4.11 PUBLIC UTILITIES

4.11.1 Introduction

This section describes utilities that will be required by the proposed project: potable water supply, recycled water, wastewater collection and treatment, solid waste disposal, electricity and natural gas, and telephone and cable services.

The following issues regarding public utilities were raised in response to the NOP (refer to Appendix B):

- Availability of existing and planned surface water and groundwater supplies
- Use of groundwater and effects on water levels
- Energy efficiency and conservation measures, as well as alternative forms of energy
- Effects of increased solid waste on the capacity of the regional landfill and Materials Recovery Facility
- Increase in construction-related solid waste
- Increase in litter
- Disposal of sewage sludge resulting from increased demand for wastewater treatment
- Financial costs associated with the provision of utilities

These issues are addressed in this section, with two exceptions. Litter is not addressed beyond the extent to which it is part of the total stream of solid waste that would be collected and sent to the regional landfill. As stated in Section 131(b) of the CEQA Guidelines, economic effects of a project shall not be treated as a significant effect on the environment; therefore, financial costs are not addressed in this EIR. However, they are being developed as part of the WRSP Financing Plan to ensure that all required utilities will be provided to support the proposed development.

As discussed in the introduction to Chapter 4 of this EIR, Environmental Analysis, the WRSP described in the NOP is different from the WRSP proposed at this time. The changes to the WRSP would not substantially affect the analysis of public utilities because the number of residential units would remain at 8,430 units, and only minor changes were made to commercial and other uses.

WATER

The water supply analysis is based on data presented in several technical studies developed for the proposed project, including

- *Technical Memorandum 1—Evaluation of Water System Capacity Water Demands* (Montgomery Watson Harza [MWH], February 26, 2002)
- *Technical Memorandum Task 1—Unit Water Demand Factor Revision* (MWH, November 6, 2002)
- *Technical Memorandum 3 – Wastewater Evaluation of Urban Growth Areas* (MWH, December 4,2001)
- *Technical Memorandum 7—Water Supply Strategy* (MWH, April 10, 2003)
- *2002 Urban Water Management Plan* (City of Roseville)
- *Master Water Study for West Roseville Specific Plan Area* (Wood Rodgers, May 2003)
- *Recycled Water Study for West Roseville Specific Plan Area* (HydroScience Engineers, Inc., May 21, 2003)
- *Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan* (MWH, June 2003)

The Groundwater Impact Analysis is provided in Appendix M, Technical Memorandum Task 1 (November 6, 2002) and Technical Memorandum 7 are provided in Appendix R, and Technical Memorandum 1 (February 26, 2002) is provided in Appendix Z of this EIR. All other documents and technical references cited in the footnotes are available for review at the City of Roseville Permit Center, 311 Vernon Street, Roseville, California.

The impact analysis in this section examines water supply and demand in the context of development projected in the City's General Plan and its attendant water demand using General Plan buildout (without the proposed project) as the baseline to ensure that the analysis incorporates a worst case scenario of competing water demands.

4.11.2 Environmental Setting

Existing Supplies

The City of Roseville has three existing sources of water supply: surface water, recycled water for landscaping, and, in dry years or emergency situations only, groundwater. Supply characteristics for each of these three sources are described below. Additional information on recycled water is included in Subsection 4.11.3 (Recycled Water) immediately following this section. Detailed information regarding groundwater resources is presented in Section 4.12 (Hydrology, Water Quality and Ground Water).

Surface Water

Folsom Lake has been the primary source of water for the City of Roseville since 1971. Through the Folsom Lake intake, Roseville receives untreated surface water from the U.S. Bureau of Reclamation (USBR) and the Placer County Water Agency (PCWA). The untreated surface water is delivered to the City's Barton Road Water Treatment Plant. Roseville maintains interties with PCWA, San Juan Water District (SJWD), the California American Water Company, and the Citrus Heights Water District. Interties are connections between existing distribution systems that can be used to deliver water between districts in the event of water treatment plant or conveyance system disruptions.[261]

As illustrated in Table 4.11-1, the City of Roseville has three surface water contract entitlements for diversions from the American River totaling 62,800 acre-feet per year (AF/year): a 32,000 AF/year contract with the USBR for a Central Valley Project (CVP) supply from Folsom Lake; a 10,000 AF/year contract with the PCWA with options for an additional 20,000 AF/year supplied from the Middle Fork [American River] Project (MFP); and an 800-AF/year contract with the SJWD for use of a portion of SJWD's PCWA contract water supply during normal/wet years (also provided from the MFP).[262]

Table 4.11-1 City of Roseville American River Water Contracts

Contracted Supply Water Supply Source	Contract Amount (AF/year)
U.S. Bureau of Reclamation (USBR)	32,000
Placer County Water Agency (PCWA)	30,000
San Juan Water District (SJWD)	800
Total Contracted Supplies	***62,800***
Available Supplies: Normal/Wet Years[1]	55,700
Available Supplies: Critically Dry Years[1]	39,800

NOTES:
1. Water Forum Agreement Maximum Surface Water Diversion limits the total amount available to the City, regardless of contracted amount.

SOURCE: City of Roseville 2003

The City of Roseville is a signatory to the Water Forum Agreement (WFA), which provides a framework for future surface water and groundwater supplies in the region through the year 2030. The WFA specifies maximum allowable surface water diversions based on unimpaired flows into Folsom Lake with diversions by the City restricted in normal/wet and in dry years, with the objective of supporting environmental needs in the Lower American River. Although water contract entitlements total 62,800 AF/year, under the WFA, the maximum American River surface water diversion by the City in normal/wet years is limited to 55,700 AF/year. The unused difference, which totals 7,100 AF/year, is

[261] City of Roseville, *2002 Urban Water Management Plan*, July 11, 2002, p. 17
[262] MWH, *Technical Memorandum, Task 7—Water Supply Strategy*, April 10, 2003, p. 3

released down the American River, where it ultimately flows into the Sacramento River. The City could divert this water from the Sacramento River through the proposed Sacramento River Water Reliability Project once this project is completed (refer to Impact 4.11-1 for additional information regarding the Sacramento River Water Reliability Project). However, in critically dry years, the maximum diversion from the American River is limited to 39,800 AF/year. In below average to dry years, the City may divert an amount between 55,700 and 39,800 AF/year from the American River based on unimpaired flow into Folsom Lake.[263] The Forum categorized water years into three types: 1) Normal or Wet Years, 2) Drier Years, and 3) Driest Years. These hydrologic year types are defined as follows:

- Normal or Wet Years: When the projected March through November Unimpaired Inflow to Folsom Reservoir is greater than 950,000 AF;
- Drier Years: When the projected March through November Unimpaired Inflow to Folsom Reservoir is between 950,000 AF and 400,000 AF; and,
- Driest Years: When the projected March through November Unimpaired Inflow to Folsom Reservoir is less than 400,000 AF.

In accord with the City's WFA, the City is working with PCWA on a re-operation plan of PCWAs Middle Fork Project (MFP) to allow up to 20,000 AF/yr of raw water to be released down the American River for environmental offsets resulting from increased water supply demands over 1995 baseline diversions (19,800 AF to 39,800 AF). The environmental offsets could come from two sources, either a combination of the remaining contractual supply (7,100 AF) plus re-operation of the MFP reservoirs (12,900 AF); or the full amount (20,000 AF) from re-operation of the MFP. Release of re-operation water would occur when the City is limited in its diversions from Folsom Lake during drier and driest years.

Recycled Water Supply

Recycled water refers to wastewater treatment plant effluent that has received a level of treatment that meets the State requirements for direct nonpotable re-use (for example, irrigation of landscaping).

Treated wastewater from the Dry Creek Wastewater Treatment Plant (DCWWTP), located on Dry Creek near the Union Pacific Railroad Yard in Roseville, produces recycled water for limited use for some landscape medians, some parks, and golf courses within the City limits. Refer to Subsection 4.11.3, immediately following this Water Supply discussion, for additional information regarding recycled water supply, including current delivery amounts and planned improvements.

[263] MWH, *Technical Memorandum, Task 7—Water Supply Strategy*, April 10, 2003, p. 3

Groundwater Supply

The use of groundwater is part of the City of Roseville's current water supply planning, but it is only used for short-term supply during dry years (e.g., during drought conditions in 1991). The City's WFA includes the extraction of up to 6,600 AF/year of groundwater during the drier and driest WFA hydrologic years. In addition, 800 AF/year would be required to support the loss of surface water no longer available from SJWD during dry years.[264] The City has four wells that are maintained primarily for backup water supply, and additional wells are planned to improve reliability. The City participates in a regional groundwater management plan with PCWA.[265] Refer to Section 4.12 (Hydrology, Water Quality and Ground Water) for additional information regarding groundwater resources and the PCWA groundwater management plan.

Future Water Supplies

Surface Water

The SJWD has an existing contract entitlement with PCWA to obtain up to 25,000 AF/year of water for use within Placer County and a long-term wheeling agreement[266] with USBR for accessing the water through Folsom Lake. Certain conditions of that contract allow a portion of that entitlement to be delivered to the SOI Amendment Area. Currently, SJWD is utilizing 48 percent of the contractual supply (12,000 AF/yr) and anticipates an additional 26 percent of the contractual supply (6,500 AF/yr) will be required to meet build out demands of the Granite Bay Area. This leaves 26 percent of the contractual supply (6,500 AF/yr). As established in a Memorandum of Understanding dated June 13, 2003, between SJWD and the City of Roseville, the SJWD has agreed to provide up to 3,200 AF/year of additional untreated surface water to the City from its existing entitlement.[267] The 3,200 AF/yr of water to be transferred to the City from SJWD represents 13 percent of the SJWD's PCWA water supply (25,000 AF/yr). Accounting for the existing 800 AF/yr of water already transferred from SJWD to the City and this new supply (3,200 AF/yr), SJWD would still have 10% or (2,500 AF/yr) of their PCWA contractual supply available. Further, the agreements between the City and SJWD require these water transfers comply with the District's commitments outlined in SJWD's Water Forum Agreement. This means that the 4,000 AF/yr transferred to the City is only available during wet years. During dry years, the City must utilize alternative water supplies. The 3,200 AF/yr of water is not included in the totals in Table 4.11-1

[264] MWH, *Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan*, Draft January 2003, p. 1-1

[265] City of Roseville, *2002 Urban Water Management Plan*, July 11, 2002, pp. 7–8

[266] "Wheeling" is the circumstance where one entity conveys or transfers water through another entity's facility. A wheeling rate is the charge imposed by the conveying agency for the transfer of the water. A wheeling agreement refers to the terms and conditions whereby the water is transferred.

because it is not part of the City's current contracted amount. Under the terms of the MOU, the 3,200 AF/yr would become available when the agreement between Roseville and SJWD is executed (upon completion of environmental review for the WRSP).

Recycled Water

The Pleasant Grove Wastewater Treatment Plant (PGWWTP), located on the west side of Phillip Road, south of the planned extension of Blue Oaks Boulevard (refer to Figure 2-3 [West Roseville Specific Plan Land Use Plan] in Chapter 2 [Project Description]), will produce recycled water in addition to recycled water produced by the DCWWTP. The PGWWTP is anticipated to be operational by winter 2003. This EIR uses the term "Roseville regional recycled water facilities" to refer to recycled water from the DCWWTP and the PGWWTP. Refer to Subsection 4.11.3, immediately following this section, for additional information regarding recycled water from the PGWWTP.

Aquifer Storage and Recovery (ASR) Program

The City is evaluating the feasibility of developing an Aquifer Storage and Recovery (ASR) program. Under such a program, surface water would be injected into the aquifer in wet years for storage, and then the City's backup groundwater wells would pump the stored water in dry years. The City is developing a demonstration project at the Diamond Creek well, which is under construction, to evaluate the feasibility of using planned wells for injection and storage of treated water.

Current and Projected Water Demand

The City's Urban Water Management Plan (WWMP) provides data, assumptions, and conclusions regarding water demand in the City of Roseville. The 2002 UWMP, which was prepared in accordance with California Water Code Division 6, Part 2.5, was adopted by City Council Resolution No. 02-315 on July 31, 2002, identifies current and projected water supply and demand in 5-year increments for a 20-year period ending in 2020 based on General Plan buildout. Because the SOI Amendment Area is outside the City limits, water demands for the WRSP Area and Remainder Area were not included in the 2002 UWMP. Subsequent to adoption of the 2002 UWMP, the City began to consider delivery of water service to urban growth areas outside the City limits, such as the SOI Amendment Area. As part of that effort, the City re-evaluated previous water demand factors to determine whether existing estimates of water demand reflect actual water use and the extent to which supply could meet citywide demand in addition to the demand associated with the SOI Amendment. The following discussion includes background

[267] MWH, *Technical Memorandum, Task 7—Water Supply Strategy*, April 10, 2003, p. 6

information about supply and reliability of existing supplies and summarizes the conclusions of studies performed in 2003 that resulted in adjustments to existing and future water demand estimates.

Supply and Reliability of Potable Water Supplies

The City of Roseville currently supplies surface water for municipal and industrial (M&I) uses. This requires firm surface water contract amounts to ensure that proper supplies are maintained for the residents and businesses relying on this supply of water. The estimates in the UWMP show that in average precipitation years the City of Roseville has sufficient water to meet its customers' needs through 2020 (without the proposed SOI Amendment). This is based on a continued commitment to regional planning for water supplies, ongoing conservation efforts, and additional recycled water supplies for landscaping being developed. In times of drought and water shortage, the urban demand is expected to decrease as a result of increased conservation awareness and regulations. Water available from surface water supplies would be supplemented with groundwater. It is expected that if supply were to be reduced due to shortage, consistent with reductions identified in the WFA, existing surface water supply coupled with conservation and groundwater use would be sufficient to meet citywide demands.[268]

The City's water system is completely "on-demand," as is typical of many urban water systems. During normal years, water supplies from Folsom Lake are sufficient to meet the contractual obligations, and the City has sufficient quantities, either directly from USBR or wheeled through Folsom Lake from PCWA, to meet the needs of the community. During times of drought, however, water allocations may be reduced, resulting in restrictions being imposed on all water used within the City.

The City's USBR contract requires supply cutbacks under certain conditions. Due to local water supply shortages, Roseville's water supply was reduced in 1991, 1992, 1994, and 2001. These cutbacks necessitated the use of an exercised water option with PCWA to reduce projected shortfalls.[269] During three of those four years, the PCWA water was conveyed through USBR facilities under single-year wheeling contracts. With the future reliance on PCWA water wheeled (or conveyed) through the USBR Folsom Lake facilities to meet the base demand within the City service area, a long-term contract that would provide for conveying PCWA water through USBR facilities ("wheeling contract") is being sought. The City is currently developing an environmental document to support approval and signature of the negotiated agreement.

[268] City of Roseville, *2002 Urban Water Management Plan*, July 11, 2002, p. 15
[269] City of Roseville, *2002 Urban Water Management Plan*, July 11, 2002, p. 15

Based on over 70 years of historical hydrology (and WFA restrictions), the 55,700 AF/year contract surface water supply is assumed to be available to the City in about 83 percent of the years. In about 17 percent of the years, less than 54,900 AF/year to a minimum of 39,800 AF/year of surface water would be available per the WFA. As discussed previously, the City is working with PCWA on a re-operation plan of PCWA's Middle Fork Project to allow up to 20,000 AF/yr of raw water to be released down the American River. Release of re-operation water would occur when the City is limited in its diversions from Folsom Lake during drier and driest years. Thus, in drought years, supplemental supplies potentially totaling up to 15,900 AF/year (the difference between the average/wet year supply and the dry year supply) is needed to make up for the dry-year and critically dry-year deficiencies. The City's current strategy for providing supplemental water during dry years consists of the following: 3,000 AF/year of recycled water supplies (for nonpotable, landscaping use), development of up to 6,600 AF/year of sustainable[270] groundwater supplies, 800 AF/year of groundwater to replace SJWD's PCWA contract water, and, during severe drought, the implementation of up to 5,500 AF/year of additional conservation efforts (including rationing), which represents a 10 percent reduction in water use.[271]

Water Shortage Contingency Plan

Based on current water supplies and projected supply availability, the City does not anticipate having more than a 20 percent shortage over a three-year consecutive dry-year period.[272] However, as part of the UWMP, the City has considered probabilities of shortages and outages that could affect water supply. This Water Shortage Contingency Plan notes that long-duration shortages are handled through implementation of a drought contingency plan, and short-term disruptions are addressed through use of existing system storage and interties with adjacent jurisdictions. In the event these supplies are not sufficient or available to meet short-term needs, groundwater can be used to supplement the required demand.

The City of Roseville has implemented various strategies and plans to minimize the use of potable water in order to operate effectively under drought conditions. In 1991, the City developed and adopted the Roseville Water Conservation and Drought Mitigation Plan. Under this plan, the City has authority to declare water shortage conditions and implement drought-related mitigation measures. The City can initiate this process by declaring the drought stage (Stage One through Stage Five) and imposing the appropriate and corresponding drought response measures. For example, Stage One prohibits washing

[270] A "sustainable" groundwater supply is defined as the amount of groundwater that can be extracted over the long term without depletion or overdraft of the aquifer.
[271] MWH, *Technical Memorandum, Task 7—Water Supply Strategy*, April 10, 2003, pp. 3–4
[272] City of Roseville, *2002 Urban Water Management Plan*, July 11, 2002, p. 16

of streets, driveways, sidewalks, and parking lots and places restrictions on boat and vehicle washing and serving water in restaurants. In the third consecutive dry year, or in the event of a major system failure, the City would continue a Stage One shortage response or move into a Stage Two water shortage response. Under Stage Two, the Stage One restrictions would apply, along with additional landscape irrigation restrictions. Stage Three, Four, and Five drought restrictions could be utilized in a similar manner depending on severity of the drought and anticipated shortage. Conservation measures to be taken in Stages One through Five are specified in the City Municipal Code Chapter 14.09, and cover supply shortages of up to 50%.

In summary, the City would initiate demand reduction measures as established, based on the drought stage, to meet the supply commitments made in the WFA.[273] City groundwater wells can also be activated to supplement surface water during droughts when necessary, but not in lieu of a Stage Two drought determination based on water supply availability.

Water Conservation

The Water and Energy Conservation Component of the City of Roseville General Plan encourages resource conservation and protection, and the City provides an information program to encourage conservation. Title 24 of the California Code of Regulations is the implementation tool for conservation efforts required by water system policies. The Code establishes water-conservation standards for new development, including low-flow showerheads and low-flush toilets. All non-residential and multi-family landscaping must also comply with Roseville Water Efficient Landscape Requirements. Water conservation requirements are specified in Chapter 14.09 of the Roseville Municipal Code.

As a USBR contractor, the City is required to develop and maintain a conservation plan pursuant to the Central Valley Project Improvement Act of 1992. In addition, as noted above, the City is a member and signatory to the WFA, which includes water conservation requirements. Water conservation measures are also required as part of the UWMP. The City of Roseville has developed a water conservation program in conjunction with the USBR and WFA participants that complies with requirements of the UWMP Act. This program includes 14 water Demand Management Measures (DMMs). These DMMs address audits, retrofits, leak detection and repair, metering/commodity rates, rebate programs, public information and education programs, commercial/industrial/institutional water conservation, and water waste prohibitions.[274]

[273] City of Roseville, *2002 Urban Water Management Plan*, July 11, 2002, p. 11
[274] City of Roseville, *2002 Urban Water Management Plan*, July 2002, pp. 19–28

Updated Potable Water Demand Estimates

Previous water supply planning in the City has been based on projected unit water demands, total water demand, and maximum day and peak hour demand factors provided in the *General Plan Update Water System Study* prepared by Spink in August 1993 (the "Spink study"). The City has been collecting and evaluating water meter data since 2001/02. The recent meter data indicate the unit water demand factors in the Spink study likely overestimate current and projected City water use. This is believed to be principally the result of the effect of the implementation of water conservation measures in post-1992 home construction. The data show a reduction in actual water use relative to the estimates used in the 1993 Spink study in every land use category except Business Professional, Railroad Yard, and Public. The data in the residential categories show up to a 25 percent decrease in every category except in one of the High-Density categories and one of the Low-Density categories. In the latter two categories, the decreases in the estimated unit water demand factors still exceed 10 percent. Significant decreases in the Industrial categories could be attributed to water conservation and greater weighting of economic considerations used in the design of industrial processes requiring water. The increase in the Business Professional category could be the result of more medical offices with a higher average water use than typical professional buildings.[275]

Revised unit water demand factors were developed through statistical analysis of the 1993 Spink study, meter data collected by the City of Roseville (as noted above), and unit demand data from Sacramento County water purveyors (which reflects Sacramento Area Water Forum land use/demand assumptions), Sacramento Water Agency Zone 40, PCWA Zone 1, and other Central Valley cities for each land use category group. The statistical comparison of unit water demand factors were then used to recalculate the unit water demand factors that were, in turn, used to estimate projected demands in the existing City of Roseville.[276] The adjusted estimates of existing and future water demand include a reliability factor to reflect the inherent uncertainty of such estimates, thereby insuring that the City can adequately meet delivery commitments and that service to existing and future customers would not be compromised as a result of the adjusted demand.[277] Refer to Technical Memorandum Task 1 included in Appendix R in this EIR for additional information regarding the development of revised unit water demand factors. Meter data will continue to be collected and analyzed to confirm the unit demand factors for the purposes of estimating existing and future water demands within the City and the SOI Amendment Area.[278]

[275] MWH, Technical Memorandum, Task 1—Unit Water Demand Factor Revision, November 6, 2002, p. 2
[276] MWH, Technical Memorandum, Task 1—Unit Water Demand Factor Revision, November 6, 2002, pp. 2–5
[277] MWH, Technical Memorandum, Task 1—Unit Water Demand Factor Revision, November 6, 2002, p. 1
[278] MWH, Technical Memorandum, Task 7—Water Supply Strategy, April 10, 2003, p. 6

Table 4.11-2 presents land use categories and total existing and buildout water demand for the City based on the revised unit water demand factors. The projected water demands include that portion of the City served with supplies contracted from the SJWD (i.e., Doctor's Ranch [NRSP Phase 3] and the Foothills Business Park). As illustrated in Table 4.11-2, the estimated existing citywide demand is 32,799 AF/year, and the estimated water demand (at buildout) of the General Plan is 51,621 AF/year. Neither existing nor future demand estimates includes the use of recycled water.

Table 4.11-2 City of Roseville Revised Unit Water Demand Factors and Existing and General Plan Buildout Water Demand (Without Project)

Land Use Category	Revised Demand Factor	Estimated Existing Demand in City (AF/year)	Estimated Demand at General Plan Buildout (without WRSP and SOI Amendment) (AF/year)
LDR (<3.5 DU/ac)	728 gpd/DU	4,943	5,903
LDR (3.5 to 5.0 DU/ac)	600 gpd/DU	8,222	13,524
LMDR (>5.0 to 6.0 DU/ac)	521 gpd/DU	2,880	3,301
LMDR (>6.0 to 8.0 DU/ac)	430 gpd/DU	1,594	2,030
MDR (>8.0 to 12.0 DU/ac)	323 gpd/DU	401	761
HDR (>12.0 to 16.0 DU/ac)	288 gpd/DU	32	115
HDR (>16.0 DU/ac)	177 gpd/DU	1,347	1,948
Commercial/Retail	2,598 gpd/ac	2,323	4,929
Business Professional	2,598 gpd/ac	987	2,267
Light Industrial	2,598 gpd/ac	858	4,120
Industrial	2,562 gpd/ac	1,599	3,002
Railroad Yard	109 gpd/ac	87	72
Elementary Schools	3,454 gpd/ac	648	573
High Schools	4,068 gpd/ac	408	597
Public (Fire Station, etc.)	1,780 gpd/ac	1,199	1,290
Park/Recreation	2,988 gpd /ac	4,628	6,176
Open Space/Major right-of-way	—	—	—
Vacant/Unassigned	—	—	—
	Subtotal	*32,156*	*50,608*
	System Losses (2%)	643	1,012
	Total	***32,799***	***51,620***

NOTES:
ac = acre; AF/year = acre-feet per year; LDR = low density residential; LMDR = low medium density residential
DU = dwelling unit; gpd = gallons per day; MDR = medium density residential; HDR = high-density residential
SOURCE: MWH, *Technical Memorandum, Task 7—Water Supply Strategy*, April 10, 2003, Table 1; *MWH, Technical Memorandum, Task 1—Unit Water Demand Factor Revision*, November 6, 2002, Table 6

As noted above, the new data indicate current estimates of existing and buildout citywide water demand are lower than the demand projected in the 1993 Spink study. Based on the revised unit demand factors the difference between existing and future surface average/wet year water supplies (55,700 AF/year) and the estimated water demand at General Plan buildout (51,620 AF/year) (not including the SOI Amendment area) is a surplus of 4,080 AF/year.

Using the revised unit demand factors, the City has decided that up to 4,080 AF/year of the excess City supply could be made available to the SOI Amendment Area, of which 2,316 AF/year would be made available to the WRSP. The City will need to update the UWMP to reflect adjusted demand projections that reflect the revised demand factors.

Recycled Water Demand

Existing City recycled water use (demand) is approximately 1,458 AF/year, which is supplied from the DCWWTP. The recycled supply from the DCWWTP is sufficient to meet demand through year 2005. Refer to Subsection 4.11.3, immediately following this Water Supply discussion, for additional information regarding recycled water.

Groundwater Demand

The City relies predominantly on surface water to meet potable water demand, as indicated above. Groundwater is extracted by the City for reliability in dry years or for short-term emergencies when other supplies are not available. Groundwater was last used during drought conditions in 1991.[279] Refer to Section 4.12 (Hydrology, Water Quality and Ground Water) for additional discussion of groundwater resources.

Existing Water Treatment and Distribution Infrastructure

Water Treatment

The City of Roseville operates a 60-million-gallons-per-day (mgd) water treatment plant (WTP) on Barton Road near Folsom Lake in the Granite Bay community. Untreated surface water from Folsom Lake is conveyed from a USBR intake through an 84-inch pipeline to a USBR pumping plant, which has a capacity of 96 mgd for Roseville contracted supplies.[280] After pumping, which is only necessary when lake levels drop below 404 feet, water is conveyed through an 84-inch pipeline to the "Hinkle Y" where flows to SJWD and Roseville are split. Roseville untreated water flows through a short segment of 60-inch pipeline, then into parallel 60-inch and 48-inch pipelines owned by the City of Roseville to the WTP.

The USBR pump station is designed to deliver 258 mgd at a lake surface level of 392 feet of which 96 mgd is allocated to Roseville. When the lake elevation is higher than 392 feet, the added head (or water

[279] City of Roseville, 2002 Urban Water Management Plan, July 11, 2002, pp. 7–8

[280] Wood Rodgers, Master Water Study for the West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties), June 2003, Section 4.0

pressure) results in water flowing more efficiently and additional physical delivery capacity would be available. Constraints would then be limited to contractual agreements, if any.

Future average day treatment demand, based on the estimated citywide demand of 51,621 AF/year at buildout of the General Plan (without the proposed project) is projected to be approximately 46.09 mgd. The average daily treatment demand incorporates the revised unit water demand factors and does not assume the use of recycled water. The maximum daily demand, which reflects a peaking factor of 2.0, is estimated to be 92.18 mgd; however, the actual amount of treated water would be 88.93 mgd because recycled water used by existing customers (1,458 AF/year) would not require treatment at the Barton Road WTP or conveyance from Folsom Lake.

The existing Barton Road WTP capacity is 60 mgd and experienced peak demands of 49.5 mgd in July 2002. The treatment plant site has been master planned to an overall capacity of 100 mgd. The current plan is for plant expansions to be completed in two phases: an expansion to 75 mgd, which is expected to be completed in mid-2006, and an expansion to 100 mgd, which is expected to be completed in mid-2010.[281] An EIR was prepared for the WTP expansion to 100 mgd (the *Roseville Water Treatment Plant Expansion and 60-Inch Pipeline Project EIR* ["WTPE EIR"] [SCH #1998012011]). The WTPE EIR addressed implementation of a Water Plant Master Plan for the phased process to expand plant capacity of 60 mgd to 75 mgd, and, ultimately to 100 mgd to meet ultimate demand at General Plan buildout. The WTPE EIR included a project level evaluation for plant expansion from 48 to 60 mgd. It also included a program-level analysis for expansion up to 100 mgd. The program-level analysis, to the extent possible, addressed a series of actions leading to full implementation of the full master plan capacity, including the construction and expansion of treatment facilities, storage reservoirs, conveyance pipelines, and pump stations. The EIR was certified in 1999. A Supplement to the certified EIR was prepared to address the construction and operation of a 6 mgd clearwell reservoir and related facilities. The Supplement was certified in March 2003.

Storage and Distribution

Potable Water

On-Site Systems

The SOI Amendment Area is largely undeveloped, with the exception of the Fiddyment Ranch complex and the Corin residence in the Fiddyment Ranch portion of the WRSP and several residences in the

[281] City of Roseville, 2002 Urban Water Management Plan, July 2002, p. 13

Remainder Area. Other than groundwater wells that serve existing landowners, there is no developed potable water distribution system in the SOI Amendment Area.

The SOI Amendment Area is within the PCWA Zone No.5. This service zone was established by PCWA exclusively as an agricultural zone, and commitments of water by PCWA for agricultural use cannot be transferred to any other use. The conversion of land within Zone 5 from agricultural use to urban use requires that the land be detached from Zone 5 by the PCWA and attached to the City of Roseville service area.[282]

Off-Site Systems

Treated water storage is required citywide to manage flow fluctuations on a daily basis and to maintain sufficient storage to address emergency needs such as main breaks and fire fighting demands. The water distribution system currently includes 22 million gallons (mg) of storage and is projected to need a total of 48 mg of storage by 2020. The additional 26 mg of storage are planned for the northeast Roseville tank site (5 mg), Stoneridge Zone 2 (3 mg), the Barton Road WTP (6 mg), and North Industrial tank site (12 mg).[283]

Existing potable water distribution facilities are located east of the WRSP Area in the Del Webb and North Roseville Specific Plan developments. These lines, which range in diameter from 6 inches to 24 inches, are in existing roadway alignments, but do not extend west to Fiddyment Road at the WRSP Area boundary. Major water mains in the Del Webb development include a 24-inch main in Blue Oaks Boulevard, a 24-inch main in Del Webb Boulevard, and a 16-inch main in Pleasant Grove Boulevard. Major water lines in the North Roseville Specific Plan include a 24-inch main in Baseline Road.[284]

In general, the existing City potable water distribution system meets the City's maximum daily demand criterion of 6 feet per second (fps) for transmission main velocity (i.e., the rate at which water flows through the pipelines) and the City's water pressure criterion of 50 pounds per square inch (psi). There are a few locations where these criteria are not met, but the discrepancies are minimal and do not adversely affect water service to customers.

[282] Placer County Water Agency, "Placer County Water Agency Comments in Response to the NOP of an EIR for the Proposed West Roseville Specific Plan," letter from Einer L. Maisch, Director of Strategic Affairs, to Kathy Pease, Roseville Planning Department, August 29, 2002

[283] City of Roseville, 2002 Urban Water Management Plan, July 2002, pp. 13–14

[284] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, Figure 2-1

Under General Plan buildout conditions (without the SOI Amendment), a few areas within the City are projected to approach or exceed the 6 fps velocity criterion: Cirby Way from Rocky Ridge Drive to Parkview Drive, Roseville Parkway from Harding Boulevard to Reserve Drive, and Pleasant Grove Boulevard at Foothills Boulevard. Water pressure decreases would affect Zone 1 services on Eureka Road and Douglas Boulevard along the boundary of Zone 2 and within the Creekside development area. At these locations, the system would be expected to experience a drop of approximately 3 to 5 psi during maximum daily conditions and approximately 5 to 9 psi during peak hour conditions. The City is continuing to evaluate options for identifying what, if any, improvements would be needed to address distribution system issues in these areas. Possible improvements could include installing parallel pipelines or in-line booster pumps.

Recycled water distribution systems are described in Subsection 4.11.3, immediately following this Water Supply discussion.

4.11.3 Regulatory Setting

Federal

There are no federal regulations related to water supply that pertain to the proposed project.

State

Water Supply Assessments

The California Water Code Section 10910 et seq. and Public Resources Code 21151.9 require that water availability be evaluated in a "Water Supply Assessment" prior to approval of certain large development projects and that detailed information regarding the assessment be included in the EIR for that project.

Water Supply Sufficiency Condition and Verification

California Government Code section 66473.7 (enacted by SB 221 and SB 610 in 2001) requires that a condition of approval be imposed on any tentative subdivision map for a residential subdivision of 500 or more units mandating that a "sufficient water supply" be available to serve the subdivision in addition to existing and planned future water uses. A public water system that proposes to serve the subdivision must submit to the relevant local government agency a water supply verification evaluating whether such a sufficient water supply exists, based on substantial evidence. Absent demonstration in the verification that a sufficient water supply exists, a final subdivision map cannot be issued for the project, and the subdivision cannot be built.

The Water Supply Assessment for the proposed project, indicating compliance with SB 221, is provided in Appendix S of this document.

State Drinking Water Quality Regulations

The State Department of Health Services establishes "primary" and "secondary" Domestic Water Quality Standards for drinking water supplied by public water systems such as the City. The standards are required by state law to meet or exceed standards adopted by the U.S. Environmental Protection Agency. The concentrations of specified constituents are limited to maximum contaminant levels (MCLs) and are established on a constituent basis for bacteriological contaminants (such as coliform), organic chemicals (such as benzene), inorganic chemicals (such as total dissolved solids), and radioactivity (such as gross alpha particle activity). Primary standards are set at levels necessary to protect public health and may not be exceeded. Secondary standards are based on aesthetic criteria such as taste and odor and are composed of (1) recommended limits that may be exceeded but are not recommended to be exceeded; (2) upper limits that may be exceeded for a limited duration with prior DHS approval; and (3) short term limits that may not be exceeded.

Public water systems also must obtain a domestic water supply permit from DHS that must be amended to reflect changes to the water supply system. The City has obtained such a permit.

Urban Water Management Planning Act (California Water Code, Division 6 Part 2.6, Section 10610 et seq.)

The Urban Water Management Planning Act was developed due to concerns for potential water supply shortages throughout the State of California. It requires information on water supply reliability and water use efficiency measures. Urban water suppliers are required, as part of the Act, to develop and implement Urban Water Management Plans to describe their efforts to promote efficient use and management of water resources.

Water Conservation Projects Act

The State of California's requirements for water conservation are codified in the Water Conservation Projects Act of 1985 (Water Code Sections 11950-11954), as reflected below:

> 11952. (a) It is the intent of the Legislature in enacting this chapter to encourage local agencies and private enterprise to implement potential water conservation and reclamation projects…

Other Applicable Regulations

In addition, other statutes that address water supplies include the California Environmental Quality Act (Public Resources Code Section 21151.9), the Cortese-Knox-Hertzberg Local Government Reorganization

Act of 2000 (Government Code Section 56668(k)), and Planning and Zoning Law (Government Code Section 6532.5).

Local

Water Forum Agreement

The Water Forum Agreement (WFA) is the result of the efforts of a diverse group of community leaders formed in 1994 to formulate principles for a regional solution to future water supply needs. Participants in the Water Forum have developed two coequal objectives:

- Provide a reliable and safe water supply for the region's economic health and planned development to the year 2030
- Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River

Water Forum stakeholders have developed an integrated package of actions that will meet the two co-equal objectives mentioned above. Each element of the package is necessary for a regional solution to work. There are seven elements:

1. Increased Surface Water Diversions
2. Actions to Meet Customers' Needs While Reducing Diversion Impacts on the Lower American River in Drier Years
3. An Improved Pattern of Fishery Flow Releases from Folsom Reservoir
4. Lower American River Habitat Management Element, which also Addresses Recreation in the Lower American River
5. Water Conservation Element
6. Groundwater Management Element
7. Water Forum Successor Effort

Purveyor Specific Agreements (PSA) have been developed that describe in detail how each of the seven elements will be implemented by the respective purveyors, such as the City of Roseville, PCWA, and SJWD. These PSAs are compiled into a Memorandum of Understanding that each stakeholder's authorizing body has executed. In return for signing the final Water Forum agreement, water purveyors receive regional support for water supply projects, including site-specific infrastructure development.

In January 1999, the Sacramento City-County Office of Metropolitan Water Planning published the Draft Environmental Impact Report (EIR) for the WFA. The WFA EIR addresses the impacts and mitigation measures that the area stakeholders would need to comply with in order to implement the water supply

program outlined in the WFA. The Final EIR for the WFA was certified on November 23, 1999. The findings of that EIR, and the accompanying Water Forum Action Plan, outlined a program whereby water delivery could be supplied to area stakeholders through the year 2030, provided that a permanent pumping plant is constructed at Auburn and the Sacramento River Water Reliability Project diversion facilities are constructed. The WFA EIR is hereby incorporated by reference into this EIR. The full WFA EIR is available for review at the City of Roseville Permit Center, 311 Vernon Street, Roseville, California.

City of Roseville

General Plan

The City of Roseville General Plan includes several policies relating to water supply and distribution. Refer to Appendix C for a complete list of all applicable City goals and policies.

Urban Water Management Plan

The City has prepared and adopted an Urban Water Management Plan. The purpose of this plan has been previously described in this section. As indicated in that discussion, water demand associated with the SOI Amendment Area is not included in the plan, and the City will need to update the UWMP to reflect adjusted demand projections caused by the revised demand factors. A copy of the 2002 UWMP is available for review at the City of Roseville Environmental Utilities Department), 2005 Hilltop Circle, Roseville, California.

Water Master Plan

The City of Roseville has developed minimum operating goals for the planning of backbone potable water facilities. These criteria are used to ensure that subsequent distribution systems are not undersized when designed and constructed. Distribution systems must also be sized to provide adequate fire flows at minimum residual pressures that meet or exceed flows specified by the Insurance Services Office, Inc. (ISO) and Roseville Fire Department.

City Improvement Standards

Section 8 of the City's Improvement Standards (1993) provides engineering design criteria of the domestic water system that would serve the proposed SOI Amendment Area. The standards identify relevant regulations, professional standards (e.g., American Water Works Association), water supply

quality, operating pressures, required fire flows, transmission system design, and distribution system sizing and location.[285]

West Roseville Specific Plan

The water supply for the WRSP Area would consist of a combination of sources for wet and dry year scenarios. Nonpotable (recycled) water will be used for irrigation purposes in both wet and dry years. Potable water for the WRSP would be obtained from the City's existing contracts with PCWA and the USBR, as well as a new contract for 3,200 acre feet per year from the SJWD.

Water will be distributed within the WRSP Area via a looping system that parallels collector and arterial roadways on a transmission main grid. The transmission and distribution system consists of 12-inch to 24-inch diameter mains. Four groundwater supply wells are planned to ensure water supply service during shortages and in emergency situations.

Placer County Water Agency

The Placer County Water Agency (PCWA) was created in 1957 by a special Act of the State Legislature ("Placer County Water Agency Act"). This Act gives the PCWA Countywide authority with powers associated with water. The boundary of the PCWA encompasses over 1,400 square miles, all of which is located in Placer County. The PCWA is also designated as a local agency and an independent "special district" encompassing all of Placer County.[286] In addition to providing untreated surface water to the City of Roseville, the PCWA is also the lead agency for the West Placer Groundwater Management Plan, which is described in more detail in Section 4.12 (Hydrology, Water Quality and Ground Water).

4.11.4 Impacts and Mitigation Measures

Methods of Analysis

Water Supply Assumptions

Water Demand

Water demand for the proposed project was developed using the revised demand factors listed in Table 4.11-3 and applying those factors to the proposed land uses. The water demand data for the project were calculated by MWH and reviewed by City of Roseville staff in conjunction with the preparation of this EIR. Assumptions and conclusions of the water demand analysis are presented in Technical

[285] City of Roseville, Improvement Standards, 1993, pp. WA-1 to WA-7

Memorandum 1—Evaluation of Water System Capacity Water Demands (MWH, February 26, 2002) and in Technical Memorandum Task 1—Unit Water Demand Factor Revision (MWH, November 6, 2002). The availability of existing water supplies and water supply strategy to meet projected demands, in combination with existing and future City commitments, was analyzed by MWH and presented in Technical Memorandum 7—Water Supply Strategy (MWH, April 10, 2003), which serves as the basis for the project-specific water supply analysis presented in this section and the cumulative analysis in Chapter 5. Both technical memoranda are included in Appendix M in this EIR.

Table 4.11-3 Estimated Water Demand

Land Use Category	West Roseville Specific Plan (AF/year)	Remainder Area (AF/year)	SOI Amendment Area Total (AF/year)
LDR (<3.5 DU/ac)	1,523	—	1,523
LDR (3.5 to 5.0 DU/ac)	2,339	3,402	5,741
LMDR (>5.0 to 6.0 DU/ac)	228	—	228
LMDR (>6.0 to 8.0 DU/ac)	214	356	570
MDR (>8.0 to 12.0 DU/ac)	157	—	157
HDR (>12.0 to 16.0 DU/ac)	229	—	229
HDR (>16.0 DU/ac)	211	323	534
Commercial/Retail	95	207	302
Business Professional	57	146	203
Light Industrial	258	—	258
Industrial	98	—	98
Elementary Schools	211	267	478
High Schools	242	—	242
Public (Fire Station, etc.)	—	—	—
Park/Recreation	1,042	623	1,665
Open Space/Major right-of-way	—	—	—
Subtotal	6,904	5,324	12,228
System Losses (2%)	138	107	245
Total	***7,042***	***5,431***	***12,473***

SOURCE: Compiled from *MWH, Technical Memorandum, Task 7—Water Supply Strategy*, April 10, 2003, Table 1

Water Supply

City Environmental Utilities staff and MWH initiated a preliminary evaluation of potential water supply alternatives for the SOI Amendment Area in February 2002. The results of the evaluation were reported to the Roseville City Council. The preliminary evaluation identified a range of water supply alternatives that could provide the City with the ability to ensure long-term, reliable water supplies to the SOI Amendment Area while maintaining service to its existing and planned future customers within the current City limits. Based on the results, City Council directed staff to more fully develop and evaluate

[286] Placer County Water Agency, Draft West Groundwater Management Plan, June 23, 1998, p. 7

the most promising alternatives and to identify a recommended course of action. In November 2002, Environmental Utilities staff and MWH completed a water supply strategy identifying a portfolio of water supply sources that could meet the projected water demands of the SOI Amendment Area under any hydrologic conditions. The two Technical memoranda included in Appendix R in this EIR, which are summarized throughout this analysis, provide additional detail regarding the development of the proposed water supply strategy for the SOI Amendment Area.

The extent to which the identified sources of water can serve the SOI Amendment Area is evaluated in this Section. Sources that are already available or planned to be developed by the City and assumed in the analysis are: surplus water (4,080 AF/year) the City has determined can be made available to the WRSP and Remainder Area from existing supplies as a result of updated City buildout water demand estimates; 3,200 AF/year SJWD allocation of PCWA water under contract; and available recycled water for landscaping from the PGWWTP (2,638 AF/year), and during dry years, groundwater. The proposed Sacramento River Water Reliability Project is a possible source of water supply for the City, but is not considered assured, because it has not been designed, funded and is subject to later CEQA/NEPA review. Furthermore, because it would be a multi-jurisdictional project, funded by and providing water to a number of agencies, the City could not, by itself, ensure that the diversion would be built.

Impacts of Water Use

The environmental effects of using these sources of water are also evaluated in this EIR as indicated below.

Impacts of San Juan Water District (SJWD) Surface Water Contract Allocation

The 3,200 AF/year SJWD source of supply is a portion of an existing PCWA surface water supply of 25,000 AF/year that would be made available through an agreement between Roseville and SJWD. The 3,200 AF/yr of water to be used within the WRSP Area was analyzed under the 2030 scenarios evaluated in the Water Forum EIR (Water Forum Environmental Impact Report, dated July 20, 1999), as discussed in Section 5.5 (CEQA Considerations, Cumulative Impacts). The 25,000 AF/yr (which includes the 3,200 AF) of PCWA water contracted to SJWD was anticipated to be diverted in both the wet and dry year scenarios.

Recycled Water

Recycled water is proposed to serve landscaping needs along roadways and medians, commercial, office, industrial, parks, schools, and multi-family land uses within the SOI Amendment Area. The potential environmental effects of supplying recycled water to the WRSP and Remainder Area for landscape

irrigation are discussed in Subsection 4.11.3 (Recycled Water) following this Water Supply section. It should be noted that the total recycled water assumed for the SOI Amendment Area (2,638 AF/year) is less than that assumed in the recycled water analysis (2,839 AF/year). The 2,638 AF/year quantity was an estimate included in the water supply studies prepared by MWH and is considered worst-case from an available water supply perspective. The 2,839 AF/year quantity was an estimate included in the Hydro-Science Engineers Recycled Water Study for the WRSP and is considered worst-case from a recycled water treatment and conveyance capacity perspective.

Water Made Available Through Revised Unit Water Demand Factors (Surplus Water from Existing Supplies)

The only environmental effect of the reduced unit water demand factors and associated adjustments to buildout demand projections is that it could induce growth that would not otherwise have a source of water, such as the proposed project. The effects of making water available to the WRSP and Remainder Area are fully evaluated in this EIR.

Dry-Year Groundwater Supply Impact Analysis

Impact 4.12-6 in Section 4.12 (Hydrology, Water Quality and Ground Water) discusses the potential physical effects on groundwater resources that could result when groundwater is used in dry years to supplement water supplies for the WRSP. Assumptions used in the groundwater impact analysis were presented in the *Groundwater Impact Report* prepared by MWH and provided in Appendix M of this document. These assumptions are more fully explained in Section 4.12 (Hydrology, Water Quality and Ground Water).

Sacramento River Water Reliability Project

Up to 7,100 AF/year of surface water from the Sacramento River Water Reliability Project is required for development of the Remainder Area. Additional information about this project is provided in Impact 4.11-1. The potential environmental effects of the 7,100 AF/year were not considered within the cumulative context of American and Sacramento river diversions evaluated in the WFA EIR but would be done as part of further environmental review of that project. Refer to Chapter 5, CEQA Considerations—Cumulative Impacts, for a further discussion of the assumptions and conclusions related to this diversion.

Water Treatment

A Master Water Study for the proposed project was prepared by Wood-Rodgers, Inc. to identify and adequately size proposed water infrastructure, including water treatment, storage, and distribution. The

Master Water Study, which evaluated the hydraulics of potable water supply infrastructure, considered the proposed land uses for the WRSP as well as the Remainder Area. The *Master Water Study* incorporated water demand information generated by MWH for the WRSP and water treatment plant capacity information developed by City Environmental Utilities staff. Wood-Rodgers used the *Hydraulic Grade Available in the Raw Water Supply Pipeline* report prepared by Boyle Engineering in 1996, in combination with the anticipated flow characteristics for the 100-mgd Barton WTP, to estimate design velocities and to identify necessary pipeline modifications to accommodate increased flows from Folsom Lake that would be conveyed to the Barton Road WTP for treatment. Additional details about pipeline assumptions are presented in the Water Master Plan. The results of the treatment capacity evaluation have been incorporated into the impact discussion. The *Master Water Study* is available for review at the City Permit Center, 311 Vernon Street, Roseville, California.

Water Distribution and Storage

The analysis of potable water storage and distribution effects is based on a technical study prepared for the SOI Amendment Area (Master Water Study, May 2003, prepared by Wood-Rodgers), as discussed above. Peaking factors were used to simulate worst-case system-operating scenarios and to generate total potable water system demands for the WRSP and the Remainder Area. The Wood-Rodgers technical study used the City's current design criteria and standards included in the City's General Plan Update Water System Study for hydraulic modeling to determine pipe and water storage reservoir sizing, storage needs, and booster pumping facilities, and to determine impacts to the City's existing potable water distribution system. For purposes of the technical study, it was assumed that maximum day demands would be supplied via connections to existing off-site infrastructure east of Fiddyment Road and that capacity to wheel a PCWA flow of 10 mgd[287] to the intersection of Baseline Road and Fiddyment would be maintained. The City H20MAP model was used with estimated demand allocations to the perimeter of the SOI Amendment Area to represent the additional demands of the WRSP and Remainder Area. Resulting pressures and hydraulic grades were estimated from the water model.

Distribution systems must also be sized to provide adequate fire flows at minimum residential pressures that meet or exceed flows specified by the Insurance Services Officer (ISO) and Fire Department. Wood-Rodgers contacted the Roseville Fire Marshal to verify fire flow demand requirements. Fire flow demands assumed 4,000 gpm for commercial sites, 4,500 gpm for schools, and 2,000 gpm for single-

[287] An agreement between PCWA and the City of Roseville requires that the City provide capacity in the 24-inch City water line in Baseline Road to maintain 10 mgd flow. This water is for use in Placer County south of Baseline Road and is not for City use. (Wood-Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, p. 31.)

family residential development maintained at a minimum-required 20 pounds per square inch (psi) residual system pressure at the flowing hydrant.

Refer to Subsection 4.11.3, immediately following this discussion for information on recycled water distribution system assumptions and analysis.

Remainder Area

Development of the Remainder Area is anticipated to generate a demand for water of 5,431 AF/year (refer to Table 4.11-3). As previously discussed and illustrated by Table 4.11-5, there would be a surplus of 1,764 AF/year from citywide and WRSP supply. This surplus would be made available to the Remainder Area. In addition, 1,112 AF/year of recycled water would be available to the Remainder Area, which includes that part of the 2,638 AF/year available to the entire SOI Amendment Area minus the 1,526 AF/year available to the WRSP Area, for landscape irrigation. However, the combined supply would not meet total water demand in the Remainder Area while meeting demand associated with the WRSP and buildout under the General Plan. As shown in Table 4.11-5, the deficit demand would be 2,555 AF/year. This is considered a significant impact.

Compliance with applicable State and local plans and policies associated with water supply would be required; however, these would not reduce impacts to a less-than-significant level.

Standards of Significance

For the purposes of this EIR, a significant impact would occur if the development proposed in the SOI Amendment Area would do either of the following:

- Require new or expanded water entitlements to serve the project
- Result in or require the construction or expansion of water treatment, conveyance, and/or storage facilities that would create significant environmental effects

The impact significance determination for water entitlements and resources (first standard listed above) considers relevant County and City planning policies and agreements. Specifically, the Development Standards in the Memorandum of Understanding (MOU) for the SOI Amendment Area (Exhibit C in the MOU) assume that surface water will be used to meet water demands of the project. The Guiding Principles for development west of Roseville state that the new demand would be met through surface water, recycled water, and other off-sets. An implicit assumption in both the MOU and Guiding Principles is that groundwater would not be used to meet demand on a regular basis. Nonetheless, the City does rely on groundwater in drier and driest years when surface supplies are not available, as

discussed in the Environmental Setting. Thus, groundwater could be used. However, the MOU requires that groundwater impacts of the project will be mitigated to a less-than-significant level unless both the County and City agree that mitigation is infeasible and overriding considerations supported by substantial evidence in the record make the unavoidable adverse environmental impacts acceptable. If a new or substantially more severe impact occurs with respect to groundwater, the City will determine whether additional environmental documentation is necessary as required for compliance with Section 15162 of the CEQA Guidelines. If additional environmental documentation is necessary, it will be completed prior to use of the groundwater.

Impacts

IMPACT 4.11-1:	AVAILABILITY OF WATER SUPPLIES TO MEET DEMAND IN WET YEARS.	
Applicable Policies and Regulations:	Water Supply Assessment (SB 221 and 610) Urban Water Management Planning Act Water Conservation Projects Act Water Forum Agreement City of Roseville and Placer County General Plan Policies Urban Water Management Plan Water Master Plan/Design Standards PCWA	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Significant
Mitigation Measures:	None Required	MM 4.11-1 (Secure adequate water supply)
Significance after Mitigation:	Less Than Significant	Significant and Unavoidable

Development of the SOI Amendment Area would include residential, commercial, business professional, light-industrial and industrial uses, and other land uses that would require water. Table 4.11-3 shows demand by land use type for the SOI Amendment Area. The total water demand for the SOI Amendment Area is estimated to be 12,473 AF/year. This amount includes the 7,042 AF/year needed for the WRSP and 5,431 AF/year for the Remainder Area.

West Roseville Specific Plan

Table 4.11-4 presents demand data for development of the WRSP Area in combination with demand associated with City buildout. Development of the WRSP Area would result in the demand for 7,042 AF of water annually (refer to Table 4.11-3). When combined with General Plan buildout demand, the total demand would be 58,662 AF/year.

