2 ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the Proposed Project and a range of reasonable alternatives to the Proposed Project consistent with the requirements of California Code of Regulations (CCR) Section 15126.6 and 40 Code of Federal Regulations (CFR) 1502.14.

The six alternatives evaluated at an equal level of detail in this draft document, known as a draft environmental impact report/draft environmental impact statement (DEIR/DEIS), are as follows:

- Proposed Project (Applicants' Preferred Alternative)
- No USACE Permit Alternative
- Biological Impact Minimization Alternative
- Conceptual Strategy Alternative
- Increased Development Alternative
- No Project/No Action Alternative

These alternatives were developed by the City of Rancho Cordova (City) and the U.S. Army Corps of Engineers (USACE), Sacramento District. The alternatives are based on the project purpose, alternatives screening criteria (described below), and coordination with Federal agencies (USACE, U.S. Fish and Wildlife Service [USFWS], and U.S. Environmental Protection Agency [EPA]). The alternatives also consider scoping comments received on the Notice of Preparation (NOP) and Notice of Intent (NOI) and voiced at the scoping meeting. These alternatives represent a full range of alternatives to the Proposed Project, consistent with California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements. As required by the Federal lead agency in charge of NEPA compliance, USACE, this document also evaluates a NEPA-only No USACE Permit Alternative. The Proposed Project and alternatives (with the exception of the No Project/No Action Alternative required by CEQA and NEPA and the No USACE No Permit Alternative required by USACE NEPA regulations) have each been formulated to feasibly accomplish most of the basic objectives of the project as discussed in Chapter 1, "Introduction and Statement of Purpose and Need," of this DEIR/DEIS, and could avoid or substantially lessen one or more of the significant effects.

A summary comparison of these alternatives, as well as identification of the environmentally superior alternative, is provided in Section 2.13 of this chapter.

2.2 CEQA/NEPA REQUIREMENTS FOR EVALUATION OF ALTERNATIVES

2.2.1 CEQA REQUIREMENTS

FOCUS OF THE EIR ALTERNATIVES ANALYSIS

The guiding principles for the selection of alternatives for analysis in an EIR are provided by the State CEQA Guidelines, as amended (CCR Section 15126.6). CCR Section 15126.6 states that the alternatives analysis must:

- describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project but would substantially lessen or avoid any of the significant effects of the project;
- focus on alternatives capable of avoiding or substantially lessening any of the significant environmental impacts of the proposed project, even if they may be more costly or could otherwise impede some of the project's objectives; and

- evaluate the comparative merits of the alternatives.

The focus and definition of alternatives evaluated in this DEIR/DEIS are governed by the "rule of reason" in accordance with CCR Section 15126.6 of the State CEQA Guidelines. That is, the range of alternatives presented in the DEIR/DEIS is limited to those that would permit a reasoned choice by the City and USACE decision makers.

In addition to the guiding principles for selection of alternatives set forth above, the State CEQA Guidelines require that an EIR evaluate a "No Project Alternative," identify alternatives that were initially considered for further evaluation but then rejected, and identify the "environmentally superior alternative." This DEIR/DEIS describes and evaluates a No Project/No Action Alternative (Section 2.7) to provide the decision makers and the public with an overview of what could reasonably be expected to occur if the proposed SunCreek Specific Plan project were not approved and implemented.

SCREENING CRITERIA

Consistent with the requirements of CEQA, the City used the CEQA project objectives identified in Chapter 1, "Introduction and Statement of Purpose and Need" as criteria to screen the alternatives that should be considered in this DEIR/DEIS and to determine whether the alternatives would lessen any of the significant environmental impacts of the project.

2.2.2 NEPA REQUIREMENTS

FOCUS OF THE EIS ALTERNATIVES ANALYSIS

The NEPA Council on Environmental Quality (CEQ) Regulations (40 CFR 15012.14) require that an EIS include:

- an objective evaluation of reasonable alternatives;
- identification of the alternatives considered but eliminated from detailed study, along with a brief discussion of the reasons that these alternatives were eliminated;
- information that would allow reviewers to evaluate the comparative merits of the proposed action (i.e., proposed project) and alternatives;
- consideration of the No Action Alternative;
- identification of the agency's preferred alternative, if any; and
- appropriate mitigation measures not already included in the proposed action or alternatives.

Additionally, USACE NEPA regulations require that an EIS include consideration and evaluation of a No USACE Permit Alternative.

Alternatives to the Proposed Project that were considered in the evaluation are described below. Consideration of the other NEPA requirements is provided in Chapters 3, "Affected Environmental, Environmental Consequences, and Mitigation Measures" and 4, "Other Statutory Requirements" of this DEIR/DEIS.

Unlike CEQA, which permits the evaluation of alternatives to occur in less detail than is provided for the proposed action, NEPA requires the analysis of alternatives to occur at a substantially similar level of detail as that devoted to the proposed action. The NEPA Regulations (40 CFR 1502.14) require agencies to rigorously explore and objectively evaluate all reasonable alternatives and to devote substantial treatment to each alternative considered, including the proposed project.

SCREENING CRITERIA

The following screening criteria are in compliance with the USACE Section 404(b)(1) Guidelines, which are the substantive criteria used by USACE in evaluating discharges of fill material into waters of the United States (U.S.) under Section 404 of the Clean Water Act. The guidelines require that the following four criteria be satisfied for USACE to make a decision that a proposed discharge is in compliance:

- The discharge must be the least environmentally damaging practicable alternative.
- The discharge must not violate any water quality standard or toxic effluent standard, or jeopardize the continued existence of a threatened or endangered species.
- The discharge must not result in a significant degradation of the waters of the U.S.
- Unavoidable impacts on the aquatic ecosystem must be mitigated within the context of NEPA.

Before USACE can issue a permit, it must find that the requirements of the Section 404(b)(1) Guidelines have been satisfied. The key criterion and the focus of the alternatives analysis is the requirement that the discharge be the least environmentally damaging, practicable alternative. USACE considers practicable alternatives to include, but not to be limited to:

- on-site activities that do not include a discharge into waters of the U.S. or ocean waters;
- discharges of dredged or fill material at other locations in waters of the U.S. or ocean waters;
- areas that are not presently owned by the applicant that could be reasonably obtained, used, expanded, or managed to fulfill the basic purpose of the proposed activity (after considering cost, existing technology, and logistics); and
- a project location that does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., that is not water dependent). Practicable alternatives that do not involve special aquatic sites are presumed to be available unless clearly demonstrated otherwise. Where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge that do not involve a discharge into a special aquatic site are presumed to have less adverse impacts on the aquatic ecosystem, unless clearly demonstrated.

The key provisions in the language are “practicability” and “overall project purpose.” An alternative is practicable if it is available to the applicant and capable of being accomplished by the applicant after consideration of costs, existing technology, and logistics, in light of the overall project purpose. USACE has determined that the overall project purpose is to provide a large-scale mixed-use community within eastern Sacramento County, in the urban services boundary. If a practicable alternative is identified that would have less adverse impact on the aquatic ecosystem and would not have other significant adverse environmental consequences, then USACE would be unable to issue a permit for the proposed project.

2.3 PROPOSED PROJECT ALTERNATIVE

2.3.1 SUMMARY

This section describes the Proposed Project Alternative. The Proposed Project Alternative has been formulated to achieve the project purpose, objectives, and needs of the project, as discussed in Chapter 1, “Introduction and Statement of Purpose and Need” of this DEIR/DEIS.

The applicant group, which consists of Sierra Sunrise, Shalako, Investek, Smith/Dunmore, Luxori, Smith/Dunmore, and Grantline 220, hereinafter referred to as the "project applicants," are seeking adoption by the City of the *SunCreek Specific Plan* (Specific Plan), hereinafter referred to as the "SunCreek project" or the "Proposed Project." The SunCreek project would be a mixed-use development on approximately 1,253 acres within the Sunrise Douglas Community Plan area in Rancho Cordova, California in eastern Sacramento County. As described previously in Chapter 1, "Introduction," although the specific plan includes a proposal for development on the Luxori and Grantline 220 parcels, those property owners are not currently participating in the DEIR/DEIS process, and are not seeking approval of development agreements or large-lot tentative maps. A copy of the draft *SunCreek Specific Plan* is available for review at the City of Rancho Cordova offices located at 2729 Prospect Park Drive, Rancho Cordova, CA 95670 and is also attached to this EIR/EIS as Appendix C. The project applicant is also seeking authorization and permit(s) from USACE to place dredged or fill material into waters of the U.S.

2.3.2 REGIONAL LOCATION

The project site is located in eastern Sacramento County, south of U.S. Highway 50 (U.S. 50), within the city limits of the City of Rancho Cordova (Exhibits 2-1 and 2-2). The property is located south of Douglas Road, north of Jackson Highway (i.e., State Route 16), west of Grant Line Road, and east of Sunrise Boulevard.

Rancho Cordova lies within the Sacramento Valley, a nearly flat alluvial plain that extends almost 180 miles from the Sacramento–San Joaquin Delta on the south to Redding on the north, and approximately 50 miles from the Sierra Nevada foothills on the east to the Coast Range on the west. The Sacramento Valley is an asymmetric structural trough that is filled locally up to 5 miles deep with sediment that has been deposited on a nearly continuous basis since the late Jurassic period (approximately 160 million years ago). Climate in the Sacramento Valley is characterized by warm, dry summers with an almost complete absence of rain, and mild winters with relatively light rains.

2.3.3 PROJECT SITE AND VICINITY

Most of the project site (i.e., SunCreek Specific Plan Area, herein referred to as "SPA") is undeveloped land used sporadically for dry land farming and grazing on spring grasses. Five rural residences and four barns are located on the SPA. Surrounding land uses include the Anatolia development under construction to the west; and vacant land to the north, east, and south. The Sacramento County Landfill is located southeast of the SPA.

Access to the SPA would be provided via Rancho Cordova Parkway and Americanos Boulevard in a north-south direction, along Chrysanthy Boulevard in an east-west direction from Grant Line Road to the north, and along Kiefer Boulevard in an east-west direction from Sunrise Boulevard to Grant Line Road in the south.

2.3.4 DESCRIPTION OF THE PROPOSED PROJECT/ACTION (PROPOSED PROJECT ALTERNATIVE)

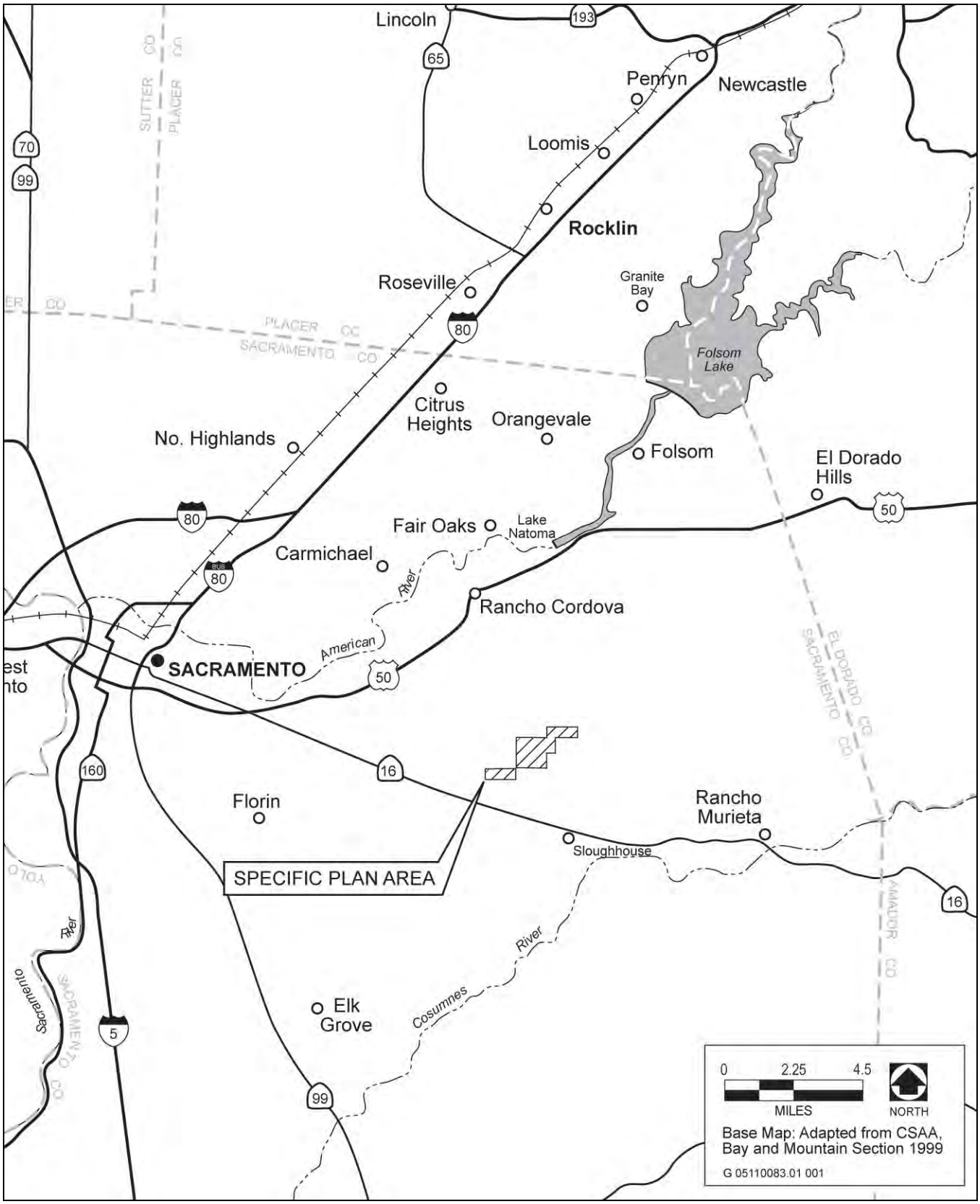
REQUESTED ENTITLEMENTS

This section describes the requested entitlements, project characteristics, and components associated with the proposed development. The analysis of project development is provided at a project-level of detail. Additional approvals and authorizations are listed in Chapter 1, "Introduction and Statement of Purpose and Need."

City of Rancho Cordova

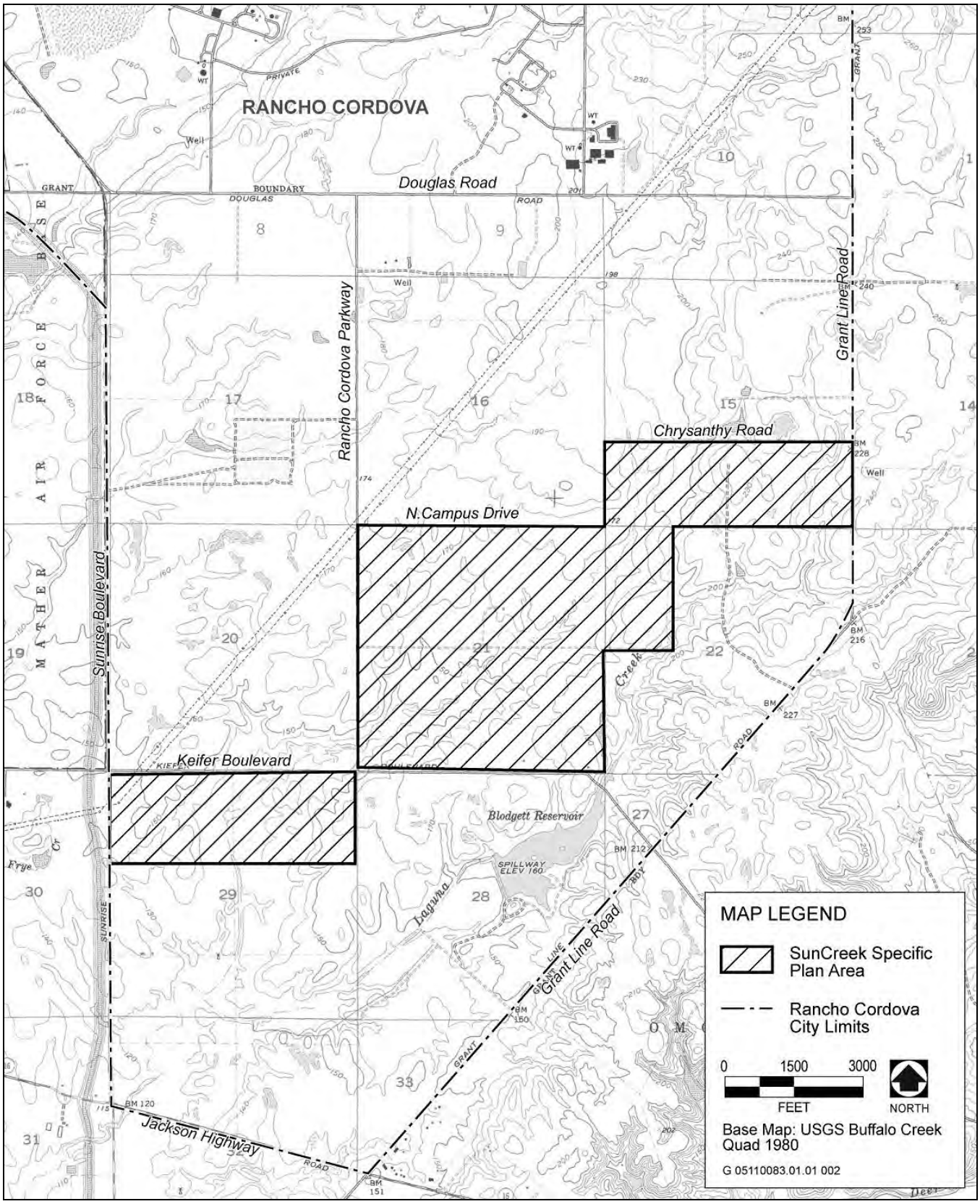
Adoption of the project, including the associated proposed development, requires the following City entitlements:

- certification of the EIR/EIS and Mitigation Monitoring and Reporting Program (MMRP),



Source: Data compiled by AECOM in 2010

Regional Project Location **Exhibit 2-1**



Source: Data compiled by AECOM in 2010

SPA Location Map **Exhibit 2-2**

- approval of a general plan amendment,
- pre-zoning of the SPA for the participating land owners,
- adoption of the SunCreek Specific Plan,
- adoption of a Public Facilities Financing Plan,
- adoption of a Public Facilities Infrastructure/Phasing Plan,
- potential approval of development agreements between the City and the project applicants for the participating land owners, and
- approval of large-lot tentative maps for the participating land owners.

Future City entitlement approvals may include, but are not limited to, the following:

- use permits,
- approval of tentative parcel and subdivision maps,
- design review,
- lot line adjustments,
- engineering improvement plans,
- planned development permits,
- grading plans, and
- development agreement between the City and future project applicants.

The first six of these required entitlements/approvals are described below.

- **Certification of the EIR/EIS and Mitigation Monitoring and Reporting Program.** After preparation of the Final EIR/EIS, the City will consider certification of the EIR/EIS and MMRP. The Final EIR/EIS will respond to significant environmental comments raised during review of the DEIR/DEIS and will document any project modifications, corrections, or revisions to the environmental impacts or mitigation measures of the Proposed Project Alternative. The MMRP will outline what actions must be taken, as conditions of approval, to comply with the EIR/EIS, and the timing and responsibilities for conducting and monitoring the various mitigation activities.

- **General Plan Amendment.** Pursuant to California Government Code Section 65454, a specific plan must be consistent with the local government's general plan. The project applicants are requesting a general plan amendment application, which includes regulations, guidelines, and standards that would make the specific plan and general plan consistent with one another. This general plan amendment includes a request to modify the residential land use shown on conceptual land use plan for the SunCreek SPA shown in the City General Plan, with the commercial land use (local town center) shown on the land use plan for the Proposed Project. No general plan policy changes are proposed. Because there would be no additional physical/environmental effect associated with this redesignation, the issue will not be evaluated further in this EIR.

- **Zoning Amendment.** The SPA is zoned General Agricultural (AG) with 80-acre and 20-acre minimum lot sizes. The SPA would be rezoned for the participating landowners with the new designations shown in Exhibit 2-3, and discussed in detail in Section 3.10, "Land Use and Agricultural Resources" of this EIR/EIS.

- **SunCreek Specific Plan Adoption.** The specific plan is intended to provide a comprehensive land use, policy, and regulatory document to govern all future development in the 1,253-acre plan area, which contains the same boundary as the SPA and is hereinafter referred to as the "SPA." The goal of the specific plan is to establish a development framework for land use, resource protection, circulation, public utilities and services,

design, and implementation. Development of the specific plan (i.e., the Proposed Project Alternative under the CEQA process) and the subsequent entitlement process provides for a sequence of community input and government review to ensure that development occurs in a logical, consistent, and timely manner. The physical environmental effects associated with this redesignation are the same as those presented by the SunCreek Specific Plan and are analyzed in this EIR/EIS.

Specific plans are an implementation mechanism for new-growth areas authorized, but not mandated, by California statute (California Government Code Section 65451 et seq.). The content of a specific plan is defined in California Government Code Section 64541(a), which specifies the following in detail:

- the distribution, location, and extent of the uses of the land, including open space, within the area covered by the plan;

- the proposed distribution, location, extent, and intensity of major components of public and private transportation, sewage, water drainage, solid-waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan;

- standards and criteria by which development would proceed, and standards for the conservation, development, and utilization of natural resources, where applicable; and

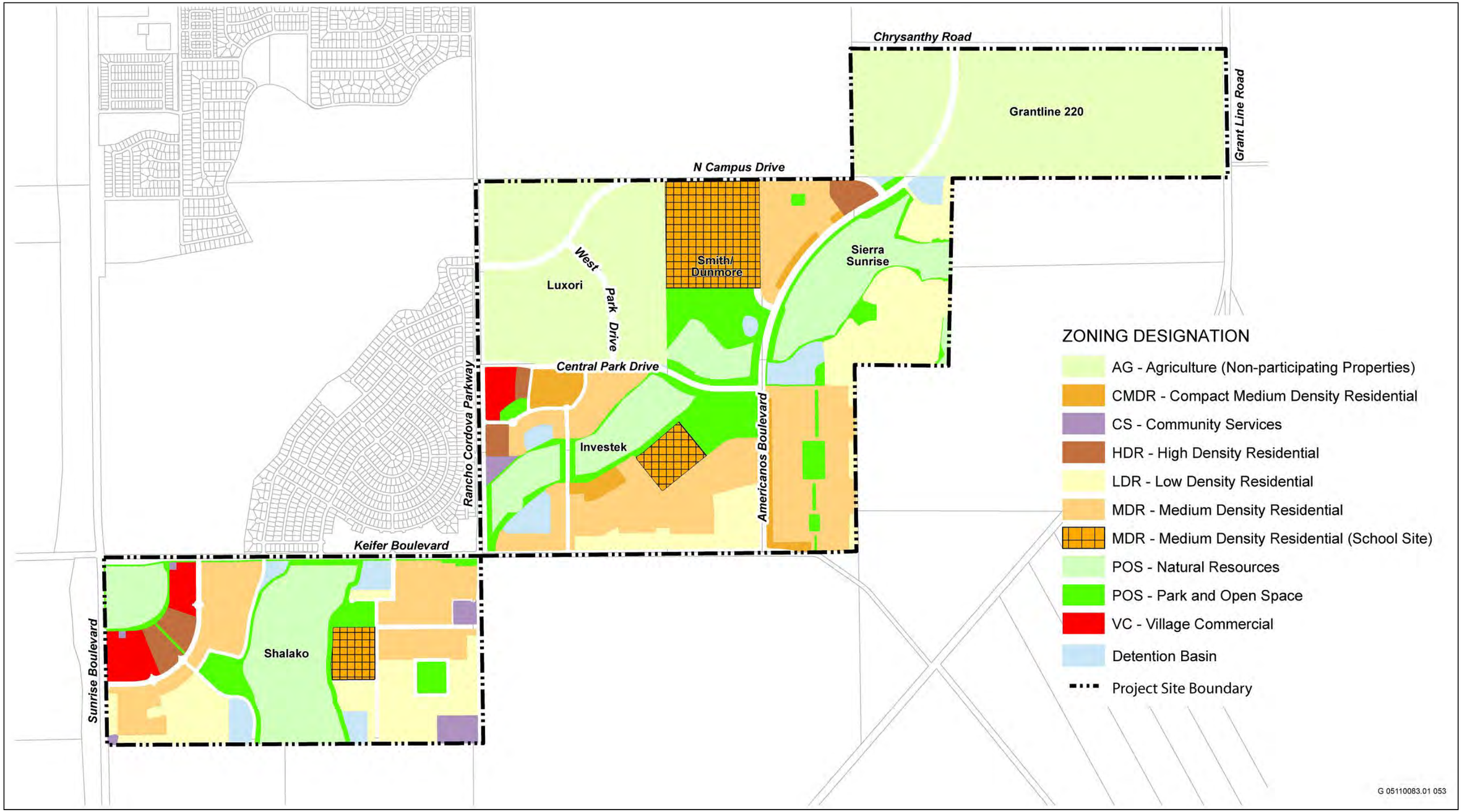
- a program of implementation measures including regulations, programs, public-works projects, and financing measures necessary to carry out the above-listed criteria.

Under state law, the specific plan implements and must be consistent with the goals, policies, and objectives of the approving local agency's general plan. Here, the project is intended to be consistent with the City of Rancho Cordova General Plan. All subsequent entitlements and approvals relating to land or infrastructure in the specific plan area, including but not limited to subdivisions, public-works projects, rezones, and conditional use permits, are required to be consistent with the specific plan if the specific plan is to be used as the entitling document. Once the specific plan is adopted, the maximum extent of development at the SPA will have been determined and cannot be exceeded without subsequent environmental review. Once the Specific Plan is adopted, the maximum extent of development at the project site will have been determined. Any development in excess of the amount in the SunCreek Specific Plan would require additional entitlements, including the need to determine whether further environmental review is required under CEQA or NEPA. A copy of the draft SunCreek Specific Plan is attached as Appendix C.

- **Public Facilities Financing Plan.** A Draft Public Facilities Financing Plan would be adopted by the City Council before the approval of any tentative map within the specific plan area. The Financing Plan would define the specific mechanisms required to fund capital costs of all infrastructure necessary as a result of specific plan buildout. The Financing Plan would define funding for the maintenance of new infrastructure and public services needed by the future residents and business locating within the SunCreek Specific Plan area.

- **Public Facilities Infrastructure/Phasing Plan.** A Public Facilities Infrastructure/Phasing Plan would be prepared for the SunCreek Specific Plan, and would be adopted by the City Council before approval of any tentative map within the specific plan area. The plan would provide specific details regarding the phasing, sizing, alignment and location, cost estimates, and construction timing requirements to serve the proposed development within the SunCreek Specific Plan area.

- **Development Agreement Adoption.** The participating project applicants intend to enter into a Development Agreement or Agreements with the City pursuant to California Government Code Section 65864 et seq. at the time of specific plan adoption. The agreement would set forth many, if not all, of the applicants' obligations to the City and other public agencies with regard to the project, including but not limited to construction, maintenance, and financial responsibilities. The agreement would also set forth the City's other project



Source: MacKay & Somps 2012

Proposed Zoning Designations **Exhibit 2-3**

obligations, including but not limited to processing of subsequent entitlement applications, formation of financing mechanisms (including but not limited to Mello-Roos districts), and the vesting of development entitlements. Pursuant to applicable California Government Code provisions, public hearings at both the City Planning Commission and City Council would be held on the proposed Development Agreement before the City Council takes any action. The specific terms and conditions of any such development agreements are subject to negotiation and approval of the parties.

U.S. Army Corps of Engineers

The Proposed Action represents a Federal action because it would require Federal permits and authorizations for one or more of the following activities: issuance of a Section 404 Clean Water Act permit for discharges into waters of the U.S.; and issuance of a biological opinion and incidental-take statement pursuant to Section 7 of the Federal Endangered Species Act for potential take of endangered or threatened species.

PROPOSED SUNCREEK SPECIFIC PLAN PROJECT LAND USES

As described below, the Proposed Project Alternative would include a range of housing types, employment centers, open space, and recreation opportunities, as well as roadway improvements, support infrastructure, and utilities. Land uses are described below and shown in Table 2-1 and Exhibit 2-4.

Table 2-1
Acres and Units of Proposed SunCreek Specific Plan Project Land Uses

Land Use	Acres[1]	Average Density per Acre (du/acre)	Total Number of Dwelling Units
Low Density Residential	169.4	5.31	900
Medium Density Residential	322.7	7.80	2,517
Compact Density Residential	20.1	14.23	286
High Density Residential	43.6	22.80	994
Village Commercial	22.9	--	--
Local Town Center	59.4	--	--
Public/Quasi Public	13.0	--	--
Park	87.1	--	--
Pocket Park	4.3	--	--
Parkway, Paseos, and Trails	9.1	--	--
Wetland Preserve Buffer	45.2	--	--
Detention Basin	46.9	--	--
Storm Water Canal	5.0	--	--
Wetland Preserve	203.7	--	--
School (Elementary and High School/Middle School)	110.9	--	--
Minor Roads	23.2		
Major Roads	79.0	--	--
Total	**1,265.5**	**--**	**4,697**

Notes: du/acre = dwelling units per acre

[1] Note that since the project is a specific plan, the acreages of each land use may change slightly during the planning process; however, the total number of dwelling units and the total square footage of commercial uses would not change.

Source: MacKay & Somps 2012

Buildout of the project is anticipated to occur over a 20-year period, with construction anticipated to begin in 2012 and end in 2032, and would include the elements described below.

Residential

The Proposed Project provides for the construction of 4,697 dwelling units in four residential land use classifications on approximately 555 acres. The proposed densities are as follows:

- Low Density Residential, with a permitted density range of 2.1 to 6 dwelling units per acre (du/ac);
- Medium Density Residential, with a permitted density range of 6.1 to 12 du/ac;
- Compact Density Residential, with a permitted density range of 12.1 to 18 du/ac; and
- High Density Residential, with a permitted density range of 18.1 to 40 du/ac.

Commercial

The Proposed Project includes the commercial land use classifications of Local Town Center and Village Commercial. The approximately 59-acre Local Town Center is proposed for the northeastern portion of the SPA, adjacent to Grant Line Road. One Village Commercial area is proposed adjacent to Ranch Cordova Parkway. The other Village Commercial areas are proposed in the southern portion of the SPA adjacent to Sunrise and Kiefer Boulevards.

Development of the Proposed Project Alternative would result in the generation of approximately 2,618 jobs, and a population of approximately 12,588.

Public/Quasi Public

Approximately 13 acres of Public/Quasi Public land is designated: approximately 2.5 acres in the northern portion of the SPA west of Americanos Boulevard, approximately 2.5 acres in the central portion of the SPA east of Rancho Cordova Parkway, and approximately 8 acres in the southern portion of the SPA west of Rancho Cordova Parkway.

