Attachment 8 (P07-060)
Mitigated Negative Declaration
for Natomas Crossing Area #3

NATOMAS CROSSING

INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

April 2002

Prepared for:

City of Sacramento
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INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION

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CHAPTER 1.0

INTRODUCTION

SECTION 1.0

INTRODUCTION

This Initial Study has been required and prepared by the City's Planning and Building Department, pursuant to Title 14, Section 15070 of the California Code of Regulations; the Sacramento Local Environmental Regulations (Resolution 91-892) adopted by the City of Sacramento, and the Sacramento City Code, Title 63.

1.1 ORGANIZATION OF THE INITIAL STUDY

This Initial Study is organized into the following sections:

Section 2.0 - Background: Provides summary background information about the project name, location, sponsor, and when the Initial Study was completed.

Section 3.0 - Project Description: Includes a detailed description of the proposed project.

Section 4.0 - Environmental Checklist and Discussion: Contains the Environmental Checklist form together with a discussion of the environmental issues. Mitigation measures, if necessary, are noted, following each impact discussion.

Section 5.0 - Environmental Factors Potentially Affected: Identifies which environmental factors were determined to have either a "Potentially Significant Impact" or "Potentially Significant Impacts Unless Mitigated", as indicated in the Environmental Checklist.

Section 6.0 - Determination: Identifies the determination of whether impacts associated with development of the Proposed project are significant, and what, if any, additional environmental documentation may be required. A list of mitigation measures required for the proposed project is also included.

Section 7.0 - List of Preparers

Section 8.0 – Bibliography

CHAPTER 2.0

BACKGROUND

SECTION 2.0

BACKGROUND

File Number, Project Name: P01-028, Natomas Crossing – Area 3

Community Plan Area/Project Location:

The project site is located north of the Central City within the North Natomas Community Plan area. The project site is bounded by Del Paso Road on the north, East Commerce Parkway on the east, San Juan Road on the south and Interstate 5 on the west. A portion of the project site, toward the southern end, extends east of East Commerce Parkway.

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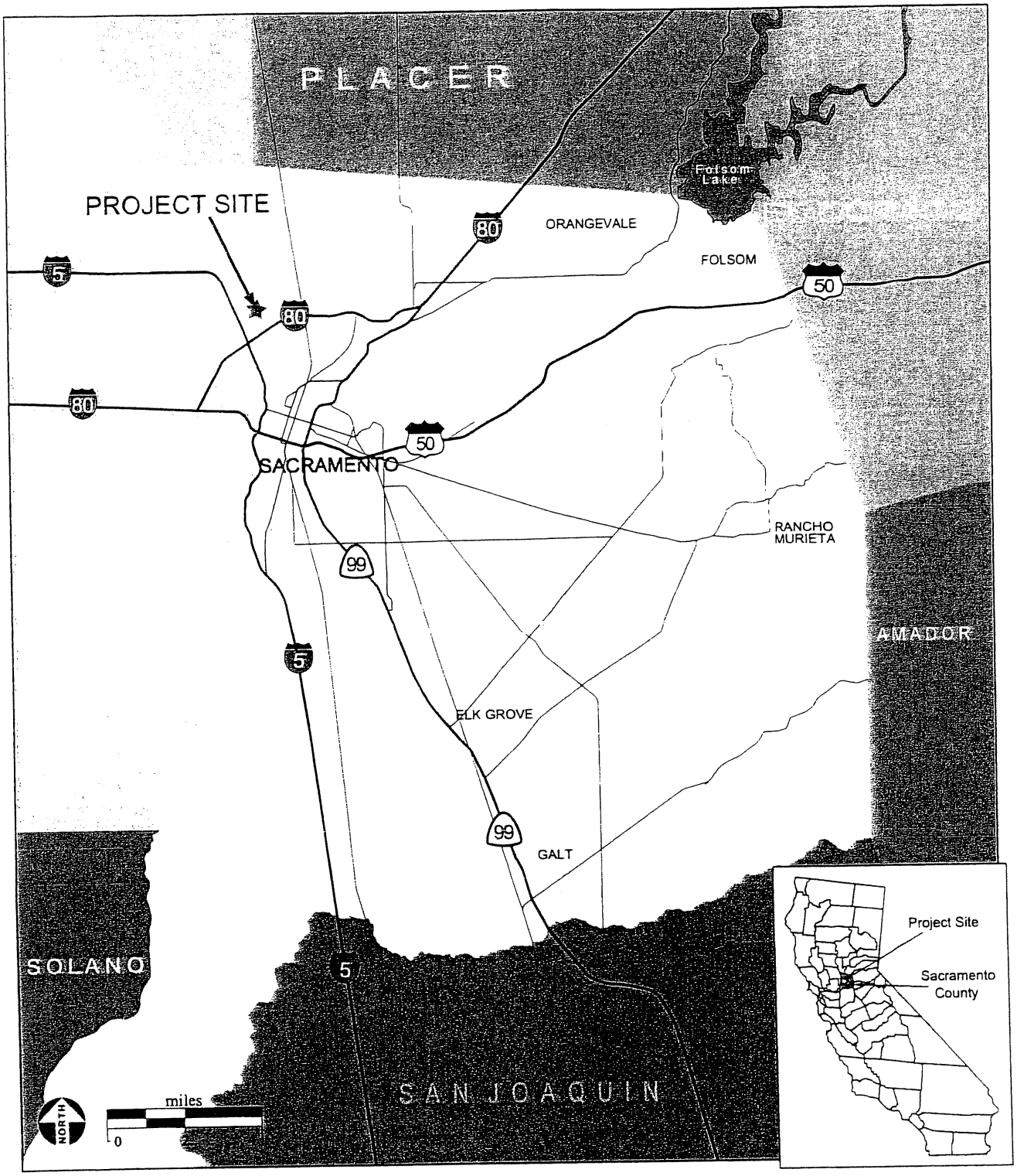
Date Initial Study Completed: April 2002

2.1 INTRODUCTION

The City of Sacramento is the lead agency for the preparation of this Mitigated Negative Declaration for the 'Natomas Crossing' project (Proposed Project) located on 298.5 ± gross acres within the North Natomas Community Plan (NNCP) area (**Figures 2-1and 2-2**). The project applicant is seeking several entitlements for the project site that will result in a reconfiguration of the existing land use designations and zoning. In addition, the current application will result in the construction of a 152,000± square foot regional headquarters for Catholic Healthcare West. The City has determined that a Mitigated Negative Declaration is the appropriate environmental document for the Proposed Project.

2.2 OTHER PROJECT STUDIES/REPORTS/REFERENCES

The following documents were utilized in the preparation of this Mitigated Negative Declaration. These documents are available for review during normal business hours at the City Planning and Building Department, 1231 I Street, Room 300, Sacramento, CA 95814.

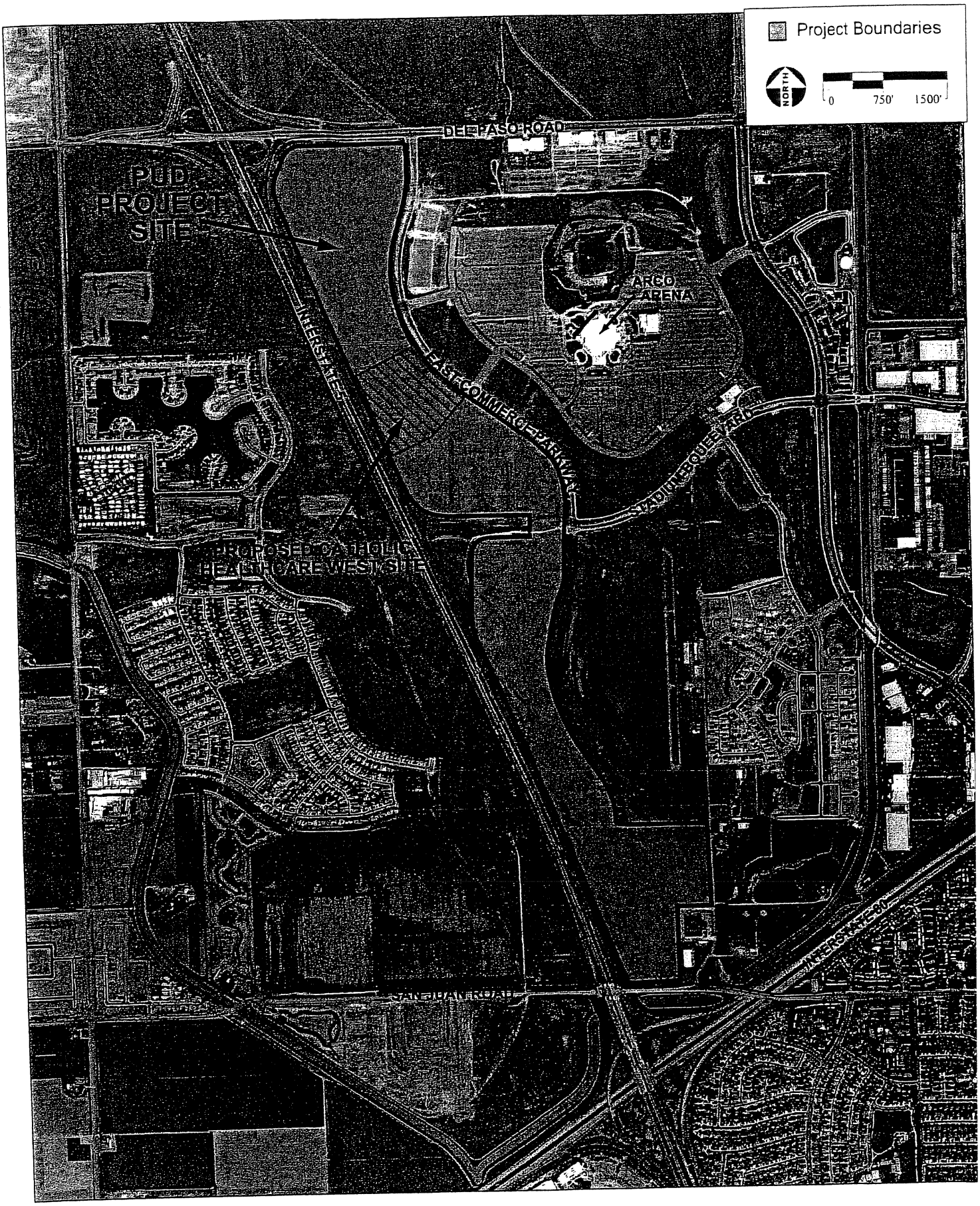


SOURCE: AES, 2001

Natomas Crossing / 202502

Figure 2-1

Regional Location Map



SOURCE: City of Sacramento, 2001 ; AES, 2002

Natomas Crossing / 202502

Figure 2-

CHAPTER 3.0

PROJECT DESCRIPTION

SECTION 3.0

PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The project site is located north of the Central City within the North Natomas Community Plan area on 298.5 ± gross acres (**Figure 2-1**). The project site is bound by Del Paso Road on the north, East Commerce Parkway on the east, San Juan Road on the south and Interstate 5 on the west (**Figure 2-2**). A portion of the project site, toward the southern end, extends east of East Commerce Parkway.

3.2 PROJECT ENTITLEMENTS

The project site is currently entitled for urban land uses. The currently approved entitlements include approval of employment center, commercial, residential, and open space. The City of Sacramento has previously approved entitlements for the project in 1997 including the Natomas Crossing PUD Guidelines, Tentative Map, Rezone and Development Agreement. Current entitlements are being sought to make modifications to the configuration of the Community Commercial and Highway Commercial uses designated for the project.

The project applicant is seeking several entitlements for the project site that will result in a reconfiguration of the existing land use designations and zoning. In addition, the current application includes a Special Permit that will result in the construction/operation of a 152,000± square foot office building for Catholic Healthcare West. The total list of entitlements for the project include (1) Community Plan Amendment, (2) Rezone, (3) PUD Design Guideline Amendment, (4) PUD Schematic Plan, (5) Tentative Master Parcel Map, (6) Tentative Subdivision Map, (7) Special Permit, (8) Special Permit to exceed maximum parking allowance, and (9) lot line adjustment/merger. Please see **Appendix A** for the details regarding the proposed entitlements. Approval of the above entitlements would allow the actual construction/operation of a 152,000± square foot office building. The remainder of the site development would be allowed only after future Special Permit entitlements are applied for, and approved by the City.

3.3 PROJECT CHARACTERISTICS

NATOMAS CROSSING PUD

The project applicant is seeking several entitlements for the project site that will result in a reconfiguration of the existing land use designations and zoning. The applicant has submitted the application in order to refine the land uses of the previously approved Natomas Crossing PUD

(P96-084). The land uses proposed for the project site include a mix of employment center, commercial, residential, and agricultural/open space. **Table 3-1** provides a comparison of existing and proposed zoning areas for the project site. **Table 3-2** provides a comparison of existing and proposed community plan designation areas. Specific land use areas identified in **Table 3-1** include areas of major roadways; in **Table 3-2**, major roadway areas have been subtracted from other land use areas, thus resulting in lower designated acreage figures.

Table 3-1
Existing and Proposed Zoning Areas

Designation	Land Use	Existing	Proposed	Difference
HC-PUD	Highway Commercial	25.0	24.0	-1.0
C-1-PUD	Limited Commercial	9.8	11.0	1.2
EC-30-PUD	Employment Center: 30 employees per net acre	9.3	8.9	-0.4
EC-40-PUD	Employment Center: 40 employees per net acre	68.1	53.1	-15.0
EC-50-PUD	Employment Center: 50 employees per net acre	156.7	140.8	-15.9
R-2B-PUD	Multi-Family: max. 21 du[1] per acre	12.1	12.1	0.0
AOS-PUD	Agriculture - Open Space	17.5	38.1	20.6
TC-PUD	Transportation Corridor: Additional I-5 ROW	0.0	10.5	10.5
	Total	**298.5**	**298.5**	

NOTE: [1] Dwelling Unit
SOURCE: City of Sacramento, 2002; AES 2002

Table 3-2
Existing and Proposed Community Plan Designation Areas

Designation	Land Use	Existing	Proposed	Difference
HC	Highway Commercial	20.5	20.7	0.2
NCC	Neighborhood Convenience Commercial	6.9	8.5	1.6
EC-30	Employment Center: 30 employees per net acre	1.5	6.9	5.4
EC-40	Employment Center: 40 employees per net acre	80.5	47.2	-33.3
EC-50	Employment Center: 50 employees per net acre	104.3	130.0	25.7
LD	Low Density Residential: 7 du/na	1.1	0.0	-1.1
MD	Medium Density Residential: 12 du/na	14.7	11.2	-3.5
HD	High Density Residential: 22 du/na	1.0	0.0	-1.0
P-OS	Open Space	40.9	36.5	-4.4
TC	Additional I-5 R.O.W.	0.0	9.8	9.8
	Major Roadways (Del Paso Rd, E. Commerce Parkway, Arena Boulevard, San Juan Rd, Roads 'A' + 'F')	27.1	26.8	-0.3
	Total	**298.5**	**298.5**	

NOTES: 1. Existing and proposed community plan designation areas are gross/net and exclude major roadways.
2. The existing community plan designations and configurations shown hereon were interpreted from the NNCP. All community plan areas are based on interpretation and should be considered approximate.
SOURCE: Wood Rodgers Inc., 2002; AES 2002

The majority of the project site (184.1 acres) will remain designated as Employment Center – PUD. The Proposed Project will also include a total of 29.4 acres of Limited and Highway Commercial along Del Paso Road, East Commerce Parkway, and Arena Boulevard. Additional acreage allocation consists of: 11.2 acres of multi-family residential east of Commerce Way on either side of Road "J"; 36.5 acres of Open Space that will provide space for a 100 foot wide

buffer along Interstate 5 and a detention basin adjacent to San Juan Road; and 9.8 acres of transportation corridor provided for the eventual widening of Interstate 5.

Figures 3-1, 3-2, 3-3 and **3-4** shows the Tentative Subdivision Map for the Proposed Project. The project site is divided into 74 lots (within 4 quadrants - A, B, C, D) that will be developed with various land uses. The breakdown of the uses proposed for the 74 lots is presented in **Appendix A**.

A 100-foot freeway buffer has been incorporated into the site plan along the project site's western border with Interstate 5, as required by the NNCP. Additional space has been provided for the future Interstate 5 right-of-way widening along the entire length of the western side of the project site, as well as the future interchange at Arena Boulevard.

Development of the project site will require the abandonment of two SMUD electrical and telephone easements that currently cross quadrant B.

ROADWAYS

Vehicular access to the lots will be provided from streets and cul-de-sacs extending from East Commerce Parkway (Streets "A – F"), directly from Commerce Parkway, Del Paso Road, Arena Boulevard and Road "J". Two roads – designated as Road "A" and Road "F" – will also provide access. The site plan has been designed to allow for these two roads to serve as Interstate 5 overcrossings in the future.

Streets "A-G" consist of streets that will extend west from Commerce Parkway. Streets "A-G" will have a 70-foot right-of-way with a central 10-foot turning lane, and a 12-foot travel lane, a 5-foot bike lane, a 7.5-foot planting strip, and a 5.5-foot sidewalk in each direction. Roads "A" and "F" will cross the project site in an east-west direction from East Commerce Parkway to cross Interstate 5. Roads "A" and "F" will have a 100 foot right-of-way with a central 14 foot planted median/turning lane, and a 11 foot travel lane, a 13 foot travel lane, a 6-foot bike lane, a 8-foot planting strip, and a 5-foot sidewalk in each direction. Road "J" will extend east from Commerce Parkway, opposite of "G" Street, to connect to future roadways. Road "J" will have a 50 right-of-way with a 10-foot travel lane, an 8-foot parking lane, and a 5-foot side walk in each direction.

The section of East Commerce Parkway north of Arena Boulevard, which currently exists, has a 128-foot right-of-way. South of Arena Boulevard East Commerce Parkway will extend to San Juan Road and will have a 136-foot right-of-way with a 13-foot planted median/turning lane, two11-foot travel lanes, a 13-foot travel lane, a 6-foot bike lane, an 8-foot planting strip, and a 6-foot sidewalk in each direction. Arena Boulevard will be extended west across the project site to connect to Interstate 5. Arena Boulevard in this section will have a 152-foot right-of-way with a central planted median, a combined 54.5 feet of travel lanes, and a 6-foot sidewalk in each direction. Construction of the Arena Boulevard interchange is expected to begin in late 2002. San Juan Road will have a 70-foot right-of-way with a central 10-foot turning lane, and a 12-foot travel lane, a 5-foot bike lane, a 7.5-foot parking lane, and a 5.5-foot sidewalk in each direction.

SITE DRAINAGE

The project site will drain into Detention Basin 6-B to be located at the southern end of the project site. The site plan includes an 8.9-acre lot reserved for the detention basin. Drainage from the project site will be directed to a canal located within the 100-foot freeway buffer along the western border of the project site and will be detained in the basin before being released to the existing East Drain.

Development of Detention Basin 6-B, which is proposed by the City of Sacramento Department of Utilities, is currently in the planning and approval stage. The City of Sacramento is the lead agency for the preparation of the Initial Study for the North Natomas Detention Basin 6-B Project. The Initial Study also includes analysis of the drainage channel adjacent that will be developed adjacent to I-5 and the utility access easement an outfall pipeline components. Construction of Detention Basin 6B is expected to begin by mid-year 2002, subject to City approval.

PEDESTRIAN CIRCULATION

Pedestrian circulation will be provided for by sidewalks along East Commerce Parkway, Streets "A-G", and Roads "A" and "F" (**Figure 3-5**). A perimeter connector/walking trail will be extend from Del Paso Road on the north end to East Commerce Parkway on the south end. The connector/trail will run along the entire length of the western border of the project site with breaks at Road "A" and Arena Boulevard. Additional pedestrian circulation/access routes will be provided on-site, including three promenades located between Streets "A" and "B", "C" and "D", and "E" and "F".

SPECIAL PERMIT – CATHOLIC HEALTHCARE WEST

The applicant seeks all necessary entitlements that will allow for the construction of a three story, 152,000± square foot office building on lot 32 of Quadrant B to serve as the regional headquarters' office for Catholic Healthcare West. The site plan is shown in **Figure 3-6**. The three-story building represents the first of three buildings that are planned for use by Catholic Healthcare West. Two future buildings are planned for lots 30 and 31 of Quadrant B. However, during construction of lot 32, lots 30 and 31 will be installed with a temporary irrigated landscape. The Special Permit applies only to the office building currently planned for lot 32 and the landscaping of lots 30 and 31. A future Special Permit will be required for the office buildings on lots 30 and 31.

The building will consist of concrete tilt-up walls, with some areas finished with plaster and slate veneer. The building will have a height of 48.5 feet above grade at the top of the third floor parapet. Mechanical screening will extend the building height to 56 feet above grade. Building elevations are shown in **Figure 3-7**. Exterior building colors will be light tan and coffee brown, along with multi-colored slate. The third floor will have exterior balconies totaling approximately 4,500 square feet. The balcony will be surrounded on the outer edge by a cable

rail with painted vertical supports. The office will provide capacity for approximately 775 employees.

A total of 701 off-street parking spaces are proposed for the project site. The ratio of parking spaces to square feet of building area exceeds the maximum standard provided by the Zoning Ordinance; therefore, a Special Permit to exceed the maximum parking standard has been requested. Surface parking lots totaling 125,000± square feet will surround the building on the west, south and east sides. Access to the parking lots will be provided from driveways on East Commerce Parkway and "C" Street. The main entrance driveway on East Commerce Parkway will provide access to the currently planned office building as well as the two future office buildings. A large circular turnaround will provide a drop off area near the northeast portion of the project site, as well as provide fire access to the northern and western portions of the project site. Two additional driveways will provide access to "C" Street.

Other features include a basketball court in the northwest portion of the project site and a central courtyard/ pedestrian corridor with a trellis and fountain in the northern portion of the project site. Service features include a compacter and a 10 x 38 foot trash enclosure: (constructed of CMU walls with plaster finish) located directed west of the building; a generator and transformer located directly east of the building, and a total of 36 bicycle racks/lockers located east, south and west of the building.

The site will be served by domestic and fire protection water from a public main extended down Commerce Parkway. Stormwater will be diverted to the drainage canal on the western border of the project site, collected in Detention Basin 6-B and released to the East Drain. Sanitary sewerage will be routed to an existing main in Commerce Parkway.

Landscaping on lot 32 includes trees, shrubs, perennials and ground covers (**Figure 3-8**). Trees, mostly tulip trees, and Chinese pitsache, will provide shade to approximately 51 percent of the paved areas. Temporary landscaping of lots 30 and 31 will provide a gravel path with benches, lawn, trees, and wildflower areas.

3.4 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

This Mitigated Negative Declaration will be used for the following direct and indirect actions regarding the Proposed Project.

CITY OF SACRAMENTO

The City of Sacramento will be the approval authority for the Proposed Project. The information contained in this Mitigated Negative Declaration will be utilized by the City during the decision-making process. As part of approval, the City will be required to take the following actions:

- Adoption of this Mitigated Negative Declaration for the Proposed Project under the requirements of the California Environmental Quality Act (CEQA), as amended.

- Adoption of a Mitigation Monitoring Plan that incorporates the mitigation measures provided in this document.

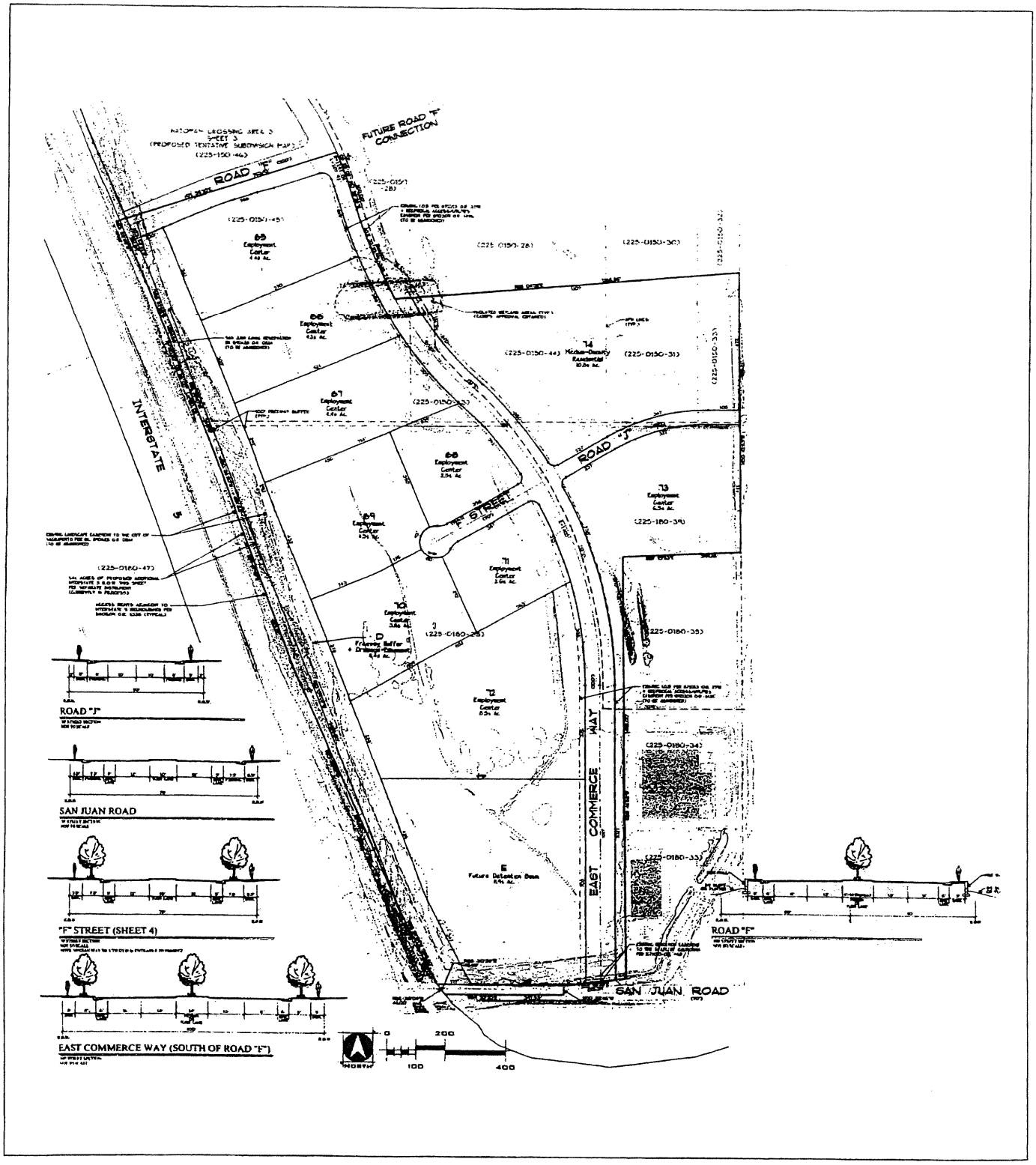
- Approval of the following entitlements:

    - Community Plan Amendment
    - Rezone
    - PUD Design Guidelines Amendment
    - PUD Schematic Plan
    - Tentative Master Parcel Map
    - Tentative Subdivision Map
    - Special Permit for the construction of a 152,000± square foot office building
    - Special Permit to exceed maximum parking allowance
    - Lot Line Adjustment/Merger

OTHER GOVERNMENTAL AGENCY APPROVALS

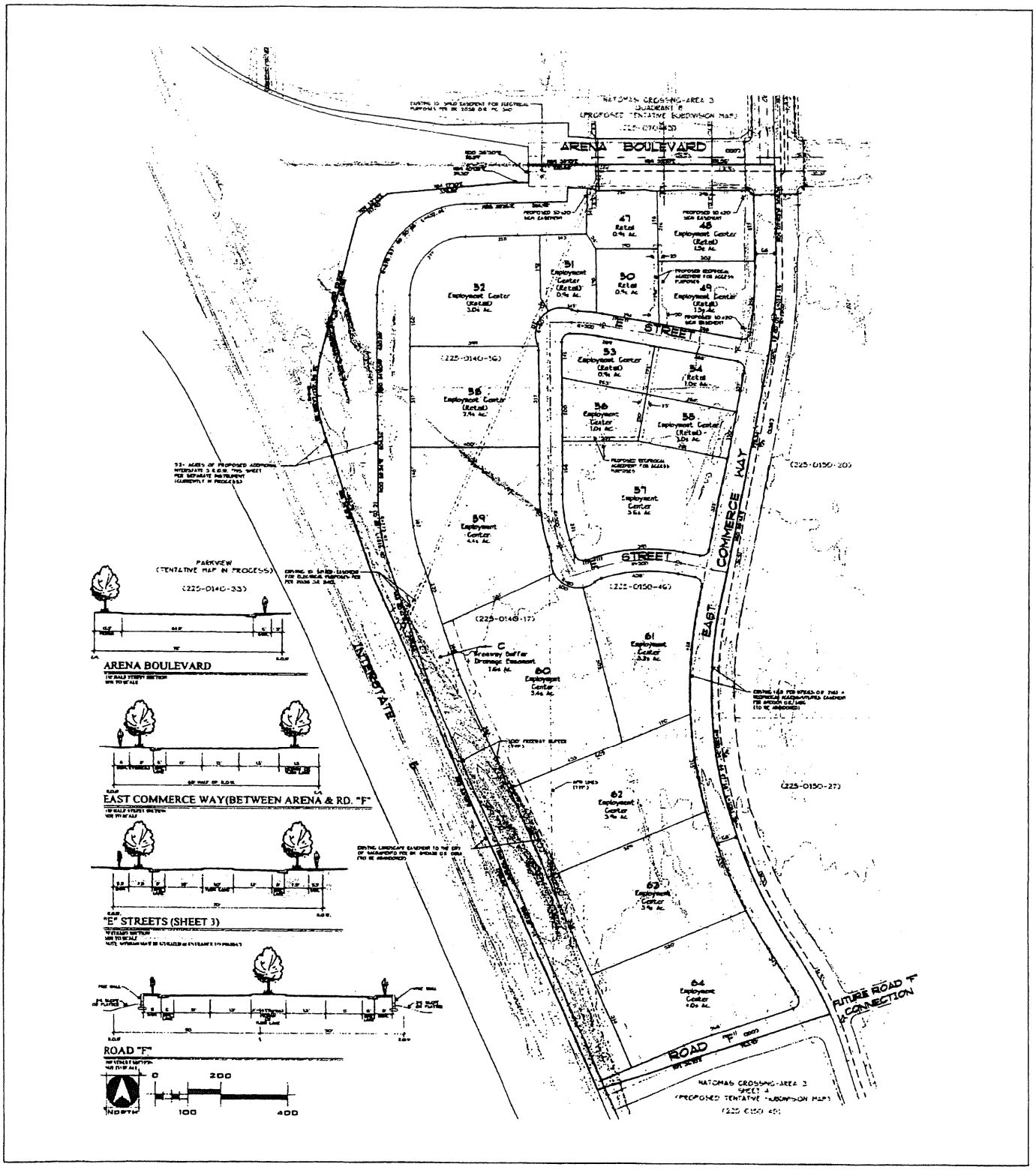
Additional subsequent approvals and other permits that may be required from local, regional, state, and federal agencies are identified below.