Table 4.11-4 Water Demand and Supply: West Roseville Specific Plan, Average/Wet Years (Acre-Feet Per Year)

	Demand	Supply	Surplus (+) or Deficit (–)	Mitigation	Mitigation Amount	Surplus or Deficit
City of Roseville	51,620	55,700[1]	+4,080			
WRSP	7,042	4,726[2]	–2,316			
City plus WRSP	***58,662***	***60,426***	***+1,764***	None required	N/A	N/A

NOTES:

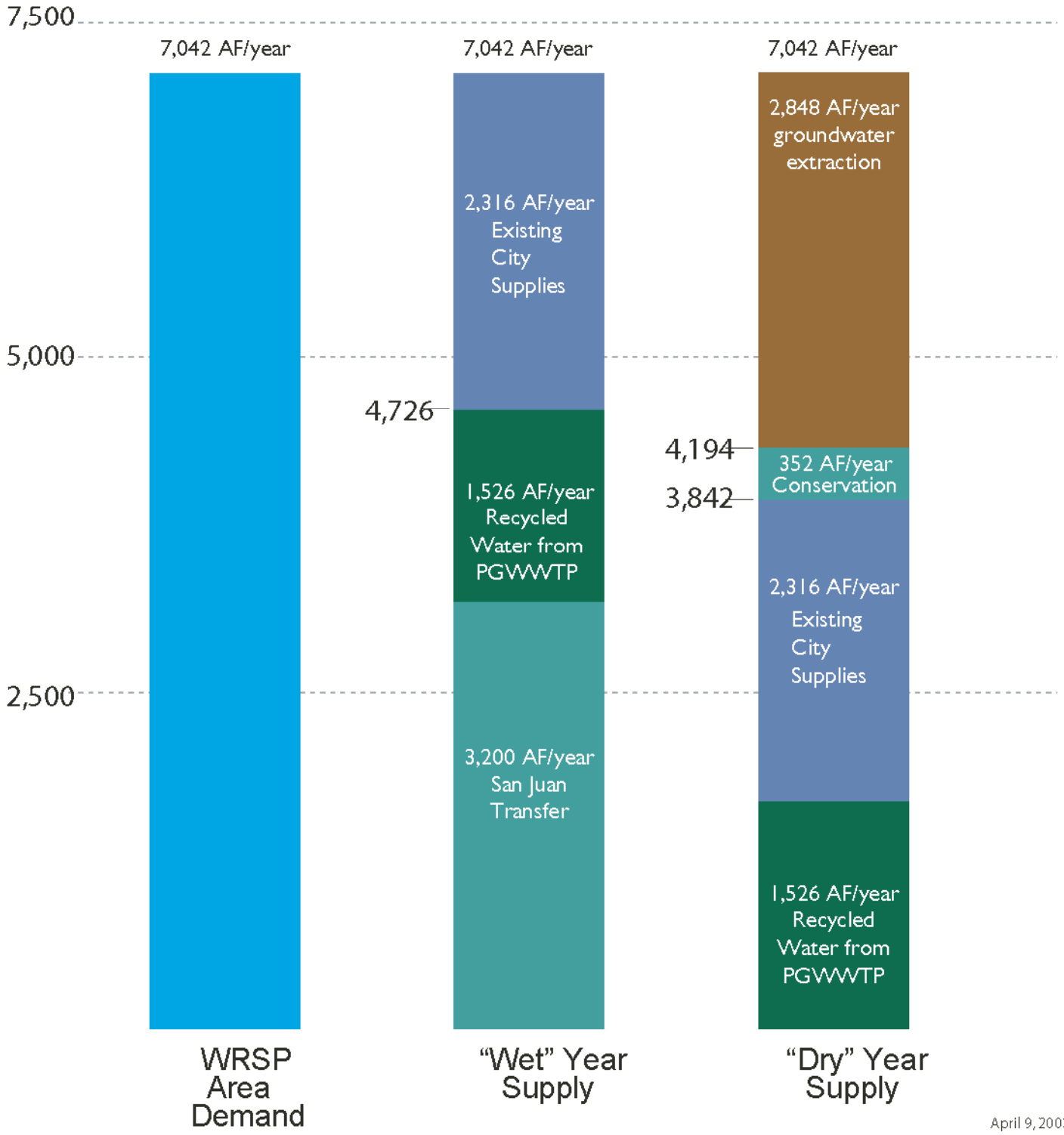
1. Water Forum Agreement (WFA) allocation for average wet years
2. Recycled water = 1,526 AF/year; San Juan Water District = 3,200 AF/year

As indicated in Table 4.11-4, two assured sources of water in average/wet years for the WRSP Area would be the SJWD supply (3,200 AF/year) and recycled water for landscape irrigation from PGWWTP (1,526 AF/year of the 2,638 AF/year available to the entire SOI Amendment Area). As previously discussed, the City has negotiated an MOU with SJWD for 3,200 AF/year during wet years. This SJWD allocation is consistent with the WFA, and would be funded by the project applicant. The WRSP includes infrastructure necessary to convey recycled water for landscape irrigation to the WRSP Area from regional facilities (refer to Impact 4.11-5 for more discussion of recycled water). Therefore, these two sources are available to the City under the WFA and can be feasibly obtained without affecting water supply for existing customers or buildout of the existing General Plan.

As previously discussed and as shown in Table 4.11-4, City supply under the WFA (55,700 AF/year) would exceed demand associated with buildout of the current General Plan by 4,080 AF/year. The City would make 2,316 AF/year of the Citywide surplus available to the WRSP Area. When combined with the City's WFA allocation, there would be a total supply of 60,426 AF/year resulting in a citywide surplus of 1,764 AF/year. Figure 4.11-1 (Proposed Water Supply Strategy for West Roseville Specific Plan) illustrates the sources of water that would be used for the WRSP. The water supply for the WRSP Area would consist of a combination of sources for wet and dry year scenarios. Nonpotable (recycled) water will be used for irrigation purposes in both wet and dry years. Potable water for the WRSP would be obtained from the City's existing contracts with PCWA and the USBR, as well as a new contract for 3,200 acre feet per year from the SJWD.

In addition, compliance with State regulations such as the requirement of a Water Supply Assessment that would ensure compliance with SB 221 and 610, the Urban Water Management Planning Act, and the Water Conservation Projects Act would address potential impacts to water supply and distribution. Further, local regulations, such as the Water Forum Agreement, City of Roseville and Placer County General Plan Policies, the Urban Water Management Plan, the Water Master Plan/Design Standards, as well as compliance with the PCWA, include additional principles and policies associated with water supply needs.

Figure 4.11-1 Proposed Water Supply Strategy for West Roseville Specific Plan



10659-00

FIGURE **4.11-1**

Proposed Water Supply Strategy for West Roseville Specific Plan
AF/yr = Acre Feet per Year

Source: City of Roseville, 2003

City of Roseville

Not to Scale

EIP ASSOCIATES

Because City and WRSP water supply would be sufficient to meet buildout demand in wet years, and no new surface water (beyond the 3,200 AF/year SJWD contract) or groundwater supplies would be needed for development of the WRSP, this is considered a **less-than-significant impact** for the WRSP.

Table 4.11-5 Water Demand and Supply: Remainder Area Average/Wet Years (Acre-Feet Per Year)

	Demand	Supply	Surplus (+) or Deficit (–)	Mitigation	Mitigation Amount	Surplus or Deficit
City plus WRSP	58,662	60,426	+1,764			
Remainder Area	5,431	1,112[1]	–4,319			
City plus Total SOI	***64,093***	***61,538***	***–2,555***	MM 4.11-1: Secure Adequate Water Supply[2]	7,100[3]	+4,545

NOTES:
1. Recycled water = 1,112 AF/year
2. This source is not assured because the City is not the only jurisdiction involved with its construction
3. City of Roseville portion of Sacramento River Water Reliability Project

Consistent with City development policies, groundwater could not be used to support development in wet/average years, so the shortfall would need to be met from other sources. Therefore, MM 4.11-1 requires that water be obtained from the Sacramento River Water Reliability Project (or from another as-yet-unidentified source) to provide enough water to serve the Remainder Area, in combination with the WRSP and General Plan buildout demand. MM 4.11-1 requires that the water supply must be secured prior to City adoption of any development approvals for the Remainder Area. With the exception of the proposed Sacramento River Water Reliability Project, no other potential sources of surface water supply have been identified for the Remainder Area to make up this deficit.

If constructed, the proposed Sacramento River Water Reliability Project would divert, treat, and deliver water from the Sacramento River. This project could include the following diversion amounts: up to 35,000 AF/year for the benefit of PCWA, up to 7,100 AF/year for the City of Roseville, up to 29,000 AF/year for the Sacramento Suburban Water District (SSWD, a consolidation of the Northridge Water District and the Arcade Water District), and up to 58,000 AF/year for the City of Sacramento. The City could make a portion of the 7,100 AF/year supply available to the Remainder Area to supplement planned surface water supplies if the Sacramento River Water Reliability Project is constructed.

The PCWA, SSWD, and City of Sacramento diversions of Sacramento River supply were included in the hydrologic modeling in the WFA EIR for purposes of identifying potential cumulative flow-related environmental impacts for wet/average, drier, and driest years for year 2030.[288] However, the 7,100

[288] Sacramento City-County Office of Metropolitan Water Planning, Water Forum Proposal EIR, Chapter 3, Project Description, Table 3-1a and Section 4.1, Modeling Assumptions, Table 4.1-2

AF/year supply for the City of Roseville was not included in the flow modeling, and the site-specific environmental effects of construction and operating the diversion facilities from the American River (as fully discussed in Environmental Setting of Section 4.11.2), including components that would divert and convey the 7,100 AF/year for Roseville, were not evaluated in the programmatic WFA EIR because the specific locations, design, and operating characteristics of all facility components had not yet been identified at the time the WFA EIR was publicly circulated and certified. In 2002/03, feasibility and environmental studies were initiated by PCWA and USBR to evaluate the feasibility of diversion locations and potential environmental effects of operating the diversion. Three potential diversion locations on the Sacramento River have been identified: Elkhorn (near Elverta Road at River Mile 73.3), Sankey (near the confluence with the Natomas Cross Canal), and Feather River near Nicolaus.[289]

Facilities that would be necessary to convey water from the Sacramento River Water Reliability Project to the City of Roseville for use in the Remainder Area would include a water treatment plant near the point of diversion, storage facilities, pump stations, and transmission lines. The final location of these facilities, including in-the-ground improvements connecting the diversion facility to City of Roseville water distribution lines, would depend on which design alternative is selected. To the extent that development of the Remainder Area would incrementally contribute to the increase in the amount of diversions from the Sacramento River and the need for construction and operation of the proposed water treatment plant and storage facilities at the Sacramento River Water Reliability Project and distribution system improvements, the surface water diversion to meet Remainder Area water demands could result in significant environmental impacts that have not yet been identified or mitigated. The impacts from development of these facilities could include short-term construction-related impacts such as construction equipment criteria air pollutant emissions, increased noise levels, disturbance of biological and/or cultural resources, and construction site runoff effects on water quality. Operational effects could include flow-related effects on aquatic and terrestrial resources, changes in visual elements along the river, noise from the treatment plant, impacts to recreation, and growth-inducement. Specific mitigation measures to address significant impacts related to the proposed Sacramento River Water Reliability Project, if any, have not been identified.

The proposed Sacramento River Water Reliability Project is not expected to be operational until at least 2010, so this water may not be available should portions of the Remainder Area develop before 2010. It would be economically infeasible for the City to develop the 7,100-AF/year diversion and the necessary water treatment facility without participation of other local and federal sponsors. Because the ability to construct and operate the Sacramento River Water Reliability Project is outside the jurisdiction and

[289] U.S. Bureau of Reclamation, Sacramento River Water Reliability Study, informational brochure, 2003

authority of the City of Roseville, and the project has not been approved nor subject to environmental review under CEQA/NEPA, it cannot be considered an assured source of water for the Remainder Area at this time.

A Notice of Intent/Notice of Preparation for a Draft Feasibility Report/EIR/EIS for the Sacramento River Water Reliability Project was published August 15, 2003. The current timeline for the Sacramento River Water Reliability Project indicates that the Draft EIR/EIS for the diversion project should be available in late 2004 or early 2005.[290]

As no other source has been identified, the feasibility and environmental effects of using surface water other than the Sacramento River Water Reliability Project cannot be determined at this time.

Because there is no assured source of water supply to meet future demand for the Remainder Area, this is considered a **significant and unavoidable** impact**.**

IMPACT 4.11-2:	**AVAILABILITY OF WATER SUPPLIES TO MEET DEMAND IN DRY YEARS.**	
Applicable Policies and Regulations:	Water Supply Assessment (SB 221 and 610) Urban Water Management Planning Act Water Conservation Projects Act Water Forum Agreement City of Roseville and Placer County General Plan Policies Urban Water Management Plan Water Master Plan/Design Standards PCWA	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	Significant
Mitigation Measures:	MM 4.11-2 Reduced groundwater extraction for dry years (WRSP)	MM 4.11-1 (Secure adequate water supply)
Significance after Mitigation:	Less Than Significant	Significant and Unavoidable

During dry years, in accordance with the WFA and consistent with City practice, water conservation measures would be required, which would reduce water demand in the SOI Amendment Area to 11,850 AF/year (a reduction of approximately 623 AF/year compared to wet years, or five percent). For both wet and dry years, the project assumes a five percent reduction in water demand due to the use of water conservation measures. While the City assumes a ten percent reduction in water demand due to water conservation measures, this project assumes a lesser reduction because many structural water

conservation features have already been incorporated into the project design. The SOI Amendment Area water demand consists of 6,690 AF/year needed for the WRSP and 5,160 AF/year for the Remainder Area. At buildout of the General Plan, City dry year demand is estimated to be 46,120 AF/year, assuming a 5,500 AF/year reduction due to conservation measures.

As shown in Table 4.11-6, the City's dry-year supplies would total 50,200 AF/year, which would exceed General Plan buildout demand by 4,080 AF/year. As outlined in the WFA MOU, this is expected to be the minimum amount of water that will be available to the City of Roseville. In years that have been categorized as dry years, additional surface water supplies will be available based on the ramping of the surface water supply as outlined in the WFA. The City has determined a portion of the supply could be made available to the SOI Amendment Area without adversely affecting other customers, assuming implementation of extraordinary water conservation measures (which are required in the City's response to Stage Three through Stage Five drought conditions).

Table 4.11-6 Water Demand and Supply: SOI Amendment Area, Dry Years (Acre-Feet Per Year)

	Demand	Supply	Surplus (+) or Deficit (–)	Mitigation	Mitigation Amount	Surplus or Deficit
City of Roseville	46,120[1]	50,200[2]	+4,080			
SOI Amendment	11,850[3]	2,638[4]	-9,212			
City plus SOI Amendment	***52,970***	***52,838***	***-5,132***	MM 4.11-1: Secure Adequate Water Supply[2]	7,100	+1,968

NOTES:
1. Assumes 5,500 AF/year reduction in demand due to conservation measures, including rationing during severe drought (MWH TM 7, page 4).
2. WFA surface water allocation for dry years=39,800 AF/year; recycled water=3,000 AF/year; groundwater=7,400 AF/year (MWH TM 7, page 3)
3. Assumes 5 percent reduction in demand compared to wet years
4. Recycled water = 1,526 AF/year; no water would be available from SJWD in dry years.

The water supply sources for the SOI Amendment Area during the dry year conditions would differ from wet years. Figure 4.11-2 (Proposed Water Supply Strategy for SOI Amendment Area) illustrates the sources of supply for the SOI Amendment Area in dry years. The 3,200 AF/year SJWD water would not be available during dry years, but recycled water (2,638 AF/year) would be available for landscape irrigation. Even with the surplus of 4,080 AF/year and recycled water, an additional 5,132 AF/year of water would be needed in dry years for the SOI Amendment Area.

[290] U.S. Bureau of Reclamation, Sacramento River Water Reliability Study, informational brochure, 2003

Figure 4.11-2 Proposed Water Supply Strategy for SOI Amendment Area

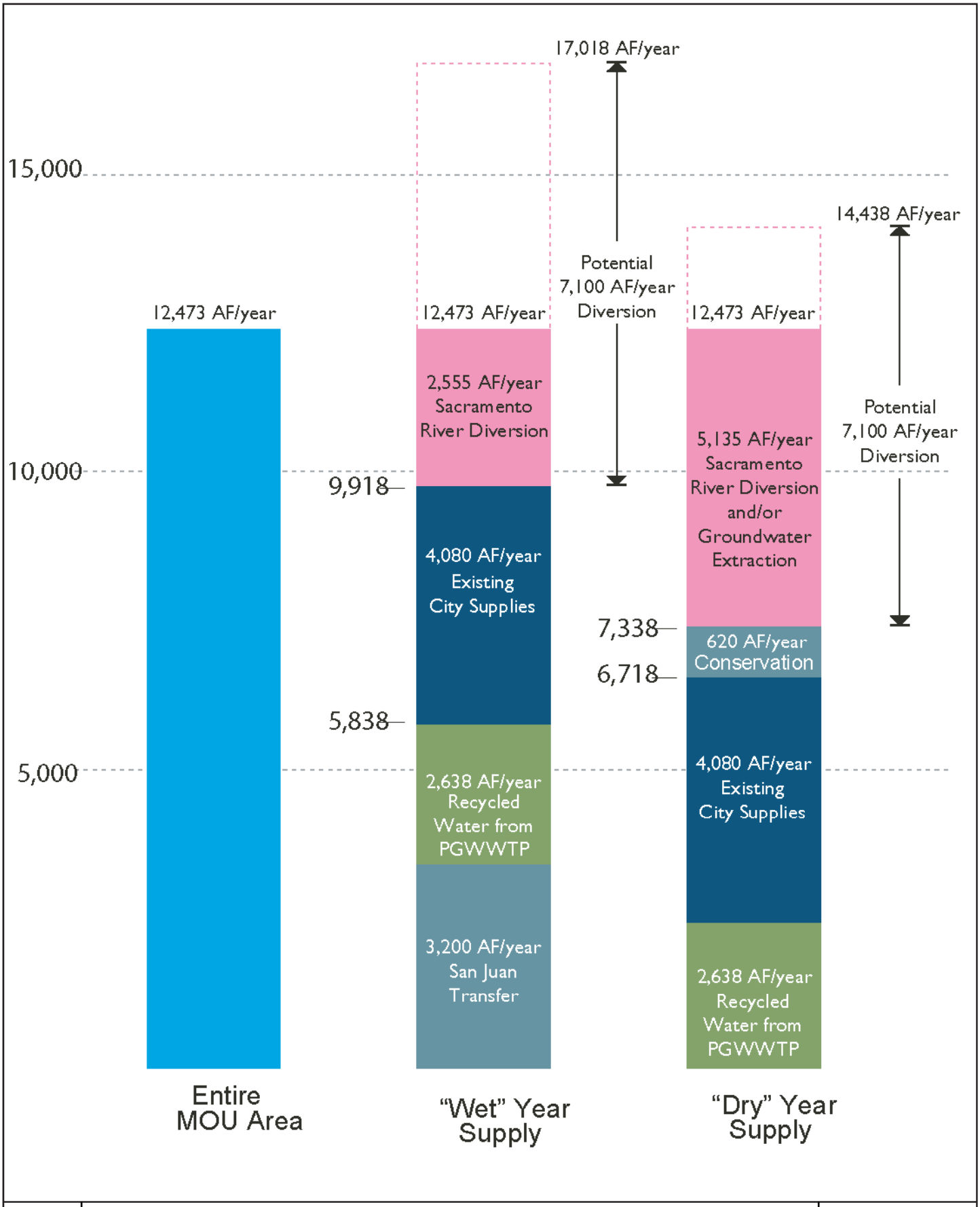


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FIGURE **4.11-2**

Proposed Water Supply Strategy for SOI Amendment Area
AF/yr = Acre Feet per Year

Source: City of Roseville, 2003

City of Roseville

Not to Scale

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During dry years, in accordance with the WFA and consistent with City practice, water conservation measures would be required in the WRSP Area. As reflected in Table 4.11-7, the estimated dry year WRSP Area demand would be 6,690 AF/year, which reflects conservation of 352 AF/year (or 5 percent). The combined demand of the WRSP and the City at General Plan buildout would be 52,810 AF/year.

Table 4.11-7 Water Demand and Supply: West Roseville Specific Plan, Dry Years (Acre-Feet Per Year)

	Demand	Supply	Surplus (+) or Deficit (–)	Mitigation	Mitigation Amount	Surplus or Deficit
City of Roseville	46,120[1]	50,200[2]	+4,080/ 2,316[5]			
WRSP	6,690[3]	1,526[4]	–5,164			
City plus WRSP	***52,810***	***51,726***	***–1,084/ –2,848[5]***	MM 4.11-2: Reduced groundwater extraction for dry years (WRSP)	2,848[5]	0

NOTES:

1. Assumes 5,500 AF/year reduction in demand due to conservation measures, including rationing during severe drought (MWH TM 7, page 4).
2. WFA surface water allocation for dry years=39,800 AF/year; recycled water=3,000 AF/year; groundwater=7,400 AF/year (MWH TM 7, page 3)
3. Assumes 5 percent reduction in demand compared to wet years
4. Recycled water = 1,526 AF/year; no water would be available from SJWD in dry years.
5. Only 2,316 AF/year of the 4,080 surplus would be made available to the WRSP; therefore, the total amount of additional supply that would need to be developed by the WRSP is 2,848 AF/year

The City's dry year supply is limited to 50,200 AF/year, which would exceed City demand (without the WRSP) by 4,080 AF/year. As discussed under Impact 4.11-1, the City has determined it can provide 2,316 AF/year of the 4,080 AF/year of surplus water to the WRSP from existing City supplies. The 3,200 AF/year SJWD water would not be available during dry years for the WRSP, but approximately 1,526 AF/year of recycled water would be used for landscape irrigation. With the recycled water supply and water provided by the City, the total WRSP demand would still exceed supply by 2,848 AF/year (refer to Table 4.11-7).

Groundwater could be used to supplement supplies for the WRSP Area during dry and driest years, consistent with existing City (and regional) practice. As illustrated by Table 4.11-7, if 2,848 AF/year of groundwater (in addition to the 7,400 AF/year of groundwater included in the City's WFA dry-year supply) is used to make up the shortfall created by the WRSP, there would be sufficient water to meet the needs of both the City and the WRSP Area. Based on 70 years of historic data, which included the 1977 drought of record, the results of hydrologic modeling suggest that groundwater would only be required in 12 of 70 years, or 17 percent of the time.[291]

[291] MWH, *Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan*, Draft January 2003, p. 5-1

The West Roseville Guiding Principles and City-County MOU Development Standards assume that new development west of the City of Roseville would only rely on surface water supplies unless it can be demonstrated that the use of groundwater can be mitigated to less-than significant level, if feasible. The use of groundwater in dry years, although infrequent and consistent with current City practice, would, therefore, represent expansion of an existing water resource. This is considered a significant impact.

In addition, compliance with State regulations such as the requirement of a Water Supply Assessment that would ensure compliance with SB 221 and 610, the Urban Water Management Planning Act, and the Water Conservation Projects Act would address potential impacts to water supply and distribution. Further, local regulations, such as the Water Forum Agreement, City of Roseville and Placer County General Plan Policies, the Urban Water Management Plan, the Water Master Plan/Design Standards, as well as compliance with the PCWA, include additional principles and policies associated with water supply needs.

Implementation of MM 4.11-2 would ensure that groundwater use would not result in a reduction in available supply by requiring that the aquifer be replenished and that hydrologic modeling be used to demonstrate that groundwater supply would not be affected by the WRSP. Two options for replenishing the groundwater aquifer have been identified by the City: (1) an in-lieu groundwater banking program accomplished by the reduction or non-use of groundwater used for agricultural lands currently irrigated with groundwater in the project vicinity (e.g., Reason Farms) in dry years or (2) an aquifer storage and recovery (ASR) program.

For the WRSP, dry-year groundwater use mitigation would be accomplished by the City's commitment to forego the extraction of up to 1,830 acre-feet per year from the Reason Farms property. The City is acquiring and has set aside funds for the 1,500-acre Reason Farms property located north and west of the SOI Amendment Area for a regional stormwater retention facility. Approximately 560 acres of Reason Farms will be taken out of production to accommodate this facility. The City could choose to take all or a portion of the remaining irrigated acreage (up to 940 additional acres) out of production as well. The City may then extract groundwater from the site for overlying uses, appropriate for municipal purposes, or "bank" it by choosing to forego extraction of all or a portion of its annual legal entitlement. The City's commitment from the Reason Farms property in a dry year would fully offset the anticipated groundwater extraction under the City's proposed water supply strategy for meeting WRSP dry-year water demands.[293] (Refer to Impact 4.12-6 in Section 4.12 [Hydrology, Water Quality and Ground Water]

[292] MWH, *Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan*, Draft June 2003, pp. 5–7
[293] MWH, *Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan*, Draft June 2003, pp. 6-1

for a detailed discussion of potential environmental impacts of groundwater use and fallowing/land retirement mitigation.)

The City is currently investigating the feasibility of operating an aquifer storage recovery system (ASR). With the ASR system, surplus treated surface water would be injected into the subsurface aquifer through wells and stored during wet-weather years and during off-peak production periods. The stored water would then be withdrawn on an as-needed basis during dry years. The ultimate sources and mix of water supplies adopted in the overall water supply strategy would affect the requirements of, and potential need for, an ASR program. With an ASR program, it is anticipated that more water would be injected into the groundwater than would be withdrawn. The City is conducting a pilot program to determine the feasibility of an ASR program, but the results may not be available until late 2004, so it is assumed that the ASR program would not be available to serve the WRSP Area. Further, the ASR program would require an approved plan that identifies appropriate implementation measures, a mechanism to monitor effectiveness (which has not yet been developed), a well injection permit from the Regional Water Quality Control Board, and appropriate environmental review under CEQA. Accordingly, this EIR does not rely on the use of an ASR system to mitigate the WRSP's potential impacts to groundwater.

With implementation of MM 4.11-2, this impact would be **less than significant**, because there would be no net reduction in the aquifer from dry-year groundwater extraction.

Remainder Area

As indicated in Table 4.11-8, dry year water demand in the Remainder Area would be 5,160 AF/year, which includes a reduction of approximately 271 AF/year (or 5 percent) from the wet year demand to account for more stringent conservation efforts required during drought conditions as established in the City's UWMP. The combined demand of the Remainder Area, the WRSP, and City General Plan buildout would be 57,970 AF/year, or 5,131 AF/year more than available supply (refer to Table 4.11-7). As discussed in Impact 4.11-1, the City has determined it can provide 1,764 AF/year of the 4,080 AF/year of surplus water to the Remainder Area from existing City supplies. In addition, approximately 1,112 AF/year of recycled water for landscape irrigation would be available to the Remainder Area from regional facilities. With the recycled water supply, the total Remainder Area demand would still exceed supply by 4,048 AF/year. This is considered a significant impact**.**

Compliance with applicable State and local plans and policies associated with water supply described above would be required; however, these would not reduce impacts to a less-than-significant level.

Implementation of MM 4.11-1 would require that, to meet City buildout and ensure there would be no net effect on supply, water would be obtained from the Sacramento River Water Reliability Project (also known as the Sacramento River Diversion Project). Because the Sacramento River project would be required for the Remainder Area in wet years (the majority of years), and it would be adequate to meet dry year demand as well, no other source of water is considered for dry years.

Table 4.11-8 Water Demand and Supply: Remainder Area, Dry Years (Acre-Feet Per Year)

	Demand	Supply	Surplus (+) or Deficit (–)	Mitigation	Mitigation Amount	Surplus or Deficit
City plus WRSP	52,810	51,726	–1,084[1]/ –2,848[2]			
Remainder Area	5,160[3]	1,112[4]	–4,048			
City plus Total SOI	***57,970***	***52,838***	–5,131[5]/ –6,896	MM 4.11-1: Secure Adequate Water Supply	7,100[3]	1,969/204

NOTES:

1. Only 1,764 AF/year of the 4,079 surplus would be made available to the Remainder Area so the amount of additional supply that would need to be developed by the Remainder Area is 5,132
2. Only 2,316 AF/year of the 4,079 surplus would be made available to the WRSP, so the total amount of additional supply that would need to be developed by the WRSP is 2,848 AF/year
3. Assumes 5 percent reduction compared to wet years
4. Recycled water = 1,112 AF/year
5. City of Roseville portion of Sacramento River Reliability Project

If the proposed Sacramento River Water Reliability Project is approved and constructed, it could supply up to 7,100 AF/year. to the City, which would be sufficient to meet Remainder Area demand. However, as discussed in Impact 4.11-1 for the Remainder Area, the diversion project has not been approved, so it is uncertain at this time whether and when it would be constructed. Therefore, this impact is considered **significant and unavoidable**.

IMPACT 4.11-3:	**CAPACITY OF WATER TREATMENT SYSTEM TO MEET POTABLE DEMAND.**	
Applicable Policies and Regulations:	Water Master Plan City Improvement Standards	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Significant
Mitigation Measures:	None Required	MM 4.11-3 (Treatment plant capacity policies)
Significance after Mitigation:	Less Than Significant	Significant and Unavoidable

Water treatment for the City of Roseville is provided at the Barton Road WTP. The existing treatment plant has a capacity 60 mgd, and experienced peak demands of 49.5 mgd in July 2002. Two expansions to the Barton Road WTP are planned: an expansion to 75 mgd would be completed by mid-2006 and an

expansion to 100 mgd would be completed by mid-2010. While the SOI Amendment demand of 8.78 mgd (17.56 mgd peak day demand) would exceed the existing capacity of the Barton Road Water Treatment Plant in combination with existing demands, the SOI Amendment Area would not be built out for decades. In fact, construction is not estimated to begin until 2004/2005 and occupancy within the WRSP portion is not likely to occur until after the first expansion to the Barton Road WTP is completed. Therefore, demand for water treatment must be considered in the context of existing entitlements and buildout of the City's current General Plan.

The Water Master Plan contains criteria used to ensure that subsequent water facility distribution systems are adequately designed and constructed. In addition, City improvement standards provides engineering design criteria of the domestic water system that would serve the proposed SOI Amendment Area.

The WTP Master Plan-approved design capacity of 100 mgd at the Barton Road WTP is sufficient to meet buildout demand for areas within the existing City limits as demonstrated by the City's Urban Water Master Plan, which shows that buildout demands are less than the 100 mgd of the planned plant capacity. Any water supply required beyond 100 mgd cannot be provided through Roseville facilities due to infrastructure and water supply constraints. Development of the entire SOI Amendment Area, in combination with other planned development in the City through buildout, would increase the demand for water treatment for potable uses to approximately 107.12 mgd at the Barton Road WTP.[294] If the Sacramento River Water Reliability Project is constructed, which would include up to 10 mgd treatment capacity for Roseville, the total treatment demand for the Barton Road WTP could be maintained below the 100-mgd WTP master plan.

West Roseville Specific Plan

Development of the WRSP Area, in combination with other City demand for water treatment, would result in an average/wet year water treatment demand at the Barton Road WTP of approximately 99.41 mgd.[295] This would not exceed the planned 100-mgd capacity of the Barton Road WTP. In dry years, when water levels in Folsom Lake would be approaching 392 feet, the City's diversions from Folsom Lake would be limited to 39,800 AF/year, and the 3,200 AF/year SJWD untreated surface supply would

[294] Treatment demand developed by City of Roseville staff, as follows: City buildout water demand treatment (50,162 AF/year, which consists of City buildout water demand of 51,621 AF/year minus current recycled water use of 1,458 AF/year) + SOI surface water (9,835 AF/year, which consists of 3,200 AF/year of SJWD supply plus 4,080 AF/year of surplus water made available to the SOI Amendment Area plus 2,555 AF/year required to meet the demands of the SOI Amendment Area and City buildout conditions) = 59,992 AF/year = 53.56 mgd Average Day demand or 107.12 mgd Peak Day.

[295] Potable water treatment demand for the Barton Road WTP was estimated as follows: General Plan buildout potable demand 89.56 mgd + WRSP potable demand 9.85 mgd = 99.41 mgd total potable peak demand for the City plus WRSP Area.

not be available to the WRSP Area, so the capacity of 96 mgd provided through the USBR pumping facility would not be a constraint. These deliveries, therefore, would not be included in the treatment demand total during dry years. In addition, conservation measures would be imposed for the City and WRSP Area. The combination of these factors would reduce the amount of water requiring treatment at the Barton Road WTP for buildout of the City's General Plan and the WRSP to 71.06 mgd.[296] This would be well below the 96-mgd pump capacity limit. Therefore, water treatment impacts for the WRSP would be **less than significant**.

Remainder Area

If the Remainder Area was developed at levels similar to those proposed in the WRSP, at buildout, the Remainder Area would contribute to treatment demand. When considered with the City General Plan buildout and the WRSP Area demand, the need for treatment as a result of developing the Remainder Area would be approximately 107.12 mgd in wet years, which would exceed the WTP planned capacity of 100 mgd. This is a significant impact**.** In dry years, the potable treatment demand would be 71.06 mgd, which reflects reductions in surface water deliveries, as described for the WRSP, so capacity would not be exceeded.

Water treatment for the Remainder Area could be provided by the City's allotment of treatment capacity at the proposed Sacramento River Water Reliability Project. Implementation of MM 4.11-3 would ensure that sufficient treatment capacity is available prior to each phase of Remainder Area development without affecting existing City commitments, and that there is a mechanism to fund the Remainder Area's contribution to the incremental demand for potable water treatment. However, this would not reduce the impact to a less-than-significant level because the diversion project has not been approved, and environmental documentation under CEQA has not been completed. Therefore, the impact would remain **significant and unavoidable**.

[296] Dry-year treatment demand for the Barton Road WTP and USBR Folsom Pumping Plant Capacity were estimated as follows: City surface supply limited to 39,800 AF/year = 71.06 mgd maximum day treatment demand.

IMPACT 4.11-4:	EXTENSION OF EXISTING POTABLE WATER DISTRIBUTION SYSTEM.	
Applicable Policies and Regulations:	Water Master Plan City Improvement Standards	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Significant
Mitigation Measures:	None Required	MM 4.11-4 (Potable water storage facility policies)
Significance after Mitigation:	Less Than Significant	Less Than Significant

West Roseville Specific Plan

Water would be distributed within the WRSP Area via a looping system that parallels collector and arterial roadways on a transmission main grid. The transmission and distribution system consists of 12-inch to 24-inch diameter mains. Four ground water supply wells are planned to ensure water supply service during shortages and in emergency situations.

Development of the WRSP would result in a total average annual daily potable water demand of approximately 4,371 gpm.[297] The results of the hydraulic modeling presented in the Master Water Study identified the necessary infrastructure improvements to serve proposed development in the WRSP Area while taking into consideration existing service and capacity limits. These components are described below.

To connect the WRSP Area to the City's existing potable water system, two major off-site water mains in the Del Webb development to the east of the WRSP Area would be extended west to Fiddyment Road. A 24-inch connection would be made at the intersection of Blue Oaks Boulevard and Del Webb Boulevard. It would be extended along the Blue Oaks Boulevard west approximately 2,600 feet to Fiddyment Road, where a new 24-inch main to serve the WRSP Area would connect. An existing 24-inch main in Del Webb Boulevard would be extended approximately 1,100 feet west to Fiddyment Road, to connect with a new 24-inch line in the WRSP Area. Two other points of connection (an existing 16-inch line in Pleasant Grove Road and an existing 24-inch line in Baseline Road) would not require extension because these lines already extend to Fiddyment Road.[298] All water pipeline extensions would be installed in existing or planned roadways.

[297] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, p. 14
[298] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, Figures 2-1 and 6-1

Potential environmental effects that could occur as result of installation of these off-site improvements are addressed in Section 4.4 (Air Quality), Section 4.5 (Noise), Section 4.7 (Biological Resources), Section 4.8 (Cultural Resources), and Section 4.12 (Hydrology, Water Quality and Ground Water).

The on-site potable water distribution system would be a looped system following the major arterial and collector street alignments. The sizes of major distribution mains would range from 12 inches to 24 inches. Smaller distribution mains within subdivisions would consist primarily of 8-inch and 12-inch lines surrounding schools, commercial areas, and high-density residential uses. Figure 4.11-3 (West Roseville Specific Plan Water Distribution System, Storage Tanks, and Well Locations) shows the planned water system if it were built as a single phase.[299] Phasing plans would be developed to ensure that looping of infrastructure is maintained during development of the WRSP Area and that fire flow and levels of service are maintained.

The *Master Water Plan* identified that approximately 6.0 million gallons of treated water storage would be required to supply operational flow (2.47 million gallons), emergency flow (2.47 million gallons), and fire flow (1.08 million gallons) potable water demands. This amount assumes no emergency, operational, or fire flow storage capacity in the existing City system to serve the SOI Amendment Area.[300]

To provide up to 6.0 million gallons of storage, a 5.1-acre parcel has been designated on the WRSP land use plan to accommodate two potable water tanks and a booster pump station. The parcel is located south of the PGWWTP west of Phillip Road (refer to Figure 4.11-3). The booster pump station would supply demands in excess of the WRSP maximum day demands.[301] Refer to Section 4.13 (Aesthetics and Visual Resources) for a discussion of visual impacts related to the storage tanks. Construction-related air quality and noise effects of tank installation (as part of development of the WRSP) are addressed within the overall context of construction-related impacts in Impact 4.4-1 in Section 4.4 (Air Quality) and in Impact 4.5-1 in Section 4.5 (Noise).

Four groundwater wells would be installed in the WRSP Area (two in Phase 1, one in Phase 3, and one in Phase 4). Preliminary locations are shown in Figure 4.11-3. These wells would be used to provide groundwater only in dry years or emergency events when surface water supplies are not sufficient to meet demand, as described in Impact 4.11-2. Chlorination and fluoridation would be provided at the wellhead. Refer to Impact 4.9-1 in Section 4.9 (Hazards and Hazardous Materials) for a discussion of

[299] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, p. 28 and Figure 6-1
[300] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, p. 25
[301] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, p. 25

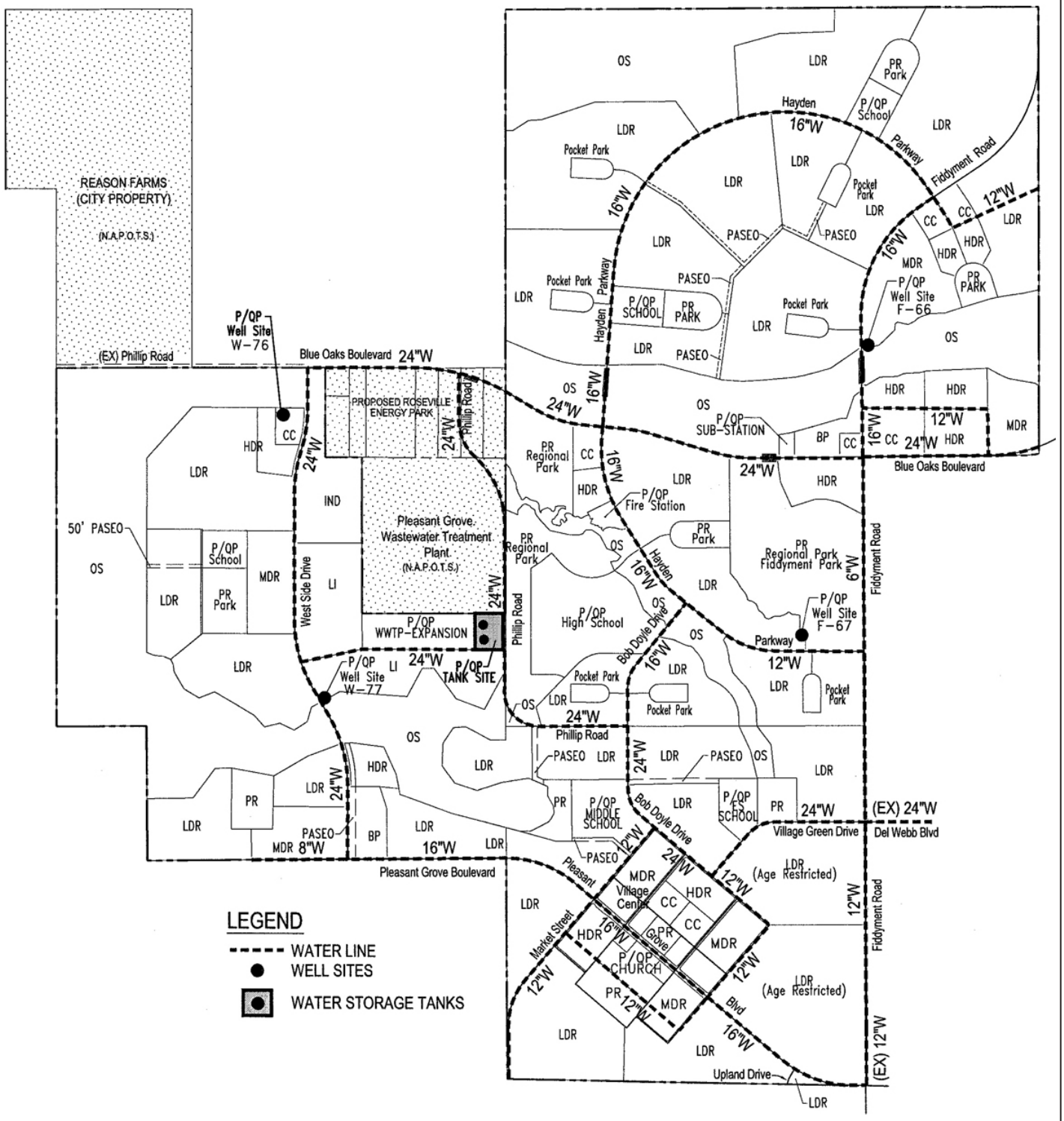

FIGURE **4.11-3**

West Roseville Specific Plan Water Distribution System, Storage Tanks, and Well Locations

Scale: 1" = 2000'

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***Source*:** West Roseville Specific Plan 2003 City of Roseville

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potential effects associated with treatment facilities. Potential impacts on groundwater resources are discussed in Impact 4.12-6 in Section 4.12 (Hydrology, Water Quality, and Groundwater). Construction-related air quality and noise effects of well installation are addressed within the overall context of construction-related impacts in Impact 4.4-1 in Section 4.4 (Air Quality) and in Impact 4.5-1 in Section 4.5 (Noise).

With the added demand of the WRSP Area to the City system at General Plan buildout, pressures and water main velocities would be affected slightly. The addition of the WRSP Area under maximum day demand would not result in an exceedance of the City's 6 feet per second (fps) maximum day velocity criterion, but it would cause the 6 fps criterion to be slightly exceeded for peak hour demand at the locations identified in the Environmental Setting. Water system pressures would also decrease during maximum day conditions by approximately 2 to 4 psi at a few locations. These locations would be affected under City General Plan buildout conditions even if the WRSP Area were not developed.[302] City staff do not consider the minor increases in velocity and slight decreases in water pressure substantial and are continuing to evaluate what, if any, improvements are necessary to correct the existing condition, as noted in the Setting.[303] Distribution system modifications, which would take into account the effect of WRSP demand, would be limited in extent and would be within existing roadway alignments and developed areas, which would not result in substantial construction-related air emissions or noise levels that would result in significant environmental effects.

The Water Master Plan contains criteria used to ensure that subsequent water facility distribution systems are adequately designed and constructed. In addition, City improvement standards provides engineering design criteria of the domestic water system that would serve the proposed SOI Amendment Area. Prior to, or in conjunction with, approval of the tentative maps for the WRSP, the final design of the potable water distribution and storage facilities would require City approval. This would ensure that the facilities would be designed, located, and constructed in accordance with City standards; therefore, the impact would be **less than significant**.

Remainder Area

If the Remainder Area was developed at densities and intensities similar to those proposed in the WRSP, this would result in a total average annual daily potable water demand of approximately 3,416 gpm.[304]

[302] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, pp. 33–38

[303] Ed Kriz, written notes, June 19, 2003

[304] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, p. 14

Additional potable water distribution pipelines, storage tanks, and wells for dry-year supply would be needed. It is assumed the Remainder Area would connect to the WRSP potable water supply infrastructure. The hydraulic modeling for the WRSP considered development of the Remainder Area in determining on-site pipeline diameters and flows, based on general land use assumptions, to ensure level of service criteria would be met. Therefore, development of the Remainder Area, in combination with the WRSP Area, is not expected to require upsizing of proposed major water mains in the WRSP Area to meet operational, emergency, or fire flow demands.[305] It is assumed the on-site distribution system in the Remainder Area, which would consist of 12- to 24-inch lines, would connect to mains in Blue Oaks Boulevard, Pleasant Grove Boulevard, and Baseline Road.[306] Existing City infrastructure was not considered for impacts of Remainder Area water demands because the supply was assumed to come from the Sacramento River and, therefore, would not be conveyed through existing City facilities.

The total storage demand for the Remainder Area is 4.0 million gallons (mg).[307] This storage volume and associated booster pump capacity were accounted for in the siting and design of the potable water storage tanks on the five-acre parcel south of the PGWWTP. Options for increasing the amount of storage from the 6.0 mg required for the WRSP Area could include constructing larger tanks initially during development of the WRSP Area or adding new tanks to the WRSP Area. Additional booster pump capacity could be provided by designing the WRSP booster pump facility to allow for future expansion. Without such facilities, the amount of water needed to serve the operational, emergency, or fire flow demands of the Remainder Area may be insufficient. This is considered a potentially significant impact.

Implementation of MM 4.11-4 would reduce this impact to a **less-than-significant** level by ensuring appropriate tank sizing and booster pump capacity for the Remainder Area is incorporated into the siting and design of the proposed WRSP water storage facilities, or that an alternate site is identified in the Remainder Area and incorporated into any eventual tentative map.

Mitigation Measures

MM 4.11-1 *Secure adequate water supply for wet and dry years (Impact 4.11-1 and Impact 4.11-2 — Remainder Area).*

Specific plans and/or development proposals for the Remainder Area shall identify a source of surface water supply sufficient to serve Remainder Area development. At this time, it is anticipated that the source would be the

[305] Brett Williams, Wood Rodgers, Inc., personal communication, September 26, 2002

[306] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, Figure 6-1

[307] Wood Rodgers Inc., *Draft Water Master Study for West Roseville Specific Plan Area (Fiddyment Ranch/Westpark Properties)*, May 2003, p. 26

Sacramento River Water Reliability Project. Prior to the City's approval of any plan for the Remainder Area, the applicant shall demonstrate that the Sacramento River Water Reliability Project has been subjected to environmental review, approved and funded, and that its construction will be completed by the time that the water is needed for Remainder Area development. The applicant shall contribute a fair share toward the funding of the diversion project.

As an alternative, an applicant may secure another source of surface water. Such a source would need to be legally available and sufficient to meet the demand of the project, consistent with the Water Forum Agreement and City policies and California Water Code Section 10910 *et seq*. and Government Code Section 66473.7 subject to a completed environmental review, approved by the agency with jurisdiction over the source, and funded.

MM 4.11-2 Reduced groundwater extraction of agricultural land during dry years (Impact 4.11-2 — WRSP)

As a condition of approval of any Tentative Tract Map for the WRSP Area, and to supplement assured supplies, the City shall ensure that groundwater in the amount of 2,848 AF/year is available for use in the WRSP Area in dry years by reducing groundwater extraction at Reason Farms.

MM 4.11-3 Expand treatment plant capacity (Impact 4.11-3 — Remainder Area)

Prior to City approval of any proposed development projects in the Remainder Area, the applicant shall demonstrate to the satisfaction of the Roseville Environmental Utilities Director that the Sacramento River Water Reliability Project water treatment facilities or substantially equivalent facilities approved by the City Council will provide the project with sufficient potable water by the time construction of the project is to begin. The development application for the project shall include a mechanism to fund the project's pro rata share of the construction costs of the Sacramento River Water Reliability Project water treatment facilities or alternative approved facilities.

MM 4.11-4 Potable water storage facility policies (Impact 4.11-4 — Remainder Area)

Prior to approval of a Tentative Tract Map for the WRSP Area, the maximum amount of potable water storage needed to serve the Remainder Area shall be identified, taking into consideration WRSP Area demand, existing storage capacity, and planned phasing of WRSP Area development. The City shall ensure that a sufficient amount of land has been set aside at the proposed location for the WRSP Area storage facilities to allow for expansion that could accommodate Remainder Area storage needs. Either the booster pumping facility shall be designed to allow for possible expansion or, prior to Tentative Tract Map approval for the Remainder Area, an alternate site for the storage facility shall be identified within the Remainder Area. If an alternate site is

selected, it would be subjected to environmental review and designated on preliminary land use plans. In addition, the size of the water line that would convey water to the tank(s) at an alternate site under low-demand condition shall be determined and evaluated.

RECYCLED WATER

The use of recycled water has been demonstrated to be an effective means for meeting the demand for new water caused by drought conditions and growth in California (Water Code Section 13555.2).

4.11.5 Environmental Setting

Existing Recycled Water Supplies

Treated wastewater from the Dry Creek WWTP (DCWWTP) located on Dry Creek near the Union Pacific Railroad Yard in Roseville produces recycled water for use within the City. Phase I of the City's recycled water plan included providing recycled water from the existing DCWWTP and distribution system to Del Webb Specific Plan, Woodcreek Oaks Golf Course, Junction Boulevard Streetscapes, and Elliot Park. An existing recycled water pump system at the DCWWTP supplies this system. Phase II, which was completed in 2002, added a storage tank, pump station, and distribution pipeline to provide recycled water to the Diamond Oaks Golf Course, West Placer CFD No. 1, and several other customers.

Current average annual wastewater flow to the DCWWTP is approximately 15 mgd.[308] The recycled water distribution system operates under a Master Water Reclamation Permit (Order No.97-147) issued by the Regional Water Quality Control Board (RWQCB). This permit outlines specific prohibitions on the use of recycled water in the City and places stringent water quality and treatment and disinfection standards on the City's recycled water.[309] The SOI Amendment Area is undeveloped and is not connected to the existing recycled water distribution system.

Planned Recycled Water Supplies

Recycled Water Planning

Current and future recycled water planning efforts for the City of Roseville are described in the Recycled Water Distribution System Feasibility Study (April 2000). The study includes estimates of recycled water demands, describes recycled water distribution systems, and identifies features associated with the

[308] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, Table 5
[309] City of Roseville, 2002 Urban Water Management Plan, July 2002, Appendix H (Recycled Water Distribution System Feasibility Study Excerpts), p. 1-1

phased expansion of the system, including recycled water that will be generated by the PGWWTP when it becomes operational in fall/winter 2003. The Feasibility Study was prepared prior to consideration of the proposed WRSP and SOI Amendment.

Phase III of the City's recycled water plan, which is anticipated to be constructed by approximately 2005 after completion of the PGWWTP, anticipates expanding the system further to the remaining customers identified in the Feasibility Study. The Phase III project assumes a cumulative total demand of 4,300 AF/year. As part of the Phase III project, new and existing pipelines would convey recycled water from the PGWWTP to the storage tank constructed in Phase II. The Phase III project also identifies a new 20-inch-diameter pipeline from the PGWWTP to pumping facilities in Fiddyment Road.[310] Phase III would serve the remaining City of Roseville and regional partner customers.

As stated above, the Feasibility Study did not consider the SOI Amendment Area. Since some of the customers identified in Phase III of the Feasibility Study are also in the SOI Amendment Area, reconciliation of existing City demands was necessary. The HydroScience Recycled Study for the WRSP[311] reconciled the existing City demands for Phase III to be 3,211 AF/year in lieu of the 4,300 AF/year presented in the Feasibility Study.

Pleasant Grove Wastewater Treatment Plant

The PGWWTP is under construction on the west side of Phillip Road, south of the future extension of Blue Oaks Boulevard (refer to Figure 2-3 [West Roseville Specific Plan Land Use Plan] provided in Chapter 2 [Project Description]). The PGWWTP will provide tertiary-level treatment through the process of screening, grit removal, extended aeration, secondary clarification, filtration, chlorination, and dechlorination.[312] The plant will provide full nitrification and will produce recycled water that meets Title 22 regulations for full unrestricted use.[313] The first phase of construction of the PGWWTP is anticipated to be operational by fall/winter 2003.[314] The second phase is anticipated to be operational between 2010 and 2012.[315] The dates for construction of Phase 2 may be adjusted as necessary to meet the demands of new wastewater flows and changes in water quality regulations.[316] The PGWWTP is anticipated to generate an

[310] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, pp. 1–2
[311] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, Tables 5 & 6
[312] Montgomery Watson, City of Roseville: Roseville Regional Wastewater Treatment Service Area Master Plan, May 1996, p. ES-21
[313] Kelye McKinney, P.E., City of Roseville, Personal Correspondence, June 10, 2002
[314] Art O'Brien, City of Roseville, Personal Correspondence, January 28, 2003
[315] Kelye McKinney, P.E., City of Roseville, Personal Correspondence, June 10, 2002
[316] Montgomery Watson and ESA, City of Roseville: Roseville Regional Wastewater Treatment Service Area Master Plan Draft Environmental Impact Report, May 1996, p. 2-47

annual average day supply of 5.1 mgd of recycled water in 2005, increasing to 10.8 mgd by 2020, for use in the City, before the SOI Amendment Area. [317]

The PGWWTP will require a separate Master Water Reclamation Permit from the RWQCB. The City prepared an "Engineering Report on the Production, Distribution, and Use of Recycled Water" in accordance with Title 22 of the California Code of Regulations for the PGWWTP. The report, which was submitted to the Department of Health Services (DHS) and RWQCB for approval in 2000, identifies best management practices and measures to ensure that the PGWWTP recycled water plan is consistent with Title 22 regulations.