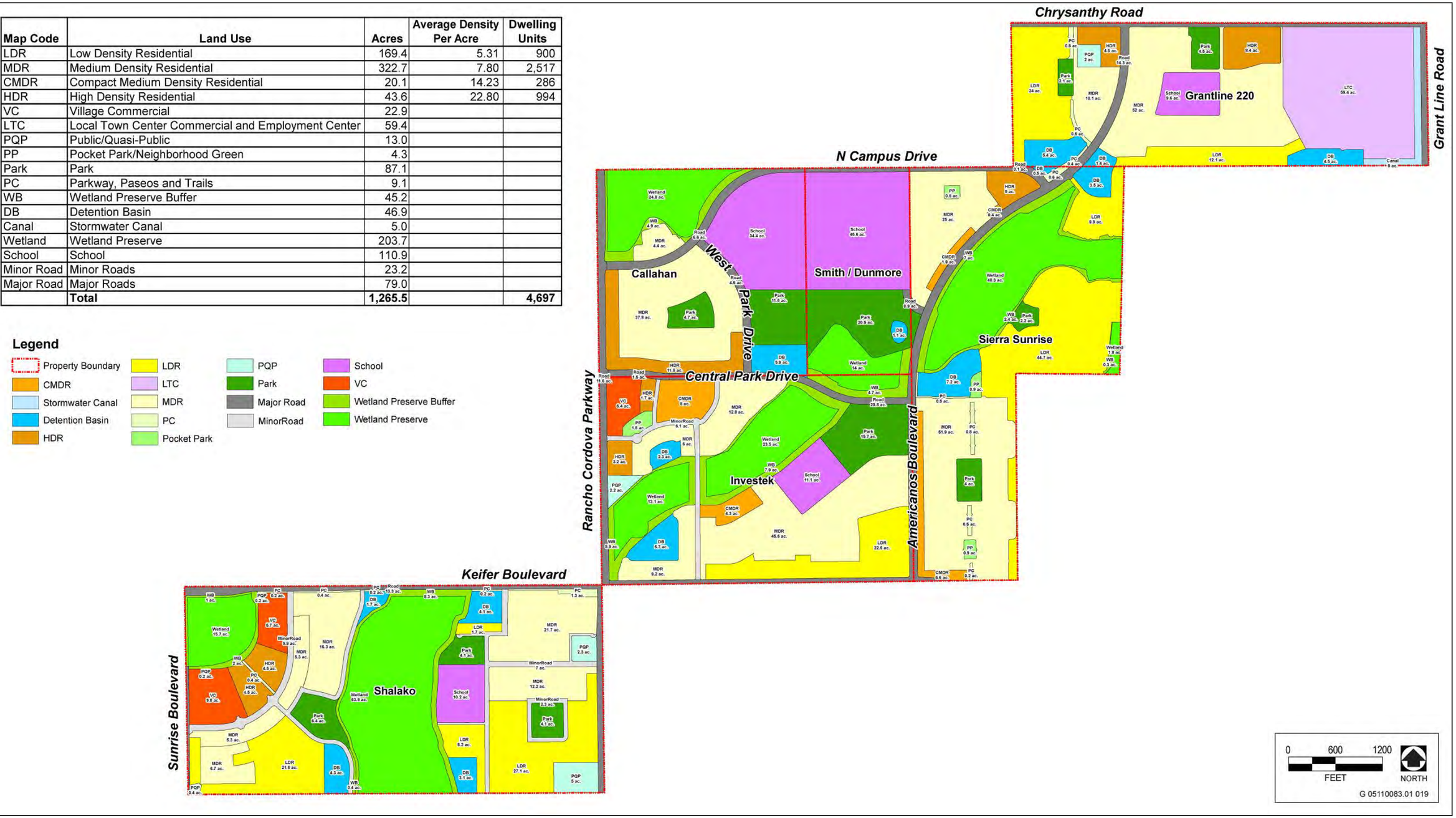
Parks

The Proposed Project includes development of an approximately 39-acre community park located adjacent to and south of the proposed high school/middle school in the central portion of the SPA. Another approximately 15-acre community park is located west of Americanos an approximately 39-acre community park located adjacent to and south of the proposed high school/middle school in the central portion of the SPA. Another approximately 15-acre community park is located west of Americanos Boulevard next to the proposed elementary school. Ten neighborhood parks with sizes ranging from 2 – 8 acres are located throughout the SPA. Pocket parks, which are scattered throughout the SPA, are small areas of parkland that do not meet the minimum City size requirements to be considered neighborhood parks. The SPA includes a total of 100.5 acres of parks.

Schools

Approximately 111 acres are designated as part of the Proposed Project for school uses, including a combined high school/middle school (80 acres) and three elementary schools (31 acres). All would be part of the Elk Grove Unified School District (EGUSD). Most of the schools, along with the community parks adjacent to the high school/middle school complex and the elementary school in the central portion of the SPA, would be jointly used by EGUSD and the Cordova Recreation & Park District (CRPD). Funding would be provided through state bonds and local bonds and developer fees.

Map Code	Land Use	Acres	Average Density Per Acre	Dwelling Units
LDR	Low Density Residential	169.4	5.31	900
MDR	Medium Density Residential	322.7	7.80	2,517
CMDR	Compact Medium Density Residential	20.1	14.23	286
HDR	High Density Residential	43.6	22.80	994
VC	Village Commercial	22.9		
LTC	Local Town Center Commercial and Employment Center	59.4		
PQP	Public/Quasi-Public	13.0		
PP	Pocket Park/Neighborhood Green	4.3		
Park	Park	87.1		
PC	Parkway, Paseos and Trails	9.1		
WB	Wetland Preserve Buffer	45.2		
DB	Detention Basin	46.9		
Canal	Stormwater Canal	5.0		
Wetland	Wetland Preserve	203.7		
School	School	110.9		
Minor Road	Minor Roads	23.2		
Major Road	Major Roads	79.0		
	Total	**1,265.5**		**4,697**



Source: MacKay & Somps 2012

Proposed Project Alternative Land Use Plan **Exhibit 2-4**

Buildout of the Proposed Project would generate approximately 3,062 pupils in grades K (kindergarten)–12. Of this total, 1,661 pupils would be in grades K–5; 490 would be in grades 6–8; and 911 would be in grades 9–12 and continuation high school. EGUSD based these projections on the current land use designations and yield rates generated from similar types of development.

The middle school and high school would be combined on one large 80-acre site. The middle school would have a capacity of approximately 1,200 pupils and the high school would have a capacity of approximately 2,200 pupils.

The timeline for construction of the schools would coincide with the project applicants' buildout schedule, which is dependent upon market demand for new homes.

Fire and Police Protection

Fire protection services would be provided by Sacramento Metropolitan Fire District (SMFD). Police protection would be handled by the City of Rancho Cordova Police Department. Each facility's needs for law enforcement and protection would be determined by that department. Public facilities would be permitted uses in any commercial, industrial, or office zone, thereby providing numerous opportunities within the SPA and vicinity for fire or police stations as determined necessary. A new fire station is tentatively proposed in the Public/Quasi-Public area that is adjacent to Rancho Cordova Parkway and south of Keifer Boulevard.

Parkways/Paseos/Trails

The Proposed Project would include approximately 9.1 acres of parkways, paseos, and trails (designated on the land use plan as "Pedestrian Corridor" or "PC") located throughout the site to allow for pedestrian and bicycle circulation. The Proposed Project also includes approximately 45.2 acres of wetland preserve buffer land, some of which would include pedestrian/bike path corridors.

Wetland Preserve

A total of approximately 43.68 acres of jurisdictional waters of the U.S. are located within the SPA. As shown in Table 2-2, a total of approximately 24.17 acres of on-site jurisdictional waters of the U.S., including wetlands would be filled by implementation of the Proposed Project Alternative. In addition, the project would result in approximately 1 acre of impacts from installation of off-site backbone infrastructure.

The Proposed Project includes an approximately 203-acre wetland preserve locating along the existing drainage of Kite Creek. (Note that road signs in the project vicinity refer to this wetland feature as "Sun Creek," hence the project name. However, for the sake of consistency with the naming convention used in the hydrologic studies, this wetland feature is referred to as "Kite Creek" throughout this DEIR/DEIS.) As shown in Table 2-2, a total of approximately 19.51 acres of waters of the U.S. and wetlands would be preserved at the SPA, including most of Kite Creek located within this area. The exact timing of events within the wetland preserve would be determined by USACE's Clean Water Act (CWA) Section 404 permit requirements. The wetland preserve would not function as a mitigation bank. (Exhibits showing the types of wetlands and amounts filled and preserved, for each of the five action alternatives, are contained in Section 3.4, "Biological Resources.")

To facilitate wildlife movement, the project would include a culverted bridge design (such as, but not limited to, ConSpan©) at all locations where roadways would cross the proposed wetland preserve (see Exhibit 2-5), as well as at the one location where the pedestrian/bicycle trail would cross the wetland preserve (see Exhibit 2-21).

The wetland preserve buffer was created to provide separation between the wetland preserve (where no land uses are allowed) and more intensive land uses such as residential, commercial, and schools. The buffer area would be used to support a pedestrian/bicycle trail network (which is described later in this chapter) and, although no basins are currently proposed there, could be used to locate on-site detention basins. By providing a buffer area, the indirect impacts (e.g. erosion, stormwater runoff) to the wetland preserve are reduced. The width of the wetland buffer varies depending on location, but encompasses in total approximately 45 acres.

Table 2-2
Waters of the U.S. and Wetlands at the SPA

Habitat Type	Acres Existing	Acres of Direct Impacts	Acres of On-site Preservation[1]	Acres of On-site Wetlands within 250 Feet of Development	Acres of Off-site Wetlands within 250 Feet of Development[2]
Vernal Pool	27.22	14.50	12.72	9.95	7.51
Seasonal Wetland	2.64	1.11	1.53	1.22	3.14
Swale	6.46	4.52	1.94	1.68	2.36
Ephemeral Drainage	0.90	0.90	0.00	0.00	0.00
Intermittent Drainage	0.98	0.17	0.81	0.54	0.00
Pond	2.06	2.06	0.00	0.00	0.65
Stream	3.42	0.91	2.51	1.69	1.63
Total	43.68	24.17	19.51	15.08	15.29

Notes:
[1] Preservation acreage listed includes acreage within 250 feet of developed land uses.
[2] Wetlands that are off-site, but within 250 feet of on-site project development.
Source: ECORP 2011

Temporary fencing would be erected between construction areas and the wetland preserve during the construction phase, and the preserve would be permanently fenced at the completion of construction to prevent unauthorized traffic. Interpretive signage would be placed along the preserve boundary to provide educational opportunities. Deed restrictions and conservation easements would be recorded that would require the wetland and open-space areas constructed on-site to be maintained as wetland and wildlife habitat in perpetuity. Copies of proposed language would be submitted to USACE for approval before recordation, and copies of the recorded documents would be provided to USACE no later than 30 days subsequent to recordation. Recordation would occur before the start of project construction.

Wetland Preserve Mitigation and Monitoring Plan

A detailed mitigation and monitoring plan (MMP) for the wetland preserve and additional mitigation areas would be developed and implemented by the project applicants. An operations and management plan (O&M plan) would also be prepared and implemented for the project. Both the MMP and the O&M plan would need to be reviewed and approved by USACE before implementation or work in waters of the U.S. The MMP would outline the monitoring methods and success criteria of compensatory wetland and riparian habitat while the O&M plan would list the responsibilities of the Preserve Steward, as well as the tasks required to ensure the long-term viability of the functions and values of the preserve.

Drainage/Stormwater Detention/Water Quality

The Regional Master Drainage Study for the SunCreek Specific Plan (SunCreek Drainage Study) prepared by MacKay & Somps (2011c) attached as Appendix D analyzes the Laguna Creek watershed from the headwaters to a point approximately 3,500 feet south of Florin Road. The SunCreek Drainage Study area is situated between the Morrison Creek watershed located adjacent to the northern Laguna Creek watershed boundary and the Deer Creek watershed located adjacent to the eastern and southern Laguna Creek watershed boundary.

INFRASTRUCTURE ABBREVIATIONS

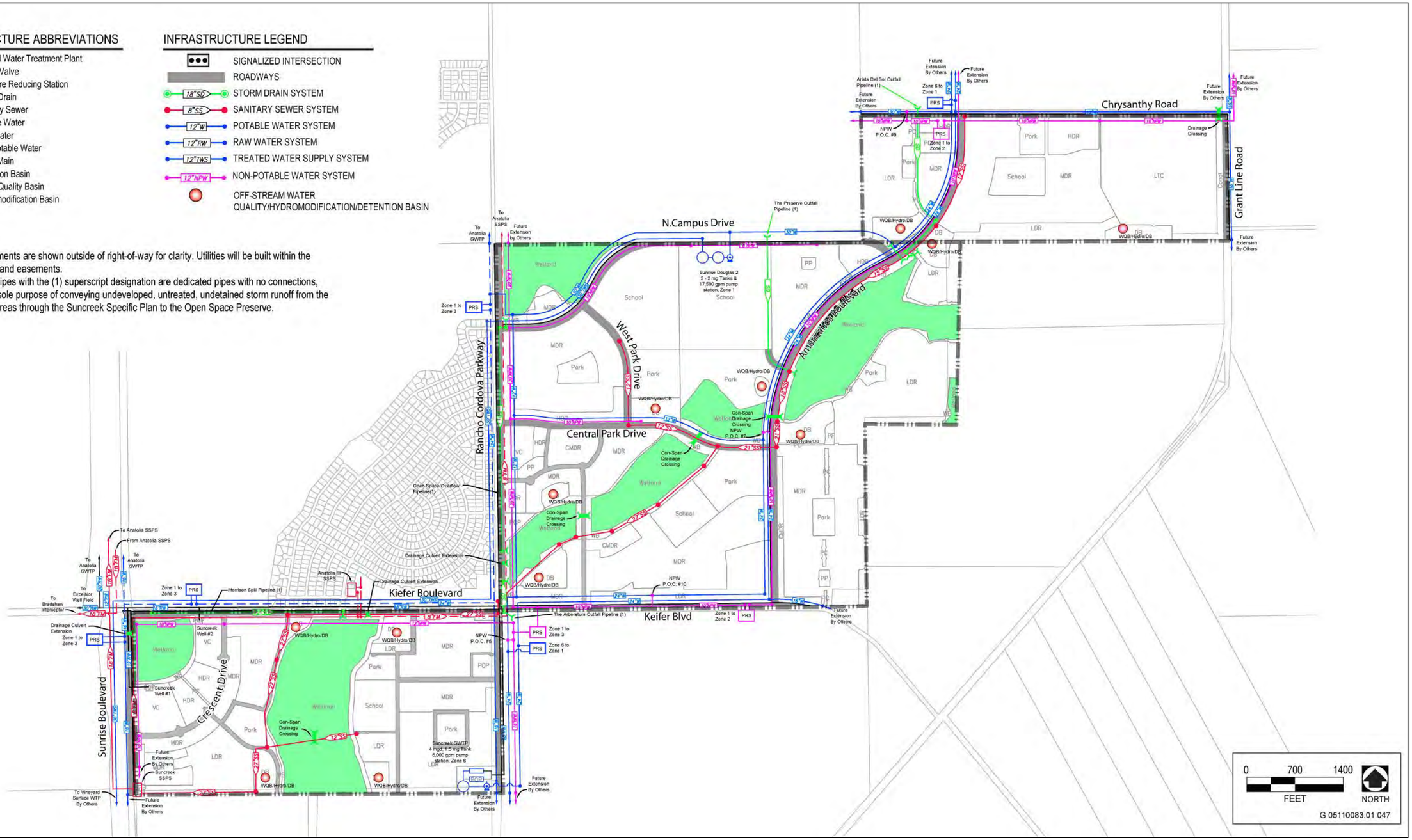
GWTP	Ground Water Treatment Plant
CV	Check Valve
PRS	Pressure Reducing Station
SD	Storm Drain
SS	Sanitary Sewer
W	Potable Water
RW	Raw Water
NPW	Non-Potable Water
FM	Force Main
DB	Detention Basin
WQB	Water Quality Basin
Hydro	Hydromodification Basin

INFRASTRUCTURE LEGEND

- SIGNALIZED INTERSECTION
- ROADWAYS
- 18"SD — STORM DRAIN SYSTEM
- 8"SS — SANITARY SEWER SYSTEM
- 12"W — POTABLE WATER SYSTEM
- 12"RW — RAW WATER SYSTEM
- 12"TWS — TREATED WATER SUPPLY SYSTEM
- 12"NPW — NON-POTABLE WATER SYSTEM
- OFF-STREAM WATER QUALITY/HYDROMODIFICATION/DETENTION BASIN

NOTES:

1. Utilities alignments are shown outside of right-of-way for clarity. Utilities will be built within the right-of-ways and easements.
2. Storm drain pipes with the (1) superscript designation are dedicated pipes with no connections, sized for the sole purpose of conveying undeveloped, untreated, undetained storm runoff from the open space areas through the Suncreek Specific Plan to the Open Space Preserve.



Source: MacKay & Somps 2012

Proposed Project Alternative Backbone Infrastructure

Exhibit 2-5

A total of 12 on-site detention basins (see Exhibits 2-4 and 2-5) would serve as combined water quality, peak flow attenuation, and hydromodification flow-duration control facilities. Under the Preferred Storm Drainage Alternative, the detention basins would be sized to detain the 10-year flood event plus the required hydromodification volume for a total of approximately 130% of the 10-year storage volume. The 100-year flows would be allowed to pass through the detention basins unattenuated. The detention basins would be designed to capture all flows generated from the developed portions of the project up to and including the 100-year flood event (see the "Baseline Conditions" model below). The overall intent of the basins that would be constructed within the SPA is to detain post-development flows such that the downstream creek system would not experience an increase in flows over existing conditions. Approximately 5 acres of stormwater canals would also be created. (For additional details, see Appendix D.)

The detention basins would all be gravity release facilities that would empty in approximately 48 hours after a storm event. The basins would be empty most of the year, although they would fill and drain numerous time each winter. The basins would not be fenced as they are intended to also serve as aesthetic features of the local neighborhoods. Typical maintenance practices would include periodic weed abatement and other similar vegetation removal practices.

Hydromodification

With the anticipation that requirements to address the effects of hydromodification will be adopted by Sacramento County in the near future as a result of renewal of the County's MS 4 permit with the Regional Water Quality Control Board, the project has been designed to address hydromodification. A hydromodification analysis performed by cbec inc. in 2008 (Appendix A to MacKay & Somps 2011c [DEIR/DEIS Appendix D]) assessed the hydrologic and geomorphic effect of developing the SPA relative to existing conditions on the segments of Kite Creek and the Laguna Creek tributaries that are within the SPA. A continuous simulation model in Hydrologic Engineering Center River Analysis System (HEC-RAS) (HMS) with a 49-year, 1-hour interval precipitation record was used for this analysis. Currently, the County does not have standards for determining the effects of hydromodification. Therefore, a set of 10 hydromodification criteria and standards was developed for use in the SunCreek hydromodification evaluation (pages 10-12 of Appendix A to MacKay & Somps 2011c [DEIR/DEIS Appendix D]). Three methods are generally used to reduce the effects of hydromodification on a water course: flow duration control, low impact development (LID), and in-stream restoration. Pursuant to USACE requirements, the on-site preserve (which includes Kite Creek) must be preserved in its current condition; therefore, in-stream approaches cannot be used in the SPA. The use of LID requires a developer to select specific materials and implement various techniques that improve stormwater runoff quality and reduce runoff volumes. The project is a specific plan, and tentative subdivision-level maps and improvements plans have not yet been prepared; therefore, LID techniques cannot be determined at this time. Thus, only flow duration control techniques were assumed in the SunCreek study (Appendix D:14).

The potential hydrologic changes to Kite Creek from project development would be reduced through hydromodification by slowly metering out storm runoff to match undeveloped runoff rates for storms ranging from 25% of the 2-year storm up to and including the 10-year storm (consistent with the draft design standards in the Hydromodification Management Plan being developed by the Sacramento Stormwater Quality Partnership) using a flow duration control strategy, as described in the remainder of this paragraph. The SPA incorporates detention basins with three separate types of storm water storage components, which are stacked on top of each other within the detention basin. The first type of storm water storage is strictly hydromodification storage. The second component is both hydromodification storage and storm water storage that has its maximum water surface elevation set by the 10-year, 24-hour storm. In the case of the SunCreek project, compliance with hydromodification for the 10-year storm event also results in detention for the 100-year storm event; however, hydromodification for the 100-year event is not required. The third storage component is additional storm water storage and has its maximum water surface elevation set by the 100-year, 24-hour storm. Each detention basin has a specifically designed outlet control structure that attenuates the storm water runoff to comply with the hydromodification criteria and objective standards as they apply to the detention basin watershed and the

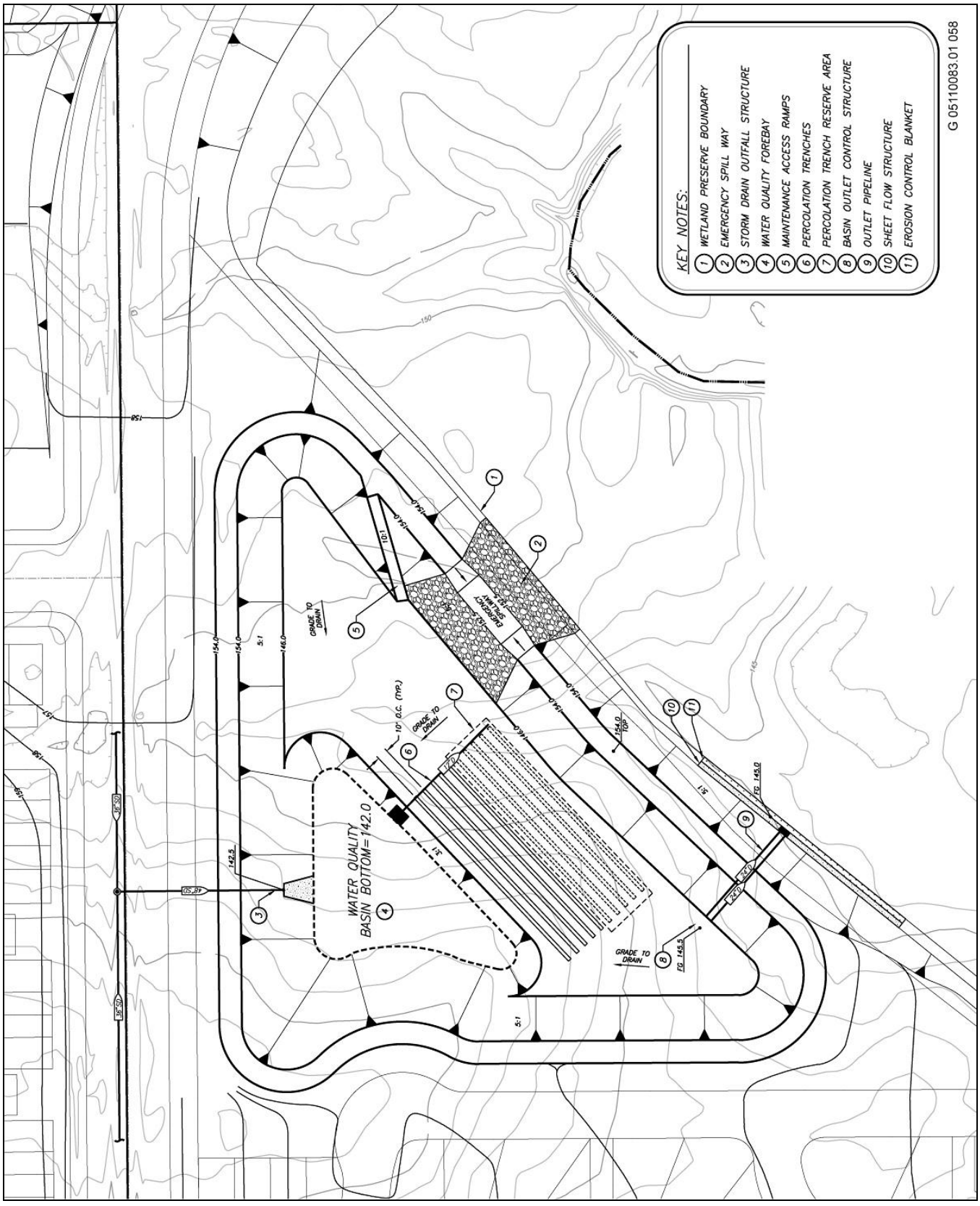
receiving water course. The detention basin outlet control structure detains a portion of the storm runoff generated up to a 100-year, 24-hour event and slowly releases the runoff through a series of varying diameter orifices set at varying elevations. The detention basin outlet control structure has one or more 12-inch or larger diameter orifices set 1.5 feet above the detention basin floor elevation. The first 1.5-feet of storm runoff stored in the detention basin comprises the first type of storm water storage; strictly hydromodification storage. The storm water within this portion of the detention basin is slowly released out of the detention basin over an extended period of time through a 2-inch diameter orifice set at the same elevation as the detention basin floor. As the water surface in the detention basin rises above the 1.5-foot hydromodification storage component, the storm water runoff release rate is attenuated by the 12-inch and larger diameter orifices. The top of the outlet control structure would be an open-grated opening. The opening would be sized to pass the 100-year, 24-hour peak flow rate. Therefore, in the event a storm larger than the 100-year, 24-hour storm occurs or if the outlet control structure orifices malfunction, the rising water level would reach the open top of the structure and then be discharge out of the basin. As a backup to the opening, on the top of the outlet control structure a portion of the embankment separating the detention basin from the receiving watercourse would have a spillway that would allow storm runoff to pass through the basin. See Exhibits 2-6 and 2-7.

Summer nuisance flows occur during the dry (summer) season and are mostly generated by residents during over-irrigation of landscaping, washing of vehicles, and other domestic uses that results in water running off of developed areas. As a result of this runoff, ephemeral tributaries that typically do not receive water during the summer can become perennial tributaries. Conversion of an ephemeral or intermittent stream into a perennial stream is considered a permanent adverse impact; therefore, to minimize adverse effects on waters of the U.S., the project applicants have designed the on-site detention basins to retain summer nuisance flows. Therefore detention basins within the SPA have been designed to retain summer nuisance flows.

The SPA has been divided into 12 separate subwatersheds (see Appendix N in MacKay & Somps 2011c). Each watershed is designed to drain to a separate hydromodification basin that has been designed to function as a combined wet-dry water quality basin, and would include a small permanently wet-water quality feature that averages about 15% of the total detention volume of the typical detention facility. The footprint of this feature would typically be about 0.25 acres in size. This feature would treat low intensity storm and nuisance flows through gravitational settling and biological processes to remove suspended solids, heavy metals, and other constituents of urban runoff prior to discharge to the creek system. Nuisance flows that enter the basins during the summertime and do not evaporate would be percolated into the ground within a percolation trench field through a pipeline network constructed within the detention basin floor. There would be a percolation trench field in each basin sized to percolate 100% of the summer nuisance flows, with space reserved in the basin for a replacement percolation field. Percolation of the summer nuisance flows would prevent release of flows to the creek system (on-site preserve), in order to ensure that development does not cause the streams to convert from ephemeral to perennial character.

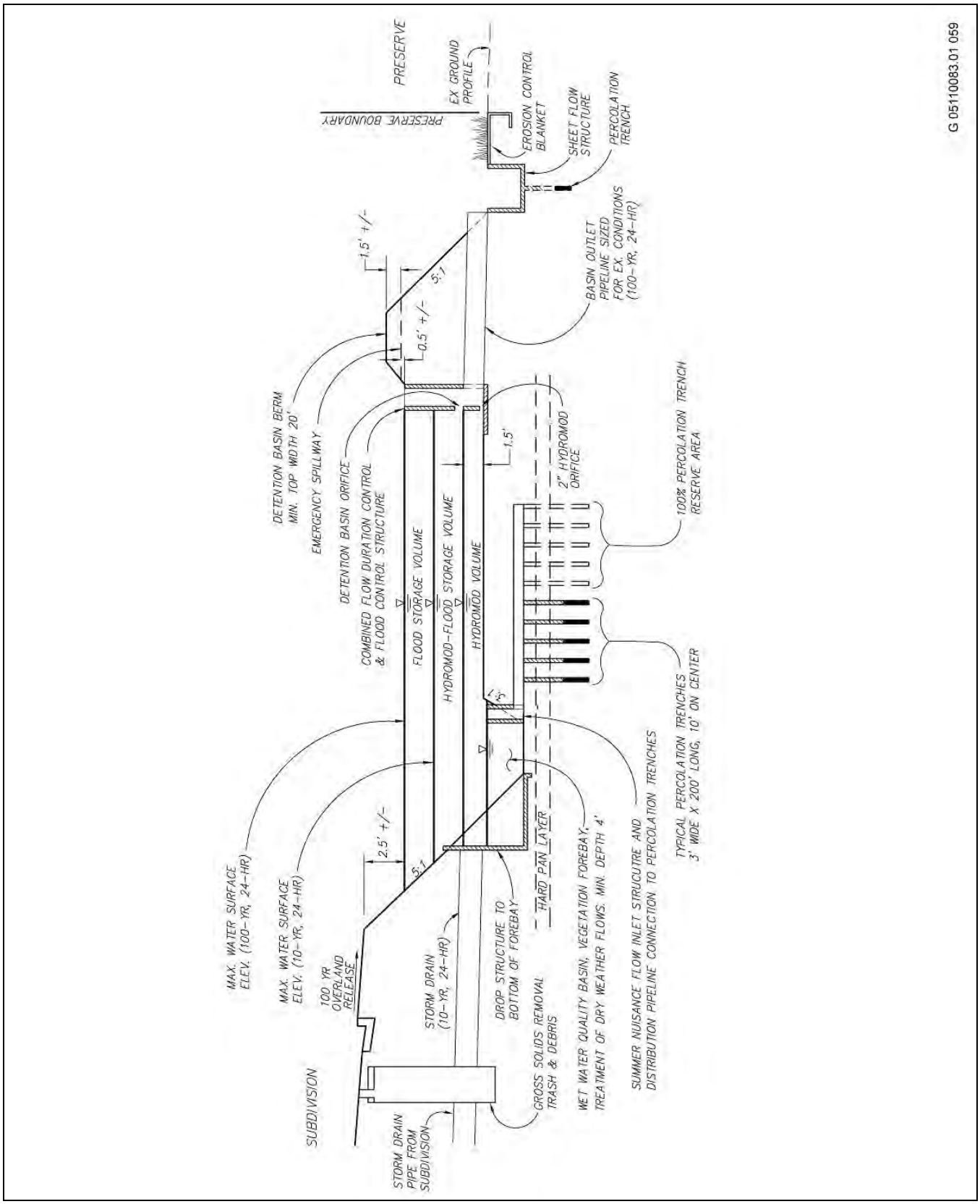
Two hydromodification modeling scenarios were evaluated in the SunCreek Drainage Study to assess the minor land use changes that have occurred in the Specific Plan and how those land uses would affect peak flow rates within Kite Creek. Each scenario is described briefly below.