Permits and approvals for sewer (Regional Sanitation District), water (City of Sacramento), drainage (City of Sacramento), dewatering (Central Valley Regional Water Quality Control Board), and transportation connections and improvements (Caltrans).



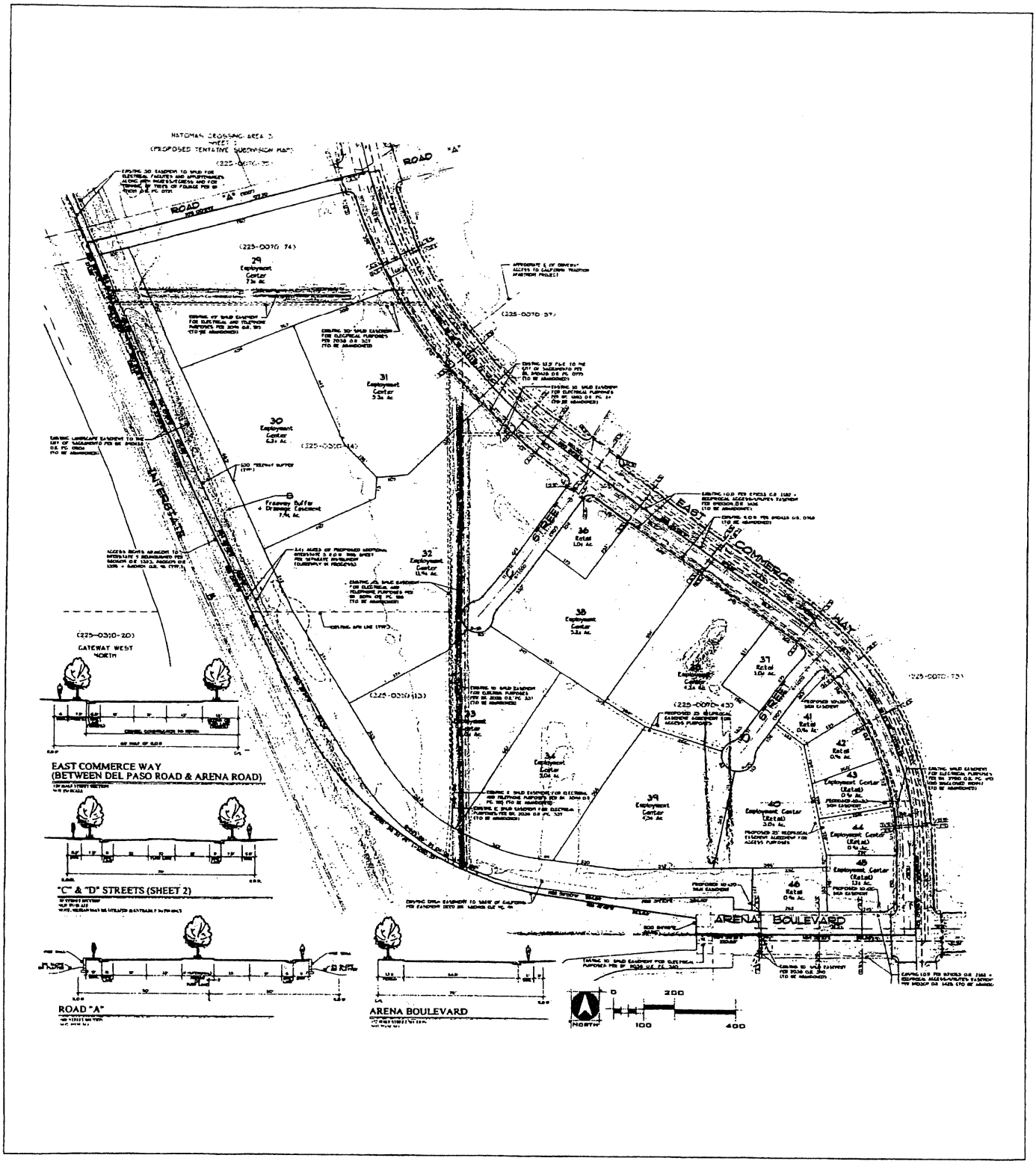
SOURCE: Wood Rodgers, 2002 : AES, 2002

Figure 3-4
Quadrant D Tentative Subdivision Map



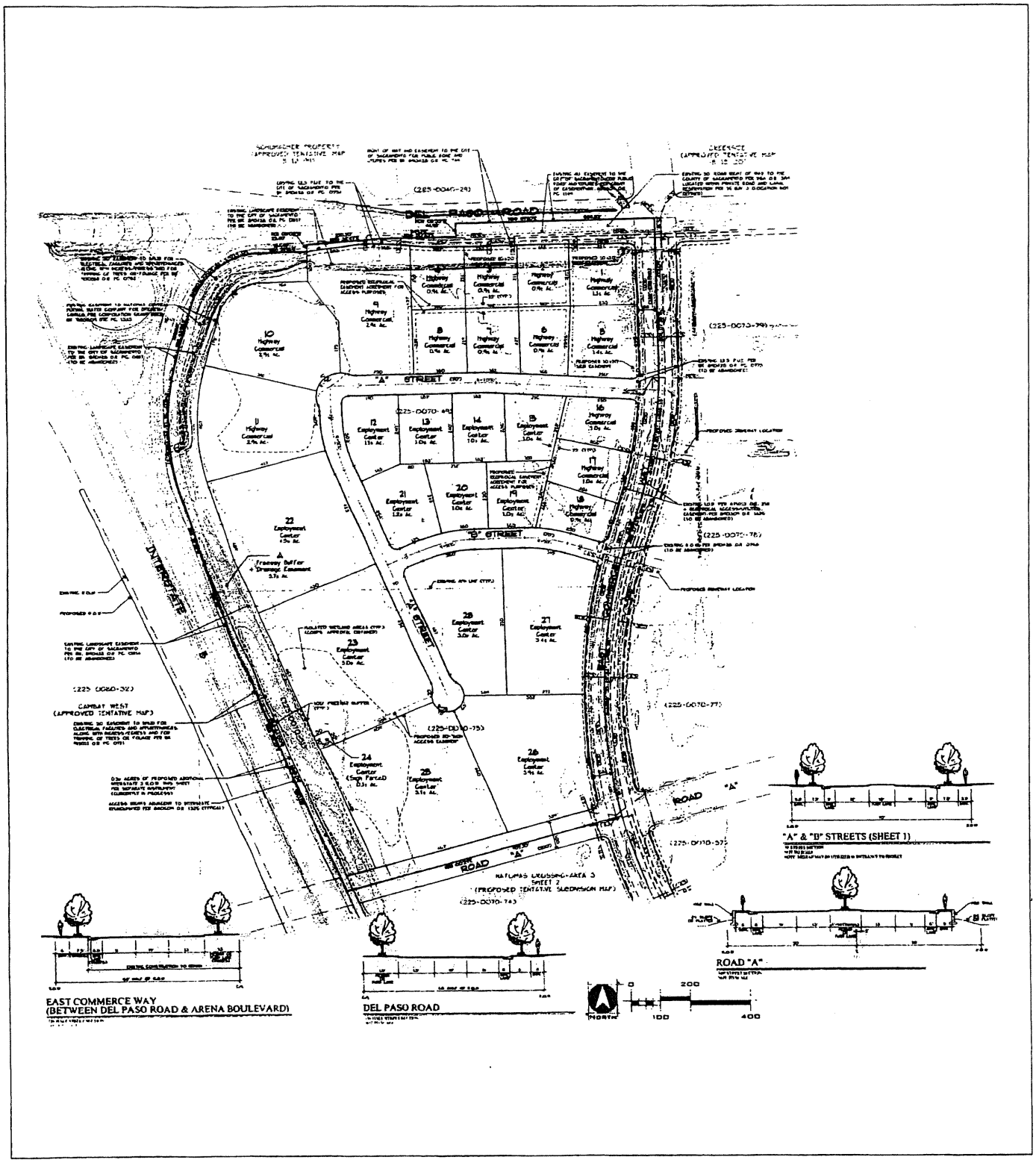
SOURCE: Wood Rodgers, 2002 : AES, 2002

Figure 3-3
Quadrant C Tentative Subdivision Map



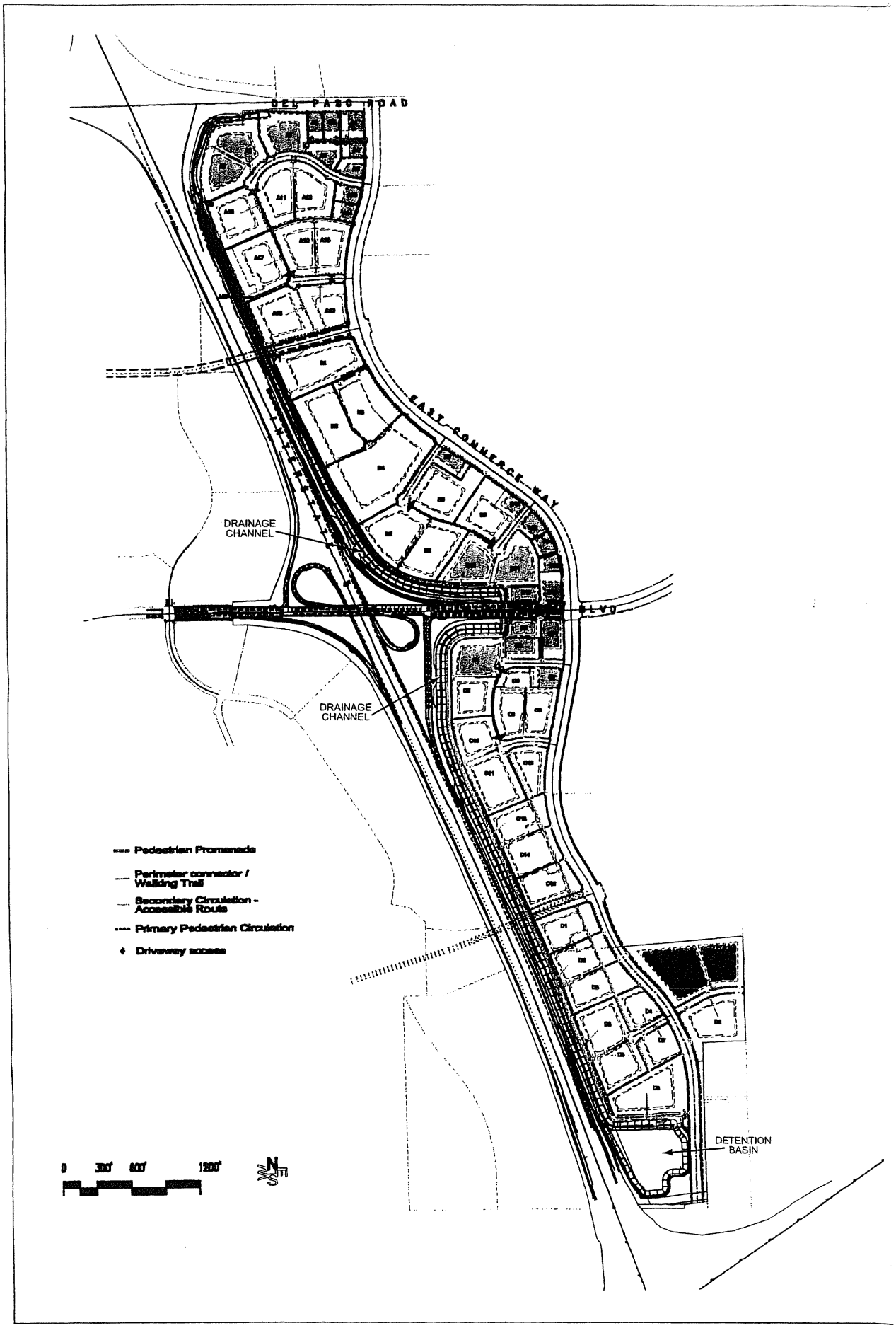
SOURCE: Wood Rodgers, 2002 : AES, 2002

Figure 3-2
Quadrant B Tentative Subdivision Map



SOURCE: Wood Rodgers, 2002 : AES, 2002

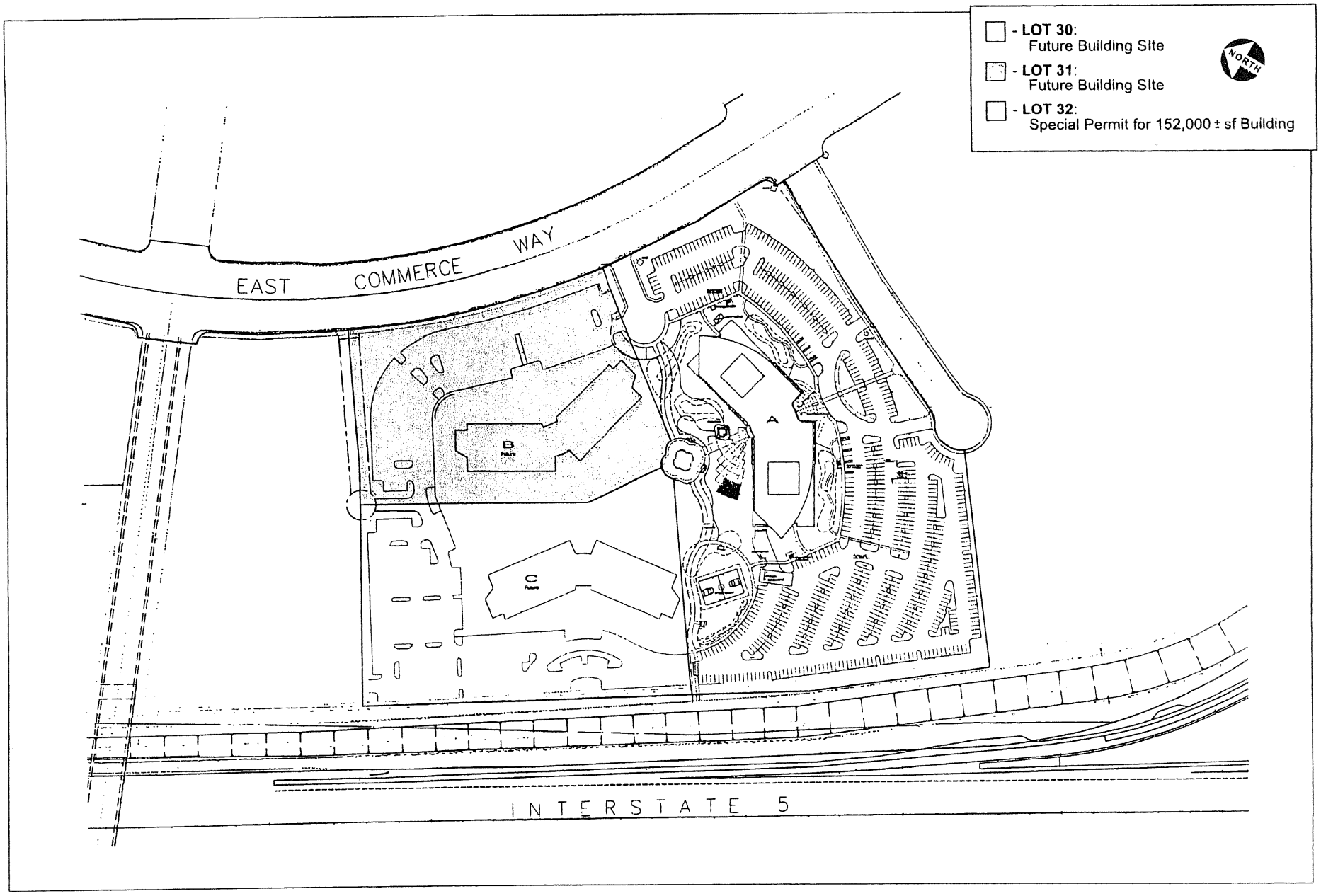
Figure 3-1
Quadrant A Tentative Subdivision Map



SOURCE: Wood Rodgers, 2002 : AES, 2002

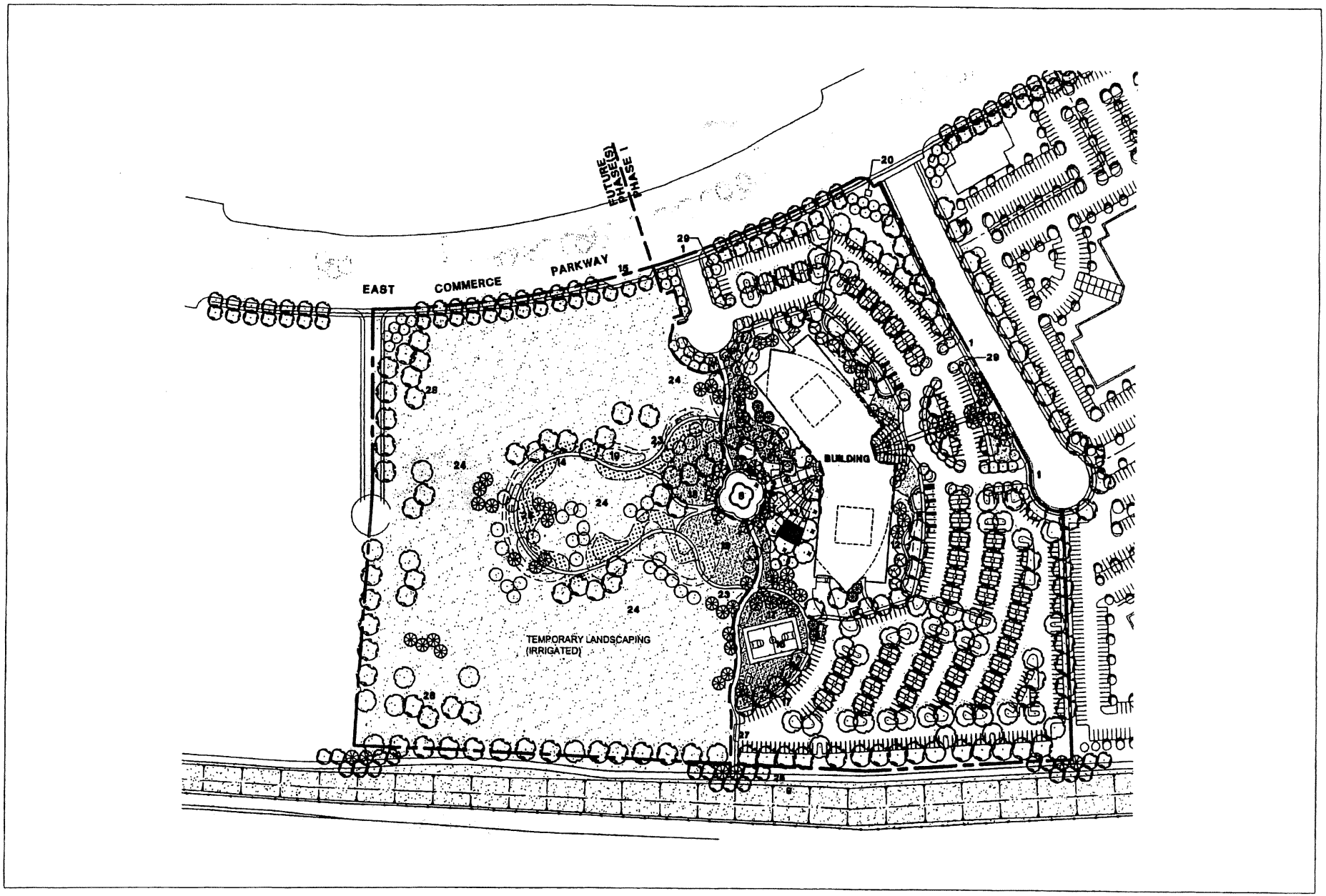
Figure

Pedestrian Circula



SOURCE: Wood Rodgers, 2002 : AES, 2002

Figure 3-6
Catholic Healthcare West Site Plan



SOURCE: Wood Rodgers, 2002 : AES, 2002

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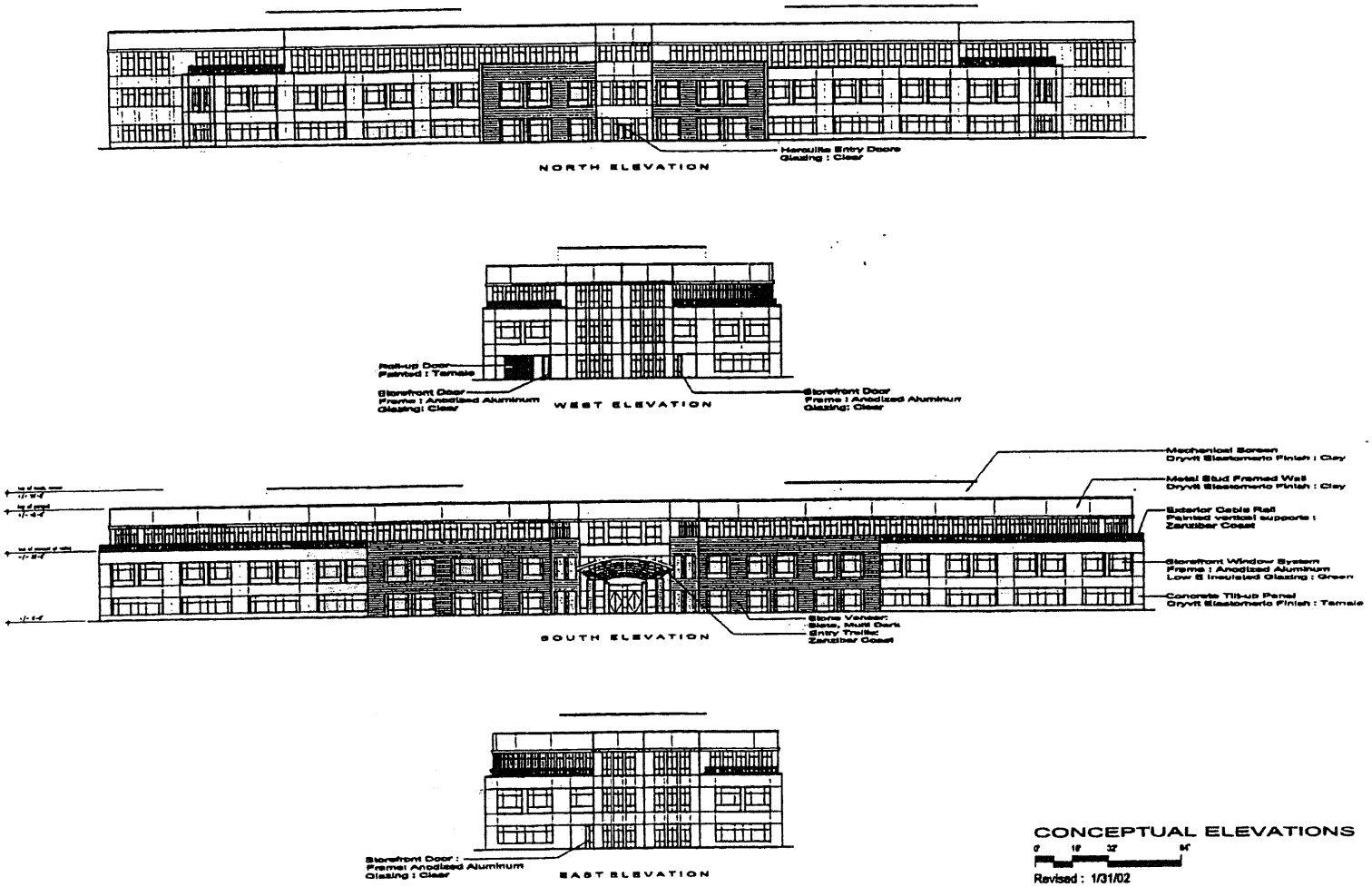
Figure 3-8

Catholic Healthcare West Schematic Landscape Plan



SOURCE: Wood Rodgers, 2002 : AES, 2002

Figure 3-7

Catholic Healthcare West Conceptual Building Elevations

CHAPTER 4.0

ENVIRONMENTAL CHECKLIST AND DISCUSSION

SECTION 4.0

ENVIRONMENTAL CHECKLIST AND DISCUSSION

I. LAND USE

Would the proposal:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Physically divide an established community?	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒

LAND USE DISCUSSION

EXISTING LAND USES

The project site is currently vacant. The site has been disked in the recent past and is currently dominated by grass vegetation (**Figure 4-1**). The project site is surrounded by vacant land and ongoing commercial and residential development (**Figure 4-2**). To the north across Del Paso Road are vacant lands; to the west across Interstate 5 are vacant land and residential development. East of East Commerce Parkway north of Arena Boulevard is Arco Arena and surrounding commercial development. South of Arena Boulevard and east of East of East Commerce Parkway is a residential neighborhood currently under construction.

NORTH NATOMAS COMMUNITY PLAN (NNCP)

The NNCP area is bound by Elkhorn Boulevard to the north, Interstate 80 to the southwest, the Natomas East main Drainage Canal to the east and the West Drainage Canal, Fisherman's Lake and Highway 99 to the west. The North Natomas community consists of 9,038 acres, 7,438 acres incorporated in the City of Sacramento and 1,428 acres within the city's Sphere of Influence, known as the panhandle annexation project. Interstate 5 and 80, Highway 99, and numerous existing local roads provide regional access to and from the plan area with internal connectors.

View from Del Paso Road looking south.

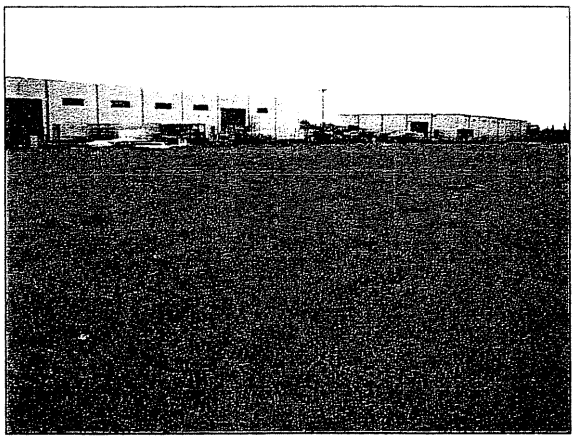
View looking west over southern portion of project site.

View looking south from intersection of East Commerce Parkway and Stadium Blvd.

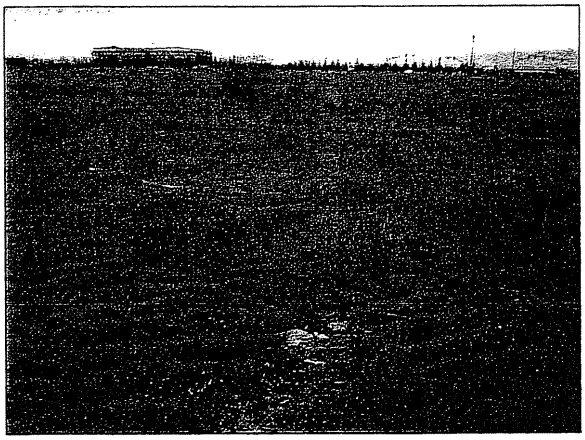
SOURCE: AES, 2002

Figure 4-1
Project Site Land Uses

View of residences east of project site.



View of commercial land use southeast of project site.



View of Arco Arena east of project site.

SOURCE: AES, 2002

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Figure 4-2
Surrounding Land Uses

The southern edge of the NNCP is 3 miles from Downtown Sacramento and the western boundary is 3 miles from the Sacramento Metropolitan Airport.

Up to 1993, the primary land use within in the NNCP was agriculture. The 1994 NNCP envisioned a new urban form for North Natomas that includes a well integrated mixture of residential, employment, commercial, and civic uses interdependent on quality transit service and a radial network of connections linking activity centers with streets, transit routes, and linear parkways with pedestrian and bicycle trails. The 1994 NNCP recognized that the planned growth in the NNCP area represents a significant opportunity for the City economically, socially, and by the provision of jobs and housing. North Natomas is designated in the General Plan to be the City's major growth area for new housing and employment opportunities.

The residential vision of the NNCP includes fourteen neighborhoods each consisting of 1,500-3,000 residences. The total estimated population of North Natomas at buildout is 66,495 (NNCP pg. 14). According to the NNCP, each dwelling unit should have convenient access to commercial centers using local connections, such as local streets or pedestrian/bikeways, and residential collectors instead of using arterial or collector streets. At least 80% of dwelling units are to be a maximum of 880 feet from open space, including public and private parks, drainage corridors, buffers, golf courses, lakes and other open space opportunities (NNCP pg. 13).

Land Use Designations and Policies

The following are NNCP land use designations and associated policies for the project site:

Employment Center (EC): The EC land use designation is a mixed-use business center that incorporates primary employment generating uses such as offices, high-tech uses, medical and educational facilities, and child care centers with secondary uses such as support retail, light industrial, and residential uses. The secondary uses are intended to serve the employees and employers at the center. A maximum of 10 percent of the acreage of an Employment Center site may be devoted to support retail, a maximum of 20 percent of the acreage can be light industrial uses, and maximum of 25 percent can be medium or high residential uses.

The suffix on the EC designation indicates the average number of employees per net acre allowed in the development. For example, EC 30 indicates 30 employees per net acre. The EC suffices range from EC30 to EC80. The most intense designation, EC80, is located with 1/8th mile of the six light rail stations and is intended to provide an effective ridership base to support a quality transit service. The also allows a further intensification of uses with 1/8th mile once the light rail system is funded. EC65 is intended to provide a large ridership base around the two bus transit centers. EC50 would be an appropriate intensity around local bus and shuttle routes. The least intense EC designation is located further away from transit.

Relevant Guiding Policies

- Designate Employment Centers along the light rail corridor, along both sides of Interstate 5, and elsewhere in the community in order to provide flexible, mixed-use employment centers that serve the needs of major employers and employees.

- Create mixed-use Employment Centers by allowing major employers and permitting support uses such as retail, residential, and light industrial uses in the EC designation.
- Decrease the need for off-site auto trips during the day by requiring support retail within each EC PUD.
- Maintain or improve the 1986 jobs/housing ration of 66 percent in the City portion of the North Natomas Community Plan area.
- Improve the jobs/housing link by permitting residential uses in close proximity to the major employers.

Jobs/Housing Balance

The NNCP calls for a jobs/housing ratio of 66 percent in the city portion of the plan area. The total number of employees projected for an EC PUD cannot be exceeded unless:

a. Housing opportunity is provided for each new employee generated over the projected number (using a formula based on the number of workers per household); and
b. Additional mitigation measures are provided by the developer generating the new workers to negate the incremental environmental impacts (such as traffic) of the additional employees.

Highway Commercial (HC): This primarily auto-dependent use in located at interchanges of the freeway system and provides services for highway users, as well as the community. Service stations, restaurants, and lodging are appropriate uses for these areas.

Neighborhood Convenience Commercial (NCC): This land use designation is intended to provide the day-to-day, carryout convenience goods and services to and immediate neighborhood. Typical uses may be a coffee shop/deli, convenience market, grocery store, service station, or dry cleaners/laundromat.

Relevant Guiding Policies

The following are relevant guiding policies established for commercial uses within the NNCP area:

- Provide commercial facilities that meet the daily and weekly needs of and are convenient to North Natomas residents, workers, and visitors.
- Confine commercial to designated sites to avoid strip commercial.