Regional Recycled Water Facilities

When the PGWWTP becomes operational, recycled water from the PGWWTP and the existing DCWWTP will comprise the "regional recycled water facilities" that would produce recycled water for use in the City including the SOI Amendment Area if developed, and the City's regional partners' service areas. The percentage split in wastewater flows between the DCWWTP and the PGWWTP was established in the *Roseville Regional Wastewater Treatment Service Area Master Plan 1996* (WWMP). The estimated recycled water supply from both the DCWWTP and the PGWWTP before the contribution of wastewater flows from the SOI Amendment Area is summarized in Table 4.11-9.

Table 4.11-9 Recycled Water Supply Available from Roseville Regional Facilities (Before SOI Amendment)

Year	Total Average Annual Supply from DCWWTP (Flows, in mgd)	Total Average Annual Supply from PGWWTP (Flows, in mgd)	Total Average Annual Recycled Water Supply (Flows, mgd)
2002	10.1	5.1	15.2
2005	12.1	5.6	17.7
2010	11.1	9.2	20.3
2015	12.2	10.2	22.4
2020	13.0	10.8	23.8
2030	14.3	11.9	26.2

SOURCE: HydroScience Engineers, *Recycled Water Study for West Roseville Specific Plan Area*, May 21, 2003, Tables 5 and 6

Recycled Water Demand

City Demand

Existing demand for recycled water use in the existing City limits is estimated to be approximately 1,458 AF/year (1.3 mgd average day demand).[318] The City's recycled water model indicates that approximately

[317] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan, May 21, 2003, Tables 8 and 9

700 gallons per minute (gpm) of additional constant flow into the recycled water tank at located at Woodcreek Oaks Golf Course is needed to meet the peak demand for the Phase III customers. This 700-gpm supply is planned to come from the PGWWTP.[319]

Also, the City's Electric Utility, Roseville Electric, is currently planning a proposed energy facility consisting of a 150 MW power plant to be located on 40-acres of a 70-acre site located just north of the PGWWTP. This plant will use recycled water for cooling. An additional demand of 1,008 gpm of constant flow will be supplied by the PGWWTP to the proposed energy facility.

4.11.6 Regulatory Setting

Federal

There are no federal regulations with regard to recycled water that pertain to the SOI Amendment.

State

DHS regulations require that recycled water must be conveyed in a totally separate distribution system from the potable water supply. Professional landscape maintenance contractors and City maintenance staff must maintain areas where recycled water will be used for irrigation. The City is responsible for implementing a cross-connection program to ensure that future potable services are not accidentally connected to the recycled water system and a public information program (including signage) is established to notify the public of the use and location of recycled water application. Regulatory considerations pertaining to the treatment of wastewater for reclamation purposes are described in Section 4.9, Hazardous Materials and Public Safety.

The recycled water distribution system operates under a Master Water Reclamation Permit (Order No.97-147) issued by the Regional Water Quality Control Board (RWQCB). This permit outlines specific prohibitions on the use of recycled water in the City and places stringent water quality and treatment and disinfection standards on the City's recycled water.[320]

[318] Based on existing recycled water contracted deliveries to customers
[319] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, p. 24
[320] City of Roseville, 2002 Urban Water Management Plan, July 2002, Appendix H (Recycled Water Distribution System Feasibility Study Excerpts), p. 1-1

Local

It is the policy of the City of Roseville that where the use of recycled water is feasible, appropriate, and acceptable to all applicable regulatory agencies, the City will require an owner or customer to use recycled water in lieu of potable water where appropriate. Requirements for recycled water use are described in Roseville Municipal Code Chapter 14.17 and City of Roseville Rules and Regulations for the Use of Recycled Water. The Recycled Water Division of the Environmental Utilities Department manages recycled water use in the City of Roseville.[321]

4.11.7 Impacts and Mitigation Measures

Methods of Analysis

As discussed above in Regulatory Setting section of Section 4.11.2 (Water), recycled water from the PGWWTP is an assured source of supply that would be available to serve the SOI Amendment Area.

This analysis of recycled water distribution system requirements was prepared by HydroScience Engineers, Inc., and incorporated into the impact discussion. The HydroScience Engineers, Inc. study is based on the City of Roseville *Recycled Water Distribution System Feasibility Study* (April 2000), design characteristics of the PGWWTP recycled water pump station; existing recycled water supply availability, including demand associated with the proposed Roseville Energy Park (if approved); water demand and supply data developed by MWH; site-specific irrigation factors and conditions; and proposed phasing of the development of WRSP Area and Remainder Area. Operational storage required to meet hourly peak recycled water flow rates was calculated using a 24-hour water balance. The water balance assumed the PGWWTP would first provide a supplementary constant supply of 700 gpm to the Woodcreek Oaks Golf Course recycled water tank. The analysis also assumed a constant supply of 1,008 gpm to the proposed energy facility (refer to Chapter 5 [CEQA Considerations—Cumulative Impacts], for additional information regarding this facility).[322]

This analysis assumes that the PGWWTP would be the sole source of recycled water for the SOI Amendment Area. In estimating how much recycled water would be available to the SOI Amendment Area from the PGWWTP and how much surplus recycled water would be available for other uses, HydroScience redirected a percentage of flows from the existing DCWWTP to the new PGWWTP consistent with the WWMP and assumed a conservative wastewater generation rate of 200 gpd per

[321] City of Roseville, 2002 Urban Water Management Plan, July 2002, pp. 34–35
[322] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, p. 24

equivalent dwelling unit (EDU). Then, the amount of recycled water generated by the SOI Amendment was calculated using the same generation factor (200 gpd/EDU) applied to the total residential EDUs (8,430 for the WRSP Area and a total of 15,453 for the SOI Amendment Area).[323] Using only the residential EDUs from the WRSP and SOI Amendment Area conservatively estimates the recycled water supply from these areas.

The distribution system was modeled using Cybernet version 5.0 and AutoCAD 2000. Pipeline alignments were assumed to be located in arterial roadways to provide a backbone distribution system. One storage reservoir and one pump station were modeled at the PGWWTP. The analysis of recycled water storage and distribution assumed the demands of both the WRSP Area and Remainder Area. The hydraulic model was run under peak hourly flow conditions. Minimum pipeline diameters were selected to achieve required pressure and velocity criteria.[324]

It should be noted that the 2,638 AF/year of recycled water in the SOI Amendment Area assumed in the water supply analysis (Section 4.11.2, and Table 4.11-6) is less than the 2,839 AF/year demand of recycled water developed by HydroScience in the Recycled Water Study for the WRSP. The 2,638 AF/year quantity included in the water supply studies prepared by MWH is considered worst-case from an available water supply perspective since more potable water would need to be provided. The 2,839 AF/year estimate included in the Hydro-Science Engineers Recycled Water Study for the WRSP is considered worst-case from a recycled water treatment and conveyance capacity perspective since more water would need to be treated and distributed.

Standards of Significance

For the purposes of this EIR, a significant impact would occur if the development proposed in the SOI Amendment Area would

- Result in or require the construction or expansion of recycled water distribution and storage facilities that could create significant environmental effects

[323] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, p. 24 and Table 6
[324] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, p.29

Impacts

IMPACT 4.11-5:	AVAILABILITY OF RECYCLED WATER TO MEET DEMAND AND INSTALLATION OF RECYCLED WATER INFRASTRUCTURE.	
Applicable Policies and Regulations:	City of Roseville Municipal Code Regional Water Quality Control Board Reclamation Permit	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None Required	None Required
Significance after Mitigation:	Less Than Significant	Less Than Significant

Recycled Water

Recycled water is a part of the overall water supply strategy for the SOI Amendment Area, as discussed in Impacts 4.11-1 and 4.11-2. Recycled water from the PGWWTP would be used for landscape irrigation of parks, schools, publicly landscaped areas (i.e., roadway medians, paseos), and other landscaped areas in commercial, light industrial, industrial, and high-density residential uses within the SOI Amendment Area. The RWQCB Permit as well as the City of Roseville Municipal Code outline specific requirements and standards associated with the use of recycled water.

The average annual recycled water demand for the SOI Amendment is estimated to be 2.53 mgd (2,638 AF/year)[325]. The peak day demand is estimated to be 6.34 mgd. As the data in Table 4.11-10 indicate, the total average amount of recycled water available to the SOI Amendment Area (accounting for the 700 gpm supplement to the Woodcreek Oaks recycled water tank and without the proposed energy facility) from the PGWWTP is 14.6 mgd (in 2030). The peak daily supply available to the SOI Amendment Area is 12.8 mgd. The amount of recycled water would be sufficient to meet demand in the SOI Amendment Area, and there would be supply remaining at the PGWWTP for other City projects. On-site infrastructure for the recycled water system would consist of storage facilities and distribution lines. A location north of the PGWWTP, west of Phillip Road and south of Blue Oaks Boulevard has been identified for the recycled water storage tank and pump station. The tank would be sized to hold the estimated amount of storage required for the SOI Amendment Area, which would be 3.14 MG. Considering the constant supply of 1,008 gpm to the proposed energy facility, the tank would need to store 3.85 MG. The locations of recycled water lines in the WRSP Area have been identified and are illustrated by Figure 4.11-4 (West Roseville Specific Plan Recycled Water Distribution System and Storage

[325] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, Table 3

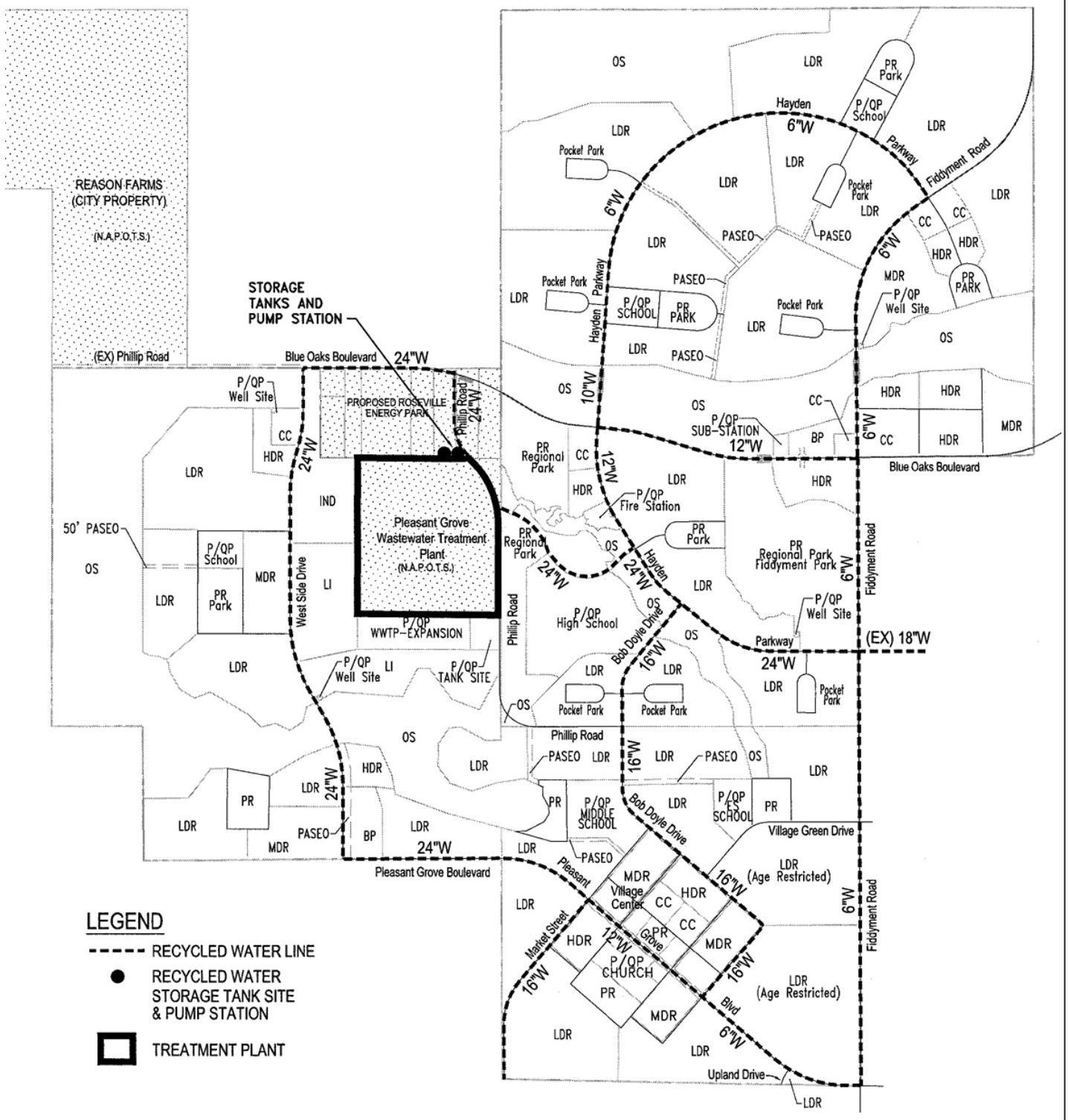

FIGURE **4.11-4**

West Roseville Specific Plan Recycled Water Distribution System and Storage Facility

Scale: 1" = 2000'

10659-00

***Source*:** West Roseville Specific Plan 2003 City of Roseville

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Facility). Although the specific locations of distribution pipelines in the Remainder Area have not been determined, it is anticipated they would be within roadway alignments. The recycled water pipelines that would be installed for Phase 4 of the WRSP would have capacity to supply the Remainder Areas.

West Roseville Specific Plan

The WRSP plans for recycled water use in irrigating parks, schools, publicly landscaped areas (including roadway corridors and medians), and landscaping associated with commercial, business professional, light industrial, industrial, and multi-family land uses. The use of recycled water offsets potable water demand and is an important component of the overall WRSP water supply. A backbone of dedicated nonpotable water lines ranging from 6 to 24 inches in diameter will be constructed within street rights of way to serve the WRSP. The water supply strategy for the WRSP includes recycled water from the PGWWTP for irrigating parks, golf courses, schools, publicly landscaped areas (including streetscapes), and landscaping associated with commercial, industrial, and multi-family land uses. The annual average recycled water demand for the WRSP is estimated to be 1.56 mgd (1,717 AF/year), and the peak day demand would be 3.91 mgd. As illustrated by the data provided in Table 4.11-10, there would be adequate recycled water supply to meet both average annual and peak day demand for each phase of the WRSP, as well as excess annual average and peak day supply for other City projects.

Table 4.11-10 WRSP/SOI Amendment Areas Recycled Water Supply Annual Average and Peak Day Demand Comparisons

Year	WRSP Phases	Total Supply from PGWWTP—Existing City Plus WRSP/SOI Amendment (mgd)	Supplement to Woodcreek Oaks Golf Course Recycled water Tank (mgd)	Supply Available to WRSP/SOI Amendment Areas (mgd)	WRSP/ SOI Demand (mgd)	System Losses (mgd)	Supply Available from PGWWTP for Other City Projects (mgd)
Average Day Conditions							
2005	1	6.2	0.4	5.75	0.50	0.01	5.24
2010	1,2	10.3	0.4	9.92	0.78	0.02	9.12
2015	1,2,3	11.7	0.4	11.27	1.35	0.03	9.90
2020	1,2,3,4	12.5	0.4	12.09	1.56	0.03	10.49
	WRSP Total	***12.5***	0.4	12.09	1.56	0.03	10.49
	Remainder Area Total				0.97		
2030	***SOI Amendment Total***	***15.0***	0.4	14.6	2.53	0.05	12.02
Peak Day Conditions							
2005	1	5.7	1.0	4.7	1.25	0.03	3.4
2010	1,2	9.5	1.0	8.5	1.96	0.04	6.5
2015	1,2,3	10.7	1.0	9.7	3.37	0.07	6.3
2020	1,2,3,4	11.5	1.0	10.5	3.91	0.08	6.5
	WRSP Total	11.5	1.0	10.5	3.91	0.08	6.5
	Remainder Area Total				2.43		
2030	***SOI Amendment Total***	13.8	1.0	12.8	6.34	0.13	6.33

SOURCE: HydroScience Engineers, *Recycled Water Study for West Roseville Specific Plan Area*, May 21, 2003, Tables 8 and 9

Results of the recycled water analysis indicate that 1.2 million gallons of recycled water storage would be needed to meet WRSP Area hourly peak flow demand.[326] Considering the constant supply of 1,008 gpm to the proposed energy facility, the tank would need to store 1.70 MG. The recycled water storage facility would be installed north of the PGWWTP (south of Blue Oaks Boulevard and west of Phillip Road). A backbone system of dedicated recycled water lines ("purple pipe") would be constructed throughout the WRSP Area. Figure 4.11-4 identifies the location of the recycled water storage tank and recycled water distribution system. Potential environmental effects that could occur as result of installation of the storage tank and distribution system improvements in the WRSP Area are addressed in Section 4.4 (Air Quality), Section 4.5 (Noise), Section 4.7 (Biological Resources), Section 4.8 (Hydrology and Water Quality), Section 4.12 (Cultural Resources), and Section 4.13 (Aesthetics and Visual Resources). Therefore, all other impacts of constructing the recycled water system in the WRSP Area are considered **less than significant**.

For a discussion of the potential health effects related to the use of recycled water in areas accessible to the public, refer to Impact 4.9-7 in Section 4.9 (Hazardous Materials and Public Safety).

Remainder Area

As discussed above, development of the Remainder Area could not occur until a Specific Plan was adopted and the portion planned for developed was annexed to the City. If the Remainder Area were developed at densities and intensities similar to those proposed in the WRSP, development of the Remainder Area would require recycled water and recycled water distribution infrastructure, as described for the WRSP, as part of the overall water supply strategy. The Remainder Area demand is reflected in the analysis of recycled water supply and demand for the SOI Amendment shown in Table 4.11-10. The results of the recycled water study indicate that there would be sufficient recycled water available for the development of the SOI Amendment (which includes the Remainder Area), and surplus recycled water would be available for other City projects.

Similar to the WRSP, a recycled water distribution system would need to be installed in the Remainder Area and connected to the WRSP Area system and storage tank. The analysis of recycled water storage, and distribution assumed the projected demand of the Remainder Area.[327] The hydraulic analysis for recycled water estimated that the additional storage demand for the Remainder Area would be approximately 1.92 MG. (The difference between the total storage needed for the SOI Amendment [3.14 MG] and the WRSP [1.22 MG]). Considering the constant supply of 1,008 gpm to the proposed energy

[326] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, Table 10
[327] HydroScience Engineers, Recycled Water Study for West Roseville Specific Plan Area, May 21, 2003, pp. 33 to 34

facility, the tank would need to store 3.85 MG, an additional demand of 2.15 MG above the requirements of 1.7 MG. for the WRSP. As noted above, the storage tank and booster pump station proposed to be north of the PGWWTP and west of Phillip Road would be sized to include sufficient storage for the Remainder Area. Impacts related to recycled water storage and distribution are, therefore, considered **less than significant**.

Potential environmental effects that could occur as result of installation of the storage tank and distribution system improvements in the Remainder Area are addressed in Section 4.4 (Air Quality), Section 4.5 (Noise), Section 4.7 (Biological Resources), Section 4.12 (Hydrology and Water Quality), Section 4.8 (Cultural Resources), and Section 4.13 (Aesthetics and Visual Resources).

Mitigation Measures

None.

WASTEWATER

Information for this section was gathered from the following documents:

- *Roseville Regional Wastewater Treatment Service Area Master Plan* (May 1996)
- *Roseville Regional Wastewater Treatment Service Area Master Plan Draft EIR* (May 1996)
- *North Roseville Specific Plan Phase 3 DEIR* (May 2000)
- *Stoneridge Specific Plan EIR* (December 3, 1997)
- *Wastewater Evaluation of Urban Growth Areas (Technical Memorandum 3)—West Roseville Specific Plan* (March 26, 2003)
- *Technical Memorandum No. 3 RE: Wastewater Evaluation of Urban Growth Areas* (December 4, 2001)
- *Project Memorandum, Capacity and Regulatory Compliance Assessment, Carollo Engineers (August 28, 2003)*

All of the above listed documents are available for review at the City of Roseville Permit Center, 311 Vernon Street, Roseville, California. The *Technical Memorandum 3 Wastewater Evaluation of Urban Growth Areas* and the *Project Memorandum, Capacity and Regulatory Compliance Assessment, Carollo Engineers* are also included in Appendix R of this EIR, and sewer flow calculations (by manhole) are provided in Appendix I of this EIR. The analysis in this section is based on buildout of the Wastewater Master Plan Service Area.

4.11.8 Environmental Setting

The SOI Amendment Area, described in detail in Chapter 2 (Project Description), is undeveloped with the exception of several residences, including the Fiddyment Ranch complex and a dog kennel business, which use septic systems for wastewater disposal (refer to Figure 2-3 in Chapter 2 [Project Description]).

Wastewater Treatment

Wastewater from the City of Roseville is currently treated at the City-owned-and-operated Dry Creek Wastewater Treatment Plant (DCWWTP), formerly known as the Roseville Regional Wastewater Treatment Plant, which is located on Booth Road, along Dry Creek, in the southwest portion of the City. It is not anticipated that this plant would serve the SOI Amendment Area.

The DCWWTP provides tertiary-level wastewater treatment through the process of screening, grit removal, primary clarification, aeration, secondary clarification, filtration, chlorination, and dechlorination; in addition, the DCWWTP provides full nitration. The current average daily flow (ADWF) is 15 million gallons per day (mgd), of which approximately 8 mgd come from the City of Roseville.[328] The peak daily wet weather flow (PWWF) during the last 12 months was 22 mgd.[329] The plant can discharge up to 18 mgd ADWF and 45 mgd PWWF into Dry Creek under an existing National Pollutant Discharge Elimination System (NPDES) permit.[330]

A second plant, the PGWWTP, is under construction on the west side of Phillip Road (refer to Figure 2-3 in Chapter 2 [Project Description]). This plant will serve the northwest areas in the existing City of Roseville, the Stanford Ranch area of the South Placer Municipal Utility District (SPMUD), and the Sunset Industrial Area of Placer County. The PGWWTP is also anticipated to serve the SOI Amendment Area assuming the area is added to the Roseville Regional Wastewater Treatment Service Area.

The PGWWTP will provide tertiary-level treatment through the process of screening, grit removal, extended aeration, secondary clarification, filtration, chlorination, and dechlorination.[331] The plant will provide full nitrification and will produce recycled water that meets Title 22 regulations for full, unrestricted use.[332] Due to the current and proposed levels of treatment, stabilized nonhazardous

[328] Kelye McKinney, P.E., City of Roseville, Personal Correspondence to Kathy Pease, City of Roseville Planning Department, October 21, 2002
[329] Kelye McKinney, P.E., City of Roseville, Personal Correspondence, June 10, 2002
[330] EIP Associates, Foothill Business Park Annexation DEIR, June 2000, p. 4.8-20
[331] Montgomery Watson, City of Roseville: Roseville Regional Wastewater Treatment Service Area Master Plan, May 1996, p. ES-21
[332] Kelye McKinney, P.E., City of Roseville, Personal Correspondence, June 10, 2002

biosolids (sewage sludge) are anticipated at the PGWWTP. These solids would be dewatered and transported to the Western Regional Sanitary Landfill for disposal.[333]

The capacity of the PGWWTP is summarized in Table 4.11-11. The first phase of the PGWWTP is anticipated to be operational by Fall/Winter 2003.[334] Phase 1 would provide a capacity of 12 mgd ADWF and 30 mgd PWWF.[335] The plant is presently authorized to discharge that volume of treated effluent into Pleasant Grove Creek under NPDES Permit No. CA0084573, which was issued by the Central Valley Regional Water Quality Control Board on March 17, 2000.[336]

Table 4.11-11 Summary of PGWWTP Capacity

Criteria	ADWF Flows (mgd)
Capacity of First Phase of Construction	12
Current NPDES Permitted Capacity	12
Capacity needed to serve the Service Area considered in the Wastewater Master Plan EIR	20.7

SOURCE: Montgomery Watson Harza, *Technical Memorandum 3: RE: Wastewater Evaluation of Urban Growth Areas*, December 4, 2001, Page 3 of 11

When the PGWWTP begins operation, approximately 5 to 6 mgd would be redirected from the DCWWTP. This would reduce the available capacity at PGWWTP to 6 to 7 mgd ADWF in 2003.

The second phase of the PGWWTP is anticipated to be operational between 2010 and 2012.[337] The dates for construction of Phase 2 may be adjusted, as necessary, to meet the demands of new wastewater flows and changes in water quality regulations.[338] Phase 2 would increase plant capacity to 20.7 mgd ADWF, which is the anticipated demand for treatment at buildout of that portion of the Wastewater Treatment Service Area that flows to the PGWWTP.[339]

Regional wastewater treatment demands and capacity have been previously addressed in an environmental impact report entitled *Roseville Regional Wastewater Treatment Service Area Master Plan Draft Environmental Impact Report* (WWMP EIR), prepared by Environmental Science Associates in May 1996 and hereby incorporated by reference. (Throughout this document, Roseville Regional Wastewater

[333] Kelye McKinney, P.E., City of Roseville, Personal Correspondence to Kathy Pease, City of Roseville Planning Department, October 21, 2002

[334] Art O'Brien, City of Roseville, Personal Correspondence, August 28, 2003

[335] Kelye McKinney, P.E., City of Roseville, Personal Correspondence, June 10, 2002

[336] Kelye McKinney, P.E., City of Roseville, Personal Correspondence, June 10, 2002

[337] Kelye McKinney, P.E., City of Roseville, Personal Correspondence, June 10, 2002

[338] Montgomery Watson and ESA, City of Roseville: Roseville Regional Wastewater Treatment Service Area Master Plan Draft Environmental Impact Report, May 1996, p. 2-47

[339] Montgomery Watson and ESA, City of Roseville: Roseville Regional Wastewater Treatment Service Area Master Plan, May 1996, p. ES-22; and Montgomery Watson Harza, Technical Memorandum 3: RE: Wastewater Evaluation of Urban Growth Areas, December 4, 2001, p. 3 of 11

Treatment Service Area Master Plan EIR is also referred to as the Wastewater Master Plan EIR.) The Wastewater Master Plan EIR evaluated two scenarios at an equal level of detail – a 54.4 mgd scenario, which assumed flows from the City of Lincoln would be accepted into the service area, and a 45.6 mgd scenario that assumed flows from the City of Lincoln would not beaccepted into the service area. Under the 54.4 mgd scenario, 29.5 mgd of flow was considered for treatment at PGWWTP. Under the 45.6 mgd scenario, 20.7 mgd was considered for treatment at PGWWTP. The maximum discharge from buildout of the Wastewater Treatment Service Area and the SOI Amendment Area is 24.7 mgd. Therefore, the environmental impacts resulting from the PGWWTP treating up to 29.5 mgd flow has already been fully analyzed. However, increases of treatment capacity beyond 20.7 mgd ADWF under the current NPDES permit requirements (NPDES No. CA0084573) would require additional area for the express purpose of accommodating MM 6-2 in the WWMP EIR.[340]

Wastewater Master Plan Service Area

As noted above, a Regional Wastewater Treatment Service Area Master Plan (Wastewater Master Plan) was prepared by the City to address major wastewater treatment improvements that would serve buildout of the service area based on planning documents adopted by 1996. Only the northeast portion of the SOI Amendment Area is currently included in the service area, which is illustrated by Figure 4.11-5 (West Roseville Specific Plan Existing Wastewater Treatment Plant Service Area). This area was previously called Phase 1 of the Villages at Blue Oaks (VBO) and is shown as Area 21 on Figure 3, Roseville Drainage Sub-Basins, in Section 1 of the Roseville Regional Wastewater Treatment Service Area Master Plan. The WWMP EIR considered that 1.1 mgd of the 20.7 mgd were generated from the VBO.

Wastewater Conveyance Infrastructure

As part of the Pleasant Grove and Kaseberg Sewer Project, the City constructed a 78-inch trunk sewer line to convey regional flows to the PGWWTP. This pipe traverses a portion of the WRSP Area that was previously known as the Village at Blue Oaks. It was assumed in the design of the 78-inch pipe that the Village at Blue Oaks would connect to the trunk line. Connections to this pipe could be used to convey wastewater flows from that portion of the SOI Amendment Area that was included in the VBO area in the Roseville Regional Wastewater Master Plan Service Area.

[340] *Project Memorandum, Capacity and Regulatory Compliance Assessment, Carollo Engineers (August 28, 2003*

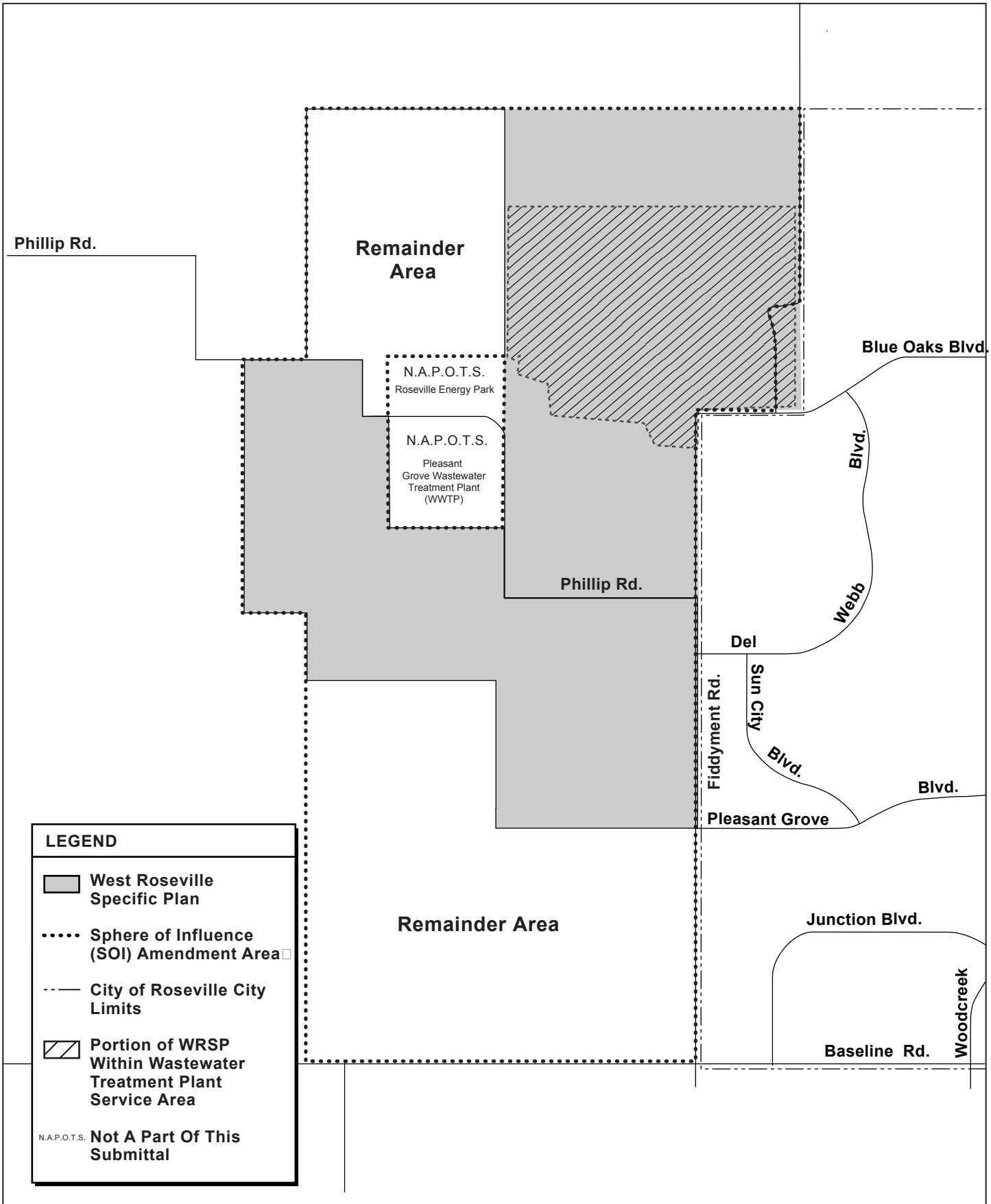

FIGURE **4.11-5**

Existing Wastewater Treatment Plant Service Area

Not to Scale

10659-00

***Source*:** Montgomery, Watson, Harza, Technical Memorandum City of Roseville

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4.11.9 Regulatory Setting

Federal and State

The discharge of treated wastewater from the PGWWTP is subject to the federal and State regulatory requirements summarized below.

NPDES Permits

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the Clean Water Act to regulate municipal and industrial discharges to surface waters of the U.S. The discharge of wastewater to surface waters is prohibited unless an NPDES permit has been issued to allow that discharge. Each NPDES permit includes the following provisions: effluent and receiving water limits of allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, and self-monitoring activities; and other regulatory requirements.

The wastewater discharge from the PGWWTP to Pleasant Grove Creek is regulated under a NPDES permit issued by the RWQCB. To obtain the permit, a Report of Waste Discharge (RWD) was prepared. The RWD includes information about the design and operation of the treatment plant (including the average and dry weather maximum flows for the plant), influent wastewater characteristics, and removal rates for specific water quality parameters. The NPDES permit and the Waste Discharge Requirements (WDR) are used to identify discharge prohibitions, effluent limitations, and monitoring and reporting requirements.

The discharge prohibitions and limitations in the permit are designed to ensure the maintenance of public health and safety, protection of receiving water resources, and safeguarding of designated beneficial uses of water bodies. Discharge limitations in the PGWWTP permit define allowable effluent concentrations for flow, biochemical oxygen demand (BOD), total suspended matter, residual chlorine, settleable matter, total coliform, oil and grease, and pH. Limitations also encompass mineralization and toxicity to aquatic life. The provisions provide stipulations for the disposal of solid materials, and limitations on impacts to receiving waters. The permit also specifies the sampling, monitoring, and reporting of requirements for compliance with waste discharge regulations. The monitoring program entails sampling influent, effluent, and the receiving water. The provisions of the NPDES permit and the WDR are enforceable through an order issued by the RWQCB or civil action.

Title 40 of the Code of Federal Regulations (CFR), Part 503 and Part 258, serves as the basis for the RWQCB requirements for biosolids disposal by land application or in a landfill. Title 27 of the California Code of Regulations and standards established by the RWQCB in a General Order for the disposal of biosolids regulate the disposal of biosolids.

Title 40 of the CFR, Parts 405 through 471, contains the Federal Categorical Pretreatment Standards for the pretreatment of industrial wastes discharged to publicly owned treatment works such as the PGWWTP.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act[341] is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the State must adopt water quality policies, plans, and objectives that will provide protection to the State's waters for the use and enjoyment of the people of California. In California, the State Water Resources Control Board (SWRCB) has authority and responsibility for establishing policy for water quality control issues for the State. Regional authority for planning, permitting, and enforcement is delegated to the nine Regional Water Quality Control Boards (RWQCB). The Porter-Cologne Water Quality Control Act authorizes the SWRCB and RWQCB to issue NPDES permits containing waste discharge requirements, and to enforce these permits. SWRCB and RWQCB regulations implementing the Porter-Cologne Water Quality Control Act are included in Title 27 of the California Code of Regulations.

Local

City of Roseville General Plan

The City of Roseville General Plan contains goals and policies that are designed to ensure that residents have adequate wastewater service. These policies can be found in Appendix C.

City of Roseville Improvement Standards

Section 9 of the City's Improvement Standards (Sanitary Sewer Design) provides criteria for design of sewer systems. Compliance with these standards would reduce impacts related to wastewater conveyance by ensuring that wastewater collection and conveyance facilities are properly sized to convey the flows from development associated with the project.

[341] California Water Code Section 13000 *et seq.*

City of Roseville Municipal Code

Section 14 of the City's Municipal Code contains regulations associated with sewer use, sewer rates and charges, and industrial wastewater. Chapter 14.26 prohibits discharge to a sanitary sewer of any pollutant or wastewater that would interfere with the operation or performance of the City's wastewater collection or treatment facilities.

4.11.10 Impacts and Mitigation Measures

Methods of Analysis

For wastewater treatment, the demand for treatment was calculated for the WRSP Area and Remainder Area and compared to the capacity of the PGWWTP (see Table 4.11-12). The rates indicated by Table 4.11-12 have been applied to the proposed land uses in the WRSP Are and assumed for the Remainder Area to estimate the quantity of wastewater to be treated at the PGWWTP.[342],[343],[344] To determine the peak wet weather flow for treatment capacity, the Average Dry Weather flow (ADWF) is multiplied by the peaking factor of 2.5.[345]

Because the Villages at Blue Oaks portion of the SOI Amendment Area was included in the total flows calculated for the Wastewater Treatment Service Area, the net increase in flows to the PGWWTP for the project is less than the flows generated by the entire SOI Amendment Area. The portion of the SOI Amendment Area currently within the Wastewater Treatment Service Area boundary (VBO) would generate 1.1 mgd ADWF. This amount is subtracted from total WRSP Area flows because it was already anticipated in the capacity of the PGWWTP considered in the Wastewater Master Plan EIR.

Standards of Significance

For the purposes of this EIR, a significant impact would occur if development proposed in the SOI Amendment Area would do any of the following:

- Result in or require the construction of or expansion of wastewater collection facilities that would create significant environmental effects

[342] Montgomery Watson Harza, Technical Memorandum 3, RE: Wastewater Evaluation of Urban Growth Areas, December 4, 2001, p. 3 of 11
[343] EIP Associates, Stoneridge Specific Plan EIR, December 3, 1997, p. 4.12-17
[344] EIP Associates, North Roseville Specific Plan Phase 3 DEIR, May 2000, p. 4,8-20
[345] Montgomery Watson Harza, Technical Memorandum 3, RE: Wastewater Evaluation of Urban Growth Areas, December 4, 2001, p. 3 of 11

Table 4.11-12 Estimated Wastewater to be Treated at the Pleasant Grove Wastewater Treatment Plant (ADWF)[8]

		Total for WRSP Area (gpd)[4]	Total for Remainder Area (gpd)[4]	Total for SOI Area (gpd)[4]
Park and Recreation	1,040 gpad[2, 5]	281,320	203,528	484,848
Public/ Quasi-Public	1,040 gpad[2]	157,456	67,600	225,056
Low Density Residential	260 gallons per day per equivalent dwelling unit[2]	1,258,920	1,376,960	2,635,880
Low Density Residential (Active Adult)	260 gallons per day per equivalent dwelling unit[2]	184,600		184,600
Medium Density Residential	260 gallons per day per equivalent dwelling unit[2]	276,640	161,200	437,840
High-Density Residential	260 gallons per day per equivalent dwelling unit[2]	461,240	386,620	847,860
Community Commercial	1,040 gpad[2]	33,904	70,304	104,208
Commercial Mixed Use	260 gallons per day per equivalent dwelling unit[2] (residential) & 1,040 gpad[7] (commercial)	23,525		23,525
Business Professional	1,040 gpad[7]	20,384	51,480	71,864
Light Industrial	1,040 gpad[2]	77,168		77,168
Industrial	1,560 gpad[2]	53,508		53,508
Total		***2,828,665***	***2,317,692***	***5,146,357***

NOTES:

1. Business Professional and Light Industrial are considered combined within the 49.5 acres
2. Montgomery, Watson, Harza, *Technical Memorandum 3, Wastewater Evaluation of Urban Growth Areas*, December 4, 2001, Page 3 of 11
3. DU = dwelling units
4. gpd = gallons per day
5. gpad = gallons per acre per day
6. Land uses, acres, and dwelling units provided by Signature Properties, Westpark Associates, 2002
7. EIP Associates, *Stoneridge Specific Plan EIR*, December 3, 1997, Page 4.12-17.
8. ADWF = average dry weather flow
9. The following "worse case scenario" assumptions were made in the calculation of the wastewater flows from the Commercial Mixed-Use area: Assumed all high-density residential for the 40 dwelling units at 22.4 DU/acre = 1.78 acres for residential. Commercial uses were assumed for the remaining 12.62.The 40 DU = 10,400 gpd The 12.62 acres of commercial = 13,125 gpd

- Result in or require the construction of or expansion of wastewater treatment facilities that would create significant environmental effects
- Result in increase of wastewater discharge regulated by the applicable Regional Water Quality Control Board (RWCQB)
- Be served by a wastewater treatment provider that has inadequate capacity to serve the project in addition to serving its existing commitments

Impacts

IMPACT 4.11-6:	CONSTRUCTION OR EXPANSION OF WASTEWATER COLLECTION FACILITIES.	
Applicable Policies and Regulations:	City of Roseville Improvement Standards	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None Required	None Required
Significance after Mitigation:	Less Than Significant	Less Than Significant

West Roseville Specific Plan

Currently, there is no wastewater collection infrastructure to collect and convey wastewater to the PGWWTP within the WRSP Area, with the exception of an existing City-owned 78-inch trunk sewer that is parallel to and south of Pleasant Grove Creek. Therefore, development of the WRSP would require installation of a wastewater collection and conveyance system. Wastewater flows from the WRSP Area would be directed to the PGWWTP by a network of pipes installed within street rights of way or easements. Sewer collection pipes would range in size from 8-inches to 33-inches. A portion of the WRSP Area would connect to an existing City-owned 78-inch diameter pipe just north of the intersection of Blue Oaks Boulevard at Fiddyment Road south of Pleasant Grove Creek. As a result of site topography, the sanitary sewer system would not require lift stations. A siphon would be required near the Pleasant Grove Creek crossing by Phillip Road in order to allow sewer lines to gain the necessary depth to cross the creek. The siphon will consist of a deeper pipe connected by underground structures with surface manholes. All sewer improvements would be consistent with the Regional Wastewater Master Plan. The wastewater collection infrastructure would be installed over time to coincide with development entitlements on the WRSP site and would be designed to accommodate buildout of the WRSP. Compliance with the City of Roseville improvement standards would ensure that the wastewater collection and conveyance facilities would be adequate to serve the proposed project.

The ADWF for conveyance systems is determined by the unit generation rates for transmission presented in the WWMP. To determine the peak wet weather flow for conveyance in the collection system, the ADWF is multiplied by a peaking factor of 2.3. The actual pipe sizes that would convey the peak wet weather flow were identified in the *Draft Preliminary Investigation of Wastewater System, West Roseville Specific Plan* (March 26, 2003), by Morton and Pitalo, Inc

Because the PGWWTP is surrounded by the WRSP Area on three sides, most new wastewater conveyance infrastructure needed to serve the WRSP Area would be constructed within the WRSP Area itself. Outside of the WRSP Area, one manhole would be constructed in Blue Oaks Boulevard and another would be constructed in Phillip Road. A 24-inch pipe would be installed from the future Phillip Road west along the northern boundary of the PGWWTP. All wastewater from the WRSP Area would be delivered to the influent junction structure (IJS) at the northeast corner of the PGWWTP site. Figure 4.11-6 (West Roseville Specific Plan Wastewater Collection System) illustrates the location of wastewater (or sewer) lines, the direction of flow, and the PGWWTP site.

Wastewater flows from the WRSP Area would be directed to PGWWTP by pipes installed within street rights of way or easements. Sewer collection pipes ranging in size from 18-inches to 42-inches would be installed as part of the WRSP. As shown in Appendix I, these pipes have been sized to accommodate the anticipated flows from both the WRSP Area and the Remainder Area.[346] Manholes would be installed as necessary along the alignments. Due to the topography, the system can rely on gravity flows and would not require lift stations. To gain the necessary depth of the sewer lines to cross Pleasant Grove Creek, a siphon would be required near the creek crossing by Phillip Road. The siphon would consist of a deeper pipe connected by underground structures with surface manholes.

The existing 78-inch pipeline was designed to accommodate flows from a portion of the WRSP previously proposed for a development known as the Villages at Blue Oaks. That development was assumed to generate transmission flows of 3.2 mgd, which would be 2.7 times greater than the flows anticipated from this portion of the proposed WRSP. Therefore, the connection of this portion of the WRSP Area, which is projected to produce a transmission flow of 1.19 mgd to the 78-inch trunk sewer, is not anticipated to result in an adverse effect on pipe capacity.[347] To date, no other local connections to the 78-inch pipe have been allowed.[348]

Portions of the wastewater collection system installed during development of the WRSP Area would be oversized to accommodate wastewater flow from the Remainder Area. In addition, three manholes would be installed as part of the wastewater infrastructure for the WRSP Area that would serve as future connection points for the Remainder Area. These manholes would be located at the northwest boundary at Blue Oaks Boulevard, at the southern boundary in Pleasant Grove Boulevard, and at the western

[346] Morton and Pitalo, Inc., Draft Preliminary Investigation of Wastewater System, West Roseville Specific Plan, September 3, 2002, Sewer Flow Calculations, Fiddyment Ranch, Sewer Flow Calculations, Westpark and Sewer Flow Calculations, Westpark—No MOU

[347] Morton and Pitalo, Inc., Draft Preliminary Investigation of Wastewater System, West Roseville Specific Plan, as revised January 31, 2003, p. 1

[348] Art O'Brien, City of Roseville, Personal Communication, February 4, 2003

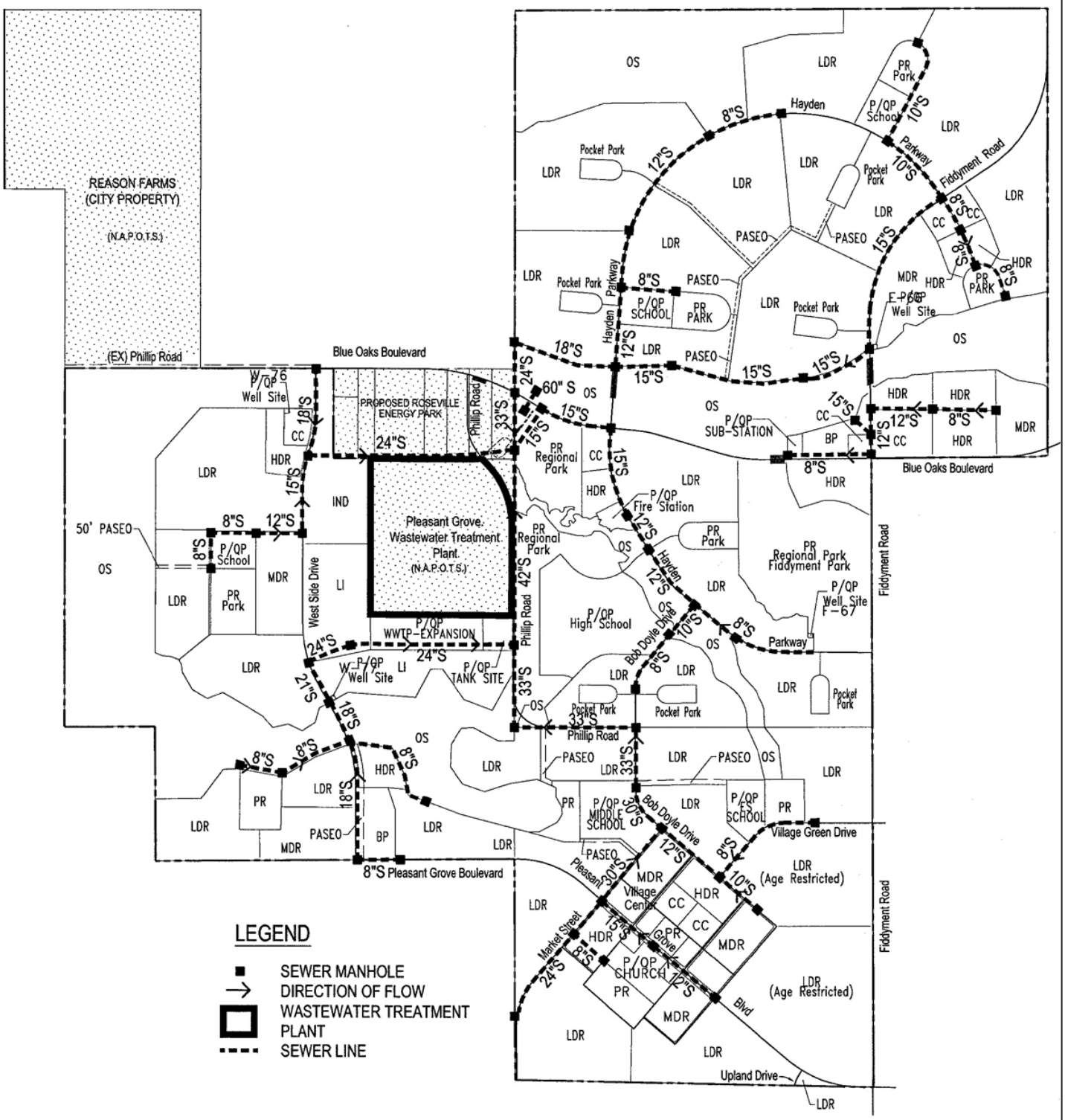

FIGURE **4.11-6**

West Roseville Specific Plan Wastewater Collecton System

Scale: 1" = 2000'

10659-00

***Source*:** West Roseville Specific Plan 2003 City of Roseville

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boundary of the southernmost portion of the WRSP Area (refer to Figure 4.11-6). Connection of the WRSP Area's wastewater collection system to the PGWWTP is designed to occur at the influent junction structure (IJS) built as part of the PGWWTP. The IJS is located at the northeast corner of the PGWWTP property (refer to Figure 4.11-6). Two 36-inch diameter connection points (north invert and south invert) were provided at the influent junction structure for future trunk lines. As shown on Figure 4.11-6, the majority of flows from the WRSP Area would be routed to these connection points. If the determination is made that the existing IJS structure would not be able to accommodate the flows generated by the WRSP Area, additional junction structure(s) would be required. The installation of this structure(s) could take place at the time of construction of the WRSP wastewater conveyance pipes.

As previously stated, the wastewater collection system would be constructed within the WRSP Area, with the exception of manholes in Blue Oaks Boulevard and Phillip Road and a 24-inch pipe aligned with the north boundary of the PGWWTP. The manholes would be installed within the existing right of way of Blue Oaks Boulevard and Phillip Road and, therefore, would not cause impacts to environmental resources such as biological and cultural resources that were not previously considered in the environmental documentation for the construction of Blue Oaks Boulevard. The manhole would be installed during the construction of the Blue Oaks extension, as part of the WRSP.

In summary, the proposed wastewater collection and conveyance system, and the existing conveyance system to which the WRSP Area would connect, would be sized to serve both the anticipated wastewater flows generated by the WRSP Area and the Remainder Area. Also, these facilities will be constructed in public roads and right-of ways and the impacts of this construction activity are analyzed elsewhere in this EIR. Therefore, the impacts of constructing the WRSP wastewater collection system would be **less than significant**.

Remainder Area

Because there are no specific land use plans for the Remainder Area, the line sizes and layout of the wastewater collection system are not currently known. The design of the system would comply with the City of Roseville Environmental Utility Department requirements. These requirements are found in Section 9, Sanitary Sewer Design, of the City of Roseville Improvement Standards, and would ensure that applicants in the Remainder Area demonstrate that the wastewater collection is adequate to accommodate flows generated by development.

The Remainder Area is separated from the PGWWTP by the City's property and a portion of the WRSP to the north and south. As previously discussed, infrastructure installed as part of the WRSP would be

oversized to convey wastewater flows from the Remainder Area to the PGWWTP. There would be no other off-site impacts due to construction of the wastewater infrastructure to serve the Remainder Area.

Development in the Remainder Area must comply with City standards for wastewater conveyance and impacts from construction of any necessary improvements will be analyzed in the planning and environmental review for the Remainder Area. Also, the WRSP conveyance system is being designed to accommodate flows from the Remainder Area. As a result, the impact of constructing the wastewater collection system for the Remainder Area would be **less than significant**.

IMPACT 4.11-7:	**CONSTRUCTION OR EXPANSION OF WASTEWATER TREATMENT FACILITIES.**	
Applicable Policies and Regulations:	Chapter 14.26 of Municipal Code	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	Significant
Mitigation Measures:	MM 4.11-5 (Treatment plant capacity)	MM 4.11-6 (Treatment plant expansion policies)
Significance after Mitigation:	Less Than Significant	Less Than Significant

As shown on Table 4.11-13, the SOI Amendment Area is projected to generate treatment flows of 5.1 mgd ADWF. Projected flows to the PGWWTP at buildout of the Wastewater Treatment Service Area considered in the WWMP EIR are 20.7 mgd ADWF.[349] A portion of the flows from the WRSP Area (1.1 mgd ADWF from the VBO) was included in the Wastewater Master Plan EIR. Therefore, the SOI Amendment Area would generate a net increase of 4.0 mgd ADWF of wastewater over the amount planned in the Wastewater Master Plan and considered in the Wastewater Master Plan EIR. The total capacity needed to treat wastewater flows, including both the WRSP Area and Remainder Area and other flows planned to be treated at the PGWWTP, would be 24.7 mgd ADWF (refer to Table 4.11-13).