Modified Hydromodification Basin Alternative 'A' Model. This scenario used the "Baseline" Conditions model as a starting point and revised it to add 30% more detention basin volume to each of the "Baseline" Conditions 10-year, 24-hour storm detention basins to conservatively evaluate the increase in detention volume required to achieve hydromodification. During the detailed design phase of project development, this analysis would be conducted again to more accurately meet hydromodification impacts and peak discharge requirements of the final project, but the Modified Hydromodification Basin – Alternative 'A' Model scenario was used as an estimation at this time in the planning process of how much additional storage volume would be required for hydromodification to accommodate the current land use plan. This alternative modeled the Anatolia III water quality basins, detention basin, and channel as they are currently constructed.



Source: MacKay & Somps 2011c

Typical Hydromodification Detention Basin Plan **Exhibit 2-6**



Source: MacKay & Somps 2011c

Cross-Section Detail of Typical Hydromodification Detention Basin **Exhibit 2-7**

Modified Hydromodification Basin Alternative 'B' Model. This scenario used the Modified Hydromodification Basin Alternative 'A' Model as a starting point and revised the model to account for the removal of the Anatolia III detention basin (and subsequent development of that site with residential housing), as was analyzed in the Anatolia III – Alternative A modeling scenario described below. Any potential changes that would be necessary to on-site detention basins within the SPA were considered as part of this scenario.

Hydrologic Modeling

The SunCreek Drainage Study uses a two-step modeling process. The hydrology is derived from the Sacramento Hydrological Calculator (SacCalc) as required by the County hydrology standards. The hydrographs derived from SacCalc are incorporated into a HEC-RAS "unsteady state" analysis in order to determine the peak flow and hydraulic grade line. A brief description of the three modeled scenarios is provided below. (See MacKay & Somps 2011c for additional details.)

Existing Conditions. This scenario establishes existing base flow conditions without project development. The existing conditions are defined by the current land uses (which consist solely of the Anatolia III residential subdivision) within the 6,930-acre SunCreek Drainage Study Area, and the Morrison Spill. This feature occurs within an open space preserve area located north of Kiefer Boulevard and east of Sunrise Boulevard. Storm runoff ponds on the east side of Sunrise Boulevard due to the limited carrying capacity of the drainage over-crossings spanning the Folsom South Canal. As the storm runoff ponding depth increases, some runoff spills from the Morrison Creek watershed into the Laguna Creek watershed. The remainder of the watershed is modeled as undeveloped land. This modeling scenario is the "CEQA baseline." Note that the NEPA baseline is existing conditions without the project at present and into the future.

Developed Conditions. This scenario is based on a fully developed SPA, using the Existing Conditions model as a starting point and adding in the SunCreek land use plan without peak flow attenuation. The Anatolia III development was modeled the same as in the Existing Conditions scenario (developed) and the remainder of the watershed was also modeled the same as Existing Conditions (undeveloped).

"Baseline" Conditions. This scenario is based on the fully developed SPA with water quality and detention basins sized so that flow rates exiting the SPA boundaries do not exceed the existing conditions flow rates (i.e., with peak flow attenuation). The Anatolia III development was modeled the same as in the Existing Conditions scenario (developed) and the remainder of the watershed was also modeled the same as Existing Conditions (undeveloped). The Morrison Spill would be intercepted at the Kiefer Boulevard culverts, by installing a junction structure, and routed around the SPA. A 72-inch diameter pipe would connect the junction structure to a new outlet structure constructed adjacent to the existing Kiefer Boulevard box culverts. The velocity energy would be dissipated in the new outlet structure before the flow enters the on-site preserve and Kite Creek. (See Appendix D of MacKay & Somps 2011c [DEIR/DEIS Appendix D] for a schematic design of the Morrison Spill pipeline.) For additional details regarding subsheds and off-site areas that drain into the SPA, see Appendix D pages 23-26. This modeling scenario is not the "CEQA baseline"; rather, it is termed "baseline" because it serves as the necessary starting point for necessary modeling of additional hydrologic alternatives where the SPA is fully developed and flow rates are attenuated, so that the effects of existing and projected development adjacent to the project site can be studied in various ways and the most effective on-site hydrologic solutions can be determined.

Anatolia III Modeling Alternatives

A portion of the SunCreek Drainage Study Area is adjacent to an existing single-family residential development called Anatolia III. Anatolia III is a 200-acre subdivision and is the only developed land within the SunCreek Drainage Study Area. Prior to the Anatolia III development, Kite Creek entered the Anatolia III property's eastern boundary and meandered for approximately 3,000 feet through the undeveloped property until it exited the property through the southern boundary. The Anatolia III development has filled (through a permit issued by the USACE) approximately 2,400 feet of the original Kite Creek stream course and routed it around the perimeter of

the Anatolia III project in a trapezoidal cross-section channel. In addition to the on-site channel improvements, the Anatolia III project also constructed a water quality basin and an off-channel detention basin. The water quality basin and off-channel detention basin are sized to treat and detain the developed Anatolia III design storm runoff to pre-development water quality, runoff flow rates, and volumes. A construction defect at the downstream end of the Anatolia III Channel and Kiefer Boulevard Box Culverts has resulted in a backwater condition occurring within the box culverts and the lower reaches of the Anatolia III channel. Realignment of the Kite Creek channel to follow the eastern and southern property boundary allowed for more development to occur within the Anatolia III property. The Anatolia III project drainage design and construction was based on the assumption that some of the proposed Anatolia III drainage improvements would be "interim" improvements until such time that downstream off-site improvements could be feasibly implemented.

Therefore, as requested by the City of Rancho Cordova and the County of Sacramento, four drainage scenario alternatives (Anatolia III Alternatives A though D) where modeled by MacKay & Somps. These alternatives would remove the interim drainage improvements to different degrees from the Anatolia III project and incorporate them into the drainage infrastructure improvements within the SPA, under the Proposed Project Alternative, as described below.

Anatolia III - Alternative A. This modeling scenario evaluates the potential changes to SunCreek hydrologic structures if the existing Anatolia III detention basin (on the west side of Rancho Cordova Parkway, at the corner of Kiefer Boulevard) were removed. Under this alternative, the Anatolia III development would be discharging post-development stormwater runoff into the existing Anatolia III stormwater quality basin, which would then be released into Kite Creek (which is preserved within the SPA) through the existing Kiefer Boulevard box culverts. In order to attenuate peak flows under this alternative, the SunCreek detention basins would need to be larger and the peak flow release rates out of the basins would need to be reduced. (See Appendix C in MacKay & Somps 2011c [DEIR/DEIS Appendix D] for a schematic design.)

Anatolia III - Alternative B. This scenario evaluates the potential changes to SunCreek hydrologic structures if a portion of the existing on-site Anatolia III channel were relocated to the southern right-of-way of Kiefer Boulevard. As would be the case under Alternative A above, the Anatolia III development would be discharging post-development stormwater runoff into the existing Anatolia III stormwater quality basin, which would then be released into Kite Creek through the existing Kiefer Boulevard box culverts. The Anatolia III channel would be directed to the south side of Kiefer Boulevard through a new box culvert constructed approximately 400 feet west of the Kiefer Boulevard/Rancho Cordova Parkway intersection. The channel would turn to the west and follow Kiefer Boulevard, passing through another box culvert that provides access to the Shalako parcel (on the SPA) and then connects to Kite Creek. Under the alternative, two new culverts would be required in order to accommodate modeled peak flow rates: (1) twin 10-foot span by 6-foot rise culverts crossing Kiefer Boulevard at Rancho Cordova Parkway, and (2) triple 9-foot-span by 5-foot-rise culverts crossing Kiefer Boulevard at the Shalako parcel. The detention basins in the SPA would have to be increased in size to ensure that post-development flows did not exceed pre-development flows. (See Appendix C in MacKay & Somps 2011c [DEIR/DEIS Appendix D] for a schematic design.)

Anatolia III - Alternative C. This scenario evaluates the potential changes to SunCreek hydrologic structures if both the existing on-site Anatolia III detention basin and channel completely removed from the Anatolia III development allowing for the detention basin and channel to be filled and developed. This scenario uses the model from Anatolia III - Alternative A as a starting point, but then includes an unsteady flow HEC-RAS model of the entire watershed above Florin Road. The Anatolia III channel would be relocated to the east side of Rancho Cordova Parkway and graded to drain to the south under Kiefer Blvd. The channel would than turn to the west, cross under Rancho Cordova Parkway, and run parallel along the southern Kiefer Boulevard right-of-way and connect to the open space preserve in the SPA. The 10-year, 24-hour runoff from the Anatolia III development would discharge into the existing Anatolia III water quality basin and then release into Kite Creek through the existing Kiefer Boulevard box culverts. Runoff on the Anatolia III property from the 100-year, 24-hour storm event would spill directly into Kite Creek at the Kiefer Boulevard box culvert location. The relocated channel

would require three new box culverts (the same sizes as described above in Anatolia III - Alternative B). The detention basins in the SPA would have to be increased in size to account for the loss of the Anatolia III detention basin. (See Appendix C in MacKay & Somps 2011c [DEIR/DEIS Appendix D] for a schematic design.)

Anatolia III - Alternative D. This scenario evaluates the potential changes to SunCreek drainage structures if the existing Anatolia III channel were replaced with twin 72-inch culverts. This scenario uses the model from Anatolia III - Alternative C as a starting point, but then includes an unsteady flow HEC-RAS model of the entire watershed above Florin Road. The proposed twin 72-inch culverts would intercept the runoff east of Rancho Cordova Parkway at the current location of the existing twin 8 x10-foot culverts. The twin 72-inch culverts would route the Anatolia III storm runoff south to Kiefer Boulevard, then west under Kiefer Boulevard to the existing 8x10-foot box culverts located in Kiefer Boulevard, where the runoff would then enter the open space preserve in the SPA. The twin 72-inch culverts are assumed to fit within the right-of-way and landscape corridors for Rancho Cordova Parkway and Kiefer Boulevard, such that the SPA would not lose any developable land. The detention basins in the SPA would have to be increased in size to ensure that post-development flows did not exceed pre-development flows. (See Appendix C in MacKay & Somps 2011c [DEIR/DEIS Appendix D] for a schematic design.)

Detention Basin Alternatives

Three additional detention basin alternatives were evaluated under the Proposed Project Alternative, as described further below.

Shalako Detention Basin Alternative. The Shalako property is located at the southwestern corner of the SPA, adjacent to the northwestern boundary of the Arboretum project site. To keep runoff from the developed portions of the SPA from entering the on-site preserve, several feet of fill dirt would need to be placed along the southernmost tier of lots within the Shalako property. The resulting lot pad elevations would be approximately 2 - 6 feet higher than the adjoining tier of lots on the Arboretum project site. The difference in elevations would create a substantial slope between adjoining lots, requiring either the construction of expensive retaining walls or requiring excessive lot depths. An alternative design was analyzed to determine if an acceptable grading solution could be implemented along the boundary between the two projects while still being able capture, treat, and attenuate the Shalako property storm runoff. This design alternative would require reducing the size (depth) of SPA detention basin no. 12 to lower the pad grades along the southern boundary of the Shalako property; making this detention basin smaller means it would no longer be able to detain the peak flow rates from the 100-year storm event. To compensate for the smaller size of detention basin no. 12, the sizes of SPA detention basin nos. 9, 10, and 11 would have to be increased. (For additional details see MacKay & Somps 2010a attached as Appendix E.)

Community Park Detention Basin Alternative. Detention Basin No. 5 is located on the proposed community park site and would be the largest detention basin (approximately 9.43 acres) within the SPA. The community park site is approximately 39 acres with approximately 24% of that area needed for Detention Basin No. 5. The CRPD has indicated they would allow for a portion of the community park to be designed as a joint use park/storm runoff/water quality treatment/detention facility, which would entail inundation of the park turf areas for no more than 72 hours during a peak storm event. Therefore, as an alternative to including in the community park a large detention basin that does not provide any other uses for a majority of the year, an alternative design was prepared for Detention Basin No. 5. This alternative design allows for the portion of the detention basin that is above the 10-year, 24-hour, hydromodification water surface elevation to have joint use capabilities so it can function as both a detention basin and a community park facility. (For additional details see MacKay & Somps 2010b attached as Appendix F.)

Stand-Alone Detention Basin Alternative. Three of the 12 subwatershed boundaries (Detention Basins Nos. 3, 5, and 7) extend beyond the SPA boundary. The "Baseline" Conditions model described above included these "off-site" subwatersheds as future development areas outside the SPA but connected them hydraulically to their

respective watershed's hydromodification basin. This means that the full area within each of the three subwatersheds was assumed to be detained within basins that would be located within the SPA, even though portions of the development in these subwatersheds would be outside the SPA. Thus, Detention Basins Nos. 3, 5, and 7 are oversized in order to accommodate the off-site development. This alternative analysis evaluated the potential change in size of these three detention basins if the three upstream off-site areas were to address their own peak flow, hydromodification, and water quality impacts within their own developments instead of within the SunCreek basins. (For additional details see MacKay & Somps 2010c attached as Appendix G.)

Preferred Drainage Plan

The applicants' preferred drainage plan consists of a combination of the following features (described in detail above):

1. Modified Hydromodification Basin Alternative B;
2. Anatolia III Alternative A;
3. Community Park Alternative Detention Basin;
4. Stand-Alone Detention Basins 3, 5 & 7; and
5. Shalako Detention Basin (either modified or unmodified).

This combination of drainage elements and/or alternatives minimizes the area required for detention basins and maximizes the developable areas within the SPA; addresses drainage, water quality, flood control and hydromodification issues; and provides the developers of Anatolia III the opportunity to reclaim 29 lots in the Anatolia III subdivision.

Potable Water

The SPA lies within the Sacramento County Water Agency's (SCWA's) existing water service areas. SCWA (Zone 40) would serve as the water wholesaler and along with Zone 41, would operate and maintain the distribution system in the specific plan area. Funds to construct water supply, treatment, and transmission facilities are collected through Zone 40 development fees. For purposes of sizing transmission/distribution facilities, the total average daily demand for the project is estimated to be 2.73 million gallons per day (mgd) and total maximum daily demand is estimated to be 5.46 mgd (MacKay & Somps 2010d). The peak hour demand is estimated to be 7584.4 gallons per minute (MacKay & Somps 2010d). The water supply and distribution facilities would provide adequate flow deliveries to maintain acceptable service pressures to all customers within the SPA. Facilities would also meet SCWA's operating criteria for transmission mains, as well as the fire flow requirements of the SMFD.

A preliminary on-site water system has been designed as a looping system following the major street alignments (see Exhibit 2-5). The transmission system would incorporate mainline pipe sizes from 16 inches to 24 inches in diameter. The on-site distribution system would consist of 8- to 12-inch diameter pipes, with the 12-inch lines looping near sites that require higher fire flow requirements, such as commercial, industrial, and school sites.

Water service to the SPA is planned to be provided in three phases, as described below.

- Phase 1 water service would involve using available groundwater capacity from the Anatolia Water Treatment Plant (see Exhibit 2-6), using groundwater that is extracted from the North Vineyard (Excelsior) Well Field as part of Zone 40's conjunctive use program. Connections to each plant would be established by constructing 16-inch conveyance pipelines in Sunrise Boulevard and Jaeger Road (now known as Rancho Cordova Parkway) south of Kiefer Boulevard, and a 24-inch conveyance pipeline in Kiefer Boulevard east of Rancho Cordova Parkway. (MWH 2008.) Other joint facilities, in concert with other developers in the Sunrise Douglas Community Plan area, such as wells, storage tanks, raw water conveyance, and groundwater treatment capacity,

may be needed in the future. The need, location, and sizing for such joint facilities would be determined at the time when connection to the existing water system were made. Future CEQA analyses of those facilities, should they be necessary, would be determined by SCWA and the City of Rancho Cordova.

- Phase 2 water service (see Exhibit 2-7) would the entail use of water delivered by the North Service Area Pipeline Project (NSAPP), which would transport water from the Vineyard Surface Water Treatment Plant (WTP), by way of the Freeport intake on the Sacramento River. Water conveyed through the NSAPP would be fed to two storage tanks in SCWA's North Service Area (NSA) (which includes the SPA) on Douglas Road. Water would then be pumped from these tanks to meet operating pressure requirements in the North Service Area. The pipeline would be approximately 8 miles long with diameters ranging from 42-66 inches. Additional storage tanks constructed as part of the NSAPP, called the Sunrise Douglas 2 Tanks, would be located on the SPA but would function as regional SCWA facilities to serve the southern portion of the North Service Area. (MWH 2008.)

- Phase 3 water service (see Exhibit 2-8) would not occur until the water demands of the North Service Area begin to approach the capacity of the NSAPP. At that time, SCWA anticipates that the Vineyard Surface WTP would be expanded to its full capacity (100 mgd). In addition, groundwater wells and a groundwater treatment plant would be constructed on the SPA to meet local (SunCreek) demands. A total of three groundwater wells, one of which would serve as a back-up, would be installed on site, with an estimated capacity of 1,500 gallons per minute. The SunCreek Water Treatment Plant would have a treatment capacity of 4.0 mgd. A 1.5-mgd storage tank and pump station with three booster pumps would also be constructed. Finally, a 12-inch raw water pipeline would be constructed off the existing 30-inch pipeline at Sunrise and Kiefer Boulevards would deliver excess water from the North Vineyard Well Field to the SPA. (MWH 2008.)

In addition to the NSAPP, two other of-site water facilities would be required to serve the project. These are the Florin Road/Sunrise Boulevard Pipeline and the Americanos Boulevard Parallel Pipelines. The NSAPP has already been analyzed under CEQA (Sacramento County 2010a). Section 3.17, "Water Supply" of this DEIR/DEIS includes a program-level CEQA/NEPA evaluation of the other two facilities described below (for additional details see MacKay & Somps 2011b attached as Appendix H).

Florin Road/Sunrise Boulevard Pipeline. This 30-inch-diameter water conveyance pipeline would function as a northeastern extension of the NSAPP. It would be installed within existing roads or road rights-of-way along Florin Road to Sunrise Boulevard, where it would connect with the proposed on-site water facilities at the intersection of Sunrise and Kiefer Boulevards (see Exhibit 2-11). The pipeline would cross Jackson Road via the jack-and-bore construction method; otherwise open trench construction methods would be used. The trenches would vary from 5 to 6 feet wide and from 5 to 10 feet deep. Where the pipeline crosses the Folsom South Canal, it would either need to be suspended underneath the existing Florin Road bridge, placed within a future roadway bridge to be constructed over the canal, or placed in a separate utility bridge. Construction staging areas could be up to 10 acres in size, but potential staging locations are not known at this time. Two crews totaling approximately 16 to 18 workers would be employed during normal daytime construction hours, except when nighttime is anticipated for work crossing the major roads. This facility is not included within the current SCWA financing plan; therefore, it is not possible to determine when this facility would be constructed.

Americanos Boulevard Parallel Pipelines. Two parallel 24-inch transmission pipelines would be constructed within the future right-of-way of the planned extension of Americanos Boulevard from Douglas Road to the future intersection with Chrysanthy Boulevard. These pipelines are shown in Exhibits 2-8, 2-9, 2-10, and 2-12, traversing through the Douglas 103, Grantline 208, and Arista del Sol properties prior to connection with the SPA. These pipelines are necessary in order to extend Zone 6 water service to the SPA.

The Americanos Boulevard pipelines would convey water from existing North Douglas storage tanks to the SPA through two new 24-inch diameter parallel pipelines. The North Douglas storage tanks are located north of Douglas Road and east of Americanos Boulevard along Edington Drive. An existing 30-inch diameter pipeline

currently conveys water from the North Douglas storage tanks south along Edington Drive to its intersections with Americanos Boulevard. From this point, the existing pipeline travels south to a check valve on Douglas Road. The new Americanos Boulevard pipelines would begin at this check valve and travel approximately 6,800 feet south along the future Americanos Boulevard road right-of-way then connect with the SPA's proposed on-site water system at the future intersection of Americano Boulevard and Chrysanthy Boulevard (Appendix H).

The Americanos Boulevard pipelines would be installed in open trenches using conventional trenching techniques. The trenching techniques include surface grading, trench excavation, pipeline installation, and backfilling and surface grading. A backhoe or excavator would be used to dig trenches for pipe installation. In general, trenches would be 4 to 5 feet wide and 5 to 10 feet deep. Trenches deeper than 5 feet would require shoring to prevent trench failure. The trenches would have vertical sidewalls to minimize construction easement width and amount of soil excavated. Excavated roadways would be repaved. For unpaved areas, restoration would generally involve re-grading and planting with annual grasses (Appendix H). Where the pipelines would cross the tributary of Morrison Creek within the Douglas 103 property, jack and bore techniques would be employed to avoid work in the bed or bank of this tributary. Boring would likely occur to a depth of approximately 10 feet.

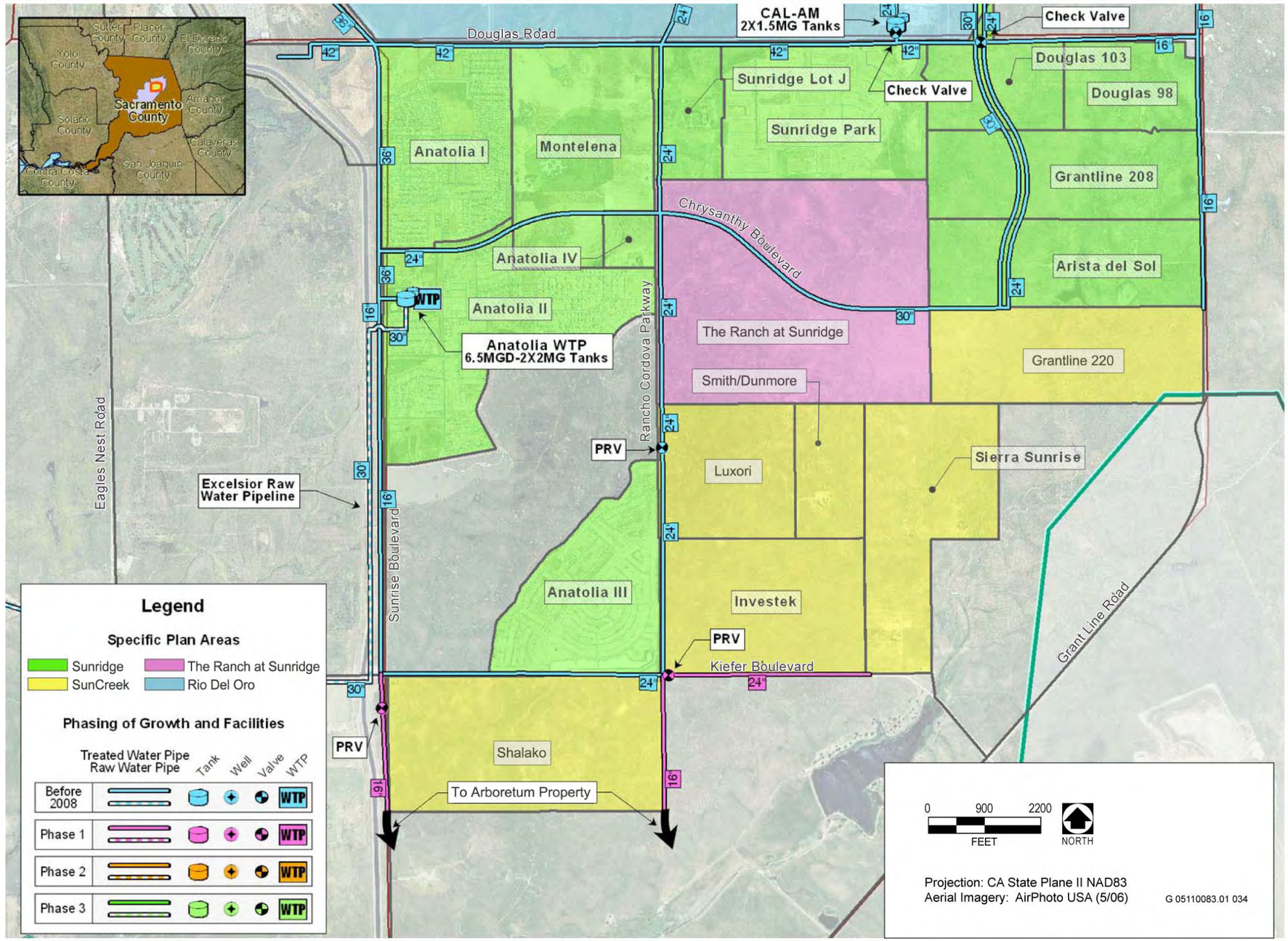
Staging areas may be up to 5 acres in size and their potential locations are presently unknown. It is anticipated that less than 5 acres per day would be disturbed during construction activities. SCWA anticipates two crews of 16 to 18 construction workers would install the pipeline and would possibly work at opposite ends of the alignment. Construction activities would only occur during the daytime hours (Appendix H). Jack and bore activities underneath the Morrison Creek tributary would likely require approximately three weeks.

In the event that construction of the NSAPP were to be delayed, an alternative interim water conveyance mechanism to serve the SPA was identified (see MacKay & Somps 2011a attached as Appendix W)—the existing Anatolia Water Treatment Plant raw water pipeline could be converted to a treated surface water transmission pipeline. This alternative is described below and the environmental impacts of constructing this alternative are evaluated in Section 3.17, "Water Supply." (For additional details see MacKay & Somps 2011b attached as Appendix H.)

Anatolia Raw Water Pipeline Conversion. As a lower cost, first-step alternative to constructing the NSAPP in the early stages of project development, portions of the existing 30-inch-diameter raw groundwater pipeline that currently conveys groundwater pumped from the Excelsior well field to the Anatolia Groundwater Treatment Plant could be converted on an interim basis to a treated surface water transmission pipeline (see Exhibit 2-13). To accomplish this conversion, the following steps would be necessary:

- Construct Phase 1 of the NSAPP.
- Temporarily shut down the existing groundwater wells at the Excelsior well field.
- Temporarily shut down the Anatolia Groundwater Treatment Plant.
- Install a new 66-inch pipeline extending approximately 4,600 feet easterly along Florin Road to Excelsior Road, and install 30-inch diameter piping extending approximately 2,500 feet northerly along Excelsior Road to a point of connection in Sunrise Boulevard with the 30-inch pipeline that currently conveys raw groundwater to the Anatolia Groundwater Treatment Plant.
- Install minor piping modifications at the Anatolia Groundwater Treatment Plant site to connect the converted raw groundwater conveyance pipeline directly to the treated water side of the plant.

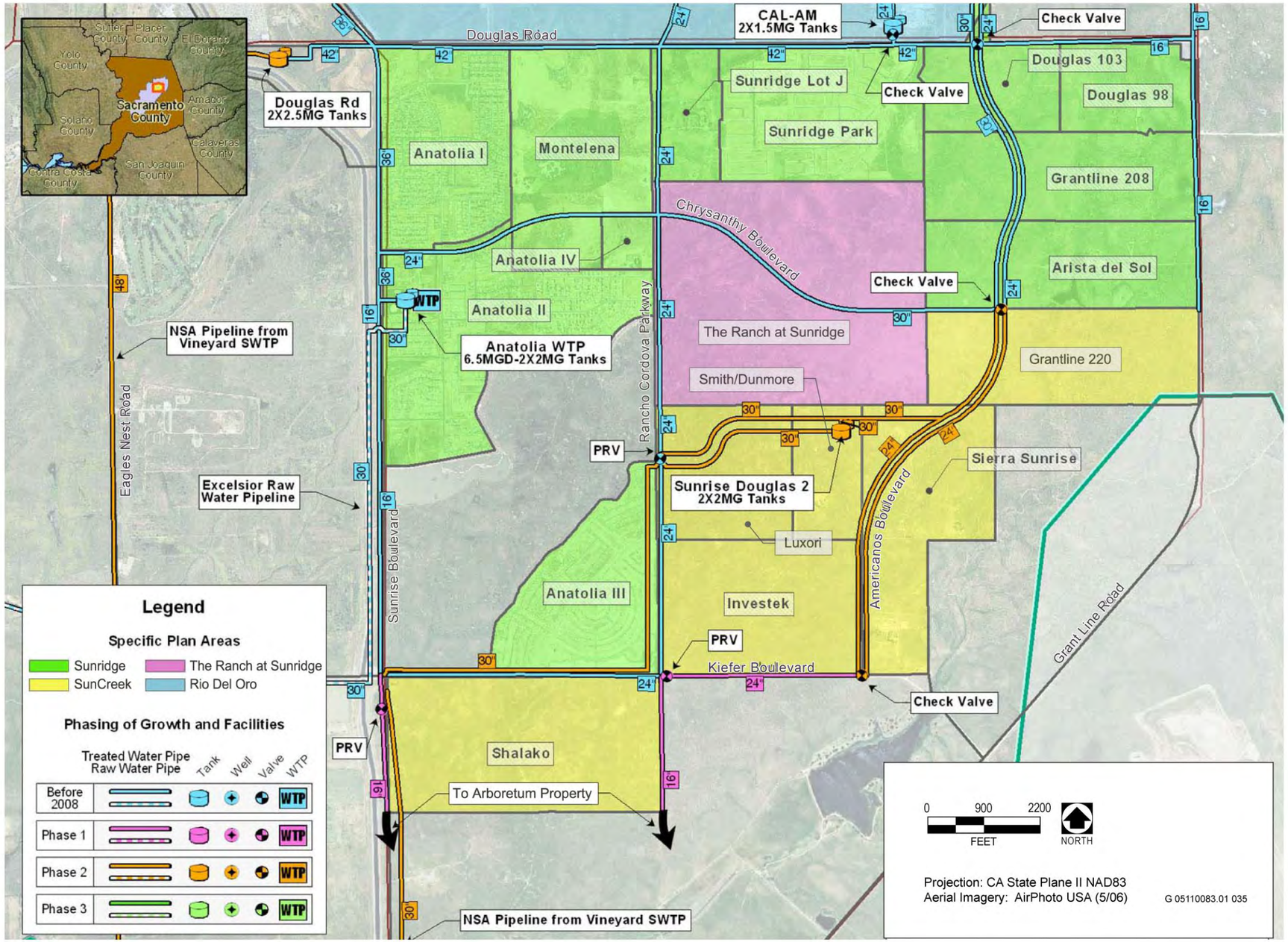
The new pipeline would be installed within existing roads or road rights-of-way and open trench construction methods would be used. The trenches would vary from 5 to 8 feet wide and from 5 to 10 feet deep. Construction staging areas could be up to 10 acres in size, but potential staging locations are not known at this time. Two crews totaling approximately 16 to 18 workers would be employed during normal daytime construction hours, except when nighttime is anticipated for work crossing Florin Road.