Low Density Residential (LD): Target average density is 7 dwelling units per net acre and allowable density range is 3 to 10 units per acre. Single family detached and attached units (including patio homes, duplexes, halfplexes, and second residential units) are includes within this designation.

Medium Density Residential (MD): Target average density is 12 units per acre and allowable density range is from 7 to 21 units per acre. Single family petite lot detached, single family attached, townhouse, and condominium units are included in this designation.

High Density Residential (HD): Target average density is 22 units per acre and allowable density range is 11 to 29 units per acre. Condominium units, garden apartments, and conventional

apartments are included in this designation. HD designated areas within ¼ mile of a light rail station or bus transit center may have a density of greater than 29 dwelling units per net acre. Also, senior citizen housing may have a density greater than 29 dwelling units per net acre.

Relevant Guiding Policies

The following are relevant guiding policies established for residential uses within the NNCP area:

- Each dwelling should have convenient access to a commercial center. Convenient access should be provided along a local connection, such as a local street or ped/bike path, or residential collector, rather than on an arterial street.
- At least 80 percent of the dwelling units shall be within 880 feet of open space. Open space includes accessible public and private parks and parkways, drainage corridors, agricultural buffers, golf course, lakes, and other open space opportunities.

Open Space (OS): The NNCP states that Open Space is any parcel of land devoted to the preservation of natural resources, managed production of natural resources, public health and safety, and outdoor recreation (NNCP, pg. 58). Additionally, the plan states that open space in North Natomas includes several broad categories: agricultural buffer, landscaped freeway buffer, agriculture, a golf course, roadways, and other open space. Drainage canals, the swale, and nine detention basins can serve as open space areas (NNCP, pg. 58). The relevant guiding policies of the NNCP related to Open Space are identified below:

Relevant Guiding Policies

The following are relevant guiding policies established for residential uses within the NNCP area:

- Promote healthy urban landscapes to enhance the quality of life in the community for the long term by conserving natural resources, improving air quality, providing biodiversity, and strengthening a sense of place.

THE NATOMAS BASIN HABITAT CONSERVATION PLAN (NATOMAS BASIN HCP) STATUS

The Community Plan requires development and implementation of a Habitat Conservation Plan as mitigation for development in North Natomas. In 1997, a Natomas Basin HCP was approved by the City of Sacramento, U. S. Fish & Wildlife Service (USFWS), and California Department of Fish & Game (CDFG). The Natomas Basin HCP is a conservation plan supporting application for a federal permit under Section 10(a)1(B) of the Endangered Species Ace and a state Permit under Section 2081 of the California Fish and Game Code, i.e., an Incidental Take Permit (ITP). The purpose of the Natomas Basin HCP is to promote biological conservation along with economic development and continuation of agriculture within the basin. The HCP and ITP were subsequently challenged, and on August 15, 2000, the federal court ruled that the ITP should not have been issued, and an EIS was required for the project. Based on the federal court ruling, the ITP was invalidated.

Based on this ruling, the City of Sacramento, Sutter County, Reclamation District No. 1000 (RD 1000), and Natomas Central Mutual Water Co. are now jointly managing the preparation of an

Environmental Impact Report/Environmental Impact Statement (EIR/EIS) on behalf of the USFWS. The USFWS is the lead federal agency for the preparation of the EIS and the City of Sacramento, Sutter County and RD1000 are co-lead agencies for the preparation of the EIR. The City of Sacramento and Sutter County will seek adoption of a revised NBHCP and the issuance of a new ITP by USFWS and CDFG for development within the Natomas Basin.

On May 15, 2001, the same court granted a motion modifying the Order of August 15, 2000, to allow incidental take protection for limited development within the City with the provision of mitigation land in specific areas of the Natomas Basin. The new order was based upon a settlement agreement entered into by all parties to the litigation.

The Settlement Agreement allows a maximum of 1,668 acres of development in North and South Natomas. Under the agreement the City can issue grading permits for up to 1,068 acres (phase 1) with these requirements in place: 1) HCP mitigation fees have been paid; 2) A biological pre-construction survey has been completed; and 3) grading must be accomplished during the grading season of May 1 to Sept 30th; 4) the developer must comply with all applicable mitigation measures; and, 5) the developer must sign a Grading Agreement that identifies requirements of the Settlement Agreement to which the project must comply. After grading permits have been issued for up to 1,068, the remaining 600 acres (phase 2) require: 1) ½ acre of mitigation land shall have been acquired for each acre authorized for disturbance under Phase 2, 2) City will replace the 200 acre "cushion"; and 3) development under the settlement agreement shall not exceed 1,360 acres until at least 250 acres of mitigation land have been acquired within Zone 1.

STANDARDS OF SIGNIFICANCE

For the purpose of this analysis, an impact is considered significant if the project would substantially alter approved land uses, or if the Proposed Project would be inconsistent with the policies of the North Natomas Community Plan.

QUESTION A

The Proposed Project will not physically divide an established community. The North Natomas Community is a community that is currently being established. The existing land use immediately surrounding the project site consists of vacant land and/or commercial uses under development. No impact will result from approval of the Proposed Project.

QUESTION B

The Proposed Project would result in the need for various land use entitlements as described in the Project Description (Chapter 3.0). The discussion below compares the Proposed Project (with proposed entitlements) to the relevant policies of the NNCP. Requested entitlements which may affect land use include (1) Community Plan Amendment, (2) Rezone, (3) PUD Design Guideline Amendment, (4) PUD Schematic Plan, (5) Tentative Master Parcel Map, (6) Tentative Subdivision Map, (7) Special Permit, (8) Special Permit to exceed maximum parking allowance, and (9) lot line adjustment/merger. A consistency discussion with the Zoning Ordinance is also provided below.

Natomas Crossing PUD

A PUD, Rezone, and Tentative Master Parcel Map were previously approved for the project site by the City of Sacramento in 1997 (P96-084 Alleghany Properties – Area 3). The current entitlements, if approved would result in the reconfiguration of the existing zoning and land use designations. A summary of project land uses is provided in **Appendix A.** As shown in **Table 4-1**, the Proposed Project would result in addition of 20.6 acres of open space zoned area (primarily freeway buffer), and 10.5 acres of additional Interstate 5 right of way (ROW) to allow for a future lane expansion. The Proposed Project would reduce the existing zoning area identified as EC-40 by 15.0 acres, and will reduce the existing zoning area identified as EC-50 by 15.9 acres. The Proposed Project includes 26.8 acres identified for major roadways; this area is unrecognized by the existing zoning areas described in **Table 4-1**.

Table 4-1
Existing and Proposed Zoning Areas

Designation	Land Use	Existing	Proposed	Difference
HC-PUD	Highway Commercial	25.0	24.0	-1.0
C-1-PUD	Limited Commercial	9.8	11.0	1.2
EC-30-PUD	Employment Center: 30 employees per net acre	9.3	8.9	-0.4
EC-40-PUD	Employment Center: 40 employees per net acre	68.1	53.1	-15.0
EC-50-PUD	Employment Center: 50 employees per net acre	156.7	140.8	-15.9
R-2B-PUD	Multi-Family: max. 21 du[1] per acre	12.1	12.1	0.0
AOS-PUD	Agriculture - Open Space	17.5	38.1	20.6
TC-PUD	Transportation Corridor: Additional I-5 ROW	0.0	10.5	10.5
	Total	**298.5**	**298.5**	

NOTES: 1. Existing zoning areas are gross and include major roadways.
2. Proposed zoning depicted are gross/net and exlude major roadways.
3. The Natomas Crossing PUD Guidelines and the City of Sacramento Zoning Maps were utilized in the calculation of existing zoning areas.
SOURCE: Wood Rodgers Inc., 2002; AES 2002

Entitlements for the Proposed Project include a Community Plan Amendment, which will reconfigure the NNCP designations of the project site. As shown in **Table 4-2**, the Proposed Project would result in the addition of: 25.7 acres of EC-50, 9.8 acres of Interstate 5 ROW, 5.4 acres of EC-30, and 1.6 acres of NCC. The project would result in the subtraction of: 33.3 acres of EC-40, 4.4 acres of Open Space, 3.5 acres of MD Residential, 1.1 acre of LD Residential, and 1.0 acre of HD Residential.

The job/housing ratio specified in the NNCP is intended to gauge the relative balance of jobs and housing units within a community. The project site was designated by the NNCP predominantly as Employment Center, Commercial, and Open Space with approximately 17 acres designated for residential uses. As such, the amount of jobs and housing provided on the project site is analyzed within the North Natomas Community jobs/housing ratio rather than solely on the project specific jobs/housing ratio.

The Proposed Project would increase the amount of potential employment on the project site by the reconfiguration of EC-30, EC-40 and EC-50. Jobs would increase from 8,488 as provided in

Table 4-2
Existing and Proposed Community Plan Designation Areas

Designation	Land Use	Existing	Proposed	Difference
HC	Highway Commercial	20.5	20.7	0.2
NCC	Neighborhood Convenience Commercial	6.9	8.5	1.6
EC-30	Employment Center: 30 employees per net acre	1.5	6.9	5.4
EC-40	Employment Center: 40 employees per net acre	80.5	47.2	-33.3
EC-50	Employment Center: 50 employees per net acre	104.3	130.0	25.7
LD	Low Density Residential: 7 du/na	1.1	0.0	-1.1
MD	Medium Density Residential: 12 du/na	14.7	11.2	-3.5
HD	High Density Residential: 22 du/na	1.0	0.0	-1.0
P-OS	Open Space	40.9	36.5	-4.4
TC	Additional I-5 R.O.W.	0.0	9.8	9.8
	Major Roadways (Del Paso Rd, E. Commerce Parkway, Arena Boulevard, San Juan Rd, Roads 'A' + 'F')	27.1	26.8	-0.3
	Total	**298.5**	**298.5**	

NOTES: 1. Existing and proposed community plan designation areas are gross/net and exclude major roadways.
2. The existing community plan designations and configurations shown hereon were interpreted from the NNCP. All community plan areas are based on interpretation and should be considered approximate.
SOURCE: Wood Rodgers Inc., 2002; AES 2002

the NNCP to 8,610 as provided by the Proposed Project – an increase of 1.4 percent or 122 jobs. The reconfiguration of residential areas on the project site would result in a decrease of housing units. Based on target densities specified in the NNCP, the existing designations would allow approximately 201 housing units; the Proposed Project provides an estimated 194 housing units. This represents a decrease of 3.5 percent or approximately 7 units. Theoretically, the increase in jobs and decrease in housing on the project site provided by the Proposed Project would result in a relatively minor increase in the jobs/housing ratio of the North Natomas Community. However, the jobs/housing balance is applicable only on a neighborhood or community level, not on an individual project basis. With the approval of the requested Community Plan Amendment, the Proposed Project will be considered consistent with the NNCP.

The proposed site design makes modifications to the configurations of the Convenience commercial and Highway Commercial uses designated for the project site. Proposed commercial uses consist of an increase of 1.8 acres more than the community plan designations. However, the proposed uses would result in a increase of only 0.2 acres less than the existing zoned areas. With approval of the requested Rezone and Community Plan Amendment, the zoning and community plan designation of the project site will be consistent.

The project also includes a proposal to utilize 10 percent of land area designated as Employment Center to be utilized for support Retail uses as allowed by the NNCP. Proposed retail uses include hotel, fast food, and service station uses (see **Appendix A**).

The Proposed Project includes approximately 36.4 acres of Open Space. Open Space areas include a 100-foot buffer along Interstate 5 and an 8.9-acre detention basin at the southern portion of Quadrant D. The housing units provided within Quadrant D will have access to open space

areas on the project site. Additionally, the NNCP open space requirement can be provided on-site with recreation facilities such as a basketball court or barbecue area (Arwen Wacht, pers. comm.).

Special Permit - Catholic Healthcare West

The Proposed Project includes a three story, 152,000± square foot office building on lot 32 of Quadrant B to serve as the headquarters' office for Catholic Healthcare West. The proposed office building will provide 701 parking spaces. The Zoning Ordinance stipulates a maximum parking for office buildings outside of the central city as 1 space per 275 gross square feet resulting in a project maximum of 553 parking spaces. The project therefore exceeds the maximum parking allowance by 148 spaces. However, with the approval of the requested Special Permit to exceed the maximum parking allowance, the project will be considered consistent with the NNCP and the Zoning Ordinance.

QUESTION C

The Proposed Project is located on property in the community plan area that is designated for development. As the project site is within North Natomas, the applicant must comply with the following mitigation with regards to the Natomas Basin HCP. The following mitigation measure would apply to both the Natomas Crossing PUD and Catholic Healthcare West proposed project site.

Mitigation 1:

Prior to issuance of a grading permit, the applicant shall satisfy one of the following:

1. If legally permissible under the NBHCP Litigation Settlement Agreement, as such Agreement may be amended, revised, extended or modified, the applicant shall pay all required HCP fees under the Settlement Agreement, and otherwise observe all requirements of the Settlement Agreement and associated documents.

2. If a revised NBHCP has been adopted by all required agencies, applicant will obtain coverage under the City's ITP and/or Section 2081 Management Authorization by entering into a Development Agreement with the City, by paying all required HCP fees and complying with all requirements of the NBHCP.

3. If a revised NBHCP is not in place, the applicant shall obtain and provide evidence to the City of a project specific ITP and/or Section 2081 Management Authorization from the California Department of Fish and Game and the U.S. Fish and Wildlife Service as necessary for the Covered Species.

FINDINGS

The Proposed Project, with the included mitigation measure and the approval of the requested entitlements, would result in less-than-significant impacts with regards to land use.

II. POPULATION AND HOUSING

Would the proposal:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	☒
b) Displace existing housing, especially affordable housing?	☐	☐	☒

POPULATION AND HOUSING DISCUSSION

The NNCP and the Sacramento General Plan both recognize the fact that for the next 10-20 years North Natomas will be the source and location of growth for the City both in terms of housing and business. Current housing and population within the NNCP area has been changing rather dramatically as housing applications are submitted, approved and residences developed. This change from vacant undeveloped to an urban area has been formally approved since 1994.

The NNCP for North Natomas designates 14 neighborhoods to be planned and build although the community plans can be amended to accommodate changes in market conditions. Total proposed residential units and population at buildout of the NNCP is 33,257 and 66,495, respectively.

STANDARDS OF SIGNIFICANCE

For the purpose of this analysis, an impact is considered significant if the project would induce unplanned, substantial growth inconsistent with the NNCP, or if the Proposed Project would displace existing affordable housing.

QUESTION A

The Proposed Project will directly provide approximately 194 medium density housing units at buildout of the PUD Schematic Plan.

This growth in housing is consistent with the NNCP. Therefore, the increase of 194 units is not considered to be "substantial unplanned growth." A less than significant impact is expected. Using the 1994 NNCP factor for people per medium density dwelling unit (1.91), approximately 371 new residents will be located on the project site at full build out. North Natomas is a rapidly

growing community. However, the change from vacant undeveloped or agricultural land to urban area has been formally approved since 1994. Therefore, the increase of units is not considered to be "substantial unplanned growth." A less than significant impact is expected.

QUESTION B

The project site is currently a vacant piece of property. The approval of the project will not result in the displacement of existing housing. No impacts will occur.

FINDINGS

The Proposed Project would result in less-than-significant impacts with regards to population and housing.

III. SEISMICITY, SOILS, AND GEOLOGY

Would the proposal result in or expose people to potential impacts involving:	*Potentially Significant Impact*	*Potentially Significant Unless Mitigated*	*Less than Significant Impact*
a) Seismic hazards	☐	☐	☒
b) Erosion, changes in topography, or unstable soil conditions?	☐	☐	☒
c) Subsidence of land (groundwater pumping or de-watering)?	☐	☐	☒
d) Unique geologic or physical features?	☐	☐	☒

SEISMICITY, SOILS, AND GEOLOGY DISCUSSION

The North Natomas study area is located within the Sacramento Valley, which is a part of the larger Great Central Valley. The Great Central Valley is a deep trough that extends 400 miles from the Klamath Mountains in the north to the Tehachapi Mountains in the south. The Sacramento Valley is drained by the Sacramento River and its tributaries, which flow south and west toward San Francisco Bay (NNCP DEIR, K-1).

The surface deposits in the North Natomas study area consist of Quaternary age gravels, silts, sands, and clay deposited along stream channels, natural and man-made levees, and in alluvial basins. Hydraulic mining of gold-bearing deposits during the 1800's increased the sediment load carried by the rivers. Subsequently, large amounts of coarse, unweathered sediments were deposited downstream. The surface soils in the North Natomas study area have developed on alluvial deposits under the semi-arid conditions of the Sacramento Valley. Under natural conditions, all of the soils would be periodically flooded, but the construction of dams and levees

has reduced the flooding. The differences in soils are due mainly to the differences in parent material, drainage, and topography (NNCP DEIR, K-1).

The soils in the study area have developed on alluvial deposits, on natural levees, and within the floodplain of the Sacramento River. The deposits consist of a thick sequence of sands, silts, and clays of varying thickness and lateral distribution. Deposits may occur in pockets (or lenses) or in abandoned stream channels within more extensive layers. Relative shrink-swell potential is variable within each soil type and depends upon the amount and type of clay present in any specific area (NNCP DEIR, K-4). Soil in the project area is primarily Cosumnes Series (NNCP DEIR, Exhibit K-3). Cosumnes Series soils consist of very deep, drained soils, which have developed on recent alluvial floodplains. These silty loam soils have a low shrink-swell potential and moderate permeability.

Cities in California are required to consider seismic safety as part of the General Plan safety elements. The City of Sacramento also recognizes that it is prudent for the City to prepare for seismic related hazards and has, therefore, adopted policies as a part of the General Plan, Health and Safety Element. These policies require that the City protect lives and property from unacceptable risk due to seismic and geologic activity or unstable soil conditions to the maximum extent feasible, that the City prohibit the construction of structures for permanent occupancy across faults, that soils reports and geologic investigations be required for multiple story buildings, and that the Uniform Building Code requirements that recognize State and federal earthquake protection standards in construction be used.

The policies listed above are implemented through the building permit process for new construction projects and reduce the potential significant health and safety impacts. According to the 1986 NNCP EIR Section K- Geology and Soils, the site lies within Seismic Zone "2" where zone 0 represents the least damage and 3 represents the most damage. The closest faults and the distance of them from Sacramento are the Dunnigan Hills fault, 25 kilometers from Sacramento; the Midland fault, 35 kilometers; the Bear Mountain fault, 35 kilometers; and the New Melones fault, 65 kilometers (NNCP EIR, Exhibit K-7).

For the purposes of this analysis, an impact is considered significant if it allows a project to be built that will either introduce geologic, soils, or seismic hazards by allowing the construction of the project on such a site without protection against those hazards. Prior to issuance of building permits, the City Planning and Building Department requires a site-specific soil investigation (including detailed analyses of surface and subsurface conditions, per Uniform Building Code) for individual structures proposed for development. The information from this soil investigation is then incorporated into the site-specific engineering and seismic designs for the proposed structures as required by the Planning and Building Department. Satisfaction of these Planning and Building Department conditions is required prior to the issuance of building permits. If the potential for geologic, soils, or seismic hazards exists on the site, the Planning and Building Department will require that the UBC standards be met in order to ensure proper design to mitigate potential impacts.

Thus, for the purposes of this environmental analysis, the potential for a significant geology, soils, and seismic impact created by construction of the project has been substantially lessened by the use of regulatory requirements. Therefore, the City does not recognize a significant impact in the areas of geology, soils, and seismicity.

STANDARDS OF SIGNIFICANCE

For the purposes of this analysis, an impact is considered significant if it allows a project to be built that will either introduce geologic, soils, or seismic hazards by allowing the construction of the project on such a site without protection against those hazards.

QUESTIONS A-D

As stated above, development associated with the Proposed Project will conform to the Uniform Building Code, which will minimize the impacts to potential seismic hazards. The topography of the project site is flat with little or no slope; therefore, the change in topography is de minimis. The potential for erosion and/or unstable earth conditions will be minimized through the provisions of the Uniform Building Code and requirements of the site grading ordinance. No subsidence of land is expected since groundwater pumping and dewatering will not occur under the Proposed Project. There are no unique geological or physical features on the project site. No impact will occur.

FINDINGS

The Proposed Project would result in less-than-significant impacts with regards to seismicity, soils and geology.

IV. WATER

Would the proposal result in or expose people to potential impacts involving:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	☐	☐	☒
b) Exposure of people or property to water related hazards such as flooding?	☐	☐	☒
c) Discharge into surface waters or other alteration of surface water quality (e.g., temperature, dissolved oxygen or turbidity)?	☐	☐	☒
d) Changes in currents, or the course or direction of water movements?	☐	☐	☒
e) Change in the quantity of groundwaters, either through direct additions or withdrawal, or through interception of an aquifer by cuts or excavations or through substantial loss of groundwater recharge capability?	☐	☐	☒
f) Altered direction or rate of flow of groundwater?	☐	☐	☒
g) Impacts to groundwater quality?	☐	☐	☒

WATER DISCUSSION

BACKGROUND

The Natomas Basin is set within the Greater Sacramento River Basin, which drains the Sacramento Valley. Historically, this basin has provided a backwater for flood flows on the Sacramento River, north of the confluence with the American River. These backwater stretches, combined with the uneven topography, left "potholes" and lagoons where water remains for months after floods. During non-flood events these potholes and lagoons serve as the surface drainage reservoirs for wildlife and keep the surrounding landscape from drying out early in the dry season.

Flood flows provided rich silts, which hold a large amount of water in the soil profile. After European settlement of the Sacramento Valley the Natomas Basin was recognized as an excellent agricultural site but due to the soils and water conditions the basin was limited in its ability to grow certain crops. Until year round water could be supplied productivity was limited. The evolution of water law and irrigation districts in California allowed for the export of water to where it was needed for its "highest and best use." The conveyance facilities for these water rights are irrigation canals and ditches across the state including the Natomas Basin. These canals and ditches served the dual purpose of bringing water when it was desired and removing water

when it was not thereby providing some degree of protection to the residences and farm infrastructure in the Natomas Basin.

The existing drainage canals include three Reclamation District 1000 canals: the West Drain along the western boundary of the plan area; the East Drain parallel to Truxel and Natomas Boulevards; and the East Main Drain parallel to the Union Pacific right of way on the eastern planning boundary. The primary current purpose of these drains is to convey agricultural and storm runoff to the Sacramento River, the Natomas East Main, and the Cross Canal depending on proximity (NNCP, 1994).

FLOOD ZONE PLANNING

On February 6, 1990, the City Council adopted a Land Use Planning Policy (LUPP) within the 100-year floodplain in the City. The LUPP was adopted as part of the on going governmental response to the flood events of 1986. To reflect new information available since 1990 and the progress made in providing better flood protection, the City Council revised the LUPP on December 7, 1993. As revised, the policy established a target level of flood protection for the City and directed staff to draft a Comprehensive Floodplain Management Plan outlining primary flood control measures and secondary injury and damage reduction measures. The target level of protection for the City is an immediate goal of 100-year flood protection and a longer-term goal of greater protection, a minimum of 200 years. The policy also established the Master Parcel Mapping Process for subdivision of North Natomas land and continued to restrict new development until at least 100-year flood protection is obtained.

A Comprehensive Floodplain Management Plan has been completed by the City. This plan outlines the primary and secondary flood protection measures that reduces personal injury and property damage in the event of a flood. The primary measures include flood control projects, both existing and proposed. The secondary measures include other measures that can be taken to reduce personal injury and property damage, such as emergency preparedness and evacuation plans; preventive and response steps to take when key public facilities are inundated by flood waters; residential and non-development guidelines; and options to boost flood insurance participation.

Development in the NNCP area must comply with the Comprehensive Floodplain Management Plan, as adopted. The NNCP area has been removed from 'Zone A' flood status after receipt of a letter from Federal Emergency Management Agency (FEMA) stating that the Local Levee Project as completed in 1998 would be enough to remove all 'Zone A' portions of North Natomas from flood danger. However, those portions of North Natomas that were within the 'Zone A' flood zone prior to completion of the Local Levee Project would either have to be declared a rescue and evacuation zone or have an evacuation plan.

The project area is in the X zone according to the FEMA Flood Insurance Rate Map (FIRM) dated May 22, 2000. This zone is defined as areas of 500-year flood: areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. However, in the past, the southern portion of the project

site was included within Zone A (areas of 100-year flood with no base flood elevation determined). Areas previously in Zone A are required by FEMA to provide and maintain evacuation plans. FEMA Panel # 20- 060266 f has not been reissued but copies are kept and available for public review at the City's Utilities Department, as well as the Planning and Building Department.

NORTH NATOMAS DRAINAGE

Drainage for the North Natomas Community is planned through the North Natomas Comprehensive Drainage Study. Rather than moving storm runoff into the Sacramento River as soon as possible, the North Natomas Drainage System focuses on retaining storm flows to maintain a "natural" rate of discharge into the Sacramento River from the Natomas Basin. The Drainage System does this through a series of detention ponds and canal corridors. The project site would drain surface runoff into Detention Basin 6-B at the southern end of the project site. A channel will be located within the 100-foot buffer of Interstate 5 on the western border of the project site. The detention basin and channel are shown in **Figure 4-3**.

Detention Basin 6-B, which is proposed by the City of Sacramento Department of Utilities, is currently in the planning and approval stage. The City of Sacramento is the lead agency for the preparation of the Initial Study for the North Natomas Detention Basin 6B Project. The Initial Study also includes analysis of the drainage channel adjacent that will be developed adjacent to I-5 and the utility access easement an outfall pipeline components. Construction of Detention Basin 6-B is expected to begin by mid-year 2002, subject to City approval. The water from the detention basin will be released to the East Drain for conveyance to the Sacramento River.

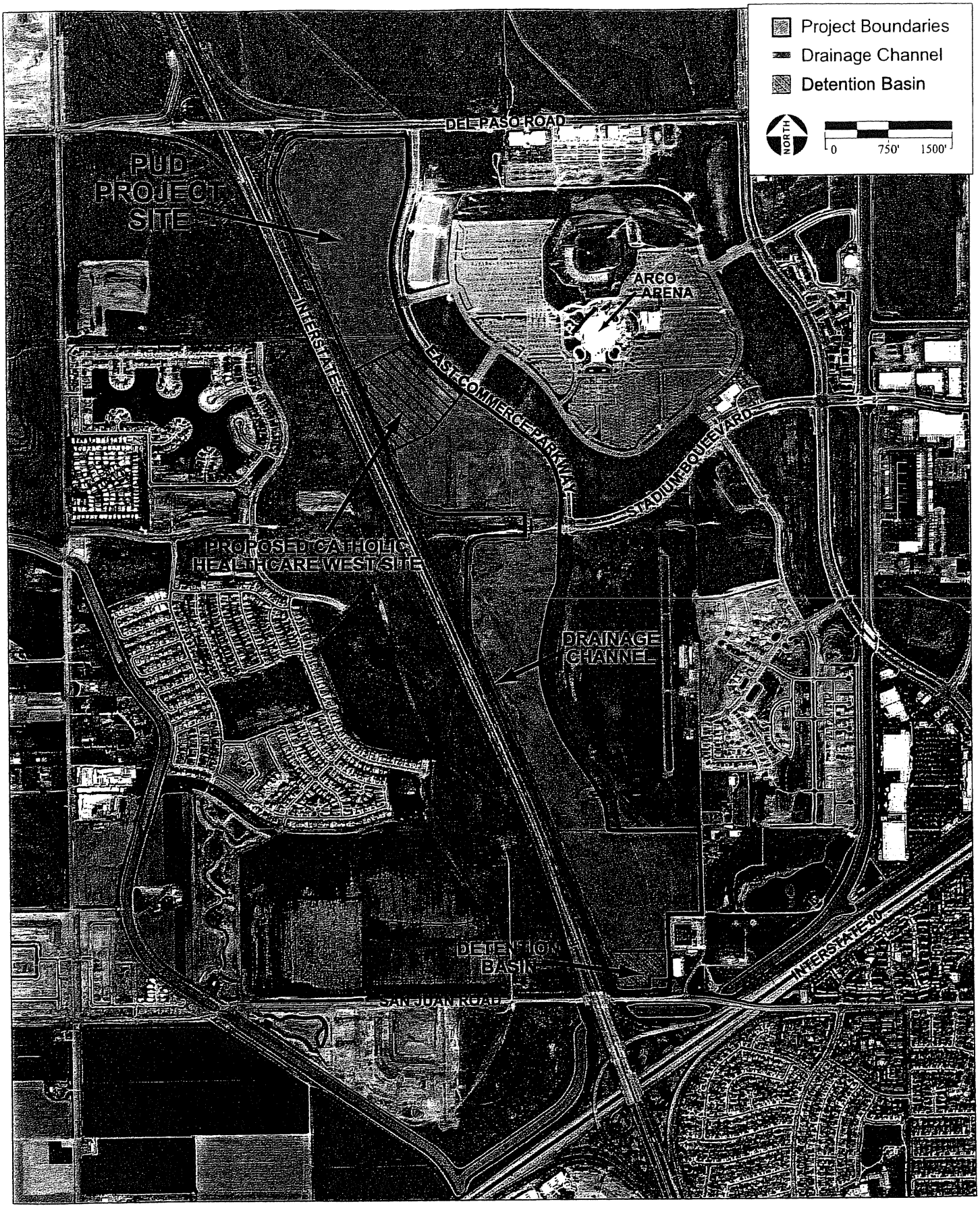
STANDARDS OF SIGNIFICANCE

Surface/Groundwater: For purposes of this environmental document, an impact is considered significant if the Proposed Project would substantially degrade water quality and violate any water quality objectives set by the State Water Resources Control Board, due to increased sediments and other contaminants generated by consumption and/or operation activities.

Flooding: If the Proposed Project would expose people and or property to the risk of injury and damage in the event of a 100-year flood.

QUESTION A

The Proposed Project would increase the runoff volumes currently generated by the property. The impervious surfaces will require an on-site storm drain system to deliver runoff from the site to the on-site drainage channels associated with Detention Basin 6-B. Basin 6-B has been designed to collect stormwater from development within the portion of the North Natomas Community that includes the project site. Basin 6-B will be used to detain stormwater runoff on-site until the flows can be slowly drained to the existing East Drain. With the proposed detention basin, the East Drain can accommodate the runoff volumes. The environmental impacts of Detention Basin 6-B are evaluated within a separate document being prepared concurrently by the City of Sacramento. No significant impacts are expected to occur as the result of the Proposed Project.



SOURCE: City of Sacramento, 2001 : AES, 2002

Natomas Crossing / 202502 ■

Figure 4-3
Proposed Drainage Facilities

QUESTION B

The Proposed Project is not expected to result in the exposure of people to flooding or flood related hazards. The Local Levee Project and evacuation plan for the Proposed Project area has been completed. As mentioned above, the project applicant will be required to make on-site drainage improvements, which will assure that proper drainage facilities are constructed.

Because the project site is located within an Evacuation Zone, development must comply with the 1996 Comprehensive Floodplain Management Plan Development Guidelines. Residential development must comply with the following conditions: 1) approved lever handle gas valves shall be used for all residential gas appliances as per Title 15 of the City Code and 2) above ground fuel tanks shall be securely anchored to a foundation to prevent movement or flotation during a flood (per Title 15 of the City Code). Compliance with these conditions will result in less-than-significant impact from flooding.