Table 4.11-13 Net Projected Flows to be Treated at PGWWTP For SOI Amendment Area

	Projected Flows (mgd)
Projected flows from SOI Amendment Area	5.1
Flows from portion of SOI Amendment Area within current Roseville Regional Wastewater Treatment Service Area	–1.1
Net increase of flows from SOI Amendment Area	4.0
Projected flows to PGWWTP at buildout of current Roseville Regional Wastewater Treatment Service Area	20.7
Total capacity needed to treat wastewater flows from buildout of the current Master Plan Service Area and the SOI Amendment Area	24.7

[349] Montgomery Watson and ESA, City of Roseville: Roseville Regional Wastewater Treatment Service Area Master Plan, May 1996, p. ES-22; and Montgomery Watson Harza, Technical Memorandum 3: RE: Wastewater Evaluation of Urban Growth Areas, December 4, 2001, p. 3 of 11

West Roseville Specific Plan

As shown on Table 4.11-14, the WRSP Area is projected to generate 2.8 mgd ADWF of wastewater to be treated by the PGWWTP. The PGWWTP is currently planned to treat up to 20.7 mgd ADWF, based on demand for wastewater treatment from development in the existing Wastewater Treatment Service Area through buildout (assumed in 2020) and considered in the Wastewater Master Plan EIR. One portion of the WRSP Area (VBO) that is within the existing boundary of the Wastewater Treatment Service Area was included in the Service Area in the WWMP EIR. That portion of the WRSP Area, at one time proposed as the Villages of Blue Oaks, was estimated to generate 1.1 mgd ADWF of wastewater that would be treated by the PGWWTP. Therefore, of the 2.8 mgd ADWF that would be generated by the WRSP Area, 1.1 mgd could be accommodated by the PGWWTP as currently planned and considered in the Wastewater Master Plan EIR. The PGWWTP was not anticipated to treat the remaining 1.7 mgd ADWF of WRSP Area wastewater and construction of additional treatment facilities is required. This is considered a significant impact**.**

Table 4.11-14 Net Projected Flows to be Treated at PGWWTP for WRSP (ADWF)

	Projected Flows (mgd)
Projected flows from WRSP	2.8
Flows from portion of WRSP within current Roseville Regional Wastewater Treatment Service Area	–1.1
Net increase of flows from WRSP	1.7
Projected flows to PGWWTP at buildout of current Roseville Regional Wastewater Treatment Service Area	20.7
Total capacity needed to treat wastewater flows from buildout of the current Master Plan Service Area and the WRSP	22.4

As required by MM 4.11-5, wastewater treatment plant capacity must be expanded prior to developing residences and nonresidential uses that would cause total wastewater flows from the WRSP Area to exceed 1.1 mgd. The PGWWTP must be expanded such that it could treat 22.4 mgd, which is the amount needed to treat flows from the current Wastewater Treatment Service Area at buildout, plus the 1.7 mgd WRSP Area flows not assumed in the current Wastewater Master Plan. Increasing wastewater treatment capacity of the PGWWTP to accommodate the WRSP Area will require expansion of the treatment facilities. The expansion is proposed to occur on a 15- to 20-acre parcel located immediately adjacent to and south of the PGWWTP site. Because the plant would be expanded (rather than having a new plant constructed) it can be assumed that the operational impacts would be similar to those anticipated for the 20.7 mgd of treatment capacity previously addressed in the EIR for the PGWWTP. With expansion of the PGWWTP, as required by MM 4.11-5, this impact would be considered **less than significant**.

Remainder Area

Flows from the Remainder Area are also proposed to be treated at the PGWWTP. The Remainder Area is projected to generate 2.3 mgd ADWF of wastewater to be treated (see Table 4.11-12). No portion of the Remainder Area is within the Wastewater Treatment Service Area considered in the WWMP EIR; therefore, the PGWWTP would need to be expanded to accept flows from development in the Remainder Area. This is considered a significant impact**.**

MM 4.11-6 requires that Specific Plans and/or development plans in the Remainder Area demonstrate that the PGWWTP is able to accommodate the flows from the proposed development. Because the Remainder Area would be unlikely to develop without the WRSP Area, the total amount of wastewater that would need to be treated at the plant would be 24.7 mgd, which is the total capacity needed to treat wastewater flows from buildout of the Wastewater Treatment Service Area and the SOI Amendment Area. An expansion beyond 20.7 mgd would require additional land.

The expansion is anticipated to occur on 15 to 20 acres of a property south of, and contiguous with, the PGWWTP site in the WRSP Area. It would be designated Public/Quasi-Public uses (refer to Figure 2-3 in Section 2, [Project Description]) in anticipation of the need to expand the footprint of the PGWWTP. Additional modules of the PGWWTP could be constructed in this area in order to provide sufficient capacity to treat the wastewater flows in excess of the 20.7 mgd that can be accommodated within the existing PGWWTP site. As previously mentioned, impacts due to expansion of the PGWWTP are evaluated in the *Regional Roseville Wastewater Treatment Service Area Master Plan EIR*.

Expansion of the PGWWTP is expected to use the same type of wastewater treatment facilities and process during the operation of the plant and is assumed to use the same type of construction methods due to the similar topography of the two sites and the modular nature of the plant.

With implementation of MM 4.11-6, the increased demand for wastewater treatment would be a **less-than-significant** impact because treatment capacity would have to be demonstrated before issuance of development entitlements.

Environmental Effects of Expanding the PGWWTP Pursuant to MM 4.11-5

The Roseville Regional Wastewater Treatment Service Area Master Plan EIR (State Clearinghouse No. 93092079, dated May 1996) hereby incorporated by reference, determined that the following impacts from construction and operation of the PGWWTP may not be reduced to less-than-significant levels after application of recommended mitigation and would, therefore, remain significant:

- Loss of vernal pools/seasonal wetlands, and impacts to vernal pool special status species

- Loss of oak trees along Pleasant Grove Creek from effluent discharge
- Loss of raptor habitat
- Odor and noise emissions at PGWWTP
- Increased criteria air pollutant emissions due to subsequent development

With the exception of the loss of oak trees, these impacts would occur if the PGWWTP is expanded onto the 20-acre parcel to the south of the plant.

Construction impacts would depend on whether the improvements needed to increase plant capacity could occur entirely within the existing footprint of the plant. If all the necessary changes were to occur internally there would be little disturbance to nearby residences and wildlife that are often associated with construction activities. If construction extended beyond the current plant footprint, temporary impacts could include noise, dust, emissions from construction vehicles, increased traffic congestion due to construction vehicles, potential disruption of utility lines, erosion, water quality degradation, disturbance to nesting raptors, and disturbance of unknown subsurface cultural resources (if grading or excavation were to occur). As evaluated in the Wastewater Master Plan EIR, the construction impacts of the expansion necessary to support the WRSP would be temporary and would be less than significant after mitigation, assuming that fewer than 10 acres are graded on a single day (to avoid exceeding air quality thresholds).

Expanding the PGWWTP would also result in operational impacts. Depending on the extent to which the plant's footprint changed, operational impacts would include contribution to downstream flooding due to increased stormwater runoff, increased urban contaminants in runoff, degradation of water quality in Pleasant Grove Creek, raw wastewater mingling with floodwaters, odor, noise from odor control fans, ingestion of recycled water by the public, contamination of groundwater and domestic water sources, increased mosquito populations, exposure to toxic air contaminants, increased sludge needing disposal at the landfill, and alteration of visual character. However, the Roseville Regional Wastewater Treatment Service Area Master Plan Environmental Impact Report found that these impacts would be less than significant, or could be reduced to less-than-significant levels, with mitigation identified in that EIR.

There are two impacts associated with proposed project that could substantially increase the severity of impacts identified in the Wastewater Master Plan EIR—disposal of sludge at the Western Regional Sanitary Landfill (WRSL) and degradation of water quality in Pleasant Grove Creek due to increased discharge from the PGWWTP. This EIR analyzes the effects of disposing additional sludge at the WRSL as part of the total waste conveyed to the landfill (refer to Impact 4.11-9). Degradation of water quality is discussed in Impact 4.11-8, below.

The light industrial and industrial land uses proposed within the WRSP could produce wastewater flows that could affect water quality entering the PGWWTP. The City of Roseville Municipal Code, Industrial Waste Section (Chapter 14.26) contains the regulations for discharge of industrial wastewater into the municipal sewer system. Federal standards prevail if they are more stringent than those of the City. Compliance with these regulations would reduce the risk that wastewater flows from the WRSP Area also would harm the PGWWTP, cause the plant to operate less efficiently, and/or cause a violation of the NPDES permit. Considering the regulations and requirements for industrial wastewater, industrial wastewater flow into the PGWWTP would be a **less-than-significant impact.**

IMPACT 4.11-8:	**INCREASED WASTEWATER DISCHARGE REGULATED BY THE RWQCB.**	
Applicable Policies and Regulations:	NPDES Permit	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	MM 4.11-5 (Treatment Plant Capacity)	MM 4.11-6 (Treatment Plant Expansion Policies)
Significance after Mitigation:	Less Than Significant	Less Than Significant

West Roseville Specific Plan/Remainder Area

Carollo Engineers[350] has analyzed the environmental effects of an increased discharge at the PGWWTP. In this analysis, it was concluded that the water quality of the effluent would not be any less than the quality considered in the Wastewater Master Plan EIR. The Wastewater Master Plan EIR evaluated two scenarios at an equal level of detail: a 54.4 mgd scenario, that assumed flows from the City of Lincoln would be accepted at PGWWTP, and a 45.6 mgd scenario, that assumed flows from the City of Lincoln would not be sent to the PGWWTP. Under the 54.4 mgd scenario, 29.5 mgd of flow was considered for treatment at PGWWTP and discharge into Pleasant Grove Creek and 24.9 mgd was considered for treatment at DCWWTP and discharge into Dry Creek. Because the City of Lincoln chose not to participate in the Wastewater Master Plan, the 45.6 mgd scenario was approved by the City of Roseville's City Council. Therefore, the Wastewater Master Plan EIR considered wastewater discharge of up to 29.5 mgd from the PGWWTP into Pleasant Grove Creek. Since the maximum discharge from buildout of the Wastewater Treatment Service Area and the SOI Amendment Area is 24.7 mgd, the water quality of the increased discharge would not be any different than that considered in the Wastewater Master Plan EIR. Compliance with a NPDES permit would reduce impacts associated with an increased demand for

discharge of the treated effluent from the PGWWTP by ensuring that water quality standards are met. The proposed expansion(s) of the PGWWTP would require modifications to the plant's NPDES permit. However, compliance with the modified NPDES permit would reduce water quality impacts associated with increased effluence discharges to a less-than-significant level. Chapter 14.26 prohibits discharge to a sanitary sewer of any pollutant or wastewater that would interfere with the operation or performance of the City's wastewater collection or treatment facilities.

Compliance with these standards would reduce impacts related to wastewater conveyance by ensuring that wastewater collection and conveyance facilities are properly sized to convey the flows from development associated with the project. Further, since the mitigation measures in the Wastewater Master Plan EIR will be implemented, as required by MM 4.11-5 and MM 4.11-6, the environmental effects of increased discharge are considered a **less-than-significant** impact.

Mitigation Measures

MM 4.11-5 *Treatment plant capacity (Impact 4.11-7 - WRSP)*

Prior to obtaining building permits for development that would cause total wastewater flows from the WRSP Area to exceed 1.1 mgd, the applicants shall demonstrate that the PGWWTP will be expanded to 22.4 mgd. This includes obtaining all necessary permits to discharge the treated flow. The applicant shall also demonstrate that the timing of the plant expansion will be adequate to serve the WRSP Area without impeding other planned development assumed in the Wastewater Master Plan. Further, the applicants shall implement all relevant mitigation measures identified in the Wastewater Master Plan EIR. A list of mitigation measures applicable to this project area found in Appendix V of this EIR.

MM 4.11-6 *Treatment plant expansion policies (Impact 4.11-7 - Remainder Area)*

Any proposal for development in the Remainder Area shall require that adequate treatment capacity at the PGWWTP be demonstrated and evaluated in an environmental document that tiers from this EIR in order to provide a project-level analysis. The environmental document shall be the responsibility of the applicant. Permits to discharge the treated flows shall also be obtained prior to the granting of any occupancy within the Remainder Area. Further, all relevant mitigation measures identified in the Wastewater Master Plan EIR shall be implemented. A list of mitigation measures applicable to this project area found in Appendix V of this EIR.

[350] *Project Memorandum, Capacity and Regulatory Compliance Assessment, Carollo Engineers (August 28, 2003)*

SOLID WASTE

4.11.11 Environmental Setting

Solid waste generated in the City of Roseville is collected and hauled by the City to the Western Regional Sanitary Landfill (WRSL) located on 320 acres at the southwest corner of Athens Road and Fiddyment Road, approximately one mile north of the project site. The landfill is owned by the Western Placer Waste Management Authority (WPWMA), which is comprised of the Cities of Roseville, Rocklin, and Lincoln, and Placer County. Madera Disposal, a private firm, operates the landfill under contract to the Authority. The City of Roseville has entered into a joint powers agreement (JPA) with these other agencies for solid waste management and operates under the County's Solid Waste Management Plan. The City entered into a Flow Control Agreement with the WPWMA in 1992, which requires that all waste generated within the City limits be delivered to the Materials Recovery Facility (MRF) for sorting and disposal at the landfill. Construction and demolition debris, however, can be sent outside the County for recycling or disposal. Collection of solid waste within the City is operated and managed by the City's Environmental Utilities Department. Private firms normally handle temporary refuse collection and disposal such as for construction and demolition.

According to the Source Reduction and Recycling Element (SRRE) of the City's General Plan, the WRSL is a Class III nonhazardous landfill. WPWMA expanded the permitted capacity of the landfill to 36,350,000 cubic yards in January 2003.[351] The landfill has a remaining capacity of 14,011,000 tons, which is projected to be exhausted in 2036.[352] The landfill is permitted for a maximum daily tonnage intake of 1,900 tons per day.[353]

According to the Environmental Utilities Department, the WRSL is presently adequately accommodating refuse generated by the City.[354] Refuse fees are collected from residential, commercial, and industrial accounts to cover collection and disposal costs.

In 2000, a total of 154,056 tons of solid waste was generated in the City of Roseville, but total waste disposal after all recycling efforts was reduced to 88,566 tons.[355] Year 2000 showed a total of 38,595 tons of residential waste collection through City services.[356]

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[351] Thom Carmichael, Western Placer Waste Management Authority, personal communication, January 15, 2003
[352] Will Dickinson, Western Placer Waste Management Authority, personal communication, December 14, 2002
[353] Will Dickinson, Western Placer Waste Management Authority, personal communication, December 14, 2002
[354] City of Roseville, Environmental Utilities Department, Engineering Division, Kelye McKinney, Senior Civil Engineer, Memorandum, June 7, 2002
[355] City of Roseville, Environmental Utilities Department, Engineering Division, Kelye McKinney, Senior Civil Engineer, Memorandum,

The remainder of the waste generated was from commercial, industrial, and construction materials collected by private firms. The SRRE planned for a MRF system to assist in reaching State-mandated recycling goals. The MRF, which opened in November 1995 at the WRSL, separates and recovers waste products for recycling, reuse, or conversion to energy resources. In 2001, the MRF diverted 48,965 tons of materials from landfill disposal. While the City does not currently operate a green waste collection program, leaves are collected from City streets through a seasonal collection program and delivered to the MRF composting operation.[357] The City has budgeted to start a pilot green waste collection program in 2004 with 6,800 residential accounts that will receive green waste collection containers. The pilot program will service approximately 22% of the residential customer base. The City's overall landfill diversion rate in 2000 was 45 percent.[358]

While the landfill is permitted to accept up to 1,900 tons per day, the MRF is only able to process approximately 1,050 tons per day due to the limited size of the handling floor and the number of operating hours per day (12 hours Monday through Friday, with reduced hours on the weekend).[359]

If more than 1,050 tons comes to the MRF in one day, the amount that cannot be processed is processed the next day.[360] This is possible as less waste is generally accepted at the MRF on weekends (200-400 tons/day).[361] If materials come to the MRF that are normally recyclable, but cannot be recycled for whatever reason, the waste is disposed of at the landfill.[362] The most common occurrence of this involves wood waste. If wood is attached to sheetrock, siding, or other materials that make the wood unsuitable for recycling, the waste is disposed of at the landfill.[363]

In August 2003, new permits were issued to the WPWMA from the California Integrated Waste Management Board to expand the landfill and increase the MRF capacity. The landfill's maximum daily intake capacity was increased to 1,900 tons/day, but the maximum number of permitted vehicle trips per day at the landfill remained at 624. The permitted MRF tonnage increased to 1,750 tons/day, with a peak daily number of vehicle trips at the MRF increased to 939.

June 7, 2002

[356] City of Roseville, Environmental Utilities Department, Engineering Division, Kelye McKinney, Senior Civil Engineer, Memorandum, June 7, 2002

[357] City of Roseville, Solid Waste Utility, Environmental Utilities Department, Terry Bosik, personal communication, July 1, 2002

[358] City of Roseville, Solid Waste Utility, Environmental Utilities Department, Terry Bosik, personal communication, July 15, 2002

[359] Eric Oddo, Western Placer Waste Management Authority, personal communication, January 17, 2003

[360] Eric Oddo, Western Placer Waste Management Authority, personal communication, January 17, 2003

[361] Eric Oddo, Western Placer Waste Management Authority, personal communication, January 17, 2003

[362] Eric Oddo, Western Placer Waste Management Authority, personal communication, January 17, 2003

[363] Eric Oddo, Western Placer Waste Management Authority, personal communication, January 17, 2003

The WPWMA approved a Capacity Enhancement Project in May 2003 enabling staff to pursue improvements to the MRF operation such as extending its processing hours to 16 hours (two full shifts) and expanding the handling floor. These improvements will allow the MRF to handle the permitted 1,750 tons/day on a daily basis, likely with no surplus materials carried over to the next day.

4.11.12 Regulatory Setting

Federal

Title 40 of the Code of Federal Regulations (CFR), Part 258 (Resource Conservation and Recovery Act [RCRA, Subtitle D]) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

Federal requirements for disposal of biosolids are set forth in Title 40 Part 503 of the CFR.

State

AB 939

The federal regulations are implemented by the California Public Resource Code Sections 40000 *et seq*. (California Integrated Waste Management Act). The State agency charged with the permitting of solid waste facilities is the California Integrated Waste Management Board.

Assembly Bill 939 (AB 939) (Public Resources Code Section 41780) is designed to increase landfill life and conserve other resources through increased source reduction and recycling. AB 939 requires cities and counties to prepare Solid Waste Management Plans and Source Reduction and Recycling Elements to implement AB 939's goals, which included diverting approximately 50 percent of solid waste from landfills and identifying programs to stimulate local recycling in manufacturing and the purchase of recycled products.

Local

City of Roseville

The City's SRRE was prepared to implement the state-mandated waste reduction goals specified in AB 939. The City has not yet met AB 939's 50 percent reduction goal for 2000. The City's waste reduction for

2000 was 45 percent.[364] To meet these goals, the SRRE specifies three methods: (1) source reduction, which is a net reduction in waste generation at the source; (2) recycling, which is a reuse of materials to produce new similar products or different products; and (3) composting, which is a process of biological decomposition of solid organic debris, such as leaves, grass clippings, and other organic material commonly found in the municipal waste stream to create useable material. The City met the AB 939 reduction goals of 25 percent by 1995.[365] AB 939 also requires the SRRE to project solid wastes generated within Roseville through 2005.

The Roseville Flow Control Agreement between the City of Roseville and the WPWMA states that any waste generated within the City must go to the MRF for sorting and to the landfill for disposal. Temporary construction and demolition debris however, may be hauled to a landfill facility outside of Placer County. Any materials that are collected through recycling programs that are established by the City, such as the collection of green waste, must also be disposed of at the MRF.

The SRRE, which is provided in the City of Roseville General Plan, includes goals and policies for solid waste disposal. Refer to Appendix C for a complete list of all applicable City goals and policies.

West Roseville Specific Plan

The WRSP requires a 50 percent reduction in the development's construction waste stream. Developers must submit records of diversion and disposal to the City's Environmental Utilities Department in order to verify compliance with this requirement.

The WRSP designates a site for a recycling collection/drop-off center on Phillip Road. The center would occupy a site of at least 150' by 150' and provide easy access for residents. The site will be paved and fenced, with appropriate signage.

4.11.13 Impacts and Mitigation Measures

Methods of Analysis

The analysis of solid waste service impacts are based upon consideration of the estimated amount of solid waste anticipated to be generated by the project. The following solid waste generation rates have been approved by the City of Roseville Environmental Utilities Department Western Placer Waste

[364] City of Roseville, Solid Waste Utility, Environmental Utilities Department, Terry Bosik, personal communication, July 15, 2002
[365] City of Roseville, Comprehensive Land Use Element Update Project, page 4.16-1, February 1995

Management Authority (memorandum for EIP to City of Roseville and Western Placer Waste Management Authority, December 12, 2002):

- Residential: 2.7 lbs/resident/day
- Commercial: 1 lb/100 square feet/day
- Industrial: 1 lb/100 square feet/day

These rates have been used to estimate the solid waste generation for the project, including the WRSP Area and the Remainder Area. The amount of waste generated is then compared to the annual and daily tonnage intake of the landfill and the MRF. Additional waste due to construction activities is addressed qualitatively.

In order to determine how the project would affect the landfill, an estimate of the annual tonnage generated by the project was multiplied by twenty to thirty years, which represents the general estimate of the time that the project would be completed and occupied. The total tonnage estimated to be generated was then compared to the remaining landfill capacity. In addition, the total tonnage was compared to the amount of waste estimated to be received in two different years (2003 and 2035, which represents the least and greatest amount of solid waste that would be generated by the project, respectively) to estimate the number of years that the landfill's lifespan would be shortened.

Buildout of the landfill is based on information provided by the WPWMA, including the *Draft Environmental Impact Report for the Capacity Enhancement Project 2002–2003* (January 2003).

Standards of Significance

For the purposes of this EIR, a significant impact would occur if development proposed in the SOI Amendment Area would do either of the following:

- Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs
- Generate more solid waste than the MRF can handle on a daily basis, due to either processing or permitting constraints

Impacts

IMPACT 4.11-9	INCREASED DEMAND FOR SOLID WASTE SERVICES AT THE LANDFILL.	
Applicable Policies and Regulations:	Assembly Bill 939	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	Significant
Mitigation Measures:	MM 4.11-7 (Expand the landfill) and MM 4.11-8 (Greenwaste containers)	MM 4.11-7 (Expand the landfill) and MM 4.11-9 (Waste reduction policies)
Significance after Mitigation:	Significant and Unavoidable	Significant and Unavoidable

Solid Waste/Landfill

Development of the SOI Amendment Area would result in solid waste generated by residences, retail and commercial establishments, offices, industrial operations, schools, and recreational facilities. Using the factors cited above, a total of 29,446 tons/year of solid waste would be generated in the SOI Amendment Area (refer to Table 4.11-15, Table 4.11-16, Table 4.11-17, and Table 4.11-18).[366] It should be noted that this estimate is conservative because the WRSP includes source-reduction measures, such as a recycling collection/drop-off center on Phillip Road and green waste containers for every residence as part of the project. These measures would divert green waste and recyclable materials from the landfill. In addition, implementation of AB 939 requires cities and counties to prepare Solid Waste Management Plans and Source Reduction and Recycling Elements that establish programs with the goal of diverting 50 percent of solid waste from landfills. However, an estimate of the diversion is not provided at this time, nor taken into account in the impact analysis because reduction rate factors for recycling and green waste composting have not been established.

At buildout of the City's General Plan, based upon the California Integrated Waste Management Board generation rates, the City could generate approximately 153,177 tons per year of solid waste (refer to Table 4.11-19), assuming that existing and currently approved projects would generate waste at the same rate assumed for the SOI Amendment Area. Development of the SOI Amendment Area would increase City waste generation by approximately 19 percent over the amount anticipated under the current General Plan. This solid waste would be hauled to the WRSL and would require additional City of Roseville solid waste hauling services.

[366] Thom Carmichael, Western Placer Waste Management Authority, written communication, February 10, 2003. Also, Western Placer Waste Management Authority, Capacity Enhancement Project 2002–2003 Draft Environmental Impact Report, January 9, 2003, Table 3-1

Table 4.11-15 Solid Waste Generation—Residential Uses

Project Area	Number of Households	Average Number of Persons Per Household	Total Residential Population	Per Capita Daily Solid Waste Generation (lbs/day)	Total Solid Waste Generation (lbs/day)	Total Solid Waste Generation (tons/day)	Total Solid Waste Generation (tons/year)
West Roseville Specific Plan Area	7,720	2.53	19,532	2.7	52,736.4	26.3	9,624
	710	1.8	1,278	2.7	3,450.6	1.7	630
Bio-solid Sludge Generation			20,810	0.66	13,734.6	6.8	2,506
Total WRSP	***8,430***		***20,810***		***69,921.6***	***34.8***	***12,760***
Remainder Area	7,403	2.53	18,730	2.7	50,571.0	25.3	9,235
Bio-solid Sludge Generation			18,730	0.66	12,361.8	6.18	2,256
Total Remainder Area			***18,730***		***62,932.8***	***31.5***	***11,491***
Total SOI Amendment Area[2]	***15,833***		***39,540***		***132,854.4***	***66.3***	***24,251***

NOTES:

Some numbers may not add up due to rounding.

1. Age-restricted households.
2. Numbers are calculated by adding WRSP and Remainder Areas together.

SOURCE: EIP Associates 2003

Table 4.11-16 Solid Waste Generation—Commercial Uses

Project Area	Square Feet of Commercial Uses	Solid Waste Generation (lbs/100 sf/day)	Total Solid Waste Generation (lbs/day)	Total Solid Waste Generation (tons/day)	Total Solid Waste Generation (tons/year)
West Roseville Specific Plan Area	426,890	1	4,269	2.1	767
Remainder Area	588,933	1	5,889	2.9	1,059
SOI Amendment Area[1]	1,015,823		10,158	5.0	1,826

NOTES:

1. Numbers are calculated by adding WRSP and Remainder Areas together.

SOURCE: EIP Associates 2003

Table 4.11-17 Solid Waste Generation—Industrial/Business Professional Uses

Project Area	Square Feet of Industrial and Business Professional Uses	Solid Waste Generation (lbs/100 sf/day)	Total Solid Waste Generation (lbs/day)	Total Solid Waste Generation (tons/day)	Total Solid Waste Generation (tons/year)
West Roseville Specific Plan Area	1,201,390	1	12,014	6.00	2,190
Remainder Area	646,849	1	6,468	3.23	1,179
SOI Amendment Area[1]	1,848,239		18,482	9.23	3,369

NOTES:

1. Numbers are calculated by adding WRSP and Remainder Areas together.

SOURCE: EIP Associates 2003

Table 4.11-18 Solid Waste Generation—All Uses

Project Area	Total Solid Waste Generation (lbs/day)	Total Solid Waste Generation (tons/day)	Total Solid Waste Generation (tons/year)
West Roseville Specific Plan Area	86,205	42.9	15,717
Remainder Area	75,290	37.6	13,729
SOI Amendment Area	161,494	80.5	29,446

NOTES:

1. Numbers are calculated by adding Tables 4.11-17 and 4.11-19 together.

SOURCE: EIP Associates 2003

Table 4.11-19 City Of Roseville Solid Waste Buildout Of The General Plan

Use	Dwelling Units	Population	Square Footage	Solid Waste Factor	Solid Waste Generated (lbs/day)	Solid Waste Generated (tons/day)	Solid Waste Generated (tons/year)
Residential	50480	127,714	—	2.7 lbs/day/person	344,827.80	172.41	62,931.07
Commercial	—	—	17,334,500	1 lb/100 sf/day	173,345.00	86.67	31,635.46
Industrial	—	—	19,775,100	1 lb/100 sf/day	197,751.00	98.88	36,089.56
Business Professional	—	—	12,340,400	1 lb/100 sf/day	123,404.00	61.70	22,521.23
Total	***50480***	***127,714***	***49,450,000***	**—**	***839,327.80***	***419.66***	***153,177.32***

SOURCE: EIP Associates 2003

The landfill has a remaining capacity of approximately 14 million tons. Currently, the landfill is projected to be able to accept waste until 2036. However, the final closure date could be affected by several factors, including regional growth rates, economic conditions, and the efficiency of waste recovery.[367] Depending on when the SOI Amendment Area is built out, it would generate approximately 588,920 to 883,380 tons of solid waste (assuming 20 to 30 full years of waste generation prior to 2036). This waste would require 4.2 to 6.3 percent of the landfill's remaining capacity.

West Roseville Specific Plan

The WRSP requires a 50 percent reduction in the development's construction waste stream. Developers must submit records of diversion and disposal to the City's Environmental Utilities Department in order to verify compliance with this requirement.

The WRSP designates a site for a recycling collection/drop-off center on Phillip Road. The center would occupy a site of at least 150′ by 150′ and provide easy access for residents. The site will be paved and fenced, with appropriate signage.

[367] Western Placer Waste Management Authority, Capacity Enhancement Project 2002-2003 Draft Environmental Impact Report, January 9, 2003, p. 3-6

A total of approximately 15,717 tons per year of solid waste would be generated by development of the WRSP Area (refer to Table 4.11-18). As discussed above, the City would collect this solid waste and convey it to the WRSL. At buildout of the City's General Plan, the WRSP would increase the amount of waste generated in the City by approximately 9.8 percent.

As stated above, these figures are conservative because the WRSP requires additional source-reduction measures that would divert an unknown amount of waste. The WRSP would increase the amount of waste received by the WRSL over a twenty to thirty year period by approximately 314,340 to 471,510 tons, or 2.2 to 3.4 percent of the remaining capacity. This increase in waste could shorten the lifetime of the landfill by as much as 1.75 years (based on the amount of waste projected to be received in 2003). Because the WRSP would substantially shorten the life of the landfill, the impact is considered significant**.**

Greenwaste bins, which would be required by MM 4.11-8, would reduce the amount of waste by 1,335 tons/yr resulting in a total generation of 14,382 tons per year. As discussed above, MM 4.11-7 would also reduce this impact by expanding landfill capacity; however, the City cannot guarantee landfill expansion beyond current plans. Therefore, this impact is considered **significant and unavoidable**.

Remainder Area

A total of approximately 13,729 tons per year of solid waste would be generated by development of the Remainder Area (refer to Table 4.11-18). This would increase the amount of waste collected by the City at buildout of the General Plan by 7.5 percent. The Remainder Area would generate 274,580 to 411,870 tons of waste over a twenty to thirty year period, which would require approximately 2.0 to 2.9 percent of the remaining capacity of the landfill, and could shorten the life of the landfill by up to approximately 1.4 years. This is considered a significant impact**.**

MM 4.11-9 would reduce the amount of waste at the landfill by requiring that Specific Plans or other development plans in the Remainder Area provide greenwaste bins to residences. This mitigation would reduce landfill disposal by approximately 1,167 tons/year; however, because the total amount of solid waste to be landfilled would remain substantial, MM 4.11-7 would be required to further reduce this impact by expanding landfill capacity. As previously stated, the City cannot guarantee landfill expansion beyond current plans. Therefore, this impact is considered **significant and unavoidable**.

IMPACT 4.11-10:	INCREASED DEMAND FOR SOLID WASTE SERVICES AT THE MRF.	
Applicable Policies and Regulations:	Assembly Bill 939	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	Significant
Mitigation Measures:	MM 4.11-10 (Increase MRF Capacity)	MM 4.11-10 (Increase MRF Capacity)
Significance after Mitigation:	Significant and Unavoidable	Significant and Unavoidable

Solid Waste/MRF

On average, the MRF receives approximately 1,000 tons/per day[368], which is below its capacity of 1,750 tons/day. Current operation capacity limits its daily tonnage to approximately 1,050 tons; however, the WPWMA has approved plans to increase its physical capacity (including sorting lines, flooring, and operational hours) to process its permitted amount to 1,750 tons per day.

Development of the SOI Amendment Area would generate approximately 65 tons per day of solid waste that would require processing at the MRF. The WPWMA projects that by 2008 the MRF will be receiving a peak of 1,707 tons per day. The peak tonnage received at the MRF would continue to increase as growth occurs in the service area and would likely exceed 1,750 by 2009. If the 65 tons per day from the SOI Amendment Area is added to the 2008 peak tonnage at the MRF, the total of 1,772 would exceed both the existing and planned permit amounts by 2008. Over time, the increased waste from the SOI Amendment Area would exacerbate the need for additional MRF processing capacity. Implementation of AB 939 requires the establishment of goals of diverting 50 percent of solid waste from landfills, which helps reduce impacts associated with an increased demand for solid waste at the MRF.

West Roseville Specific Plan

Development of the WRSP would produce approximately 36 tons per day of solid waste, which would be sent to the MRF for sorting. As discussed above, the MRF is projected to approach its peak tonnage capacity around 2008, not including WRSP Area waste. By 2009, the MRF will likely exceed 1,750 tons per day on peak days. The addition of waste from the WRSP Area would accelerate the rate at which the MRF could exceed its existing and planned capacity. This would be a significant impact**.**

[368] Eric Oddo, Western Placer Waste Management Authority, personal communication, January 24, 2003.

MM 4.11-10 would increase the capacity of the MRF by adding additional processing lines. This could increase MRF capacity to approximately 2,400 tons per day, which would be adequate to process waste from the WRSP Area and from other development anticipated in WPWMA's current plans. As a member of the WPWMA, the City can support increased capacity of the MRF; however, the City cannot compel the WPWMA to take such action. Furthermore, in order to undertake increased capacity, the WPWMA would need to conduct a CEQA review and obtain amendments to permits governing the MRF. For these reasons, whether and when the MRF will be expanded cannot be determined at this time. Therefore, this impact is considered **significant and unavoidable**.

Remainder Area

Development of the Remainder Area is expected to produce approximately 29 tons per day of solid waste. As discussed above, when combined with waste from other planned development, the amount of waste to be processed could exceed existing and planned capacity at the MRF. This would be a significant impact**.** MM 4.11-10 would increase the capacity of the MRF. However, the City cannot guarantee that the MRF will be expanded, or when. Therefore, this impact is considered **significant and unavoidable**.

IMPACT 4.11-11	**CONSTRUCTION DEBRIS DEMAND FOR SOLID WASTE SERVICES.**	
Applicable Policies and Regulations:	Assembly Bill 939	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	Significant
Mitigation Measures:	MM 4.11-7 (Expand the landfill), MM 4.11-10 (Increase MRF capacity), and MM 4.11-11 (Recycle Construction Debris)	MM 4.11-7 (Expand the landfill), MM 4.11-10 (Increase MRF capacity), and MM 4.11-12 (Construction debris policies)
Significance after Mitigation:	Significant and Unavoidable	Significant and Unavoidable

Construction Debris

West Roseville Specific Plan

As discussed above, development of the WRSP Area would include removal of debris from the site and the construction of new buildings, which would generate construction debris that requires disposal. Construction and demolition activities can generate significant amounts of waste. As discussed in Impacts 4.11-8 and 4.11-9, solid waste generated by the WRSP would shorten the life of the landfill and exceed the processing capacity of the MRF. Construction debris would exacerbate these impacts. This is considered a significant impact**.**

Consistent with the requirements of AB 939, MM 4.11-11 requires that 50 percent of the construction debris from the WRSP be diverted from the landfill. Developers must submit all diversion and disposal records to the City's Environmental Utilities Department to demonstrate that the 50 percent diversion requirement has been satisfied. MM 4.11-7 and MM 4.11-10 would increase the capacity of the landfill and MRF. Together, these measures would reduce impacts on WPWMA facilities. However, as discussed above, the City cannot guarantee implementation of MM 4.11-7 and MM 4.11-10. Therefore, this impact is considered **significant and unavoidable**.

Remainder Area

As discussed above, construction and demolition activities generate construction debris in addition to the waste that would be generated on an annual basis once development is occupied. As discussed in Impact 4.11-8 and Impact 4.11-9, solid waste generated on an annual basis in the Remainder Area would shorten the life of the landfill and exceed the processing capacity of the MFR. Construction debris would exacerbate these impacts. This is considered a significant impact**.** MM 4.11-12 would reduce the amount of construction debris that requires processing at the MRF and/or landfilling by including construction debris recycling policies or conditions for development in the Remainder Area. Consistent with the requirements of AB 939, MM 4.11-7 and MM 4.11-10 would increase the capacity of the landfill and MRF. Together, these measures would reduce impacts on WPWMA facilities. However, as discussed above, the City cannot guarantee implementation of MM 4.11-7 and MM 4.11-10. Therefore, this impact is considered **significant and unavoidable**.

Mitigation Measures

MM 4.11-7 *Expand the WRSL landfill (Impact 4.11-9 — WRSP and Remainder Area)*

Development in the WRSP Area and Remainder Area shall pay collection fees to the City of Roseville, a portion of which shall be used to service bonds necessary to fund landfill expansion on an adjacent property that is suitable for such a use. As a member of the WPWMA, the City of Roseville can support expansion of the landfill, as needed; however, the City cannot compel the WPWMA to expand the landfill.

Expansion of the landfill would create environmental effects. Because plans for expansion of capacity beyond 2036 have not been developed, specific impacts cannot be identified at this time. Nonetheless, because of the expansion site's proximity to the existing landfill, it can be anticipated that impacts of an expansion would be similar to those attributed to the currently planned expansion. First, there would be construction-related impacts, such as air pollutant emissions and noise from construction equipment and erosion. In addition, agricultural land and biological resources, potentially including

wetlands and Swainson's hawk foraging habitat, could be lost. Once constructed, the landfill could create additional odors, traffic, operational air emissions (due to increased vehicle trips to the landfill), increased emissions of landfill gas and combustion flare emissions, litter, night lighting and changes in visual character, degradation of surface and groundwater quality, and geologic hazards. These impacts would be similar to those of the existing landfill, and, where significant, could be reduced by implementation of mitigation measures already required of the landfill and the permitting process. However, there could be impacts, such as the loss of biological and agricultural resources, that would remain significant and unavoidable even after mitigation.

MM 4.11-8 *Greenwaste receptacles (Impact 4.11-9 — WRSP)*

All residences shall be provided with one 90-gallon greenwaste receptacle.

MM 4.11-9 *Greenwaste policies (Impact 4.11-9 — Remainder)*

Specific Plans and/or other development proposals for the Remainder Area shall require that all residences be provided with greenwaste containers.

MM 4.11-10 *Increase MRF capacity (Impact 4.11-10 — WRSP and Remainder Area)*

Operations at the MRF could be expanded by increasing the number of processing lines. Like expansion of the landfill, increasing MRF capacity would be under the jurisdiction of the WPWMA. The WPWMA can and should increase the capacity of the MRF and the City should advocate that it do so.

Expansion of the MRF capacity would have environmental effects, such as construction noise, increases in vehicle traffic and emissions, and a shortened lifespan for the landfill (because more waste would be disposed of on a daily basis). Specific impacts would need to be identified and evaluated by the WPWMA if it decided to further increase the capacity of the MRF.

MM 4.11-11 *Divert construction debris (Impact 4.11-11 — WRSP)*

The applicant shall ensure a 50 percent reduction in the development's construction waste stream. In Developer's contracts with construction contractors and their subcontractors, the Developer shall require that contractors reduce construction waste stream by 50 percent. The Developer shall further require that contractors and subcontractors submit records of diversion and disposal to the City's Environmental Utilities Department in order to verify compliance with this requirement.

MM 4.11-12 Construction debris policies (Impact 4.11-11 — Remainder)

Specific Plans and/or other development proposals for the Remainder Area shall provide for diversion and recycling of construction debris.

ELECTRICITY AND NATURAL GAS

4.11.14 Environmental Setting

Electricity

Supply

The City purchases wholesale electrical power from both the Western Area Power Administration (WAPA), which is generated by the federal government's Central Valley Project, and from other members of the Northern California Power Agency (NCPA), a joint powers agency, and distributes it through transmission and distribution lines. The City may purchase power from other members and entities.

There are two potential public utility providers that could provide electricity to the SOI Amendment Area: Pacific Gas and Electric Company (PG&E) and the City of Roseville Electric Department (Roseville Electric). Roseville Electric provides electrical service to customers within the City limits, and is anticipated to be the service provider for the entire SOI Amendment Area.

In 2000, the City's annual electrical demand was approximately 243 mega-watts (MW).[369] By the year 2010, the City's electrical demand is expected to rise to 296 MW (without the WRSP or SOI Amendment).[370] The peak demand for electricity for the City in July 2002 was approximately 274 MW. This is the highest electricity demand in the City.[371] That demand was filled by:[372]

- 20 MW from steam-injected combustion turbines
- 16 MW from simple-cycle combustion turbines
- 44 MW from Calaveras hydroelectric project
- 69 MW from Western Area Power Administration
- 20 MW from Seattle City Light

[369] Roseville Electric website, Roseville Electric, 2000 Annual Report Quantum Leaps—The Electric System, www.rosevilleelectric.org, accessed August 24, 2002
[370] Phillip McAvoy, City of Roseville, written communication, March 31, 2003
[371] Phillip McAvoy, Energy Market Analyst, Roseville Electric, personal communication, August 19, 2002
[372] Mike Wardell, Risk Manager/Trader, Roseville Electric, personal communication, August 19, 2002

- 11 MW from Geothermal Nos. 1 and 2
- 94 MW (remainder) from market purchases

The City can remove 30 percent of its supply if the market price for energy drops to protect it against financial hardship.[373] Revenue sources for the City's utility system include electric rates and direct installation fees. These fees are collected as a condition of approval of development projects.

The City currently encourages energy conservation by providing information regarding rebate programs for energy efficiency investments and educational programs for residents and businesses. In addition, Title 24 of the California Code of Regulations requires the use of energy-efficient appliances in all new development.

Transmission

There are currently 21-kilovolt (kV) overhead lines along Fiddyment Road between Blue Oaks Boulevard and Baseline Road, and an extension of these lines to the east along the north side of Blue Oaks Boulevard toward Woodcreek Oaks Boulevard.374 There is also a 60-kV overhead line along Baseline Road. A 60-kV overhead line may be constructed along Fiddyment Road north of Blue Oaks Boulevard.375 Currently, there is a substation at the intersection of Baseline Road and Fiddyment Road and a 12-kV line that connects PGWWTP.376 There is a 12-kV network serving the Del Webb Specific Plan area, and another 12-kV network serving the North Roseville Specific Plan Area (Phase 2).377 A 230-kV electrical receiving station is located in the Remainder Area on the east side of Fiddyment Road, approximately 375 feet south of Pleasant Grove Boulevard. The northern boundary of the substation site is adjacent to an existing 425-foot wide transmission corridor that consists of above-ground 230-kV transmission lines that run east/west through the Remainder Area approximately 375 feet south of Pleasant Grove Boulevard. Buffer zones are provided around the facility. Figure 4.11-7 (West Roseville Specific Plan Electric Substation and 60 kV Power Line Easements) illustrates the location of proposed 60 kV electrical line as well as alternative alignments for the 60 kV line.

Natural Gas

PG&E, a privately owned and operated utility company, provides natural gas to the City of Roseville. PG&E currently has a 6-inch high-pressure plastic gas main located on the east side of Fiddyment Road.

[373] Mike Wardell, Risk Manager/Trader, Roseville Electric, personal communication, August 19, 2002
[374] Kam Hung, Roseville Electric, personal communication, August 19, 2002
[375] City of Roseville, *Draft West Roseville Specific Plan*, April 2002, p. 6-13
[376] Kam Hung, Roseville Electric, personal communication, August 19, 2002
[377] Kam Hung, Roseville Electric, personal communication, August 19, 2002

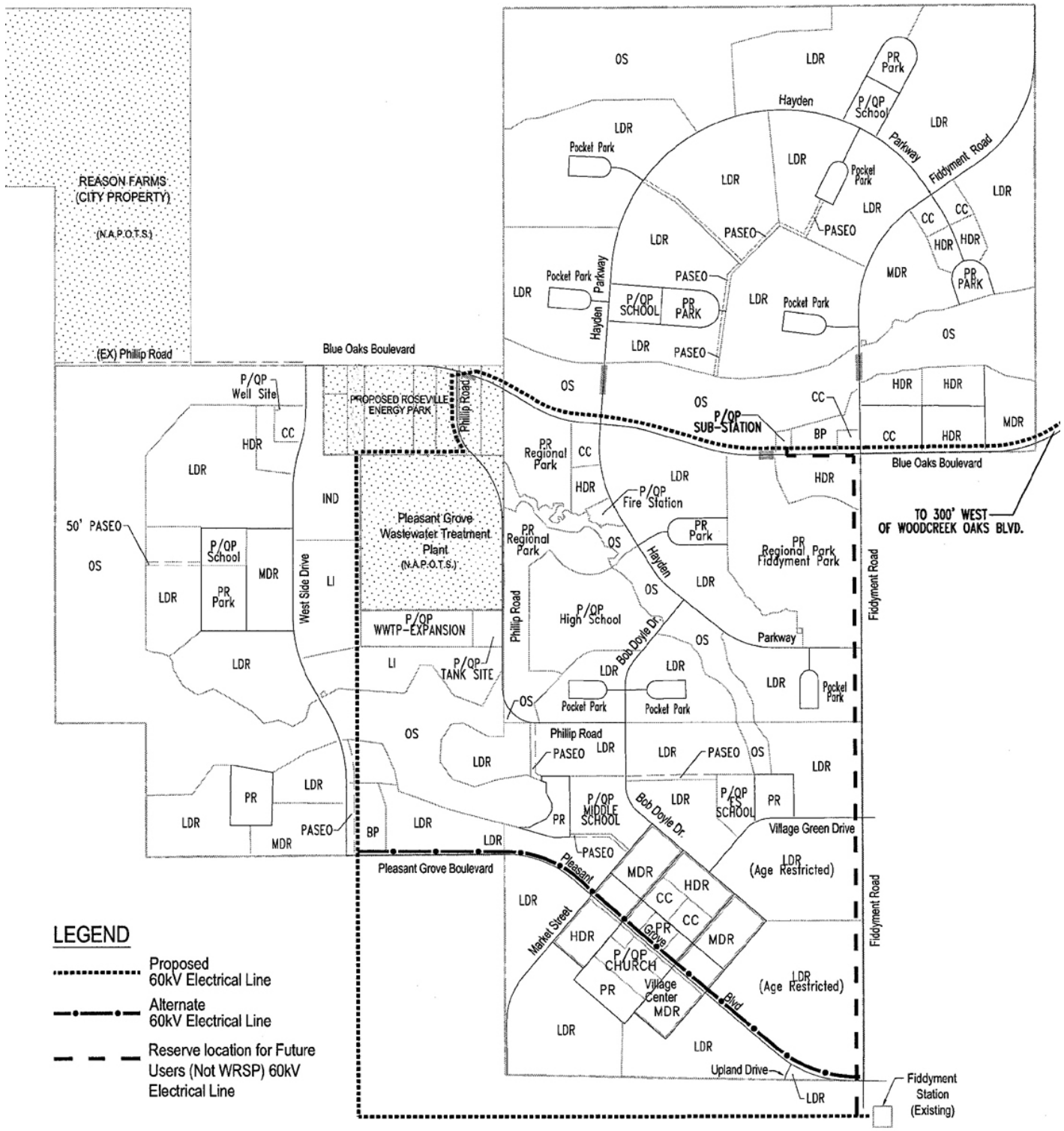

FIGURE **4.11-7**

West Roseville Specific Plan Electric Substation and 60kV Power Line Easements

Not to Scale

10659-00

Source: West Roseville Specific Plan 2003

City of Roseville

EIP ASSOCIATES

There are also 6-inch high-pressure plastic gas lines located along the north side of Baseline Road and the south side of Blue Oaks Boulevard, both of which have stubs just west of Fiddyment Road in the SOI Amendment Area. According to PG&E, the average amount of natural gas consumed by a residential unit in the City of Roseville is approximately 150 cubic feet per day (cfd) per unit.[378]

The City's ongoing development review process includes a review and comment opportunity for privately owned utility companies, including PG&E, to allow for informed input from each utility company on all development proposals. The input facilitates a detailed review of all projects by service purveyors to assess the potential demands for utility services on a project-by-project basis. The ability of PG&E to provide its services concurrently with each project is evaluated during the development review process. Funding for gas service is collected through company billings and developer fees put toward the extension of infrastructure to new development.

4.11.15 Regulatory Setting

Federal

The Federal Energy Regulatory Commission regulates the transmission and sale of electricity in interstate commerce, licenses hydroelectric projects, and oversees related environmental matters.

State

In 1996, State legislation was enacted which restructured California's electricity market. In accordance with Assembly Bill (AB) 1890, the generation of electricity is open to competition, but the transmission and distribution remain a regulated monopoly. The utilities are required to purchase all their electricity needs from the wholesale market. The goal of the legislation was to open the state's energy market to competition, with the expectation that competition would drive down the cost of electricity. The legislation gave the customers of investor-owned utilities, such as PG&E, the ability to choose who provides their electric energy, much the same way they can choose long distance telephone companies.

The State experienced a number of problems at the same time the electricity market was restructured. Many power plants were sold to privately owned, out-of-state energy companies. The demand for electricity grew faster than expected during the 1990s due to rapid growth in the State's economy, the spread of computer technology, the lack of new power plants constructed since the mid 1980s, the lack of widespread conservation due to relatively low electricity costs to consumers, and the State's population

[378] Ed Wong, Senior Gas Distribution Engineer, PG&E, written communication, September 20, 2002

growth (a 13 percent increase between 1990 and 2000). The State produces only part of its electricity needs: For example, in 1999, California produced about 82 percent of the electricity it used.[379] The rest must be bought from other western states. At the same time, the west, in particular the northwest, experienced dramatic growth, which reduced the amount of energy available from that area for use in California, which led to rolling blackouts and exorbitant electricity costs.

Because most power plants in California are powered by natural gas, the cost of making electricity increased during this same time due to dramatic increases in the price of natural gas during 2000. In January 2001, some utilities, including PG&E, began to experience financial problems.

Title 20 and Title 24, California Code of Regulations (CCR)

New buildings constructed in California must comply with the standards contained in Title 20, Energy Building Regulations, and Title 24, Energy Conservation Standards, of the CCR. Title 20 contains the regulations relating to power plant siting certification. Title 24 (AB 970) contains the energy efficiency standards for residential and nonresidential buildings based on a state mandate to reduce California's energy demand.

Warren-Alquist Energy Resources Conservation and Development Act

The State Energy Commission regulates energy resources by encouraging and coordinating research into energy supply and demand problems and to reduce the rate of growth of energy consumption (Warren-Alquist Energy Resources Conservation and Development Act Government Code section 25000 *et seq*.).

Pacific Gas and Electric

PG&E's Gas Rule 15 provides guidelines for the extension of gas distribution mains necessary to furnish permanent services to customers. It outlines responsibilities for installation and extension allowances, as well as financial contributions by project applicants. Gas Rule 16 applies to PG&E's service facilities that extend from PG&E's distribution main facilities to service delivery points, and the service-related equipment required on the project site to receive gas service. It discusses metering facilities, distribution main extensions, service connections, and responsibilities for new service extensions.

[379] California Energy Commission website, http://www.energy.ca.gov/html/energysources.html accessed September 10, 2002

Local

City of Roseville

The City of Roseville General Plan includes goals and policies for electricity and gas supply. Refer to Appendix C for a complete list of all applicable City goals and policies.

4.11.16 Impacts and Mitigation Measures

Methods of Analysis

The assessment of electricity and natural gas service is a qualitative review of services available to the project and a determination of whether they are adequate to serve its needs. Standard generation rates were used for the projected electrical and natural gas demand for the SOI Amendment Area.