Source: Montgomery Watson Harza 2008

Proposed Potable Water Supply System - Phase 1

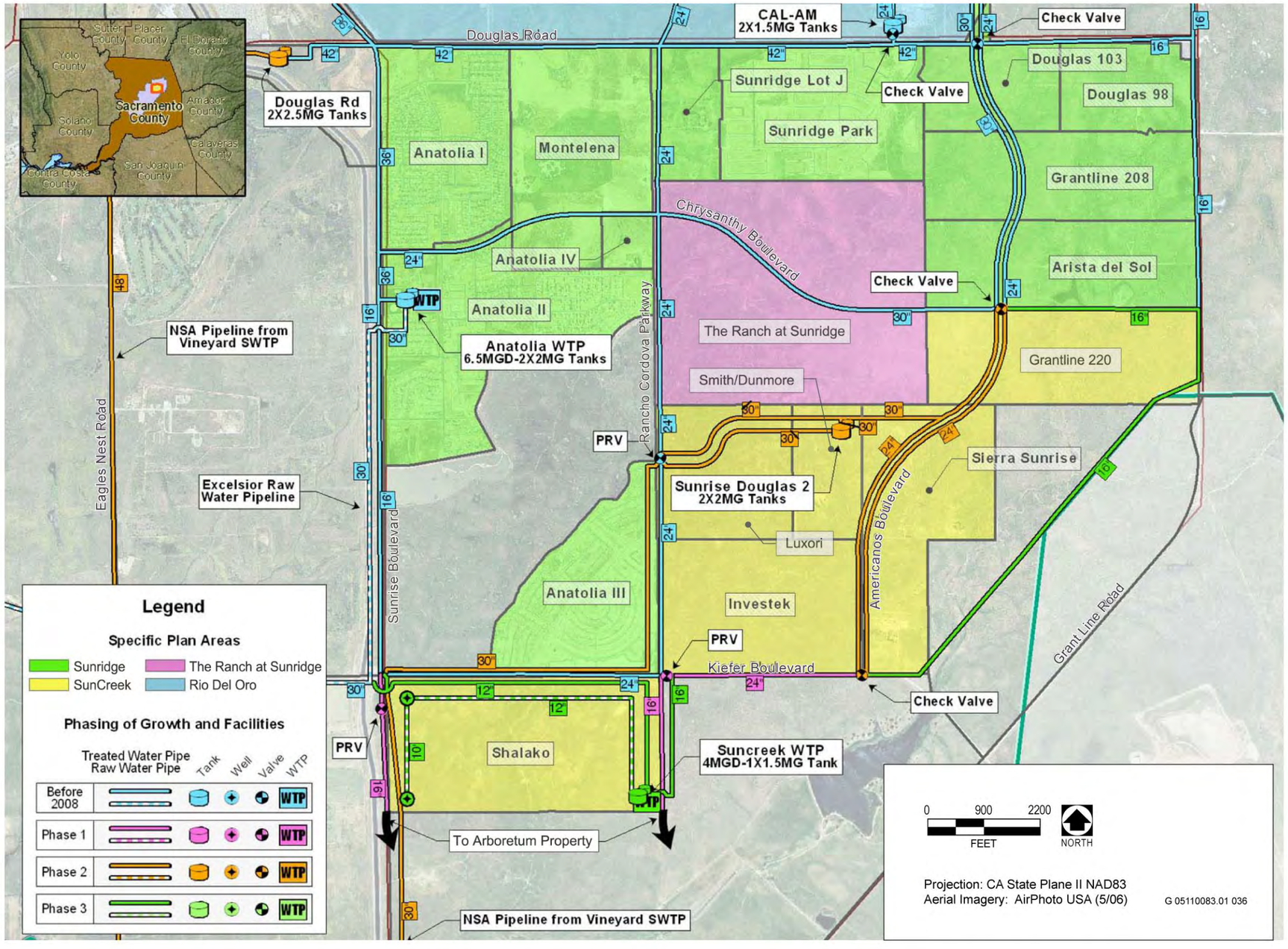
Exhibit 2-8



Source: Montgomery Watson Harza 2008

Proposed Potable Water Supply System - Phase 2

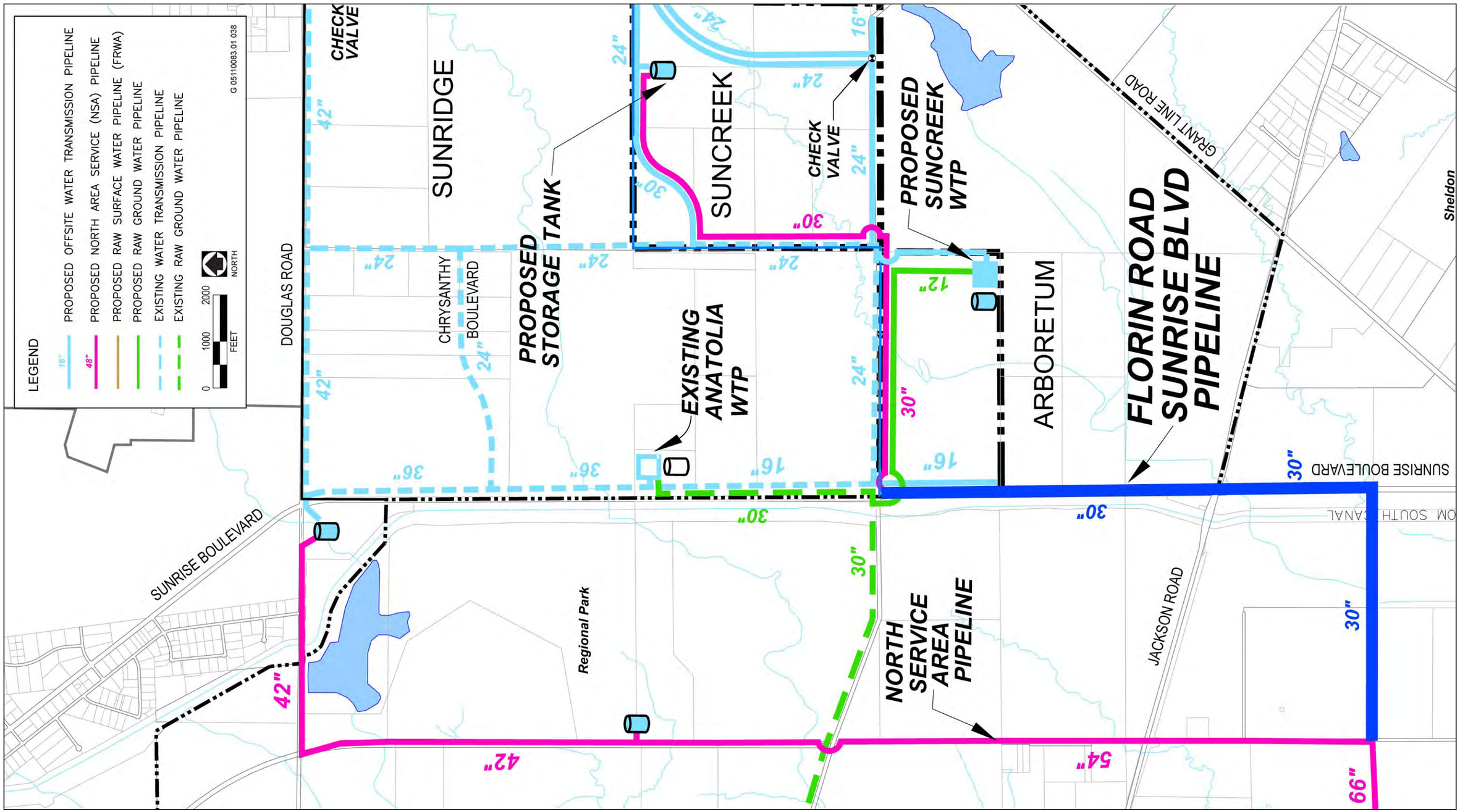
Exhibit 2-9



Source: Montgomery Watson Harza 2008

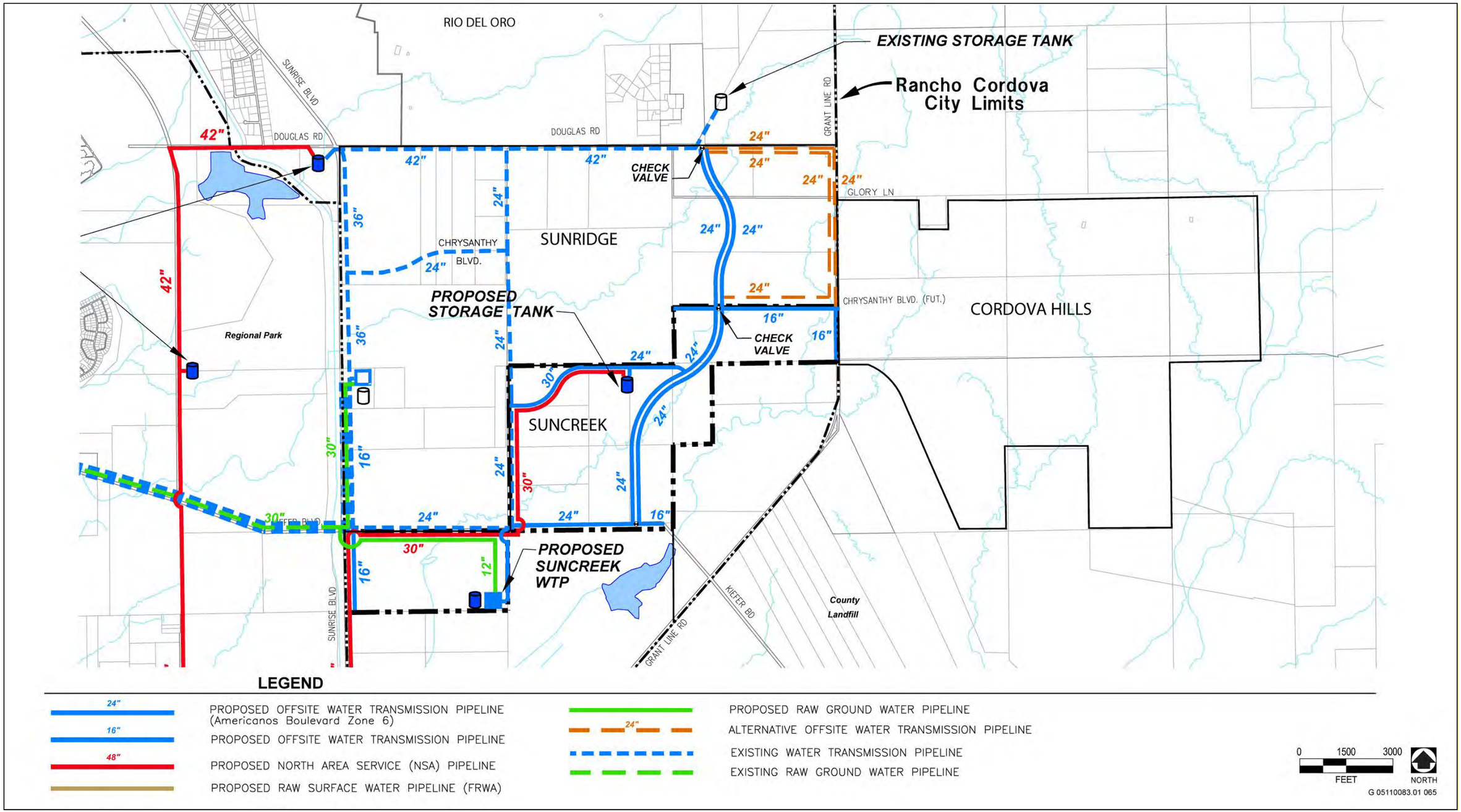
Proposed Potable Water Supply System - Phase 3

Exhibit 2-10



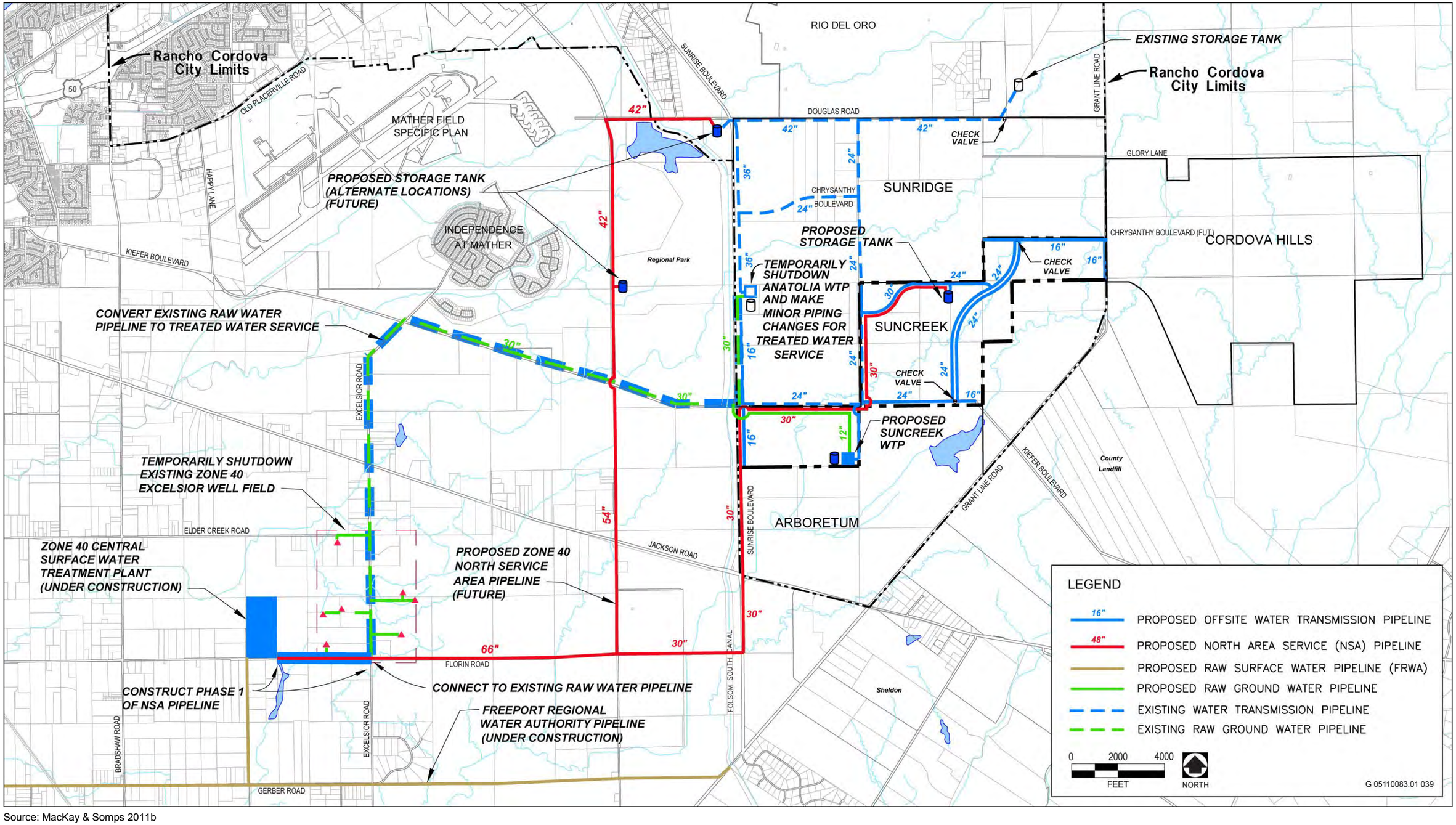
Source: MacKay & Somps 2011b

Proposed Off-Site Florin Road/Sunrise Boulevard Water Pipeline **Exhibit 2-11**



Source: MacKay & Somps 2011b, Adapted by AECOM in 2012

Proposed Americanos Boulevard Parallel Pipelines **Exhibit 2-12**



Source: MacKay & Somps 2011b

Proposed Off-Site Anatolia Pipeline Conversion **Exhibit 2-13**

Water Supply Alternatives

Water supplies for the SPA would be provided as follows. Surface water would be diverted from the Sacramento River via the Freeport Regional Water Project (FRWP) facilities and conveyed to the Vineyard Surface WTP for treatment. Treated water would then be conveyed to the NSA through the NSAP and Florin Road/Sunrise Boulevard pipeline. (As a short-term alternative to the NSAP and Florin Road/Sunrise Boulevard pipeline, surface water could be provided in the interim through the temporary conversion of the Anatolia raw groundwater transmission pipeline to a treated surface water transmission pipeline after the Vineyard Surface WTP becomes operational). Water from Zone 6 would also be provided to the SPA through the Americanos Boulevard parallel pipelines. Groundwater would be provided by the North Vineyard Well Field (NVWF), Mather Housing groundwater system, and SunCreek groundwater wells.

In the long term, SCWA anticipates the majority of water demands in the NSA (including the SPA) would be met with surface water. However, the year-to-year mix of surface and groundwater varies depending on a large number of variables and surface water and groundwater supplies would be adjusted as necessary to meet the demands of the NSA as part of its conjunctive use program. To account for this variability, four potential water supply scenarios were developed (see Appendix W), evaluated in terms of water supply availability and reliability in Section 3.17 "Water Supply," and modeled as related to effects on groundwater levels (see Section 3.9, "Hydrology and Water Quality"). These four scenarios are briefly described below.

- **Accelerated Construction of the North Service Area Pipeline (NSAP).** This scenario assumes the existing capacity of the NVWF and Mather Housing groundwater system would meet water demands of the SPA until 2012. This scenario further assumes that the NSAP would be constructed and online by 2012 and would provide surface water to meet the remaining water demands of the SPA at that time.

- **Delayed Construction of the NSAP.** This scenario assumes the existing capacity of the NVWF and Mather Housing groundwater system would meet water demands of the SPA until 2012. At this point, the NVWF would require expansion to its full capacity. Under this scenario, the NSAP is anticipated to be constructed and online by 2013 and would provide surface water to meet the remaining water demands of the SPA at that time.

- **Conversion of the Anatolia Raw Groundwater Transmission Pipeline.** This scenario assumes the existing capacity of the NVWF and Mather Housing groundwater system would meet water demands of the SPA until 2012. At this point, the Vineyard Surface WTP would be operational and the Anatolia raw groundwater transmission pipeline would be converted to a treated surface water transmission pipeline and the NVWF and Anatolia WTP would be temporarily shut down. Under this scenario, the NSAP is anticipated to be constructed and online by 2019 and would provide surface water to meet the remaining water demands of the SPA at that time. The NVWF and Anatolia WTP would then be reactivated to provide groundwater extraction and treatment to the SPA.

- **Groundwater Intensive Development with the SunCreek Groundwater Wells.** This scenario assumes the existing capacity of the NVWF and Mather Housing groundwater system would meet water demands of the SPA until 2012. At that point, this scenario assumes that the NVWF would require expansion to its full capacity and the SunCreek groundwater wells and treatment plant would be constructed and operational by 2013. This scenario further assumes that the NSAP would be operational in 2015 and would provide surface water to meet the remaining water demands of the SPA at that time.

Non-Potable Water

Non-potable water would also be used at the SPA for irrigation of public landscaping areas such as parks, schools, and streetscapes. Although the non-potable water distribution system would be installed within major on-site roads at the same time as the potable water system (see Exhibit 2-5), non-potable water is not expected to be available in the near future. Potential sources of nonpotable water include: (1) remediated groundwater from

groundwater extraction and treatment (GET) facilities, or (2) recycled water from the Sacramento Regional County Sanitation District (SRCSD). Nonpotable water from both of these sources is still being studied from a feasibility standpoint, and is outside the control of the either of the lead agencies or the project applicants.

A Non-Potable Water Master Plan for the Sunrise Douglas Planning Area, which includes SunCreek, was prepared by Wood Rodgers in 2007, under contract with SCWA. Nonpotable water would be supplied to the SPA and other projects in the vicinity via an interconnected system. Until nonpotable water becomes available, the proposed non-potable water system would be cross-connected with the potable water system as shown in Exhibit 2-14. The proposed non-potable water system at full project buildout is shown in Exhibit 2-15. In the full project buildout condition, the cross-connections with the potable water system would be shut off. A storage tank would need to be constructed at Rancho Cordova Parkway near Douglas Road to receive remediated groundwater from Aerojet GET facilities or recycled water from SRCSD (see Exhibit 2-15).

The Master Water Study for the SunCreek Specific Plan, prepared by Montgomery Watson Harza (2008) under contract with SCWA, used the Wood Rodgers plan to calculate non-potable water demands for the Proposed Project Alternative as follows: 1.85 mgd total maximum day demand and am average annual demand of 825.4 acre-feet per year (afy).

Sanitary Sewer

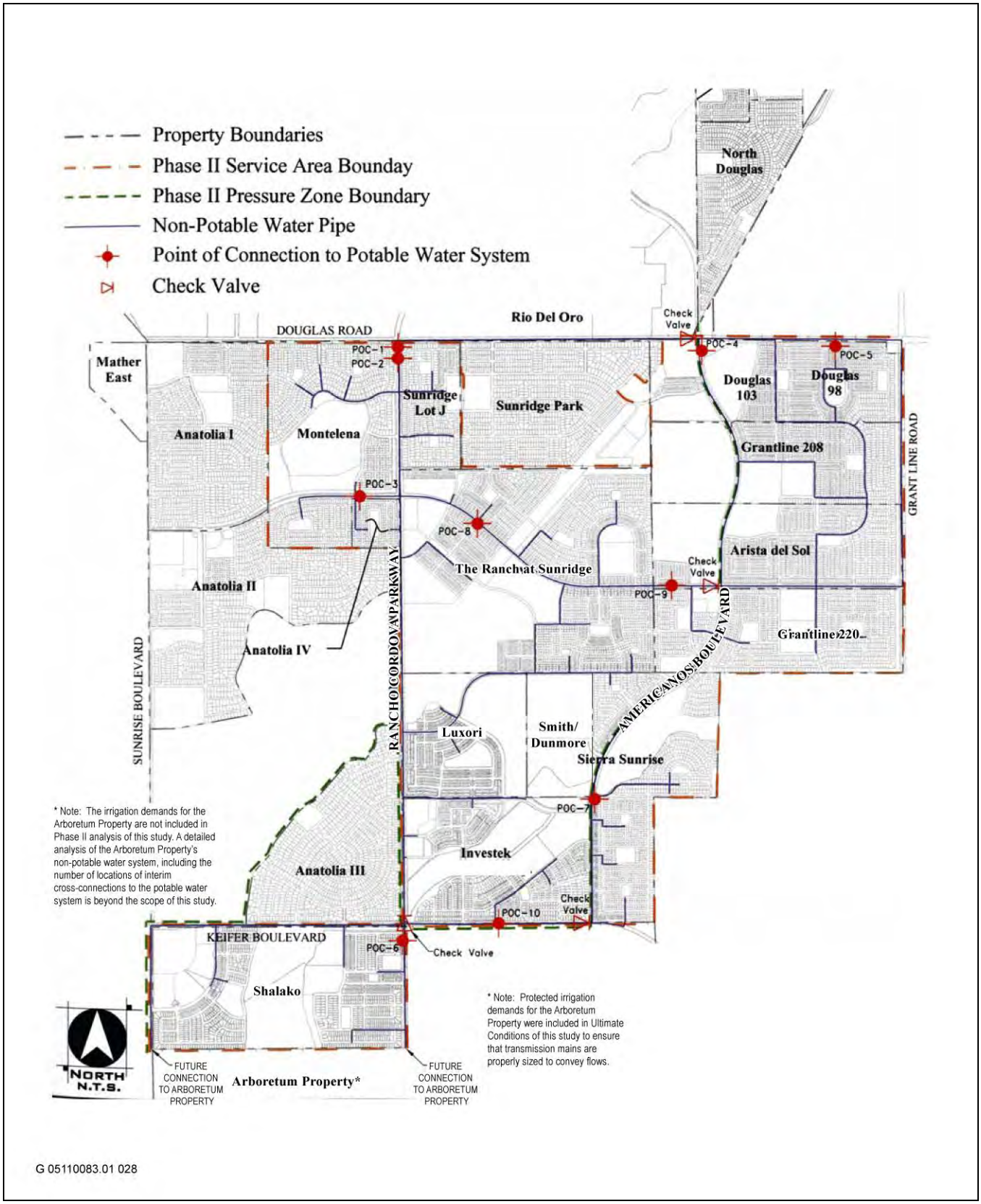
All land uses proposed in the specific-plan area must be served by a public sanitary-sewer system, pursuant to the City General Plan's policy requiring that all commercial and industrial development, as well as all residential development with lots smaller than 2 acres, must connect to a public sewer system. The following discussion summarizes the proposed sewer service.

Sanitary-sewer service for the SPA would be provided by SRCSD, which is responsible for collection by interceptors (sanitary sewers that are designed to carry flows in excess of 10 mgd) and for wastewater treatment in Sacramento County. This district owns, operates, and is responsible for the interceptor sewer systems throughout Sacramento County as well as the Sacramento Regional Wastewater Treatment Plant (SRWTP) located south of the community of Freeport. Sewer collection and trunk sewers that collect and deliver flows to the SRCSD system where flows are less than 10 mgd are owned, operated, and maintained by the Sacramento Area Sewer District (SASD).

A diagram of on-site sewer facilities that would serve development under the specific plan is shown in Exhibit 2-16. Details regarding proposed sanitary sewer service to the SPA are contained in the Sanitary Sewer Study Level Two prepared by MacKay & Somps (2009) and attached as Appendix I. Furthermore, the recently adopted Sewer System Capacity Plan 2010 Update (SASD 2012) includes other facilities that may be used to provide sewer service to the SPA. The on-site sanitary sewer system would consist of gravity pipelines and force mains ranging in size from 8 inches to 30 inches in diameter and would be installed at a minimum depth of 8 feet. The on-site wastewater system would be incrementally expanded to meet the demands of the SPA. SRCSD is planning to adopt its updated sewer master plan later this year, which will reflect the recent adoption of SASD's sewer system capacity plan.

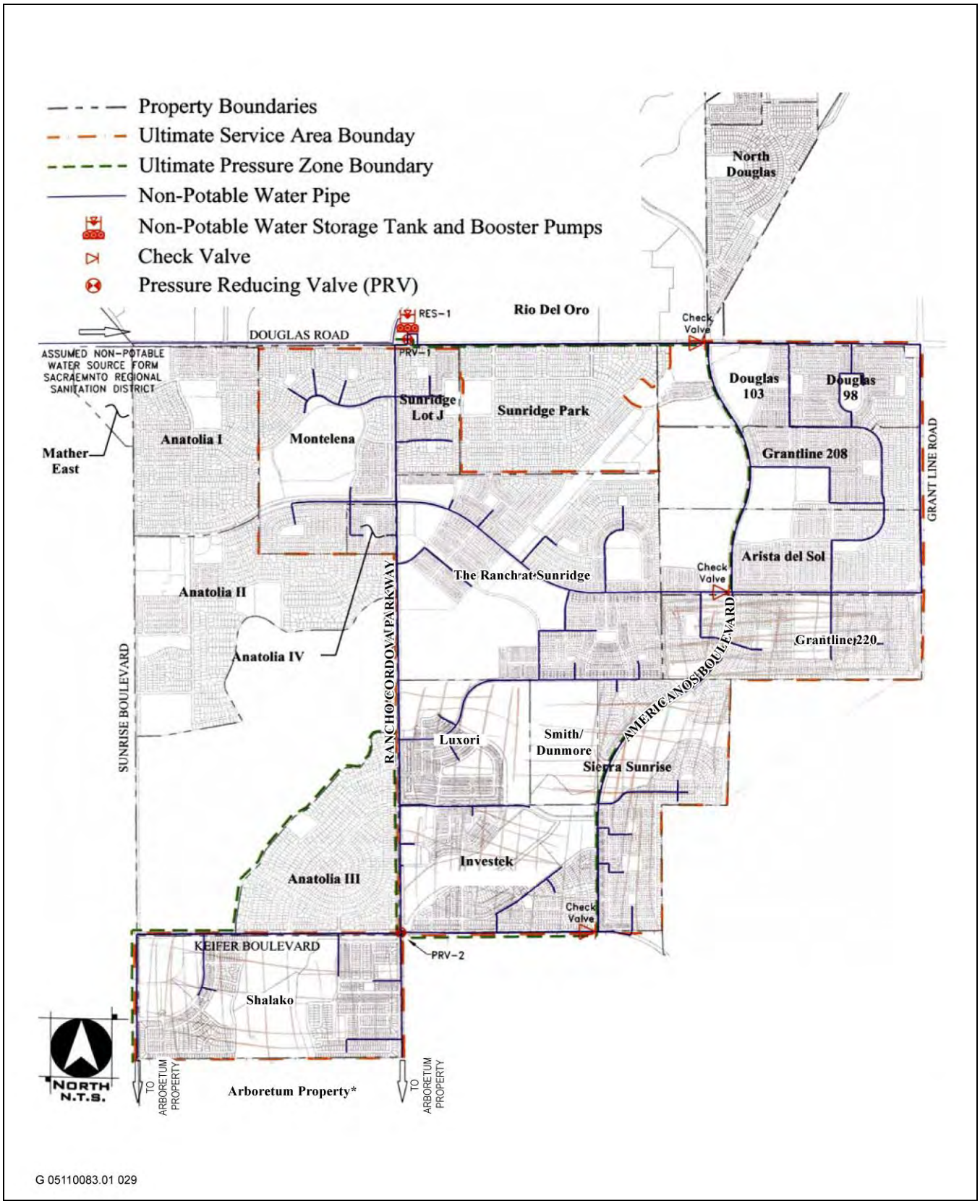
SunCreek Specific Plan Sewer Service Options

Project-related wastewater flows would be conveyed from the SPA to the SRWTP via the Laguna Creek Interceptor (LCI) Sections 1–5. The project would construct SRCSD's Section 5 of LCI that is within the SPA. Both the SunCreek and Arboretum projects would be receiving sewer service through common off-site sanitary sewer infrastructure (see "Off-Site Sewer Conveyance Facilities," below). Initially, on-site wastewater flows would be conveyed through Section 5 of the LCI to either the SunCreek sewer pump station located at the southwestern corner of the SPA east of Sunrise Boulevard or the Arboretum sewer pump station located east of Sunrise Boulevard and south of the SPA on the Arboretum project site. The SunCreek sewer pump station would be equipped with odor control devices.