QUESTIONS C AND D

Development on the project site will require compliance with the City's Comprehensive Stormwater Management Program. In addition, the applicant will be required to comply with the State "National Pollution Discharge Elimination System General Permit for the Stormwater Discharges Associated with Construction Activity" (State Permit). To comply with the State Permit, the applicant will file a Notice of Intent with the State Water Resources Control Board and prepare a Stormwater Pollution Prevention Plan prior to construction. Compliance with these two regulations will assure that surface water quality is not significantly impacted. In addition, the use of detention basins within the North Natomas Community will assist in filtering the urban runoff during and after the "first-flush", which is a positive water quality feature of the entire North Natomas community. The Proposed Project will have a less-than-significant impact.

QUESTIONS E-G

Ground water conditions may impact development of the site depending upon when construction is planned. Water levels in the drainage canals and beneath the site are influenced by seasonal weather conditions. Though rainfall intercepted will be diverted offsite through a drainage network, the reduction in infiltration and groundwater recharge is expected to have no significant impact. This will be minimized partly through the use of the Natomas detention basins, which will allow for some recharge prior to the water being directed to the Sacramento River.

Due to the shallow depth of groundwater in some portions of the local area, it is possible that proposed improvements could encounter groundwater and require de-watering during construction. De-watering activities could result in a short-term change in the quantity of groundwater, and /or direction or rate of flow, and groundwater quality. De-watering activities must comply with application requirements established by the Central Valley Regional Water Quality Control Board (CVRWQB) to ensure that de-watering activities would not result in changes to groundwater quality. Since the requirements of the CVRWQB must be implemented, the impact would become less than significant.

FINDINGS

The Proposed Project would result in less-than-significant impacts to water resources.

V. AIR QUALITY

Would the proposal:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☒	☐
b) Exposure of sensitive receptors to pollutants?	☐	☒	☐
c) Alter air movement, moisture, or temperature, or cause any change in climate?	☐	☐	☒
d) Create objectionable odors?	☐	☐	☒

AIR QUALITY DISCUSSION

CLIMATE AND METEOROLOGY

The project is located in the City of Sacramento, which lies within the Sacramento Valley Air Basin (SVAB). The climate of the SVAB is Mediterranean in character, with mild, rainy winter weather from November through March, and warm to hot, dry weather from May through September. The physiographic features giving shape to the SVAB are the Coast Range to the west, the Sierra Nevada Mountains to the east, and the Cascade Range to the north. These ranges channel winds through the Sacramento Valley, but also inhibit dispersion of pollutant emissions.

The SVAB is subject to eight unique wind patterns. The predominant annual and summer wind pattern is the full sea breeze, commonly referred to as Delta breezes. These cool winds originate from the Pacific Ocean and flow through a sea-level gap in the Coast Range called the Carquinez Straits. In the winter season, northerly winds predominate. Wind direction in the SVAB is influenced by the predominant wind flow pattern associated with the season. The predominant annual wind direction and speed for the Sacramento area is south-southwest at 9.5 miles per hour (mph) (California Air Resources Board [CARB], 1984).

Vertical and horizontal movements of air are important atmospheric components involved in the dispersion of air pollutants. Movement of air allows for the dispersion and subsequent dilution of air pollutants. Without movement, air pollutants can collect and concentrate in a single area, increasing the health hazards associated with air pollutants. For instance, in the winter months, the SVAB experiences a high percentage of inversion layer atmospheric conditions. These calm conditions result in stagnation of valley air and increased air pollution.

Persistent inversions occur frequently in the SVAB, especially during late fall and early spring, and act to restrict vertical dispersion of pollutants released near ground level. Inversions characteristic to Sacramento County involve nighttime cooling of air near the valley surface. The sun warms the air above the nocturnally cooled surface, creating the inversion that prohibits vertical mixing.

CRITERIA AIR POLLUTANTS

The air quality of the SVAB is determined by routinely monitoring changes in the quantities of criteria pollutants in the ambient environment. Air quality in the area is a function of the criteria pollutants emitted locally, the existing regional ambient air quality, and the meteorological and topographic factors which influence the intrusion of pollutants into the area from sources outside the immediate vicinity.

CARB and SMAQMD maintain ambient air quality monitoring stations at numerous locations throughout the basin. The stations provide information on average concentrations of criteria air pollutants. The monitoring station nearest the Proposed Project site and project alternative sites are located at 13th and T streets in downtown Sacramento. **Table 4-3** summarizes the highest annual concentrations of O_3, CO, and PM_{10} for the most recent years available (1999-2001) and compares ambient air pollutant concentrations with the SAAQS, which are more stringent than the corresponding federal standards.

Ozone (O_3)

O_3 is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere. Through a complex series of photochemical reactions, in the presence of strong sunlight and ozone precursors (NO_x and reactive organic gases [ROG]), O_3 is created. Motor vehicles are a major source of O_3 precursors. O_3 causes eye and respiratory irritation, reduces resistance to lung infection, and may aggravate pulmonary conditions in persons with lung disease. As shown in **Table 4-3**, the state O_3 standard was violated several times at the T Street monitoring station in Sacramento over a three-year period.

Carbon Monoxide (CO)

CO is an odorless, invisible gas usually formed as the result of incomplete combustion of organic substances and is primarily a winter pollution problem. Motor vehicle emissions are the dominant source of CO in Sacramento County (SMAQMD, 1994). CO concentrations are influenced by the spatial and temporal distributions of vehicular traffic, wind speed, and atmospheric mixing. High levels of CO can impair the transport of oxygen in the bloodstream, thereby aggravating cardiovascular disease and causing fatigue, headaches, and dizziness. Measured CO levels at the T Street monitoring station have not violated the state eight-hour standard in the last three years as shown in **Table 4-3**.

Respirable Particulate Matter (PM_{10})

PM_{10} consists of particulate matter 10 microns (one micron is one one-millionth of a meter) or less in diameter, which can be inhaled. Relatively small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorine or ammonia) that may be injurious to health. Primary sources of PM_{10} emissions in Sacramento County are entrained road dust and construction and demolition activities. The amount of particulate matter and PM_{10}

Table 4-3
Air Quality Data Summary (1999-2001) for the Project Area

Pollutant	Standard	Monitoring Data By Year[a]		
		1999	2000	2001
Ozone (O_3)				
Highest 1-hour average, ppm[c]	0.09	**0.12**	**0.10**	**0.12**
Number of days standard exceeded		6	3	2
Carbon Monoxide (CO)				
Highest 8-hour average, ppm	9.0	5.7	4.4	4.4
Number of times standard exceeded		0	0	0
Particulate Matter (PM_{10})				
Highest 24-hour average, $\mu g/m^3$ [c]	50	**99**	**64**	**89**
Measured days above state standard		8	5	3
State Annual Average, $\mu g/m^3$	30	23.7	22.9	21.7

NOTE: **Bold** values are in excess of applicable standard.
a All data are from the 13th and T Street monitoring station in downtown Sacramento.
b State standard, not to be exceeded.
c ppm, parts per million; $\mu g/m^3$, micrograms per cubic meter.
d Particulate matter is usually measured every sixth day (rather than continuously like other pollutants).
SOURCE: CARB, 2002a

generated is dependent on the soil type and the soil moisture content. Traffic also generates particulate matter and PM_{10} emissions through entrainment of dust and dirt particles that settle onto roadways and parking lots. Burning of wood in residential wood stoves and fireplaces and open agricultural burning are other sources of PM_{10} (SMAQMD, 1994). **Table 4-3** shows that the PM_{10} standard was violated 16 times during the three-year sampling period at the T Street monitoring station.

Other Criteria Air Pollutants

The standards for NO_2, SO_2, and Pb are being met within the region, and trends in historical data of ambient concentrations of these pollutants show no signs of violating state or federal standards in the future (CARB, 1995-1997).

REGULATORY SETTING

Regulation of air quality is achieved through both federal and state ambient air quality standards (SAAQS) and emission limits for individual sources of air pollutants.

Federal

The 1977 federal Clean Air Act (CAA) required the United States Environmental Protection Agency (EPA) to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for the six "criteria" air pollutants, O_3, CO, NO_2, SO_2, PM_{10}, and Pb. EPA publishes criteria documents to justify the choice of standards. Standards for these pollutants are listed in **Table 4-4**.

In June of 1997, the EPA adopted new O_3 and PM_{10} federal standards. The EPA changed the 1-hour O_3 federal standard of 0.12 ppm to an 8-hour standard of 0.08 ppm. The EPA also adopted an additional standard for suspended particulate matter from PM_{10} to particulate matter less than 2.5 microns ($PM_{2.5}$). Although these new standards have been adopted, air quality monitoring data is not available for the new measurements. Therefore, the evaluation of air quality impacts in this section refers only to the pre-June 1997 standards.

Pursuant to the 1990 CAA Amendments (CAAA), the EPA has classified air basins (or portions thereof) as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. The site lies within the urbanized area of Sacramento County of the SVAB which the EPA classifies as a non-attainment area for O_3 and PM_{10}. The area has reached attainment status for CO. The SVAB is unclassified for NO_2 and SO_2 (CARB, 2002b).

Because the air basin's status is designated as a non-attainment area, the air pollution control districts and air quality management districts within the basin have prepared the Sacramento Area Regional Ozone Attainment Plan as the basins' contribution to the State Implementation Plan (SIP), pursuant to the CAAA. The SIP includes plans for each of the state's non-attainment areas, along with rules and regulations and other control measures adopted by the air districts and the California Air Resources Board (CARB).

State

The CARB, California's state air quality management agency, regulates mobile emissions sources and oversees the activities of County Air Pollution Control Districts (APCDs) and regional Air Quality Management Districts (AQMDs). The CARB regulates local air quality indirectly by SAAQS and vehicle emission standards by conducting research activities, and through its planning and coordinating activities.

California has adopted ambient standards that are more stringent than the federal standards for the criteria air pollutants and are shown in **Table 4-4**. Under the California Clean Air Act (CCAA), patterned after the federal CAA, areas have been designated as attainment or non-attainment with respect to SAAQS. The SVAB is non-attainment for O_3 and PM_{10} and attainment for CO, NO_2, SO_2, and Pb with respect to the state standards (CARB, 2002b).

Local

The project site is in Sacramento County, under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD is responsible for implementing emissions standards and other requirements of federal and state laws.

As required by the CAA and CCAA, SMAQMD developed the *1994 Regional Ozone Attainment Plan* and the *1991 Air Quality Attainment Plan*. The plans address the requirement to attempt to bring the district into compliance with the federal and SAAQS. Because the district is not in

Table 4-4
State And National Ambient Air Quality Standards

Pollutant	Averaging Time	SAAQS[a]	NAAQS[b]
Ozone	1 hour	0.09 ppm[c]	0.12 ppm
Carbon Monoxide	1 hour	20 ppm	35 ppm
	8 hour	9.0 ppm	9 ppm
Nitrogen Dioxide	1 hour	0.25 ppm	NA
	Annual	NA	0.053 ppm
Sulfur Dioxide	1 hour	0.25 ppm	NA
	3 hour	NA	0.5 ppm
	24 hour	0.04 ppm	0.14 ppm
	Annual	NA	0.03 ppm
Respirable Particulate Matter	24 hour	50 g/m^3/c/	150 g/m^3
	Annual	30 g/m^3	50 g/m^3
Sulfates	24 hour	25 g/m^3	NA
Lead	30 day	1.5 g/m^3	NA
	Calendar Quarter	NA	1.5 g/m^3
Hydrogen Sulfide	1 hour	0.03 ppm	NA
Vinyl Chloride	24 hour	0.010 ppm	NA

a SAAQS (i.e., California standards) for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, respirable particulate matter are values that are not to be exceeded. All other California standards shown are values not to be equaled or exceeded.
b NAAQS (i.e., national standards), other than ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.
c ppm = parts per million by volume; □/m3 = micrograms per cubic meter.
NA: Not Applicable.
SOURCE: CARB, 1998.

compliance with O_3, and PM_{10} standards, the plans address emissions of ozone precursors (volatile organic compounds and nitrogen oxides), CO, and PM_{10}. The plans include carefully planned strategies for progressive reduction of air pollutants by promoting active public involvement, by encouraging compliance through positive influence and behavior, and through public education in both the public and private sectors.

North Natomas Community

The 1994 North Natomas Community Plan includes an Air Quality Mitigation Strategy, the focus of which is on reducing emissions of ozone precursors and carbon monoxide. The 1996 NNCP FEIR describes the net increase in regional emissions of carbon monoxide and reactive organic

gases (ROG's), which contribute to ozone, as being significant environmental effects. The City Council found that these emissions are significant environmental effects that would arise from the cumulative development of North Natomas in the absence of appropriate and feasible mitigation measures.

The 1986 NNCP EIR, certified in 1986, identified three mitigation measures related to air quality: 1) Implement requirements for the Air Quality Plan (Air Quality Mitigation Strategy) for new developments; 2) Implement transportation control measures such as incentives for ride-sharing, transit, and bicycle use; and 3) Implement land use measures which would reduce number of vehicle trips. Such measures include mixed land uses, which provide housing within walking distance of employment centers and development of housing with prices compatible with the salary structure of major local employers. Prior to approval of on-site development, the project will be required to submit an Air Quality Mitigation Strategy (AQMS) and Transportation Systems Management (TSM) Plan in compliance with those measures.

The 1994 NNCP SEIR sets forth additional air quality mitigation measures. The requirement of implementing an AQMS and a TSM Plan was restated as well as the following guiding policies that serve as mitigation measures:

- Development in North Natomas shall comply with the Federal and the California Clean Air Acts. (NNCP pg.48)
- Structure the community and each development to minimize the number and length of vehicle trips. (NNCP pg. 48)
- Minimize air quality impacts through direct street routing, providing a support network for zero-emission vehicles, bicycles, and pedestrians, and sizing streets suitable to the distance and speed of the traveler. (NNCP pg. 38)
- Provide commercial sites at transit stations/stops to make it easier for transit riders to shop on their commute rather than making a separate trip. (NNCP pg. 25)

The Transportation Systems Management (TSM) Element and the required detailed Air Quality Mitigation Strategy of the North Natomas Community Plan were found to substantially lessen all the significant and potentially significant air quality impacts resulting from development of the North Natomas Community Plan area. The TSM element establishes a goal of 35 percent reduction in peak hour vehicle trips to assist in achieving an adequate level of service on North Natomas arterials. The Air Quality Mitigation Strategy establishes a community-wide goal of a 35 percent reduction in traffic and other related ROG's to assist in achieving and maintaining federal ozone standards.

STANDARDS OF SIGNIFICANCE

Construction and operation impacts are considered significant if the project would result in a net increase in criteria air pollutants that exceed the following Sacramento Metropolitan Air Quality Management Districts (SMAQMD) thresholds as listed in the *Air Quality Thresholds of Significance* (1994) which are as follows:

ROG	85 lbs/day
NO_x	85 lbs/day
PM_{10}	275 lbs/day

QUESTION A

Air quality standards represent the level at which people can be exposed to pollutant levels before experiencing health impacts. At elevated levels, or prolonged exposure, ROG, NO_x, and PM-10 have various health effects associated with them. PM-10 can also cause a nuisance type impact. Fugitive dust generated by the project may settle out on the vehicles within the immediate vicinity of the project site.

Natomas Crossing PUD

The 1994 NNCP Supplemental EIR concluded that development of the community plan would result in significant and unavoidable adverse ROG, NO_X, PM_{10}, and sulfur dioxide emissions. The City Council considered these air emissions impacts and determined that other benefits of the buildout of the community plan outweighed the air emission impacts and adopted a Statement of Findings and Overriding Considerations in 1994. The following requirements are included within the 1994 NNCP SEIR to reduce the significance of development in the North Natomas Community.

Transportation Systems Management (TSM Strategy): The proposed project will be required to implement a Transportation Systems Management (TSM) strategy. The strategy helps make the maximum use of the existing transportation system, thus reducing the need for or delaying construction of new transportation facilities. TSM strategies work in several ways: 1) to reduce the number and length of vehicle trips, 2) to spread traffic throughout the day, or 3) to improve traffic flows. TSM measures are also intended to reduce air pollution levels. The TSM plan is a citywide requirement per the City Zoning Ordinance, Section 6-E. The applicant may select from a menu of options that, used collectively, will reduce peak hour trips by at least 35 percent. These options include bike lockers and showers, carpool/ vanpool incentives, transit incentives, and others.

Air Quality Mitigation Strategy: All development in the North Natomas Community Plan area is required to submit a project-wide Air Quality Mitigation Strategy to reduce the ROG emissions generated by the community. The North Natomas Community Plan contains an Air Quality Mitigation Strategy, which requires that projects in North Natomas be planned and developed in a way that reduces the community's reliance on single-occupant vehicles. Three types of measures are included in the strategy: 1) site design, 2) target area, and 3) community wide. An example of a site design measure is the orientation of the building(s) to promote transit use. A target area measure might include the reduction in parking allowed because the site is located within 1/4 mile of a light rail station. And a community-wide measure might include provision of a shuttle system or formation of a Transportation Management Association (TMA) for the community.

The City Planning and Building and Public Works Departments, with help from the Sacramento Metropolitan Air Quality Management District (SMAQMD), will verify that a 35 percent

community-wide reduction in projected ROG emissions will result from successful implementation of the Air Quality Mitigation Strategy. All new residential development must reduce ROG emissions by a minimum of 20 percent compared to the single occupant vehicle baseline. And all non-residential development must reduce ROG emissions by a minimum of 50 percent compared to the single occupant vehicle baseline (NNCP SEIR). Promotion of electric, other zero-emission, and low-emission vehicle use is part of the Air Quality Mitigation Strategy. This NNCP requirement is in addition to the citywide requirement that all new non-residential developments prepare a Transportation Systems Management (TSM) Plan.

Mixture of Land Uses: Per the 1986 NNCP EIR and the 1994 NNCP SEIR, a mixture of land uses is viewed as a benefit to reducing air quality because fewer trips may need to be made between activity centers. The proposed project site is currently designated as Employment Center which allows a mixture of uses within the zone: office, light industrial, retail, and residential. The site is also designated for Medium Density Residential, Highway Commercial, and Convenience Commercial. The project may benefit from future transit improvements as well. A proposed light rail station is located within 1/4 mile of the northeast corner of the site, on Del Paso Road. Arena Boulevard, East Commerce Road, and South Loop Road are all designated as intra-community minor bus corridors.

Reduce Trips, Direct Street Routing and Ped/Bike/Low Emission Network: The Guiding Policies of the 1994 NNCP indicate that air quality can be improved by: 1) structuring each development to reduce trips, 2) providing direct street routing and ped/bike/transit linkages, and 3) providing commercial services at light rail stations. To accomplish these improvements, the project and PUD guidelines shall ensure that buildings are close to the street, buildings are oriented toward transit, and pedestrian/bicycle linkages are incorporated throughout the site, between land uses.

Particulate Matter-10 (i.e., dust): Development of the site may result in short term particulate impacts. The Sacramento City Code (SCC, Article 9) states that any person who has been issued a building permit shall take responsible precautions to prevent and control movement of dust created by work activities. If a project is in violation of this article, the Building Official may order the work to be stopped (Sections 9.381, 9.382). Enforcement of these sections under the SCC will ensure that there is a less-than-significant PM-10 air quality impact.

Future development will be required to conform to the requirements of the 1994 NNCP. The TSM Plan required for the project is expected to result in a minimum 35 percent decrease in peak hour vehicle trips compared to the single occupant vehicle baseline. The Air Quality Mitigation Strategy required for the project is expected to result in a minimum 35 percent community-wide (50 percent project-wide) decrease in Reactive Organic Gas (ROG) emissions when measured against the baseline conditions and promote electric, other zero-emission, and low-emission vehicle use. These decreases in trips and emissions, mixture of land uses, transit friendly site design, and construction management practices are expected to reduce the proposed project's contribution to project specific and cumulative air quality impacts below a level of significance. Because the applicant must comply with these regulations and mitigation measures included in the NNCP EIR and SEIR pertaining to air quality, a less-than-significant air quality impact is anticipated by the project.

Catholic Healthcare West

Short-Term Construction Impacts

Construction is divided into two distinct phases. Phase 1 involves site preparation, excavation, and grading, or demolition of existing structures. Phase II involves the actual construction of the project. Emissions associated with the construction of the Proposed Project were calculated using the URBEMIS 7G Version 5.1.0 computer program developed by CARB (**Appendix B**). Emissions from both phases of construction are expected to be less than significant (**Table 4-5**).

Table 4-5
Estimated Emissions From Project Construction
(Pounds Per /Day)

Pollutant	SMAQMD Thresholds	Phase I (Grading)	Phase II (Construction)	Significant Impact
ROG	85	2.55	71.90	No
NO_x	85	20.20	76.49	No
PM-10	275	20.02	5.36	No

Source: Analytical Environmental Services, 2002.

While the short-term construction impacts are considered less-than-significant, it should be noted that implementation of the Proposed Project would still need to comply with SMAQMD Rule 902 regarding asbestos emissions, Rule 403 regarding fugitive dust emissions, and Rule 405 regarding dust and condensed fumes.

Long-Term Operational Ozone Precursor Impacts

To determine long-term operational air emissions resulting from the Proposed Project, the URBEMIS 7G Version 5.1.0 computer program developed by the CARB was used. Model outputs for construction emissions are listed in **Table 4-6**.

Table 4-6
Estimated Operational Emissions
(Pounds Per /Day)

Pollutant	SMAQMD Thresholds	Emissions	Significant Impact
ROG	85	35.00	No
NO_x	85	37.53	No
PM_{10}	275	12.62	No

Source: Analytical Environmental Services, 2002.

The Proposed Project would be estimated to generate 35.00 pounds per day of ROG, 37.53 pounds per day of NO_x, and 12.62 pounds per day of PM_{10}. As can be seen from the table above, no significant long-term operational impacts associated with ROG, NO_x or PM_{10} emissions are expected from implementation of the Proposed Project.

QUESTION B

Some receptors are considered more sensitive than others to air pollutants. The reason for greater sensitivity that the average include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also sensitive to poor air quality because people usually stay home for extended periods of time.

There exist a few potential sensitive receptors in the vicinity of the project construction site. Existing residential land uses occur west, east and southeast of the project site. However, because no significant emissions are anticipated to result from the construction or operation of the Catholic Healthcare West office, and because the applicant must comply with these regulations and mitigation measures included in the NNCP EIR and SEIR pertaining to air quality, no significant impacts are expected.

QUESTION C

The Proposed Project is not expected to create a substantial alternation of air movement, moisture, or temperature, or cause any change in regional climate.

QUESTION D

Development of the project site and the ultimate use of the site are not expected to result in objectionable odors.

FINDINGS

With the incorporation of the above mitigation measures into the project, a less than significant air quality impact is anticipated.

VI. TRANSPORTATION/CIRCULATION

Would the proposal result in:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Increased vehicle trips or traffic congestion	☐	☐	☒
b) Hazards to safety from design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒
c) Inadequate emergencies access or access to nearby uses?	☐	☐	☒
d) Insufficient parking capacity on-site or off-site?	☐	☐	☒
e) Hazards or barriers for pedestrians or bicyclists?	☐	☐	☒
f) Conflicts with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☒
g) Rail, waterborne or air traffic impacts?	☐	☐	☒

TRANSPORTATION DISCUSSION

QUESTIONS A-G

The project area is bounded by Del Paso Road to the North, Interstate 5 to the west, East Commerce Way to the East, and San Juan Road to the south. There have been numerous studies and traffic investigations done arround the project area. The Public Works Department has used information in these studies, along with additional information requested from the applicant to determine if there is the potential for impacts due to the proposed project. No impacts have been identified as a result of the proposed project. Therefore, a traffic study is not needed for this project.

All entrances to the Proposed Project area are either signalized or have limited turn movements that are allowed. These facilities will be implemented as development of the proposed project area occurs. In addition, the existing signal at Arena Boulevard and East Commerce Way will be modified and become fully operational with the Arena Boulevard Interchange project, scheduled for completion by summer of 2004.

With the development of the Proposed Project the following roadway improvements have been incorporated into the project design.

- Dedication and construction of Del Paso Road fronting the Proposed Project
- East Commerce Way is a 6-lane facility north of the proposed Natomas Crossing Drive (Road F on the map). This portion of East Commerce way shall have a separated

sidewalk with some modifications to the existing median to accommodate the proposed signalized intersections and allowed turn movements. The portion of East Commerce Way south of Natomas Crossing drive (Road F on the map) shall be constructed as a 4-lane facility as part of this development.

- Dedication and construction of San Juan Road fronting the Proposed Project

Based upon the findings of numerous traffic studys in the project and incorporation of the roadway improvements listed above, the Public Works Department has found that a traffic study is not required as the Proposed Project is expected to have a less-than-significant impact.

FINDINGS

The Proposed Project, with the included roadway improvements, would result in less-than-significant impacts with regards to transportation and circulation.

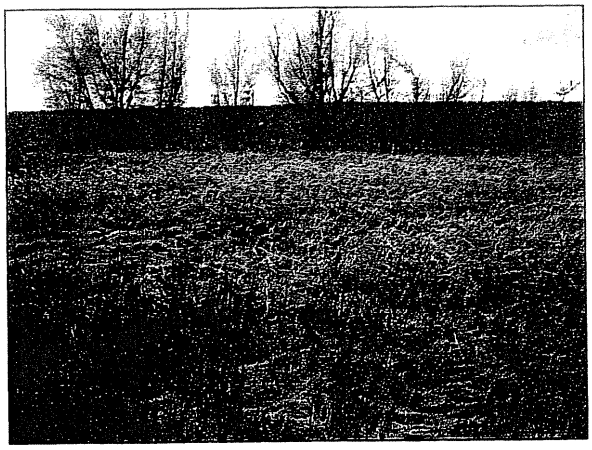
VII. BIOLOGICAL RESOURCES

Would the proposal result in impacts to:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Endangered, threatened or rare species or their habitats (including, but not limited to plants, fish, insects, animals and birds)?	☐	☒	☐
b) Locally designated species (e.g., heritage or City street trees)?	☐	☐	☒
c) Wetland habitat (e.g., marsh, riparian and vernal pool)?	☐	☒	☐

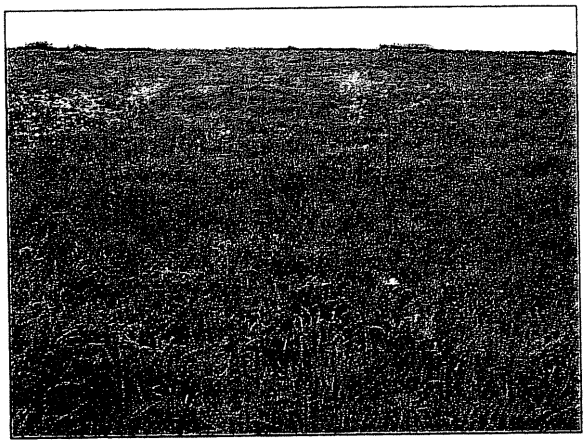
BIOLOGICAL RESOURCES DISCUSSION

The Proposed Project is located within the Natomas Basin, a low-lying region in the Sacramento Valley, located east of the Sacramento River and north of the American River. The Natomas Basin contains portions of the City of Sacramento and unincorporated areas of Sacramento and Sutter counties. Historically, the basin was primarily in agricultural production and existing water conveyance systems, like the East Drainage Canal, within the Natomas Basin were created for agricultural water conveyance and drainage purposes.

AES biologists conducted a field assessment on March 12, 2002 to characterize the biological resources of the proposed project site. The 298.5± acre property consists primarily of disturbed annual grassland habitat, supporting approximately 8.85 acres of seasonal wetlands. The property was historically used for agricultural purposes and is regularly disked for maintenance and weed-abatement purposes. Photographs of the proposed project site are presented in **Figure 4-4**.



Typical view of seasonal wetland occurring on proposed project site.



Typical view of annual grassland habitat.

View of borrow pit wetland.

SOURCE: AES, 2002

Figure 4-4
Site Photographs

The annual grassland plant community is generally devoid of woody vegetation and is characterized by a dense to sparse cover of non-native grasses and forbs. Depending on level of disturbance, moisture level, and other environmental factors, several species are considered dominant in this plant community including English ryegrass (*Lolium perenne*), dovefoot geranium (*Geranium molle*), longbeak stork's-bill (*Erodium botrys*), ripgut brome (*Bromus diandrus*), yellow star thistle (*Centaurea solstitialis*), and soft brome (*Bromus hordeaceus*). Other common plant species include Mediterranean barley (*Hordeum marinum*), mustard (*Brassica* spp.), fiddleneck (*Amsinckia* sp.), field bindweed (*Convolvulus arvensis*), clover (*Trifolium* spp.), and vetch (*Vicia* sp.).

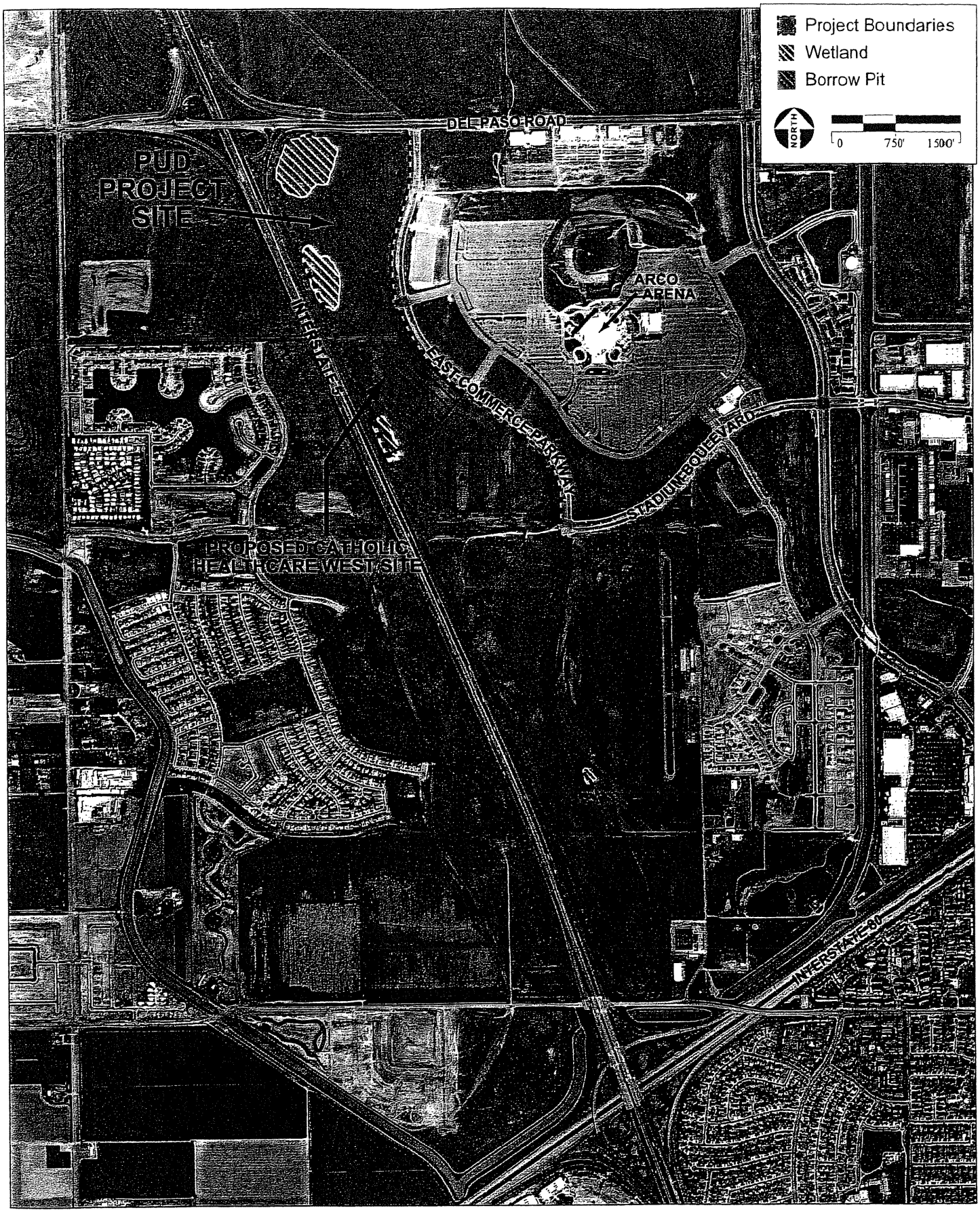
The proposed project site contains approximately 8.85 acres of seasonal wetland habitat. These features have formed in localized topographic depressions and occur primarily in the northwestern portion of the property. The vegetation community of the seasonal wetland habitat consists primarily of rush (*Juncus* spp.), curly dock (*Rumex crispus*), spikerush (*Eleocharis* sp.), cocklebur (*Xanthium strumarium*), cattail (*Typha latifolia*), and other herbaceous wetland species. In addition, wetland habitat has formed in a historically excavated "borrow pit" located in the southeastern portion of the proposed project site. The locations of wetland habitats are shown in **Figure 4-5**.