The peak electrical demand for the project is calculated by applying the following electrical demand rates to the proposed land uses.[380] The additional electrical demand is compared to existing and proposed entitlements for electricity:

- Single-Family Residential: 0.0055 MW per year per dwelling unit
- Multi-Family Residential 0.0035 MW per year per dwelling unit
- Commercial: 0.116 MW per year per acre
- Business-Professional: 0.298 MW per acre
- Schools: 0.025 MW per acre
- Industrial 0.056 MW per year per acre

The average natural gas demand for the project is calculated by applying the following natural gas demand rates to the proposed land uses:

- Residential: 1,440 Therms per dwelling unit
- Commercial/Business-Professional: 63,600 Therms per acre
- Industrial 10,200 Therms per acre

[380] Philip McAvoy, Energy Market Analyst, Roseville Electric, written communication, April 14, 2003

Standards of Significance

For the purposes of this EIR, a significant impact would occur if development proposed in the SOI Amendment Area would do the following:

- Generate a demand for electricity or natural gas that exceeds the existing or planned natural gas supply or capacity of transmission facilities

IMPACT 4.11-12:	INCREASED DEMAND FOR ELECTRICITY.	
Applicable Policies and Regulations:	CCR Title 20 CCR Title 24 (AB 970) Government Code Section 25000 *et seq.*	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Significant
Mitigation Measures:	None Required	MM 4.11-13 (Electric facilities policies)
Significance after Mitigation:	Less Than Significant	Less Than Significant

Electricity

West Roseville Specific Plan

The development and implementation of the WRSP Area would add land uses that would increase the demand for electrical services. As shown in Table 4.11-20, the increased demand for electrical service is estimated to average 60.67 MW per year within the WRSP Area, an increase of 20 percent over average existing City levels. Roseville Electric has indicated that there are no constraints to obtaining a reliable energy source to serve development in the WRSP Area.[381]

As shown in Figure 4.11-7, 21-kV lines currently exist along Fiddyment Road, with a 12-kV line connecting the PGWWTP. The existing Fiddyment Road substation is located at the southeast quadrant of Fiddyment Road and Pleasant Grove Boulevard. Extension of overhead power lines west along Pleasant Grove Boulevard, to the WAPA corridor, north to Blue Oaks Boulevard, and east through the project would provide a network to serve the WRSP Area. However, in order to provide enough electricity to the area, a new 60-kV substation would be required to serve the WRSP Area. A 1.5-acre site to the northwest of the intersection of Fiddyment Road and Blue Oaks Boulevard has been designated in the WRSP for this substation. This substation would be located on a 1.5-acre site with a 12-foot high fence

[381] City of Roseville, Executive Summary of the Feasibility Analysis Report for the Proposed West Roseville Specific Plan and City/County MOU Area, February 2002, p. 20

surrounded with landscape buffer. Electrical structures associated with the substation would range in height from 10 to 40 feet. Approximately two 60-foot tall, 60-kV tubular steel poles would also be installed in order to connect the substation to the proposed power lines along Blue Oaks Boulevard. A paved driveway would be installed within the substation for internal circulation of vehicles. The substation would be fed from new 60-kV overhead transmission lines that loop through the project site. Starting at the existing Fiddyment Road substation, the 60-kV lines would extend west along Pleasant Grove Boulevard, to the WAPA corridor, north to the PGWWTP, then east along the north side of Blue Oaks Boulevard to the planned substation at Fiddyment Road and Blue Oaks Boulevard. Electric power would leave the substation via distribution lines at 12-kV. Transformer bank(s), breakers, switches, and other electric equipment will be used to transform the voltage.

Table 4.11-20 Annual Electrical Demand West Roseville Specific Plan and Remainder Areas

Land Use Category	Number of Units/Acres	Electrical Demand Factor per Year[1]	Estimated Electrical Demand (MW) per Year
West Roseville Specific Plan Area			
Single-Family Residential	5,552 units	0.0055 MW per unit	30.54
Multi-Family Residential	2,878 units	0.0035 MW per unit	10.07
Commercial	47 acres	0.116 MW per acre	5.45
Industrial	108.5 acres	0.056 MW per acre	6.08
Business Professional	19.6 acres	0.298 MW per acre	5.84
Schools	107.6 acres	0.025 MW per acre	2.69
Total WRSP Demand			***60.67***
Remainder Area			
Single-Family Residential	5,296 units	0.0055 MW per unit	29.13
Multi-Family Residential	2,107 units	0.0035 MW per unit	7.38
Commercial	67.6 acres	0.116 MW per acre	7.84
Business Professional	49.5 acres	0.298 MW per acre	14.75
Total Remainder Area Demand			***59.10***
Total Demand in SOI Amendment Area			***119.76***

NOTES:

1. Demand factor units were originally in Mega Volt Amps (MVA), which are similar to megawatts (MW). For this analysis, MV was used.

SOURCE: Philip McAvoy, Energy Market Analyst, Roseville Electric, written communication, April 14, 2003; EIP Associates 2003

It is important to note that project impacts related to changing power generation and distribution in the western U.S. cannot be ascertained. It should also be noted that the City's sources of energy are diverse and widespread. The exact source that would supply the WRSP Area is not known at this time. Currently, the City obtains power from diverse sources, including combustion (natural gas), hydroelectric facilities, and geothermal projects. It is beyond the purview of this EIR to speculate about the impacts of increasing demand for any particular source of energy (e.g., hydroelectric, coal) or changes in the types of energy sources available to the City. Construction of new or expanded electrical generation or distribution facilities could affect the environment, particularly during construction when

impacts related to soil erosion, storm runoff, increased noise, dust, and vehicle emissions could result. In addition, sensitive habitats, visual resources, and cultural resources could be affected.

Although both PG&E and Roseville Electric have indicated that they can serve the WRSP Area, construction of a new substation and transmission lines must be completed to serve the WRSP Area. Physical impacts of that construction are evaluated in this EIR. Implementation of Title 20 and 24 of the CCR would reduce impacts associated with an increased demand for electricity by implementing energy efficient standards for residential and non-residential buildings. In addition, implementation of section 25000 *et seq*. would encourage, develop and coordinate research and development into energy supply and demand problems to reduce the rate of growth of energy consumption. Furthermore, since there is adequate electrical supply, and the substation and transmission lines will be constructed as part of the WRSP, the impact is considered **less than significant**.

Remainder Area

As shown in Table 4.11-20, the Remainder Area would require 59.10 MW of electricity annually. As discussed above, both PG&E and Roseville Electric have indicated they could serve the site and would provide the necessary transmission facilities. It is anticipated that an additional 60-kV substation would be required to serve the Remainder Area.[382] Without the new substation, future development within the Remainder Area could not be served. This would be a significant impact**.** MM 4.11-13 requires that a substation site be designated within the Remainder Area when a development proposal is submitted. Roseville Electric would monitor the Remainder Area's need for electricity, and the new substation or new transmission lines would be built when needed. Compliance with Title 20 and 24 of the CCR, as well as section 25000 et seq. would be required. Roseville Electric would be responsible for their construction. Because this measure would ensure that distribution facilities would be adequate, the impact would be **less than significant**.

IMPACT 4.11-13:	INCREASED DEMAND FOR NATURAL GAS.	
Applicable Policies and Regulations:	PG&E Gas Rule 15 and 16	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None Required	None Required
Significance after Mitigation:	Less Than Significant	Less Than Significant

[382] Kam Hung, Roseville Electric, personal communication, August 19, 2002

Natural Gas

West Roseville Specific Plan

The development of the WRSP Area would increase the demand for natural gas. As shown in Table 4.11-21, the increased demand for natural gas is estimated to average approximately 17,481,660 Therms per year. As shown in Figure 4.11-8 (PG&E Natural Gas Line), a 6-inch gas line is located near the eastern border of the WRSP Area.

Table 4.11-21 Annual Natural Gas Demand West Roseville Specific Plan and Remainder Areas

Land Use Category	Number of Units/Acres	Natural Gas Demand Factor per Year	Estimated Natural Gas Demand (Therms) per Year
West Roseville Specific Plan Area			
Residential	8,430 units	1,440 Therms per dwelling unit	12,139,200
Commercial/ Business-Professional	69.8 acres	63,600 Therms per acre	4,439,280
Industrial	115 acres	10,200 Therms per acre	1,173,000
Total WRSP Demand			*17,751,480*
Remainder Area			
Residential	7,403 units	1,440 Therms per dwelling unit	10,660,320
Commercial/Business Professional	117.1 acres	63,600 Therms per acre	7,447,560
Total Remainder Area Demand			*18,107,880*
Total Demand in SOI Amendment Area			***35,859,360***

SOURCE: North Roseville Specific Plan DEIR 1997; EIP Associates 2003

There are several possibilities for additional natural gas line connections. It may be possible to route a feeder of the transmission line (Line 123) east of the WRSP Area that provides the feed (a regulation station on Blue Oaks) for the existing gas system on Fiddyment Road and throughout the Del Webb Sun City Development.[383]

More likely, the utility would build a new 500-psi distribution feeder main down Baseline Road from Line 123 to a new regulator station near Fiddyment Road and Baseline Road, then a 60 psi 6- or 8-inch main up Fiddyment Road as an additional feed for the WRSP Area.[384] Line extensions off major roadways and subsequent line extensions in various neighborhoods would be made per Gas Rule 15. Service to the individual dwelling units and the commercial parcels would be made per Gas Rule 16.[385]

In the future, a new natural gas regulator station would be required to service the entire WRSP Area. An extension of the 6-inch 60-psi gas backbone feeder would occur along the industrial zoned sections in the

[383] G.A. Krause & Associates, Memo: Dry Utility Overview and Opportunity Assessment, February 11, 2002, p. 8
[384] G.A. Krause & Associates, Memo: Dry Utility Overview and Opportunity Assessment, February 11, 2002, p. 8
[385] G.A. Krause & Associates, Memo: Dry Utility Overview and Opportunity Assessment, February 11, 2002, p. 8

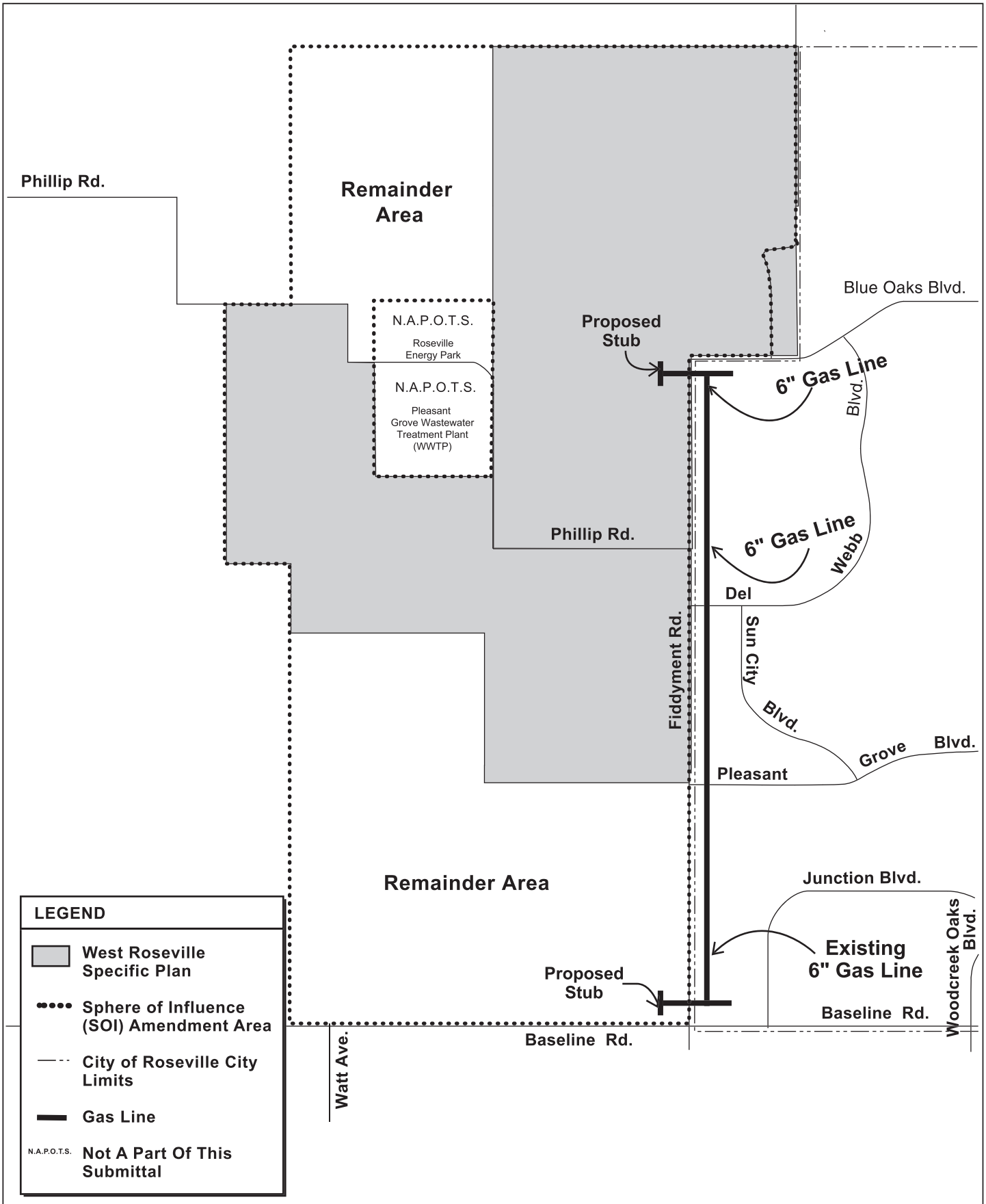

FIGURE **4.11-8**

PG & E Natural Gas Line

Not to Scale

10659-00

Source: Wade Associates, 2003; EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

western portion of the project site.[386] When usage approaches existing capacity, it would be necessary to bring in another feed from a second source.[387] According to PG&E, there is adequate natural gas supply and the WRSP provides for needed transmission lines. Therefore, this impact is considered **less than significant**.

Remainder Area

As shown in Table 4.11-21, the Remainder Area would require 18,107,880 therms of natural gas per year. As discussed above, PG&E has indicated that it can serve the site. It is anticipated that additional natural gas lines would be required to serve the Remainder Area. There are currently 6-inch stub lines just west of Fiddyment Road at Blue Oaks Boulevard and Baseline Road. The southern portion of the Remainder Area could tap into the line at Baseline Road and Fiddyment Road. Lines to serve the Remainder Area could tap into these stub lines. With the excess natural gas supply that PG&E currently has and connections to these existing lines, PG&E would be able to accommodate development of the Remainder Area. Therefore, this impact is considered **less than significant**.

Mitigation Measures

MM 4.11-13: Electric facilities policies (Impact 4.11-12 — Remainder)

> Specific Plans and/or other development proposals for the Remainder Area shall identify a substation or substations and appropriately sized transmission lines, as determined by the City. Roseville Electric shall monitor electrical use in the Sphere of Influence area, and construct these facilities as needed. At the time specific development is proposed within the Remainder Area, additional environmental review would be required which analyzes electrical facilities. Any proposal for development in the Remainder Area shall demonstrate that these facilities will be available to serve the proposed development prior to occupation.

CABLE TELEVISION AND TELEPHONE SERVICES

4.11.17 Environmental Setting

Cable television service is provided within the City of Roseville by Comcast Cablevision of Sacramento. Telephone service is provided by the Roseville Telephone Company (Surewest), SBC/Pacific Bell, or other service providers. The cable and telephone companies are privately owned and operated. The existing

[386] G.A. Krause & Associates, Memo: Dry Utility Overview and Opportunity Assessment, February 11, 2002, p. 8
[387] G.A. Krause & Associates, Memo: Dry Utility Overview and Opportunity Assessment, February 11, 2002, p. 8

development review process for project proposals includes a review and comment opportunity for privately owned utility companies, including Comcast Cablevision of Sacramento and the Roseville Telephone Company. This review and comment opportunity allows service purveyors to assess potential future demands for utility services and the existing access to potential development sites on a project-by-project basis.

Funding for cable and telephone service is collected through company billings and developer fees applied to the extension of infrastructure to new development. Normally, the purchase of materials and labor costs associated with infrastructure extension are paid by the utility company. However, trenching costs attributable to Comcast Cablevision of Sacramento are the responsibility of the developer. Interior wiring material is supplied to the developer by the utility free of charge. Installation of interior wiring is not provided.

According to the Roseville Telephone Company, the purchase of materials, labor, and trenching costs associated with infrastructure extensions are paid by the utility company. Trenching costs would most likely be paid by the developer initially but would be reimbursed by Roseville Telephone Company. The utility provides one-inch conduit to each dwelling unit. Interior wiring is the responsibility of the developer or home-owner. Roseville Telephone Company can provide interior wiring service; however, their services would need to be separately contracted and are not included when providing service to new development.

4.11.18 Regulatory Setting

Federal and State

There are no specific federal or state regulations pertaining to the provision of cable television or telephone services.

Local

City of Roseville

The City of Roseville General Plan includes goals and policies for private utilities. Refer to Appendix C for a complete list of all applicable City goals and policies.

4.11.19 Impacts and Mitigation Measures

Methods of Analysis

The demand for cable television and telephone services needed to serve the increased Roseville resident population resulting from development of the WRSP Area and Remainder Area is anticipated as the development of the SOI Amendment Area occurs. For this analysis, each dwelling unit is anticipated to require one cable television and one telephone connection. One cable television and telephone connection is anticipated per each gross acre of nonresidential use, excluding parks and open space. While estimates of the additional new cable television and telephone services are calculated, the impact on the service providers is qualitatively discussed.

Standards of Significance

For the purposes of this EIR, a significant impact would occur if development proposed in the SOI Amendment Area would

- Generate a demand for cable television and telephone service that requires extension of these facilities in a manner that could adversely affect the environment.

Impacts

IMPACT 4.11-14:	INCREASED DEMAND ON CABLE TELEVISION AND TELEPHONE SERVICES.	
Applicable Policies and Regulations:	None identified	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None Required	None Required
Significance after Mitigation:	Less Than Significant	Less Than Significant

West Roseville Specific Plan/Remainder Plan

The WRSP Area is within the service areas of Roseville Telephone Company (Surewest Communications) and SBC/Pacific Bell. The exchange boundary between Roseville Telephone and SBC/Pacific Bell runs directly through the WRSP Area in a north/south direction from below Pleasant Grove Boulevard west of the Village Center north to Pleasant Grove Creek and then east to the Plan Area boundary. One or more private cable television companies will provide service to the WRSP Area.

Distribution lines to individual parcels will be extended from existing infrastructure adjacent to the WRSP Area and will occur as development takes place. The appropriate providers will review delivery of telephone and cable television services to individual projects in the WRSP at the time of proposal.

The development of the SOI Amendment Area, including the WRSP Area and Remainder Area would create an increased demand for cable television and telephone services. Assuming that each dwelling unit would require one cable television and one telephone connection, the SOI Amendment Area would require at a minimum 15,833 new residential connections. The cable television needs of the SOI Amendment Area would be served by Comcast Cable of Sacramento and Roseville Telephone Company or other SBC Service providers would service the area's phone needs. Similarly, assuming that each acre of all nonresidential land, excluding road right-of-ways, parks and open space, would require a cable television and telephone connection, the SOI Amendment Area would require another 468 nonresidential connections for a total of approximately 16,300 connections.

As stated above, these additional services would be provided by private utility companies and would be funded through developer fees and future customer billing. In addition, the utility companies would be given the opportunity to review and comment on any proposed development requiring new service. All phone and cable lines would be installed in roadway rights-of-way, so there would not be any environmental impacts beyond the construction impacts identified in this EIR. Therefore, the demand for cable television and telephone services is considered a **less-than-significant** impact**.**

Mitigation Measures

None required.

4.12 HYDROLOGY, WATER QUALITY, AND GROUNDWATER

4.12.1 Introduction

This section addresses potential hydrologic effects related to drainage, groundwater resources, and water quality in the SOI Amendment Area. Site characteristics such as regional and local drainage and flooding conditions and water quality are described based on site-specific information developed for the WRSP Area and Remainder Area and published technical information, as indicated in footnoted references. The primary sources of information referenced for this section regarding drainage and flooding conditions are listed below:

- *Fiddyment-Westpark Property Master Plan Drainage Analysis*, Wood-Rodgers Inc. (June 2003)
- *Groundwater Impact Analysis*, MWH (June 2003)
- *City of Roseville Detention Basin Project FEIR* January 2003 (SCH No. 2002072084)

These documents are available for review at the City of Roseville Permit Center, 311 Vernon Street, Roseville, California.

Comments raised in response to the Notice of Preparation (see Appendices A and B) identified the following topics of interest and/or concern: increase in stormwater peak flows and volume and potential for downstream flooding, particularly for higher frequency small storm events; development in the floodplain; and urban contaminants in stormwater runoff, including sedimentation effects. These issues are addressed in this section.

Issues related to the availability of water supply and potential environmental effects related to the use of existing and planned supplies are addressed in Section 4.11.2,Public Utilities, Water.

As discussed in Chapter 1, Introduction, this EIR evaluates the impacts of the project, which would include a Sphere of Influence Amendment and annexation of the WRSP Area to the City, at a project-specific level. Because a sphere amendment is the only action proposed for the Remainder Area (that portion of the SOI Amendment Area outside of the WRSP Area), a program-level analysis is provided for the full SOI Amendment. In order to conduct the analysis, development assumptions are made for the Remainder Area (see Chapter 2, Project Description, for details). Figure 1-1 (SOI Amendment Area) in Chapter 1, Introduction, identifies the boundaries of the SOI Amendment Area, WRSP Area, and Remainder Area.

As discussed in Chapter 4 of this EIR, Environmental Analysis, minor changes have been made to the proposed land uses for the WRSP since publication of the NOP. Overall the total amount of open space increased by 34.9 acres, primarily along the western boundary of the WRSP Area. However, the total amount of area to be disturbed is very similar to the prior land use plan. The open space corridors along Pleasant Grove Creek and Curry Creek have not changed. For these reasons, impacts related to hydrology and water quality would be reduced relative to the project described in the NOP. These differences do not affect the conclusions of this EIR, which analyzes hydrology and water quality based on the project described in Chapter 2.

4.12.2 Environmental Setting

Regional Surface Water Hydrology

The SOI Amendment Area is situated within the Pleasant Grove Creek and Curry Creek watersheds in the Sacramento Valley. The Pleasant Grove Creek watershed originates in the lower foothills of Placer County northeast of the SOI Amendment Area. The Pleasant Grove Creek watershed totals approximately 45 square miles, ranging in elevation from approximately 300 feet near Loomis to approximately 45 feet in Sutter County.[388] Approximately 10,000 acres of watershed discharge upstream of the SOI Amendment Area.[389] Pleasant Grove Creek flows west into Pleasant Grove Creek Canal, approximately seven miles downstream of the Roseville City limits.[390] The headwaters of Curry Creek are located about three-quarters of a mile east of Fiddyment Road. The Curry Creek watershed totals approximately 16.5 square miles and slopes from east to west. The elevation in the upper watershed is approximately 120 feet, decreasing to approximately 45 feet inSutter County.[391] Figure 4.12-1 illustrates regional hydrology.

The two watersheds drain to the Cross Canal watershed, which encompasses approximately 292 acres in Placer and Sutter counties. Pleasant Grove Creek flows into the Cross Canal in Sutter County, and through an extensive levee network into the Sacramento River just south of its confluence with the Feather River, approximately 14 miles west of Roseville.[392] In addition to Pleasant Grove Creek and Curry Creek, other large creeks in the Cross Canal watershed include Coon Creek, Auburn Ravine, and Markham Ravine.

[388] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 7.
[389] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 39.
[390] Rosewood Environmental Engineering, Phase I Environmental Site Assessment, Fiddyment Property, Roseville, California, August 1999, page 11.
[391] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 7.
[392] Rosewood Environmental Engineering, Phase I Environmental Site Assessment, Fiddyment Property, Roseville, California, August 1999, page 11.

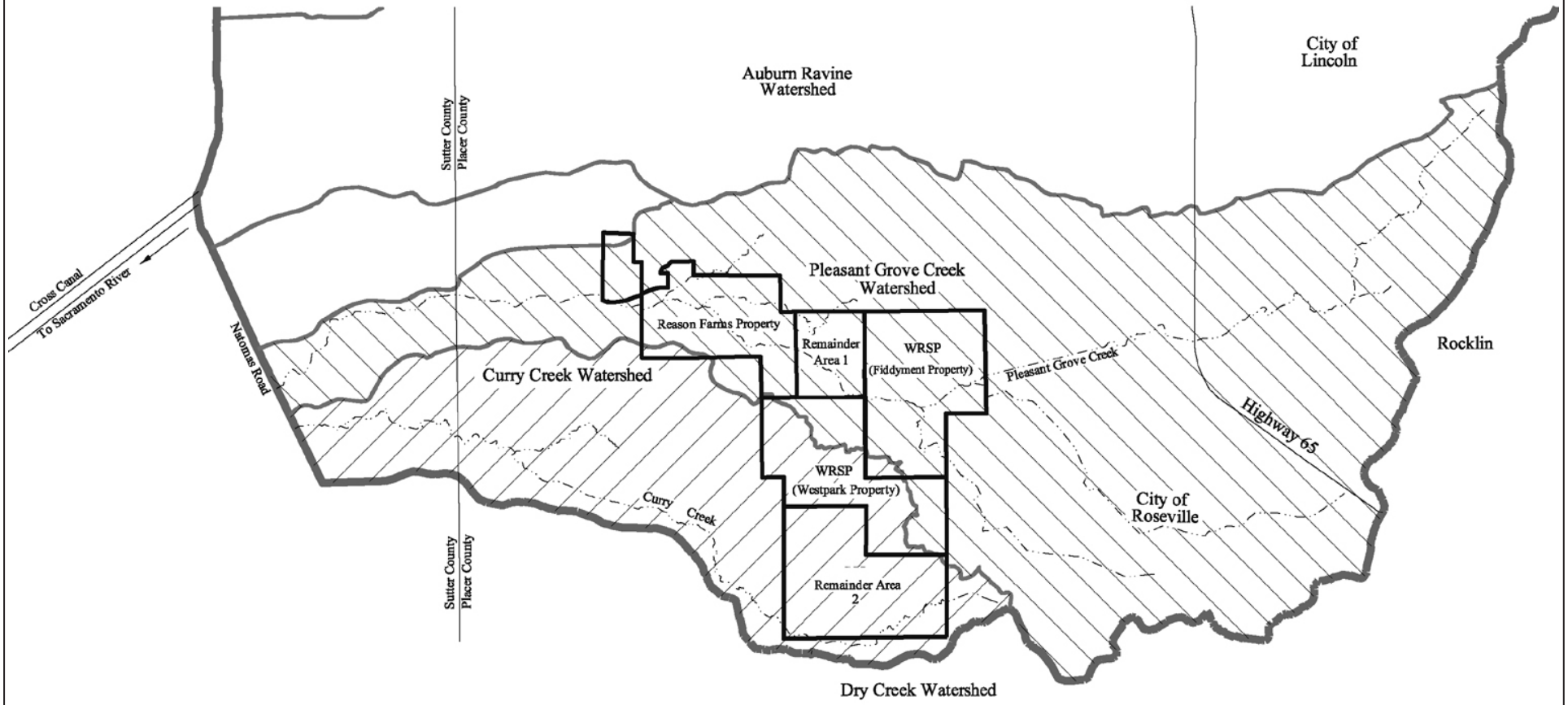

FIGURE **4.12-1**
Regional Hydrology

Not to Scale

10659-00

Source: Wood Rogers

City of Roseville

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The Cross Canal watershed is within the Sacramento River Basin, which covers approximately 26,500 square miles and is bound by the Sierra Nevada to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta-Central Sierra area to the south. The Sacramento River is the principal river in the basin. The principal tributaries to the Sacramento River include the Pit and McCloud rivers, which join the Sacramento River from the north, and the Feather and American rivers, which are tributaries from the east.[393] The average runoff from the Basin is estimated to be 21.3 million acre-feet per year.[394]

West Roseville Specific Plan Drainage

The 3,162-acre WRSP Area is located within the Pleasant Grove and Curry Creek watersheds. The Fiddyment Ranch portion of the WRSP Area within the Pleasant Grove Creek watershed incorporates approximately 1,622 acres. The Westpark portion of the WRSP Area contributes an additional approximately 412 acres to the Pleasant Grove watershed.[395] The shed area also includes the Pleasant Grove Wastewater Treatment Plant (PGWWTP) site. Approximately 1,070 acres of the Westpark portion of the WRSP Area is within the Curry Creek watershed. A small portion (approximately 56 acres) of the Fiddyment Ranch property discharges to the Curry Creek watershed through the northeast corner of the Westpark property.[396]

The main branch of Pleasant Grove Creek flows east to west through the Fiddyment Ranch portion of the WRSP Area. The main branch of Pleasant Grove Creek extends approximately 4,000 feet (0.76 mile) through the site. The South Branch of Pleasant Grove Creek connects with the main branch on the east side of the WRSP Area. An additional tributary of Pleasant Grove Creek is located west of the WRSP Area in the Remainder Area north of Phillip Road.[397]

Another small ephemeral creek crosses the southwest corner of the Fiddyment Ranch property in the WRSP Area, passing the Old Homestead. The creek is referred to as Coyote Creek because it passes a hill referred to by the Fiddyment family as Coyote Hill. This creek reportedly rarely has water in it, although it is within the 100-year floodplain of Pleasant Grove Creek.[398]

[393] City of Roseville, North Roseville Specific Plan Phase 3 Draft Environmental Impact Report, May 2000.
[394] EIP Associates, Stoneridge Specific Plan EIR, December 3, 1997.
[395] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, Table 6.
[396] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 26.
[397] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 39.
[398] Rosewood Environmental Engineering, Phase I Environmental Site Assessment, Fiddyment Property, Roseville, California, August 1999, page 11.

Kaseberg Creek drains to Pleasant Grove Creek, converging with the main branch of Pleasant Grove Creek near the center of the Fiddyment Ranch property.[399] It begins near Kaseberg School southeast of the Fiddyment Ranch property near Village Green Drive and flows through a corrugated arched pipe (super span) under Fiddyment Road. From there, it meanders in a north-northwesterly direction for about 5,000 feet and joins with the north branch Kaseberg Creek about 1,000 feet upstream of the Kaseberg Creek confluence with Pleasant Grove Creek. The north branch begins east of the Phillip Road/Fiddyment Road intersection, enters through a concrete box culvert under Fiddyment Road, and meanders approximately 8,000 feet north-northwest.[400] It is a minor drainage within the WRSP Area, generating less than 200 cubic feet per second (cfs) during a 10-year storm event. Kaseberg Creek reportedly varies in width from 8 to 24 feet.[401]

The Del Webb Sun City development, adjacent to the WRSP Area, east of Fiddyment Road, contributes a significant amount to the watershed through Kaseberg Creek and the South Branch of Pleasant Grove Creek. The existing underground drainage located within Blue Oaks Boulevard will require the existing outfall to be relocated with future WRSP improvements.[402]

Existing Bridges

Two existing bridges currently cross the main branch of Pleasant Grove Creek in the WRSP Area. One off-site bridge crosses approximately 300 feet west of the Fiddyment Ranch boundary and provides access to an existing residence north of Pleasant Grove Creek. The Fiddyment Road bridge crossing at Pleasant Grove Creek consists of two 18-foot-high arch culverts. The two bridge crossings overtop during extreme flooding events.[403] Phillip Road crosses a tributary to Pleasant Grove Creek in the southwest corner of the Fiddyment Ranch property. There is a 4-foot by 8-foot box culvert and an existing maintenance road that also crosses the tributary with two 42-inch culverts to an existing pump station.[404]

Remainder Area Drainage

The Remainder Area is within the Pleasant Grove Creek and Curry Creek watersheds. An additional tributary of Pleasant Grove Creek flows west of the WRSP Area through the Remainder Area north of Phillip Road. The southern Remainder Area north of Baseline Road is within the Curry Creek watershed.

[399] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 8.
[400] Rosewood Environmental Engineering, Phase I Environmental Site Assessment, Fiddyment Property, Roseville, California, August 1999, page 13.
[401] Rosewood Environmental Engineering, Phase I Environmental Site Assessment, Fiddyment Property, Roseville, California, August 1999, page 13.
[402] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 8.
[403] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 38.
[404] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 39.

Soil Types and Runoff Characteristics

The type of soil in the watershed, including its infiltration and runoff characteristics, is a major factor in determining the rate and amount of stormwater runoff. There are four hydrologic soil groups defined by the Natural Resources Conservation Service (NCRS). Type A soils are characterized by high infiltration. Based on NRCS mapping, these soils are not present in the SOI Amendment Area. Type B, C, and D soils exhibit moderate to poor infiltration with moderate to high runoff potential, respectively.

West Roseville Specific Plan

Soil Group D (poor infiltration and high runoff potential) accounts for approximately 89 percent of the soil cover in the WRSP Area. Areas of greatest runoff potential (Soil Group B) are generally restricted to soil units along stream channels (see Figure 4.6-2 [Soil Types] in Section 4.6 [Geology, Soils, and Seismicity]).

Remainder Area

Soil Group D is present in about 80 percent of the soil cover in the Remainder Area. Less than 7 percent of the soil types are classified as Group B (moderate infiltration and runoff potential).

Stormwater Runoff Rates and Volumes

Peak Flow Runoff

Pre-development peak flow rates and stormwater runoff volumes are presented in Table 4.12-4 through Table 4.12-7 in Impact 4.12-1 through Impact 4.12-3 to allow for comparison to post-development rates.

Several developments upstream of the SOI Amendment Area east of State Route 65 have either constructed or have planned regional detention storage basins along Pleasant Grove Creek and its tributaries to mitigate post-development peak flows in the area. Each of these basins contributes to delays in downstream peak flows at the WRSP Area boundary.[405]

Stormwater Volume

Sutter County and Reclamation District 1001 has expressed concerns with flooding as a result of increased stormwater volume generated by development in Placer County. In response to Sutter County's concerns, Placer County and the cities of Roseville, Rocklin, Lincoln, and Auburn participated in the *Auburn Ravine, Coon, and Pleasant Grove Creek Watershed Study*. The study, which was prepared in

1993, examined the Pleasant Grove Creek watershed and other regional drainages that affect Sutter County. The study concluded that all planned future development in Placer County, if unmitigated, could increase flows by less than 0.3 feet (3.6 inches) along tributary streams and approximately 0.1 feet (1.2 inches) in the ponding area upstream of the Cross Canal. These increases would inundate several hundred additional acres in Sutter County during a major flood.[406] Conclusions of this study recommended a combination of regional and local detention and retention basins, adoption of a regional floodplain management plan, and grading ordinances and policies.[407] To date, the City of Roseville has collected about $10 million in fees to construct a regional retention basin. These fees will be used to purchase a 1,700-acre property west of the SOI Amendment Area (Reason Farms) on which the regional retention basin will be constructed and operated on Pleasant Grove Creek. The location of the Reason Farms property is shown on Figure 4.12-1.

Preliminary estimates of the amount of retention that would be needed to reduce potential flooding impacts at downstream locations (e.g., Placer-Sutter County line) were developed in 1999-2000 for the Pleasant Grove Creek watershed (*Pleasant Grove Creek Watershed Mitigation Fee* report prepared by Civil Solutions). The analysis used to estimate stormwater runoff volume was based on long-duration storms within the City of Roseville with development in place. The most recent analysis indicates that approximately 2,350 acre-feet of storage volume would be required to mitigate the increase in the amount (volume) of stormwater runoff for existing, entitled, and planned future projects in Roseville. Although the SOI Amendment Area is currently outside the City limits, runoff volumes for the WRSP Area and Remainder Area were included in the 2,350 acre-feet volume for purposes of developing a conceptual basin design and storage capacity.

Only a portion of the Reason Farms (about 560 acres) would contain the retention basin facilities. The project area would be managed by the City of Roseville as public open space and would accommodate other opportunities such as habitat enhancement and restoration projects. 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. Portions of the site not used for retention could be sold by the City to adjacent landowners. It is also possible that the basin site could remain fallow.[408] The City published a Draft EIR for the retention basin facility in October 2002 (SCH No. 2002072084). The EIR analyzed construction and operation of full

[405] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 29.
[406] Placer County Flood Control and Water Conservation District, Auburn Ravine, Coon, and Pleasant Grove Creeks Flood Mitigation, June 1993, page ES-3.
[407] CH2MHILL, Auburn Ravine, Coon, and Pleasant Grove Creeks Flood Mitigation, Volume 1, June 1993.
[408] City of Roseville, Final Environmental Impact Report for the City of Roseville Retention Basin Project (SCH No. 2002072084), p.3-41.

buildout of the retention basin to a capacity of 2,350 acre-feet and related features (e.g., maintenance/access roads, pumping facilities). The Final EIR was certified and the Reason Farms Retention Basin project was approved in January 2003.

100-Year Floodplain

The Federal Emergency Management Agency (FEMA) published a Flood Insurance Rate Map (FIRM) for Pleasant Grove Creek in 1998. The mapping delineates the boundary of the 100-year floodplain along Pleasant Grove Creek and designates the floodplain as Zone A (no base flood elevations determined). Detailed mapping showing cross-sections and base flood elevations ends at the City of Roseville-Placer County corporate limits near Fiddyment Road.

In conjunction with development of the WRSP Area and associated drainage study, hydraulic analysis was used to identify water surface elevations in the 100-year floodplain along Pleasant Grove Creek through the Fiddyment Ranch property in the WRSP Area and approximately three miles downstream of the Remainder Area for the main branch and off-site tributaries (see Methods of Analysis, below). The boundaries of the 100-year floodplain in the SOI Amendment Area are shown in Figure 4.12-2 (On-Site Drainage Improvements and 100-Year Flooodplain).

West Roseville Specific Plan

The extent of the 100-year floodplain in the WRSP Area is shown on Figure 4.12-2. Within the WRSP Area, the 100-year floodplain is primarily associated with the existing tributaries of Pleasant Grove Creek east and south of the WRSP Area, and Curry Creek.

Remainder Area

As shown on Figure 4.12-2, the 100-year floodplain within the Remainder Area is primarily associated with the existing tributaries of Pleasant Grove Creek. The Reason Farms property, located west of the Remainder Area, includes an additional 100-year floodplain designation for Pleasant Grove Creek and an additional tributary north of the main branch. Several areas of the Reason Farms property were altered by rice farming within the floodplain. [409] The City of Roseville is developing additional detailed 100-year floodplain information for the location of the regional retention basin that will be located within the Reason Farms property, and the reach of Pleasant Grove Creek that runs west through the Reason Farms property to the Sutter-Placer County line.

[409] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 40.

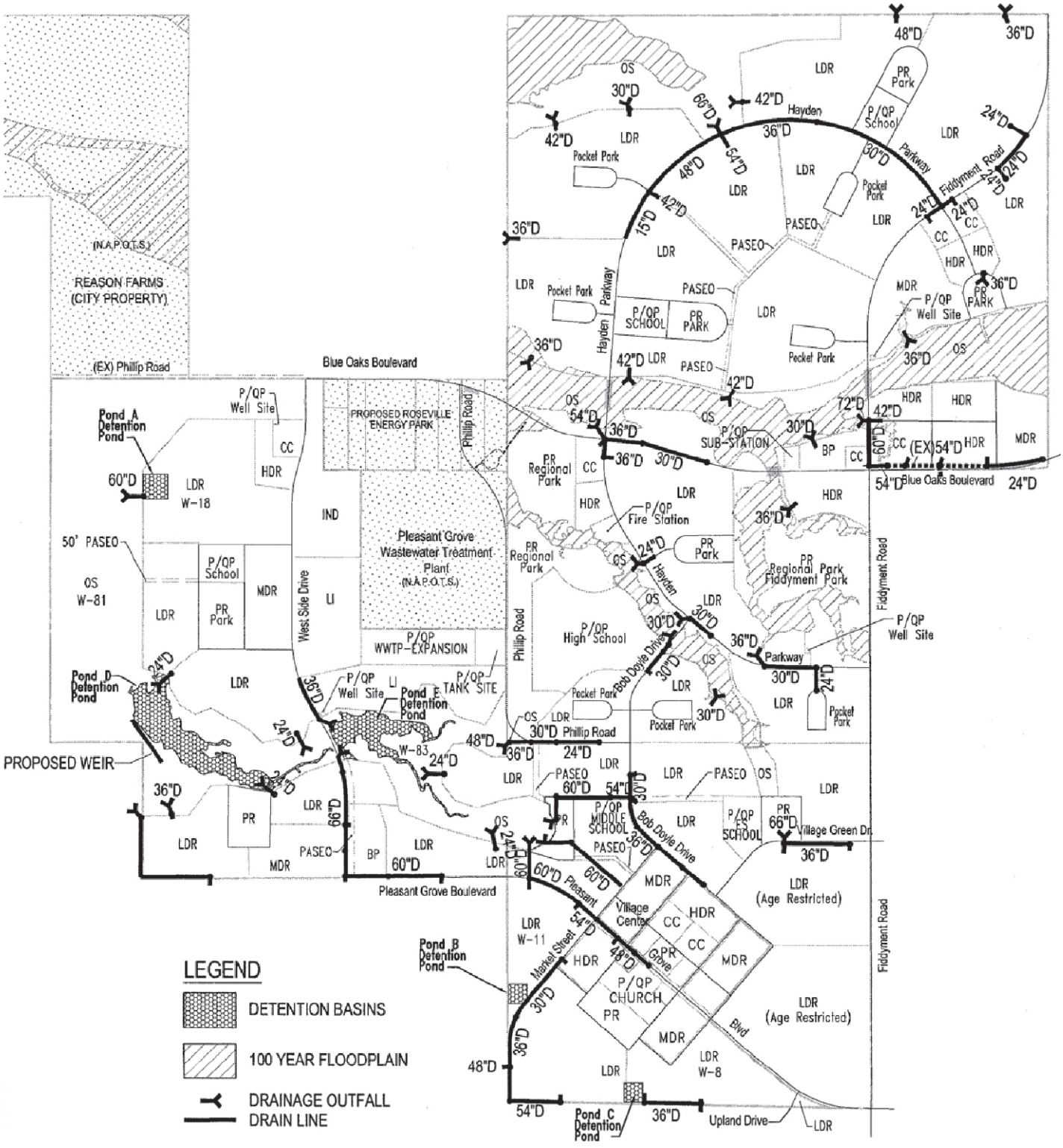

FIGURE **4.12-2**

On-Site Drainage Improvements and 100-Year Floodplain

Not to Scale

10659-00

Source: West Roseville Specific Plan 2003

City of Roseville

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Surface Water Quality

Surface water quality in the SOI Amendment Area can generally be characterized by surrounding land uses. The historical land use along Pleasant Grove Creek along the segment and tributaries that pass through the SOI Remainder Area has been agricultural, primarily for grazing and pasture. Typical constituents in runoff from pasturelands would include nitrogen, phosphorus, and coliform bacteria. Based on such uses, typical pollutant concentrations in runoff under existing conditions could be estimated to be 3.0 milligrams per liter (mg/l) Total Kjeldahl Nitrogen, 0.3 mg/l phosphate, 0.02 mg/l lead, and 0.05 mg/l zinc.[410]

Stormwater runoff from urban development upstream of the SOI Amendment Area (e.g., City of Roseville, Rocklin/Loomis, and a small portion of Lincoln) is assumed to contain urban pollutants such as oil, grease, metals, nitrogen and phosphorus from fertilizers, pesticides and herbicides, bacteria, and sediment. Nearby industrial uses (e.g., Hewlett-Packard and NEC to the east) could also contribute levels of heavy metals, petroleum, hydrocarbons and other constituents through runoff. Table 4.12-1 (Typical Concentrations of Nonpoint Source Pollutants in Stormwater) lists typical concentrations of chemical indicators of urban pollutants that could be expected in stormwater runoff.

Table 4.12-1 Typical Concentrations of Nonpoint Source Pollutants in Stormwater

Land Use	Typical Nonpoint Source Pollutant (pounds per acre/year of runoff)			
	Biological Oxygen Demand (BOD_5)	Suspended Solids	Total Phosphorus	Total Nitrogen
Residential	24	545	0.32	4.0
Commercial	98	745	0.75	9.0
Recreation	1.3	420	0.06 to 0.2	2.3 to 4.4
Cropland, pasture and unused rural land	2.1 to 30	420 to 10,000	0.09 to 0.64	0.9 to 23
Residential	24	545	0.32	4.0

SOURCE: City of Roseville, Del Webb Specific Plan Draft Environmental Impact Report, 1993

Comprehensive stormwater runoff water quality testing has not been performed to characterize existing water quality as a result of urban runoff, but the City of Roseville is initiating a program to demonstrate compliance with recently adopted stormwater quality regulations (see Regulatory Setting, below), which would include reviewing land use types to determine which urban pollutants may be affecting water quality.[411]

[410] City of Roseville, Del Webb Specific Plan Draft Environmental Impact Report, September 1993, page 14-7.
[411] Kelye McKinney P.E. Senior Civil Engineer, City of Roseville Engineering Division, personal communication, June 5, 2002.

Treated tertiary effluent from the Pleasant Grove PGWWTP scheduled for operation in Fall/Winter 2003 will be directly discharged to a segment of Pleasant Grove Creek that passes through the WRSP Area. The PGWWTP outfall to the creek is located northeast of the PGWWTP in an area designated in the WRSP as Open Space between proposed Hayden Parkway and Phillip Road, as illustrated by Figure 4.12-3 (Location of PGWWTP Outfall in WRSP). As part of the design and permitting effort for the PGWWTP, surface water samples were collected in 1999-2000 at two locations upstream and downstream of the SOI Amendment Area: Pump Station 1, approximately where Woodcreek Oaks Boulevard crosses Pleasant Grove Creek, and Harris Bridge, where Pleasant Grove Boulevard in Sutter County crosses Pleasant Grove Creek. Samples were analyzed for pH, Dissolved Oxygen (DO), turbidity (NTU), and temperature. The results are listed in Table 4.12-2 (Pleasant Grove Creek Sampling Results). Tertiary-treated water from the Dry Creek WWTP will be discharged to Pleasant Grove Creek in the Diamond Creek area via recycled water lines that pass through the area.

Table 4.12-2 Pleasant Grove Creek Sampling Results

	pH	Dissolved Oxygen	Turbidity (NTU)	Temperature (°C)
Pump Station 1 (upstream)				
Minimum	6.8	1.5	1.7	1.8
Maximum	9.0	15.3	419.0	35.1
Average	7.5	8.2	16.3	15.2
Harris Bridge (downstream)				
Minimum	6.9	1.1	0.5	3.0
Maximum	9.4	14.12	85.0	34.4
Average	7.6	8.4	12.1	16.4

SOURCE: City of Roseville EUD, July 2002.

As noted in Section 4.7 (Biological Resources), Pleasant Grove Creek is an intermittent stream with no existing cold-water fishery and limited warm water fishery value. Pleasant Grove Creek's value for water-contact recreation is limited, due to the lack of water in the creek during the summer.

In their review and amendment of the State of California's assessment of surface waters, the EPA listed Pleasant Grove Creek as a Section 304 (1) "Long List" water body. The 304 (1) "Long List" designates waters that are impaired because narrative or numeric objectives are violated or beneficial uses are impaired.[412]

[412] Environmental Science Associates, Roseville Regional Wastewater Treatment Service Area Master Plan Draft Environmental Impact Report, May 1996. page 7-3.

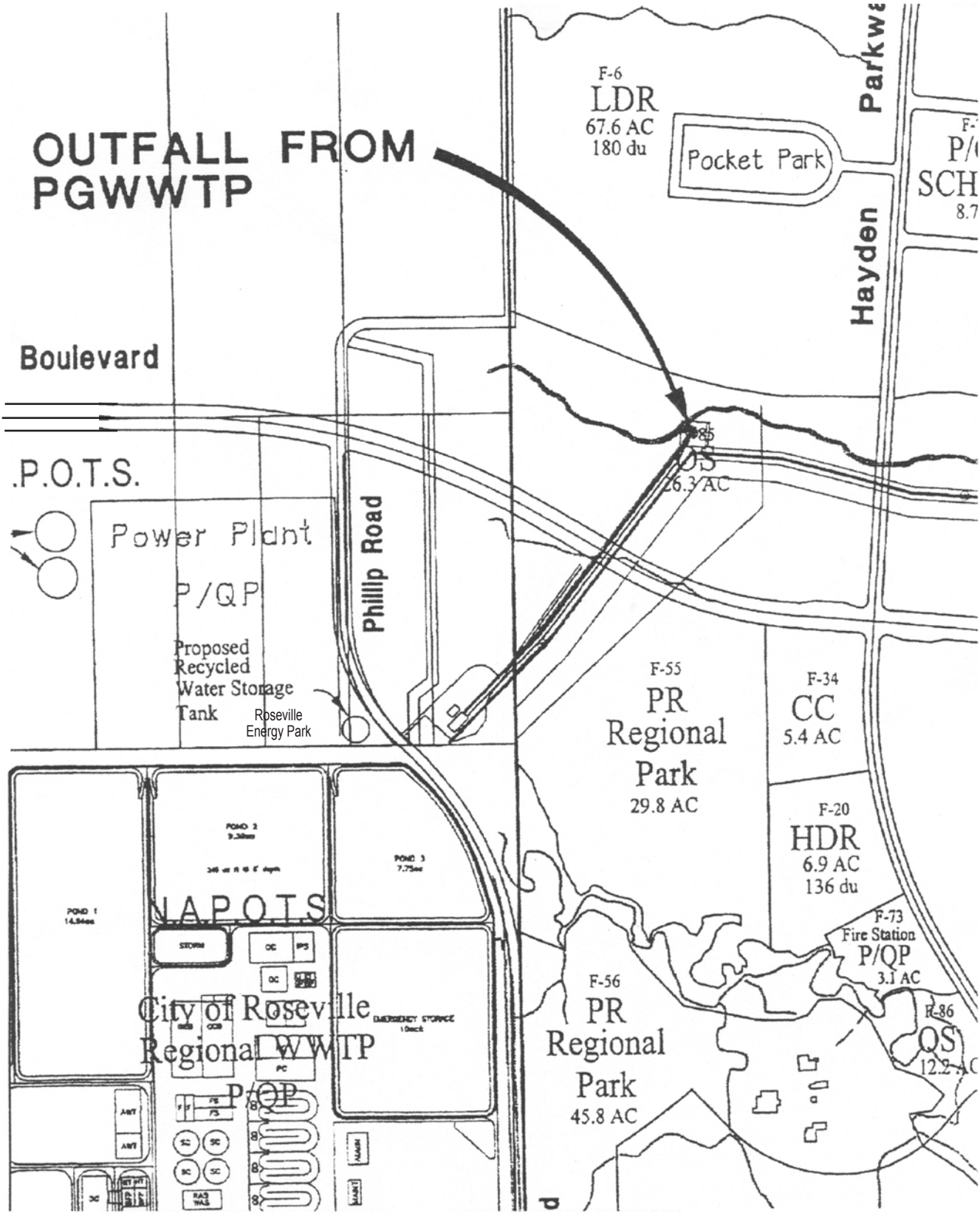

FIGURE **4.12-3**
Location of PGWWTP Outfall in WRSP

Not to Scale

10659-00

***Source*:** City of Roseville

City of Roseville

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The City of Roseville does not discharge any wastewater effluent into Kaseberg or Curry creeks, but the creeks receive surface runoff from the urban development east and southeast of the SOI Amendment Area. Specific water quality data are unavailable for Kaseberg Creek and Curry Creek at this time.[413]

Groundwater

Regional Characteristics

Placer, Sutter, and Sacramento counties are situated in the North American sub-basin of the Sacramento Valley Groundwater Basin. The North American subbasin is defined by the Bear River on the north, the Feather River on the west, the Sacramento River on the south, and a north/south line extending from the Bear River south to Folsom Lake that passes about 2 miles east of Lincoln. The sub-basin encompasses 351,000 acres (548 square miles). Drainage in the sub-basin is west-southwest at an average 5 percent grade.[414]

The eastern boundary of the sub-basin (approximately 5.5 miles east of the SOI Amendment Area) is the approximate edge of the alluvial basin, where little or no groundwater flows into or out of the groundwater basin from the Sierra Nevada. The western portion of the sub-basin, which includes the SOI Amendment Area, is a flat flood basin for the Bear, Feather, Sacramento, and American Rivers and several small east/side tributaries. Most of the groundwater is produced in the northern portion of the sub-basin (north of the SOI Amendment Area).[415]

Various geologic formations comprise the water-bearing deposits that underlie the region. These formations include an upper aquifer system (referred to Aquifer 1 in this EIR) consisting of the Victor, Fair Oaks, and Laguna Formations, and a lower aquifer system (referred to as Aquifer 2) consisting primarily of the Mehrten Formation. These formations are typically composed of lenses of interbedded sand, silt, and clay interlaced with coarse-grained stream channel deposits. These deposits form a wedge thickening from east to west at a fairly constant rate to a maximum thickness of 2,000 feet near the Sacramento River.[416]

Groundwater occurs in an unconfined to semi-confined state throughout the region. A confined aquifer state occurs in aquifers that have overlying stratum of low permeability. Groundwater under a confined

[413] Kelye McKinney P.E. Senior Civil Engineer, City of Roseville Engineering Division, personal communication, June 5, 2002.
[414] Department of Water Resources, California Groundwater -- Bulletin 118, Draft Basin Descriptions, Groundwater Basin No.5-21.64. April 2003, pages 1-2, http://www.waterplan.water.ca.gov/groundwater/118index.htm.
[415] Department of Water Resources, California Groundwater -- Bulletin 118, Draft Basin Descriptions, Groundwater Basin No.5-21.64 April 2003, pages 1-2. http://www.waterplan.water.ca.gov/groundwater/118index.htm.

state is described in terms of its piezometric surface elevation rather than a water surface elevation. The piezometric surface elevation is the elevation of water within a piezometer or well that is screened only in the confined or semi-confined aquifer. The groundwater surface elevation is the elevation of water in an unconfined aquifer. Semi-confinement can occur in local areas, and the degree of confinement typically increases with depth. Groundwater in the Victor, Fair Oaks, and Laguna Formations is typically unconfined. The deeper Mehrten Formation, a major source of groundwater, exhibits semi-confined conditions.[417]

Groundwater Use, Wells, and Water Levels

The use of groundwater is part of the City of Roseville's current water supply planning, but is only used as short-term emergency supply during dry years. The City's Water Forum Agreement (WFA) includes the extraction of up to 7,400 acre-feet per year (AF/yr) of groundwater during the drier and driest year WFA hydrologic year types.[418]

Currently the City has three groundwater wells and a fourth well (the Diamond Creek well) under construction that are maintained primarily for backup water supply. Additional wells are planned to improve reliability. The City participates in a regional groundwater management plan with PCWA.[419]

There are several groundwater wells in the vicinity of the SOI Amendment Area. These wells include the three of the four wells identified above, domestic wells used by homes in the unincorporated areas of the County, and agricultural wells including approximately 12 groundwater wells at the Reason Farms property to the west of the SOI Amendment Area that are used for irrigation.[420] There is also a groundwater well located at the PGWWTP.