Source: Wood Rodgers 2007 cited in Montgomery Watson Harza 2008

Proposed Non-Potable Water System in Interim Condition **Exhibit 2-14**

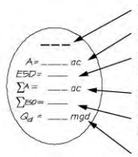


Source: Wood Rodgers 2007 cited in Montgomery Watson Harza 2008

Proposed Non-Potable Water System in Full Project Buildout Condition **Exhibit 2-15**

LEGEND

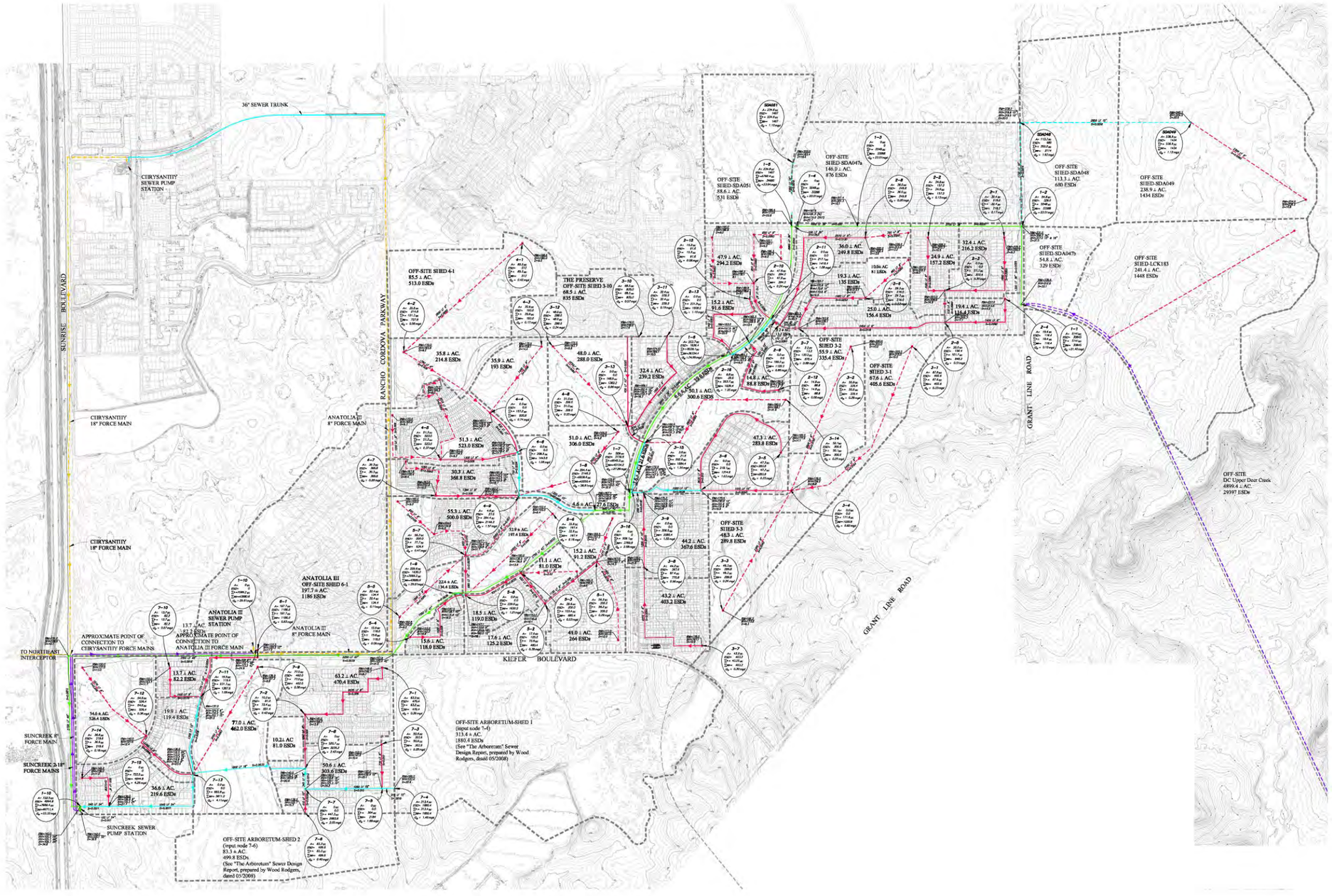
- Sanitary Sewer Interceptor
- Sanitary Sewer Trunk
- Sanitary Sewer Collector
- Schematic Sanitary Sewer
- Proposed Force Main
- Existing Force Main
- Sewer Shed Boundary



NOTES

1. All inverts shown are out inverts unless otherwise specified.

2. The elevations and topography shown are per NGVD 88.



Source: MacKay & Somps 2009

Proposed Sanitary Sewer Plan **Exhibit 2-16**

Since it is not known which project would be constructed first, the SunCreek sewer study includes two potential scenarios. Each scenario would consist of three phases of sewer service and are summarized below. Detailed sewer plans and descriptions for each scenario and each phase are contained in Appendix I. Common sewer facilities that would be constructed on the Arboretum project site would receive CEQA coverage under the Arboretum project's EIR. To the extent that the scenarios and phases below contain more than one option for sewer service in the future, this DEIR/DEIS does not provide CEQA or NEPA coverage for any off-site facilities associated with those future options. If those options were to be implemented in the future, SRCSD and/or the City of Rancho Cordova would determine what type of CEQA or NEPA coverage, if any, were required prior to construction of the facilities associated with those options.

Scenario One: SunCreek Develops First Followed by Arboretum

Phase 1. The project would construct Section 5 of the LCI that is within the SPA as well as the on-site sewer collectors, sewer trunks, and the 2.26-mgd SunCreek sewer pump station. If construction of the Arboretum project begins during this phase, the Arboretum project would construct a 1.5-mgd sewer pump station that would pump sewer flows north along Sunrise Boulevard through the proposed Arboretum force main to the SunCreek sewer pump station. The Anatolia III sewer pump station would be decommissioned and sewer flows from the Anatolia III residential development would be conveyed to the SunCreek sewer pump station through a new gravity sewer pipeline.

Sewer flows would be conveyed from the SunCreek sewer pump station north through the proposed SunCreek force main to the Anatolia III force main and then to the Chrysanthy Boulevard sewer pump station. From this point, sewer flows would be conveyed through the existing Sunrise Boulevard segment of the Chrysanthy Boulevard force main to Kiefer Boulevard and then to the Northeast Interceptor.

Phase 2. The capacity of the SunCreek sewer pump station would be increased to 9.91 mgd and the capacity of the Arboretum sewer pump station would be increased to 4.3 mgd. The Arboretum sewer pump station would continue to pump sewer flows through the Arboretum force main to the SunCreek sewer pump station. The Mather Interceptor would be constructed and the Chrysanthy Boulevard sewer pump station would be decommissioned. The existing Sunrise Boulevard segment of the Chrysanthy Boulevard force main would be used to convey sewer flows to the Mather Interceptor.

As the 9.91-mgd SunCreek sewer pump station reaches capacity, the SRCSD could upgrade the SunCreek sewer pump station to a 19.0-mgd regional pump station, and sewer flows would be conveyed through the proposed Sunrise Boulevard force main to Kiefer Boulevard and then to the Northeast Interceptor.

Phase 3. Sections 1-4 of the LCI would be constructed from the SRWTP and connected to Section 5 of the LCI. The SunCreek and Arboretum projects' gravity sewer systems would be connected to the LCI and the SunCreek and Arboretum projects' sewer pump stations and associated force mains would be decommissioned.

Scenario Two: Arboretum Develops First Followed by SunCreek

Phase 1. The Arboretum project would construct gravity sewer collectors, sewer trunks, and a 1.5-mgd Arboretum sewer pump station. The capacity of the Anatolia III sewer pump station would be increased to 2.26 mgd. If construction of the SunCreek project begins developing during this phase, two scenarios would be available to provide sewer service to the SPA:

- The SunCreek project would construct a 2.26-mgd sewer pump station. Sewer flows from the Arboretum sewer pump station would be conveyed north along Sunrise Boulevard through the proposed Arboretum force main to the SunCreek sewer pump station. The Anatolia III sewer pump station would be decommissioned and sewer flows from the Anatolia III residential development would be conveyed to the SunCreek sewer pump station through a new gravity sewer pipeline. Sewer flows would be pumped from the SunCreek sewer pump station back to the Arboretum force main through the proposed SunCreek force main. From this point,

the Arboretum sewer force main would pump sewer flows north to the Anatolia III force main and then to the Chrysanthy Boulevard sewer pump station.

- The SunCreek project could extend either Section 5 of the LCI or construct a smaller gravity sewer pipeline to the southwest corner of the SPA. A gravity sewer pipeline would be constructed from the SPA to the Arboretum sewer pump station. The Anatolia III sewer pump station would not be decommissioned and sewer flows would be pumped from the Arboretum sewer pump station north through the proposed Arboretum force main to the 2.26-mgd Anatolia III sewer pump station and then conveyed through the Anatolia III force main to the Chrysanthy Boulevard sewer pump station.

From the Chrysanthy Boulevard sewer pump station, sewer flows would be conveyed through the existing Sunrise Boulevard segment of the Chrysanthy Boulevard force main to Kiefer Boulevard and then to the Northeast Interceptor.

Phase 2. The capacity of the Arboretum sewer pump station would be increased to 9.91 mgd and the Arboretum force main constructed in Phase 1 would be decommissioned. The Mather Interceptor would be completed and operational. Sewer flows from the Arboretum sewer pump station would be pumped north through the proposed Sunrise Boulevard force main to the existing Sunrise Boulevard segment of the Chrysanthy Boulevard force main and then to the Mather Interceptor. If construction of the SunCreek project begins developing during this phase, two scenarios would be available to provide sewer service to the SPA:

- The SunCreek project would construct a 1.5-mgd sewer pump station and the Arboretum force main constructed in Phase 1 and 2.26-mgd Anatolia III sewer pump station would remain operational. Sewer flows generated by the project would be conveyed to the SunCreek sewer pump station and then would be pumped from the SunCreek sewer pump station to the Arboretum force main. Sewer flows would then be pumped from the Arboretum sewer pump station to the Anatolia III sewer pump station. From this point, sewer flows would be pumped north from the Anatolia III sewer pump station through the Anatolia III force main to the Chrysanthy Boulevard gravity sewer pipeline and then to the Mather Interceptor.

- The SunCreek project could extend either Section 5 of the LCI or construct a smaller gravity sewer pipeline to the southwest corner of the SPA. The Anatolia III sewer pump station would be decommissioned and sewer flows from the Anatolia III residential development would be conveyed to the SunCreek sewer pump station through a new gravity sewer pipeline. The Arboretum force main constructed in Phase 1 would be decommissioned and a gravity sewer pipeline would be constructed from the SPA to the Arboretum sewer pump station. Sewer flows from the Arboretum sewer pump station would be pumped through the proposed Sunrise Boulevard force main to the existing Sunrise Boulevard segment of the Chrysanthy Boulevard force main and then to the Mather Interceptor.

As the 9.91-mgd Arboretum sewer pump station reaches capacity, the SRCSD could upgrade the Arboretum sewer pump station to a 19.0-mgd regional pump station. Sewer flows would continue to be conveyed from the Arboretum sewer pump station through the proposed Sunrise Boulevard force main and the Sunrise Boulevard segment of the Chrysanthy Boulevard force main and to the Mather Interceptor. A parallel force main would be constructed on Sunrise Boulevard from the Arboretum sewer pump station to Kiefer Boulevard and sewer flows would then be conveyed to the Northeast Interceptor.

Phase 3. Sections 1-4 of the LCI would be constructed from the SRWTP and connected to Section 5 of the LCI. The SunCreek and Arboretum projects' gravity sewer systems would be connected to the LCI and the SunCreek and Arboretum projects' sewer pump stations and associated force mains would be decommissioned.

Under either scenario, there would be approximately 3 to 4 wastewater pumping stations located on the SPA, and these facilities would have controls that would prevent the release of objectionable odors.

SASD Sewer System Capacity Plan

The recently adopted sewer system capacity plan outlines SASD's most current plans to extend sewer service to developing areas, including the East County area in general and the SPA in particular. Under the current plan, the future Laguna Interceptor would be dropped by SRCSD in favor of the White Rock, Aerojet-2, and Douglas Interceptors that would convey flows from the East County area westerly to the existing Bradshaw Interceptor. Accordingly, Section 5 of the LCI would be downsized to trunk sewer status. This trunk sewer would convey flows from the SPA to the SunCreek sewer pump station, including the Anatolia III area, thereby abandoning the Anatolia III sewer pump station. A force main would be extended to the existing Anatolia III force main for conveyance to the Chrysanthy sewer pump station. From the existing Chrysanthy sewer pump station the flows would be conveyed through the existing Kiefer Force Main and delivered to the Northeast Interceptor and/or the Bradshaw Interceptor.

By the time that the Kiefer Force Main reaches capacity, SRCSD would have constructed the Aerojet-2 and White Rock Interceptors, and flows from the Chrysanthy pump station would be diverted to the Aerojet-2 and White Rock Interceptors. This diversion would then free up capacity in the Kiefer Force Main and allow flows from the SunCreek sewer pump station to utilize the capacity of the Kiefer Force Main to deliver flows to the Northeast and/or Bradshaw Interceptors. Eventually, as development continues within the SPA and the Kiefer Force Main again reaches capacity, a new Sunrise Boulevard force main would be constructed along Sunrise Boulevard from the SunCreek sewer pump station to the Chrysanthy pump station. At that time, sewer flows from SunCreek would be pumped from the SunCreek pump station to the Chrysanthy pump station, where they would be lifted into the Aerojet-2 Interceptor that would flow by gravity into the White Rock Interceptor and then to the Bradshaw Interceptor.

Summary of Project Sewer Facilities by Phase

The specific facilities that are known at the time of writing of this DEIR/DEIS that would be constructed during each phase of sewer service are listed below.

Phase 1

- The 2.26-mgd SunCreek sewer pump station and associated 8-inch force main.
- Segment 5 of the Laguna Creek Interceptor from the SunCreek pump station to Americanos Boulevard.

Phase 2

- Increased capacity of the SunCreek sewer pump station to 9.91 mgd.
- Two 18-inch force mains from the SunCreek pump station to the Chrysanthy Boulevard force main.

Phase 3

- Segment 5 of the Laguna Creek Interceptor from Americanos Boulevard to Grant Line Road.

Alternatively, a new 18-inch-diameter sewer force main from the SunCreek sewer pump station to the Chrysanthy pump station could be constructed. SRCSD would be responsible for constructing the White Rock, Aerojet-2, and Douglas Interceptors after additional CEQA analysis. Included in these facilities would be the downsizing of the on-site portions of Section 5 of the LCI to sewer trunk status with on-site main sizes from 8-inch to 27-inch diameter.

Electricity

Electrical service would be provided by Sacramento Municipal Utility District (SMUD). All electrical lines less than 69 kilovolt (kV) would be routed underground within the rights-of-way of on-site project streets. Following

consultation between the project applicants and SMUD, SMUD has determined that the following electrical facilities, shown on Exhibit 2-17, are required to serve the proposed development:

1. Use of a substation that SMUD already plans to build at the northwest intersection of Village Way and Rancho Cordova Parkway (within the Anatolia III Specific Plan area).

2. Construction of a new substation south of the SPA, but immediately adjacent to the southeast corner of the SunCreek SPA. This substation site could range from 0.5 to 0.75 acre. SMUD has indicated that a typical substation is approximately 150 x 150 feet.

3. Installation of a 69 kV electrical line along Grant Line Road from Kiefer Boulevard to Douglas Road.

4. Installation of a 69 kV electrical line along Kiefer Boulevard that would connect the existing 69 kV electrical line at Grant Line Road to the substation that would be constructed at the southeast corner of the SunCreek SPA.

Additional details regarding electrical service are contained in Appendix J (MacKay & Somps 2010e). SMUD would provide any necessary CEQA and/or NEPA coverage of its facilities, as they determine necessary in the future.

Natural Gas

Natural gas service would be provided by Pacific Gas and Electric Company (PG&E), and would be routed underground within the rights-of-way of SPA streets. Following consultation between the project applicants and PG&E, PG&E has provided the following information regarding natural gas facilities, as shown on Exhibit 2-18:

1. PG&E has tentative plans to upgrade its existing 8-inch steel distribution line that runs along Sunrise Boulevard between Douglas Road and Kiefer Boulevard, to a larger transmission main that would operate at a higher pressure.

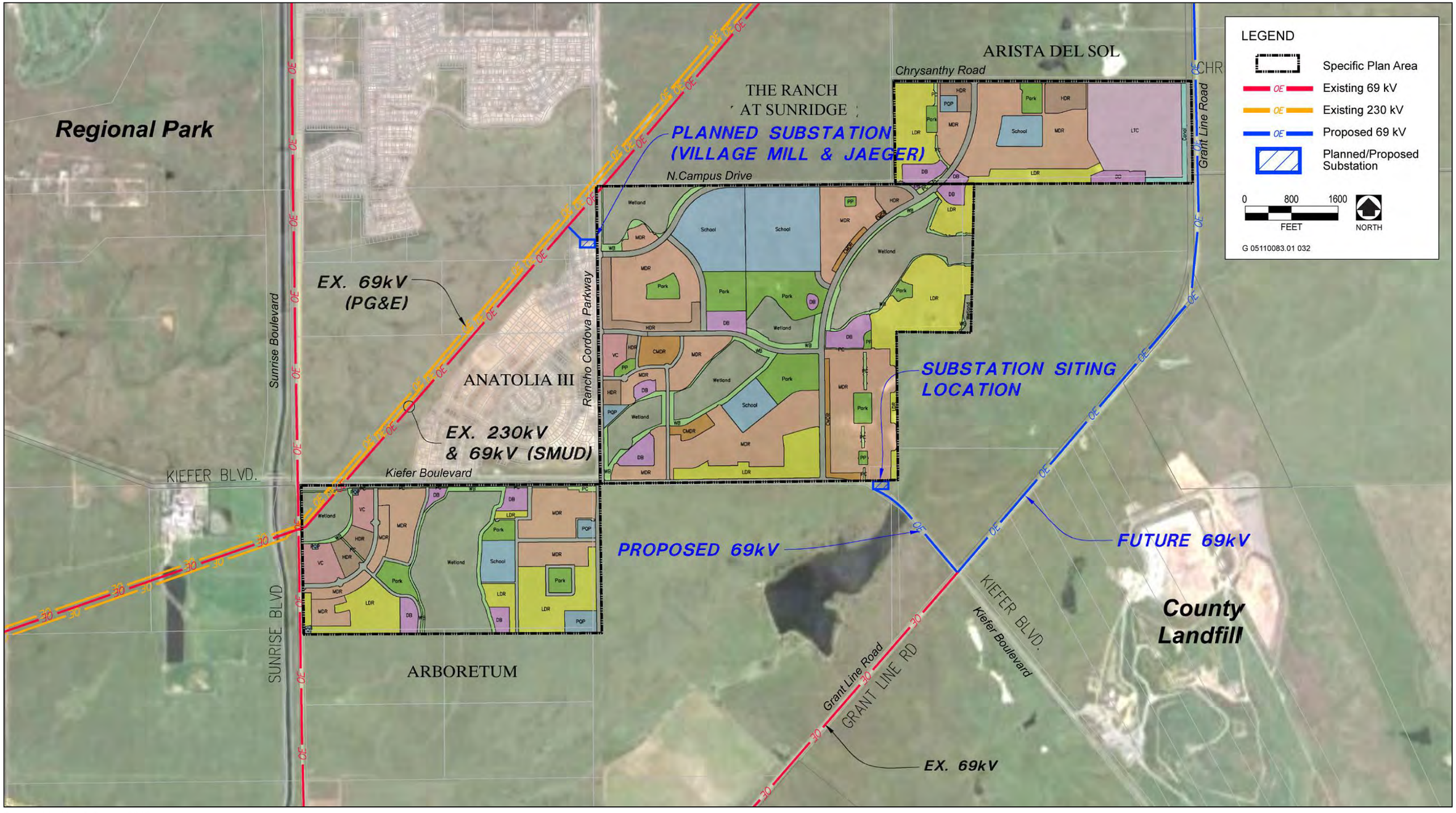
2. PG&E plans to install a new distribution regulator station at the intersection of Kiefer Boulevard and Sunrise Boulevard.

3. The timing, size, and exact location of these future facilities has not been determined by PG&E at this time. Furthermore, PG&E would be responsible for determining whether or not these facilities described in items 1 and 2 above require analysis under CEQA or NEPA, and performing such analysis if it is required.

PG&E has indicated that it may provide service to the SunCreek SPA by extending service from one or more of its existing distribution lines along Kiefer Boulevard or Rancho Cordova Parkway (shown on Exhibit 2-18), or from its existing distribution line along Douglas Road (north of the SPA). Service extensions from all three locations would occur within existing or planned roadways. PG&E would provide any necessary CEQA and/or NEPA coverage of its facilities, as they determine necessary in the future. Additional details regarding natural gas service are contained in Appendix J (MacKay & Somps 2010e).

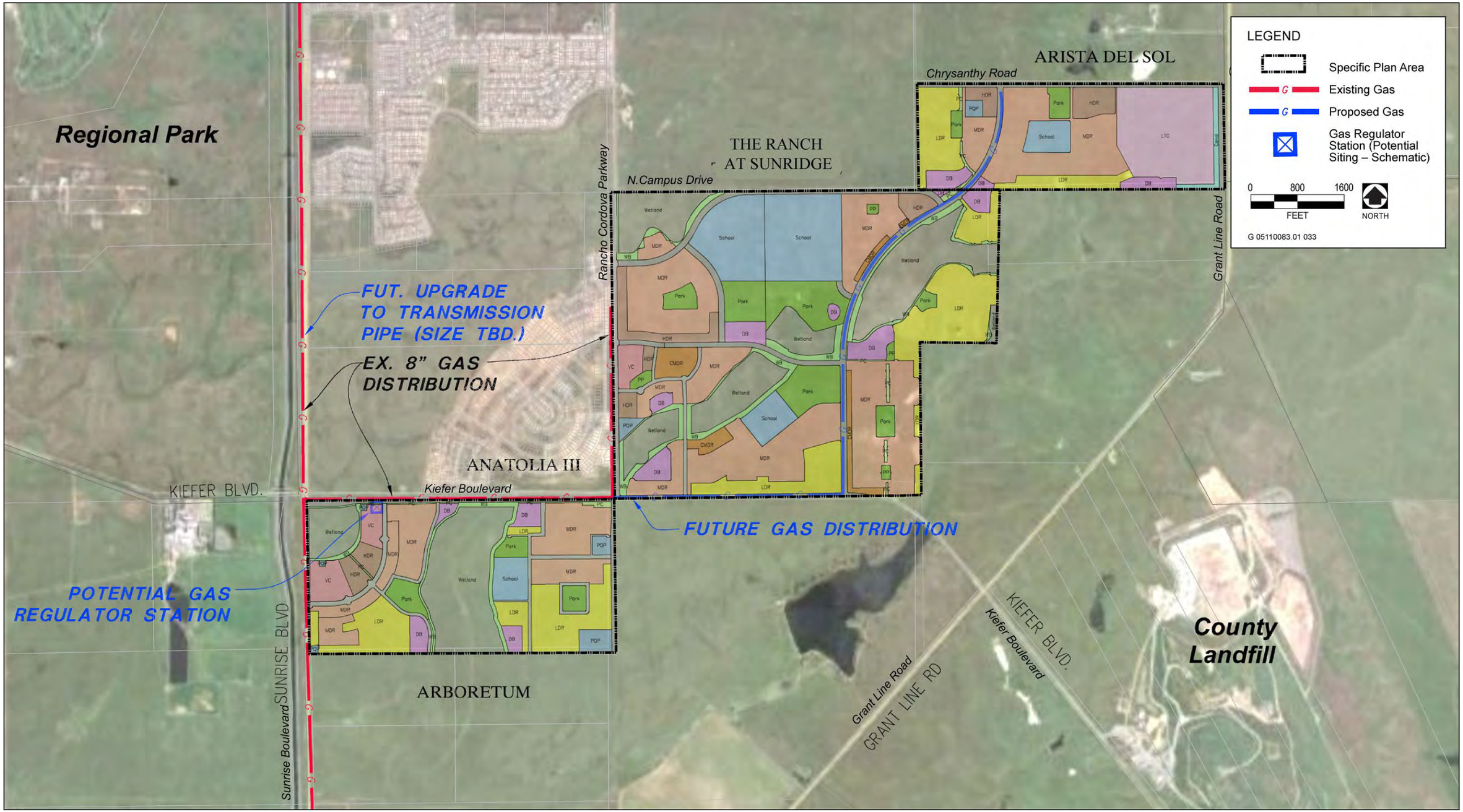
Communications

The Grantline 220 parcel is within the service area of AT&T, which maintains overhead lines along Grantline Road. The remainder of the SPA would be served by Frontier Communications, which has existing overhead lines along Sunrise Boulevard and existing underground lines within Kiefer Boulevard (from Sunrise Boulevard to approximately Country Garden Drive). Service to the SunCreek SPA would be provided through connections with these existing lines (see Exhibit 2-19). Additional details regarding communications facilities are contained in Appendix J (MacKay & Somps 2010e).



Source: MacKay & Somps 2012

Proposed Electrical Facilities Plan **Exhibit 2-17**



Source: MacKay & Somps 2012

Proposed Natural Gas Facilities Plan **Exhibit 2-18**

LEGEND

- Specific Plan Area
- G — Existing Aerial Line
- UT — Proposed Underground line
- Potential Remote Terminal Sight
- AT&T/Frontier Service Limit

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FEET NORTH

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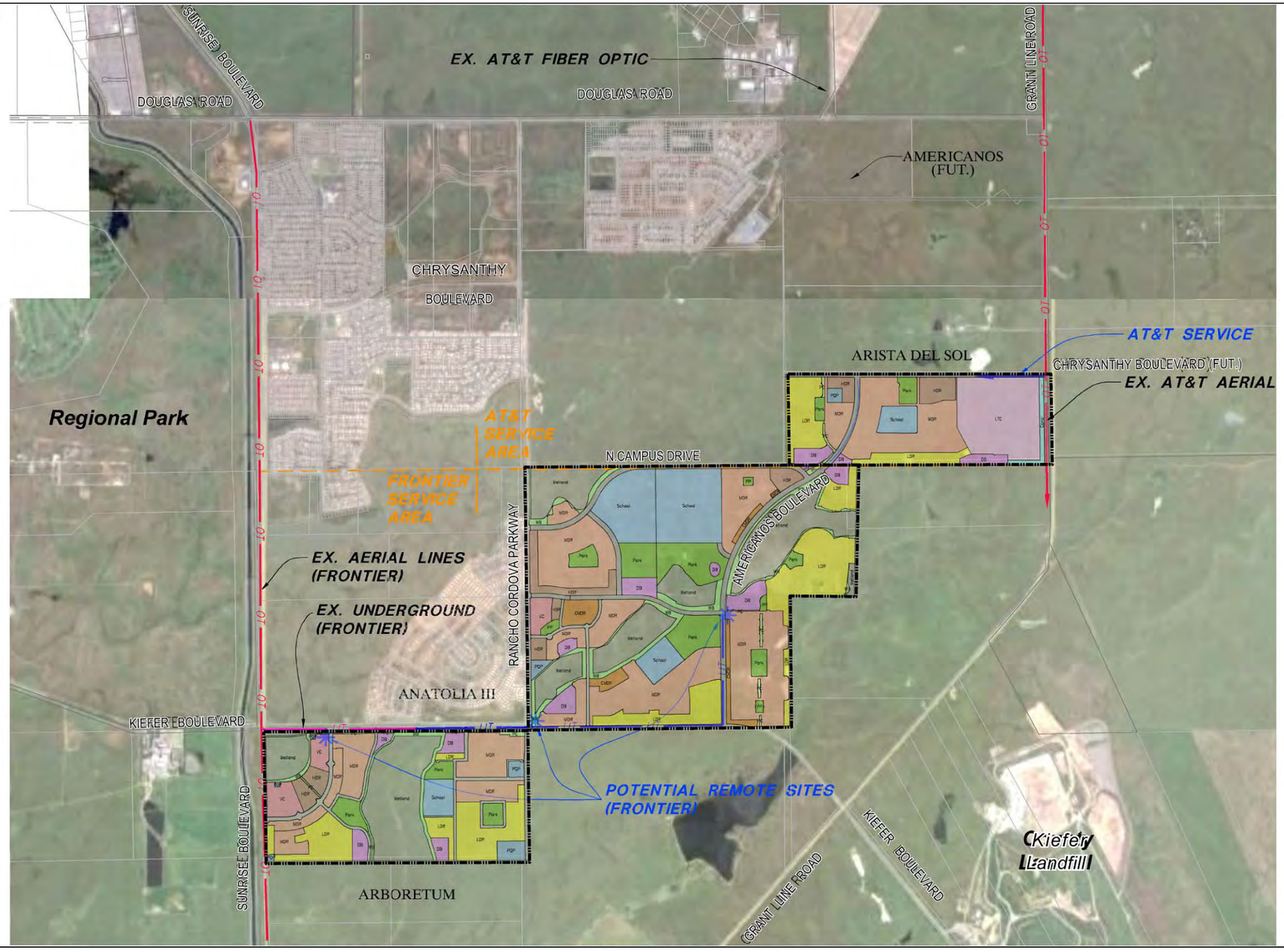


Source: MacKay & Somps 2012

Proposed Communications Facilities Plan **Exhibit 2-19**

Solid Waste Disposal

In 2008, Rancho Cordova disposed of approximately 61,638 tons of solid waste (California Integrated Waste Management Board 2010). Allied Waste Services provide solid waste and recycling collection services to the city. Solid waste is transported to the Kiefer Landfill, near the intersection of Grant Line Road and Kiefer Boulevard.

Businesses and multifamily residential properties with 5 or more units that generate four or more cubic yards per week of solid waste are required to implement an on-site recycling program (Title 6, Chapter 6.21 of the Rancho Cordova Municipal Code). The program requires businesses and multifamily residential properties to keep recyclable materials separate from all other solid waste, to provide signs and labeled containers for the storage and collection of recyclable materials, and to either self-haul or enter into a written service agreement with a franchise hauler (i.e., Allied Waste Services, Atlas Disposal Industries, and Waste Management of Sacramento) for the collection and subsequent delivery of recyclable materials to an authorized recycling facility.

Off-Site Facilities for Public Utilities

Off-site infrastructure improvements would be needed to support the proposed SunCreek project as outlined in the specific plan. The project applicants have initiated coordination with the various service providers regarding provision of these services. Many of the off-site conveyance facilities that would be used by the project have either already been constructed, or are planned to be constructed by another agency and have already received CEQA (and NEPA, if applicable) coverage. The only exceptions are discussed below.

Water Supply

- Florin Road/Sunrise Boulevard Pipeline
- Anatolia Pipeline Conversion

Roadway Improvements

- **Off-Site Roadway Improvements.** As discussed in detail in Section 3.15, "Traffic and Transportation," various off-site roadway improvements would be required and have been included as project-specific mitigation measures. Section 3.15, "Traffic and Transportation," of this EIR/EIS provides a broad program-level discussion of the types of environmental impacts that could be associated with constructing those recommended off-site roadway improvements.

Electrical Facilities

- **Substation.** A new electrical substation on a 1/2- to 3/4-acre parcel would be constructed south of and immediately adjacent to the southeastern project boundary, and service to SunCreek would also be provided from a new substation constructed within the Anatolia development north of the SPA. SMUD would be responsible for constructing these substations and providing any necessary CEQA or NEPA coverage.

- **Electrical Lines.** New 69kV electrical lines would be installed overhead along Kiefer Boulevard and Grant Line Road. SMUD would be responsible for installing these lines and providing any necessary CEQA or NEPA coverage.