THE NATOMAS BASIN HABITAT CONSERVATION PLAN

The 1994 North Natomas Community Plan requires development and implementation of a Habitat Conservation Plan as mitigation for development in North Natomas. In 1997, a Natomas Basin HCP was approved by the City of Sacramento, U. S. Fish & Wildlife Service (USFWS), and California Department of Fish & Game (CDFG). The Natomas Basin HCP is a conservation plan supporting application for a federal permit under Section 10(a)1(B) of the Endangered Species Ace and a state Permit under Section 2081 of the California Fish and Game Code, i.e., an Incidental Take Permit (ITP). The purpose of the Natomas Basin HCP is to promote biological conservation along with economic development and continuation of agriculture within the basin. The HCP and ITP were subsequently challenged, and on August 15, 2000, the federal court ruled that the ITP should not have been issued, and an EIS was required for the project. Based on the federal court ruling, the ITP was invalidated.

Based on this ruling, the City of Sacramento, Sutter County, Reclamation District No. 1000 (RD 1000), and Natomas Central Mutual Water Co. are now jointly managing the preparation of an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) on behalf of the USFWS. The USFWS is the lead federal agency for the preparation of the EIS and the City of Sacramento, Sutter County and RD1000 are co-lead agencies for the preparation of the EIR. The City of Sacramento and Sutter County will seek adoption of a revised NBHCP and the issuance of a new ITP by USFWS and CDFG for development within the Natomas Basin.

On May 15, 2001, the same court granted a motion modifying the Order of August 15, 2000, to allow incidental take protection for limited development within the City with the provision of mitigation land in specific areas of the Natomas Basin. The new order was based upon a settlement agreement entered into by all parties to the litigation.



SOURCE: City of Sacramento, 2001 : AES, 2002

Natomas Crossing / 202502

Figure 4-5
Wetland Features

The Settlement Agreement allows a maximum of 1,668 acres of development in North and South Natomas. Under the agreement the City can issue grading permits for up to 1,068 acres (phase 1) with these requirements in place: 1) HCP mitigation fees have been paid; 2) A biological pre-construction survey has been completed; and 3) grading must be accomplished during the grading season of May 1 to Sept 30th; 4) the developer must comply with all applicable mitigation measures; and, 5) the developer must sign a Grading Agreement that identifies requirements of the Settlement Agreement to which the project must comply. After grading permits have been issued for up to 1,068, the remaining 600 acres (phase 2) require: 1) ½ acre of mitigation land shall have been acquired for each acre authorized for disturbance under Phase 2, 2) City will replace the 200 acre "cushion"; and 3) development under the settlement agreement shall not exceed 1,360 acres until at least 250 acres of mitigation land have been acquired within Zone 1.

STANDARDS OF SIGNIFICANCE

For purposes of this environmental document, an impact would be considered significant if the Proposed Project would:

- Create a potential health hazard or use, produce, or dispose of materials that would pose a hazard to special-status plant or animal species in the affected area;
- For threatened or endangered species, substantially degrade the quality of the environment, destroy habitat, or reduce a population below self-sustaining levels;
- Affect other biologically sensitive features (such as jurisdictional "waters of the U.S.", biologically-significant isolated wetlands) of concern to agencies or natural resource organizations; or
- Violate the City's Heritage Tree Ordinance (Ordinance 93-066, as amended).

QUESTION A

The proposed project site represents potential habitat for two special-status species including giant garter snake (*Thamnophis gigas*) and Swainson's hawk (*Buteo swainsoni*). In addition, raptor species (birds of prey) may potentially nest on the proposed project site or surrounding areas. These species and the potential for project-related impacts for the proposed project are discussed below.

Giant garter snake, a federally listed species, is known to occur within suitable habitats in the Natomas Basin. Aquatic habitats on the proposed project sites include shallow seasonal wetlands and a "borrow pit" that remains partially inundated for most or all of the year. A formal survey to determine the presence, extent, and suitability of potential giant garter snake habitat within the proposed project site was conducted by herpetologist Sean Barry from April 29 to May 31 of 2001 (**Appendix C**). No giant garter snakes were found on-site during the survey and a majority of on-site aquatic habitats were determined to not represent suitable habitat for this species. However, the borrow pit wetland was determined to represent potential foraging or transient habitat for the species.

Swainson's hawk, which is listed by the California Endangered Species Act as a threatened species, is known to occur in the project area and may potentially utilize the annual grassland

habitat on the proposed project site for foraging. No suitable nesting habitat for this species (e.g. large trees near major watercourses) is present within the proposed project site. However, suitable nesting habitat is present within ½ mile of the proposed project site.

The Proposed Project will be required to comply with any and all applicable provisions (e.g. pre-construction surveys, measures to minimize potential for take) of the Natomas Basin HCP and submit the appropriate HCP mitigation fees to the City of Sacramento as provided in **Mitigation 1** (pg. 4-10). Implementation of this measures will reduce potential impacts to giant garter snake and Swainson's hawk to a less that significant level and no additional mitigation for these species is required.

Trees occurring within the proposed project site or immediate vicinity may represent potential nesting habitat for raptor species. All raptor species, and their nests, are protected from "take" according the California Fish and Game Code. Therefore, impacts to nesting raptors are considered significant and mitigation is required.

Formal wet and dry season surveys for vernal pool branchiopod species were conducted for the proposed project by Gibson & Skordal and May Consulting Services from 1998 to 1999 (**Appendix C**). No special-status invertebrates were identified during these surveys and the proposed project is not anticipated to result in adverse impacts to special-status invertebrates. Therefore, no mitigation is required for special-status invertebrates.

QUESTION B

The proposed project site contains numerous cottonwood (*Populus* sp.), poplar (*Populus nigra*), willow (*Salix* sp.), London plane (*Plantanus acerifolia*), valley oak (*Quercus lobata*), and other planted trees located adjacent to Interstate 5. The proposed project site does not contain any trees that qualify for protection under the City of Sacramento Heritage Tree Ordinance. The City of Sacramento Arborist has evaluated all trees occurring on the proposed project site and determined that trees may be saved or removed at the developer's discretion (City of Sacramento, 1997a). Therefore, project related impacts to trees are considered less than significant and no mitigation is required.

QUESTION C

A formal wetland delineation of the proposed project site was conducted by Gibson & Skordal and verified by the U.S. Army Corps of Engineers (ACOE). Wetlands occurring on the proposed project site include seasonal wetlands and an excavated borrow-pit. None of the wetland habitats occurring on the site are subject to ACOE jurisdiction under the federal Clean Water Act.

The proposed project will result in direct impacts to approximately 8.85-acres of isolated wetland habitat. Wetland habitats occurring on the proposed project site have developed as a result of human activities on or near the proposed project site (construction of Interstate 5 berm, borrowing soils from the property, uneven topography after disking). These wetland habitats are regularly disturbed during routine disking activities and provide limited resources for wildlife. Payment of the Natomas Basin HCP mitigation fees as provided in **Mitigation 1** (pg. 4-10) will mitigate for

the loss of aquatic habitat that could potentially be utilized by protected species occurring within the Natomas Basin (e.g. giant garter snake). Given the existing level of disturbance, relatively low biological value and artificial origin of on-site wetland habitats, no additional mitigation for loss of wetland habitat is recommended. However, the project proponent will be required to obtain State Water Quality Certification to ensure that project impacts remain less than significant.

The following mitigation measure would apply to both the Natomas Crossing PUD and Catholic Healthcare West proposed project site.

Mitigation 2:

The proposed project shall obtain State Water Quality Certification from the Regional Water Quality Control board prior to filling of any wetland habitats.

FINDINGS

The Proposed Project, with the included mitigation measures, would result in less-than-significant impacts to biological resources.

VIII. ENERGY

Would the proposal result in impacts to:	*Potentially Significant Impact*	*Potentially Significant Unless Mitigated*	*Less than Significant Impact*
a) Power or natural gas?	☐	☐	☒
b) Use non-renewable resources in a wasteful and inefficient manner?	☐	☐	☒
c) Substantial increase in demand of existing sources of energy or require the development of new sources of energy?	☐	☐	☒

ENERGY RESOURCES DISCUSSION

Electrical service for the NNCP area is provided by the Sacramento Municipal Utilities District (SMUD) and natural gas service is provided by Pacific Gas and Electric (PG&E). The project site has no existing overhead utility power lines. Development of the project site will require the abandonment of SMUD electrical and telephone easements according to an agreement between the project proponent and SMUD. These easements currently bisect quadrant B in a north-south direction. SMUD proposes to amend the 230 kv electrical transmission system adopted in the 1994 NNCP to a 69 kv transmission system. The proposed 69 kv transmission system locates an overhead line adjacent to "Street A" in the northern portion of the site. SMUD is requesting that adequate ROW be dedicated for the facilities at the time the Master Tentative Parcel Map is

finalized. The NNCP requires undergrounding of utilities for all SMUD powerlines not shown on the Plan Map (everything except high-voltage transmission lines). The project proponent may underground the 69kv transmission facility at their own expense. All other utilities to the Proposed Project are underground as required by the North Natomas Community Plan. No substation is proposed on-site.

The State Building Energy Efficient Standards (Title 24) regulate energy consumption of new buildings in California. Title 24 regulates energy consumed for heating, cooling, ventilation, water heating, and lighting in all new residential and non-residential buildings. In addition, the City has adopted an energy conservation review checklist and development guidelines for project and site plan review. The intent of the guidelines is to encourage consideration of energy conservation measures in the preliminary development stages so that project related energy consumption is minimized.

Policies in the NNCP encourage the use of electric and other low-emission vehicles. Specifically, on page 49, an Implementing Policy related to Air Quality states: "Encourage the use of electric, other zero-emission, and low-emission vehicles by providing sufficient, convenient, electric vehicle charging and parking facilities in the planning of residential and employment developments."

Policies in the NNCP also promote energy efficient building design. On page 74, an Implementing Policy related to Utilities states: "Prior to any development occurring, the project proponent must consult with SMUD's New Construction Service staff to incorporate SMUD energy efficiency programs where feasible. The objective of the program is to maximize the energy efficiency potential of new construction projects consistent with SMUD's system design capacity and energy conservation goals through cost-effective investments and technical assistance for designers and builders." This requirement will be included as a planning condition of development approval. SMUD has begun to coordinate with developers to implement programs that encourage the use of electric vehicles and alternative energy sources, such as photovoltaic cells and fuel cells. Charging stations for electric vehicles could be incorporated in residential garages and parking lots within the project area. The applicant shall contact SMUD to review methods to incorporate these programs in the project.

On page 88 – 89 of the NNCP, the Project Design Standards state that the site, building, and landscape should be designed to conserve energy. Specifically, developments should "provide appropriate microclimate siting techniques that address solar access, exposure, shading, and wind direction." The NNCP points out numerous methods that can be used to maximize energy efficiency of development, including efficient lighting systems, thermal energy storage, energy management systems, and the appropriate use of glazing and building materials. Finally, projects should be landscaped to reduce "heat island" effects through the use of landscaping and reflective surfaces. The proposed Catholic Healthcare West project has been designed to be energy efficient. For instance, the parking lot would be heavily treed (trees would shade about 51% of the paved area) and the windows would be energy efficient.

STANDARDS OF SIGNIFICANCE

A significant environmental impact would result if a project would require PG&E to secure a new gas source beyond their current supplies. Additionally, a significant impact would occur if the project resulted in the need for a new electrical source (e.g. hydroelectric and geothermal plants).

QUESTION A

The project will result in a net increase for power and/or natural gas. However, the North Natomas Community Plan incorporated this level of development into the expected increase of energy demand and has planned utility expansion with cooperation from Sacramento Municipal Utilities District. The proposed development will meet Title 24 State Energy Standards. The developer shall be responsible for all hook up costs up front. A less-than-significant impact is expected.

QUESTION B

The project is proposed to be a mixed-use development with peak energy usage in the afternoon hours. Energy conservation measures will be built into the project as required by the NNCP. A less-than-significant impact is expected from using non-renewable resources.

QUESTION C

Under the State's current supply constraints, rolling blackouts are a possibility unless additional power plants and sources of supply are constructed before the project is finished. The project itself will not require development of energy resources for the sake of the project. A less-than-significant impact is expected from the increased demand on existing power.

FINDINGS

The Proposed Project would result in less-than-significant impacts regarding energy systems and supply.

IX. HAZARDS

Would the proposal involve:	*Potentially Significant Impact*	*Potentially Significant Unless Mitigated*	*Less than Significant Impact*
a) A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation)?	☐	☐	☒
b) Possible interference with an emergency evacuation plan?	☐	☐	☒
c) The creation of any health hazard or potential health hazard?	☐	☐	☒
d) Exposure of people to existing sources of potential health hazards?	☐	☐	☒
e) Increased fire hazard in areas with flammable brush, grass, or trees?	☐	☐	☒

HAZARDS DISCUSSION

The project site is currently vacant and was historically used for agricultural purposes. The project site currently consists mainly of grassland. There are no old foundations, significant garbage, or other evidence suggesting that the historic use of the site could have resulted in hazardous material discharge or dumping. A March 2002 site survey by AES, Inc. did not reveal any evidence of hazardous materials on the project site.

SITE ASSESSMENT

Previous assessments of hazardous materials in the area detected low concentrations of DDT compounds in the shallow soil samples collected at sites to the east of the subject property (see Natomas Crossing, 1997). Very low concentrations of DDT compounds are within the acceptable health risk range established by regulatory agencies (EPA, and California State Department of Health Services). A 1996 surface soil evaluation by Wallace-Kuhl and Associates, found no evidence of persistent agricultural chemical residues that would be problematic with respect to unrestricted development of the subject property. Wallace-Kuhl did not recommend additional assessment of the subject property with respect to persistent pesticide residues in existing surface soils (Wallace-Kuhl and Associates, 1996). A former nursery occupied a portion of the project site and resulted in soil contamination on-site, just south of Arena Boulevard (McLaren Hart, 1991). A 1996 soil analysis completed by Wallace-Kuhl and Associates found that the nursery site had been remediated through the excavation and proper disposal of on-site contaminated soils. Wallace-Kuhl found no soil contamination at the previous nursery site that would be problematic for residential or commercial development on-site (1996).

A hazardous materials database search was conducted for the project site and surrounding area on March 14, 2002 (EDR). The search found no environmental conditions on the project site (**Appendix D**). The 2002 EDR report found two leaking underground storage tanks at Elixir Industries, 3321 Airport Road and at Natomas Airport, 3801 Airport Road. McLaren Hart's 1991 report noted two leaking subsurface fuel storage tanks at Chevron, 3801 Airport Road, and Elixir Industries, 3321 Airport Road. The Chevron site is a soil contamination case that is distant from the Proposed Project. It is thus, not likely to affect the subject property. Initial sampling of a closed tank at the Elixir site detected a diesel leak. However, subsequent re-sampling at the Elixir site failed to confirm a leak, and the site has been closed (Liebold, 2002). In 1996, Wallace Kuhl and Associates found no evidence of on-site petroleum hydrocarbon contamination in subsurface soil or groundwater. Groundwater will not be used be utilized by the Proposed Project, further reducing potential human health hazards. No effect to the Proposed Project is anticipated.

One potential "Superfund" site, Natomas Airport, was identified on the EPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list. The 2002 EDR report and the 1991 McLaren Hart report found petroleum hydrocarbon groundwater contamination at the Natomas Airport. However, McLaren Hart reported that the groundwater flow is to the south, downgradient from the subject property. It is thus, not expected to affect the subject property. McLaren Hart recommended soil samples to assess any possible soil contamination on the subject property (1991). In 1996, Wallace Kuhl and Associates found no on-site petroleum hydrocarbon contamination in subsurface soil or groundwater. The site visit conducded by AES on March 12, 2002 did not reveal any recent evidence of soil staining or distressed vegetation.

The 2002 EDR report found six underground storage tanks within 1.5 miles of the Proposed Project. These tanks were not found to be leaking. Thus, no effect to the subject property from these tanks is expected. A total of three sites were found that generate, store, treat, or dispose of hazardous waste as defined by the Resource, Conservation and Recovery Act (RCRA). No violations of RCRA were reported at these sites. Thus, no effect to the subject property from these sites is expected. Five incidences of oil or hazardous substance releases were found within 1.5 miles of the Proposed Project. These include releases at the junction of Interstates 80 and 5. Two accidental hazardous material spills were noted within 1.5 miles of the Proposed Project. One spill was recorded by the California Hazardous Material Incident Report System at the intersection of San Juan Road and Witter Way on April 11, 1988. Another was reported to the Department of Transportation's Hazardous Materials Incident Report System and occurred at 1900 Del Paso Road. These releases are not continuous and are not expected to affect the subject property.

POWER LINES

The project site has existing overhead utility power lines west and northwest of the intersection of East Commerce Parkway and Arena Boulevard. These lines will be realigned consistent with the planned developments during construction of the Arena Boulevard overpass, which is expected to occur in late 2002. SMUD proposes to amend the 230 kv electrical transmission system adopted in the 1994 NNCP to a 69 kv transmission system. The proposed 69 kv transmission system

locates an overhead line adjacent to "Street A" in the northern portion of the site. The project proponent may underground the facility at their own expense. No substation is proposed on-site.

There may be potential hazards arising from the transmission lines. The main health hazard relates to the construction phase of the project. If construction equipment comes within 10 feet of the power lines, severe electric shock could occur. This hazard can be avoided by requiring that all operators of heavy equipment must obey Article 86, Title 8, the High Voltage Electrical Safety Order. Information pertaining to this law is available from Pacific Gas & Electric (PG&E). In short, the law requires a minimum of 10 feet of clearance from energized high voltage conductors.

Another health hazard may be the effect that long-term exposure to electromagnetic fields (EMF) could have upon human health. Any electrically charged conductor generates two kinds of invisible fields, electric and magnetic. Taken together, they are called electromagnetic fields. EMF generated by electric appliances, wiring and electric tools are commonplace in everyday life. Some scientific findings have suggested these electromagnetic fields can interfere with the activity in biochemicals linked to the growth of cancer (Sacramento Bee, 1989). Two studies (The Savitz Study and The New York Power Lines Project) have shown conflicting results regarding the effect of long-term exposure to electromagnetic fields. Most carefully controlled studies of EMF effects have failed to produce proven evidence of a health hazard or noticeable changes in health and bodily functions. Although some research has shown statistical correlations exist between magnetic fields and certain types of cancer, no study has yet been produced that demonstrates a "cause and effect" relationship between the two. Evidence gathered so far does not demonstrate that power lines adversely affect public health. Therefore, a less-than-significant human health impact is anticipated.

NATOMAS AIR PARK

The Natomas Air Park is located to the east of the site near the intersection of Interstates 80 and 5. Negotiations with the City resulted in the closure of the Air Park in order to minimize public safety impacts to the growing North Natomas community. For a detailed account of the Air Park negotiations see the 1997 Natomas Crossing Negative Declaration; project number P96-084. The 1997 report analyzes the original PUD establishment and associated approvals for the project area presently at issue.

MOSQUITO ABATEMENT

In 1986, the City Council certified the 1986 NNCPEIR as adequate. One of the environmental impacts identified in the NNCPEIR was mosquitoes. Mosquitoes thrive in abundance as undeveloped areas, particularly rice fields, are converted to urban uses. To reduce the negative impact of mosquitoes and protect urban residents from profuse mosquitoes generated by rice growing, the following mitigation measure was adopted:

The Sacramento Yolo Mosquito Abatement District should implement a specific mosquito abatement program in order to provide urban standards of mosquito control in the project area. Additional revenues for the District would be necessary to pay for the increased control costs

(City of Sacramento, 1986, page B-37)." To provide an urban level of mosquito control, an assessment district may be formed. This project would be required to participate in that district once formed.

STANDARDS OF SIGNIFICANCE

For purposes of this environmental review, an impact is considered significant if the Proposed Project would expose people (e.g., residents, pedestrians, construction workers) to:

- existing contaminated soil during construction activities;
- asbestos-containing materials;
- existing contaminated groundwater during de-watering activities; or
- increased fire hazards.

QUESTIONS A-D

There are no current plans for the use, storage, or disposal of hazardous waste/materials. The identified environmental conditions found through the database search are not expected to result in a hazardous materials issue associated with either construction or operation of the project site. The Proposed Project would make all necessary on-site and off-site improvements in conformance with City standards; therefore, no impacts to emergency evacuation routes are expected. A less-than-significant hazards impact is expected.

Existing regulatory provisions related to electrical service and hazardous materials and participation in a Mosquito Abatement Control Program Assessment District are expected to reduce the human health impact below a level-of-significance.

QUESTION E

If construction activities occur during the dry season, equipment used during grading and construction activities may create sparks that could ignite dry grasses and weeds on the project site. During construction, the use of power tools and acetylene torches may also increase the risk of fire hazard. This risk is similar to that found at other construction sites. To protect against fires during project construction, the construction plans and specifications for the Proposed Project would include the following: all construction equipment should include spark arresters in good working order. During construction, staging areas, welding areas, or areas slated for development using spark-producing equipment should be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor should keep these areas clear of combustible materials in order to maintain a firebreak. A less-than-significant wildfire hazards impact is expected.

FINDINGS

The Proposed Project would result in less-than-significant impacts regarding hazards.

X. NOISE

Would the proposal result in:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Increases in existing noise levels?			
Short term	☐	☐	☒
Long term	☐	☐	☒
b) Exposure of people to severe noise levels?			
Short term	☐	☐	☒
Long term	☐	☐	☒

NOISE DISCUSSION

ACOUSTICAL TERMINOLOGY

Noise is often described as unwanted sound. Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough, they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, called Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. As a result, the decibel scale was devised. The decibel (dB) scale uses the hearing threshold (20 micropascals of pressure), as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by the A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives noise. A-weighting consists of a frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels.

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the

composite noise descriptor, Ldn, and shows very good correlation with community response to noise.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to ambient noise levels than others due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are more sensitive to noise than are commercial and industrial land uses.

One sensitive receptor currently exists in the vicinity of the project site. This sensitive receptor consist of residential subdivision located east of the project site south of Arena Boulevard and north of San Juan Road. The closest distance from the residential area to the project site is approximately 750-feet.

EXISTING NOISE ENVIRONMENT

The noise environment on the project site consists of vehicle noise associated with traffic along Interstate 5 which is located immediately west along the entire length of the project site. Vehicle noise associated with traffic along East Commerce parkway currently occurs when events are held at Arco Arena which is located east of the project site between Del Paso Road and Arena Boulevard. The site is not within the noise contours of the Sacramento International Airport; therefore, the project site is not influenced by aircraft noise and is consistent with the Conditional Land Use Plan.

REGULATORY SETTING

North Natomas Community Plan

The following applicable noise provisions are identified on page 85 of the 1994 North Natomas Community Plan:

> Acoustical Study: A detailed acoustical study shall be required for any land use which potentially would be incompatible with outdoor noise limits specified by the requirements of the Noise Element of the General Plan, or which is located within the Noise Impact Areas shown in the NNCP EIR.
>
> Mitigate Surface Transportation Noise: Development exposed to surface transportation noise should be designed to be consistent with the goals of the City General Plan. Residential land uses should be developed such that there is some usable outdoor space associated with the development that provides an exterior noise level that does not exceed an Ldn of 45 dB.
>
> - Indoor noise levels shall not exceed an Ldn of 45 dB.

City General Plan

To provide for noise and land use compatibility, the City has adopted the following goals and policies contained within the Noise Element of the General Plan. "The following local standards are applicable to the assessment of noise impacts for this Initial Study. The Noise Element of the City of Sacramento's General Plan contains the City's goals and policies for controlling and reducing environmental noise in the City of Sacramento (City of Sacramento General Plan, p. 8-20). The following goals and policies are applicable to the Proposed Project:

Goal A: Future development shall be compatible with the projected year 2016 noise environment.

Policy 1: Require an acoustical report for any project which would be exposed to noise levels in excess of those shown as normally acceptable.

Policy 2: Require mitigation measures to reduce noise exposure to the "normally acceptable levels" except where such measures are not feasible.

Policy 3: Land uses where the exterior noise levels would be below the "normally acceptable" limit may be approved without any requirement for interior or exterior mitigation measures.

The noise element also contains a section entitled "Noise Assessment Report Guidelines." These guidelines state that "mitigation measures should be considered if the project would increase the Ldn at a noise sensitive location by more than 4 dB or cause the overall level to exceed that considered normally acceptable for the land use category or be expected to generate significant adverse community response." The noise element finds an Ldn of 60 dB or lower to be normally acceptable for residential development.

STANDARDS OF SIGNIFICANCE

The Proposed Project would result in a significant impact if construction activities are to occur outside of the period allowed by the City's Noise Ordinance. In addition, operation of the facility is expected to result in a significant impact if the provisions of the City's Noise Element are violated.

QUESTION A

Both construction and operation of the project site would result in an increase of existing noise levels on the project site when compared with the existing environment.

Construction Noise

Natomas Crossing PUD and Special Permit - Catholic Healthcare West

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in **Table 4-7**, ranging from 78 to 89 dB at a distance

of 50 feet from the noise source. Specific noise emissions from common construction equipment is provided in **Table 4-8.**

Table 4-7
Typical Construction Noise Levels

Construction Phase	Noise Level (dBA, L_{eq}) [a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

NOTE: a Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
SOURCE: Bolt, Baranek, and Newman, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, 1971.

Table 4-8
Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

Source: Environmental Noise Pollution, Patrick R. Cunniff, 1977.

Because construction activities would be temporary in nature occurring within the hours of operation specified in the Sacramento City Codes – Noise Ordinance, and because no pile driving is proposed, a less-than-significant impact is expected to occur.

Operation Noise

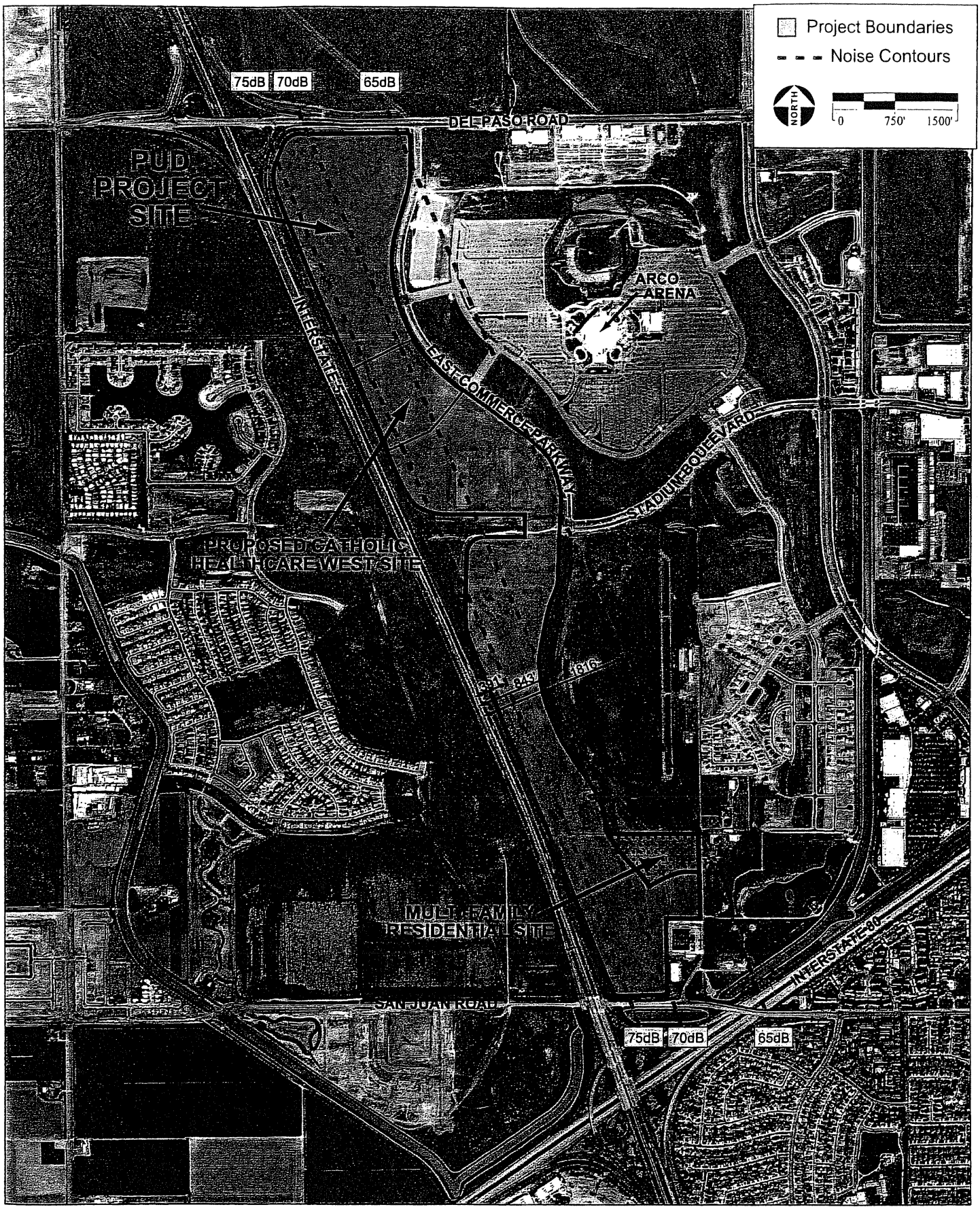
Natomas Crossing PUD

Figure 4-6 shows the modeled, cumulative noise contours assuming future growth through the year 2025. The noise contours displayed in the figure represent a worst-case scenario given the assumption of flat terrain from the centerline of Interstate 5 eastward. **Table 4-9** provides the distances to the 75, 70 and 65 Ldn noise contour from the centerline of Interstate 5.