The Reason Farms property west of the SOI Amendment Area is currently under agricultural production for rice. About 6,483 AF/yr of groundwater extracted from the aquifer underlying the property is estimated to be applied for irrigation purposes each year on approximately 1,080 acres. The major portion of that water is lost to evapotranspiration, while a small amount returns to the groundwater through deep percolation.[421]

[416] MWH, Groundwater Impact Analysis for Proposed Reasons Farms Land Retirement Plan, Draft June 2003, p.3-1.
[417] MWH, Groundwater Impact Analysis for Proposed Reasons Farms Land Retirement Plan, Draft June 2003, p.3-1.
[418] MWH, Groundwater Impact Analysis for Proposed Reasons Farms Land Retirement Plan, June 2003, p.1-1.
[419] City of Roseville, 2002 Urban Water Management Plan, July 11, 2002. p. 7-8
[420] City of Roseville, Final Environmental Impact Report for the City of Roseville Retention Basin Project (SCH No. 2002072084), p. 3-43.
[421] MWH, Groundwater Impact Analysis for Proposed Reasons Farms Land Retirement Plan, Draft June 2003, p.4-4.

Groundwater elevations within and around the SOI Amendment Area have been monitored by Department of Water Resources for several decades. There are three groundwater wells in the DWR monitoring network in and immediately adjacent to the SOI Amendment Area. One well (11N/6E/18P005M) is located adjacent to Pleasant Grove Creek just west of Fiddyment Road in the WRSP Area. A second well (11N/6E/30F002M) is east of the WRSP Area along Kaseberg Creek southeast of the intersection of Fiddyment and Phillip Roads. The third well (11/N5E/23B001M) is located on City-owned land north of the WRSP Area.[422] Data for Well 18P005M indicate rising groundwater elevations since about 1977, which could be attributable to a decrease in agricultural pumping or recharge into a subsurface channel system.[423] In 2002, the groundwater elevation ranged from 45 to 47 feet above mean sea level (msl).[424] Well F002M, which has not been monitored since 1993, shows almost stable groundwater elevations since about 1980.[425] Reported groundwater elevations in that well in 1993 were -17 to -20 feet msl.[426] The westernmost well, 23B001M, has also been stable since about 1980, and decreased agricultural water use in the area suggests water table levels are rising.[427] In 2002, groundwater elevations ranged from a low of -24 feet msl in November to a high of -17 feet msl in April.[428]

Aquifer Storage and Recovery (ASR) Program

The City is evaluating the feasibility of developing an Aquifer Storage and Recovery (ASR) program. Under such a program, the surface water would be injected into the aquifer in wet years for storage, and then the City's backup groundwater wells would pump the stored water in dry years. The City has a demonstration project currently underway at the Diamond Creek well to evaluate the feasibility of using planned wells for injection and storage of treated water.

Groundwater Recharge

Under natural conditions, groundwater recharge results from precipitation and infiltration of excess irrigation water. However, only lands with sufficiently permeable soil permit percolation. The rate and

[422] Gasch & Associates, Inc., Preliminary Geophysical and Geological Review of the Groundwater Potential of the Proposed Westpark/Fiddyment Development, Placer County, California, March 2000, Plate 1.
[423] Gasch & Associates, Inc., Preliminary Geophysical and Geological Review of the Groundwater Potential of the Proposed Westpark/Fiddyment Development, Placer County, California, March 2000, p.3.
[424] California Department of Water Resources, Water Data Library http://wdl.water.ca.gov/gw/admin/main_menu_gw.asp), accessed February 7, 2003.
[425] Gasch & Associates, Inc., Preliminary Geophysical and Geological Review of the Groundwater Potential of the Proposed Westpark/Fiddyment Development, Placer County, California, March 2000, p.3.
[426] California Department of Water Resources, Water Data Library http://wdl.water.ca.gov/gw/admin/main_menu_gw.asp), accessed February 7, 2003.
[427] Gasch & Associates, Inc., Preliminary Geophysical and Geological Review of the Groundwater Potential of the Proposed Westpark/Fiddyment Development, Placer County, California, March 2000, p.3.
[428] California Department of Water Resources, Water Data Library http://wdl.water.ca.gov/gw/admin/main_menu_gw.asp), accessed February 7, 2003.

quantity of water reaching the saturation zone depends on factors that include the amount and duration of precipitation, soil type, moisture content of the soil, and vertical permeability of the unsaturated zone.

According to U.S. Geological Survey (USGS) computer model estimates, approximately 1.6 percent of the total natural recharge in the Sacramento Valley basin can be attributed to the Placer County subarea.[429] USGS studies indicate the Bear River recharge subarea located north of the Placer County subarea also contributes some recharge to the Sacramento Valley groundwater basin. The USGS estimates 2.3 percent of the total recharge can be attributed to the Bear River subarea.[430] Thus, the Placer County and Bear River subareas combined represent approximately 5 percent of total recharge to the Sacramento Valley groundwater basin under natural conditions. This would not be considered significant compared to the contribution from recharge areas in the northern Sacramento Valley, which account for approximately half of all recharge in the Sacramento Valley groundwater basin.[431] Consequently, the SOI Amendment Area is not considered a significant recharge source in the regional context.

As noted in Section 4.6 (Geology, Soils, and Seismicity), rock units in the SOI Amendment Area consist of the Riverbank and Turlock Lake Formations and alluvium deposited during the Pliocene and Pleistocene. Geologists who classified and described these formations also refer to these rock units as "Older Alluvium." The Older Alluvium ranges from 100 to 650 feet thick and is moderately permeable.[432] However, as also noted in Section 4.6, soils containing hardpan occupy over half the valley on the east side of the Sacramento River (which includes the SOI Amendment Area), and these severely restrict downward movement of water. Clayey soils also impede percolation.[433]

Although moderately permeable rock units underlie the SOI Amendment Area, Soil Group D (poor infiltration) accounts for approximately 89 percent of the soil cover in the WRSP Area and about 80 percent in the Remainder Area. Although the SOI Amendment Area is undeveloped (with the exception of the Fiddyment Ranch area), the abundance of Group D soils throughout the entire SOI Amendment Area limits groundwater recharge under existing conditions.

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[429] California Department of Water Resources, Evaluation of Ground Water Resources: Sacramento Valley, Bulletin 118-6, August 1978, Figure 6A and Table 2, pages. 114 through 117.
[430] California Department of Water Resources, Evaluation of Ground Water Resources: Sacramento Valley, Bulletin 118-6, August 1978, Figure 6A and Table 2, pp. 114 through 117.
[431] California Department of Water Resources, Evaluation of Ground Water Resources: Sacramento Valley, Bulletin 118-6, August 1978, Figure 6A and Table 2, pp. 114 through 117.
[432] Department of Water Resources, Sacramento Valley Groundwater Basin, North American Subbasin, http://www.waterplan.water.ca.gov/groundwater/118index.htm, September 2001, pages 1-2
[433] California Department of Water Resources, Evaluation of Ground Water Resources: Sacramento Valley, Bulletin 118-6, August 1978, p. 67.

Groundwater Quality

Regional Groundwater Quality

On a regional basis, there are areas of good-quality groundwater and marginal-quality groundwater in the North American sub-basin. Generally, groundwater quality in the southern part of the basin where the SOI Amendment Area is located is characterized as good, although some contaminated areas do exist within a few miles of the SOI Amendment Area. The former McClellan Air Force Base, approximately five miles south-southwest, and the Union Pacific Railyards in Roseville, approximately two miles southeast, have been identified as major sources of groundwater contamination. Elevated levels of total dissolved solids (TDS)/specific conductance, chloride, sodium, bicarbonate, boron, fluoride, nitrate, iron, manganese, and arsenic have also been identified as contributing to poorer water quality conditions in some locations. The highest levels of TDS have been reported in an area extending just south of Nicholas to Verona, between Reclamation District 1001 and the Sutter Bypass, located over 10 miles west of the SOI Amendment Area. Some wells in that area have exceeded 1,000 mg/L of TDS.[434]

Local Groundwater Quality

Based on California DWR well records, there are several groundwater wells in the SOI Amendment Area.[435] Wells on the Fiddyment Ranch property have not been sampled for water quality.[436] However, two wells north and south of Pleasant Grove Creek in the WRSP Area were tested in 2001 for general minerals in conjunction with pump tests.[437] Data from the wells are presented in Table 4.12-3 (Westpark/Fiddyment Ranch Groundwater Wells Sampling Results [July 2001]).

Groundwater quality data available from Diamond Creek well, located adjacent to the WRSP Areaa are expected to be representative of the quality of the groundwater under the SOI Amendment Area. These data, along with water quality data collected form the City's other wells, indicate that groundwater in the area contains high levels of minerals and salts, but generally contains low levels of metals. The pH is neutral. Nitrate contamination appears in some areas. Nonetheless, the groundwater could be treated to potable water standards.[438]

[434] Department of Water Resources, http://www.waterplan.water.ca.gov/groundwater/118index.htm, September 2001, pages 4-5
[435] Anderson Consulting Group, Westpark Fiddyment Well Investigation, Step Drawdown Pumping Test and Well Sampling Results, September 13, 2001.
[436] John Tallman, Signature Properties, personal communication, June 27, 2002.
[437] Anderson Consulting Group, Westpark Fiddyment Well Investigation, Step Drawdown Pumping Test and Well Sampling Results, September 13, 2001.
[438] MWH, Groundwater Impact Analysis for Proposed Reasons Farms Land Retirement Plan, June 2003. p.5-5 and 5-6.

Table 4.12-3 Westpark/Fiddyment Ranch Groundwater Wells Sampling Results (July 2001)

Well Location	North of Pleasant Grove Creek	South of Pleasant Grove Creek
pH	7.1	7.3
Electrical Conductivity (µS/cm)	320	370
Copper (µg/L)	5.7	7.9
Iron (µg/L)	210	120
Sodium (µg/L)	23,000	24,000
Calcium (µg/L)	20,000	20,000
Chloride (mg/L)	37	38
Sulfate (mg/L)	<4	<4
Total Hardness (mg/L)	NA	130
Hydroxide (mg/L)	<5	<5
Carbonate (mg/L)	<5	<5
Bicarbonate (mg/L)	92	117
Total Dissolved Solids (mg/L)	160	180
Nitrate (mg/L)	1	2.3
Nitrate (mg/L)	<0.02	<0.02
Magnesium (µg/L)	12,000	13,000
Zinc (µg/L)	24	90

4.12.3 Regulatory Setting

The following is a summary of the regulatory context under which issues associated with water quality, drainage, and on-site and off-site flooding are managed at the federal, State, and local level.

Federal

Floodplain Development

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMS), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain.

FEMA allows non-residential development in the floodplain. However, construction activities are restricted within the flood hazard areas depending upon the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations (CFR).

Water Quality

Section 303 of the federal Clean Water Act (CWA) requires states to adopt water quality standards for all surface water of the United States. Where multiple uses exist, water quality standards must protect the most sensitive use. Water quality standards are typically numeric, although narrative criteria based upon biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards.

Title 40 of the Code of Federal Regulations (40 CFR) includes U.S. Environmental Protection Agency (EPA) regulations to implement the National Pollutant Discharge Elimination System (NPDES) permit system, which was established in the CWA to regulate municipal and industrial discharges to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

Two types of non-point source discharges[439] are controlled by the NPDES program – non-point source discharges caused by general construction activities and the general quality of urban runoff in municipal stormwater systems (either as part of a combined system or as a separate system in which runoff is carried through a developed conveyance system to specific discharge locations). The goal of the NPDES non-point source regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of best management practices (BMPs). BMPs can include the development and implementation of various practices including educational measures (workshops informing public of what impacts result when household chemicals are dumped into storm drains), regulatory measures (illicit discharge detection and elimination), public involvement measures (label storm drain inlets as to impacts of dumping on receiving waters) and structural measures (filter strips, grass swales and detention ponds).

The 1987 amendments to the CWA directed the federal EPA to implement the stormwater program in two phases both of which are currently effective. Phase 1 addressed discharges from large (population 250,000 or above) and medium (population 100,000 to 250,000) municipalities and certain industrial and construction activities. Phase 2 addresses all other discharges defined by EPA that are not included in Phase 1 and construction activities that affect more than one acre.

[439] Nonpoint sources are generally diffuse and originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff rather than by pipelines or discrete conveyances.

State

Urban Water Quality

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) are responsible for ensuring implementation and compliance with the provisions of the federal CWA, California's Porter-Cologne Water Quality Control Act, and NPDES programs. Along with the SWRCB and RWQCB, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as City and County governments, and requires the coordinated efforts of these various entities.

The SOI Amendment Area is situated within the jurisdiction of the Central Valley Region of the RWQCB (Region 5). The Central Valley RWQCB (CVRWQCB) has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. Water quality objectives for the Sacramento River and its tributaries (e.g., Pleasant Grove Creek and Curry Creek) are specified in *The Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin* (Basin Plan) prepared by the CVRWQCB in compliance with the federal CWA and the State Porter-Cologne Water Quality Control Act.[440] The Basin Plan establishes water quality objectives and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Sacramento-San Joaquin River Basin. Because the City of Roseville (including the SOI Amendment Area) is located within the CVRWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the Basin Plan requirements.

Beneficial uses for the Sacramento River include municipal and domestic supply, agricultural supply, recreation, and aquatic and wildlife habitat. These beneficial uses also apply to Pleasant Grove Creek and its tributaries and Curry Creek because these streams ultimately discharge to the Sacramento River.

Construction Site Runoff Management

The SWRCB adopted a State-wide general NPDES permit for stormwater discharges associated with construction activity (General Permit) in August 1999. Performance standards for obtaining and complying with the General Permit are described in NPDES General Permit No. CAS000002, Waste Discharge Requirements, Order No. 99-08-DWQ. The General Permit was modified in April 2001 (SWRCB Resolution No. 2001-046) to require permittees to implement specific sampling and analytical procedures to determine whether the BMPs used at the construction site are effective.

[440]California Regional Water Quality Control Board, Central Valley Region, The Water Quality Control Plan (Basin Plan) [for] the Sacramento River Basin and the San Joaquin River Basin, 4th edition, 1998.

Under the General Permit, the State requires that any construction activity affecting one acre or more must obtain a General Construction Activity Stormwater Permit Waste Discharge Identification Number. Development within the SOI Amendment Area would be required to comply with the General Permit.

Examples of typical construction BMPs included in the Stormwater Pollution Prevention Plan (SWPPP) include: using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw bales or plastic, to minimize the amount of uncontrolled runoff that could enter drains or surface water. To comply with water quality standards, the discharger must, as needed, apply Best Available Technology (BAT) standards to the project. These BATs would include structural controls designed specifically to prevent and or reduce construction-related water pollution.

Urban Runoff Management

The City of Roseville is currently required to operate under a NPDES Municipal Stormwater Permit. Although Roseville did not meet the federal EPA criteria for Phase 1 compliance at the time that permit was adopted, the City of Roseville is regulated for Phase 2 requirements. The Phase 2 State Municipal Stormwater Permit requires the City to develop, implement, and enforce a stormwater management program.

The SWRCB was required to issue general permits for the NPDES Phase 2-regulated jurisdictions by December 8, 2002, and operators of Phase 2 jurisdictions were required to obtain permit coverage by March 10, 2003. On January 28, 2003, U.S. Court of Appeals for the Ninth Circuit published an opinion (decision) remanding three aspects of the Phase 2 Rule concerning the issuance of Notice of Intent (NOIs) under the rule's general permitting scheme (*Environmental Defense Center v. U.S. Environmental Protection Agency*). As a result of this decision, the SWRCB decided to delay issuance of the State permit. The new submittal date for permit applications for automatically designated traditional MS4 such as the City of Roseville was August 8, 2003.[441] However, despite this ruling the City was already in compliance with the Phase 2 program. In March, 2003, the City met the submittal requirements by preparing and submitting a Storm Water Management Program (SWMP) to the CVRWQCB prior to the March 10, 2003 deadline. Although the City has not received its Phase 2 NPDES permit, it has begun implementing the SWMP. Components of the City's SWMP are summarized below. Development in the WRSP Area and

[441] State Water Resources Control Board, Phase II Small Municipal Separate Storm Sewer (MS4) Program, SWRCB website, accessed February 11, 2003.

Remainder Area will be required to incorporate SWMP requirements into facilities design and during operations.

City of Roseville Stormwater Management Plan

The City's SWMP (dated March 2003) outlines a comprehensive set of priorities, activities, and strategies that comprise the City's minimum control measures (MCMs) and BMPs intended to address the Phase 2 requirements, with the goal of reducing pollutants in stormwater to the maximum extent practicable. The SWMP was completed under consideration of guidance from a Citizen's Advisory Committee, as well as input and direction of City staff. The components of the SWMP will become effective when the State issues the permits. However, the City has begun implementing the SWMP.

The SWMP identifies the activities to implement the following six minimum control measures required under the General Permit: public outreach, public involvement, illicit discharge detection and elimination, construction site runoff, new development and redevelopment, and municipal operations. Some typical types of outreach may include public outreach, stormwater articles, creekside educational programs, and other community events. Public meetings and presentations, a hotline, interactive website, volunteer water quality monitoring groups, and community cleanup days are some of the elements of the public involvement component.

Some typical sources of illicit discharges that the program is designed to control include non- residential car washes, radiator flushing, unauthorized industrial discharges and chemical spills. The plan to detect and address non-stormwater discharges is developed in consideration of the staff and resources available. In general, however, it includes an inspection program to identify problems, locate sources, take corrective action, and provide documentation. For the construction site runoff element, the City will implement and enforce a program to reduce pollutants in runoff from construction sites one acre or larger. Review of site/construction plans, site inspections, enforcement, and sanctions to ensure compliance are major components of this program.

The City will have as part of the overall program a new development and redevelopment minimum control measure for post-construction controls that will include BMPs to address both the quality and quantity issues associated with new development. In general, this program will provide a regulatory mechanism, structural and non-structural control strategies, and long-term operation and maintenance of controls. Section 3.5 of the preliminary SWMP includes specific guidance for developing technical criteria for volume and flow control design parameters for structural controls such as detention ponds, vegetative areas, and runoff pretreatment. The City plans to develop a new ordinance for post-construction runoff controls requiring post-construction controls on new development and establishing

the authority to inspect privately owned controls approved by the City and maintenance of the controls. Stormwater controls would initially be evaluated during plan checks, then observed and inspected by City staff. Prior to final approval, the owner of the stormwater control structure will be required to submit an operations and maintenance manual and a proposed maintenance schedule. Additional detail on post-construction controls is provided in the SWMP, which is available for review at City offices or on the City's website (http://www.ci.roseville.ca.us/).

The City already has many elements of the municipal operations control measure in place. As part of the SWMP, the program will be further developed to include appropriate controls to address the specific needs and characteristics of the City's municipal operations. The City will update or prepare Standard Operating Procedures (SOPs), which will provide BMPs that can be implemented within the City municipal operations context to reduce stormwater pollutants. The SOPs will continue to be updated as BMPs change or improve.

The March 2003 SWMP includes a Monitoring and Reporting (MRP) section per the NPDES Phase 2 regulations. The SWMP is scheduled to start implementation of MRP in the City's 2003/04 fiscal year. The MRP data collection is anticipated to increase in frequency over the course of the Phase 2 permit term. The SWMP is targeted to reach full implementation by fiscal year 2007/08.[442]

Construction Dewatering

Clean or relatively pollutant-free, construction-related wastewater that poses little or no threat to water quality may be discharged directly to surface water under certain conditions. In addition to the State General Construction Activity Permit, the CVRWQCB has also adopted a general NPDES permit for short-term discharges of small volumes of wastewater from certain construction-related activities. Permit conditions for the discharge of these types of wastewaters to surface water are specified in "General Order for Dewatering and Other Low-Threat Discharges to Surface Waters" (Order No. 5-00-175, NPDES No. CAG995001). Discharges may be covered by the permit provided they are (1) either four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 million gallons per day. Construction dewatering, well development water, pump/well testing, and miscellaneous dewatering/low-threat discharges are among the types of discharges that may be covered by the permit. The general permit also specifies standards for testing, monitoring, and reporting, receiving water limitations, and discharge prohibitions.

[442] City of Roseville, *Stormwater Management Plan*, March 2003, p. 63-64.

Groundwater Management Plan

California Water Code sections 10750 *et seq*. (Assembly Bill 3030, approved by the California Legislature in 1992) allows certain local agencies whose service areas overlie a State-designated groundwater basin to develop and implement groundwater management plans (GMP). The purpose of the GMP is to outline the role of the local agency in managing the local groundwater resources to maximize the water supply and to protect the quality of the supply. The Placer County Water Agency is the lead agency for the West Placer Groundwater Management Plan. The plan area includes Roseville, Rocklin, and the unincorporated portion of west Placer County west of State Route 65. The West Placer Groundwater Management Plan describes groundwater level and land use trends, water needs and availability, and agency efforts to stabilize groundwater. Continued monitoring of groundwater levels and quality, evaluating groundwater safe yield, and identifying groundwater recharge and conjunctive use opportunities are key elements of the plan.[443]

Local

City of Roseville General Plan

The City of Roseville General Plan includes several policies relating to hydrology and water quality. Please see Appendix C for a complete list of all applicable City goals and policies.

WRSP Measures

The WRSP designates creek corridors and their associated floodplains for preservation as open space. Detention basins are proposed within the Curry Creek open space corridors to provide detention storage for a 100-year, 24 hour peak event. All drainage facilities will be designed and constructed in conformance with the City's Improvement Standards, PCFCNCD Storm Water Management Manual, and the Operations and Maintenance Plan (required under the Clean Water Act 404 Permit), which will include requirements to direct drainage away from vernal pool habitat.

City of Roseville Development Standards

The City of Roseville Planning and Public Works Departments maintain policies and guidelines regarding grading, erosion control, inspection, and permitting. Section 16.20.040 of the Roseville Zoning Ordinance regulates stockpiling and grading and addresses conditions under which permits and grading plans are required. Section 16.20.070 identifies grading plan performance standards. Section 16.20.020 requires that all grading be performed in accordance with either City of Roseville Improvement

[443] Placer County Water Agency, Draft West Placer Groundwater Management Plan, June 23, 1998.

Standards or Chapter 16 of the Zoning Ordinance, whichever is more restrictive. The City of Roseville Department of Public Works Improvements Standards require that a grading permit be obtained prior to grading activities. At that time the Applicant must submit, for review and approval, Improvement and/or Grading Plans along with a site-specific erosion and sedimentation control plan. Slopes (banks) along the creek channels must be designed with proper slope protection to prevent soil erosion and channel-bank undercutting. The City has also adopted standards that would apply to projects within public right-of-way or easements, (Section 111 of the Construction Standards, May 2001). The City's NDPES Phase 2 SWMP proposes revisions to existing City standards to enhance stormwater quality control BMP requirements.

Section 10 of the City of Roseville Improvement Standards identifies hydrologic and hydraulic methods to determine peak flow rates and criteria for identifying appropriate design and capacity for storm drainage infrastructure. Design criteria include requirements for channels and outfall design, cross culverts, inlet and outlet structures, and piping materials. Section 101 of the City's Construction Standards addresses drainage infrastructure requirements on public rights-of-way or easements.

City of Roseville Floodplain Development

To prevent exacerbating flooding conditions and to limit exposure of residents and structures to potential harm and/or damage, the City of Roseville General Plan contains policies that restrict land uses and development within the 100-year floodplain. Chapter 9.80 of the Roseville Municipal Code identifies floodplain development criteria and restrictions that implement FEMA requirements. Section 10 of the City's Improvement Standards also identify criteria for development within the 100-year floodplain.

Placer County Flood Control and Water Conservation District

The Placer County Flood Control and Water Conservation District (PCFCWCD) was formed by Senate Bill 1312, effective August 23, 1984. The PCFCWCD formulates regional strategies for flood control management. In 1990, the PCFCWCD developed a Stormwater Management Manual (SWMM) that presents policy, guidelines, and specific criteria for evaluating hydrologic and hydraulic conditions associated with new development within the context of regional stormwater issues. The manual was revised in 1992, 1994, and in 1997. The PCFCWCD SWMM policies were considered during preparation of the project drainage study and in the drainage analysis in this section, as further discussed in "Methods of Analysis," below. The City references the use of PCFCWCD SWMM criteria in Section 10 (Drainage) of the City's Improvement Standards.

Water Forum Agreement

The Water Forum Agreement (WFA) is the result of the efforts of a diverse group of community leaders formed in 1994 to formulate principles for a regional solution to future water supply needs. Participants in the Water Forum have developed two coequal objectives:

- Provide a reliable and safe water supply for the region's economic health and planned development to the year 2030
- Preserve the fishery, wildlife, recreational, and aesthetic values of the Lower American River

Water Forum stakeholders have developed an integrated package of actions that will meet the two co-equal objectives mentioned above. Each element of the package is necessary for a regional solution to work. There are seven elements:

1. Increased Surface Water Diversions
2. Actions to Meet Customers' Needs While Reducing Diversion Impacts on the Lower American River in Drier Years
3. An Improved Pattern of Fishery Flow Releases from Folsom Reservoir
4. Lower American River Habitat Management Element, which also Addresses Recreation in the Lower American River
5. Water Conservation Element
6. Groundwater Management Element
7. Water Forum Successor Effort

Purveyor Specific Agreements (PSA) have been developed that describe in detail how each of the seven elements will be implemented by the respective purveyors, such as the City of Roseville, PCWA, and SJWD. These PSAs are compiled into a Memorandum of Understanding that each stakeholder's authorizing body has executed. In return for signing the final Water Forum agreement, water purveyors receive regional support for water supply projects, including site-specific infrastructure development.

In January 1999, the Sacramento City-County Office of Metropolitan Water Planning published the Draft Environmental Impact Report (EIR) for the WFA. The WFA EIR addresses the impacts and mitigation measures that the area stakeholders would need to comply with in order to implement the water supply program outlined in the WFA. The Final EIR for the WFA was certified on November 23, 1999. The findings of that EIR, and the accompanying Water Forum Action Plan, outlined a program whereby water delivery could be supplied to area stakeholders through the year 2030, provided that a permanent pumping plant is constructed at Auburn and the Sacramento River Water Reliability Project diversion

facilities are constructed. The WFA EIR is hereby incorporated by reference into this EIR. The full WFA EIR is available for review at the City of Roseville Permit Center, 311 Vernon Street, Roseville, California.

4.12.4 Impacts and Mitigation Measures

Methods of Analysis

Drainage and Flooding

Technical data to support the analysis of potential drainage and flooding impacts of the Proposed Project were developed by Wood Rodgers Inc. and presented in the *Fiddyment-Westpark Property Master Plan Drainage Analysis* (June 2003), which is available for review at the City of Roseville Permit Center, 311 Vernon Street, Roseville, California. The baseline for the analysis in this section is existing conditions. Cumulative impacts on Hydrology and Water Quality are addressed in Chapter 5 (CEQA Considerations).

Stormwater Peak Flows

Wood-Rodgers Inc. used the HEC-1 watershed computer program version 4.1 to analyze the 2-, 10-, 25-, 100-, and 500-year peak flow pre-project and post-project conditions for the Pleasant Grove Creek and Curry Creek watersheds. Although the model assumptions were refined to reflect the location of the WRSP Area and Remainder Area within the context of each of the two drainage sheds, the same methods were applied to both the WRSP and the Remainder Area because portions of each area drain to both Pleasant Grove Creek and Curry Creek.

The HEC-1 models used the Pleasant Grove Creek and Curry Creek watershed portions of the 1993 *Pleasant Grove, Auburn, and Coon Creek Flood Mitigation Plan* to estimate peak flows throughout the watersheds. Wood Rodgers Inc. modified the HEC-1 models to include standard methodologies from the PCFCDWCD SWMM. These methodologies included Kinematic Wave for overland flow, Muskingum-Cunge routing for channels, and Modified Puls routing for channel storage and/or detention routing. The model has been updated to reflect development that has accrued since 1993 in the watershed. The off-site watershed sub-basins were consistent with the size (square miles) and estimated impervious surface assumed in the 1993 *Pleasant Grove, Auburn, and Coon Creek Flood Mitigation Plan*. Only the sub-shed areas within the WRSP Area were modified to reflect proposed land uses.

Pleasant Grove Creek

The HEC-1 modeling for the Fiddyment Ranch portion of the WRSP Area within the Pleasant Grove Creek watershed incorporates 1,622 acres. A 265.0-acre portion of the Westpark property also discharges

through the Fiddyment Ranch property, and additional runoff is generated from a portion of the Westpark property west of the Fiddyment Ranch property adjacent to Phillip Road. The shed area also includes the new wastewater treatment plant site. Off-site contributing basins in the Pleasant Grove Creek watershed were identified and added to the model as if the contributing areas were discharging through the WRSP.

The entire Pleasant Grove Creek watershed was analyzed because the HEC-1 watershed model was previously developed and provided by the PCFCWCD and because the main branch of Pleasant Grove Creek flows from east to west through the middle of the Fiddyment Ranch portion of the WRSP Area.

Four individual HEC-1 models were developed for the Pleasant Grove Creek watershed:

- *Model 1—Existing (Pre-Development) Peak Flow Runoff*: Off-site Pleasant Grove Creek watershed (existing condition) and WRSP Area (Fiddyment Ranch and Westpark), including the northern portion of the Remainder Area within the Pleasant Grove Creek watershed, prior to development (existing condition)
- *Model 2—Post-Development Peak Flow Runoff*: Off-site Pleasant Grove Creek watershed (existing condition) and WRSP Area developed as proposed. This model identifies the project-specific impact stormwater runoff attributable to the proposed WRSP, including the portion of the Remainder Area that drains to Pleasant Grove Creek.
- *Model 3—Post-Development Cumulative Peak Flow Runoff (No Upstream Detention)*: Off-site Pleasant Grove Creek watershed (developed under General Plan buildout conditions, assuming upstream, off-site regional detention basins are *not* in place) and WRSP developed as proposed. This model identifies how the proposed WRSP contributes to the cumulative condition (without upstream detention)
- *Model 4—Post-Development Cumulative Peak Flow Runoff (With Upstream Detention)*: Off-site Pleasant Grove Creek watershed (developed under General Plan buildout conditions with upstream mitigation) and WRSP Area developed as proposed. Peak flows from this model were used to delineate the 100-year floodplain along Pleasant Grove Creek.

Curry Creek

With the exception of the 265.0-acre area noted above, most of the Westpark portion of the WRSP Area is within the Curry Creek watershed. A small portion (55.7 acres) of the Fiddyment Ranch property discharges to the Curry Creek watershed through the northeast corner of the Westpark property. For purposes of the drainage study, the 55.7-acre contribution from the Fiddyment Ranch portion was included in the Curry Creek analysis. As with the Pleasant Grove Creek watershed, off-site contributing basins for Curry Creek were identified and added to the model as if the contributing areas were discharging through the WRSP Area. The HEC-1 model was used to generate estimates of existing peak

flows, peak flows generated by development in the WRSP Area that discharges to the Curry Creek watershed, and peak flows with detention facilities in place to mitigate increases in flows.

Proposed basins that were identified in the drainage study (see Figure 4.12-2) to mitigate post-development peak flows below pre-existing levels for the Curry Creek watershed were analyzed based on the PCFCWCD SWMM Section VII, which requires mitigating the 2- to 100-year frequency storm events and reducing the objective project peak flows up to 90 percent of the pre-development levels. The objective flow is equal to the pre-development peak flow rate less 10 percent of the difference between the estimated on-site pre-development and post-development peak flow rates.

Floodplain Analysis

Wood Rodgers Inc. used the HEC-RAS version 3.0.1 (March 2001) to delineate the 10-year and 100-year water surface elevations and floodplain for Pleasant Grove Creek, Kaseberg Creek, and the Pleasant Grove Creek tributary in the WRSP Area and Remainder Area. The highest peak flows from each storm centering were used to designate the 100-year floodplain for Pleasant Grove Creek and tributaries.

The analysis assumed natural open channel conditions would not be altered. Because historical high water marks were not available, roughness coefficients through the main branch and tributaries were assumed based on field observation and previous studies in Placer County.

The Curry Creek analysis for developed conditions assumed that detention facilities and the berm were in place, as well as small areas of fill within the floodplain at roadway crossings (generally in areas where overbank flows would occur).

Stormwater Volumes

The 8-day 1986 storm event was applied to the Pleasant Grove Creek and Curry Creek watershed model to calculate estimated runoff volumes for the entire SOI Amendment Area, which includes the WRSP Area and the Remainder Area.

Stormwater Runoff Water Quality

The analysis of potential water quality effects was based on a qualitative comparison of pre-developed and post-developed land uses. It would be speculative to identify specific post-development water quality impacts that could occur because the actual amount or type of development that could occur within any given proposed land use and the specific types of water quality BMPs (both construction and operational) have not been determined at this stage of project development. However, it is conservatively assumed for purposes of evaluation in this EIR that new or additional stormwater runoff generated by

the Proposed Project is expected to contain some level of contaminants typically associated with urban development that could affect receiving water quality.

For purposes of developing a list of proposed BMPs for the WRSP, Wood Rodgers assumed the stormwater treatment devices in the WRSP would be designed to treat the "first flush" storm event. The first flush storm event equates to an approximately six-month design storm frequency over a 30-minute duration; however, this storm event is rarely quantified. The PCFCWCD SWMM includes criteria for stormwater quality treatment features that were considered in the development of the number and locations of water quality outfalls. The drainage features will need to be further modified, as necessary, to ensure compliance with State requirements established in the Phase 2 Municipal Stormwater General Permit as implemented through the City's Phase 2 SWMP.

Groundwater

Dry-Year Groundwater Supply Impact Analysis

Groundwater Impact Analysis Assumptions

The impact discussion incorporates the results of a groundwater impact analysis prepared by MWH. The *Groundwater Impact Report* is included in Appendix M. In the *Groundwater Impact Report*, MWH used the North American River and Sacramento County Combined Integrated Groundwater and Surface Water Model (IGSM) to simulate groundwater conditions. This model was originally developed for the American River Water Resources Investigation (ARWRI) and later updated by the American River Basin Cooperating Agencies for the Regional Water Master Plan. Additional information regarding this model is provided in Appendix M.

For the impact analysis, it was assumed that groundwater would be used only for the WRSP Area, because buildout of the Remainder Area would likely depend on implementation of the Sacramento River Water Reliability Project (also referred to as the Sacramento River Diversion Project) (see Impacts 4.11-1 and 4.11-2 in Section 4.11, Public Utilities). If that project is implemented, the City anticipates potential delivery of approximately 7,100 AF/yr of surface water supplies. Under such a scenario, the need for groundwater may be avoided even in the WSRP Area. However, the earliest anticipated date for operation of the Sacramento River Water Reliability Project is 2010. Therefore, assuming development of the WRSP represented the "worst-case" scenario for groundwater extraction in these years, the WSRP Area would only require 2,848 AF/yr. Therefore, this analysis is conservative.

The groundwater impacts described in the *Groundwater Impact Report* were defined as the incremental changes between the groundwater conditions corresponding to a baseline condition that does not include

development of the WRSP Area and groundwater conditions resulting after the WRSP Area has been developed. The following assumptions were made for the analysis of mitigating the dry-year groundwater use, which was assumed to be accomplished by fallowing land at the Reason Farms property:

- 1,080 acres fallowed,
- 6,483 AF/yr of groundwater extracted for existing irrigation demand,
- 2,632 AF/yr of groundwater return by deep percolation of irrigation water,
- 3,851 AF/yr of groundwater available for beneficial uses.

Groundwater Recharge

Groundwater recharge related to changes in impervious surfaces was analyzed qualitatively, based on published technical information that identifies groundwater recharge potential in the groundwater basin that underlies the SOI Amendment Area.

Standards of Significance

For the purposes of this EIR, a significant impact would occur if development proposed in the SOI Amendment Area would do any of the following:

- Substantially alter the existing drainage pattern in a manner that would either result in substantial erosion or siltation on or off site, or increase the rate or amount of surface runoff resulting in flooding on or off site
- Create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems
- Expose people or property to flood hazards by placing them in an area subject to inundation within the 100-year floodplain as defined by FEMA or additional site-specific floodplain maps
- Substantially degrade surface and/or groundwater quality due to increases in sediments, erosion and urban contaminants generated by construction and/or operation activities or violate any water quality standards or waste discharge requirements
- Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table

Impacts

IMPACT 4.12-1:	CHANGES IN THE RATE OF STORMWATER RUNOFF (PEAK FLOWS) THROUGH THE DEVELOPMENT OF NEW IMPERVIOUS SURFACES.	
Applicable Policies and Regulations:	City of Roseville Improvement Standards PCFCWCD SWMM	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Significant
Mitigation Measures:	None required	MM 4.12-1 (Prepare site-specific drainage study)
Significance after Mitigation:	Less Than Significant	Less Than Significant

The Project Area is undeveloped at present. Development of residential and mixed uses in the Project Area would increase the amount of impervious surface coverage over that which currently exists. This increase in the amount of impervious surface coverage would increase the rate of surface runoff entering Pleasant Grove Creek and Curry Creek watersheds. In addition, development and grading would alter the existing runoff patterns and conveyance capacities on the properties.

Results of hydrologic and hydraulic modeling were used to identify appropriate drainage facilities in the WRSP to manage stormwater peak flows in accordance with City Improvement Standards and PCFCWCD SWMM requirements. Detention facilities to control peak flows are not recommended for locations that drain to Pleasant Grove Creek as described below for the WRSP because hydrologic modeling shows that such facilities could exacerbate downstream flooding conditions. However, detention basins are proposed for Curry Creek in the WRSP to mitigate downstream effects. The impacts associated with peak flow runoff and the effectiveness of the mitigation for both the WRSP Area and Remainder Area are discussed below.

Stormwater Runoff (Peak Flow Rates)

West Roseville Specific Plan

Increased stormwater flows and altered drainage patterns as a result of development in the WRSP could increase the potential for localized and regional flooding downstream of the WRSP. Consistent with Roseville General Plan Policy SB-6 and PCFCWCD SWMM standards, peak flow runoff rates were determined for the WRSP Area to identify drainage features that would be necessary to mitigate post-development flows. Pre-project and post-development peak flow rates for Pleasant Grove Creek and Curry Creek are presented in Table 4.12-4 (Pleasant Grove Creek Comparison of Pre-Development and

Post-Development Peak Flow Conditions) and Table 4.12-5 (Curry Creek Comparison of Pre-Development and Post-Development Peak Flow Conditions). Because the Pleasant Grove Creek watershed was modeled as one unit, these data reflect the contribution from the portion of the Remainder Area that drains to Pleasant Grove Creek.

Table 4.12-4 Pleasant Grove Creek Comparison of Pre-Development and Post-Development Peak Flow Conditions

Location	2-yr			10-yr			25-yr			100-yr		
	Ex (cfs)	Dev (cfs)	% Chg	Ex (cfs)	Dev (cfs)	% Chg	Ex (cfs)	Dev (cfs)	% Chg	Ex (cfs)	Dev (cfs)	% Chg
Pleasant Grove Creek at west end of WRSP	1,857	1,848	-0.5	4,449	4,384	-1.5	6,115	6,098	-0.28	8,162	8,124	-0.5
Pleasant Grove Creek at Brewer Rd.	2,052	2,012	-1.9	5,344	5,236	-2.0	7,034	6,933	-1.4	9,070	8,921	-1.6
Pleasant Grove Creek at Placer-Sutter County line	2,079	2,045	-1.6	5,289	5,200	-1.7	6,982	6,901	-1.2	9,021	8,882	-1.5
Pleasant Grove Creek at Cross Canal	2,076	2,047	-1.4	5,227	5,150	-1.5	6,897	6,837	-0.9	8,947	8,823	-1.4

NOTES:
cfs = cubic feet per section
Ex = existing (pre-developed) conditions
Dev = developed conditions on-site, no detention
% Chg = percent change (increase/reduction) in peak flow rates without detention
SOURCE: Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, Volume 1, Table 13, June 2003.

Table 4.12-5 Curry Creek Comparison of Pre-Development and Post-Development Peak Flow Conditions

Description	2-yr	10-yr	25-yr	100-yr
Peak Flow and Mitigation Rates for Curry Creek At WRSP Boundary				
Pre-Development Peak Flow Rate (cfs)[1]	218	501	662	910
Post-Development Unmitigated Peak Flow Rate (cfs)	362	723	936	1265
Post-Development Mitigated Peak Flow Rate (cfs)	204	386	532	747
Net Decrease from Pre-Development to Post-Development Peak Flow Rate (cfs)	14	115	130	163
Peak Flow and Mitigation Rates for Curry Creek at Sutter County/Placer County Boundary				
Pre-Development Peak Flow Rate (cfs)	833	1916	2669	3646
Post-Development Unmitigated Peak Flow Rate (cfs)	852	2031	2795	3799
Post-Development Mitigated Peak Flow Rate (cfs)	816	1879	2613	3575
Net Decrease from Pre-Development to Post-Development Peak Flow Rate (cfs)	17	37	56	71

NOTES:
1. cfs = cubic feet per second
SOURCE: Wood Rodgers, June 2003

Pleasant Grove Creek

Hydrographs of the modeled data show that peak flows in the lower portions of the Pleasant Grove Creek watershed are accelerated prior to peak flows from the upstream watershed. The 10-, 25-, and 100-

year frequency peak flow comparisons shown in Table 4.12-4 that compare pre-development conditions (Model 1) to post-development conditions (Model 2) for the Pleasant Grove Creek watershed indicate that development of the WRSP Area without detention in the areas that drain to Pleasant Grove Creek (i.e., Fiddyment Ranch and the portion of Westpark that drains to the Pleasant Grove Creek watershed) would reduce peak flows for all storm events. The reduction would occur because the peak WRSP discharge would occur before the most significant watershed peak, which would, in turn, reduce the potential for peak flows to coincide downstream that could cause or exacerbate flooding.

As noted in the Environmental Setting, several developments upstream east of State Route 65 in Lincoln and Rocklin have constructed or have planned regional detention storage basins along Pleasant Grove Creek and its tributaries. Based on a comparison of data generated for cumulative plus project upstream conditions with and without upstream detention (Model 3 and Model 4), each of these basins contributes to delays in downstream peak flows at the WRSP boundary. As a result, placing detention basins in the lower portions of the Pleasant Grove Creek watershed to manage all events, including the higher frequency (2-year) small storms, would likely delay peak flows such that the combined effect could actually increase peak flows downstream, which could increase flood risk to downstream properties. The conclusion for the Pleasant Grove Creek watershed is consistent with drainage studies prepared for projects located upstream in the City of Roseville. Therefore, based on the HEC-1 modeling estimates, it was determined that on-site stormwater detention storage is not recommended to manage peak flows in the Pleasant Grove Creek watershed.[444]

Curry Creek

With the Westpark portion of the WRSP Area located at the headwaters of the Curry Creek watershed, the HEC-1 analysis produced results indicating that detention is recommended at key locations to mitigate post-development peak flows below pre-development conditions. Results of the Curry Creek analysis are presented in Table 4.12-5. As shown in Figure 4.12-2, two detention basins (Basins A and E) would be located adjacent to and upstream of the proposed weir to mitigate the largest contribution from the Westpark property prior to discharging off-site. These basins would provide detention storage for a 100-year, 24-hour peak event. Basin E would use three 36-inch culverts and an approximately 6-foot-high weir structure at the project boundary to detain approximately 38 to 40 acre-feet. The proposed weir structure would be set at elevation 85.5 feet and would be approximately 250 feet long. The weir structure would be 30 feet wide to accommodate a future maintenance access road. Basin A would provide approximately 20.0 acre-feet of storage by using two 4-foot by 10-foot and two 5-foot by 10-foot

[444] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 29.

box culverts under West Side Drive. Table 4.12-5 shows the reduction in peak flows that would occur with the proposed detention features.

A third basin (Basin F) is recommended to mitigate peak flows in the northwest portion of the Westpark property (see Figure 4.12-2). The basin would store approximately 5 acre-feet for a 100-year, 24-hour storm event, and would be approximately 3 feet deep.

Based on the analysis, two small basins in the southern part of the WRSP Area drained by Curry Creek would also be required (Basins C and D on Figure 4.12-2). Each basin would provide approximately 8 to 9 acre-feet of storage. Alternatively, a larger detention basin near the main branch of Curry Creek within the SOI Amendment Area could be developed instead of Basins C and D. Either of these options would provide sufficient detention storage for peak flows from the Curry Creek portion of the WRSP.[445]

As a condition of project approval, the City Planning Department would require that the preliminary infrastructure to convey stormwater flows in the WRSP Area be identified. Prior to issuance of building permits, the final design for the storm drainage infrastructure would be reviewed by the City's Engineering Department to ensure it complies with City Improvement Standards.

In summary, peak flow comparisons indicate that the proposed basin storage and outflow design described above for Curry Creek would provide the required peak flow mitigation beyond the SWMM requirements.[446] As land uses are further refined, specific data for detention outflow structures would be developed when specific projects are proposed, consistent with SWMM and City of Roseville standards. Therefore, impacts for the WRSP Area would be **less than significant**.

Remainder Area

Pleasant Grove Creek

Stormwater from new impervious surfaces in the Remainder Area north of Phillip Road would be conveyed to Pleasant Grove Creek. As discussed for the WRSP, modeling for the Pleasant Grove Creek watershed (which includes the northern Remainder Area) indicated that detaining peak flows in basins would not be recommended because it could exacerbate downstream flooding by allowing downstream peak flows to coincide. When future land uses in the northern Remainder Area have been more clearly defined, site-specific hydrologic and hydraulic analyses would be performed as a condition of project approval (as required under City of Roseville General Plan Policy SB-6) and subject to review by the

[445] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 32.
[446] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 32.

PCFCWCD. As noted for the WRSP Area, the City would require that the preliminary infrastructure required to adequately convey stormwater flows in the Remainder Area draining to Pleasant Grove Creek be identified. Prior to issuance of building permits, the final design for the infrastructure would be reviewed by the City's Public Works Department, Engineering Division.

Curry Creek

New development in the southern Remainder Area would increase peak flows into Curry Creek. As discussed above, five detention basins (A, C, D, E, and F shown on Figure 4.12-2) would be developed for the WRSP Area to reduce peak flows generated by development in the southern portion of the WRSP Area that drains to Curry Creek. The capacity of the drainage facilities infrastructure in the WRSP has been sized to accommodate WRSP-generated runoff along with runoff from the Remainder Area.[447] As a result, flows from the Remainder Area, combined with the flows from the WRSP Area, would not exceed the capacity of the infrastructure, so the potential for a backwater effect that could cause upstream flooding in the WRSP Area would be minimized.

The location of a basin to serve the Remainder Area only and the size of that facility has not been determined. As a result, peak flows from the Remainder Area could increase the risk of downstream flooding. If the combined approach is used, and if the combined basin in the Remainder Area is not large enough to detain the combined WRSP Area and Remainder Area flows in accordance with PCFCWCD and City Improvement Standards drainage criteria, peak flows could be increased downstream, which could increase the risk of flooding downstream of the Remainder Area, or properties within the Remainder Area adjacent to the basin could be subject to increase risk of flooding. This is considered a significant impact**.** Implementation of MM 4.12-1 would reduce this impact to a **less-than-significant** level by ensuring peak flows from the Remainder Area do not increase the risk of downstream flooding in the Curry Creek watershed.

[447] Garth Gaylord, City of Roseville Public Works Department, personal communication, December 5, 2002.

IMPACT 4.12-2:	**INCREASE IN THE AMOUNT OF SURFACE RUNOFF, WHICH WOULD EXCEED THE CAPACITY OF EXISTING STORM DRAINAGE SYSTEMS AND INCREASE THE POTENTIAL FOR DOWNSTREAM FLOODING.**	
Applicable Policies and Regulations:	None Applicable	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	Significant
Mitigation Measures:	MM 4.12-2 (Pay fair-share of Roseville regional stormwater retention facility improvements)	MM 4.12-3 (Retention policies)
Significance after Mitigation:	Less Than Significant	Less Than Significant

As discussed in Impact 4.12-1, development of the Proposed Project would increase impervious surfaces, which would generate additional stormwater runoff. This increase in the amount of impervious surface coverage would increase the volume of surface runoff entering Pleasant Grove Creek and Curry Creek watersheds over existing conditions. In addition, development and grading would alter the existing runoff patterns and conveyance capacities on the properties. Development of the project is estimated to generate an additional runoff volume of 685.5 acre-feet over the 8-day storm model (total combined stormwater flows from the WRSP Area and Remainder Area into Pleasant Grove Creek and Curry Creek).

The increase in runoff volume would need to be managed to minimize the risk of downstream flooding beyond the Project boundaries in the Cross Canal watershed. There are currently no existing retention basin facilities to manage stormwater volumes generated by the project. As discussed in the Environmental Setting, approximately 2,350 ac-ft of storage volume has been identified to mitigate the increase in the amount (volume) of stormwater runoff for existing and entitled projects in Roseville that ultimately discharge to the Cross Canal watershed. The storage volume (which would also provide capacity for projects discharging to the Curry Creek watershed) would be provided in the Pleasant Grove Creek watershed. The storage volume capacity includes stormwater runoff generated by the proposed Project. Flows from the portions of the Project Area that drain to the Curry Creek watershed are included in the volume estimates for the retention basin on Pleasant Grove Creek. Because Pleasant Grove Creek flows through the WRSP Area and would receive stormwater from the WRSP Area that would, in turn, be discharged directly to the retention basin, no other off-site retention basin conveyance improvement would be needed for the WRSP Area flows.

As noted in the Environmental Setting, a site for the return basin has been identified, and several million dollars have been collected through development fees to acquire the site. An EIR that evaluated full buildout of the regional retention basin to 2,350 acre-feet capacity, to which the project would incrementally contribute, was certified in January 2003. The City approved the regional basin project on January 22, 2003. The regional retention basin would be constructed regardless of whether the project is approved.

The impacts associated with stormwater volume at both the WRSP and Remainder Areas, and the effectiveness of potential mitigation measures, are discussed below.

West Roseville Specific Plan

Results of hydraulic modeling indicate that development of the WRSP Area is estimated to generate a total increase of 351.7 AF/yr of additional runoff volume (172.4 AF/yr from the Fiddyment portion and 179.3 AF/yr from the Westpark portion). The amount of runoff for the Fiddyment Ranch and Westpark properties individually is listed in Table 4.12-6 (Stormwater Runoff Volume Increase). The increase in runoff volume would need to be managed to minimize the risk of downstream flooding beyond the WRSP Area boundaries. The approved regional stormwater retention basin located on Pleasant Grove Creek west of the WRSP would be used to store flows from the WRSP Area during major flood events on the Sacramento River. When the basin is completed, no additional on-site or off-site conveyance infrastructure would need to be developed (other than the proposed water quality outfalls [see Impact 4.12-5]) to convey WRSP Area stormwater flows to the basin because the WRSP outfalls discharge directly to Pleasant Grove Creek. Although not yet constructed, the regional retention basin project has been approved, and would include capacity for WRSP stormwater flows. As such, the WRSP contribution would be **less than significant** because if the project is approved and funded, it will be constructed over 10 years so that at Buildout the retention basin should be completed, and capable of dealing with the stormwater flows.

Implementation of MM 4.12-2 would ensure a mechanism for determining the WRSP's proportionate contribution to development of the regional retention basin. To further reduce potential impacts MM 4.12-2 would ensure that if the regional detention center is not completed at Buildout, a funding mechanism for the construction of any necessary stormwater detention facilities is in place.

Table 4.12-6 Stormwater Runoff Volume Increase

Location	Total Area (acres)	Retention Volume Requirement (acre-feet)
Fiddyment Ranch	1,678.4	172.4
Westpark	1,483.6	179.3
WRSP Total	3,161	351.7
SOI Remainder Area No. 1 (north of Phillip Road)	667.0	67.6
SOI Remainder Area No. 2 (north of Baseline Road)	1,701.0	223.7
SOI Remainder Area Total	2,368	291.3
Total Retention Volume Requirement (WRSP + SOI)		643.0
Proposed Energy Park (included in modeling)	66.2	16.5
PGWWTP (included in modeling)	101.6	25.9
Total Retention Volume Requirement		***685.5***

SOURCE: Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, Table 25.

Remainder Area

If the Remainder Area were developed at levels similar to those proposed in the WRSP, development of the Remainder Area would be estimated to generate 291.3 acre-feet of runoff (see Table 4.12-6). The effects on stormwater runoff volumes are discussed above. As described for the WRSP, without the completed regional detention facility, runoff at buildout could result in increased risk of flooding at downstream properties. However, the Remainder Area contribution would be less than significant because if the project is approved and funded, it will be constructed over the next 10 years so that at Buildout the retention basin should be completed and capable of dealing with the stormwater flows. Therefore, as described for the WRSP Area, this impact is considered **less than significant**. To further reduce potential impacts MM 4.12-3 would ensure that if the regional detention center is not completed at buildout, the construction of a funding mechanism for any stormwater detention facilities is in place.