Natural Gas Facilities

- **Natural Gas Conveyance Pipeline.** Potential extension of natural gas service from PG&E's existing distribution line along Douglas Road (north of the SPA). PG&E would be responsible for installing this distribution line (if it is required) and providing any necessary CEQA or NEPA coverage.

Sewer Facilities

- **White Rock, Aerojet-2, and Douglas Interceptors.** SRCSD is responsible for construction and installation of these sewer interceptors, and would provide CEQA coverage as part of its planned update to its sewer system master plan in late 2012.

Circulation Improvements

As shown in Exhibit 2-20, the project includes the development of an estimated 79 acres of major roadways and associated landscaping within the SPA. Access and circulation within the SPA would be provided through the construction of the following major roadways:

- Rancho Cordova Parkway, a north-south connector between Douglas Road and Kiefer Boulevard, in the central part of the SPA. Four lanes are proposed. Rancho Cordova Parkway (currently known as Jaeger Road) would include a landscape corridor/public utilities easement on either side, 15-foot-wide bus-rapid-transit (BRT) lanes in both directions, and a 15-foot-wide median that would provide BRT access.

- Americanos Boulevard, a north-south connector between Douglas Road and Kiefer Boulevard, in the eastern part of the SPA. Four lanes are proposed along the entire length, with a 15-foot-wide landscape corridor on both sides, bicycle lanes, and a 14-foot-wide landscaped median.

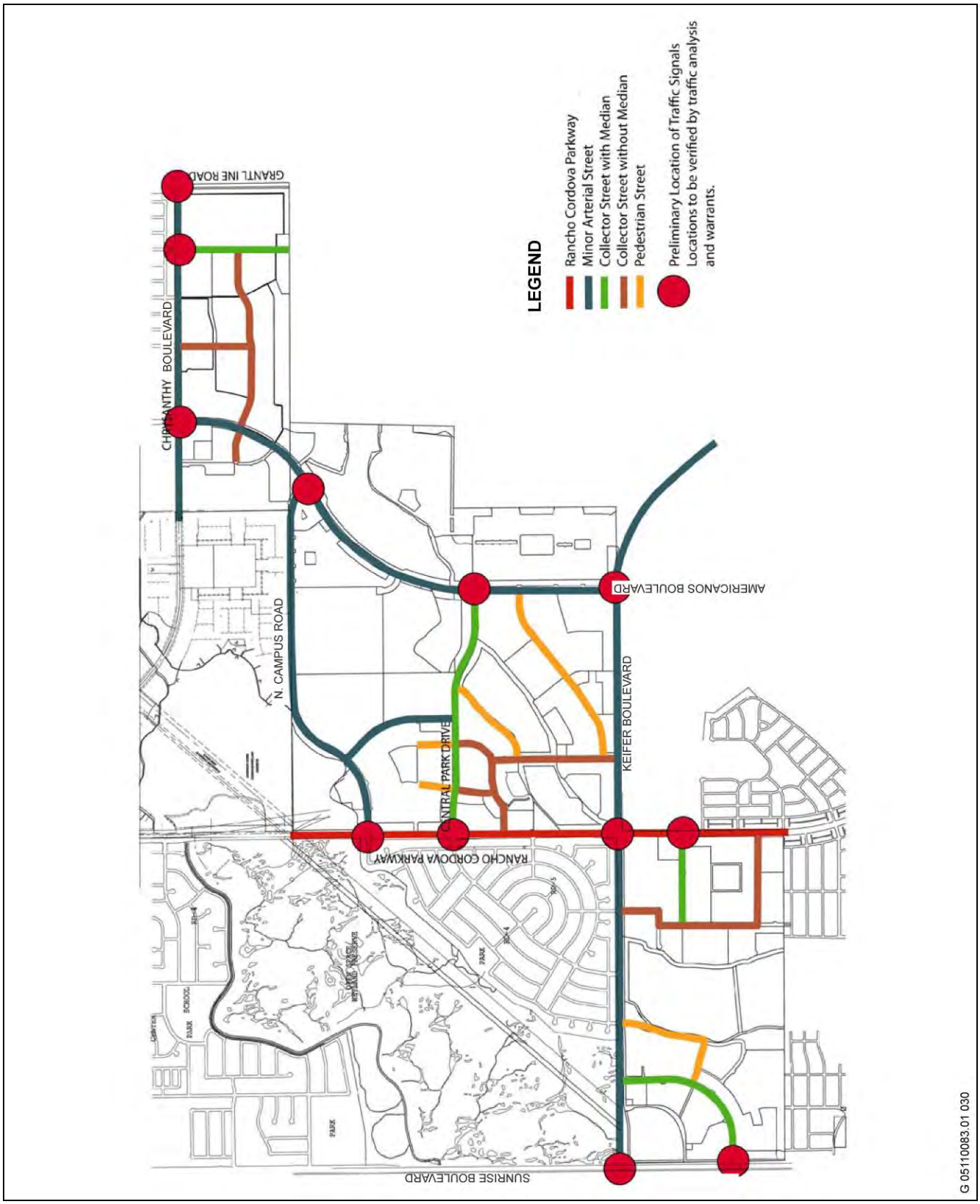
- Kiefer Boulevard, Chrysanthy Road, and North Campus Road, east-west connectors within the SPA. Four lanes are proposed on each roadway, with a 15-foot-wide landscape corridor on both sides, bicycle lanes, and a 14-foot-wide landscaped median.

In addition, a number of two-lane internal roadways are proposed as collector streets and to accommodate front-on lots. These collector streets would contain a bicycle lane, an on-street parking lane, and an adjacent 13-foot-wide landscape corridor incorporating 7-foot-wide sidewalks. The project applicants would be required to pay their fair share of various regional and local roadway improvements, which are discussed in Chapter 3.15, "Traffic and Transportation." CEQA or NEPA analysis of environmental impacts associated with the future construction and operation of any required off-site roadway improvements is not provided in this DEIR/DEIS. As shown in Exhibit 2-20, the proposed roadway network provides direct connectivity with existing and proposed development to the north and south of the SPA.

Collector streets and residential streets may include traffic calming devices to slow traffic and discourage non-resident traffic in neighborhoods. The measures also encourage people to walk by slowing traffic and provide shorter crossing distances at intersections. In compliance with the City's Neighborhood Traffic Management Plan, Chapter 7, the potential traffic calming measures within the SunCreek SPA include, but are not limited to, the following: traffic circles, roundabouts, intersection "bulb-outs," and lane width restrictions. For additional details regarding the proposed circulation network and proposed traffic calming measures, see Chapter 4, "Circulation" of the SunCreek Specific Plan (Appendix C).

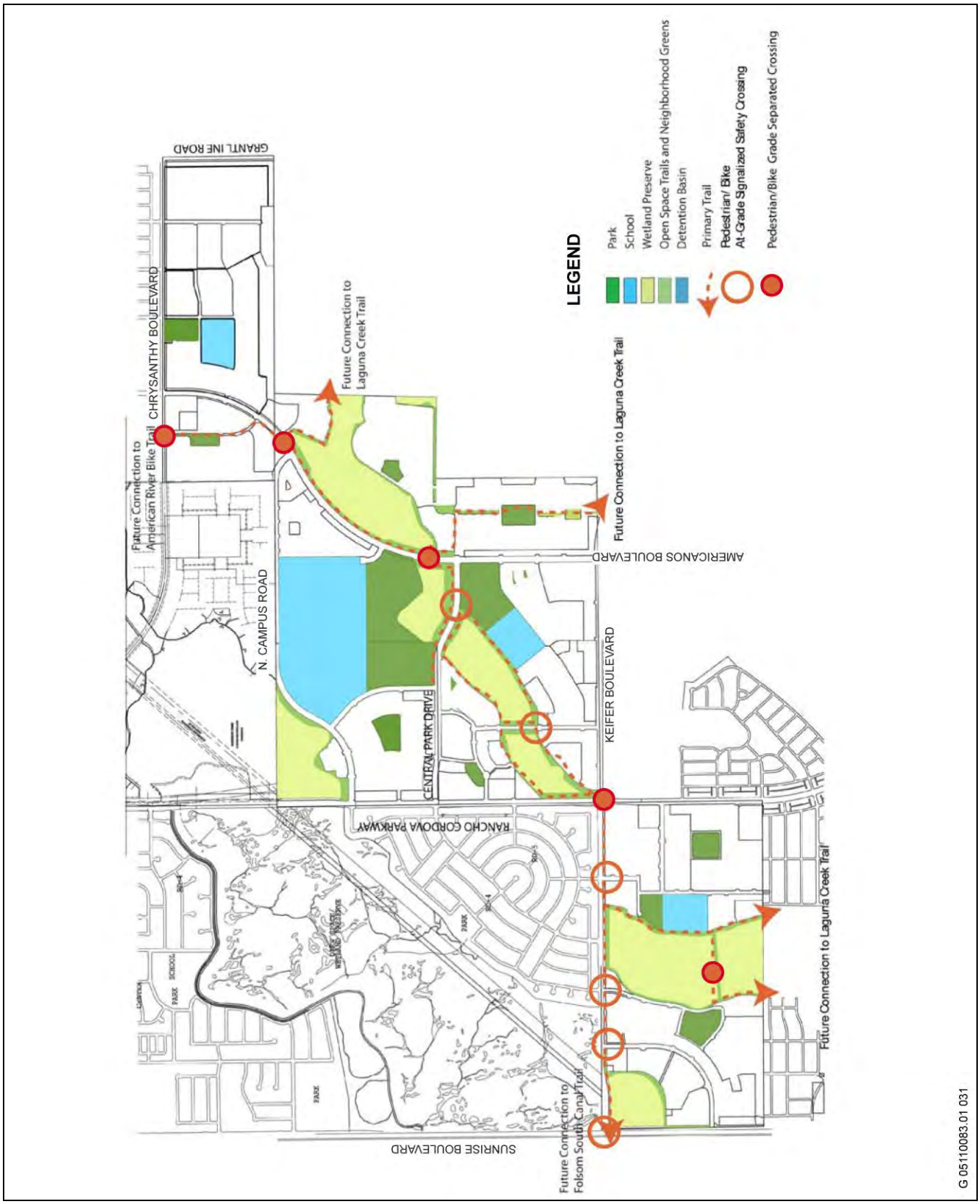
As shown in Exhibit 2-21, the project includes the development of on-site bicycle and pedestrian trails. In addition to sidewalks, more than 9 miles of Class I paved off-street bike paths would be provided. Class II bicycle lanes would be provided along paved streets within neighborhoods. Bike path corridors would also be provided in the wetland buffer areas.

Several of the on-site bicycle and pedestrian trails would provide direct connectivity to regional or local trails, such as the American River Bike Path, the Laguna Creek Trail, and the Folsom South Canal Trail. Connection to these local and regional trails also provides for direct bicycle and pedestrian access to planned and proposed development to the north and south of the SPA, which furthers the City of Rancho goals to create a walkable community and provide access via alternative forms of transportation. For additional details regarding the proposed trail network, see Chapter 4, "Circulation" of the SunCreek Specific Plan (Appendix C).



Source: Wade Associates 2010

Proposed Major Roadway Circulation Plan **Exhibit 2-20**



Source: Wade Associates 2010, Adapted by AECOM in 2010

Proposed Bike Trail Master Plan **Exhibit 2-21**

2.3.5 PROJECT PHASING AND CONSTRUCTION

It is estimated for purposes of this DEIR/DEIS that the project would be constructed in three phases, as shown in Exhibit 2-22, with an estimated project start date of 2012 and an estimated end date of 2030. The proposed phasing plan shown in Exhibit 2-22 is not intended to preclude development from occurring in the future in a different manner, nor is it intended to require full build-out of an earlier phase of development before initiating development activities in a subsequent phase of the project (MacKay & Somps 2010f). The phasing plan represents the City's and the USACE's best estimate as to the way the SPA would be developed for use primarily in air quality modeling and in evaluation of the construction of on-site utilities.

Construction staging areas would be established as each area of the specific plan is developed. Staging areas would be fenced and would be used for storage of vehicles, equipment, materials, fuels, lubricants, and solvents. The stockpiling or vehicle staging areas would be identified in the improvement plans and would be located as far as practical from protected resources in the area such as specimen trees and native vegetation. All staging areas would be sited in disturbed areas.

2.4 NO USACE PERMIT ALTERNATIVE

This alternative was designed to avoid the placement of dredged or fill material into waters of the U.S. (including wetlands) from the project, thus eliminating the need for a USACE Section 404 CWA permit. As a result, there would be no fill of waters of the U.S. under this alternative, compared to 22.56 acres of fill under the Proposed Project Alternative. The No USACE Permit Alternative, however, would likely still require that the project applicants consult with the USFWS to comply with Section 7 of the Endangered Species Act (ESA). A conceptual land use map showing proposed development is provided in Exhibit 2-23.

A summary comparison of the long-term environmental benefits to be gained, or adverse impacts to be avoided, among all alternatives is provided at the end of this chapter; detailed comparisons are provided within each section of Chapter 3, "Affected Environment, Environmental Consequences, and Mitigation Measures."

Under this alternative, the approximately 203-acre wetland preserve that would be created under the Proposed Project Alternative, which would require continuing activities as part of a Mitigation and Monitoring Plan approved by the USACE, would not exist because it would not be proposed or imposed as mitigation for impacts associated with the fill of Federally regulated wetlands. Instead, 607 acres of the SPA would be designated "Natural Resources" under the City's General Plan. Land with this use designation would be set aside as natural habitat with no urban development. While open space trails may be located adjacent to areas designated as Natural Resources, the City of Rancho Cordova would prohibit public access into the area.

Proposed backbone infrastructure improvements for the No USACE Permit Alternative are illustrated in Exhibit 2-24. The projected water demand for this alternative is approximately 2,033 afy, as compared to the 3,058 afy demand for the Proposed Project Alternative. This represents a 33.5% decrease in the total annual water demand. The alignment of pipelines and facilities would change substantially from those required to serve the Proposed Project Alternative. While these facilities would be proportionally smaller in size to handle the decreased demands resulting from the decrease in development proposed in this alternative, the lack of opportunities for looping of transmission mains would, in all likelihood, result in an increase in main sizes in spite of the decreased demands resulting from this alternative. Because of the lack of an interconnected street system and the substantial change in the spatial distribution of the developable areas between this alternative and the Proposed Project Alternative, a substantial change in the location of major sewer trunk and interceptor lines would be required. While a substantial upstream sewer shed exists that conveys sewer flows though the SPA, the alignment of the interceptor sewer that conveys these flows would change substantially. The developed area of this alternative would be approximately 606 acres as compared to approximately 869 acres for the Proposed Project Alternative, which represents a 31% decrease in developed area. This would result in a corresponding decrease in the amount of impervious surfaces and runoff. The location of storm drainage and detention facilities

required to serve this alternative would be similar to the Proposed Project Alternative, but would be smaller. Under this alternative, Americanos Boulevard would be realigned further east through the SPA to accommodate the increased amount of land designated as Natural Resources, and the on-site circulation network would be more severely constrained as compared to the Proposed Project Alternative. This alternative would require more expensive/time-consuming, methods of construction for roadways and utilities. The realignment of Americanos Boulevard would not be consistent with the planned City General Plan roadway network.

Under the No USACE Permit Alternative, approximately 92 acres less residential acreage would be developed and approximately 338 fewer residential units would be constructed as compared to the Proposed Project Alternative. Furthermore, under the No USACE Permit Alternative, the Local Town Center would not be constructed. Approximately 75 fewer acres of total commercial land uses would be constructed under this alternative as compared to the Proposed Project Alternative. Tables 2-3 and 2-4 list the total estimated residential and commercial development under this alternative.

Table 2-3
Summary Comparison of Residential Development under the No USACE Permit Alternative and the Proposed Project Alternative

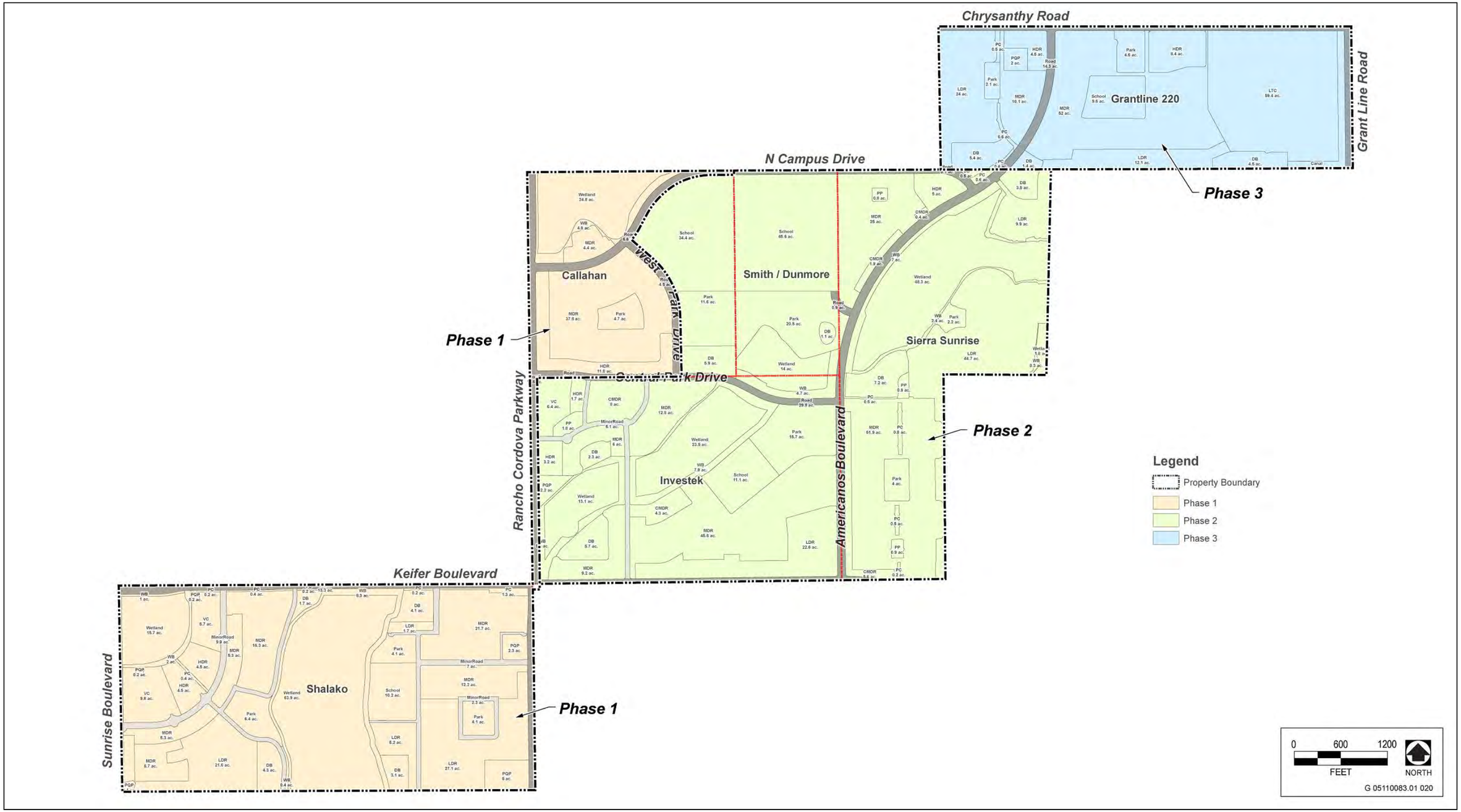
Land Use Type	No USACE Permit Alternative			Proposed Project Alternative		
	Acres	du/ac[1]	Units[2]	Acres	du/ac[1]	Units[2]
Low Density Residential	54.3	5.31	288	169.4	5.31	900
Medium Density Residential	287.1	7.80	2,239	322.7	7.80	2,517
Compact Medium Density Residential	97.7	14.26	1,393	20.1	14.23	286
High Density Residential	18.1	21.25	385	43.6	22.80	994
Commercial Mixed Use	6.7	8.12	54	N/A	N/A	N/A
Total	**463.9**		**4,359**	**555.8**		**4,697**

Notes:
[1] du/ac = average dwelling units per acre
[2] numbers have been rounded
Source: MacKay & Somps 2012

Table 2-4
Summary Comparison of Commercial Development under the No USACE Permit Alternative and the Proposed Project Alternative

	No USACE Permit Alternative Acres	Proposed Project Alternative Acres
Local Town Center	0	59.4
Commercial Mixed Use	6.7	0
Village Commercial	0	22.9
Total	**6.7**	**82.3**

Source: MacKay & Somps 2012

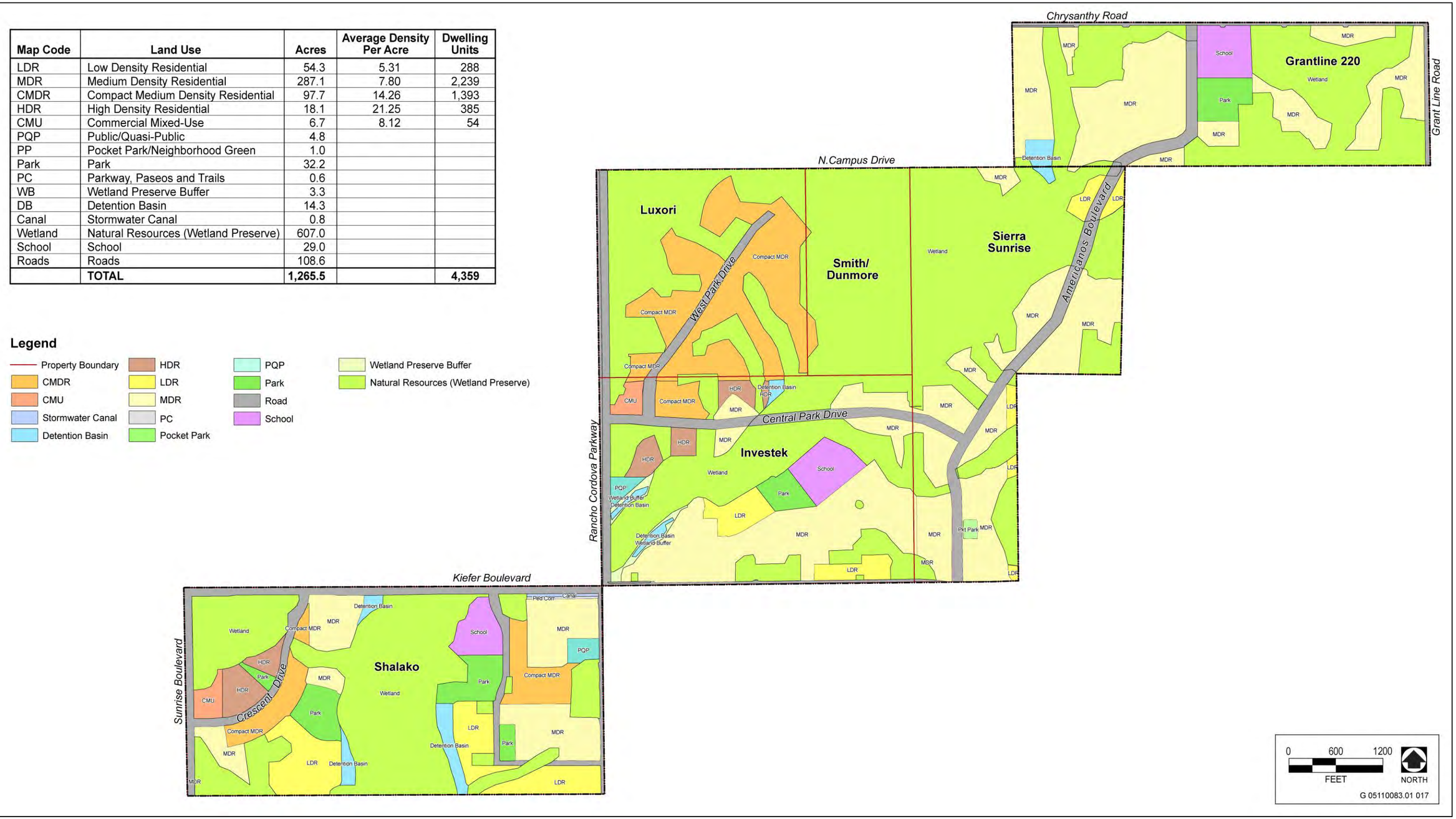


Source: MacKay & Somps 2012

Proposed Project Phasing

Exhibit 2-22

Map Code	Land Use	Acres	Average Density Per Acre	Dwelling Units
LDR	Low Density Residential	54.3	5.31	288
MDR	Medium Density Residential	287.1	7.80	2,239
CMDR	Compact Medium Density Residential	97.7	14.26	1,393
HDR	High Density Residential	18.1	21.25	385
CMU	Commercial Mixed-Use	6.7	8.12	54
PQP	Public/Quasi-Public	4.8		
PP	Pocket Park/Neighborhood Green	1.0		
Park	Park	32.2		
PC	Parkway, Paseos and Trails	0.6		
WB	Wetland Preserve Buffer	3.3		
DB	Detention Basin	14.3		
Canal	Stormwater Canal	0.8		
Wetland	Natural Resources (Wetland Preserve)	607.0		
School	School	29.0		
Roads	Roads	108.6		
	TOTAL	**1,265.5**		**4,359**



Source: MacKay & Somps 2010

No USACE Permit Alternative Land Use Plan **Exhibit 2-23**

INFRASTRUCTURE ABBREVIATIONS

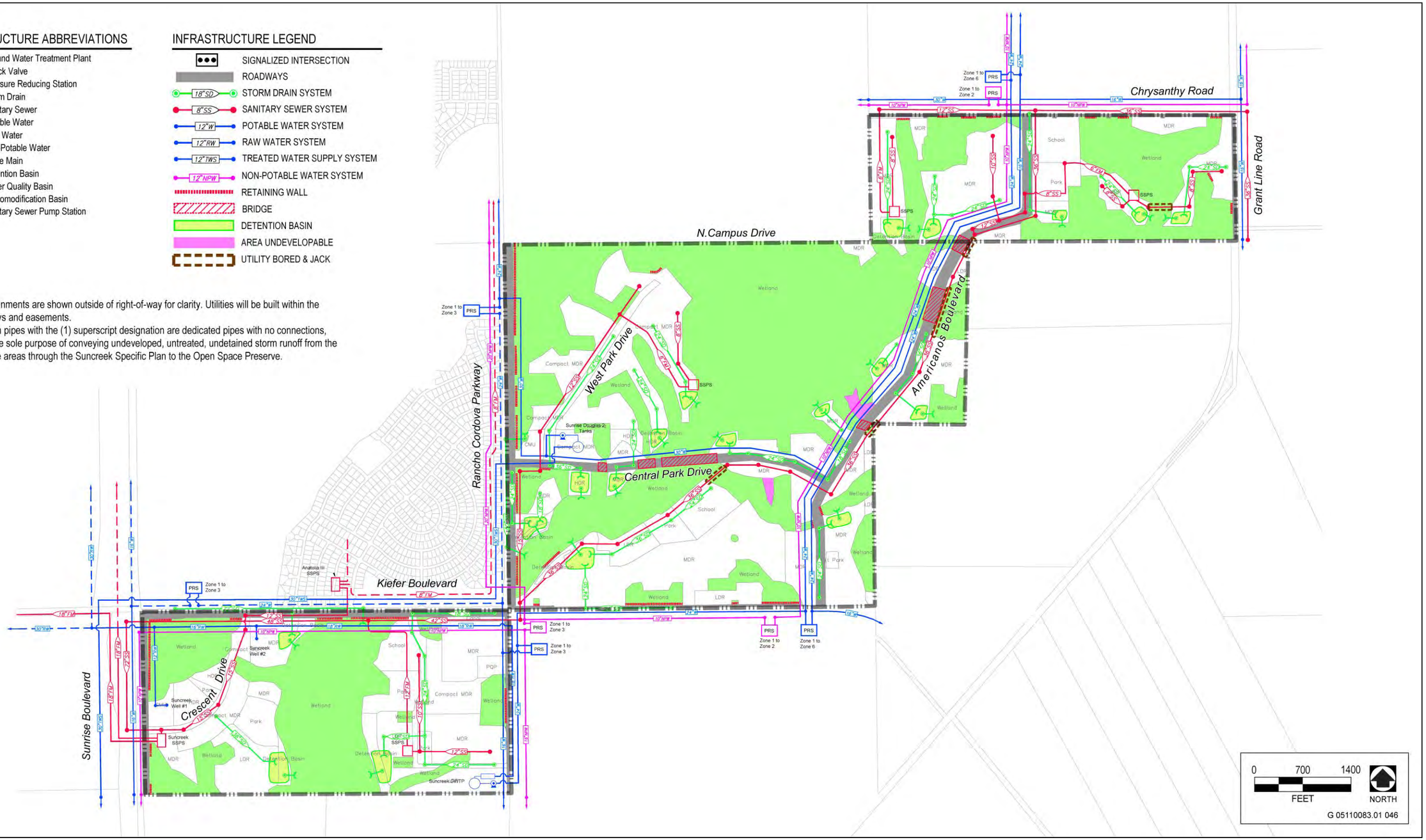
GWTP	Ground Water Treatment Plant
CV	Check Valve
PRS	Pressure Reducing Station
SD	Storm Drain
SS	Sanitary Sewer
W	Potable Water
RW	Raw Water
NPW	Non-Potable Water
FM	Force Main
DB	Detention Basin
WQB	Water Quality Basin
Hydro	Hydromodification Basin
SSPS	Sanitary Sewer Pump Station

INFRASTRUCTURE LEGEND

- SIGNALIZED INTERSECTION
- ROADWAYS
- 18"SD — STORM DRAIN SYSTEM
- 8"SS — SANITARY SEWER SYSTEM
- 12"W — POTABLE WATER SYSTEM
- 12"RW — RAW WATER SYSTEM
- 12"TWS — TREATED WATER SUPPLY SYSTEM
- 12"NPW — NON-POTABLE WATER SYSTEM
- RETAINING WALL
- BRIDGE
- DETENTION BASIN
- AREA UNDEVELOPABLE
- UTILITY BORED & JACK

NOTES:

1. Utilities alignments are shown outside of right-of-way for clarity. Utilities will be built within the right-of-ways and easements.
2. Storm drain pipes with the (1) superscript designation are dedicated pipes with no connections, sized for the sole purpose of conveying undeveloped, untreated, undetained storm runoff from the open space areas through the Suncreek Specific Plan to the Open Space Preserve.



Source: MacKay & Somps 2010

No USACE Permit Alternative Backbone Infrastructure

Exhibit 2-24

2.5 BIOLOGICAL IMPACT MINIMIZATION ALTERNATIVE

The Biological Minimization Alternative was designed to preserve additional areas of high-quality biological resources.

Under this alternative, the wetland preserve would be approximately 411 acres, which is approximately 200 acres larger than the Proposed Project Alternative. Under the Biological Impact Minimization Alternative, project components would be reconfigured to avoid many of the impacts on waters of the U.S., including wetlands and high-quality biological habitat, and the level of residential development would be decreased to reduce the amount of project-generated traffic, air quality emissions, and noise. A permit for wetland fill would still be required under this alternative; 14.73 acres of waters of the U.S. would be filled, which is 9.44 fewer acres than would be filled by the Proposed Project Alternative.