Table 4-9
Noise Contours

Ldn Noise Contour	Distance from Centerline (feet)
75	391
70	843
65	1,816

Source: Bollard and Brennan, 2002; AES, 2002



SOURCE: City of Sacramento, 2001 : AES, 2002

Natomas Crossing / 202502

Figure 4-6
Noise Contours

As can be seen from **Figure 4-6**, the vast majority of the project site lies within the 65 to 70 dB Ldn contour. A small strip of the project site fronting on the Interstate 5 ROW is within the greater than 75 dB Ldn contour.

As mentioned previously, the Noise Element of the City of Sacramento General Plan provides land use compatibility guidelines for community noise levels. These guidelines indicate that a normally acceptable land use compatibility criterion of 65 dB Ldn for exterior noise levels at the building facades of office buildings, business commercial and professional land uses. Noise levels between 65 and 80 dB Ldn are considered conditionally acceptable only after noise insulation features and included in the design of the building. However, the City's Noise Element does not identify an interior noise level for office buildings. Forty-five (45) dB will be used as interior guidance for purposes of this analysis. This is consistent with the interior standards used by the City for residential uses. The interior standards for residences take into account living

quarters which is more sensitive than an office environment, therefore, the 45 dB standard for office buildings is intended for guidance purposes only.

Typical façade design and construction in accordance with prevailing industry practices are expected to result in an exterior to interior noise attenuation of 28 to 38 dB Ldn with windows and doors in the closed position. Assuming a worst case decibel level of 75 Ldn at the building façade, the interior noise level will be reduced to between 37 to 47 dB Ldn. A recent noise analysis conducted for the west side of Interstate 5 revealed that the actual noise encountered was 3 dB less than the modeled noise. Given that similar line of site conditions exist on the east and west side of Interstate 5 at this location, it is reasonable to assume that the 3 dB reduction would also apply to this project site. Adjusting the 37-47 dB Ldn interior noise level to account for the 3 dB Ldn reduction reveals that the interior noise guidance of 45 DB Ldn will not be exceeded. This level will be reduced further when one considers the fact that the office building will be removed somewhat from the 75 dB Ldn noise contour. Therefore, a less than significant noise impact is expected for the office and retail uses.

The proposed multi-family residential site is located between the 65 and 70 dB Ldn noise contour (**Figure 4-6**). The City's identified acceptable exterior noise standard for common outdoor use areas of multi-family residential is 60 dB Ldn, while the identified interior standard is 45 dB Ldn. Intervening office uses between the residences and Interstate 5 will reduce the exterior noise somewhat; however, the exterior noise level may be greater than the 60 dB Ldn threshold at the common outdoor use areas. Additionally, the employment center parcel located south of the residential site may also generate unacceptable noise levels at the common outdoor use areas of the residences. This is considered to be a significant impact.

Mitigation 3:

A detailed acoustical report shall be prepared at the time a special permit application is filed for the multi-family residential parcel. Noise attenuation features that may be identified include building orientation, construction materials, and acoustical barriers placed between the residences and noise source.

The noise attenuation features identified shall be incorporated as part of the project design.

Special Permit - Catholic Healthcare West

The proposed facility will be located between the 70 and 75 dB Ldn noise contour. As mentioned above for the programattic portion of the project, the interior noise levels are not expected to be significant given building orientation and the use of office building construction materials. Therefore, a less than significant impact is expected.

FINDINGS

The Proposed Project, with the included mitigation measure, would result in less-than-significant impacts to noise resources.

XI. PUBLIC SERVICES

Would the proposal have an effect upon or result in a need for new or altered government services in any of the following areas:	*Potentially Significant Impact*	*Potentially Significant Unless Mitigated*	*Less than Significant Impact*
a) Fire protection?	☐	☐	☒
b) Police protection?	☐	☐	☒
c) Maintenance of public facilities, including roads?	☐	☐	☒
d) Other governmental services?	☐	☐	☒

PUBLIC SERVICES DISCUSSION

Police service is provided by the City's Police Department. Police services to the North Natomas area is provided by the Police Substation located at 3550 Maryville Boulevard.

Fire protection, emergency medical services, and first response hazardous materials services are provided by the City of Sacramento Fire Department. Two City fire stations that service the project site – Station 15 located at 1591 Newbourough Drive, and Station 18 located at 746 North Market Boulevard. Each of these stations has 4 full-time fire personnel.

There are no schools located near the project site. The NNCP plans for a total of 14 elementary schools, three junior high schools, and two high schools to serve public school students generated by the North Natomas Community.

STANDARDS OF SIGNIFICANCE

The Proposed Project would be considered to result in a significant impact if it would result in an unplanned need to expand public services.

QUESTIONS A-D

The Proposed Project is not expected to significantly impact fire services, police services, or other governmental services. The public services needed for the North Natomas Community Plan area have been planned for within the NNCP and the capital costs of these services will be funded through the North Natomas Financing Plan. Operation and maintenance costs will be paid for through City-wide and community-wide revenue programs. Changes proposed for the site are not expected to create additional public services impacts for this area. Participation in the North Natomas Financing Plan will be a condition of development approval.

The Proposed Project is located within the boundaries of the Natomas Unified School District. The applicant shall be subject to the School Facilities Fee, adopted by the City Council on October 31, 1995 (Ordinance No. 95-061 and Resolution No. 95-624). Therefore, a less-than-significant impact is anticipated on school facilities by this project.

FINDINGS

The Proposed Project would result in less-than-significant impacts to public services.

XII. UTILITIES

Would the proposal result in the need for a new systems or supplies, or substantial alterations to the following utilities:	*Potentially Significant Impact*	*Potentially Significant Unless Mitigated*	*Less than Significant Impact*
a) Communication systems?	☐	☐	☒
b) Local or regional water supplies?	☐	☐	☒
c) Local or regional water treatment or distribution facilities?	☐	☐	☒
d) Sewer or septic tanks?	☐	☐	☒
e) Storm water drainage?	☐	☐	☒
f) Solid waste disposal?	☐	☐	☒

UTILITIES DISCUSSION

Currently, the Proposed Project site consists of fallow agricultural land and open space. It is not served by utilities. The project site is surrounded by vacant land and ongoing commercial and residential development. Telecommunications trunk lines have been extended into these development areas. Water supply and wastewater lines have been extended to these areas as well.

STANDARDS OF SIGNIFICANCE

The Proposed Project is considered to result in a significant impact if one of the following were to occur:

- result in a detriment to microwave, radar, or radio transmission;
- create an increase in water demand of more than 10 million gallons per day;
- substantially degrade water quality;
- generate more than 500 tons of solid waste per year; or
- generate storm water that would exceed the capacity of the stormwater system.

QUESTION A

The project will require the installation of communications infrastructure to service the planned buildings. Service is provided by several telecommunications services providers (Pacific Bell, Verizon, and AT&T broadband, etc). The developer will be responsible for installing the necessary items to provide services on site. No impact is expected on the existing communications infrastructure from this project.

QUESTIONS B-D

The City of Sacramento is the water supplier to the North Natomas Community. The project will result in an increased demand and need for water. The developer shall pay up front the costs of extending any laterals from the City's main line as well as the costs of fire hydrants along the streets bordering the property. The proposed Catholic Healthcare West office building will be served by domestic and fire protection water from a public main extended down Commerce Parkway. A less-than-significant impact is expected on the City's water supply and water distribution infrastructure.

Development in North Natomas is currently served by the Sacramento County Regional Sanitation District and County Sanitation District #1 (CSD-1). The County of Sacramento has indicated that sanitary sewer service, after payment of applicable connection fees, is available to the subject property. The cost of sewer lateral extension and sewer service installation to the property line is the responsibility of the developer. Over-sizing of the sewer system may be necessary to provide facilities that are adequate to serve the area at build-out. The developer will front these costs and enter into an agreement to be reimbursed by subsequent developers benefiting by the oversized facilities. Upon acceptance of such improvements by the City or County as appropriate, collection system service will be provided by CSD-1 and wastewater treatment and disposal by the Sacramento Regional County Sanitation District. A less-than-significant impact will result.

QUESTION E

The Proposed Project is within Detention Basins #5 & #6 of the North Natomas drainage system. A Master Drainage Plan (MDP) has been prepared, with Department of Utilities cooperation, which will regulate development in this area.

The MDP includes a "freeway" drain along the western edge of the subject site, parallel to I-5. This will drain properties of Sheds #5 & #6 to Basin #6B at the southern end of the project site. Detention Basin 6-B, which is proposed by the City of Sacramento Department of Utilities, is currently in the planning and approval stage. The City of Sacramento is the lead agency for the preparation of the Initial Study for the North Natomas Detention Basin 6B Project. The Initial Study also includes analysis of the drainage channel that will be developed adjacent to I-5 and the utility access easement and outfall pipeline components. Construction of Detention Basin 6-B is expected to begin by mid-year 2002, subject to approval. Pumping capacity at Basin #5 will be required to be constructed as part of the "Phase 1" facilities. Also, Basins #5 & #6 and the respective pumping operations will operate independent of each other. This MDP will result in significantly less earthwork, smaller storm drains and improved overall hydraulic conditions for the project area.

The project proponent shall coordinate with other property owners in the area of Detention Basins #5 & #6 to ensure that adequate drainage is provided and the area with the 100-year underlying floodplain is removed from the floodplain prior to occupying any buildings on the site.

As stated in the Water section discussion above, the proposed Catholic Healthcare West project would increase the runoff volumes generated by the property. The impervious surfaces of the building and parking lots would require an on-site storm drain system to deliver runoff from the site to the detention basin and canal. City Utilities staff has indicated that prior to the approval of the final master parcel map, an assessment district, or other financing mechanism acceptable to the City, must be formed for the purpose of constructing all common drainage facilities within Detention Basins #5 & #6 and any additional drainage capacity or facilities required to accommodate development in the project area and all facilities shall be bonded for or constructed. A Drainage Agreement between all property owners within the detention basins areas must be executed to coordinate design and construction of the basins, trunk lines, and other facilities. The project proponent shall provide adequate stormwater drainage to the satisfaction of the City Utilities Director. A less-than-significant impact will result.

QUESTION F

The California Integrated Waste Management Act of 1989 (AB 939) mandates that cities develop source reduction and recycling plans. To comply with AB 939, the City of Sacramento's Comprehensive Zoning Ordinance has provisions pertaining to solid waste recycling. In 1991, an amendment was added to the Zoning Ordinance (Section 34) to address recycling and solid waste disposal requirements for new and existing developments. This plan requires that all non-residential (commercial, office, industrial, public/quasi-public) and residential (multifamily of 5 or more units) development prepare and submit a recycling program with the planning

entitlement application and before issuance of a building permit. The recycling program must include a flow chart depicting the routing of recycled materials, a site plan specifying the location and design components and storage locations associated with recycling efforts, a construction plan to specify the recyclable materials being used in the construction of the proposed structures, a demolition plan specifying the proposed recycling of reusable or recyclable building materials in the demolition of any existing structures, and an educational program pertaining to recycling. The construction and operation of the proposed Catholic Healthcare West office building will comply with Section 34 of the Zoning Ordinance. Compliance will include the development and implementation of a comprehensive recycling program. Thus, the Proposed Project is not anticipated to result in a significant impact to solid waste disposal.

The EPA estimates that each employee in a large office building will produce 2.9 pounds of solid waste per day (EPA, 2002). The proposed Catholic Healthcare West office building would employ approximately 775 employees. Thus, the proposed office building would generate approximately 410 tons of solid waste per year. Solid waste disposal will be provided by the City's Public Works Department, Solid Waste Division or by a contract through a private solid waste collection company. If the City provides collection service, then the solid waste would be transported to the Transfer Station at 8191 Fruitridge Road operated by BLT Enterprises, after which it would be hauled to the Lockwood Landfill in Nevada. Solid waste from the Proposed Project is not expected to have a significant impact on the life of the Lockwood Landfill. A less than significant impact is expected from solid waste generation and recycling.

FINDINGS

The Proposed Project would result in less-than-significant impacts to utilities.

XIII. AESTHETICS, LIGHT AND GLARE

Would the proposal:	*Potentially Significant Impact*	*Potentially Significant Unless Mitigated*	*Less than Significant Impact*
a) Affect a scenic vista or adopted view corridor?	☐	☐	☒
b) Have a demonstrable negative aesthetic effect?	☐	☐	☒
c) Create light or glare?	☐	☐	☒
d) Create shadows on adjacent property?	☐	☐	☒

AESTHETICS DISCUSSION

The area in the vicinity of the project site is currently undergoing a transformation from agricultural and open space uses to urban uses. The aesthetic setting of the project area, and

community at large, is representative of the Central Valley with vast expanses of flat, valley areas in all directions. There are no scenic vistas within the North Natomas Community, nor are there any designated scenic view corridors within the community.

STANDARDS OF SIGNIFICANCE

New shadows from developments are generally considered to be significant if they would shade a recognized public gathering place (e.g. park) or locate residence/child care centers in complete shade. Additionally, a significant impact will result if the Proposed Project would block a scenic vista. Glare is considered to be significant if it would be cast in such a way as to cause a public hazard or annoyance for a sustained period of time.

QUESTIONS A-B

The Proposed Project will not affect a scenic vista or adopted view corridor. Development will occur within an area that has historically been used as farmland. The area has, and is currently undergoing a significant change as the area transitions from farmland to an urban community. The urban development of the site will contribute to this alteration; however, this has been planned for and assessed by the City of Sacramento through the NNCP. A less-than-significant impact will result from the project.

QUESTION C

Lighting details are not known at this time. However, in accordance with the City's Zoning Ordinance (Section 6-D-6) street and parking lighting shall reflect away from residential areas and public streets. Compliance with the City Zoning Ordinance and use of low-sodium downcast lighting will assure a less than significant lighting impact. Historical ornamental street light standards would be used by the Proposed Project unless otherwise directed by the City of Sacramento Department of Public Works, Electrical Section. The proposed Catholic Healthcare West building will be constructed with materials that minimize glare. Specifically, exterior building colors will be light tan and coffee brown, along with multi-colored slate. These colors and materials tend to diffuse light rather than reflect it, resulting in a less-than-significant glare impact.

QUESTION D

The Proposed Project will transform the current project site from vacant to urban development. This, by definition, will create shadows that heretofore did not exist. However, shadows per se do not result in a significant impact. The shade generated by the proposed Catholic Healthcare West building would not affect any recognized public gathering area or completely shade any residence/child care center. Therefore, a less-than-significant impact would result. In addition, the project site and surrounding area has been designated and zoned for urban land uses with the expectation that shadows would result from new facilities. The proposed structures are within the height limit established by the City's zoning ordinance. No impact will result.

FINDINGS

The Proposed Project would result in less-than-significant impacts with regards to aesthetics, light and glare.

XIV. CULTURAL RESOURCES

Would the proposal:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Disturb paleontological resources?	☐	☐	☒
b) Disturb archaeological resources?	☐	☒	☐
c) Affect historical resources?	☐	☐	☒
d) Have the potential to cause a physical change that would affect unique ethnic cultural values?	☐	☐	☒
e) Restrict existing religious or sacred uses within the potential impact area?	☐	☐	☒

CULTURAL RESOURCES DISCUSSION

The project site is vacant and does not contain any above ground structures that would be considered historic resources. The project site is identified as a Primary Impact Area in the Sacramento General Plan Update Draft Environmental Impact Report (City of Sacramento, 1987, page V-5). Also, the project site is indicated to be within a medium and high sensitivity area on the Archaeological Sensitivity Map prepared by David Chavez and Associates (City of Sacramento, 1986, Exhibit 0-3).

The NNCP Environmental Design Standards requires a comprehensive field reconnaissance be done and a subsurface archaeological testing program be initiated for any development planned in the vicinity of a recorded archaeological site. A Cultural Resources Inventory and Evaluation was conducted by PAR Environmental Services, Inc. in February, 1997. The PAR study identified one prehistoric archaeological resource within the project area. The prehistoric archaeological resource consists of an area containing a light lithic debitage scatter (stone tool remnants) along with several groundstone and flaked stone tool fragments. The site is located adjacent to Airport Road in a plowed field, approximately 656' north of the intersection of San Juan Road and Airport Road, in the south of the project area. The recorder of this site (Chavez 1984) indicated that the placement of artifacts and debitage offers little in the way of observable or inferred cultural significance beyond its location due to the extensive earth moving and leveling that has occurred in the area.

The cultural resource inventory did not result in the identification of any additional prehistoric or historical sites, features or isolates. However, observations obtained during the present investigation of the prehistoric archaeological site designated as N-1 revealed that although no artifacts were discerned on the surface of the site, the eastern half of the site has been subjected to agricultural plowing. As noted by Chavez (1984), the presence of stream-rolled cobble fragments occurring in the field may be groundstone, but all specimens are too fragmentary to be positively identified as being cultural in origins. The entire site has been heavily impacted from years of plowing and planting, and it is conceivable that several hundred years ago this resource occupied an area that possessed greater relief and/or was once mounded.

The previously identified prehistoric archaeological site, designated N1 by Chavez (1984) was subjected to a systematic excavation by Peak and Associates, Inc., in January of 1987. This excavation was conducted at the request of the Spink Corporation for the Gateway Point project. As a result of Peak and Associates' investigation it was determined that the site, N-l, represented a surface manifestation of imported fill material and did not contain an *in situ* cultural deposit (Neuenschwander 1987). However, due to the size of the recorded site area, and the limited number of units excavated at that time (e.g., two 1 x 1 meter units), they advanced the recommendation that a "professionally qualified archaeologist be present during surface and subsurface modifications to the site area" during future projects (Neuenschwander 1987).

In addition to the previously identified prehistoric archaeological site several recent historic and/or contemporary features associated with stock raising and agricultural activities were noted. These features included an electrical water pump with associated concrete wellheads, concrete culverts, and scattered modern trash. All historic and/or contemporary features noted during this investigation were judged to be less than 50 years in age.

As with many surface surveys in the Central Valley, ground visibility in parts of the project was partially inhibited by emergent grasses and standing water. Moreover, cultural deposits buried beneath alluvial deposits are known to exist along the Sacramento River. In light of this, it is possible that unrecorded subsurface deposits may be encountered during construction activity.

STANDARDS OF SIGNIFICANCE

The Proposed Project is considered to result in a significant impact if significant archaeological and/or historic site characteristics are affected. Adverse effects may include, but are not limited to:

- loss or degradation of significant known or undiscovered prehistoric, archaeologic, and historic resources,
- physical destruction, damage, or alteration of all or part of a significant historic property, as could occur if a site were subjected to direct construction impacts,
- isolation of a significant historic property or alteration of the character of its setting when that character contributes to the property's cultural significance.

The thresholds of significance for cultural resources are based on 1) association with an event or person of recognized significance in California or American history; 2) association with an event

or person of recognized scientific importance in prehistory; 3) the resource can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions; 4) the resource has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind; 5) the resource is at least one hundred years old and possesses substantial stratigraphic integrity; 5) the resource involves important research questions that historical research has shown can be answered only with archaeological methods.

Resources must also be evaluated in terms of their eligibility for inclusion in the California Register of Historical Resources (A.B. 2881). The Register supplements CEQA in defining what constitutes a significant cultural resource and contains guidelines and criteria for determining the significance at the local level. Properties eligible for listing in the National Register of Historic Places automatically qualify for the California Register. Resources that do not meet National Register criteria, but retain state or local values will also be included in the California Register. In light of these criteria and guidelines, impacts to resources located within the project site are discussed below.

QUESTIONS A-B

It is unlikely that paleontological resources exist on the project site, as the area is not considered sensitive. Impacts to paleontological resources are therefore considered to be less than significant. However, the project lies in an area that is considered a Primary Impact area by the City of Sacramento for cultural resources (General Plan Update EIR, 1987). Additionally, a archaeological site identified by Chavez (1984) has been recorded on the project site. While surface and subsurface cultural deposits have not been confirmed by the survey conducted by PAR Environmental Services, development of the project site may result in the impact to buried archaeological resources. This is considered a potentially significant impact of development within the entire Natomas Crossing PUD project area, including the proposed Catholic Healthcare West site. The following mitigation measure will reduce the potential impact of the project on cultural resources if discovered during construction to a less-than-significant threshold.

Mitigation 4:

> If subsurface archaeological or historical remains (including unusual amounts of bones, stones, or shells) are discovered during excavation or construction of the site, work shall stop immediately and a qualified archaeologist and a representative of the Native American Heritage Commission shall be consulted to develop, if necessary, further mitigation measures to reduce any archaeological impact to a less-than-significant level before construction continues.

Further impacts could result from construction within the previously identified prehistoric archaeological site, designated as N1 by Chavez. Because of the highly disturbed nature of N-1 created by agricultural practices, it is difficult to ascertain whether or not there are areas of the site that do in fact possess a subsurface cultural component. Thus, if it is not feasible to avoid this location, the recommendations advanced by Peak and Associates for this site should be followed. This is considered a potentially significant impact of development within the area

identified as N-1 only and does not pertain to other portions of the project site including the proposed Catholic Healthcare West site.

Mitigation 5:

As recommended by Peak and Associates, a "professionally qualified archaeologist (shall) be present during surface and subsurface modifications to the site area" during the implementation of the Proposed Project (Neuenschwander, 1987). If an intact subsurface component is encountered during monitoring activities at the site, then the NNCP requires that all land alteration work in the general vicinity of the find be halted. A formal test excavation plan should then be implemented to determine if the resource should be considered important. This test excavation plan should be developed in consultation with the State Historic Preservation Officer and the other interested parties. Additionally, if subsurface archaeological or historical remains (including unusual amounts of bones, stones, or shells) are discovered during excavation or construction of the site, work shall stop immediately and the County Coroner shall be contacted. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission who shall notify the person it believes to be the most likely descendant. The most likely descendant shall work with the contractor to develop a program for reinternment of the human remains and any associated artifacts. No additional work is to take place within the immediate vicinity of the find until the identified appropriate actions have been carried out. Where possible, any significant cultural resources found will be preserved on-site, per the NNCP preference.

QUESTION C

The recent historic and/or contemporary features encountered as a result of the above cultural resource inventories do not represent unique or important cultural resources as defined by CEQA or the California Register criteria. Therefore, the Proposed Project would not affect significant historic resources. A less-than-significant impact will result.

QUESTIONS D-E

There are no recorded unique cultural values or existing religious or sacred uses that apply to the project site, nor is there any evidence that they have existed on the project site. A less-than-significant impact will result.

FINDINGS

The Proposed Project, with the included mitigation measures, would result in less-than-significant impacts with regards to cultural resources.

XV. RECREATION

Would the proposal result in impacts to:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Increase the demand for neighborhood or regional parks or other recreational facilities?	☐	☐	☒
b) Affect existing recreational opportunities?	☐	☐	☒

RECREATION DISCUSSION

The project is proposed for a site that has been identified for urbanized land uses that does not include recreational uses. There are no recreational facilities on the project site, nor is the site currently used for recreational purposes. Financing of park development is included in the North Natomas Financing Plan. Land acquisition of community/neighborhood parks will be paid for through Quimby Act fees; development costs of the community/neighborhood parks are included in the Public Facilities Fee portion of the North Natomas Development Impact Fees; and operation and maintenance of the parks will be paid for through a Lighting and Landscaping District. No land acquisition will take place in relation to the Proposed Project. The applicant is required to participate in the North Natomas Financing Plan and Landscaping and Lighting District.

STANDARDS OF SIGNIFICANCE

A significant park impact would occur if the proposed development increased the demand of park use beyond the supply provided in the project vicinity. Additionally, a park impact would occur if the project resulted in the direct impact to existing parks.

QUESTIONS A-B

The Proposed Project is not anticipated to significantly affect the quantity or quality of recreational facilities in the area. In anticipation of an increased need for recreational opportunities in the North Natomas community, the NNCP plans to devote over 400 acres of land to park use. The proposed Catholic Healthcare West project will additionally include on-site recreational facilities, including extensive landscaping and an outdoor basketball court. Therefore, the Proposed Project is not expected to result in a significant recreational impact.

FINDINGS

The Proposed Project would result in less-than-significant impacts to recreation facilities.

XVI. MANDATORY FINDINGS

Would the proposal result in impacts to:	Potentially Significant Impact	Potentially Significant Unless Mitigated	Less than Significant Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐
b) Does the project have the potential to achieve short-term, to the disadvantage of long-term environmental goals?	☐	☐	☒
c) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒
d) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Disturb paleontological resources?	☐	☐	☒

MANDATORY FINDINGS OF SIGNIFICANCE DISCUSSION

QUESTION A

As discussed in the preceding sections, the Proposed Project, with mitigation, does not have the potential to significantly degrade the quality of the environment, including effects on animals or plants. However, as stated in Section XIV – Cultural Resources, the Proposed Project may affect Cultural Resources yet uncovered within the project area. Likewise, as stated in Section VII – Biological Resources, the Proposed Project may affect giant garter snakes, Swainson's hawk foraging habitat, nesting raptors, and seasonal wetland habitat. Mitigation has been proposed in order to reduce these impacts to less-than-significant levels.

QUESTION B

As discussed in the preceding sections, the project does not have the potential to achieve short-term, to the disadvantage of long-term environmental goals. The Proposed Project, with approval of requested entitlements, is compatible with the goals and policies set forth by the General Plan and the North Natomas Community Plan.

QUESTION C

As discussed in the preceding sections, when project impacts, with included mitigation, are considered along with, or in combination with other impacts, the project-related effects are less than significant.

QUESTION D

The project, with mitigation, does not have environmental effects that could cause substantial adverse effects on human beings, either directly or indirectly, nor is the project expected to result in a significant unavoidable impact to paleontological resources. However, as stated in Section X – Noise, the Proposed Project may be affected by traffic noise from Interstate 5. Mitigation has been proposed in order to reduce these impacts to less-than-significant levels.

CHAPTER 5.0

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

SECTION 5.0

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below potentially would be affected by this project.

- ☐ Land Use and Planning
- ☐ Population and Housing
- ☐ Geological Problems
- ☐ Water
- ☒ Air Quality
- ☐ Transportation/Circulation
- ☒ Biological Resources
- ☐ Energy and Mineral Resources
- ☐ None Identified
- ☐ Hazards
- ☒ Noise
- ☐ Public Services
- ☐ Utilities and Service Systems
- ☐ Aesthetics
- ☒ Cultural Resources
- ☐ Recreation
- ☒ Mandatory Findings of Significance

CHAPTER 6.0

DETERMINATION

2. If a revised NBHCP has been adopted by all required agencies, applicant will obtain coverage under the City's ITP and/or Section 2081 Management Authorization by entering into a Development Agreement with the City, by paying all required HCP fees and complying with all requirements of the NBHCP.

3. If a revised NBHCP is not in place, the applicant shall obtain and provide evidence to the City of a project specific ITP and/or Section 2081 Management Authorization from the California Department of Fish and Game and the U.S. Fish and Wildlife Service as necessary for the Covered Species.

Mitigation 2:

The proposed project shall obtain State Water Quality Certification from the Regional Water Quality Control board prior to filling of any wetland habitats.

Mitigation 3:

A detailed acoustical report shall be prepared at the time a special permit application is filed for the multi-family residential parcel. Noise attenuation features that may be identified include building orientation, construction materials, and acoustical barriers placed between the residences and noise source. The noise attenuation features identified shall be incorporated as part of the project design.

Mitigation 4:

If subsurface archaeological or historical remains (including unusual amounts of bones, stones, or shells) are discovered during excavation or construction of the site, work shall stop immediately and a qualified archaeologist and a representative of the Native American Heritage Commission shall be consulted to develop, if necessary, further mitigation measures to reduce any archaeological impact to a less-than-significant level before construction continues.

Mitigation 5:

As recommended by Peak and Associates, a "professionally qualified archaeologist (shall) be present during surface and subsurface modifications to the site area" during the implementation of the Proposed Project (Neuenschwander, 1987). If an intact subsurface component is encountered during monitoring activities at the site, then the NNCP requires that all land alteration work in the general vicinity of the find be halted. A formal test excavation plan should then be implemented to determine if the resource should be considered important. This test excavation plan should be developed in consultation with the State Historic Preservation Officer and the other interested parties. Additionally, if subsurface archaeological or historical remains (including unusual amounts of bones, stones, or shells) are discovered during excavation or construction of the site, work shall stop immediately and the County Coroner shall be contacted. If the remains are determined to be Native American, the Coroner shall notify the Native

SECTION 6.0

DETERMINATION

6.1 DETERMINATION

On the basis of the initial evaluation:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because the project-specific mitigation measures described in Section IV have been added to the project. A NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Signature	Date
Printed Name	For

6.2 MITIGATION MEASURES

Mitigation 1:

Prior to issuance of a grading permit, the applicant shall satisfy one of the following:

1. If legally permissible under the NBHCP Litigation Settlement Agreement, as such Agreement may be amended, revised, extended or modified, the applicant shall pay all required HCP fees under the Settlement Agreement, and otherwise observe all requirements of the Settlement Agreement and associated documents.

American Heritage Commission who shall notify the person it believes to be the most likely descendant. The most likely descendant shall work with the contractor to develop a program for reinternment of the human remains and any associated artifacts. No additional work is to take place within the immediate vicinity of the find until the identified appropriate actions have been carried out. Where possible, any significant cultural resources found will be preserved on-site, per the NNCP preference.

The following requirements are included within the 1994 NNCP SEIR to reduce the significance of air quality impacts resulting from development in the North Natomas Community. The proposed project will be required to implement a Transportation Systems Management (TSM) strategy to make the maximum use of the existing transportation system, and thereby reducing the need for or delaying construction of new transportation facilities. The applicant is also required to submit a project-wide Air Quality Mitigation Strategy to reduce the ROG emissions generated by the community. The Air Quality Mitigation Strategy requires that a project be planned and developed in a way that reduces the community's reliance on single-occupant vehicles.