IMPACT 4.12-3:	**PLACEMENT OF FILL OR STRUCTURES IN 100-YEAR FLOODPLAIN COULD AFFECT WATER SURFACE ELEVATIONS, WHICH COULD INCREASE THE RISK OF FLOODING.**	
Applicable Policies and Regulations:	FEMA (44 CFR 60) City Floodplain Development Regulations (Chapter 9.80, Roseville City Code)	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Significant
Mitigation Measures:	None required	MM 4.12-4 (Floodplain Policies)
Significance after Mitigation:	Less Than Significant	Less Than Significant

Pleasant Grove Creek, Kaseberg Creek, and Curry Creek flow through the Project Area. As illustrated in Figure 4.12-2, the 100-year floodplain for Pleasant Grove Creek is broader in the western part of the

Project Area than in the eastern portions. Development of the Project Area is anticipated to include the placement of small amounts fill at certain locations. Some of the fill would be used in small depressions in overbank areas to reduce the extent of the floodplain where uses other than open space or park would occur. Fill would also be placed as part of the construction of proposed roadway and bridge crossings, drainage culverts, and the weir structure for the Curry Creek detention basins. Refer to Section 4.7 (Biological Resources) for additional information regarding fill placement and permitting requirements.

West Roseville Specific Plan

Locations of proposed fill in the WRSP Area are shown in Figure 4.12-4 (Proposed 100-Year Floodplain Fill Areas in West Roseville Specific Plan). The placement of fill would slightly reduce the conveyance capacity of the Pleasant Grove Creek and tributary floodplains and would minimally increase water surface elevations in the WRSP Area. These increases (approximately 1 to 2 inches) are not considered substantial and are only located within the WRSP.[448] Downstream water surface elevations would not be measurably affected.[449] The modeled estimates of water surface elevation changes listed in Table 4.12-7 include a component that accounts for these fill improvements. Compliance with the City's Floodplain Development Regulations would mitigate any impacts associated with fill in the 100-year floodplain. A Letter of Map Revision (LOMR) for Pleasant Grove Creek and tributary floodplains, including the Curry Creek tributary, will be submitted to FEMA after the City of Roseville and Placer County Flood Control and Water Conservation District have reviewed the data. While the absolute boundary of the 10-year and 100-year floodplains could vary slightly from the elevations shown on detailed floodplain maps in the *Master Drainage Study*, placement of the fill would not increase water surface elevations beyond those estimated in the current HEC-RAS model. As land uses are refined within the WRSP Area, this detail will be further refined to ensure that no private development would occur in the floodplain. Because no development would occur in the 100-year floodplain, people and structures would not be exposed to 100-year flood hazard, and the WRSP would not increase flood elevations beyond those already identified. Therefore, this is considered a **less-than-significant** impact**.**

[448] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 45 and Table 24.
[449] Chris Ferrari, Wood Rodgers, personal communication, June 13, 2003.

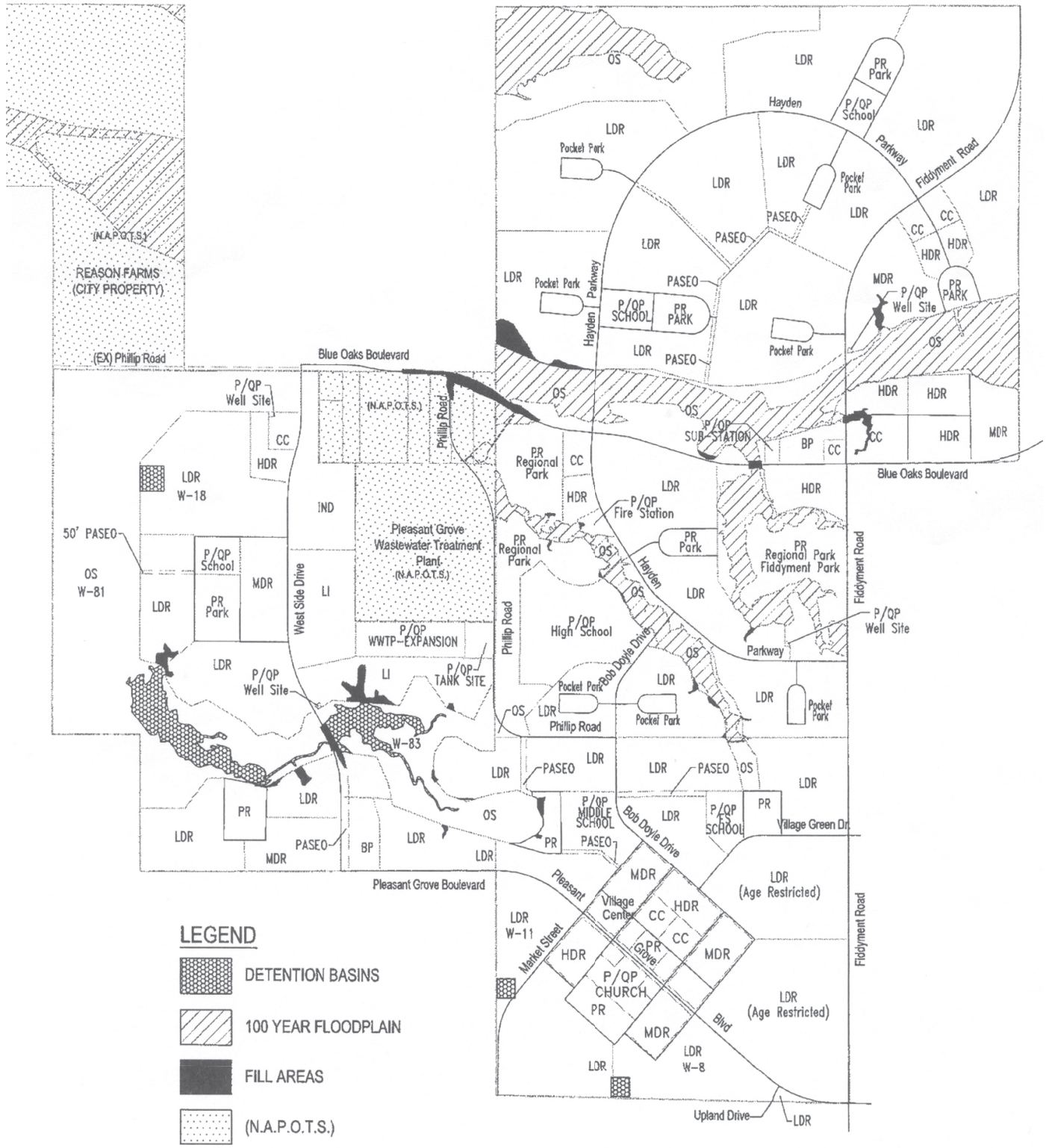

FIGURE **4.12-4**

Proposed 100-Year Floodplain Fill Areas in West Roseville Specific Plan

Not to Scale

10659-00

Source: Wood Rogers

City of Roseville

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Table 4.12-7 Curry Creek Downstream Changes in Water Surface Elevations with Detention Basin E and Weir Structure in Place

Location	Existing 10-year WSL (feet)	Existing plus Project 10-year WSL (feet)	Net Change (feet)	Existing 100-year WSL (feet)	Existing plus Project 100-year WSL (feet)	Net Change (feet)
Downstream of berm at WRSP/SOI Remainder Area No. 2 boundary (with proposed detention)[a]	83.02	82.96	-0.06	83.66	83.61	-0.5

NOTES:
WSL = water surface elevation
a = Basin E, southwestern part of Remainder Area west of Westpark property
SOURCE: Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, Table 23.

Remainder Area

Because the specific land uses within the Remainder Area and potential fill areas have not been identified at the same level of detail as the WRSP, placement of fill or structures within the Pleasant Grove Creek floodplain in the Remainder Area could encroach upon the floodplain, which could reduce the capacity of the channel to convey flows. Floodplain encroachment could increase water surface elevations in the channel that could, in turn, cause or exacerbate flood risk in the Remainder Area or at downstream locations. This is considered a significant impact**.**

Implementation of MM 4.12-4 would reduce this impact to a **less-than-significant** level by ensuring that development in the Remainder Area does not occur in the 100-year floodplain, or if small amounts of fill are placed in the floodplain that water surface elevations would not be measurably affected.

IMPACT 4.12-4:	**EROSION AND RUNOFF FROM CONSTRUCTION SITES CONTAINING SOIL OR OTHER MATERIALS COULD DEGRADE WATER QUALITY IF DISCHARGED TO LOCAL STREAMS.**	
Applicable Policies and Regulations:	SWRCB NPDES Permit (State General Construction Activity Stormwater Permit) City of Roseville Improvement Standards Sections 2 and 11	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None required	None required
Significance after Mitigation:	Less Than Significant	Less Than Significant

WRSP and Remainder Area

Development associated with the project, including off-site infrastructure connections, would involve the construction of structures, roadways, parking lots, and infrastructure, which would require grading, excavation, and other construction-related activities that could cause soil erosion at an accelerated rate

during storm events. Sediment from erosion could have adverse effects on receiving water quality at the site and downstream, including Curry Creek, Pleasant Grove Creek, and eventually the Sacramento River. Such effects could include increased turbidity, which could result in adverse impacts on fish and wildlife habitat, reduced pump life at Sacramento River water intakes due to abrasion, increased municipal/industrial water treatment costs for turbidity removal, and impaired recreation and aesthetic values. Another potential source of water quality degradation during construction activities is heavy machinery and other construction equipment. Construction equipment spills could result in the release of polluting constituents, such as heavy metals, oil, grease, and other petroleum hydrocarbons, to Pleasant Grove Creek and other on-site channels.

Project construction contractors would be required by state law to obtain and comply with the State General Construction Activity Stormwater Permit. Compliance with the permit would involve the implementation of Best Management Practices (BMPs). BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollution (i.e. straw bales, dikes, silt fences, sediment traps, or similar methods). Contractors would also be required to prepare and retain on-site an Erosion Control Plan in accordance with Sections 2 and 11 of the City of Roseville's Improvement Standards. The plan would include a description of the construction site, time restrictions, erosion and sediment controls to be used, means of waste disposal, control of post-construction sediment and erosion control measures and maintenance responsibilities, landscaping during and after grading, and non-stormwater management controls.

Compliance with the State General Construction Activity Permit, as recently modified by SWRCB resolution, and City Improvement Standards, which require preparation and implementation of an Erosion Control Plan, would ensure that construction-related sediment or other contaminants that could adversely affect receiving water, would be reduced to **less-than-significant** levels.

IMPACT 4.12-5:	**CHANGES IN SURFACE WATER OR GROUNDWATER QUALITY RESULTING FROM URBAN STORMWATER RUNOFF.**	
Applicable Policies and Regulations:	NPDES Phase 2 Program regulations (City of Roseville Storm Water Management Plan)	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None required	None required
Significance after Mitigation:	Less Than Significant	Less Than Significant

Development associated with the Proposed Project would result in the conversion of undeveloped land to urban uses including residences, schools, businesses, recreation amenities, roadways, and parking areas. As discussed in Impacts 4.12-1 and 4.12-2, the increase in impervious surfaces resulting from the construction of buildings and paved areas would increase the rate and amount of stormwater runoff that would carry urban pollutants into Pleasant Grove Creek, Kaseberg Creek, or Curry Creek. It is anticipated that runoff from the Project Area would be typical of urban runoff water quality for the identified uses listed in Table 4.12-1. Activities that could increase the types or quantities of non naturally occurring pollutants in runoff due to development include motor vehicle operations, residential maintenance, littering, careless material storage and handling, domestic animal and wildlife wastes, and pavement wear. Pollutants typically associated with urban uses, such as those that could be developed in the Project Area, include oil and grease, coliform bacteria, petroleum hydrocarbons (gas and diesel fuels), nitrogen, phosphorus, heavy metals such as lead, copper, and zinc. Pesticides, herbicides, and other landscape maintenance products typically used in residential developments or formally landscaped areas could also be present. Urban runoff studies throughout the U.S. have shown that the concentration of suspended solids usually decreases as exposed soils are covered by impervious surfaces, although some sediment may still be present due to entrained dust on roadways and parking lots and from any open space areas.

The potential impacts associated with groundwater and surface water quality, as it relates to stormwater runoff, are addressed below for both the WRSP and Remainder Areas.

West Roseville Specific Plan

Development in the WRSP would result in a change in the types and amounts of pollutants discharged through stormwater outfalls as undeveloped land is converted to urban uses. Figure 4.12-5 (Proposed Major Water Quality Treatment Locations in WRSP [Fiddyment Ranch Property]) and Figure 4.12-6 (Proposed Major Water Quality Treatment Locations in WRSP [Westpark Property]) illustrate proposed water quality outfall locations. Consistent with current and anticipated NPDES Phase 2 stormwater requirements, a variety of water quality BMPs have been identified for the WRSP to treat the first flush storm event. These BMPs, which are included in the Master Drainage Study, provide guidelines to be implemented for the WRSP. The guidelines are based on BMPs currently being used in Roseville, Placer County, and the City/County of Sacramento. As discussed above, the City has prepared a SWMP under the Phase 2 program that would be applicable to the WRSP Area.

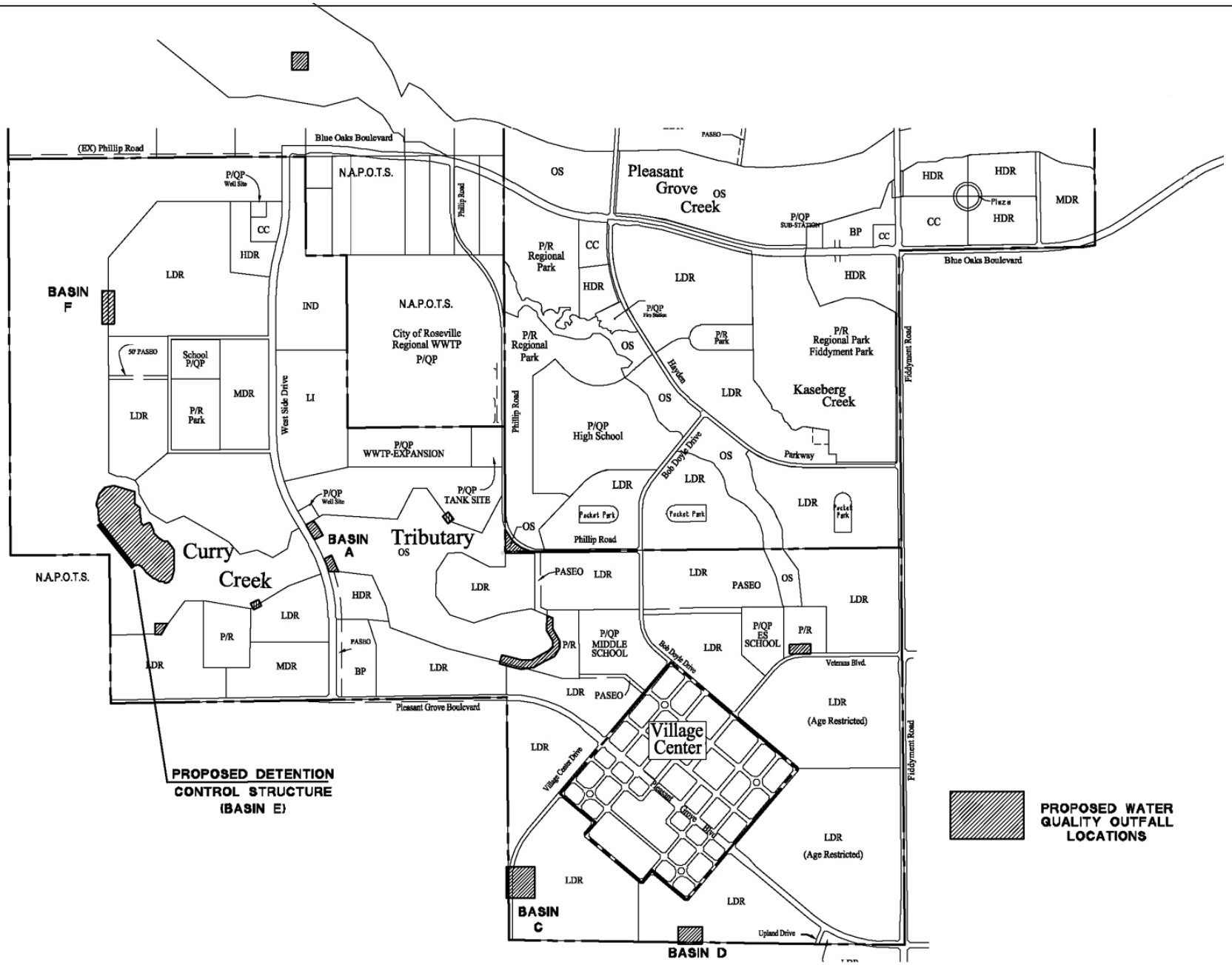

FIGURE **4.12-5**

Proposed Major Water Quality Treatment Location in WRSP (Fiddyment Ranch Property)

Source: Wood Rogers, Inc.

City of Roseville

Not to Scale

10659-00

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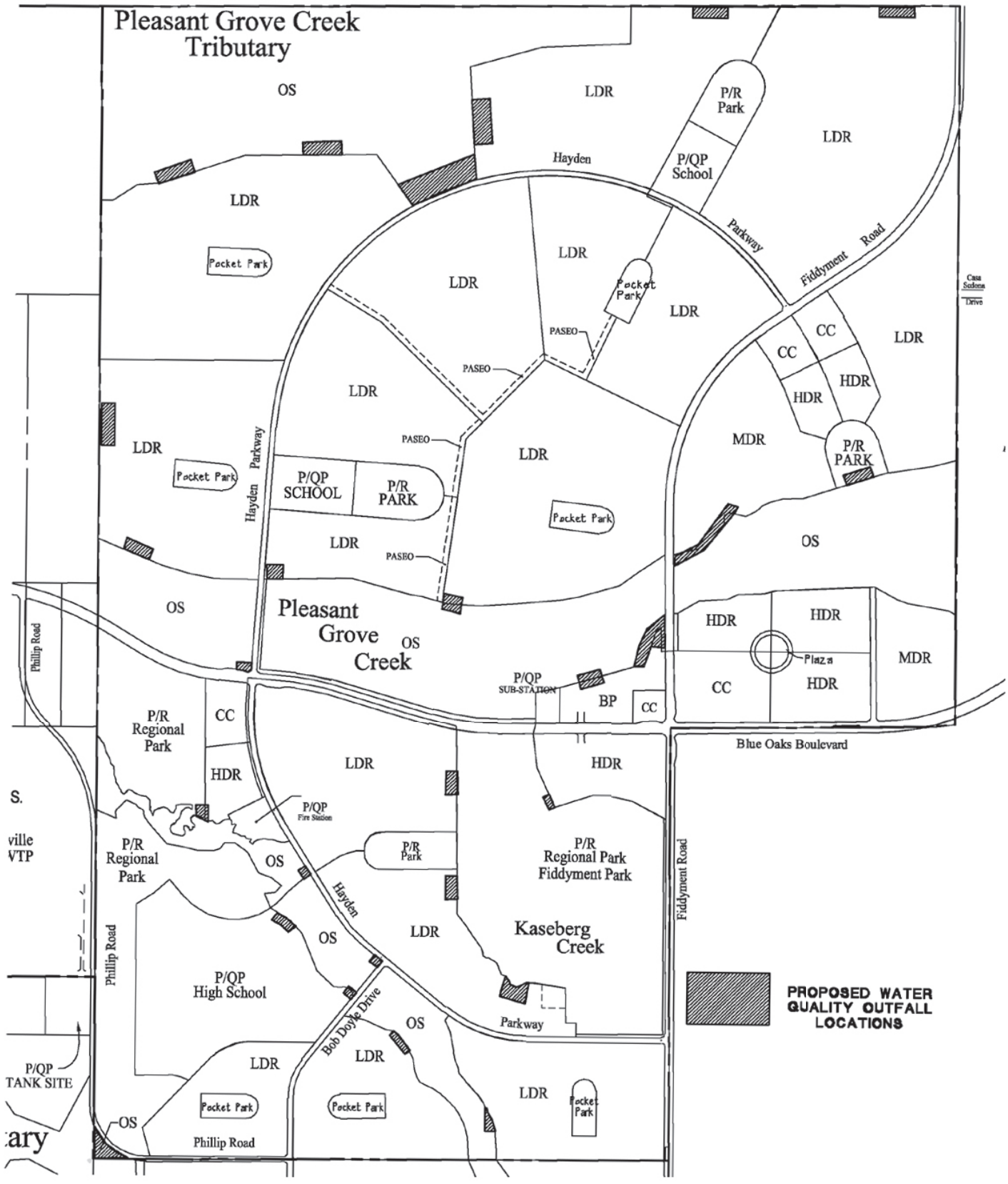

FIGURE **4.12-6**

Proposed Major Water Quality Treatment Locations in WRSP (Westpark Property)

Source: Wood Rogers

City of Roseville

Not to Scale

10659-00

EIP ASSOCIATES

Water quality treatment features in the WRSP Area could include the detention basins in the Curry Creek watershed, which would include low-flow areas to allow pollutants to settle. Grassy swales and vegetated channels could be used to remove pollutants by filtration. These BMPs are typically situated at outfalls. The WRSP provides several open space buffer areas that are proposed for such features. Landscaped roadside channels and/or buffer strips are also effective. Figures 4.12-2, 4.12-4, and 4.12-5 show a conceptual layout of where detention basins or grassy swales/vegetated channels and associated outfall structures could be located to provide water quality treatment. Oil/water grit separators, sand filter systems, or other on-site structural controls could be used in commercial, industrial, or other areas where higher-than-normal levels of pollutants could be generated. Constructed wetlands, which are shallow pools with or without open water elements that create growing conditions suitable for marsh plants, provide treatment by decreasing flow velocities. However, constructed wetlands require additional land and sources of water that may not be available in the WRSP Area.[450]

The specific BMPs that could be used in the WRSP Area, either individually or in combination, may need to be refined at the tentative map stage. For example, the drainage features will need to be modified, as necessary, to ensure compliance with the City's Phase 2 SWMP storm event standards (Attachment 4, page 6, of the State Water Resources Control Board (SWRCB) Water Quality Order No. 2003-0005-DWQ). In addition, when more detailed information is developed for each land use (e.g., tentative map), actual design for target pollutant identification and specific BMPs, such as vegetative planting, would also be necessary. Because the proposed water quality BMPs for the WRSP Area are still being refined and the City has not yet implemented a specific program to monitor the effectiveness of the proposed BMPs at the WRSP Area under the requirements of the Phase 2 SWMP, there is the potential that urban runoff from the WRSP Area could contain levels of pollutants that could adversely affect water quality in the local streams or increase sediment loads. Similarly, because creeks are the primary source of groundwater recharge in the WRSP Area, contaminants could migrate to groundwater.

Compliance with the NPDES regulations detailed above, would ensure BMPs specific to the land uses in the WRSP Area are implemented and are monitored for their effectiveness in reducing urban pollutants in runoff so that Basin Plan objectives and water quality standards are not violated, and that the BMPs are consistent with the City's Phase 2 SWMP. This would ensure potential water quality effects from urban runoff remain at a **less-than-significant** level**.**

[450] Wood Rodgers Inc., Fiddyment-Westpark Master Plan Drainage Analysis, June 2003, page 50.

Remainder Area

If the remaining portions of the SOI Amendment Area were developed at levels similar to those proposed in the WRSP, the effects on urban runoff would be similar to those described for the WRSP. Although Placer County has developed and implemented a Phase 2 program, the land uses in the Remainder Area have only been identified at a conceptual level for purposes of programmatic analysis. The types of BMPs that could be used in the Remainder Area have not been documented and how they would be monitored has not been established. Therefore, urban runoff water quality impacts could be significant**.**

Compliance with the NPDES regulations as detailed above would ensure BMPs specific to the land uses in the Remainder Area are implemented and are monitored for their effectiveness in reducing urban pollutants in runoff so that Basin Plan objectives and water quality standards are not violated. This would ensure potential water quality effects from urban runoff remain at **less-than-significant** levels**.**

IMPACT 4.12-6:	**GROUNDWATER USE DURING DRY YEARS.**	
Applicable Policies and Regulations:	Roseville General Plan City/County MOU Placer County General Plan Guiding Principles Water Forum Agreement	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	No impact
Mitigation Measures:	MM 4.11-2 (non-extraction)	None required
Significance after Mitigation:	Less Than Significant	No impact

Development of the Proposed Project would increase the demand on water supplies. As discussed in greater detail in Impacts 4.11-1 and 4.11-2 in Section 4.11 (Public Utilities), this demand for water would be met through a combination of sources. During average/wet years, a portion of required surface water would be obtained from existing supplies and treated at the City's Water Treatment Plant on Barton Road. The remainder would be from a treatment facility that would be constructed as part of the Sacramento River Water Reliability Project, if that project is approved and built. The Sacramento River Water Reliability Project is required for development of the Remainder Area, as groundwater use would not be allowed to support growth in either the WRSP or the Remainder Area during average/wet years. However, groundwater could be used during dry years to supplement supplies in the WRSP.

Effects of Groundwater Use During Dry Years

West Roseville Specific Plan

Development of the WSRP Area would increase the demand on water supplies. As discussed in greater detail in Impacts 4.11-1 and 4.11-2 in Section 4.11 (Public Utilities), this demand for water would be met through a combination of sources. During average/wet years, sufficient surface water would be obtained from existing supplies and new supplies and treated at the City's Water Treatment Plant on Barton Road. Groundwater use would not be allowed in the WRSP Area during average/wet years. However, due to contractual obligations, approximately 2,848 AF/yr of surface water supplies would not be available during dry and driest years. As a result, the City would have to implement extraordinary measures including implementing water conservation measures, and utilizing emergency groundwater supplies as a backup consistent with current City practices. The following analysis is based on MWH Groundwater Analysis to determine what the impact of using groundwater during dry conditions by the WRSP Area would be.

Based on 70 years of historic data, which included the 1977 drought of record, the results of hydrologic modeling suggest that groundwater would only be required in 12 of 70 years, or 17 percent of the time. During dry years, as stated in Impact 4.11-2, groundwater would be needed to supplement surface water supplies. While this is consistent with regional water planning established in the Water Forum Agreement, it is implicit in the City/County MOU Development Agreement Standards and Guiding Principles that surface water will be the water supply source. The Placer County General Plan also encourages use of surface water for urban development. However, groundwater use is not prohibited by either document.

MM 4.11-2, identified in Impact 4.11-2 in Section 4.11 (Public Utilities, Water), directs that the annual or permanent retirement of groundwater-irrigated land owned by the City of Roseville (Reason Farms property) could be used to offset the dry-year groundwater use in the WRSP. The following discussion describes the potential environmental effects of groundwater use during dry years for the WRSP and how fallowing land reduces groundwater impacts.

When a well first begins extracting groundwater from an aquifer, groundwater is initially extracted from groundwater storage. The result is a localized cone of depression with an approximately 1,000-foot radius that fluctuates with operation of the well. When extraction ceases, the aquifer typically recharges back to its pre-extraction condition. Over time, a well can also induce an incremental decline in regional groundwater elevations. Cones of depression with a larger aerial extent can form in areas where multiple groundwater extraction wells are in operation. The use of groundwater, although relatively infrequent,

could affect the aquifers underlying the SOI Amendment Area and/or regional conditions by altering groundwater elevations that could, in turn, affect recharge conditions, change aquifer storage characteristics, result in localized well impacts, or cause areas of poorer quality groundwater to shift. This would be a significant impact.

Based on preliminary groundwater supply estimates that assumed conservative extraction rates of up to 2,848 AF/yr of groundwater in a dry year for WRSP Area, the hydrologic modeling for the WRSP Area indicates that groundwater elevations/piezometric surfaces in dry years without mitigation would potentially be lower relative to baseline conditions. The maximum potential drop in groundwater surface elevations in Aquifer 1 (unconfined aquifer) would be about 3 feet, and the maximum potential drop in the groundwater piezometric elevation (for a well screened in only a confined or semi-confined aquifer) would be about 6 feet.[451] The potential drop in groundwater/piezometric elevations in dry years could be reduced to insignificant levels, by the City's commitment not to extract 2850 acre feet of groundwater at Reason Farms in dry or drier years. In fact, reducing groundwater extraction at Reason Farms could raise groundwater levels by as much as 9 feet in Aquifer 1 (in wet years). The groundwater that would have been extracted for irrigation purposes would be banked for future use ("in-lieu groundwater banking").

Table 4.12-8 presents modeling results comparing the effect of groundwater extraction before and after implementation of MM 4.11-2 (which conservatively assumed up to 3,851 AF/yr of groundwater would be available through City's commitment not to extract 2,850 acre-feet of groundwater at Reason Farms in dry years). As discussed in Impact 4.11-2 (dry-year water supply impact in Section 4.11.2, Public Utilities, Water).[452] Figure 4.12-7 (Baseline Condition Aquifer 1: Groundwater Surface Elevation Contours, Dry Year) shows future baseline groundwater elevation contours (in feet above mean sea level) for Aquifer 1 in dry years. Figure 4.12-8 (Baseline Condition with Mitigation Aquifer 1: groundwater Surface Elevation Contours, Dry Year) shows future predicted groundwater elevation contours for Aquifer 1 in dry years with WRSP groundwater use and implementation of mitigation. Figure 4.12-9 (Baseline Condition Aquifer 2: Piezometric Surface Elevation Contours, Dry Year) shows future baseline piezometric[453] surface elevation contours for Aquifer 2 in dry years. Figure 4.12-10 (Baseline Condition with Mitigation Aquifer 2: Piezometric Surface Elevation Contours, Dry Year) shows future predicted piezometric surface elevation contours for Aquifer 2 with WRSP groundwater use and implementation of mitigation. By comparing the locations of groundwater elevation contour lines and projected piezometric surface elevations in Figures 4.12-7 (baseline) and 4.12-8 (future mitigated) for Aquifer 1 and in Figures 4.12-9

[451] MWH, Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan, June 2003, p.5-2.
[452] MWH, Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan, June 2003, p. 5-7.
[453] The piezometric surface elevation is the elevation of groundwater within a well that is screened in only the confined or semi-confined aquifer. The groundwater surface elevation is the elevation of groundwater in an unconfined aquifer.

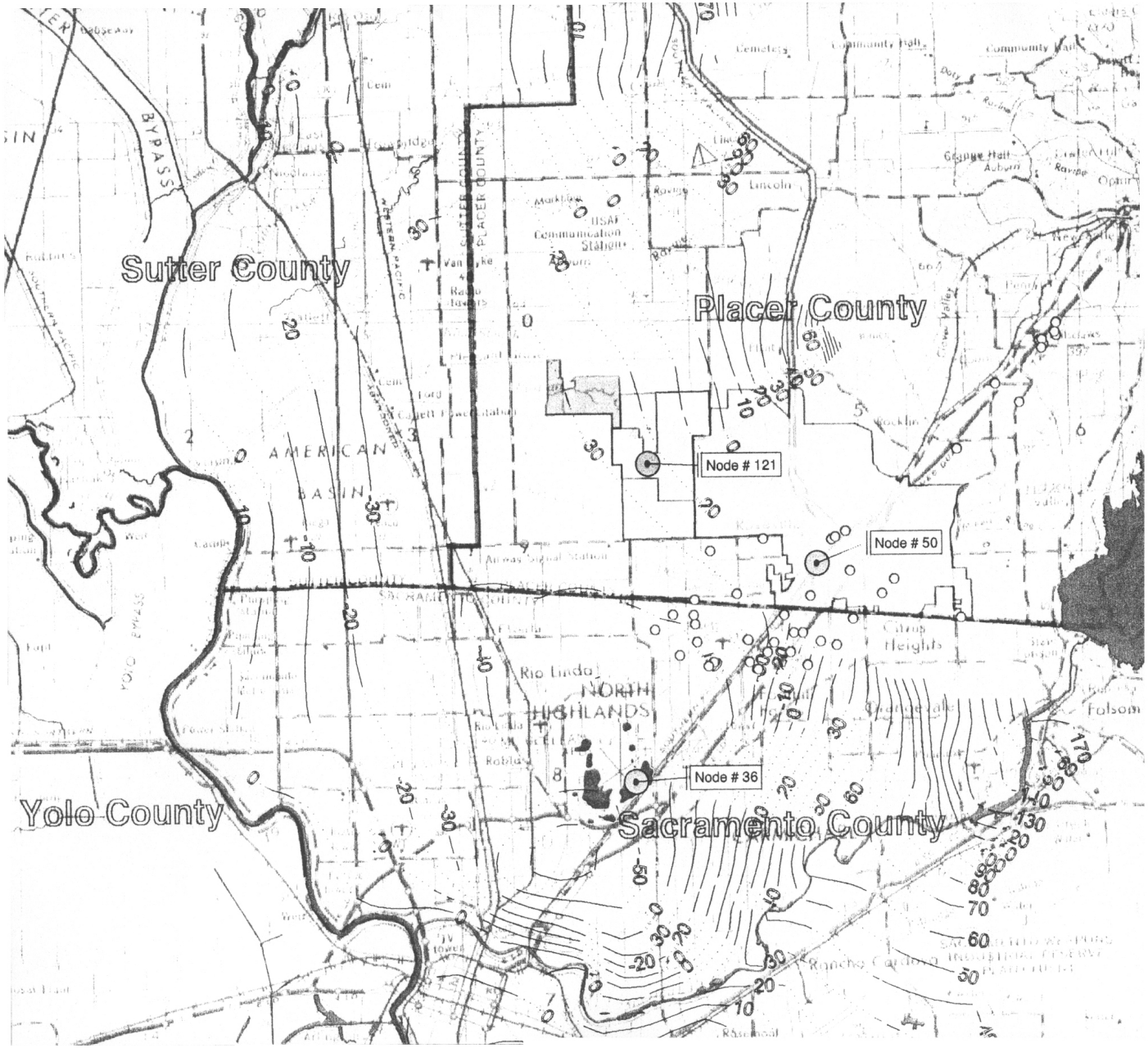

FIGURE **4.12-7**

Baseline Condition Aquifer 1: Groundwater Surface Elevation Contours, Dry Year

10659-00

Source: MWH, June 2003

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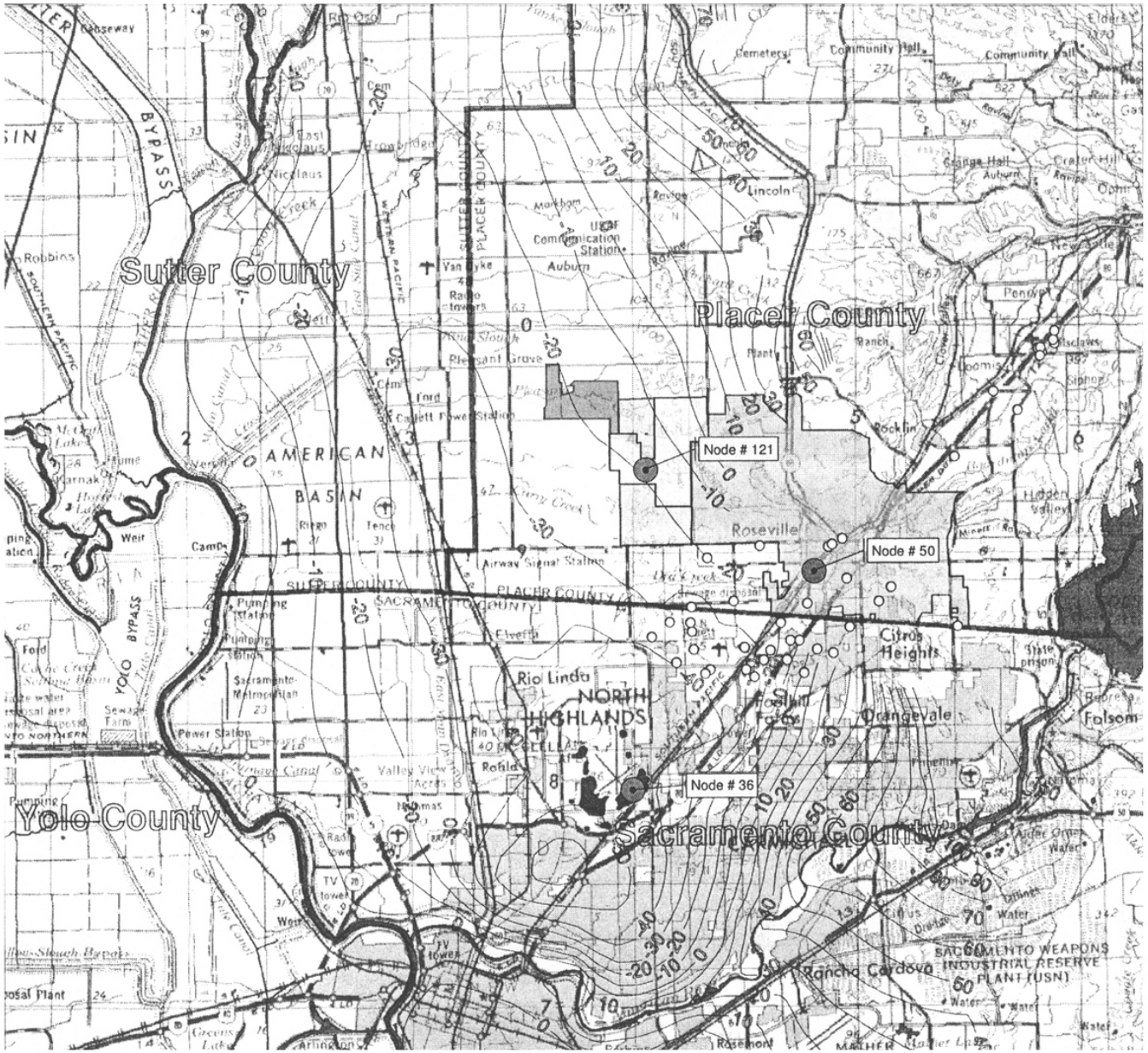

FIGURE **4.12-8**

Baseline Condition with Mitigation Aquifer 1: Groundwater Surface Elevation Contours, Dry Year

Source: MWH, June 2003

City of Roseville

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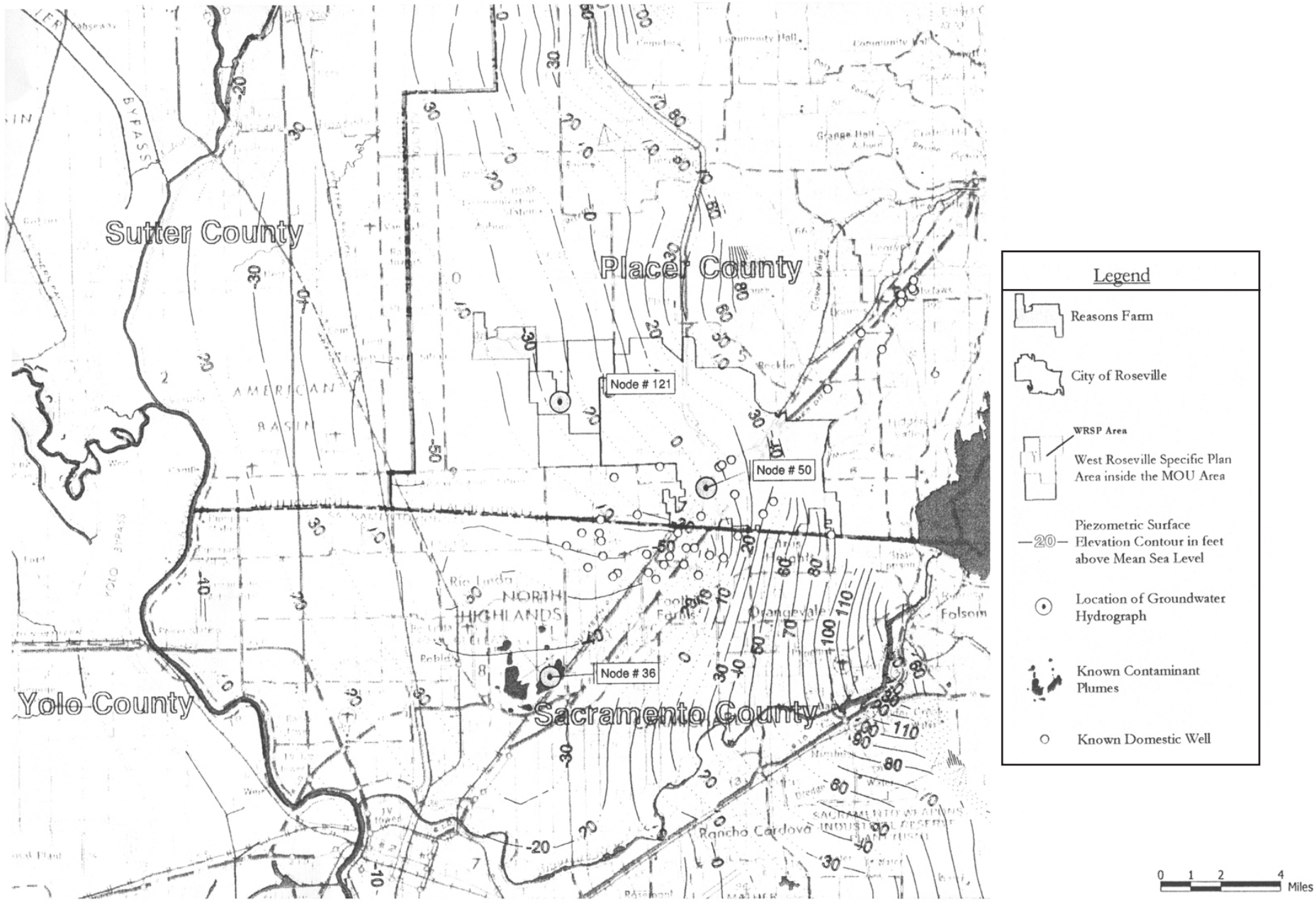

FIGURE **4.12-9**

Baseline Condition Aquifer 2: Piezometric Surface Elevation Contours, Dry Year

10659-00

Source: MWH, June 2003

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(baseline) and 4.12-10 (future mitigated) for Aquifer 2, respectively, there is only a minimal shift in groundwater and piezometric surface elevations across the WRSP and negligible change regionally. The net changes in groundwater elevations in Aquifers 1 and 2 are described below. Additional figures depicting the net change in groundwater elevations for Aquifers 1 and 2 under future mitigated conditions are included in Appendix M.

Table 4.12-8 Estimated Changes in Groundwater Levels with Groundwater Extraction for WRSP Showing Effect of Mitigation

Condition	Difference in Groundwater Elevation for Aquifer 1 in Dry Year (feet)	Difference in Piezometric Surface Elevation for Aquifer 1 in Dry Year (feet)	Difference in Groundwater Elevation for Aquifer 2 in Wet Year (feet)	Difference in Piezometric Surface Elevation for Aquifer 2 in Wet Year (feet)
Without mitigation	-3	-6	3	1.5
With mitigation	4	2	9	8

NOTES:

Differences in groundwater elevation from dry year (1977) and wet year (1986) baseline conditions. Negative values represent a decline in groundwater conditions from the baseline condition.

SOURCE: MWH, Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan, June 2003, Table 5.1.

Without the extraction of groundwater at Reason Farms, groundwater elevations in dry years in Aquifer 1 are projected to rise 4 feet. There would also be an increase of 2 feet in the piezometric surface elevation in Aquifer 2. As indicated by the data and as illustrated in figures, the annual or permanent fallowing at the Reason Farms property would not result in a substantial change in groundwater surface elevations or flow directions across the WRSP site or regionally. This indicates that non-extraction of ground water during dry years mitigation would fully offset the anticipated groundwater extraction under the City's proposed water supply strategy for meeting WRSP water demands.[454] For the above reasons, this impact is considered **less than significant**.

Potential Effects of No or Reduced Groundwater Extraction at Reason Farms (as recommended by MM 4.11-2)

An EIR was prepared for a project proposed by the City of Roseville that would develop a regional stormwater retention basin facility on a portion of the approximately 1,500-acre Reason Farms property west of the SOI Amendment Area. The property would be owned and managed by the City of Roseville. This would result in the conversion of agricultural land to non-agricultural use. The EIR for the retention basin project concluded that the conversion of up to 1,500 acres of agricultural land predominantly used for rice farming to other uses would result in the following significant and unavoidable environmental impacts: direct and indirect conversion of prime agricultural land to non-agricultural use; inconsistency with Placer County air quality attainment plan, Placer County General Plan, and Roseville General Plan

[454] MWH, Groundwater Impact Analysis for Proposed Reason Farms Land Retirement Plan, June 2003, pp.6-1 to 6-2.

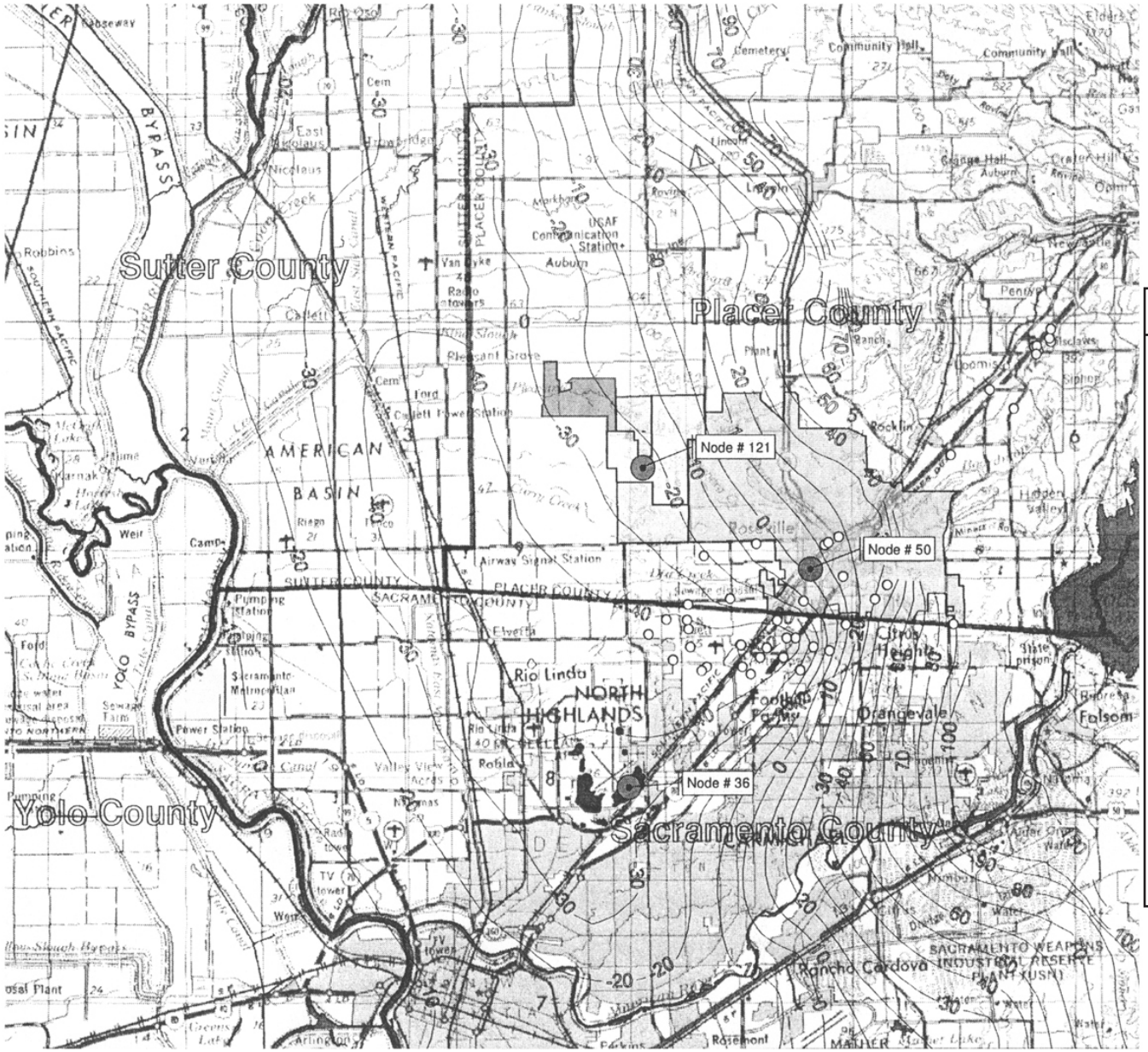

FIGURE **4.12-10**

Baseline Condition with Mitigation Aquifer 2: Piezometric Surface Elevation Contours, Dry Year

Source: MWH, June 2003

City of Roseville

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(construction-related air emissions); short-term noise level increases; and indirect cumulative growth inducement. For all other impact areas identified in Appendix G of the CEQA Guidelines (aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic, and utilities/service systems), the EIR concluded the proposed retention basin project would result in less-than-significant impacts either because they would not exceed an established standard or because mitigation measures that would reduce potential impacts to a level of insignificance were incorporated into the proposed project.[455]

The groundwater impact analysis prepared for this EIR assumed the City's commitment not to extract 2850 acre feet of groundwater at Reason Farms in dry years, which would not exceed the assumptions in the certified EIR for the proposed retention basin with regard to the conversion of agricultural land to non-agricultural uses. Reducing groundwater use at Reason Farms, in and of itself, would not contribute to the significant and unavoidable construction-related air quality or noise impacts identified for the proposed retention basin project because there would be no source of emissions or noise-generating construction equipment.

Cultivated and/or fallow rice fields encompass approximately 1,286 acres of the Reason Farms property. 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. Native vegetation is excluded from cultivated portions of the rice fields by the application of herbicides. There is a small freshwater marsh (approximately 4 acres) in the rice fields south of Pleasant Grove Creek. The freshwater marsh habitat is dominated by broad-leaf cattail (*Typha latifolia*) and Pacific rush (*Juncus effuses*). Bird species such as mallard (*Anas platyrhynchos*), American widgeon (*Anas americana*), and red-winged blackbirds (*Agelaius phoeniceus*) use the freshwater marsh. Two seasonally ponded depressions (tire tracks) near a north/south dirt access road on the western side of the property were observed to contain Dwarf downingia (*Downingia pusilla*) in April 2002. Dwarf downingia has no federal or State listing status, but it is included on the California Native Plant Society List 2. There are some small areas of seasonal wetlands including vernal pools and seasonal swales located along a north/south access road. These features can support vernal pool fairy shrimp and

[455] City of Roseville, Draft Environmental Impact Report for the City of Roseville Retention Basin Project (SCH No. 2002072084), Chapter 2.0, Executive Summary, and Section 8.2, Significant Environmental Effects Which Cannot Be Avoided.

vernal pool tadpole shrimp, which are federally listed threatened and federally listed endangered species, respectively.[456]

The potential indirect effect of a reduction in irrigation is not expected to result in any significant biological resources impacts because this habitat is currently disturbed and provides only limited habitat resources that are already available elsewhere in more natural areas such as marshes and other wetlands. Additionally, there are no special-status species that are dependent on this agricultural habitat type for their survival. Once this land is allowed to fallow, it will revert to its natural state, which would provide suitable foraging habitat for Swainson's hawk and other raptors, and potentially for vernal pool and other seasonal wetland species.

Groundwater Use during Dry Years

Remainder Area

As discussed in Impacts 4.11-1 and 4.11-2 (Remainder Area) in Section 4.11.2 (Public Utilities, Water), the Remainder Area cannot be developed without the Sacramento River Water Reliability Project (per MM 4.11-1) or some other yet identified surface water source. If the Sacramento River Water Reliability Project is approved and constructed, and becomes the water source for the Remainder Area there would be no dry year restriction and groundwater would not be needed as a backup supply. Because no groundwater is anticipated to be used in the Remainder Area, there would be **no impact.**

IMPACT 4.12-7:	**CHANGES IN GROUNDWATER RECHARGE POTENTIAL THROUGH THE DEVELOPMENT OF IMPERVIOUS SURFACES.**	
Applicable Policies and Regulations:	None Applicable	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None required	None required
Significance after Mitigation:	Less Than Significant	Less Than Significant

[456] City of Roseville, Draft Environmental Impact Report for the City of Roseville Retention Basin Project (SCH No. 2002072084), Figure 6-1 and pp. 6-4 to 6-9.

Groundwater Recharge

WRSP and Remainder Areas

Groundwater supply is partly dependent on "recharge" by percolation of rainwater through permeable surfaces. Groundwater recharge in the Project Area occurs primarily along stream channels such as Pleasant Grove Creek, Kaseberg Creek, Curry Creek, and smaller tributaries to these waterways. As described in the Setting, the SOI Amendment Area is undeveloped and there are minimal impervious surfaces; soils that are impermeable or underlain by hardpan comprise most of the SOI Amendment Area. In these areas, infiltration is low, thereby limiting groundwater recharge.