The objectives and criteria in developing the Biological Minimization Alternative consisted of the following:

- preserve the maximum acreage of sensitive biological resources on site;
- preserve buffers around sensitive resources to minimize adverse indirect impacts;
- Maintain connectivity for wetland habitats (vernal pools, seasonal wetlands, ephemeral drainages) to preserve hydrologic function;
- maintain connectivity for upland (annual grassland) habitats to preserve migration corridors;
- preserve lands in both the Laguna Creek and Morrison Creek Watershed;
- provide opportunities for on-site restoration and mitigation; and
- maintain consistency with vernal pool recovery plan.

Although no commercial land uses would be built under this alternative, the types and locations of the other land uses and general infrastructure improvements under the Biological Impact Minimization Alternative would be substantially similar to those that would be built under the Proposed Project Alternative. Exhibit 2-25 illustrates the conceptual land use plan for this alternative.

Exhibit 2-26 illustrates proposed backbone infrastructure improvements. The projected water demand for this alternative is approximately 2,672 afy, as compared to the 3,058 afy demand for the Proposed Project Alternative. This represents a 12.7% decrease in the total annual water demand. The alignment of pipelines and facilities would change substantially from those required to serve the Proposed Project Alternative. While these facilities would be proportionally smaller in size to handle the decreased demands resulting from the decrease in development proposed in this alternative, the lack of opportunities for looping of transmission mains would likely result in an increase in water main sizes in spite of the decreased demands resulting from this alternative. Additionally, it would be difficult to provide service to portions of the developable areas shown on this alternative that are more isolated in nature. Sewer flows for this alternative would be approximately the same as those projected for the Proposed Project. Although this alternative would have a substantially similar amount of sewer flows, the lack of an interconnected street system and the substantial change in the spatial distribution of the developable areas between this alternative and the Proposed Project Alternative would result in a substantial change in the location of major sewer trunk and interceptor lines. While a large upstream sewer shed exists that conveys sewer flows though the SPA, the alignment of the interceptor sewer that conveys these flows would change substantially. The developed area of this alternative would be approximately 730 acres as compared to approximately 869 acres for the Proposed Project Alternative, which represents a 16% decrease in developable area as compared to the Proposed Project Alternative. Therefore, the amount of impervious surface and

corresponding amount of runoff would also decrease by approximately 16%. The location of storm drainage and detention facilities required to serve this alternative would vary considerably from the Proposed Project Alternative due to both the difference in street alignments and the spatial distribution of the developable areas, and smaller size facilities. Because Americanos Boulevard would not be connected through the proposed wetland preserve, the on-site circulation network would be more constrained as compared to the Proposed Project Alternative, and this alternative's roadway network would not be consistent with the planned City General Plan roadway network.

As shown in Table 2-5, implementation of the Biological Impact Minimization Alternative would result in substantially the same acres of residential housing, but approximately 466 fewer residential units would be constructed as compared to the Proposed Project Alternative. As shown in Table 2-6, no commercial land uses would be developed under this alternative, for a total of approximately 82 fewer acres of commercial development as compared to the Proposed Project Alternative.

Table 2-5
Summary Comparison of Residential Development under the Biological Impact Minimization Alternative and the Proposed Project Alternative

Land Use Type	Biological Impact Minimization Alternative			Proposed Project Alternative		
	Acres	du/ac[1]	Units[2]	Acres	du/ac[1]	Units[2]
Low Density Residential	166.7	5.3	883	169.4	5.31	900
Medium Density Residential	391.3	7.8	3,052	322.7	7.80	2,517
Compact Medium Density Residential	11.6	14.2	165	20.1	14.23	286
High Density Residential	6.2	21.2	131	43.6	22.80	994
Commercial Mixed Use	--	--		N/A	N/A	N/A
Total	**575.8**		**4,231**	**555.8**		**4,697**

Notes:
[1] du/ac = average dwelling units per acre
[2] Numbers have been rounded
Source: MacKay & Somps 2012

Table 2-6
Summary Comparison of Commercial Development under the Biological Impact Minimization Alternative and the Proposed Project Alternative

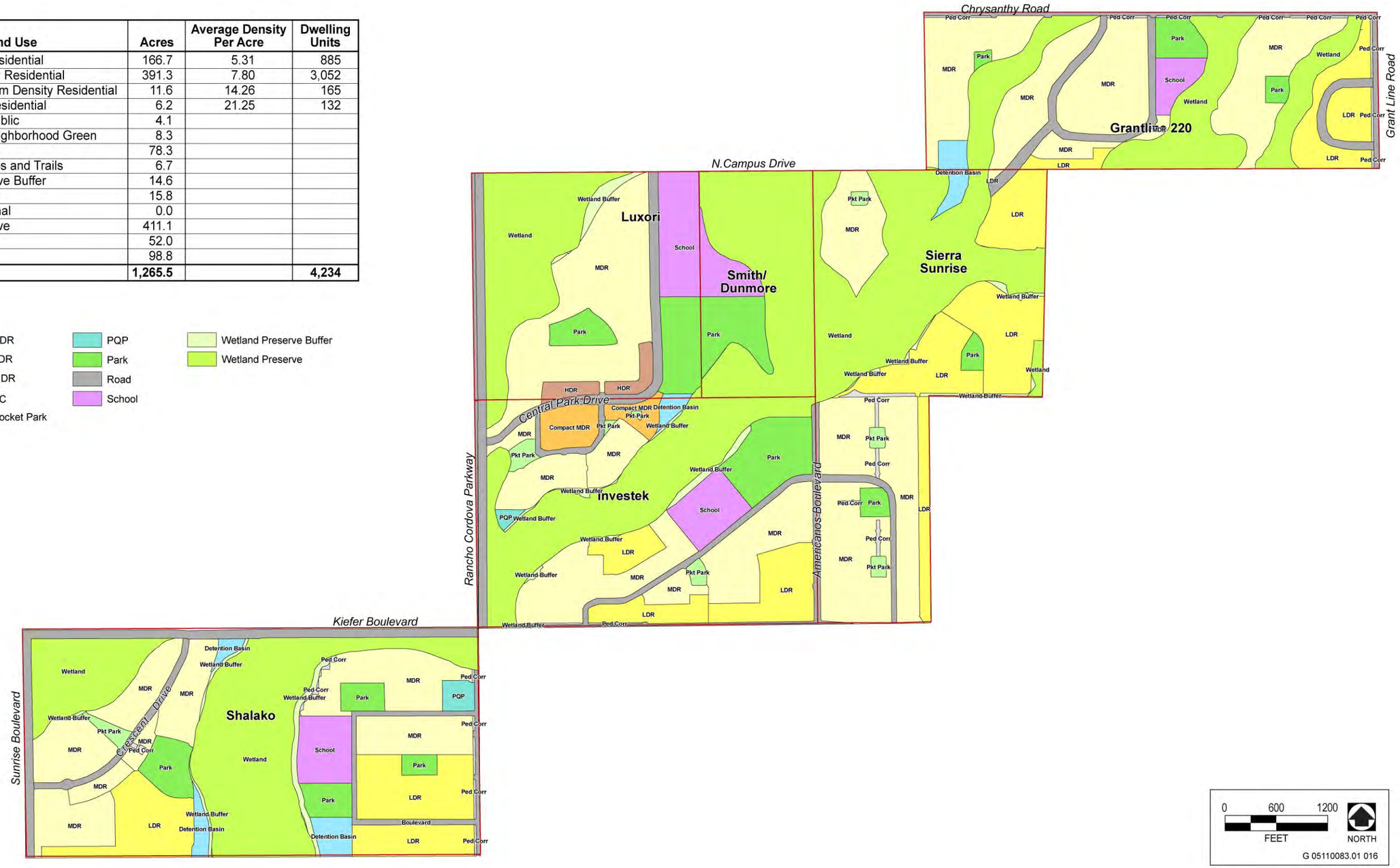
	Biological Impact Minimization Alternative Acres	Proposed Project Alternative Acres
Local Town Center	0	59.4
Commercial Mixed Use	0	0
Village Commercial	0	22.9
Total	**0**	**82.3**

Source: MacKay & Somps 2012

Map Code	Land Use	Acres	Average Density Per Acre	Dwelling Units
LDR	Low Density Residential	166.7	5.31	885
MDR	Medium Density Residential	391.3	7.80	3,052
CMDR	Compact Medium Density Residential	11.6	14.26	165
HDR	High Density Residential	6.2	21.25	132
PQP	Public/Quasi-Public	4.1		
PP	Pocket Park/Neighborhood Green	8.3		
Park	Park	78.3		
PC	Parkway, Paseos and Trails	6.7		
WB	Wetland Preserve Buffer	14.6		
DB	Detention Basin	15.8		
Canal	Stormwater Canal	0.0		
Wetland	Wetland Preserve	411.1		
School	School	52.0		
Roads	Roads	98.8		
	TOTAL	**1,265.5**		**4,234**

Legend

- Property Boundary
- CMDR
- CMU
- Stormwater Canal
- Detention Basin
- HDR
- LDR
- MDR
- PC
- Pocket Park
- PQP
- Park
- Road
- School
- Wetland Preserve Buffer
- Wetland Preserve



Source: MacKay & Somps 2010

Biological Impact Minimization Alternative Land Use Plan

Exhibit 2-25

INFRASTRUCTURE ABBREVIATIONS

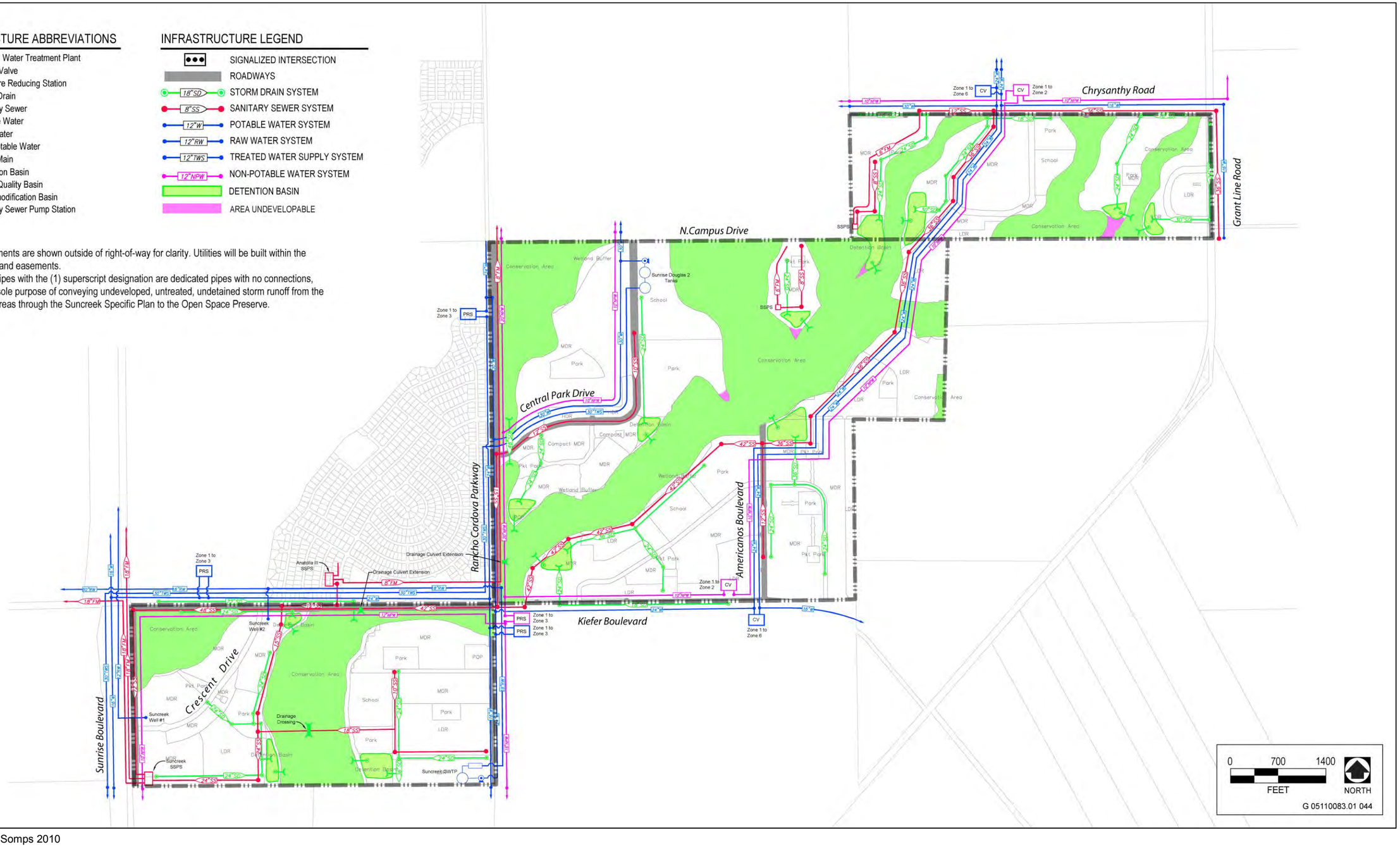
GWTP	Ground Water Treatment Plant
CV	Check Valve
PRS	Pressure Reducing Station
SD	Storm Drain
SS	Sanitary Sewer
W	Potable Water
RW	Raw Water
NPW	Non-Potable Water
FM	Force Main
DB	Detention Basin
WQB	Water Quality Basin
Hydro	Hydromodification Basin
SSPS	Sanitary Sewer Pump Station

INFRASTRUCTURE LEGEND

- SIGNALIZED INTERSECTION
- ROADWAYS
- 18"SD — STORM DRAIN SYSTEM
- 8"SS — SANITARY SEWER SYSTEM
- 12"W — POTABLE WATER SYSTEM
- 12"RW — RAW WATER SYSTEM
- 12"TWS — TREATED WATER SUPPLY SYSTEM
- 12"NPW — NON-POTABLE WATER SYSTEM
- DETENTION BASIN
- AREA UNDEVELOPABLE

NOTES:

1. Utilities alignments are shown outside of right-of-way for clarity. Utilities will be built within the right-of-ways and easements.
2. Storm drain pipes with the (1) superscript designation are dedicated pipes with no connections, sized for the sole purpose of conveying undeveloped, untreated, undetained storm runoff from the open space areas through the Suncreek Specific Plan to the Open Space Preserve.



Source: MacKay & Somps 2010

Biological Impact Minimization Alternative Backbone Infrastructure **Exhibit 2-26**

2.6 CONCEPTUAL STRATEGY ALTERNATIVE

Beginning May 10, 2002, the County initiated a series of conflict resolution meetings regarding potential wetlands and endangered species permitting strategies for the geographic area known as the Sunrise Douglas Community Planning Area. The meetings were attended by a majority of the landowners, as well as developers, biologists, attorneys, project advocates, staff from Congressman Doug Ose's office and the Federal Agencies (i.e., EPA, USACE, and USFWS, collectively the "Federal Agencies"). The group met regarding issues involving wetland and endangered species protection and project development for the unpermitted areas within the Sunridge Specific Plan area began, referred to as the "Plan Subarea."

For 7 months, the Federal Agencies, local agencies, landowners of the unpermitted areas, stakeholders, biological consultants, and attorneys participated in numerous meetings to review issues involving site development and wetland and endangered species protection within the Plan Subarea.

In March 2004, Congressman Doug Ose initiated separate meeting with the Federal Agencies, local agencies, and the landowners/property representatives to facilitate resolution of differences of opinion that had emerged during the initial phase of meetings. Congressman Ose encouraged the Federal Agencies to develop a conceptual strategy both for the conservation of on-site wetland and aquatic resources in the planning area and to address general issues regarding the appropriate mitigation of those resources that could not feasibly and practicably be preserved on-site. The parties worked cooperatively to follow the mandates of Federal law, the need to preserve ecosystem integrity and the habitat of endangered species, the need to acknowledge the planning policies and objectives of the City of Rancho Cordova, and the need to account for the economic realities facing private sector developers. These meetings continued through June 2004.

In June 2004, the Federal Agencies developed an advisory document known as the Conceptual Level Strategy for Avoiding, Minimizing, and Preserving On-Site Aquatic Resource Habitat in the Sunrise Douglas Community Plan area ("Conceptual Level On-Site Avoidance Strategy, herein after referred to as "Strategy"). The Conceptual Level Strategy laid out general planning, ecological, and biological principles based on the best available information at the time. EPA, USACE, and USFWS also developed an accompanying map to provide general guidance on a development/preservation footprint that could potentially be permitted subject to appropriate review (see Exhibit 1-1 in Chapter 1, "Introduction").

After EPA, USACE, and USFWS released the Conceptual Level Strategy map, individual property owners and representatives held additional discussions with the City and EPA, USACE, and USFWS on the Conceptual Level Strategy map, based upon more detailed, project-level information. In response to comments, the landowners revised the map in September 2004 to reflect the more detailed analysis and to incorporate what they understood to be acceptable modifications based upon the guidance provided in the meetings.

The Conceptual Strategy Alternative would preserve approximately 107 more acres of biological habitat (designated as "wetland preserve") as compared to the Proposed Project Alternative. This alternative would fill 23.33 acres of waters of the U.S., which is 0.84 acres fewer than would be filled under the Proposed Project Alternative.

Although little commercial land uses would be built under this alternative, the types and locations of the other land uses and general infrastructure improvements under the Conceptual Strategy Alternative would be substantially similar to those that would be built under the Proposed Project Alternative. Exhibit 2-27 illustrates the conceptual land use plan for the Conceptual Strategy Alternative.

Exhibit 2-28 illustrates the proposed backbone infrastructure improvements. The projected water demand for this alternative is approximately 2,952 afy, as compared to the 3,058 afy demand for the Proposed Project Alternative. This represents only a 3.5% reduction in the total annual water demand. The alignment of pipelines and facilities would change from those required to serve the Proposed Project Alternative; however, while different in location, these facilities would be of the same magnitude in terms of size. The sewer system needed to serve this alternative

would not differ significantly from that of the Proposed Project Alternative, because the amount of sewer flows would be approximately the same. There would be minor variations in the location of the sewer system facilities to serve this alternative would vary somewhat from the Proposed Project Alternative due to the difference in street alignments and the spatial distribution of the developable areas. The developed area of this alternative would be approximately 827 acres as compared to approximately 869 acres for the Proposed Project Alternative, which represents only a 5% reduction in developed area. Therefore, since the amount of impervious surfaces would be substantially similar, the amount of runoff would be substantially similar. While the location of storm drainage and detention facilities required to serve this alternative would vary somewhat from the Proposed Project Alternative due to the difference in street alignments and the spatial distribution of the developable areas, the same (albeit slightly smaller) drainage/stormwater/water quality facilities would be constructed as under the Proposed Project Alternative. Finally, in order to avoid crossing over the on-site preserve, this alternative routes Americanos Boulevard further west, through the central portion of the SPA, to an intersection with Rancho Cordova Parkway. This routing change would be inconsistent with the planned City General Plan roadway network, and would result in decreased connectivity between communities within the City.

As shown in Table 2-7, implementation of the Conceptual Strategy alternative would result in approximately 15 additional acres of residential housing, but approximately 126 fewer residential units. As shown in Table 2-8, the Local Town Center included as part of the Proposed Project Alternative would not be built under this alternative. Approximately 70 fewer acres of total commercial development would be built as compared to the Proposed Project Alternative.

Table 2-7
Summary Comparison of Residential Development under the Conceptual Strategy Alternative and the Proposed Project Alternative

Land Use Type	Conceptual Strategy Alternative			Proposed Project Alternative		
	Acres	du/ac[1]	Units[2]	Acres	du/ac[1]	Units[2]
Low Density Residential	141.5	5.3	750	169.4	5.31	900
Medium Density Residential	410.9	7.8	3,205	322.7	7.80	2,517
Compact Medium Density Residential	18.5	14.2	263	20.1	14.23	286
High Density Residential	12.5	21.2	265	43.6	22.80	994
Commercial Mixed Use	10.9	--	88	N/A	N/A	N/A
Total	**594.3**		**4,571**	**555.8**		**4,697**

Notes:
[1] du/ac = average dwelling units per acre
[2] Numbers have been rounded
Source: MacKay & Somps 2012

Table 2-8
Summary Comparison of Commercial Development under the Conceptual Strategy Alternative and the Proposed Project Alternative

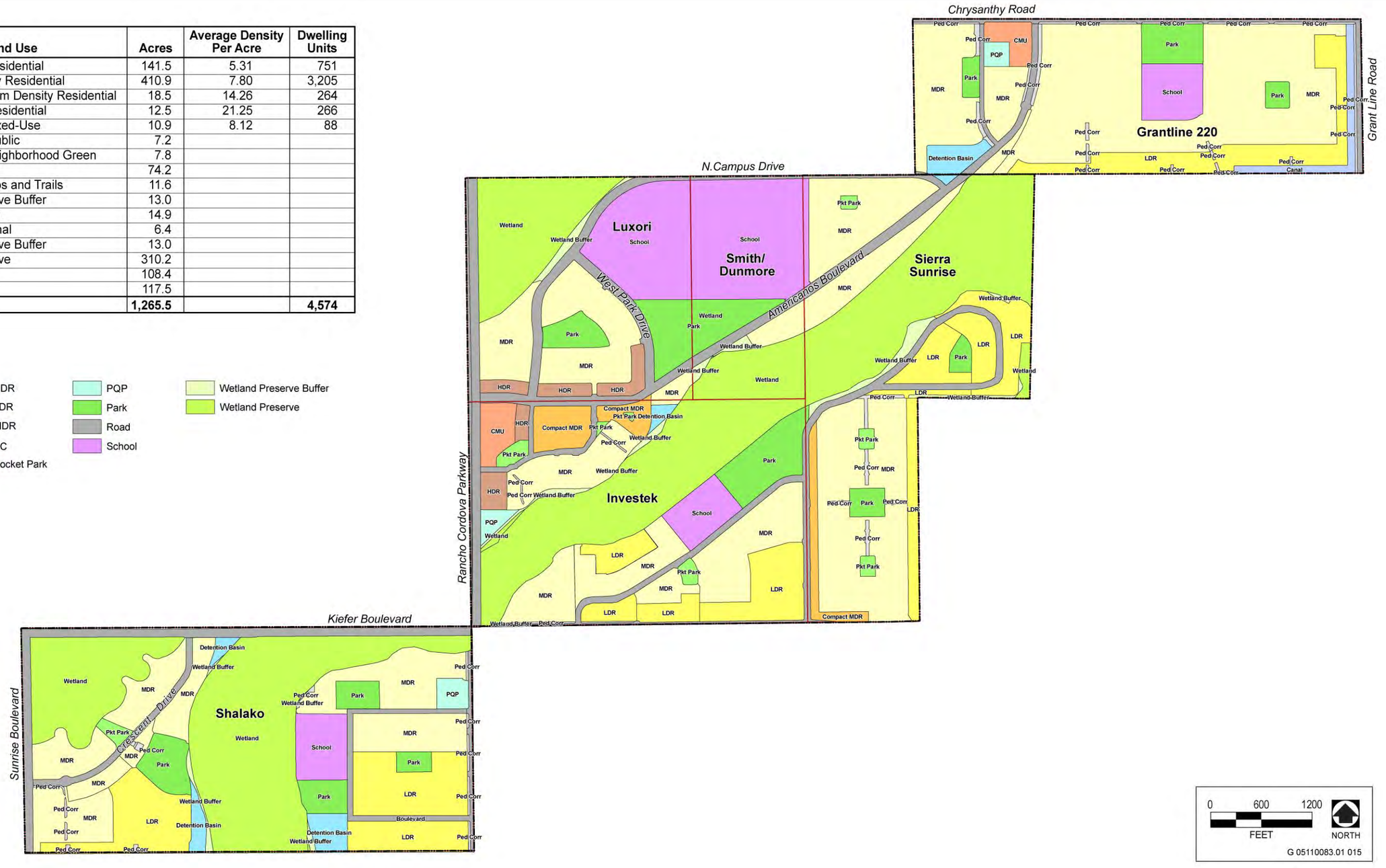
	Conceptual Strategy Alternative Acres	Proposed Project Alternative Acres
Local Town Center	0	59.4
Commercial Mixed Use	10.9	0
Village Commercial	0	22.9
Total	**10.9**	**82.3**

Source: MacKay & Somps 2012

Map Code	Land Use	Acres	Average Density Per Acre	Dwelling Units
LDR	Low Density Residential	141.5	5.31	751
MDR	Medium Density Residential	410.9	7.80	3,205
CMDR	Compact Medium Density Residential	18.5	14.26	264
HDR	High Density Residential	12.5	21.25	266
CMU	Commercial Mixed-Use	10.9	8.12	88
PQP	Public/Quasi-Public	7.2		
PP	Pocket Park/Neighborhood Green	7.8		
Park	Park	74.2		
PC	Parkway, Paseos and Trails	11.6		
WB	Wetland Preserve Buffer	13.0		
DB	Detention Basin	14.9		
Canal	Stormwater Canal	6.4		
WB	Wetland Preserve Buffer	13.0		
Wetland	Wetland Preserve	310.2		
School	School	108.4		
Roads	Roads	117.5		
	TOTAL	**1,265.5**		**4,574**

Legend

- Property Boundary
- CMDR
- CMU
- Stormwater Canal
- Detention Basin
- HDR
- LDR
- MDR
- PC
- Pocket Park
- PQP
- Park
- Road
- School
- Wetland Preserve Buffer
- Wetland Preserve



Source: MacKay & Somps 2010

Conceptual Strategy Alternative Land Use Plan

Exhibit 2-27

INFRASTRUCTURE ABBREVIATIONS

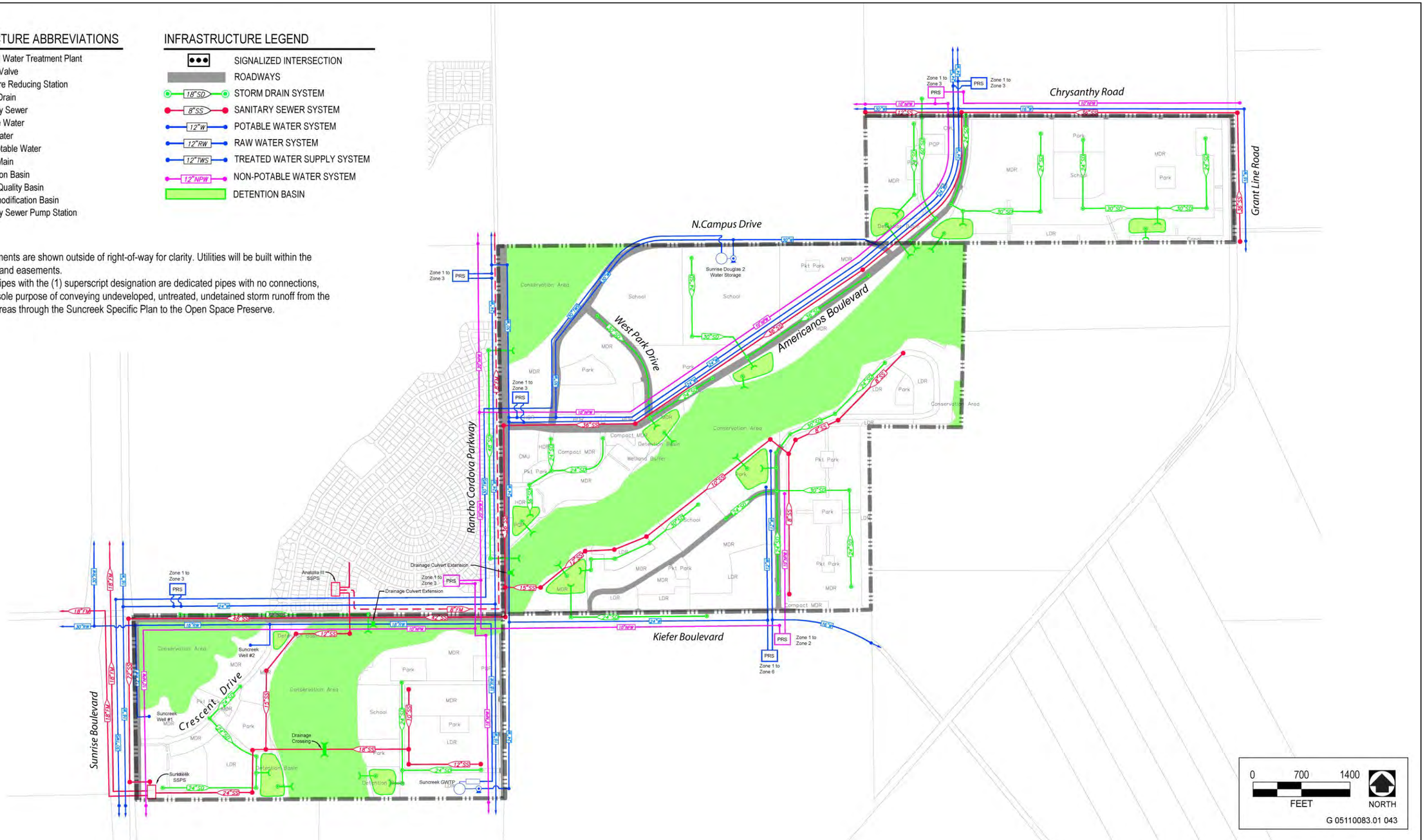
GWTP	Ground Water Treatment Plant
CV	Check Valve
PRS	Pressure Reducing Station
SD	Storm Drain
SS	Sanitary Sewer
W	Potable Water
RW	Raw Water
NPW	Non-Potable Water
FM	Force Main
DB	Detention Basin
WQB	Water Quality Basin
Hydro	Hydromodification Basin
SSPS	Sanitary Sewer Pump Station

INFRASTRUCTURE LEGEND

- SIGNALIZED INTERSECTION
- ROADWAYS
- 18"SD — STORM DRAIN SYSTEM
- 8"SS — SANITARY SEWER SYSTEM
- 12"W — POTABLE WATER SYSTEM
- 12"RW — RAW WATER SYSTEM
- 12"TWS — TREATED WATER SUPPLY SYSTEM
- 12"NPW — NON-POTABLE WATER SYSTEM
- DETENTION BASIN

NOTES:

1. Utilities alignments are shown outside of right-of-way for clarity. Utilities will be built within the right-of-ways and easements.
2. Storm drain pipes with the (1) superscript designation are dedicated pipes with no connections, sized for the sole purpose of conveying undeveloped, untreated, undetained storm runoff from the open space areas through the Suncreek Specific Plan to the Open Space Preserve.