CHAPTER 7.0

LIST OF PREPARERS

SECTION 7.0

LIST OF PREPARERS

City of Sacramento

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CHAPTER 8.0

BIBLIOGRAPHY

SECTION 8.0

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APPENDICES

APPENDIX A

TENTATIVE SUBDIVISION LAND USE

Tentative Subdivision Map

Quadrant A

Lot #	Land Use	GP	CP	Zone	Net Acres
1	Highway Commercial	CNCO	HC	HC-PUD	1.1
2	Highway Commercial	CNCO	HC	HC-PUD	0.9
3	Highway Commercial	CNCO	HC	HC-PUD	0.9
4	Highway Commercial	CNCO	HC	HC-PUD	0.9
5	Highway Commercial	CNCO	HC	HC-PUD	1.4
6	Highway Commercial	CNCO	HC	HC-PUD	0.9
7	Highway Commercial	CNCO	HC	HC-PUD	0.9
8	Highway Commercial	CNCO	HC	HC-PUD	0.9
9	Highway Commercial	CNCO	HC	HC-PUD	2.9
10	Highway Commercial	CNCO	HC	HC-PUD	2.9
11	Highway Commercial	CNCO	HC	HC-PUD	2.9
12	Employment Center	MU	EC-50	EC-50-PUD	1.1
13	Employment Center	MU	EC-50	EC-50-PUD	1.0
14	Employment Center	MU	EC-50	EC-50-PUD	1.0
15	Employment Center	MU	EC-50	EC-50-PUD	1.0
16	Highway Commercial	CNCO	HC	HC-PUD	1.0
17	Highway Commercial	CNCO	HC	HC-PUD	1.0
18	Highway Commercial	CNCO	HC	HC-PUD	0.9
19	Employment Center	MU	EC-50	EC-50-PUD	1.0
20	Employment Center	MU	EC-50	EC-50-PUD	1.0
21	Employment Center	MU	EC-50	EC-50-PUD	1.2
22	Employment Center	MU	EC-50	EC-50-PUD	4.5
23	Employment Center	MU	EC-50	EC-50-PUD	5.0
24	Sign Parcel	MU	EC-50	EC-50-PUD	0.1
25	Employment Center	MU	EC-50	EC-50-PUD	5.1
26	Employment Center	MU	EC-50	EC-50-PUD	3.9
27	Employment Center	MU	EC-50	EC-50-PUD	3.4
28	Employment Center	MU	EC-50	EC-50-PUD	3.0
A	Freeway Buffer	PROS	POS	A-0S-PUD	5.7
	Minor Roadways				5.7
	Major Roadways				4.8
	Additional I-5 Right-Of-Way				0.5
				Totals	**68.5**

Tentative Subdivision Map

Quadrant B

Lot #	Land Use	GP	CP	Zone	Net Acres
29	Employment Center	MU	EC-50	EC-50-PUD	7.1
30	Employment Center	MU	EC-50	EC-50-PUD	6.2
31	Employment Center	MU	EC-50	EC-50-PUD	5.3
32	Employment Center	MU	EC-50	EC-50-PUD	11.9
33	Employment Center	MU	EC-50	EC-50-PUD	6.0
34	Employment Center	MU	EC-50	EC-50-PUD	5.0
35	Employment Center	MU	EC-50	EC-50-PUD	5.2
36	Retail	CNCO	CC	C-1-PUD	1.0
37	Retail	CNCO	CC	C-1-PUD	1.0
38	Employment Center	MU	EC-50	EC-50-PUD	4.2
39	Employment Center	MU	EC-50	EC-50-PUD	4.5
40	Employment Center	MU	EC-50	EC-50-PUD	3.0
41	Retail	CNCO	CC	C-1-PUD	0.9
42	Retail	CNCO	CC	C-1-PUD	0.9
43	Employment Center	MU	EC-50	EC-50-PUD	0.9
44	Employment Center	MU	EC-50	EC-50-PUD	0.9
45	Employment Center	MU	EC-50	EC-50-PUD	1.1
46	Retail	CNCO	CC	C-1-PUD	0.9
B	Freeway Buffer	PROS	POS	A-OS-PUD	7.9
	Major Roadways				7.2
	Minor Roadways				1.8
	Additional I-5 Right-Of-Way				2.9
				Totals	**85.8**

Tentative Subdivision Map

Quadrant C

Lot #	Land Use	GP	CP	Zone	Net Acres
47	Retail	CNCO	CC	EC-50-PUD	0.9
48	Employment Center	MU	EC-50	EC-50-PUD	1.5
49	Employment Center	MU	EC-50	EC-50-PUD	1.5
50	Retail	CNCO	CC	C-1-PUD	0.9
51	Employment Center	MU	EC-50	EC-50-PUD	0.9
52	Employment Center	MU	EC-50	EC-50-PUD	3.0
53	Employment Center	MU	EC-50	EC-50-PUD	0.9
54	Retail	CNCO	CC	C-1-PUD	1.0
55	Employment Center	MU	EC-50	EC-50-PUD	1.0
56	Employment Center	MU	EC-50	EC-50-PUD	1.0
57	Employment Center	MU	EC-50	EC-50-PUD	3.6
58	Employment Center	MU	EC-50	EC-50-PUD	2.9
59	Employment Center	MU	EC-50	EC-50-PUD	4.4
60	Employment Center	MU	EC-50	EC-50-PUD	5.4
61	Employment Center	MU	EC-50	EC-50-PUD	3.2
62	Employment Center	MU	EC-40	EC-40-PUD	3.9
63	Employment Center	MU	EC-40	EC-40-PUD	3.9
64	Employment Center	MU	EC-40	EC-40-PUD	4.0
A-C	Freeway Buffer	PROS	POS	A-OS-PUD	7.6
	Major Roadway				6.0
	Minor Roadway				2.9
	Additional I-5 Right-Of-Way				5.7
				Totals	**66.1**

Tentative Subdivision Map

Quadrant D

Lot #	Land Use	GP	CP	Zone	Net Acres
65	Employment Center	MU	EC-40	EC-40-PUD	4.4
66	Employment Center	MU	EC-40	EC-40-PUD	4.1
67	Employment Center	MU	EC-40	EC-40-PUD	4.4
68	Employment Center	MU	EC-40	EC-40-PUD	2.5
69	Employment Center	MU	EC-40	EC-40-PUD	4.5
70	Employment Center	MU	EC-40	EC-40-PUD	3.8
71	Employment Center	MU	EC-40	EC-40-PUD	2.6
72	Employment Center	MU	EC-40	EC-40-PUD	8.5
73	Employment Center	MU	EC-30	EC-30-PUD	6.5
74	Medium Density Residential	LDR	MD	R-2B-PUD	10.8
D	Freeway Buffer	PROS	POS	A-OS-PUD	6.4
E	Detention Basin	PROS	POS	A-OS-PUD	8.9
	Major Roadway				7.8
	Minor Roadway				1.4
	Additional I-5 Right-Of-Way				1.4
				Totals	**78.0**

APPENDIX B

AIR QUALITY DATA

Natomas Crossing

Travel Mode	Home-Work Trips	Home-Shop Trips	Home-Other Trips
Pedestrian	0.00	0.00	0.00
Transit	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00
Totals	0.00	0.00	0.00

Travel Mode	Work Trips	Employee Trips	Customer Trips
Pedestrian	0.00	0.00	0.00
Transit	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00
Other	0.00	0.00	0.00
Totals	0.00	0.00	0.00

Changes made to the default values for Construction

The asphalt option switch changed from off to on.
The architectural coating option switch changed from off to on.
The construction year changed from 2000 to 2003.
The site grading max daily acreage estimate changed from to 2.
The site grading annual days earth moving changed from 250 to 6.
The site grading tracked tractor total vehicles changed from to 1.
The site grading tracked tractor hours/day changed from 8 to 6.
The site grading scraper hours/day changed from 8 to 6.
The site grading wheeled tractor total vehicles changed from to 1.
The site grading wheeled tractor hours/day changed from 8 to 6.
The site grading roller hours/day changed from 8 to 6.
The site grading motor grader total vehicles changed from to 1.
The site grading motor grader hours/day changed from 8 to 6.
The site grading miscellaneous hours/day changed from 8 to 6.
The worker construction year changed from 2000 to 2003.
The asphalt acres to be paved changed from 1 to 3.
The asphalt total days of paving changed from 10 to 6.
The stationary equipment equipment units changed from 2 to 30.
The mobile diesel truck: off hwy total vehicles changed from to 2.
The mobile diesel truck: off hwy hours/day changed from 8 to 6.
The mobile diesel wheeled loader total vehicles changed from to 1.
The mobile diesel wheeled loader hours/day changed from 8 to 6.
The mobile diesel roller hours/day changed from 8 to 1.
The mobile diesel miscellaneous total vehicles changed from to 1.
The mobile diesel miscellaneous hours/day changed from 8 to 6.
The coatings number of days of painting changed from 20 to 90.
Mitigation measure Soil Erosion Measures: Water Exposed Surfaces 2x Per Day:0
 has been changed from off to on.
Mitigation measure Properly Maintain Equipment: 5
 has been changed from off to on.
Mitigation measure Implement Water/Paved Road Measures: Water All Haul Roads 2x Per Day:0
 has been changed from off to on.
Mitigation measure Architectural Coatings: Use Low VOC Coatings: 5
 has been changed from off to on.
Mitigation measure Asphalt Paving: Use Low VOC Asphalt: 5
 has been changed from off to on.
Changes made to the default values for Area

The wood stove option switch changed from on to off.
The fireplcase option switch changed from on to off.
The landscape option switch changed from off to on.
The natural gas residential percentage changed from 60 to 0.
The landscape year changed from 2000 to 2003.
Mitigation measure Orient Buildings North/South: Cmrcl Space Heat.
 has been changed from off to on.
Changes made to the default values for Operations

The pass by trips option switch changed from on to off.

Natomas Crossing

The operational emission year changed from 2000 to 2003.
The operational winter selection item changed from 2 to 1.
The operational summer selection item changed from 7 to 6.
The travel mode environment settings changed from both to: none
The default/nodefault travel setting changed from nodefault to: nodefault
Visually Interesting Uses: No Uses Within Walking Distance
changed to:Visually Interesting Uses: No Uses within Walking Distance

DETAIL REPORT
(Pounds/Day - Summer)

Total Land Use Area to be Developed (Estimated): 24 acres
Retail/Office/Institutional Square Footage: 152000
Single Family Units: 0 Multi-family Units: 0

CONSTRUCTION EMISSION ESTIMATES

Source	ROG	NOx	CO	PM10	SOX
Demolition	-	-	-	0.00	-
Site Grading	2.03	19.46	-	21.88	1.90
Const. Worker Trips	0.52	0.74	1.40	0.14	-
Stationary Equip	5.04	4.11	-	0.24	0.06
Mobile Equip. - Gas	0.00	0.00	-	0.00	0.00
Mobile Equip. - Diesel	4.56	71.64	-	4.98	7.35
Architectural Coatings	60.47	-	-	-	-
Asphalt Offgassing	1.31	-	-	-	-
TOTALS(lbs/day,unmitigated)	73.94	95.95	1.40	27.24	9.31

CONSTRUCTION EMISSION ESTIMATES

Source	ROG	NOx	CO	PM10	SOX
Demolition	-	-	-	0.00	-
Site Grading	2.03	18.49	-	14.68	1.80
Const. Worker Trips	0.52	0.74	1.40	0.14	-
Stationary Equip	5.04	4.11	-	0.24	0.06
Mobile Equip. - Gas	0.00	0.00	-	0.00	0.00
Mobile Equip. - Diesel	4.56	71.64	-	4.98	7.35
Architectural Coatings	57.45	-	-	-	-
Asphalt Offgassing	1.24	-	-	-	-
TOTALS (lbs/day, mitigated)	70.75	94.98	1.40	20.05	9.21

Construction-Related Mitigation Measures

Soil Erosion Measures: Water Exposed Surfaces 2x Per Day
Percent Reduction(ROG 0% NOx 0% CO 0% PM10 68% SOx 0%)
Properly Maintain Equipment
Percent Reduction(ROG 5% NOx 5% CO 5% PM10 5% SOx 5%)
Implement Water/Paved Road Measures: Water All Haul Roads 2x Per Day
Percent Reduction(ROG 0% NOx 0% CO 0% PM10 3% SOx 0%)
Architectural Coatings: Use Low VOC Coatings
Percent Reduction(ROG 5% NOx 0% CO 0% PM10 0% SOx 0%)
Asphalt Paving: Use Low VOC Asphalt
Percent Reduction(ROG 5% NOx 0% CO 0% PM10 0% SOx 0%)

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	PM10	SOX
Natural Gas	0.07	1.01	0.41	0.00	-
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.09	0.01	0.64	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
TOTALS(lbs/day,unmitigated)	0.16	1.02	1.04	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

Source	ROG	NOx	CO	PM10	SOX

Natomas Crossing

Natural Gas	0.07	1.01	0.36	0.00	-
Wood Stoves - No summer emissions					
Fireplaces - No summer emissions					
Landscaping	0.09	0.01	0.64	0.00	0.00
Consumer Prdcts	0.00	-	-	-	-
TOTALS (lbs/day, mitigated)	0.16	1.02	1.00	0.00	0.00

Area Source Mitigation Measures

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
General office building	19.68	30.92	145.27	12.62
TOTAL EMISSIONS (lbs/day)	19.68	30.92	145.27	12.62

Does not include correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2003 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
General office building	12.04 trips / 1000 sq. ft.	152.00	1,830.08

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	-
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00	-	-	100.00
Urban Buses	2.00	-	-	100.00
Motorcycles	3.00	100.00% all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

% of Trips - Commercial (by land use)

General office building	35.0	17.5	47.5

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	PM10
General office building	19.68	30.92	145.27	12.62
TOTAL EMISSIONS (lbs/day)	19.68	30.92	145.27	12.62

APPENDIX C

BIOLOGICAL SURVEYS

SEAN J. BARRY

Herpetologist: California Threatened and Endangered Species
P.O. Box 401, Dixon, California 95620 (530) 304 4316 FAX (707) 678 5930
e-mail sjbarry@thegrid.net

June 5, 2001

Mr. Tom Skordal
Gibson and Skordal
2277 Fair Oaks Blvd., Suite 395
Sacramento, California 95825

Dear Tom:

Per our agreement, I have surveyed the east Alleghany property (Natomas Crossing Area 3) south and west of Arco Arena, Sacramento County to determine the presence, extent, and suitability of potential giant garter snake (*Thamnophis gigas*) habitat within those boundaries and within 1.0 mile (1.6km) of the property. My surveys were necessary because *T. gigas* is included in the federal list of threatened and endangered species. I will report my surveys of the west parcel (Natomas Crossing Area 4, between I-5 and El Centro Road) in a separate letter.

Background

The giant garter snake is restricted to the Central Valley of California. Populations have been found from at least as far north as Gridley, Butte County south to Buena Vista Lake, Kern County (Hanson (*sic*) and Brode, 1980; Brode, 1988; US Fish and Wildlife Service, 1999). Giant garter snake populations have been found only in sump or other very low elevation regions within the Central Valley. Records have come from the Kern River sump (Buena Vista Lake), the north end of the Tulare basin (west of Fresno), the Merced grasslands (Gustine south to Mendota), the Sacramento-Mokelumne-Calaveras-San Joaquin River delta (Elk Grove south to Stockton and west to Antioch), the Yolo bypass/American Basin region (eastern Yolo, northern Sacramento, Sutter, and Butte counties), the Colusa basin (Colusa, Glenn, and Tehama Counties), and the Butte sink (Butte County). The American Basin (Natomas) region of northwestern Sacramento and southern Sutter Counties has yielded at least 44 California Natural Diversity Database (CNDDB) *T. gigas* records, principally from the work of George Hansen during the mid-late 1980's. Most of the American Basin records originated along drainage canals, irrigation ditches, and lakes, but giant garter snakes also apparently occupy rice fields during the summer (US Fish and Wildlife Service, 1999). Elsewhere in the Central Valley reproductive populations of this species also occur along second-order sloughs and creeks, nearly always with permanent water. The Natomas Crossing Area 3 parcel is within the southern part of the habitat region defined by the American Basin region records.

During the past 40 years the giant garter snake has disappeared from most sites in the San Joaquin Valley that formerly supported its populations (Hansen and Brode, 1980; US Fish and Wildlife

Service, 1999). The reasons for this include habitat loss because of water diversion and manipulation (Kern and Tulare basins) and urban and agricultural expansion (Merced grasslands), and perhaps because of environmental toxins and exotic predators (Brode, 1988). Populations north of Stockton have generally been stable, but are now threatened by urban expansion, particularly in south Sacramento County and the American Basin. For those reasons, *T. gigas* has been included in the federal list of threatened and endangered species. The US Fish and Wildlife Service (1999) has prepared a draft recovery plan.

Giant garter snakes occur along slow-moving permanent waterways including sloughs, canals, irrigation ditches, and rice fields, typically in areas of dense bordering vegetation (grasses, tules, cattails, various sedges and rushes, willows, salt bush). They are exceedingly alert and timid, and disappear rapidly into such cover or into the water at the least disturbance. The best way to find them is to use binoculars to scan bordering vegetation and floating vegetation mats during favorable weather and seasonal conditions (Hanson and Brode, 1980; Brode, 1988). Juvenile giant garter snakes have also been found sporadically along very narrow third- and fourth-order natural waterways and ditches (CNDDB records and Barry, unpbl), where it may be easier for them to obtain food than in larger waterways. Giant garter snakes also require upland regions (above winter flood levels) very close to primary marshland habitat. They use these upland regions for basking and they use underground retreats above flood level as winter hibernacula. Rodent burrows and rock piles are favored retreats for hibernation and for short-term shelter (Brode, 1988). Giant garter snakes may emerge from winter hibernacula on warm days in early April, but they are observed on the surface most often from mid-April through early October (Brode, 1988). Warm ambient temperatures (at least 25°C substratum) tend to stimulate *T. gigas* activity, but these snakes retire underground or deep into vegetative cover during summertime hot spells.

Some of Hansen's American Basin CNDDB records were snakes that clearly had dispersed from primary reproductive populations (such as Fisherman's Lake) to small but somewhat suitable sites scattered throughout the basin. For example, on 30 April 1986 Hansen found an adult and two juvenile giant garter snakes basking on a rock pile at the southwest corner of El Centro and Del Paso Roads along a quasi-permanent roadside irrigation ditch, less than 1.6km east of Fisherman's Lake (Taylor Monument occurrence #72). Such habitat as described by Hansen would be considered unsuitable almost anywhere else in the species' distribution (Brode, 1988), although the site may also have been better suited in 1986 than it is now. The maze of small canals, irrigation ditches, and rice fields in the region facilitate such movement, and the primordial American Basin apparently offered ideal giant garter snake habitat throughout. Thus, these snakes may be encountered almost anywhere in aquatic habitat in the American Basin, and it is important to survey such sites very carefully before ruling out the presence of this species.

Giant garter snakes are presumed to feed primarily on fish, because most of the related garter snake species (the *Thamnophis couchii* complex) share this habit, and because reproductive giant garter snake populations generally occur only along waterways that support permanent fish populations (Hanson and Brode, 1980; Brode, 1988). Their preference for extensive cover along waterways with abundant fish populations probably explains the predominance of reproductive population records from large second-order permanent sloughs and canals. However, some fish species follow fluctuating seasonal water as it floods into dry channels (irrigation ditches) and may present transient forage sources for snakes in seasonal habitat (Barry, unpubl.). This might facilitate giant garter snake dispersal from primary population centers such as Fishermans Lake, and would explain some of the

seasonal waterway giant garter snake records in the CNDDB. The bullfrog (*Rana catesbeiana*), an exotic species introduced to California from the eastern US at the turn of the 20th century (Jennings and Hayes, 1985), probably also figures in the giant garter snake diet. Some authors note that these large exotic frogs may include juvenile garter snakes of other species sporadically in their own diets (Bury and Whelan, 1980; Schwalbe and Rosen, 1989), but it is unknown if this actually impacts native snake populations adversely. It is generally supposed that it does because the bullfrog is an exotic, but there are no confirming data available for giant garter snakes or any other reptile or amphibian species (Hayes and Jennings, 1986). In Natomas bullfrogs and giant garter snakes frequently occur together within the same sometimes-fishless habitat, so at least in this region bullfrogs seem more likely to represent a food source than a serious impact on giant garter snake populations.

Survey methods

I used maps, aerial photographs, existing wetland delineations (Gibson and Skordal, 1998, 1999), records from the California Natural Diversity Database (CNDDB), and field surveys to identify potential giant garter snake habitat on the Natomas Crossing Area 3 parcel. Maps included the US Geological Survey 7.5′ series (Taylor Monument and Sacramento West quadrangles), the DeLorme Northern California Atlas and Gazeteer, TOPO! Software (National Geographic), and the Thomas Sacramento County 2001 edition road atlas. Aerial photographs from 1996 were those included with the Gibson and Skordal wetland delineations.

I assessed waterway habitats by the criteria developed by the California Department of Fish and Game (CDFG) and summarized in Appendix D of the US Fish and Wildlife Service (USFWS) giant garter snake draft recovery plan (US Fish and Wildlife Service, 1999). These include still or slowly moving permanent water over a silt substratum, presence of bordering or emergent and floating vegetative cover, presence of rock piles in lieu of or in addition to vegetative cover, presence of diurnal retreats and potential hibernacula such as rodent burrows and rock piles, and presence of several sizes of fish, as potential food for all life stages of giant garter snakes. Bullfrogs are also considered potential forage for giant garter snakes (US Fish and Wildlife Service, 1999).

I classified waterway habitats according to their assessed potential suitability for giant garter snakes:

Level 0 waterways fulfill none of the above criteria and thus offer no potential habitat. Seasonal rain pools and concrete channels are typical Level 0 habitats.

Level 1 waterways (typically intermittent irrigation and flood control ditches with minimal marshland vegetative cover) partially fulfill hydrological and some cover requirements but lack a dependable forage source because the water is intermittent, perhaps usually absent. Thus, they offer only so-called "dispersal" or transient habitat based on CNDDB records of similar habitat (such as the El Centro and Del Paso Road junction record discussed above).

Level 2 waterways seemingly fulfill the hydrological and cover requirements but the water level fluctuates unpredictably, sometimes to dryness. Some forage species may be present (especially amphibians), but these sites typically lack large reproductive forage species populations and thus may offer potential habitat for reproductive giant garter snake populations during some years but not others. Most well vegetated irrigation ditches and rice fields with amphibian or intermittent fish populations fit this category.

Level 3 waterways (permanent canals and some tributary ditches in the American Basin) fulfill all of the above criteria with little or no annual water level fluctuation, and thus offer permanent habitat for reproductive giant garter snake populations and their forage species.

I surveyed potential habitat by walking slowly along the upland edge of bordering or emergent vegetation and watching for basking snakes and by scanning floating and emergent vegetation and rocky cover with binoculars. Per the USFWS/CDFG survey protocol, I surveyed all level 1, 2, and 3 habitat at least 10 times per mile (1.6km) of border, between 29 April and 31 May, from 0900 to 1300 hours. This typically allowed about 4-6 surveys per date per mile from varying starting points, so that at least 5 days were necessary to survey one mile of canal adequately along both sides (20 miles total). I used a global positioning system receiver to determine the geographic location of each specimen found, and verified those data with topographic maps and map software. I also recorded weather conditions (shaded bulb ambient air and ground temperatures, anemometer wind direction and velocity, estimated % cloud cover) during each survey.

Survey results

I. *Habitat within the property boundaries*

The east Alleghany property surveyed for this report is a parcel of about 104ha (255 acres), bounded on the west by Interstate Highway 5, on the north by Del Paso Road, on the south by San Juan Road, and on the east by a line extending roughly from the junction of Airport way (excluding existing structures at that intersection) and San Juan Road north to the junction of East Commerce Way and Arena Boulevard, then north along East Commerce Way to its junction with Del Paso Road. The property is contiguous at the southeastern end with another Alleghany parcel that has been developed and was not surveyed during this study. The surveyed parcel has seen long-term agricultural use, so that nothing of its primordial setting remains. The property has also been disc-plowed within the preceding 12 months, but is not currently planted. The on-parcel wetlands that I surveyed for this report include the seasonal wetlands along the western boundary, the "Alleghany north ditch," the excavated pit, and the remnant irrigation ditches.

A. Seasonal wetlands. Within the boundaries of the segment that I surveyed, Gibson and Skordal (1998) identified four seasonal wetlands (which they designated SW 1,2,3, and 4) that total about 3.3ha (8.2 acres), scattered along the western boundary of the parcel. These are very shallow sumps that apparently formed consequential to the surrounding land use (freeway embankment to the west, agriculture to the east), and none has any of the elements of giant garter snake habitat. During my surveys a 10cm (4 inch) deep pool of water remained in only about 0.5% of the northernmost seasonal wetland (SW1 in the Gibson and Skordal report), and the other three were completely dry. Forage species were absent from all four sites. Thus, these wetlands are Level 0 habitat, and did not require further surveys for giant garter snakes.

B. "Alleghany north ditch." The "Alleghany north ditch" (my designation, and not to be confused with the American Basin North Drainage Canal) enters the parcel at the northeast corner, just west of the junction of Del Paso Road and East Commerce Boulevard, angles west along Del Paso Road within the parcel boundaries, turns south near the Del Paso Road-Interstate Highway 5 interchange, and leaves the parcel via a culvert under I-5 about 250m southeast of the interchange. It is a

continuation (via a culvert under Del Paso Road) of a seasonal drainage canal that roughly parallels I-5 north of Del Paso Road and that apparently offers Level 2 giant garter snake habitat off-parcel, north of a concrete dam. According to the 1980 revision of the Taylor Monument 7.5 series USGS map, the Alleghany north ditch originally continued straight south from Del Paso Road, then turned west about 700m south of that road. One of George Hansen's records (CNDDB Taylor Monument occurrence #129, unspecified date in 1987) originated along the ditch, about 100m south of Del Paso Road, within what is now the northwest Arco Arena parking lot. Presumably the construction of East Commerce Boulevard and the Arco Arena parking lots in the late 1980's necessitated rerouting the ditch. The 1996 aerial photographs confirm that the ditch had been rerouted by then, except for a remnant of the east/west portion, about 750m south of Del Paso Road. On the parcel, the north ditch was completely dry throughout the survey period, and there was little evidence of wetland indicator vegetation that would suggest Level 1 or 2 giant garter snake habitat. The ditch within the parcel boundaries appears to function as a runoff channel only, during heavy winter rains. USFWS "protocol-level" surveys as detailed above yielded no giant garter snakes. In my opinion, the Alleghany north ditch on the parcel is probably a Level 0 waterway, and does not offer giant garter snake habitat.

C. Excavated pit. The Gibson and Skordal wetlands delineation report identified an excavated pit just south of SW4 as a permanent (jurisdictional) waterway. This deep 0.28ha (0.69-acre) "borrow" pit apparently remains partially flooded during most or all of the year. Evidence for that is the presence of at least two fish species (mosquitofish (*Gambusia*) and an unidentified species), at least one crayfish species, and a reproductive bullfrog population. Bullfrogs require permanent water because their tadpoles overwinter and metamorphose in the second year (Bury and Whelan, 1980). During my surveys, about 30% of the pit was flooded, but the water was only about 1m deep. The remaining 70% probably floods during winter rains in some years, but the absence of extensive marshland or aquatic vegetation indicates that the water level probably declines rapidly when the rains end. However, despite very warm weather and a rather dry winter, the water depth and pool radius in the flooded section declined less than 10cm (4 inches) in the five weeks of these surveys, an indication that the aquifer probably maintains the pond quasi-permanently in the lowest part of the excavation. A few large willows (*Salix*) bordered the western edge of the pond, but the surrounding vegetation was mostly upland forbes. True wetland indicator vegetation (other than the willows) was confined to two small tule (*Scirpus*) patches west of the pond. This excavated pit is at least Level 1 giant garter snake potential habitat, and during some years is probably at Level 2. However, protocol-level surveys failed to yield any observations of giant garter snakes. Dispersing giant garter snakes that happen upon the site may remain for a time because forage is available, but the low total forage biomass apparently does not support a permanent reproductive giant garter snake population. The pit may be isolated by Interstate 5 from giant garter snake populations to the west, and by housing development from populations to the east, but only surface roadways and open fields (both of which these snakes readily cross) exist between the pit and populations to the north and south.

D. Remnant irrigation ditches. The Alleghany property includes a few remnants of former irrigation ditches, the largest of which are the south remnant of "Alleghany north ditch" (discussed above), and a more substantial ditch a few meters south and east of the excavated pit. Neither ditch contained water during my surveys, and both are apparently blocked at each end so that they are isolated from other irrigation ditches in the region (Tom Skordal, personal communication). The "Alleghany north ditch" south remnant supports minimal cover and no true wetland indicator species, so I classified it as Level 0 habitat, very unlikely to support giant garter snakes at any time. The

southern ditch is bordered by substantial blackberry scrub (*Rubus*), and this semi-riparian cover is extensive enough so that it may sometimes provide cover for dispersing giant garter snakes. It warrants only Level 0 classification because of the absence of surface water during the spring, and the absence of forage species. I surveyed the ditch during protocol-level surveys of the nearby excavation pit, but found no giant garter snakes.

II. *Habitat and CNDDB records within one mile of the property boundaries*

Most of the land within a mile (1.6km) north and west of Natomas Crossing Area 3 currently resembles that property (level, recently plowed/disced, planted or fallow agriform fields, with scattered dwellings and associated structures). Several CNDDB giant garter snakes records from George Hansen's 1986-88 surveys originated along canals and ditches in those nearby sections. South of the property is Interstate Highway 80 and urban Sacramento, but between the property and the interstate highway is East Drainage Canal, which has yielded at least three late 1980's CNDDB giant garter snake records upstream of the parcel (submitted by George Hansen). The land east of the parcel is a mixture of development and agriform fields, but it is being urbanized rapidly and there are few giant garter snake records from that area. I surveyed several waterways within a mile of the Natomas Crossing Area 3 parcel by the criteria and protocols used for the parcel waterway surveys. Surveyed waterways include East Drainage Canal, the overflow sump along East Drainage Canal, "south slough," the off-parcel portion of "Alleghany north ditch," irrigation ditches along Del Paso Road west of Interstate 5, and West Drainage Canal at El Centro and Witter Roads.

E. East Drainage Canal. The CNDDB includes at least two giant garter snake records from East Drainage Canal within one mile (1.6km) of the Alleghany parcel (Taylor Monument records # 74, 75). The only segment of this canal near the surveyed parcel is between the San Juan Road and Interstate 5 overcrossings, but San Joan Road and the industrial park northwest of the Airport Road-San Juan Road junction isolate that segment of the canal from the parcel. Although emergent vegetation is absent from most of the canal, the canal provides all giant garter snake habitat requirements and is clearly a Level 3 habitat for its entire length within at least a mile of the Alleghany property. I performed protocol surveys of the canal from Interstate Highway 5 east and north to the current overflow pond (sump 16), southeast of the property, and found one large juvenile giant garter snake basking at the edge of a dense grassy patch at 1300 hours on 13 May. This site is about 0.6 mile (0.96km) upstream from the junction of East Drainage Canal and San Juan Road, and about the same linear distance from the nearest part of the Alleghany property, southwest of Natomas airport. Though I found just one giant garter snake during these surveys, the microhabitat occupied by the snake was similar to that along the entire canal, and for that reason these snakes probably occur sporadically but consistently along the entire canal. Although I did not find any specimens along the short segment of East Drainage Canal between the San Juan Road and Interstate 5 overcrossings, the available habitat resembles that upstream, so I would expect these snakes sporadically along that segment as well. Gopher snakes (*Pituophis catenifer*) were common in the rip-rap along the canal during my surveys, and giant garter snakes are known to use these rock piles for shelter as well (Brode, 1988). In my opinion, East Drainage Canal is the most important giant garter snake habitat in the vicinity of the Alleghany parcel.

F. Overflow sump 16 along East Drainage Canal. This substantial sump north and west of East Drainage Canal is clearly a recent excavation, and seems to be potential giant garter snake habitat because of the dense emergent and bordering vegetation and abundant rodent burrows in the vicinity.

Nevertheless, protocol-level surveys of the entire perimeter failed to yield any giant garter snakes or any evidence of forage species. The excavation was lined with plastic sheeting, and this may impede aquatic vegetation and delay or preclude the establishment of amphibian and fish populations that may require such vegetation.