Although there would be new impervious surfaces created by development in the SOI Amendment Area (see Impact 4.12-1), recharge is already limited under existing conditions. Runoff from the new impervious surfaces would be collected and diverted through on-site drainage controls, such as swales, channels or other detention features, and ultimately released downstream. Some infiltration from these features would occur. Water from flows released from the SOI Amendment Area to downstream channels could also provide some recharge. In effect, recharge would still occur, but at different locations and at different rates than under existing conditions. In addition, FEMA and City floodplain development restrictions (see Impact 4.12-3) would limit the types and locations of structures that could be placed near the stream channels. Because areas along stream channels would remain undeveloped either because of proximity to the 100-year floodplain or with the use of natural resource buffers, recharge along stream channels would not be affected. Therefore, the SOI Amendment would result in a **less-than-significant** impact on groundwater recharge potential and would not result in a reduction in available groundwater supply.

Mitigation Measures

MM 4.12-1: Prepare site-specific drainage study (Impact 4.12-1 – Remainder)

> If a larger detention basin near the main branch of Curry Creek is used for the Remainder Area, and includes flows for the WRSP Area, Specific Plans and/or other development proposals for the Remainder Area shall prepare a site-specific drainage study. The study shall identify appropriate sizing and location to ensure that Remainder Area flows, in combination with flows generated in the WRSP Area, can be accommodated in the larger basin. The study shall also be used to identify features that will limit peak flow runoff from the areas drained to Curry Creek to pre-development levels per the PCFCWCD SWMM and City standards. The study shall also be used to demonstrate the larger basin will not cause or exacerbate downstream flooding conditions

Specific Plans and/or other development proposals for the Remainder Area, shall include a site-specific drainage study prepared in accordance with PCFCWCD SWMM and City of Roseville standards to identify on-site storm drainage features that will limit peak flow runoff from the area that drains to Curry Creek to pre-development levels, provided it can be demonstrated that such features will not cause or exacerbate flooding conditions in the SOI Amendment Area or at downstream locations outside the SOI Amendment Area. The drainage study shall be submitted to the PCFCWCD and City Roseville for review. If a basin in the Remainder Area is used to store flows generated by sheds C-WP7 and C-WP8 in the WRSP Area, in addition to Remainder Area-generated flows, the drainage study shall ensure that sufficient capacity is provided to manage total flows into the basin.

MM 4.12-2: Pay fair-share of Roseville regional stormwater retention facility improvements (Impact 4.12-2 – WRSP)

The City shall collect the Pleasant Grove Drainage fee from the applicants prior to the approval of each building permit, which would cover the cost of retention for that development's portion of the Roseville regional retention basin at Reason Farms.

MM 4.12-3: Retention Policies (Impact 4.12-2 – Remainder)

Specific Plans and/or other development proposals for the Remainder Area shall demonstrate, through the preparation of technical engineering studies, that the increased volume of stormwater runoff from the SOI Amendment Area, which includes the WRSP Area, can be accommodated in the approved regional stormwater retention facility. The results of the study shall be submitted to the City of Roseville Public Works Department for review and concurrence. The facility shall be expanded as necessary, funded through fair-share contributions by project developers.

MM 4.12-4: Floodplain Policies (Impact 4.12-3 – Remainder)

Specific Plans and/or other development proposals for the Remainder Area shall identify the 100-year floodplain for each location that could be affected by fill placement or installation of structures to ensure water surface elevations estimated in the Master Drainage Study would not be measurably increased. If measurable increases are identified, redesign or relocation of the fill or structures shall be considered. In addition, the recalculated water surface elevations shall be used to determine what improvements, if any, are necessary to provide adequate mitigation so that off-site risk of flooding is not increased as a result of Remainder Area development, in combination with the WRSP Area development. Those improvements shall be required to be constructed as a condition of approval of the proposed development.

4.13 AESTHETICS AND VISUAL RESOURCES

4.13.1 Introduction

This section of the EIR evaluates the potential changes to the existing visual characteristics of the project site that could result from future development of the Sphere of Influence (SOI) Amendment Area. The analysis focuses on the potential loss of visual resources, effects on views, compatibility with the visual characteristics of surrounding uses, and the likelihood that sensitive receptors would be disturbed by light and glare generated or reflected by new structures within and in the vicinity of the SOI Amendment Area.

While land use designations have been applied to all land in the WRSP, the exact design of the projects to be developed under the WRSP is not known at this time. Also, the location and design of future development in the Remainder Area will not be determined until Specific Plans and other planning documents are proposed for projects in the Remainder Area. Therefore, specific uses or building designs are not analyzed; rather, the general visual effects of development under the WRSP Area and the Remainder Area are described.

Comments received in response to the Notice of Preparation (refer to Appendix B) for this project expressed concern about alteration of views and visual character in the vicinity of the WRSP and Remainder Areas. In addition, a scoping meeting was held on August 29, 2002 to receive comments on the proposed WRSP and the Remainder Areas. Comments received at the scoping meeting included concerns about the heights of buildings to be constructed on the west side of Fiddyment Road and related loss of privacy for the existing residences at the Del Webb Specific Plan Area located to the east.

Information contained in this section is based on review of existing documentation, including

- *Placer County General Plan* (November 18, 1992)
- *City of Roseville General Plan* (August 1994 and amended in January 2003)
- *The West Roseville Specific Plan*
- A site visit conducted in May 2002

All of these documents are available for review at City of Roseville's Permit Center, 311 Vernon Street, Roseville, CA.

As discussed in Chapter 1, Introduction, this EIR evaluates the impacts of the WRSP, which would include an SOI amendment and annexation to the City, at a project-specific level. Because an SOI

amendment is the only action proposed for the Remainder Area (that portion of the SOI Amendment Area outside of the WRSP), a program-level analysis is provided for the Remainder Area. In order to conduct the analysis, development assumptions are made for the Remainder Area (refer to Chapter 2, Project Description, for details). Figure 1-1 (SOI Amendment Area) in Chapter 1 identifies the boundaries of the entire SOI Amendment Area, WRSP, and Remainder Area.

As discussed in Chapter 4 of this EIR, Environmental Analysis, minor changes have been made to the proposed land uses for the WRSP Area since publication of the NOP. Overall, the total amount of open space increased by 34.9 acres, primarily along the western boundary of the WRSP. However, the total amount of area to be disturbed is very similar to the prior land use plan. The total amount of residential units has remained the same, but the number of low-density and high-density units has decreased, while the total number of medium-density units has increased. The open space corridors along Pleasant Grove Creek and Curry Creek have not changed and the historic Fiddyment Ranch complex will remain in its current location and be integrated into the regional sports complex park.

4.13.2 Environmental Setting

Regional Visual Resources

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

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

Development has become a prominent component of the landscape character in the vicinity and is evident throughout the region, reflecting a variety of residential, commercial, and industrial land uses. Development in some areas of the region has completely eliminated the historically rural character associated with regional ranching and agricultural operations. In many other locations, development has

segmented the remaining natural areas, thereby heightening the aesthetic value of remaining contiguous open space.

Long-range views within the region include numerous important landmarks and landscape features, including portions of the Sierra Nevada, Sutter Buttes, Mount Diablo, and the Coast Range. No prominent landscape features or areas of unique scenic quality have been identified in the vicinity of the project site. The most prominent manmade feature is the Pleasant Grove Wastewater Treatment Plant (PGWWTP) currently under construction and the high-power transmission corridor located south of the WRSP Area.

The SOI Amendment Area is characterized by wide expanses of flat to rolling grasslands traversed by Pleasant Grove Creek and Curry Creek. Several rural residences are located in the northeast portion of the SOI Amendment Area. Figure 4.13-1 (Direction and Location of Photographic Views) shows locations and orientations of photographs taken of the SOI Amendment Area, while Figure 4.13-2 (Visual Elements) identifies more specifically the location of specific visual resources referenced in the section.

West Roseville Specific Plan Area

The WRSP Area encompasses approximately 3,162 acres of land, adjacent to the approximately 110-acre PGWWTP and the approximately 70 acres of City-owned land to the north of the PGWWTP site (approximately 180 acres, combined). For the purposes of this analysis, the project site is described as a combination of two areas: the Fiddyment Ranch portion and the Westpark portion (refer to Figure 2-2 [Land Ownership] in Chapter 2 [Project Description]).

Within the WRSP Area, the topography generally consists of rolling grasslands (refer to Figure 4.13-3 [View To and From the Project Site (Photos A and B)], Figure 4.13-4 [View To and From the Project Site (Photos C and D)], and Figure 4.13-5 [View To and From the Project Site (Photos E and F)]). Pleasant Grove Creek, which traverses the central portion of the Fiddyment Ranch portion of the site from east to west, is lined with oak trees and other riparian habitat (refer to Figure 4.13-6 [View To and From the Project Site (Photos G and H)]). North of the creek on the east side near Fiddyment Road, a stand of Tree of Heaven is visually prominent from the surrounding grassland. Aboveground power lines (12 kV) also extend through the WRSP Area north of Pleasant Grove Creek, from Fiddyment Road to the PGWWTP.

Views

Views to the WRSP

The WRSP Area is visible from a short distance as one approaches from any direction, and from adjacent residential areas located east of the WRSP Area. The WRSP Area is also highly visible from the more hilly

land to the north (a medium-range view). Long-range views are available from adjacent open space land; from these areas, the WRSP Area blends into the landscape of the surrounding areas, which have similar topography and vegetation. Pleasant Grove Creek, a prominent visual feature traversing the northern portion of the WRSP Area, is visible at both short and medium range from surrounding land and adjacent roadways. The creek is particularly prominent visually during the summer months, when the dark foliage of the oak trees contrasts starkly with the golden-colored grassland. The same can be said for the stand of Tree of Heaven north of Pleasant Grove Creek. The WRSP site is not visible from any designated State scenic highway.

Views from the WRSP

Views to the north, south, and west of the WRSP Area reveal expansive open space grasslands, similar to the terrain of land in southern Placer County. At the western edge of the Fiddyment Ranch site and north and east of the Westpark area lies the PGWWTP, currently under construction. Development within the area consists of a large parking lot and several large (approximately three-story) wastewater treatment facility buildings (refer to Figure 4.13-5). These bulky concrete buildings are visible throughout a large portion of the northern WRSP.

Northeast of the project site, on a clear day the Western Regional Sanitary Landfill is visible at a distance, presenting a view of graded, exposed earth. To the east, the Del Webb Sun City residential development is visible across Fiddyment Road, visually screened by a masonry wall and landscaping that includes curved lawn areas, walkways, and young trees and plants. An area north of Sun City and east of the WRSP Area is currently under construction for residential uses as part of the North Roseville Specific Plan. Also north of Sun City is a pistachio orchard, with manicured rows of pistachio trees. Long-range views to the north, south, and west are mostly composed of expanses of open grassland. On a clear day, long-range views to the east encompass the Sierra Nevada mountain range as well as the Sierra foothills.

Existing On-Site Visual Resources

Structures in the WRSP Area include a house at the northeastern edge of the project area, a house west of Fiddyment Road, south of Blue Oaks Boulevard, the Fiddyment Ranch homestead (refer to Figure 4.13-7 [Fiddyment Ranch (Photos I and J)] and Figure 4.13-8 [Fiddyment Ranch (Photos K and L)]), and the abandoned turkey farming facilities (refer to Figure 4.13-9 [Turkey Farm (Photo M)]). The existing visual resources present in the WRSP Area, and their prominent characteristics, are described below.

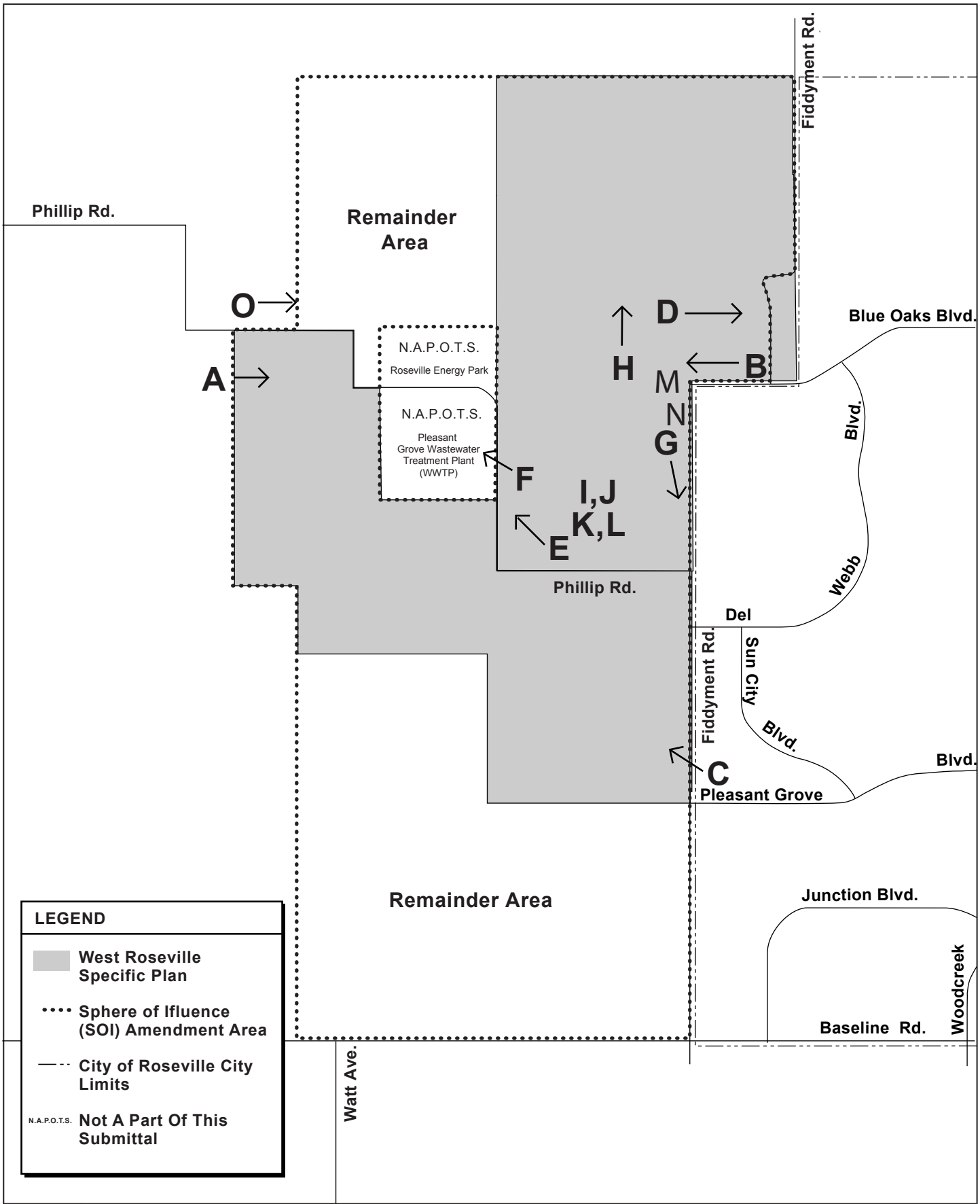

FIGURE **4.13-1**

Direction and Location of Photographic Views

Not to Scale

10659-00

***Source*:** EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

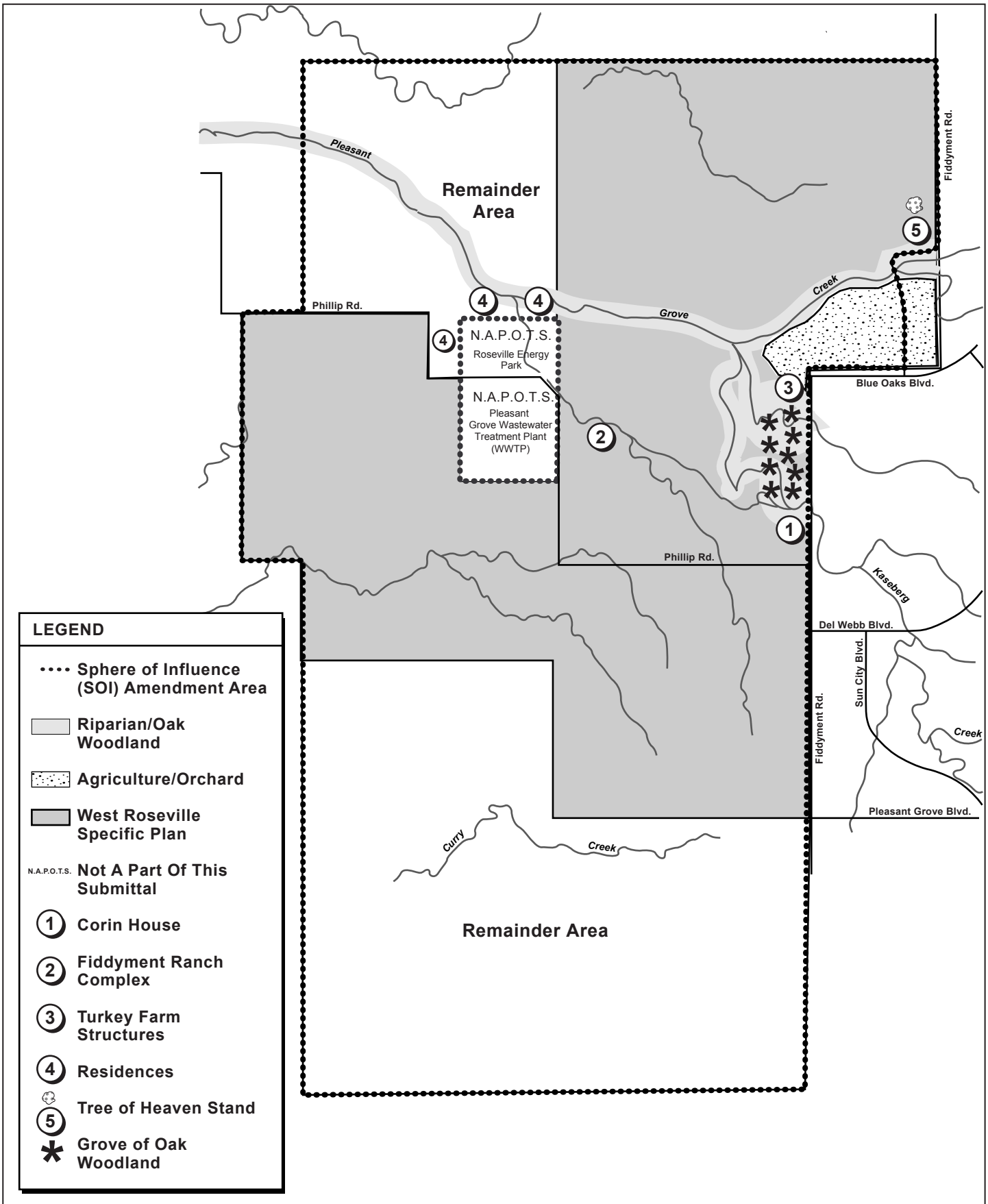

FIGURE **4.13-2**
Visual Elements

Not to Scale

10659-00

***Source*:** Wade Associates, 2003; EIP Associates, 2003 City of Roseville

EIP ASSOCIATES

Figure 4.13-3 View To and From the Project Site (Photos A and B)

A. View of West Roseville Specific Plan Area from West

B. View of West Roseville Specific Plan Area from East

FIGURE **4.13-3**

View To and From the Project Site (Photos A and B)

10659-00

Source: EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Figure 4.13-4 View To and From the Project Site (Photos C and D)

C. View of the West Roseville Specific Plan Area from the Southeast

D. View to the East from the West Roseville Specific Plan Area

FIGURE **4.13-4**

View To and From the Project Site (Photos C and D)

10659-00

Source: EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Figure 4.13-5 View To and From the Project Site (Photos E and F)

E. View to the North West from Central West Roseville Specific Plan Area (Wastewater Treatment Plant)

F. Wastewater Treatment Plant

FIGURE **4.13-5**

View To and From the Project Site (Photos E and F)

10659-00

Source: EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Figure 4.13-6 View To and From the Project Site (Photos G and H)

G. View of Del Webb Property from the West Roseville Specific Plan Area

H. Pleasant Grove Creek (Central Fiddyment Property)

FIGURE **4.13-6**

View To and From the Project Site (Photos G and H)

10659-00

Source: EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Figure 4.13-7 Fiddyment Ranch (Photos I and J)

I. Fiddyment Home

J. Fiddyment Home Rear View

FIGURE **4.13-7**
Fiddyment Ranch
(Photos I and J)

10659-00

***Source*:** EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Figure 4.13-8 Fiddyment Ranch (Photos K and L)

K. Fiddyment Ranch Smokehouse

L. Fiddyment Ranch Cooler

FIGURE **4.13-8**
Fiddyment Ranch
(Photos K and L)

10659-00

Source: EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Figure 4.13-9 Turkey Farm (Photo M)

M. Turkey Farm Structures

FIGURE **4.13-9**
Turkey Farm (Photo M)

10659-00

Source: EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Fiddyment Road Home

The existing residence located at the northeastern edge of the Fiddyment Ranch portion of the WRSP Area is located across Fiddyment Road from the pistachio orchard. It is a one-story, ranch-style house with a wood siding exterior in a light beige tone, with brown window trim. The property also contains a small pool, outbuildings, and scrap heaps. The house's frontage is screened by shrubs and mature trees.

Corin Residence

An existing single-family residence is located west of Fiddyment Road south of Blue Oaks Boulevard (refer to Figure 4.13-10 [Corin House (Photo N)]). This residence was built in 1949 and is a four-bedroom, two-and-a-half-bathroom residence that will remain in the WRSP Area in an area designated for low-density residential.

Fiddyment Ranch

The Fiddyment Ranch, located near the southwest edge of the Fiddyment Ranch Main Complex portion of the WRSP Area, is a large two-story colonial-style home. The home, fronted by four large columns, has a white, wood-slat exterior, and is surrounded by a white wood and wrought-iron fence (refer to Figure 4.13-7). Directly behind the large main house within the back yard area is a small, square, brick cooler with a rustic, aged wood door. Numerous trees, shrubs, and flowering bushes provide landscaping to the property. To the back of the large house are several barns and shed structures (refer to Figure 4.13-8).

One structure behind the main house is a small, one-story wood shed with a two-story-tall brick tower smokehouse. The main shed structure has an exterior covered in weathered white paint, while the tower is whitewashed brick with a white wood accent at the top, beneath an A-line gable. A rustic, weathered, white wood door provides entrance to this structure at the base of the brick tower (refer to Figure 4.13-8).

A second shed structure is located north of the brick-towered shed. This building is also one story in height and constructed of wood that was painted white and has now aged; however, this structure is longer and slightly larger in scale than the shed structure attached to the brick tower. The structure also has a light tan roof, as opposed to the painted wood roof of the other, smaller shed. A small covered porch area faces west and houses an entrance to the structure.

West of these two-shed structures is a large barn constructed of dark wood. A large, two-story peaked-roof entrance faces east toward the house and shed structures, protruding from the main structure, which presents windows and doors only on the first story, the rest of the frontage being dominated by a

large, forward-sloping roof with large reflective shingles. The roof of the barn is in disrepair, and some shingles are missing, exposing the underlying wood slats of the roof.

Finally, north of the sheds and barn lies another barn-like structure. With two roof ridges, this large building encased in reflective aluminum siding appears to be part barn and part dwelling. The larger portion of the structure, located on the west side, appears to be a small barn. Attached to this building segment is a smaller structure with a lower roofline.

Turkey Farm

The abandoned turkey farm is located in the southeastern Fiddyment portion of the WRSP Area. Structures at the turkey farm consist of a small wood and wire chicken coop, a few small sheds and a few long, one-story corral-type structures. These structures are constructed of wood and painted white. The structures have been damaged by a tornado and are in an advanced state of disrepair, with the interior often visible through warped or missing patches of wall structure. The boards that cover the exterior appear to be thin plywood.

South of these structures stands a large, white wood barn. The peak of the barn's roof is off center, occurring more to the eastern side and resulting in a longer roofline on the western side. A small protruding element rises from the western side of the structure's roof, standing taller than the rest of the building and rising straight upward. This element is topped with a slightly sloped roof, in contrast to the main sides of the barn, which extend outward with a sharply downward-sloping roof angle. A large, open entrance, approximately one-and-a-half- to two-stories tall, is located at the base of the tall central tower. A small, one-story free-standing shed constructed of aged wood painted white and a tall, white cellular tower are located adjacent to the barn.

Remainder Area

The topography in the Remainder Area is similar to that of the WRSP Area, consisting of flat to rolling hills and grassland areas. Existing development in the Remainder Area is limited to a commercial dog kennel and a few sparsely distributed rural residences (refer to Figure 4.13-11 [Remainder Area (Photo O)]). Pleasant Grove Creek extends into the Remainder Area, meandering from west to east in the northern Remainder Area parcel. In addition, Curry Creek runs through a portion of the southern Remainder Area parcel. Oak trees and other riparian vegetation abound along these creeks, and trees are scattered sparsely throughout the Remainder Area, occasionally in clusters. A small portion of the Remainder Area includes a portion of Reason Farms.

Figure 4.13-10 Corin House (Photo N)

N. Corin House

FIGURE **4.13-10**
Corin House (Photo N)

10659-00

Source: EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Figure 4.13-11 Remainder Area (Photo O)

O. North Remainder Area, View from west

FIGURE **4.13-11**
Remainder Area (Photo O)

10659-00

Source: EIP Associates, 2003

City of Roseville

EIP ASSOCIATES

Views

Short and middle-range views from the Remainder Area include the rolling grasslands of the WRSP Area and the Del Webb Specific Plan Area (described above). Reason Farms is visible northwest of the Remainder Area. The southern Remainder Area is primarily characterized as grassland and oak woodland. Some residential development is visible south of Baseline Road, which forms the southern border of the Remainder Area. Long-range views to the north, south, and west are mostly composed of expanses of open grassland. Long-range views to the east under clear weather conditions reveal the Sierra Nevada mountain range, as well as the Sierra foothills.

Surrounding Area

The areas surrounding the SOI Amendment Area consist mostly of rolling grasslands to the north, south, and west, with residential areas under development (North Roseville Specific Plan Phase 3, "Doctor's Ranch") to the east of the Fiddyment Ranch portion of the site, and existing residential development (Del Webb Sun City age-restricted community) east of Fiddyment Road (refer to Figure 4.13-3). The County lands to the north of the WRSP Area consist of rolling grasslands. Farther to the northeast lies the Western Regional Sanitary Landfill, approximately one mile from the northern boundary of the WRSP Area. To the west and south, the surrounding area in the County is undeveloped rolling grasslands. Farther to the east, there are several industrial operations and businesses. Farther south are residential and commercial developments.

4.13.3 Regulatory Setting

Federal and State

There are no specific federal or State regulations pertaining to visual quality.

Local

City of Roseville General Plan

The City of Roseville General Plan includes goals and policies for enhancement and protection of visual quality. Please refer to Appendix C for a complete list of all applicable City goals and policies. The following policies are directly applicable with visual characteristics:

- City of Roseville General Plan Policies LG 1-9

City of Roseville Community Design Guidelines

The City of Roseville adopted Community Design Guidelines ("Guidelines") on December 6, 1995. The purpose of these Guidelines is to "implement the goals and policies of the Community Form and the Community Design components of the Roseville 2010 General Plan" (City of Roseville 1995). The Guidelines list specific site design such as vehicle access, grading fencing, storage, etc; architectural guidelines that specify exterior treatment of buildings; and specific lighting guidelines for commercial, office, industrial and multi-family residential development within the City. The City's Specific Plans each include design guidelines more restrictive or detailed than the City Guidelines and supplement the Guidelines. Design Guidelines have been prepared for Specific Plans in the City, including those adjacent to the project site, the North Roseville Specific Plan and Del Webb. The WRSP contains its own Design Guidelines. If the Remainder Area is annexed, new development proposals would either include WRSP Design Guidelines or be subject to the City's Community Design Guidelines.

West Roseville Specific Plan Design Guidelines

The WRSP Design Guidelines include provisions for visual screening, lighting, and setbacks that would reduce visual impacts and streamline building designs.

- All arterial streets will have landscaped medians
- All arterial streets will include a 35-foot landscape corridor and an 8-foot-wide sidewalk
- Collector Streets would include a 25-foot-wide landscape corridor adjacent to single-family residential, nonresidential, or high-density residential
- Bridges in open space areas shall be designed in a manner consistent with the Westpark and Fiddyment Ranch themes, using materials particular to each of the communities
- Bridges would be designed to blend seamlessly with their surroundings and landscaped so as to conceal grading operations, abutments, and other construction activities from view
- Traditional street light fixtures in a City of Roseville accepted style will be used on streets, gateways, bridges, and path approaches, other lighting should be themed appropriately with development
- Lighting in underpasses shall be per City of Roseville standards
- All production fencing visible from streets will be painted or stained
- Retaining walls are to be avoided; however, if necessary they shall be constructed of split-face block and cap, consistent with area soundwall materials
- Non-garage-dominant plans and detached/setback garages are encouraged in exchange for relaxation of current City setback and lot standards

- Side entries to garages are encouraged at corner lots
- Variable setbacks and lot widths will be allowed to provide for a mix of housing types and styles
- Front wing and side yard fencing adjacent to roads, parks, open spaces and paseos should be painted or stained
- Builders are encouraged to develop corner-specific architecture that is signature and sets the design tone for the neighborhood
- Corner-specific production fences are required
- All fences visible from streets should be painted or stained
- Access to home entries shall be broad and visible, porches, entries, and alcoves are encouraged on all homes
- Multi-family parcel sites are encouraged to have residential units oriented towards parks, opening onto them and reducing the need for excessive amounts of fencing and walls
- Paseos will be lit per City of Roseville standards with shielded lights so that light will not spill into residential lots
- If enhanced wood fences are used, they shall be stained on both sides
- All paseo fences and/or walls shall have vines to discourage graffiti
- Each neighborhood will provide access to parks, paseos, and open space corridors
- Fencing types include: open fencing 4 to 6 feet high in tubular steel, mesh or wrought iron; mesh fencing, brick, or other masonry pilasters or columns; or an open wood fence or wooden posts with cable
- A consistent palette of landscaping materials will be used throughout the multi-family developments for unity
- Medium-density housing should use high-quality materials and be arranged creatively on the site to allow for varied outdoor spaces and privacy
- Village Center building facades should emulate the character and composition of retail/commercial buildings found in the downtown of small towns. The use of tinted or reflective glass at ground level is prohibited
- Use of enhanced paving materials for sidewalks and pedestrian crosswalks
- Service areas and delivery areas would be screened from views from all streets, parking areas, and residential parcels
- All paseos will be landscaped in a manner consistent with landscape corridors and other public spaces within the Plan area
- Both sides of residential fence walls to be addressed aesthetically if they are visible from streets

- Where residential lots back up to open space, knee walls with or without a tubular steel fence on top will be used. If tubular steel fencing is required on top of the knee wall, the top of the fence/wall combination will not exceed 5 feet.
- Where residential lots back up to schools a 6-foot enhanced wood fence consistent with corridor walls shall be constructed
- Landscape at multi-family housing shall always be used at building foundations (except at garage doors) so as to transition buildings into their sites as well as provide for a garden environment;
- Blank walls shall be landscaped with taller plant materials so as to break up building mass and provide shading
- Utilities and mechanical units shall be screened from view from all streets and individual units
- High-density residential project entries and signage shall be consistent with the individual project themes for Westpark and Fiddyment Ranch
- All lighting for high-density residential projects shall be themed appropriately with the development. Decorative, non-City-standard fixtures are encouraged
- Lighting in pedestrian areas of high-density residential projects is encouraged to be no more than 8 feet tall, with shorter fixtures preferred
- Lighting shall be directed and shielded so as to minimize spill into residential units
- Parking and drive area lighting within multi-family residential projects is encouraged to be mounted on as short of poles as possible to create a pedestrian orientation and to minimize light spill into second floor units

4.13.4 Impacts and Mitigation Measures

Methods of Analysis

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

A description of the SOI Amendment Area, including both the WRSP Area and Remainder Area, has been constructed from visits, aerial oblique photographs, site photographs, and topographic maps. The City of Roseville General Plan, as well as other applicable planning documents, was reviewed to determine what visual elements have been deemed valuable by the community. Analysis focuses on the manner in which development could alter the visual elements or features that exist in or near the WRSP Area and Remainder Area.

This analysis assumes that development within the WRSP Area and the Remainder Area would comply with the City's General Plan policies, Improvement Standards, and Design Standards. Therefore, such policies and standards are not specifically identified as mitigation.

The baseline for the analysis in this section is existing conditions. Cumulative impacts on aesthetics and visual resources are addressed in Chapter 5 (CEQA Considerations).

Standards of Significance

For the purposes of this EIR, a significant impact would occur if development proposed in the WRSP Area or Remainder Area would do any of the following:

- Substantially change the existing visual character (day or night) of the site, including alterations to the natural terrain or topography
- Create a substantial adverse effect on a scenic resource
- Introduce uses that are visually incompatible with existing or planned uses in areas that have visual access to the plan area
- Create new sources of light and/or glare that would directly illuminate adjacent and nearby residences or public uses

Impacts

IMPACT 4.13-1:	ALTERATION OF THE VISUAL CHARACTER OF THE SITE AND VICINITY.	
Applicable Policies and Regulations:	Roseville General Plan Policies LG 1-9 Roseville Community Design Guidelines	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	Significant
Mitigation Measures:	None available	None available
Significance after Mitigation:	Significant and Unavoidable	Significant and Unavoidable

Development of the project area would convert over 4,000 acres of currently undeveloped grassland to urban uses. The introduction of residences, infrastructure, and commercial and industrial buildings in an area that is presently undeveloped would change the existing visual character of the area. Potential impacts associated with the WRSP and Remainder Areas are discussed below.

West Roseville Specific Plan

The visual character of the WRSP Area is dominated by open, rolling grasslands, and is visible from a variety of short- and long-range viewpoints. The areas to the east of the WRSP Area have been developed with residential uses. Development of the WRSP Area would extend this urban edge. However, although the WRSP Area would be visually compatible with surrounding developed uses, it would substantially and permanently alter the existing visual character of the WRSP Area by introducing an extensive roadway network, houses, offices, commercial and industrial uses, and other urban facilities into an undeveloped area.

The WRSP Area would convert an estimated 2,477 acres of the approximately 3,162 acres of currently undeveloped grassland into urban uses, including parks. Of the 2,477 acres slated for development, approximately 270 acres would be developed as parks. Approximately 670 acres (not included in the 2,463 acres) would be retained as open space. The stand of Tree of Heaven located north of Pleasant Grove Creek on the east site near Fiddyment Road would be removed as part of park site improvements. Conversion of the majority of the site to urban uses, and loss of mature, natural landscaping, loss of Tree of Heaven grove, and removal of some oak trees as part of infrastructure improvements (refer also to Section 4.7 [Biological Resources] for a brief discussion of the biological value of the Tree of Heaven grove) would represent a significant and unavoidable impact for which there are no feasible mitigation measures that would reduce the impacts to an acceptable level. Because the majority of grasslands on the site would be developed, and the remaining open space areas would be either adjacent to or surrounded by development, the character of the drainage corridors would change from meandering rural streams to open space corridors running through an urban landscape. Similarly, if the Fiddyment Ranch complex is retained in Fiddyment Park, it would convey a sense of the visual character of rural Placer County, but the context in which it is set would be altered.

Within the WRSP, south of the PGWWTP adjacent to Phillip Road, two potable water tanks, and two reclaimed (or recycled) water tanks would be visible. The two potable water tanks would be approximately 25 to 30 feet in height and approximately 170 feet in diameter. The two potable water tanks would also include a 50-foot-wide fenced area surrounding the two tanks. The recycled water tanks would be located adjacent to the northeast corner of the PGWWTP west of Phillip Road and south of Blue Oaks Boulevard. The potable water tanks would be located approximately 200 feet from the centerline of Phillip Road behind pump equipment and a recycling drop-off area. Along the west side of Phillip Road, a 20-foot-wide landscape corridor is proposed, with low shrubs and trees and an open fence adjacent to the PGWWTP and tank site. The recycled water tanks would be approximately 25 to 30 feet high, with a tank diameter of approximately 75 feet. Due to the height of the tanks, it is anticipated

they would be visible from Phillip Road, the regional sports complex park, and the light industrial areas to the south. Once the trees along Phillip Road mature, the tanks would become less visible.

In addition, 60 kV overhead electrical transmission lines will traverse the WRSP Area (shown on Figure 4.11-7 [West Roseville Specific Plan Electric Substation and 60 kV Power Line Easements] in Section 4.11 [Public Utilities] of this EIR). These overhead electrical transmission lines will be located within a public utility easement. The 60 kV line easement is located adjacent to the north side of Blue Oaks Boulevard, which includes a 35-foot-wide landscape corridor. Therefore, the transmission poles will be buffered, though still visible, from vehicles traveling along Blue Oaks Boulevard. In addition, a 60 kV easement will traverse through a small area of business professional, open space and light industrial uses located east of West Side Drive north of Pleasant Grove Boulevard. This 60 kV line is not located near any residential uses with the exception of a small area located to the west. No public gathering spaces are located near this easement either. Views of the WRSP Area would include these power lines as part of the urban landscape. In addition, landscaping would be included within the easement area. Also shown in Figure 4.11-7 is an alternate 60 kV power line easement following Pleasant Grove Boulevard east to the existing Fiddyment substation in the event that off-site easements are not available or not acquired.

A new electric distribution substation would be constructed north of Blue Oaks Boulevard, between Hayden Parkway and Fiddyment Road adjacent to the proposed commercial area. The substation would be on a 1-acre site with a 12-foot-high fence surrounded by a landscape buffer. Electrical structures associated with the substation would range in height from 10 to 40 feet. Approximately two 60-foot-tall, 60 kV tubular steel poles would also be installed in order to connect the substation to the proposed power lines along Blue Oaks Boulevard. A paved driveway would be installed within the substation for internal circulation of vehicles.

The Roseville General Plan Policies LG 1-9 serve to promote the visual compatibility of developments through the application of community design standards. Specifically, Policy LG 6 requires site and building designs that are in scale and compatible with adjacent development in character. In addition, the WRSP Design Guidelines include specific screening requirements for utilities and mechanical units. Implementation of the Roseville General Plan Policies and the WRSP Design Guidelines would help reduce the significance of the impacts of the utility infrastructure, but not to a less-than-significant level. As such, the impact would remain **significant and unavoidable**.

Off-Site Improvements

Certain components of the WRSP would be constructed off site, that is, outside of the WRSP. Off-site improvements would include roads, electrical infrastructure (including transmission lines), water, and sewer lines. Roads and water and sewer lines would not affect the visual character of the area, because they would be at or below grade. Overhead electrical transmission lines located off site, including 60 kV lines, would be visible on the WRSP. Electrical lines, similar to the water and sewer lines to serve residences, would be placed below grade.

Development of the WRSP Area would be subject to the Roseville Community Design Guidelines, the City's Zoning Ordinance, and the WRSP Design Guidelines, which address factors such as the size, type, and treatment of buildings, setbacks, and landscaping. While these standards would beneficially guide the scale and consistency of architecture, as well as the configuration of site improvements and landscaping, they would not preserve the existing character of the site. No mitigation measures are available to reduce the significance of this impact. Therefore, this impact would remain **significant and unavoidable**.

Remainder Area

Similar to the WRSP, the visual character of the Remainder Area is dominated by open, rolling grasslands, and is visible from a variety of short- and long-range viewpoints. The areas to the east and northeast of the Remainder Area have been developed with residential and other uses. To a certain extent, development of the Remainder Area would be an extension of this urban edge. This EIR assumes the Remainder Area would consist of similar land uses as the WRSP, and would be governed by the City Community Design Guidelines or guidelines developed for future Specific Plan proposals once the site is annexed to the City. Therefore, it is anticipated future development would be visually compatible with surrounding developed uses, including the WRSP. Nonetheless, development would substantially and permanently alter the existing visual character of the Remainder Area by introducing offices, commercial and residential uses, roadways, and other urban facilities into an undeveloped area.

Approximately 365 acres of the Remainder Area are assumed to remain in open space, including the entire Pleasant Grove Creek floodplain, which encompasses most riparian areas and a large portion of trees within the Remainder Area.

While the City's Community Design Guidelines and Specific Plan Design Guidelines, if proposed, would beneficially guide the scale and consistency of architecture, as well as the configuration of site improvements and landscaping, they would not preserve the existing character of the Remainder Area.

No mitigation measures are available to reduce the significance of this impact. Therefore, this impact would remain **significant and unavoidable**.

IMPACT 4.13-2:	NEW SOURCES OF LIGHT AND GLARE.	
Applicable Policies and Regulations:	Roseville Community Design Guidelines WRSP Design Guidelines	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Significant	Significant
Mitigation Measures:	MM 4.13-1 (a) (Restrict high-watt light usage and hours for park facilities) MM 4.13-1(b) (Site high-intensity lighting so as to minimize nuisance) MM 4.13-1(c) (Use low-glare materials for new development) MM 4.13-1(d) (Avoid light spill over into riparian habitat)	MM 4.13-2 (Light and glare policies)
Significance after Mitigation:	Significant and Unavoidable	Significant and Unavoidable

The introduction of artificial light into a rural area contributes to the change in that area's character. In addition, lighting can be an annoyance if it spills into backyards or homes, as it can interfere with sleeping, watching television, or other activities. Development of the project area would result in light from urban development such as residences and commercial and industrial uses, as well as recreational facilities, streetlights, and vehicles, thus increasing the ambient nighttime illumination level and resulting in a substantial change in the amount of light generated in the project area. This would also alter nighttime views to the site, which are currently uninterrupted by light pollution from the area and would become views of a developed, lit environment. Potential impacts are discussed below.

West Roseville Specific Plan

The WRSP Area is currently undeveloped grazing land, and contains very few light sources (primarily several residences in the northeast portion of the WRSP, and the PGWWTP). Development of the proposed WRSP would result in a substantial change in the amount of light generated on the site, and alter nighttime views of the site. There would be light from residences, businesses, industrial areas, streetlights, and vehicles, all which would increase the ambient nighttime illumination level. In addition, parks and schools with sports facilities could use high-intensity lights for playing fields, which would create increased nighttime light. With development of the WRSP, views to the project site that are currently uninterrupted by light pollution from the site would change to views of a developed, lit environment.

The City of Roseville Community Design Guidelines specify that "cut-off" fixtures be used. These fixtures are screened to direct light into specific areas and prevent it from spilling into areas where it is not required. For example, with cut-off fixtures, a security light can be directed entirely toward the parking area and "cut off" at the fence line.

The WRSP includes six school sites and two Citywide parks, all of which would be adjacent to residential areas. Potential visual incompatibilities associated with the high school and Citywide parks would be from lighting associated with stadiums or ballparks that could illuminate adjacent residential areas. The WRSP Design Guidelines do not include any provisions to control spillover lighting into commercial and business professional uses (refer to Applicable WRSP Measures).

City parks typically do not use cut-off fixtures because athletic field lights are only used during games and are shut off after games. The lights do not remain on all night. Lighting of parks (athletic fields) could cause light and glare in adjacent residential neighborhoods during these hours. However, to ensure impacts associated with exterior building lights, park lights, and street lights would be reduced, MM 4.13-1(a) would ensure that such lighting would not use high-powered floodlights, and would not remain on past 11:00 P.M. Additionally, MM 4.13-1(b) recommends siting of these light-producing uses to minimize impacts on adjacent sensitive uses and shielding of light fixtures. Low-glare materials would be utilized for new buildings to reduce glare impacts as recommended by MM 4.13-1(c). To ensure lighting would not adversely affect nesting birds in open space areas, especially along Pleasant Grove Creek and Curry Creek, MM 4.13-1(d) would reduce light impacts on nearby riparian habitat through design measures and light direction and placement. In addition, the WRSP Design Guidelines include measures for using landscaping to provide further visual screening. Although proper site design and timing restrictions are likely to reduce lighting impacts to a large degree, if a level of lighting appropriate for competitive-level sporting events is necessary, it may not be feasible to significantly reduce the amount of light. Additionally, because construction of sports facilities associated with schools would be under the jurisdiction of the School Districts, implementation of WRSP Design Guidelines and these mitigation measures is at the discretion of the School Districts. The City of Roseville cannot compel the School Districts to implement these measures. Should the Districts choose not to implement the WRSP mitigation measures for facilities within their jurisdiction, reduction of nighttime lighting impacts would be compromised.

The WRSP, due to its current open grassland character, is not currently a source of daytime glare. Glare is caused by light reflection from pavement, vehicles, and building materials such as reflective glass and polished surfaces. During daylight hours, the amount of existing glare depends upon the intensity and direction of sunlight; at night, artificial lighting can create glare. Particularly in commercial and

business/professional areas, windows comprise a large proportion of building surfaces, creating a potential for glare that would increase with the use of reflective coatings and reflective building materials. The problem is most noticeable with large buildings that have reflective surfaces. Residential and small commercial buildings are not generally considered sources of substantial glare. Daytime glare could result from commercial and office buildings associated with the WRSP. MM 4.13-1(c) would ensure that low-glare materials would be used for development of new large-scale buildings associated with the WRSP.

MM 4.13-1(a) through MM 4.13-1(c), the City of Roseville Design Guidelines, and the WRSP Design Guidelines provide effective methods to reduce light and glare impacts. Nonetheless, the change in the level of light and glare on the project site would remain **significant and unavoidable**, because the area, which currently lacks light and glare sources, would still be visibly changed in the context of nighttime lighting and daytime glare.

Remainder Area

Development of the Remainder Area would result in light from urban developed uses, increasing the ambient nighttime illumination level and resulting in a substantial change in the amount of light generated on the site.

Similar to the WRSP, the Remainder Area would be subject to City of Roseville Design Guidelines requiring use of "cut-off" light fixtures, and could include land uses with intense light sources, such as ball fields and stadiums. MM 4.13-2 would reduce impacts on nighttime lighting for the area by requiring that future Specific Plans and development plans include policies and/or conditions to ensure that stadium and ball field lighting is shielded and hours of operation are limited.

In addition, the Remainder Area, like the WRSP, is currently open grassland, and is not currently a source of daytime glare. Development of buildings associated with development of the Remainder Area could result in daytime glare. MM 4.13-2 would also ensure that low-glare materials would be used for development of new buildings associated with the Remainder Area.

While MM 4.13-2 and the City of Roseville Design Guidelines provide some methods to reduce the increase in light and glare, the change in the level of light and glare in the Remainder Area would remain **significant and unavoidable**, because the area, which currently lacks light and glare sources, would still be visibly changed in the context of nighttime lighting and daytime glare.

IMPACT 4.13-3:	VISUAL INCOMPATIBILITY BETWEEN LAND USES.	
Applicable Policies and Regulations:	Roseville Community Design Guidelines WRSP Guidelines	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None required	None required
Significance after Mitigation:	Less Than Significant	Less Than Significant

The project area is bordered by a mix of residential, light industrial, and open agricultural areas. Future development would introduce new residences, infrastructure, commercial, and industrial uses in this area. It is assumed new development would be an extension of what currently exists within the City of Roseville to the east. To address new development, the City of Roseville has developed specific Community Design Guidelines. The City's Community Design Guidelines would help streamline design of future development to be visually compatible with existing adjacent land uses. The Community Design Guidelines specify site design, architectural treatment, screening, signage, and lighting requirements for commercial office, industrial, and multi-family residential development. The WRSP includes additional Design Guidelines to address visual compatibility between developed uses. In addition, it is assumed future development within the Remainder Area would prepare specific design guidelines to ensure development would be internally compatible. Potential impacts of the proposed project are discussed below.

West Roseville Specific Plan

Adjacent land uses include a large residential development to the east and northeast, the PGWWTP, and adjacent orchards and grazing land. Development of the WRSP Area would result in construction of residences, roadways, commercial, office, and industrial areas, as well as other urban development features. Essentially, development of the WRSP Area would be an extension of existing urban development in the City of Roseville to the east. The WRSP has established a set of Design Guidelines and standards for development within the WRSP. These guidelines and standards include measures for landscaping, lighting, open space areas, location of land uses, and utility and roadway placement and design. In addition, development of the WRSP Area would be subject to the City of Roseville Community Design Guidelines (discussed above), as are adjacent land uses. Land uses within the WRSP Area would be visually compatible with one another, in compliance with the City of Roseville Community Design Guidelines and the WRSP Design Guidelines. Compliance with the City's Community Design Guidelines, the WRSP open space element, and the WRSP Design Guidelines would ensure that the potential for visual incompatibility would be considered a **less-than-significant** impact.

Remainder Area

The Remainder Area is bordered primarily by open agricultural areas, with residential areas to the northeast of the southern portion of the Remainder Area, and the WRSP Area between the two Remainder Area parcels. Development of the Remainder Area could result in new residential, commercial, and office/light industrial facilities. Adjacent development would include the PGWWTP and the WRSP, which would include residences, roadways, commercial, office, and industrial areas, as well as other urban development features. Like the WRSP, future development in the Remainder Area would comply with the City of Roseville's Community Design Guidelines. These guidelines would direct design of the Remainder Area to be visually compatible with adjacent land uses, because all would be subject to these same design parameters. In addition, land uses within the Remainder Area would be visually compatible with one another, in compliance with the City of Roseville's Community Design Guidelines.

Because development in the Remainder Area would conform to the City of Roseville's Community Design Guidelines and thus be visually compatible with one another as well as surrounding land uses, and because each of those areas would also be visually cohesive internally, the Remainder Area would also be visually compatible with adjacent and internal land uses. Therefore, this would be a **less-than-significant** impact.

IMPACT 4.13-4:	**DEGRADATION OF SCENIC RESOURCES.**	
Applicable Policies and Regulations:	None available	
	WRSP	**Remainder Area**
Significance with Policies and Regulations:	Less Than Significant	Less Than Significant
Mitigation Measures:	None required	None required
Significance after Mitigation:	Less Than Significant	Less Than Significant

There are no scenic roads, resources, or views within or adjacent to the project area. In addition, the area is not designated a scenic area in the City of Roseville General Plan or the Placer County General Plan. Long-range views include views of the Sierra Nevada Mountains to the east while short-range views include views of adjacent residential within the City of Roseville to the east and undeveloped lands to the north, south and west. In addition, short-range views of the area are available from adjacent residential and undeveloped areas to the east, north and south. Development within this area would change existing views, and impacts are discussed below.

West Roseville Specific Plan

The proposed WRSP would result in large-scale development projects that could impair views of the Sierra Nevada and undeveloped lakes by placing buildings within view corridors. The WRSP includes open space areas that could open up view corridors from within the site, but views would still be obstructed by surrounding development. However, because these views are not designated scenic vistas, development of the WRSP would not create a substantial adverse effect on a scenic resource. Therefore, this is considered a **less-than-significant** impact.

Remainder Area

Like the WRSP, proposed development in the Remainder Area would result in large-scale development projects that could impair views by placing buildings within view corridors. However, because these views are not designated scenic vistas, development of the Remainder Area would not create a substantial adverse effect on a scenic resource. Therefore, this is considered a **less-than-significant** impact.

Mitigation Measures

MM 4.13-1(a): Restrict High-Watt Light Usage and Hours for Park Facilities (Impact 4.13-2 – WRSP)

In order to reduce the effects of nighttime illumination from development associated with the WRSP, high-powered floodlights will be discouraged for recreational or other facilities within the WRSP. In addition, such lights shall not be used later than 11:00 P.M. if located within 300 feet of residences. The developers shall be required to disclose to all adjacent residential areas that a regional park is located nearby that will contain outdoor lighting.

MM 4.13-1(b): Site High-Intensity Lighting so as to Minimize Nuisance (Impact 4.13-2 – WRSP)

High-Intensity light producing uses, such as stadiums and ball fields, within the WRSP Area shall be located and oriented to minimize visual impacts on adjacent residential areas located within 300 feet. Lighting for stadiums and ball fields should be shielded and designed to distribute light in the most effective and efficient manner, using the minimum amount of light to achieve the necessary illumination for the use, as defined by suggested lighting standards for competitive play. The developers shall be required to disclose to all adjacent residential areas that regional park/school uses are located nearby that will contain outdoor lighting.

MM 4.13-1(c): Use Low-Glare Materials for New Development (Impact 4.13-2 – WRSP)

In order to reduce the effects of daytime glare from development of commercial, office, and industrial uses within the WRSP, building developers shall make use, when feasible, of low-glare materials.

MM 4.13-1(d): Avoid Light Spill Over Into Riparian Habitat (Impact 4.13-2 – WRSP)

Outdoor lighting shall be placed, designed, and directed so as to avoid light spill over into the riparian habitat of Pleasant Grove or Curry Creek and Open Space Preserve Areas.

MM 4.13-2: Light and Glare Policies (Impact 4.13-2 – Remainder Area)

Specific Plans and/or other development proposals for the Remainder Area shall include policies or conditions of project approval that reduce the effects of nighttime illumination and glare from the Remainder Area. The Specific Plans and/or development proposals shall include policies and/or conditions that require that lighting for stadiums and ball fields be shielded and designed to distribute light in the most effective and efficient manner, using the minimum amount of light to achieve the necessary illumination for the use, and that hours of operation be limited to avoid nuisances. In addition, these policies and/or conditions should ensure that outdoor lighting does not spill over into creeks or open space preserves, and that low-glare materials are used on office, commercial and industrial buildings.