Source: MacKay & Somps 2010

Conceptual Strategy Alternative Backbone Infrastructure **Exhibit 2-28**

2.7 INCREASED DEVELOPMENT ALTERNATIVE

The land use plan shown in this alternative was the original development proposed for the SunCreek SPA before the negotiations with the regulatory agencies as described above in Section 2.6, "Conceptual Strategy Alternative," which resulted in agreement by the project applicants to preserve additional on-site wetlands. This alternative would fill 32.86 acres of waters of the U.S., which is 8.69 acres more than would be filled under the Proposed Project Alternative. The wetland preserve within the SunCreek SPA would decrease to approximately 97 acres; therefore, under this alternative, approximately 106 fewer acres of biological habitat would be preserved, as compared to the Proposed Project Alternative. Although this alternative does not meet the CEQA requirements to reduce or avoid any of the project's environmental impacts, it was included in order to show the progression over time of the increased amount of on-site biological resources that have been preserved from the original land use plan to the current land use plan.

As shown in Exhibit 2-29, this alternative would entail a substantially different mix of land uses, at different locations within the SPA, as compared to the Proposed Project Alternative. Most of the SPA would consist of low-density residential housing, as compared to the mix of residential housing densities, schools, parks, public, and commercial land uses contemplated under the Proposed Project Alternative.

Exhibit 2-30 illustrates proposed backbone infrastructure improvements. The projected water demand for this alternative is approximately 3,478 afy, as compared to the 3,058 afy demand for the Proposed Project Alternative. This represents a 12.1% increase in the total annual water demand. The alignment of water pipelines and facilities, while slightly larger in size, would not change substantially from those required to serve the Proposed Project Alternative. The sewer system needed to serve this alternative would not differ substantially from that of the Proposed Project Alternative because the amount of sewer flows would be approximately the same. There would be minor variations in the location of the sewer system facilities to serve this alternative because of the difference in street alignments and the spatial distribution of the developable areas. The developed area of this alternative would be approximately 1,072 acres as compared to approximately 869 acres for the Proposed Project Alternative, which represents a 19% increase in developed area. Therefore, the amount of impervious surfaces would be larger, as would the amount of runoff. While the location of storm drainage and detention facilities required to serve this alternative would vary somewhat from the Proposed Project Alternative due to the difference in street alignments and the spatial distribution of the developable areas, the same, substantially larger, drainage/stormwater/water quality facilities would be constructed as under the Proposed Project Alternative.

As shown in Table 2-9, implementation of this alternative would result in approximately 276 more acres of residential housing, and approximately 701 more residential units that would be constructed as compared to the Proposed Project Alternative. However, most of the housing would be constructed as low-density (larger lot) residential under this alternative, whereas under the Proposed Project Alternative, most of the housing would be constructed as medium-density residential. As shown in Table 2-10, the Local Town Center would not be built under this alternative. Approximately 64 fewer acres of commercial development would be built as compared to the Proposed Project Alternative.

2.8 NO PROJECT/NO ACTION ALTERNATIVE

Under this alternative, the project would not be developed. The SPA would remain under the jurisdiction of the City. A Section 404 permit for wetland fill would not be required from USACE. Although this No Action/No Project Alternative (referred to elsewhere in this document as the "No Project Alternative") is evaluated herein, consistent with CEQA and NEPA requirements, it is an unlikely long-term alternative for the SPA because, according to the City's General Plan, the SPA is located in an area planned for urban development. Entitlements are actively being sought for development in the vicinity of the SPA (e.g., Sunrise Douglas Community Plan, Mather Field Redevelopment Project, Easton Planning Area, Rio del Oro Specific Plan, and the Anatolia, Arboretum, and The Ranch at Sunridge projects). Infrastructure planning is also occurring for the area, as part of the South County Water Authority's Water Treatment Plant, SASD Sewer Master Plan, SRCSD Interceptor System

Table 2-9
Summary Comparison of Residential Development under the Increased Development Alternative and the Proposed Project Alternative

Land Use Type	Increased Development Alternative			Proposed Project Alternative		
	Acres	du/ac[1]	Units[2]	Acres	du/ac[1]	Units[2]
Low Density Residential	609.8	5.31	3,238	169.4	5.31	900
Medium Density Residential	173.0	7.80	1,349	322.7	7.80	2,517
Compact Medium Density Residential	0	0	0	20.1	14.23	286
High Density Residential	31.4	21.25	667	43.6	22.80	994
Commercial Mixed Use	17.7	8.12	144	N/A	N/A	N/A
Total	**831.9**		**5,398**	**555.8**		**4,697**

Notes:
[1] du/ac = dwelling units per acre
[2] Numbers have been rounded
Sources: MacKay & Somps 2012

Table 2-10
Summary Comparison of Commercial Development under the Increased Development Alternative and the Proposed Project Alternative

	Increased Development Alternative Acres	Proposed Project Alternative Acres
Local Town Center	0	59.4
Commercial Mixed Use	17.7	0
Village Commercial	0	22.9
Total	**17.7**	**82.3**

Source: MacKay & Somps 2012

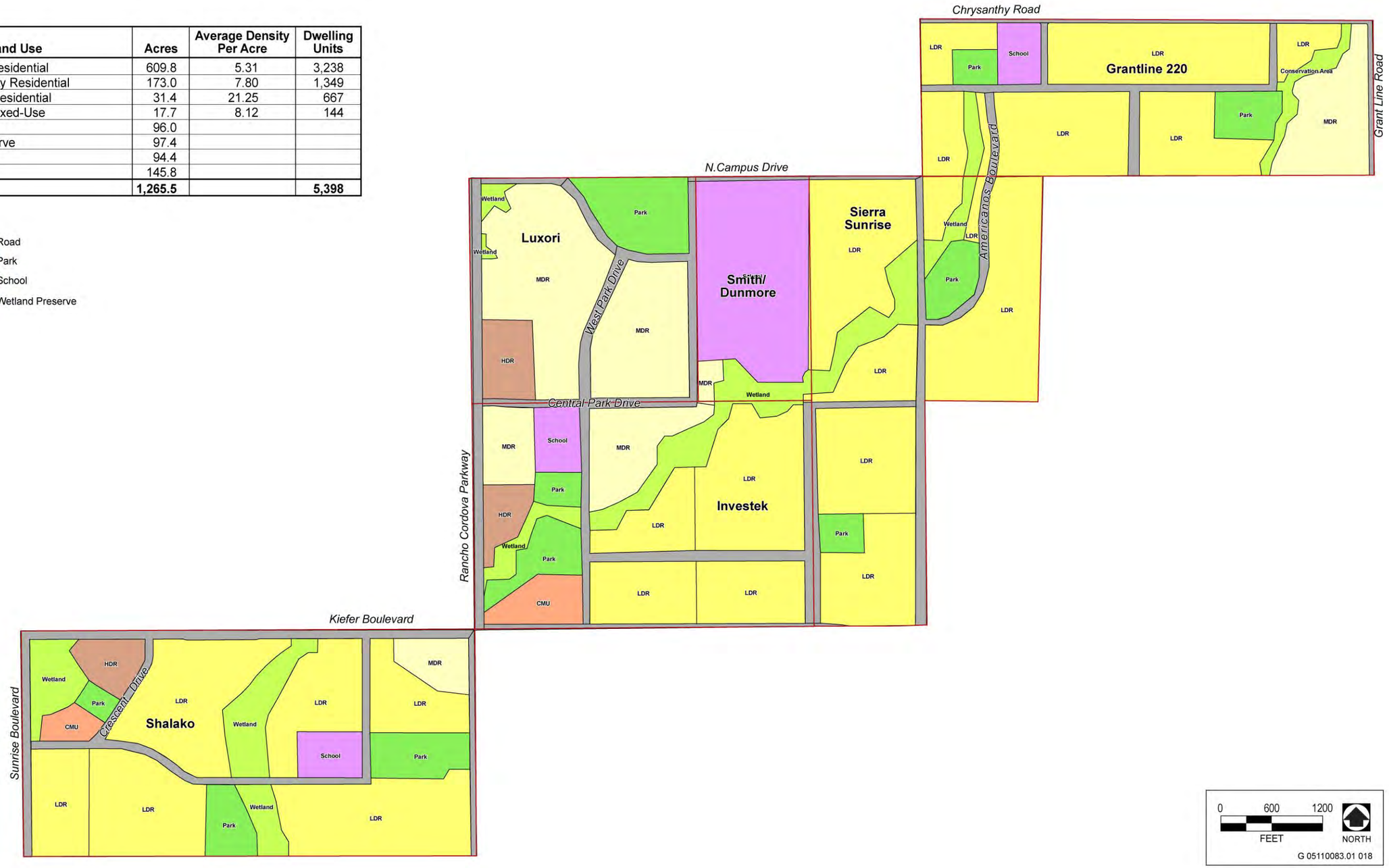
Master Plan, Alta-Sunrise Interchange, Zinfandel Drive Extension, and Douglas Road Extension. The regional economic base is expected to continue to expand as a result of these and other development projects in the region, and the associated growth in housing demand will increase the development pressure on the SunCreek SPA. The City General Plan indicates that the SPA is designated as a "Special Planning Area," within which a wide variety of land uses are permitted. The general plan includes a layout for the SPA with land uses, but it is specifically designated as "conceptual"; therefore it does not include acreages, densities, or dwelling units. Without this information, it would be speculative to predict the environmental impacts that would occur from development at the SPA other than the Proposed Project and alternatives already evaluated herein. Consistent with CEQA requirements, the No Project Alternative is evaluated in this DEIR/DEIS; however, for the reasons stated above, it is assumed to be a "no development" scenario.

Consistent with CEQA and NEPA requirements, this No Project/No Action Alternative is evaluated in this DEIR/DEIS. The No Action/No Project Alternative would not meet the project purpose, need, or objectives of the proposed SunCreek project as described in Chapter 1, "Introduction and Statement of Purpose and Need," because no development would occur.

Map Code	Land Use	Acres	Average Density Per Acre	Dwelling Units
LDR	Low Density Residential	609.8	5.31	3,238
MDR	Medium Density Residential	173.0	7.80	1,349
HDR	High Density Residential	31.4	21.25	667
CMU	Commercial Mixed-Use	17.7	8.12	144
Park	Park	96.0		
Wetland	Wetland Preserve	97.4		
School	School	94.4		
Roads	Roads	145.8		
	TOTAL	**1,265.5**		**5,398**

Legend

- Property Boundary
- CMU
- HDR
- LDR
- MDR
- Road
- Park
- School
- Wetland Preserve



Source: MacKay & Somps 2010

Increased Development Alternative Land Use Plan **Exhibit 2-29**

INFRASTRUCTURE ABBREVIATIONS

GWTP	Ground Water Treatment Plant
CV	Check Valve
PRS	Pressure Reducing Station
SD	Storm Drain
SS	Sanitary Sewer
W	Potable Water
RW	Raw Water
NPW	Non-Potable Water
FM	Force Main
DB	Detention Basin
WQB	Water Quality Basin
Hydro	Hydromodification Basin
SSPS	Sanitary Sewer Pump Station

INFRASTRUCTURE LEGEND

- SIGNALIZED INTERSECTION
- ROADWAYS
- 18"SD — STORM DRAIN SYSTEM
- 8"SS — SANITARY SEWER SYSTEM
- 12"W — POTABLE WATER SYSTEM
- 12"RW — RAW WATER SYSTEM
- 12"TWS — TREATED WATER SUPPLY SYSTEM
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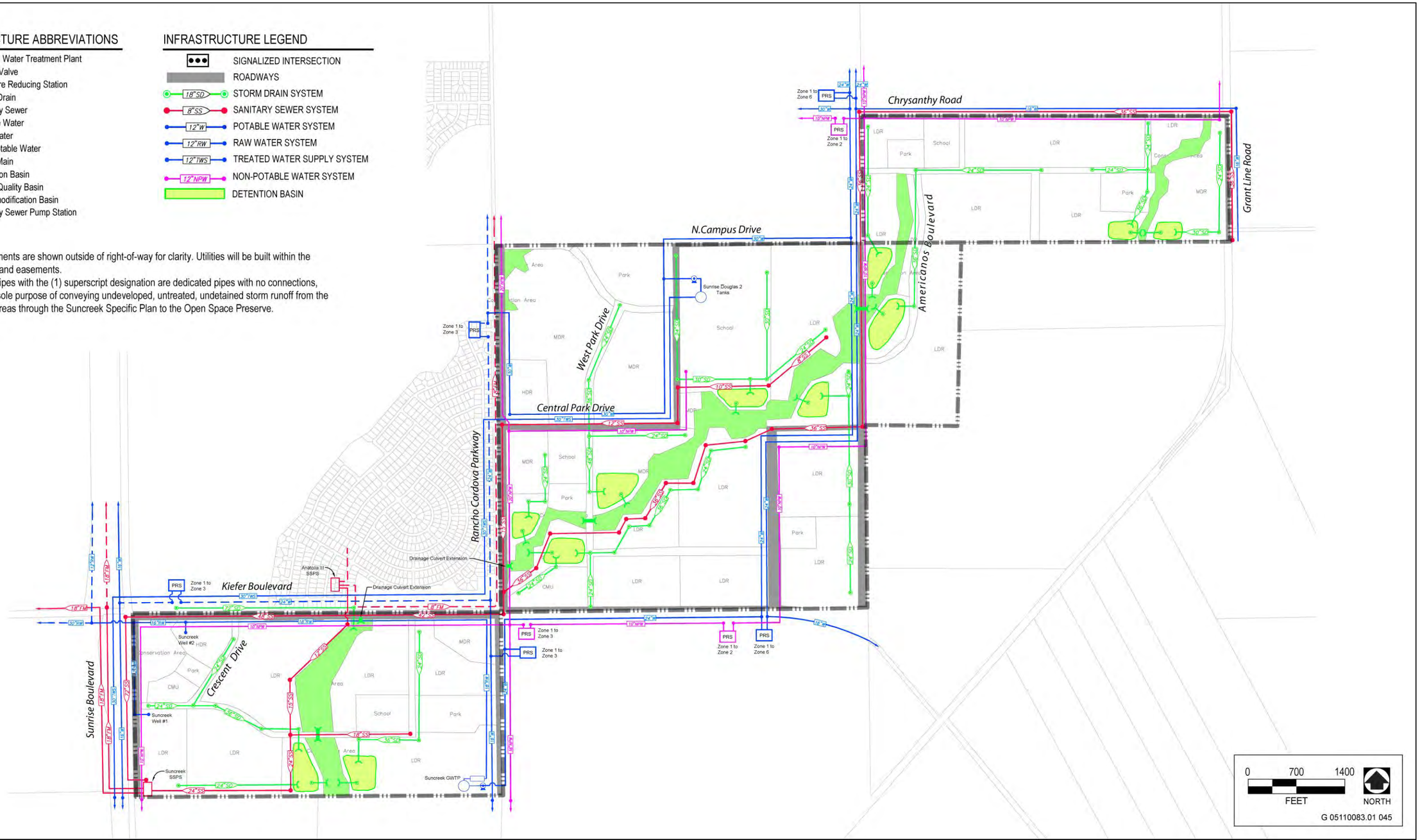
- DETENTION BASIN

NOTES:

1. Utilities alignments are shown outside of right-of-way for clarity. Utilities will be built within the right-of-ways and easements.
2. Storm drain pipes with the (1) superscript designation are dedicated pipes with no connections, sized for the sole purpose of conveying undeveloped, untreated, undetained storm runoff from the open space areas through the Suncreek Specific Plan to the Open Space Preserve.



Source: MacKay & Somps 2010

Increased Development Alternative Backbone Infrastructure **Exhibit 2-30**

2.9 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR FURTHER EVALUATION

Alternatives that were considered and eliminated from further consideration in this EIR/EIS for detailed review consist of alternatives that were considered as part of the Draft Section 404(b)(1) alternatives analysis (attached to this EIR/EIS in Appendix X). The Draft Section 404(b)(1) alternatives information contains additional on-site alternatives for each of the participating landowners, as well as alternatives to the proposed backbone infrastructure and off-site alternatives.

Under both NEPA and CEQA, the range of alternatives is governed by the rule of reason. The State CEQA Guidelines Section 15126.6 requires that "an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation." In relationship to NEPA alternatives, the CEQ suggests, "When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS. … What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case." (CEQ 1981)

This EIR/EIS evaluates four action alternatives (No USACE Permit, Biological Impact Minimization, Conceptual Strategy, and Increased Development) at a similar level of detail as the Proposed Project Alternative, each of which would entail different land uses and different amounts of on-site preservation and avoidance of wetland fill. Therefore, since this EIR/EIS considers and evaluates a reasonable range of potentially feasible alternatives, the alternatives listed below from the Draft Section 404(b)(1) analysis were not carried forward for further evaluation because all of the on-site alternatives consist of minor variations of the existing five action alternatives that would all entail a redesign of proposed land uses and relocation of proposed infrastructure, which are already covered by the spectrum of alternatives carried forward for detailed analysis. The off-site alternatives are infeasible because they consist of too many separate parcels of land (74 and 351, respectively) that could not all be acquired.

2.9.1 SIERRA SUNRISE ALTERNATIVES

The alternatives evaluated on the Sierra Sunrise parcel of the SPA are listed below.

- **Alternative 1**: avoids a portion of a larger avoidance area that connects to the proposed project preserve on the Jaeger Ranch property. Wetland fill avoided: 1.092 acres.
- **Alternative 2:** avoids a small vernal pool/swale by extending the open space area in that portion of SPA that would be provided as a buffer to Laguna. Wetland fill avoided: 0.181 acres.
- **Alternative 3:** avoids a swale on the southern portion of the adjacent Smith Property and extends northward, with tributary swales branching out to the west and east. Wetland fill avoided: 3.7 acres.

2.9.2 SMITH PROPERTY ALTERNATIVES

The alternatives evaluated on the Smith parcel of the SPA are listed below.

- **Alternative 1a:** extends the area evaluated in the backbone infrastructure northward to allow connectivity to Alternatives 1b and 1c. Wetland fill avoided: 0.073 acres.

- **Alternatives 1a, 1b, and 1c:** avoids an additional area within an existing preserve area that would connect to a potential additional preserve in the southern portion of the Smith property. Wetland fill avoided: 1.395 acres.

- **Alternatives 1a and 1b:** avoids the system and associated vernal pools that branch off in the western portion of the overall potential additional avoidance area. Wetland fill avoided: 0.724 acres.

- **Alternatives 1a and 1c:** additional avoidance of the system and associated vernal pools that branch off in the eastern portion of the overall potential additional avoidance area. Wetland fill avoided: 0.598 acres.

2.9.3 SHALAKO PROPERTY ALTERNATIVES

The alternatives evaluated on the Shalako parcel of the SPA are listed below.

- **Alternative 1:** avoids additional wetlands located in the northwestern corner of the site south of the existing preserve. Wetland fill avoided: 0.066 acres.

- **Alternative 2:** avoids additional wetlands located in the center of the site and extends the proposed preserve to the east. Wetland fill avoided: 0.207 acres.

2.9.4 JAEGER RANCH (INVESTEK) PROPERTY ALTERNATIVES

The alternatives evaluated on the Jaeger Ranch (Investek) parcel of the SPA are listed below.

- **Alternative 1:** avoids additional wetlands located in the northwestern corner of Jaeger Ranch at the corner of Rancho Cordova Parkway and a major east-west thoroughfare. Wetland fill avoided: 1.236 acres.

- **Alternative 2:** avoids additional wetlands located in the northeastern portion of Jaeger Ranch and establishes an additional 6.597 acres of wetland preserve and open space. Wetland fill avoided: 0.092 acres.

2.9.5 BACKBONE INFRASTRUCTURE ALTERNATIVES

The alternatives evaluated to the backbone infrastructure of the SPA are listed below.

- **Alternative B1**: avoids and preserves a vernal pool located south of the currently proposed preserve in the northwest corner of the Shalako property that is located within a proposed well site. Wetland fill avoided: 0.087 acres.

- **Alternative B2**: avoids additional wetlands within the proposed preserve located in the south-central portion of the Shalako Property by relocating/realigning the proposed sewer line. Wetland fill avoided: 0.235 acres.

- **Alternative B3:** avoids additional wetlands by re-aligning and/or redesigning portions of several roads to avoid impacts to the alternative preserve near Rancho Cordova Parkway. Wetland fill avoided: 0.235 acres.

- **Alternative B4:** avoids additional wetlands in the center of the SPA on the community park site by relocating a joint use hydromodification/water quality/detention basin. Wetland fill avoided: 0.457 acres.

- **Alternative B5:** avoids additional wetlands by re-aligning North Campus Drive. Wetland fill avoided: 0.231 acres.

- **Alternative B6:** avoids additional wetlands by re-aligning Americanos Boulevard and a sewer line, storm drain piping, and a trail along the western boundary of this alternative. Wetland fill avoided: 0.056 acres.

- **Alternative B7:** avoids additional wetlands by re-aligning a proposed arterial roadway and relocating two hydro-modification/water quality/detention basins. Wetland fill avoided: 0.174 acres.

- **Alternative B8:** avoids additional wetlands by re-aligning and/or redesigning Chrysanthy Road and an arterial road that connects to Chrysanthy Road. Wetland fill avoided: 0.182 acres.

2.9.6 OFF-SITE ALTERNATIVES

The two off-site alternatives that include available land are listed below.

- **Alternative 1:** consists of a 1,491-acre area, located west of Excelsior Road, east of Bradshaw Road, north of Elder Creek Road, and south of Kiefer Boulevard. The site is comprised of 74 parcels and consists of developed and disturbed areas. Commercial and industrial uses include two cemeteries, a sand and gravel mining operation, and other smaller businesses. The area also includes rural residential developments, agricultural fields, and cleared and graded area. A total of approximately 39.71 acres of wetlands and other waters may occur within the alternative's boundaries. Development on this alternative site would likely result in more impacts to waters of the U.S. than the Proposed Project Alternative.

- **Alternative Site 2:** consists of a 1,692-acre area comprised of approximately 351 parcels, and is located west of Bradshaw Road, east of Hedge Avenue, north of Elder Creek Road, and south of Kiefer Boulevard. The site consists of developed and disturbed areas. Commercial and industrial developments within the area include sand and gravel operations, a wholesale florist enterprise, construction building services, and other smaller commercial businesses. The area also includes the Cordova Golf Course, agricultural land, and rural residential areas. A total of approximately 19.17 acres of wetlands and other waters may occur within the parcel boundaries. In addition, an established conservation area is located in the southwestern quadrant of the alternative area. Constructing the project on this site would likely result in similar impacts to waters of the U.S. as compared to the Proposed Project Alternative.

2.10 ENVIRONMENTALLY SUPERIOR ALTERNATIVE – CEQA ONLY

The State CEQA Guidelines CCR Section 15126.6(e)(2) requires identification of an environmentally superior alternative from among the Proposed Project Alternative and the other alternatives evaluated. Federal NEPA regulations also recommend that an environmentally preferred alternative be identified; however, under NEPA, that alternative does not need to be identified until the final record of decision is issued. Therefore, the discussion in this section of the environmentally superior alternative is intended to satisfy only the state (CEQA) requirements.

The No Project Alternative would have the fewest environmental impacts, because the project would not be built. If the No Project Alternative is environmentally superior, State CEQA Guidelines CCR Section 15126.6(e)(2) requires identification of the "environmentally superior alternative" other than the No Project Alternative from among the proposed project and the alternatives evaluated.

Table 2-11 provides a comparison of some of the project characteristics between the alternatives and Table 2-12 presents a comparison of the environmental impacts among all five "action" alternatives (i.e., Proposed Project, No USACE Permit, Biological Impact Minimization, Conceptual Strategy, and Increased Development). Table 2-12 does not show all of the environmental impacts evaluated in this DEIR/DEIS; rather, Table 2-12 presents those topic areas where implementation of the alternatives would result in different levels of significance as compared to the Proposed Project Alternatives. For a complete listing of all of the environmental impacts, mitigation measures, and significance conclusions for all alternatives (including No Project) evaluated in this DEIR/DEIS, see Table ES-1 in the "Executive Summary."

Table 2-11
Comparative Summary of Characteristics of the Proposed Project and the Other Four Action Alternatives[1]

Project Characteristics	Alternative				
	Proposed Project	No USACE Permit	Biological Impact Minimization	Conceptual Strategy	Increased Development
Population (number of residents)	12,589	11,685	11,349	12,260	14,469
Residential Development					
Total Acreage	556	464	576	594	832
Total Units	4,697	4,360	4,235	4,574	5,399
Commercial Development (approximate acreage)	82.3	7	0	11	18
Employment (number of jobs)	2,854	299	196	480	609
Jurisdictional Waters of the U.S. and Wetlands Filled (approximate acreage)[2]	24	0	15	23	33
On-Site Wetland Preserve (approximate acreage)	204	607	411	310	97
Sufficiency of Parkland (approximate acreage)	+24	-26	+21	+13	+24
Number of Students Generated and Sufficiency of On-Site Schools	3,062 (Sufficient)	1,867 (1,357 Shortfall)	2,931 (Sufficient)	3,119 (Sufficient)	3,593 (Sufficient)
Water Consumption (acre-feet per year at full buildout)	3,058	2,033	2,672	2,952	3,478

Notes: "+" = surplus; "-" = deficit

[1] Acreages have been rounded to the nearest whole number.

[2] Acreage of waters of the U.S. and other wetlands differs among the alternatives because each alternative has a different backbone infrastructure footprint outside of the SPA boundary.

Source: Data compiled by AECOM in 2012

Table 2-12
Comparison of Impacts of the Action Alternatives[1]

Environmental Issue	Alternative				
	Proposed Project	No USACE Permit	Biological Impact Minimization	Conceptual Strategy	Increased Development
Air Quality					
3.2-1	S	S (Lesser)	S (Similar)	S (Similar)	S (Greater)
Biological Resources					
3.3-1	S Direct Impact	No Direct Impact (Lesser)	S Direct Impact (Lesser)	S Direct Impact (Similar)	S Direct Impact (Greater)
3.3-2	S	No Impact (Lesser)	S (Similar)	S (Similar)	S (Similar)
3.3-3	S	S (Lesser)	S (Lesser)	S (Similar)	S (Greater)
Climate Change					
3.4-1	S	S (Lesser)	S (Lesser)	S (Similar)	S (Greater)
Hydrology and Water Quality					
3.9-1	S	S (Lesser)	S (Lesser)	S (Lesser)	S (Greater)
3.9-2	S	S (Lesser)	S (Lesser)	S (Lesser)	S (Greater)
Noise					
3.11-3	S	S (Lesser)	S (Lesser)	S (Lesser)	S (Greater)
Cumulative Traffic Noise	LTS	LTS (Greater)	LTS (Greater)	LTS (Greater)	S (Greater)
Parks and Recreation					
3.12-1	LTS	S (Greater)	LTS (Similar)	LTS (Similar)	LTS (Similar)
Population and Housing					
3.13-2	LTS	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Greater)
Public Services					
3.14-2	S	S (Similar)	S (Similar)	S (Similar)	S (Greater)
3.14-6	LTS	LTS (Greater)	LTS (Similar)	LTS (Similar)	LTS (Similar)

Table 2-12
Comparison of Impacts of the Action Alternatives[1]

Environmental Issue	Alternative				
	Proposed Project	No USACE Permit	Biological Impact Minimization	Conceptual Strategy	Increased Development
Traffic and Transportation					
3.15-1f	S	LTS (Lesser)	S (Similar)	S (Similar)	S (Similar)
3.15-1i	S	LTS (Lesser)	LTS (Lesser)	S (Similar)	S (Similar)
3.15-1l	S	LTS (Lesser)	LTS (Lesser)	S (Similar)	S (Similar)
3.15-1p	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.15-1r	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	S (Similar)
3.15-1x	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.15-5e	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.15-5x	S	S (Similar)	S (Similar)	LTS (Lesser)	S (Similar)
3.15-5ee	S	S (Similar)	LTS (Lesser)	S (Similar)	S (Similar)
3.15-5ff	S	S (Similar)	LTS (Lesser)	LTS (Lesser)	S (Similar)
3.15-5gg	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.15-5hh	S	LTS (Lesser)	S (Similar)	S (Similar)	S (Similar)
3.15-5ii	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.15-5jj	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.15-5nn	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	S (Similar)
3.15-5oo	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.15-5pp	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	S (Similar)
3.15-5qq	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.15-5rr	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	S (Similar)
3.15-5uu	S	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	S (Similar)
3.15-5xx	S	S (Similar)	S (Similar)	LTS (Lesser)	S (Similar)
Utilities and Service Systems					
3.16-4	LTS	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)
3.16-5	LTS	LTS (Lesser)	LTS (Lesser)	LTS (Lesser)	LTS (Similar)

Table 2-12
Comparison of Impacts of the Action Alternatives[1]

Environmental Issue	Alternative				
	Proposed Project	No USACE Permit	Biological Impact Minimization	Conceptual Strategy	Increased Development
Water Supply					
3.17-1	LTS	LTS (Similar)	LTS (Similar)	LTS (Similar)	LTS (Greater)
Total Number of Each Significance Conclusion[1]	5 LTS 30 S	2 No Impact 21 LTS 12 S	22 LTS 13 S	21 LTS 14 S	11 LTS 24 S
Total Number of Each Level of Impact[1]	N/A	26 Lesser 6 Similar 3 Greater	24 Lesser 10 Similar 1 Greater	20 Lesser 13 Similar 1 Greater	7 Lesser 17 Similar 11 Greater

Notes: LTS = Less-than-Significant Impact; S = Significant Impact

[1] This table presents a comparison of only those topic areas where at least one environmental impact of the Proposed Project Alternative would be avoided or substantially lessened by implementation of one of the other action alternatives, or where one of the other alternatives would have a greater impact as compared to the Proposed Project Alternative. A complete listing of all the environmental impacts of all alternatives is contained in Table ES-1 in the "Executive Summary."

Source: Data compiled by AECOM in 2012.

The No USACE Permit Alternative would be the environmentally superior alternative after the No Project Alternative. The No USACE Permit Alternative would result in least amount of development, the largest on-site wetland preserve, the fewest significant environmental impacts and lowest overall level of impact, and would not result in fill of any waters of the U.S. or other wetlands, including waters of the state.

It should also be noted that while Table 2-12 indicates that the Proposed Project Alternative would have a larger total number of significant impacts as compared to the Increased Development Alternative, that occurs solely because the Proposed Project Alternative includes an approximately 32-acre commercial center, and the addition of the commercial center results in several additional significant traffic impacts at intersections and roadways in the project vicinity (i.e., a large commercial center results in changes in traffic patterns). However, in all other topics areas analyzed in the DEIR/DEIS, the Increased Development Alternative has a greater level of impact as compared to the Proposed Project Alternative. This is particularly true in the case of biological resources, where the Increased Development Alternative would include only a 97-acre on-site wetland preserve and would fill approximately 33 acres of waters of the U.S. and other wetlands while the Proposed Project Alternative would include an approximately 204-acre wetland preserve and would fill approximately 24 acres of waters of the U.S. and other wetlands. Furthermore, as compared to the Proposed Project Alternative, the Increased Development Alternative would also result in an increased generation of construction-related emissions of criteria air pollutants, increased generation of GHGs, increased level of hydrology and water quality effects, increased generation of noise, increased population, and a substantially increased need for fire protection services (because an on-site fire station would not be constructed).