G. "South slough." "South slough" (my designation) is a small ditch that drains from an unknown source within or near the Alleghany property north of the commercial park at Airport Road and San Juan Road. The slough apparently drains overflow and runoff from water storage facilities east of Airport Road, and it emerges from an underground culvert at the north parking lot entrance on the west side of Airport Road north of San Juan Road. The water flows south along Airport Road and west along the north side of San Juan Road about 30m and then disappears, possibly into another culvert. The slough was full of flowing water throughout the survey period, but water permanence is unknown. It is a less than 1m wide for most of its aboveground length, and in some places it is choked with trash, but it also supports limited bordering and emergent vegetation and a small bullfrog population of unknown reproductive status. Despite its small size, South slough apparently qualifies as Level 2 habitat, and its proximity to East Drainage Canal suggests that it may provide habitat for transient giant garter snakes.

H. Off-parcel portion of "North Alleghany ditch." North of Del Paso Road the "North Alleghany ditch" widens and straightens. The bed of this section of the ditch is lined for almost its entire length with cattails (*Typha*), which suggests that the ditch is flooded frequently enough to support such marshland vegetation. As discussed earlier, forage species may temporarily colonize such periodically flooded habitat, and if cover is available (as it is along this ditch) giant garter snakes might follow the food supply into habitat that does not normally support reproductive populations. The numerous CNDDB (Hansen) records in similar habitat throughout American Basin support this speculation. However, during my surveys the ditch bed was dry, and I found no giant garter snakes. Thus, this ditch qualifies as Level 1 or perhaps Level 2 habitat, and in the absence of permanent water, survey specimens, or on-site CNDDB records it seems unlikely to be an important giant garter snake site.

I. Irrigation ditch along Del Paso Road west of Interstate 5. The irrigation ditch on the south side of Del Paso Road between Interstate 5 and El Centro Road is partially vegetated and was full of flowing water during the survey period. However, I found no forage species or snakes during USFWS protocol surveys. The Hansen record from the southwest corner of El Centro and Del Paso Roads (CNDDB Taylor Monument record #72, discussed above) is very close to the ditch, and both sites are less than a mile (1.6km) east of Fisherman's Lake and north of West Drainage Canal. Because of its potential seasonal suitability and proximity to CNDDB records, this Level1-2 site may provide habitat for transient giant garter snakes.

J. West Drainage Canal. West Drainage Canal (and associated irrigation ditches) is well-documented giant garter snake habitat, from Fishermans Lake (CNDDB Taylor Monument records #11 and #93) downstream at least to El Centro Road (CNDDB Taylor Monument record #130). During very brief stops in May 2001, I observed nine giant garter snakes within a few meters of the West Drainage Canal overcrossing at Del Paso Road, about 1.5-2.0 miles (2.4-3.2km) west of the Alleghany parcel. However, the available cover along the canal from El Centro Road to San Juan Road is very sparse, and that segment of West Drainage Canal clearly offers very marginal habitat for giant garter snakes.

III. *On-parcel upland habitat*

Giant garter snakes may utilize virtually any rodent borrow or rock pile in any hill or levee above the flood zone as a hibernaculum site. As discussed above, these snakes occupy underground shelters continuously from October through March, and they may use similar shelters during summertime hot spells. The average or maximum distance traveled by these snakes from primary aquatic foraging habitat to winter retreats is unknown, but by telemetry studies Wiley (cited by US Fish and Wildlife Service, 1999) found giant garter snake hibernacula up to 250m (820ft) from aquatic foraging habitat. In regions where hibernaculum choice is critical to survival (due to frostline depth or winter flooding), some garter snake species may move several miles between foraging habitat and suitable hibernacula (Fitch, 1965). It is probably best to assume that giant garter snakes could use almost any suitable site in the Natomas region as a hibernaculum, particularly because CNDDB records reflect usage of a network of dispersal corridors throughout the region. Within the Natomas Crossing Area 3 parcel boundaries, burrow networks of the California ground squirrel (*Spermophilus beecheyi*) along the west edge of the parcel near the Interstate 5 embankment and perhaps within the excavation pit offer potentially suitable hibernacula.

Survey summary

Of four wetland habitats or habitat types within the boundaries of the Alleghany east parcel, only the excavated pit has enough cover, water, and forage to be considered a potential giant garter snake site. However, USFWS protocol-level surveys of this site were unproductive, which suggests that the pit does not have enough forage biomass to support a permanent reproductive giant garter snake population. Transient and dispersing juvenile giant garter snakes may appear at the site sporadically, perhaps somewhat more often in late summer as nearby transient habitat dries. The other on-parcel habitats lack sufficient water, cover, and forage throughout the year to support these snakes. On-parcel or very near on-parcel potential winter hibernacula include rodent burrows in the walls of the excavated pit and the Interstate 5 embankment and nearby elevated areas.

Of six nearby off-parcel waterways, East and West Drainage Canals clearly support reproductive giant garter snake populations, and two smaller irrigation and drainage ditches south ("South slough") and west (along Del Paso Road west of I-5) of the parcel may offer habitat for transient specimens that disperse from the drainage canals. One recently constructed sump pond along East Drainage Canal may eventually become suitable giant garter snake habitat if forage species colonize permanently. A drainage canal ("Alleghany north ditch") that is contiguous with an on-parcel ditch may offer seasonal cover and forage, but giant garter snakes are not known currently to utilize this habitat.

Please note that any substantive changes to the waterways discussed in this report, such as increased or prolonged waterflow and subsequent habitat improvement, might change the status of the giant garter snake at or near Natomas Crossing Area #3. Therefore, if construction is delayed more than a year from the date of this report, it may be necessary to repeat some of the surveys.

Sincerely,

Sean J. Barry

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LISTED VERNAL POOL BRANCHIOPODS SURVEY WET SEASON SAMPLING

NORTH NATOMAS QUADRANT ONE HOLDINGS

CITY OF SACRAMENTO, CALIFORNIA

MAY 1999

Prepared For:

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OBJECTIVE

The purpose of this report is to summarize the results of wet season surveys for listed vernal pool branchiopods for the North Natomas Quadrant One Holdings project. Listed branchiopod species include conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool tadpole shrimp (*Lepidurus packardii*), and vernal pool fairy shrimp (*Branchinecta lynchi*). Field surveys were conducted under authorization of U.S. Fish and Wildlife Service (USFWS) pursuant to Endangered/Threatened Species Take Permit No. PRT-795935.

LOCATION

The survey area includes multiple parcels comprising an area of approximately 500 acres situated south of Del Paso Boulevard, north of Interstate 80, and east of Interstate 5 in the North Natomas Basin region of the City of Sacramento, California. Figure 1 is a vicinity map.

METHODS AND MATERIALS

Potential listed branchiopod habitats (i.e. survey pools) were sampled approximately every 14 days commencing on December 10, 1998 and terminating on April 15, 1999 at which time all of the survey pools had either dried up or had experienced a minimum of 120 days of continuous ponding.

Field sampling was conducted in compliance with the terms and conditions outlined in USFWS vernal pool crustacean survey guidelines dated April, 1996. Survey pools were sampled with a 5-foot long dip net with a 12-inch D-ring and 650 micron mesh. Sampling technique involved making a series of pulls by extending the net out and pulling it back in a sweeping motion. The net was examined for the presence of listed branchiopods and then cleaned of debris between pulls. Survey effort ranged from four to ten pulls per survey pool depending on the size of the pool.

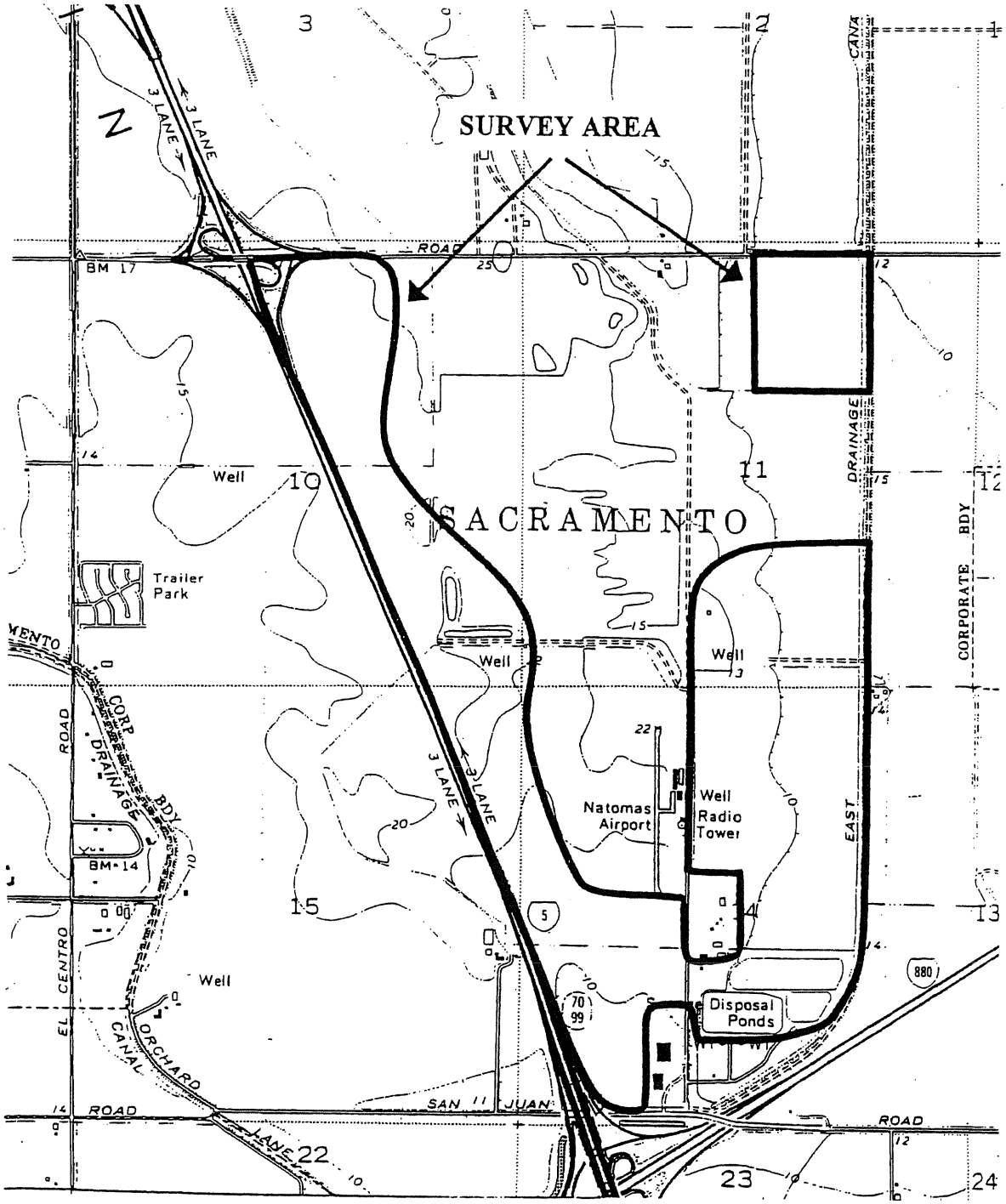
Approximate maximum depths of ponding were measured and recorded for each survey pool per sampling session. Air temperature and water temperature were measured on a periodical basis per sampling session.

GENERAL SITE CONDITIONS

The study area includes parcels situated immediately east, west, and south of the Arco Arena site. Historically, the survey area was leveled, drained, irrigated and used for crop cultivation. In the recent past, portions of the survey area have been altered by grading and excavation associated with road construction. Mapped soils include Capay clay loam, 0 to 2 percent slopes; Clear Lake clay, hardpan substratum, drained, 0 to 1 percent slopes; Consumnes silt loam, partially drained and drained, 0 to 2 percent slopes; Durixeralfs, 0 to 1 percent slopes; Galt clay, 0 to 2 percent slopes; and San Joaquin silt loams. All of these soils have been disturbed and altered by past grading and excavation activities.

FIGURE 1

VICINITY MAP



(Scale: 1" = 2000')

Source: Taylor Monument, California 7.5 minute USGS Quadrangle Map

A majority of the habitat in the survey area is non-native annual grassland characterized by soft chess (*Bromus mollis*), rip-gut brome (*Bromus diandrus*), perennial rye grass (*Lolium perenne*), yellow star thistle (*Centaurea solstitialis*), filaree (*Erodium sp.*), and cut-leaf geranium (*Geranium dissectum*).

SURVEY POOL CONDITIONS

Survey pools consist of eight seasonal wetland habitats (SW1 - SW8) and an excavated pond (EP1) which comprise a total wetland area of approximately 11.02 acres. The seasonal wetland habitats typically occur within shallow closed depressions which either sustain ponding and/or saturated soil conditions to the surface for long duration during the growing season. Some of the seasonal wetland areas (i.e. SW1, SW4, SW5, and SW7) may not typically pond water in normal rainfall years, but they do sustain saturated soils at or near the surface for long duration during the growing season. Other areas (i.e. SW2, SW3, SW6, and SW8) typically sustain ponding conditions for long duration in the growing season in most years. A majority of the wetland areas were either created inadvertently or and/or have been significantly altered by past construction activities.

Typical seasonal wetland habitat is characterized by tall flat-sedge (*Cyperus eragrostis*), creeping spikerush (*Eleocharis macrostachya*), bird's foot trefoil (*Lotus corniculatus*), Bermuda grass (*Cynodon dactylon*), curly dock (*Rumex crispus*), purple hairgrass (*Deschampsia danthonioides*), and slender popcorn flower (*Plagiobothrys stipitatus*). The excavated pond (EP1) sustains ponding conditions in excess of 36 inches at maximum depths throughout the winter and spring months. Sparse wetland habitat in the pond includes willows (*Salix sp.*), cattails (*Typha latifolia*), smartweed (*Polygonum sp.*), and hyssop loosestrife (*Lythrum hyssopifolia*). Appendix A contains the delineation maps (Sheets 1 & 2) showing the survey area boundary and the location of survey pools.

FINDINGS

Based on wet season survey data conducted over the 1998-1999 wet season, we did not identify any listed or non-listed branchiopod species present in the survey pools. It is important to note that four of the survey pools (SW1, SW4, SW5, and SW7) did not sustain ponding conditions at any time during the wet season survey. Of the remaining survey pools, all reached maximum depths and then dried up by April 15, 1999 except for EP1 which had experienced a minimum of 126 days of continuous ponding at that time.

Appendix B provides a database listing and summary sheet containing relevant survey data which has been formatted to include information required on the USFWS vernal pool data form as listed in the 1996 protocol.

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APPENDIX A

WETLAND DELINEATION MAP
(Sheets 1 & 2)

APPENDIX B

SURVEY DATA

VERNAL POOL DATA FORM
WET SEASON SURVEY FOR LISTED BRANCHIOPODS

Project Name: North Natomas Quadrant One Holdings Take Permit No. PRT-795935

Collector: Gibson & Skordal

USGS Quadrangle: Taylor Monument

Section: 10, 11, 14 & 15 Township: 9 North Range: 4 East

Longitude: 121° 30′ W Latitude: 38° 38′ N

Habitat Condition: (circle where appropriate)

- unidisturbed disturbed: tire tracks garbage (discing/plowing)

(ungrazed) grazed: cattle horses sheep other _____
light moderate heavy

- land use of habitat: Historically, survey area was drained, leveled, irrigated, and used for crop cultivation. Portions of survey area have been disturbed/altered by grading and excavation activities.

Representative color photographs of the survey area are included: ___ No ✓ Yes

Comments: Survey pools include eight seasonal wetland habitats (SW1-SW8) and one excavated pond (EP1).

This form and the attached database forms are being submitted as a substitute for the U.S. Fish & Wildlife Service vernal pool data form as approved by the Service.

LISTED BRANCHIOPODS WET SEASON SURVEY DATA
NORTH NATOMAS QUADRANT ONE

Survey Pool Ref. No.	Sampling Date	Weather Conditions	Air Temp. (C)	Water Temp. (C)	Water Depth (Inches)	Max. Surface Area of Pool (Sq. Ft.)	BRLY	BRMI	LIOC	LEPA	Estimated No. of Branchiopods (Order of Magnitude)
SW1	12/11/98	CLEAR	13		0	189,410					None
SW2	12/11/98	CLEAR	13	9	6	146,940					None
SW3	12/11/98	CLEAR	13	9	5	17,980					None
SW4	12/11/98	CLEAR	13		0	1,520					None
SW5	12/11/98	CLEAR	13		0	500					None
SW6	12/11/98	CLEAR	13		0	88,660					None
SW7	12/11/98	CLEAR	13		0	500					None
SW8	12/11/98	CLEAR	13		0	4,400					None
EP-1	12/11/98	CLEAR	13	9	28	30,125					None
SW1	12/28/98	CLEAR	10		0	189,410					None
SW2	12/28/98	CLEAR	10	5	4	146,940					None
SW3	12/28/98	CLEAR	10		0	17,980					None
SW4	12/28/98	CLEAR	10		0	1,520					None
SW5	12/28/98	CLEAR	10		0	500					None
SW6	12/28/98	CLEAR	10		0	88,660					None
SW7	12/28/98	CLEAR	10		0	500					None
SW8	12/28/98	CLEAR	10		0	4,400					None
EP-1	12/28/98	CLEAR	10	5	20	30,125					None
SW1	1/8/99	CLOUDY	9		0	189,410					None
SW2	1/8/99	CLOUDY	9		0	146,940					None
SW3	1/8/99	CLOUDY	9		0	17,980					None
SW4	1/8/99	CLOUDY	9		0	1,520					None
SW5	1/8/99	CLOUDY	9		0	500					None
SW6	1/8/99	CLOUDY	9		0	88,660					None
SW7	1/8/99	CLOUDY	9		0	500					None
SW8	1/8/99	CLOUDY	9		0	4,400					None
EP-1	1/8/99	CLOUDY	9	7	20	30,125					None
SW1	1/22/99	OVERCAST	14		0	189,410					None
SW2	1/22/99	OVERCAST	14	12	5	146,940					None
SW3	1/22/99	OVERCAST	14	12	5	17,980					None
SW4	1/22/99	OVERCAST	14		0	1,520					None
SW5	1/22/99	OVERCAST	14		0	500					None
SW6	1/22/99	OVERCAST	14		0	88,660					None
SW7	1/22/99	OVERCAST	14		0	500					None
SW8	1/22/99	OVERCAST	14	12	13	4,400					None
EP-1	1/22/99	OVERCAST	14	12	26	30,125					None
SW1	2/4/99	OVERCAST	16		0	189,410					None
SW2	2/4/99	OVERCAST	16	16	8	146,940					None
SW3	2/4/99	OVERCAST	16	16	4	17,980					None

LISTED BRANCHIOPODS WET SEASON SURVEY DATA
NORTH NATOMAS QUADRANT ONE

Survey Pool Ref. No.	Sampling Date	Weather Conditions	Air Temp. (C)	Water Temp. (C)	Water Depth (Inches)	Max. Surface Area of Pool (Sq. Ft.)	BRLY	BRMI	LIOC	LEPA	Estimated No. of Branchiopods (Order of Magnitude)
SW4	2/4/99	OVERCAST	16		0	1,520					None
SW5	2/4/99	OVERCAST	16		0	500					None
SW6	2/4/99	OVERCAST	16		0	88,660					None
SW7	2/4/99	OVERCAST	16		0	500					None
SW8	2/4/99	OVERCAST	16	16	13	4,400					None
EP-1	2/4/99	OVERCAST	16	16	28	30,125					None
SW1	2/18/99	RAIN	13		0	189,410					None
SW2	2/18/99	RAIN	13	13	13	146,940					None
SW3	2/18/99	RAIN	13	13	8	17,980					None
SW4	2/18/99	RAIN	13		0	1,520					None
SW5	2/18/99	RAIN	13		0	500					None
SW6	2/18/99	RAIN	13	13	11	88,660					None
SW7	2/18/99	RAIN	13		0	500					None
SW8	2/18/99	RAIN	13	13	16	4,400					None
EP-1	2/18/99	RAIN	13	13	30	30,125					None
SW1	3/3/99	CLEAR	18		0	189,410					None
SW2	3/3/99	CLEAR	18	18	11	146,940					None
SW3	3/3/99	CLEAR	18	18	6	17,980					None
SW4	3/3/99	CLEAR	18		0	1,520					None
SW5	3/3/99	CLEAR	18		0	500					None
SW6	3/3/99	CLEAR	18	18	9	88,660					None
SW7	3/3/99	CLEAR	18		0	500					None
SW8	3/3/99	CLEAR	18	18	3	4,400					None
EP-1	3/3/99	CLEAR	18	18	36	30,125					None
SW1	3/18/99	CLEAR	22		0	189,410					None
SW2	3/18/99	CLEAR	22	24	9	146,940					None
SW3	3/18/99	CLEAR	22	24	6	17,980					None
SW4	3/18/99	CLEAR	22		0	1,520					None
SW5	3/18/99	CLEAR	22		0	500					None
SW6	3/18/99	CLEAR	22	24	6	88,660					None
SW7	3/18/99	CLEAR	22		0	500					None
SW8	3/18/99	CLEAR	22		0	4,400					None
EP-1	3/18/99	CLEAR	22	24	30	30,125					None
SW1	4/1/99	CLEAR	18			189,410					None
SW2	4/1/99	CLEAR	18			146,940					None
SW3	4/1/99	CLEAR	18			17,980					None
SW4	4/1/99	CLEAR	18			1,520					None
SW5	4/1/99	CLEAR	18			500					None
SW6	4/1/99	CLEAR	18	19	3	88,660					None

LISTED BRANCHIOPODS WET SEASON SURVEY DATA
NORTH NATOMAS QUADRANT ONE

Survey Pool Ref. No.	Sampling Date	Weather Conditions	Air Temp. (C)	Water Temp. (C)	Water Depth (Inches)	Max. Surface Area of Pool (Sq. Ft.)	BRLY	BRMI	LIOC	LEPA	Estimated No. of Branchiopods (Order of Magnitude)
SW7	4/1/99	CLEAR	18			500					None
SW8	4/1/99	CLEAR	18			4,400					None
EP-1	4/1/99	CLEAR	18	19	30	30,125					None
SW1	4/15/99	CLEAR	28			189,410					None
SW2	4/15/99	CLEAR	28			146,940					None
SW3	4/15/99	CLEAR	28			17,980					None
SW4	4/15/99	CLEAR	28			1,520					None
SW5	4/15/99	CLEAR	28			500					None
SW6	4/15/99	CLEAR	28			88,660					None
SW7	4/15/99	CLEAR	28			500					None
SW8	4/15/99	CLEAR	28			4,400					None
EP-1	4/15/99	CLEAR	28	21	20	30,125					None

Note: BRLY=*Branchinecta lynchi*; BRMI= *Branchinecta sp.* (midvalley); LEPA= *Lepadurus packardii*; LIOC=*Linderiella occidentalis*.

May *Consulting Services*

P.O. Box 1156 Walnut Grove, CA 95690
Phone (916) 776-2500 Fax (916) 776-1541

November 5, 1998

Tom Skordal
Gibson & Skordal Wetland Consultants
2277 Fair Oaks Blvd. Suite 395
Sacramento, CA 95825

Dear Mr. Skordal,

We are pleased to submit a copy of the report documenting the methods and results of our analysis of soil samples collected from five seasonal wetlands and one excavated pit in the North Natomas Quadrant One Holdings (Exhibit A) for the presence of federally listed large branchipods. Although, seven seasonal wetlands are indicated in the *Delineation of Waters of the United States: North Natomas Quadrant One Holdings* report (Gibson & Skordal Wetland Consultants 1997), two of these seasonal wetlands were not sampled. Seasonal wetland seven had been filled from construction improvements of the East Drainage Canal and seasonal wetland five had been thoroughly disturbed by disking and determination of its location was not possible (i.e., no wetland vegetation or basin micro-topography was present) during field sampling. No evidence of large branchiopod cysts were observed in any of the seasonal wetlands sampled on site.

If you have any questions or need additional information please call me at (916) 752-2500. Thank you for the opportunity to work on this project. We look forward to future opportunities to work with you.

Sincerely,

Matt Grace for
Brent Helm
Senior Wetland Ecologist

Attachment: Exhibit A

Exhibit A

ANALYSIS OF SOIL SAMPLES FOR THE PRESENCE OF FEDERALLY LISTED LARGE BRANCHIPODS

INTRODUCTION

May Consulting Services was retained by Gibson & Skordal Wetland Consultants to analyze soils for the presence of large branchiopod (Crustacea: Branchiopoda) cysts (embryonic eggs) collected from the basins of seasonal wetlands occurring in the North Natomas Quadrant One Holdings Project site. The project site is located in the northeast corner of the intersection of Interstate 5 and Interstate 80, Sacramento, Sacramento County, California. The roughly 500-acre project site is bounded to the west by Interstate 5, to the north by Del Paso Boulevard, and to the south and east by the East Drainage Canal.

This report documents the methods and results of analysis of soils for the presence of federally listed large branchiopods.

METHODS

Soil samples from five seasonal wetlands and one excavated pit were collected for analysis of the presence of listed large branchiopods. Although, Gibson and Skordal (1997) delineated seven seasonal wetlands on the site, one of the delineated wetlands (SW7) had been recently filled from construction of the East Drainage Canal and another seasonal wetland (SW5) could not be located during field sampling due to the recent disking which had removed the vegetation and evidence of a depressional basin.

Soil collection and analysis was conducted under permit TE-795930-2 of Section 10 (a)(1)(A) of the federal Endangered Species Act, 16 U.S.C. 1531 et seq., and its implementing regulations. Methods followed U.S. Fish and Wildlife Service (USFWS) *Interim Survey Guidelines to Permittees for Recovery Permits under Section 10 (a) (1) (A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods* (1996).

Soils were collected from the five seasonal wetlands (SW1, SW2, SW3, SW4, and SW6) and the excavated pit by May Consulting Services' wetland ecologist Brent Helm. Between ten and fifty soil sub-samples were collected, depending on wetland size, from each of the wetlands. Sub-samples were taken with a hand trowel from the lower topographic portions of each wetland. Sub-samples were approximately 5-cm square by 1-cm deep, or 25 cubic cm. Each sub-sample was placed in a 1-liter plastic freezer bag

marked with the wetland number and date. The soil samples were returned to May Consulting Services laboratory for processing and subsequent analysis.

The collected soil material was placed in 900-micron pore-size sieve stacked on top of three other sieves (400-, 270-, 160-micron diameter pore-size). The soil material was processed through the sieves by flushing it with lukewarm water while gently rubbing it with a camelhair brush. The soil retained from the 400-, 270- and 160-micron diameter pore size sieves was then placed into a brine solution. The organic material floating atop the brine solution was removed and placed into plastic petri dishes.

The contents of each petri dish were examined for large branchiopod cysts under a 10 to 180-power zoom binocular microscope and a 100 to 1,000-power compound microscope. A minimum of 0.5-hour was spent observing each petri dish. May Consulting Services large branchiopod cyst reference collection and scanning electron micrographs of cysts (Hill and Shepard 1998, Mura 1991, and Gilchrist 1978) were used to identify and compare cysts within samples.

RESULTS

Visual examinations of the soil samples did not reveal the presence of large branchiopod cysts in any of the wetlands sampled onsite (Table 1).

Table 1. Estimates of invertebrate abundance* in soil samples

Wetland Number	Mosquito pupae	Insect parts	Copepods Eggs	Micro-turbularia		Ostracoda Carapaces	Cladocera Ephippia	Evaluation of Habitat Condition for Large Branchiopods**
				Eggs	adults			
SW1		M	C	M		F	M	G
SW2	F	M		F	F		M	N
SW3	F	C		C	F		M	N
SW4		M				F	M	G
SW6		M	F			M	M	G
Pit***		C		M		M	M	N

* F = few (2–10)
C = common (11-20)
M = many (>20)

** Based on life history data (Helm 1998):
N = Not habitat (supported by artificial perennial water source [i.e., sprinkler system for landscape vegetation] and ditch water from highway and agriculture runoff)
P = Poor habitat (very shallow basin not well defined)
G = Good habitat (moderately deep and well defined basins)

*** Habitat supports high concentrations of large branchiopod predators (i.e., mosquito fish [*Gambusia affinis*], bulfrog [*Rana catesbeiana*], and crayfish [*Pascifasicus* sp.])

LITERATURE CITED

Gibson and Skordal Wetland Consultants. 1997. Delineation of Waters of the United States: North Natomas Quadrant One Holdings. Prepared for Alleghaney Properties, Inc.

Gilchrist, B. M. 1978. Scanning electron microscope studies of the egg shell in some Anostraca (Crustacea: Branchiopoda). Cell Tiss. Res. 193:337-351.

Helm, Brent. 1998. Biogeography of Eight Large Branchiopods Endemic to California. Proceedings paper. Conference on the Ecology, Conservation, and Management of Vernal Pool Ecosystems. April 19 -21, 1996.

Hill, R. E., and W. D. Shepard. 1998. Observations on the identification of California anostracan cysts. Hydrobiologia 359: 113-123.

Mura, G. 1991. SEM morphology of resting eggs in the species of the genus *Branchinecta* from North America. Journal of Crustacean Biology 11(3): 432-436.

APPENDIX D

EDR REPORT

The EDR Radius Map
with GeoCheck®

Natomas Crossing
E. Commerce Pkwy/Interstate 5
Sacramento, CA 95834

Inquiry Number: 745218.1s

March 14, 2002

Environmental Data Resources, Inc.

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-DEC

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

E. COMMERCE PKWY/INTERSTATE 5
SACRAMENTO, CA 95834

COORDINATES

Latitude (North):	38.642600 - 38' 38' 33.4"
Longitude (West):	121.518300 - 121' 31' 5.9"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	628952.4
UTM Y (Meters):	4277951.0

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	2438121-F5 TAYLOR MONUMENT, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS..... Corrective Action Report
RCRIS-TSD..... Resource Conservation and Recovery Information System
RCRIS-LQG..... Resource Conservation and Recovery Information System

STATE ASTM STANDARD

AWP..... Annual Workp!an Sites
Notify 65..... Proposition 65 Records
Toxic Pits..... Toxic Pits Cleanup Act Sites
SWF/LF..... Solid Waste Information System
WMUDS/SWAT..... Waste Management Unit Database
CA BOND EXP. PLAN..... Bond Expenditure Plan

FEDERAL ASTM SUPPLEMENTAL

CONSENT..... Superfund (CERCLA) Consent Decrees

EXECUTIVE SUMMARY

ROD ..... Records Of Decision
Delisted NPL ..... National Priority List Deletions
MLTS ..... Material Licensing Tracking System
MINES ..... Mines Master Index File
NPL Liens ..... Federal Superfund Liens
PADS ..... PCB Activity Database System
RAATS ..... RCRA Administrative Action Tracking System
TRIS ..... Toxic Chemical Release Inventory System
TSCA ..... Toxic Substances Control Act
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST ..... Aboveground Petroleum Storage Tank Facilities
CLEANERS ..... Cleaner Facilities
CA WDS ..... Waste Discharge System
DEED ..... List of Deed Restrictions

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas ..... Former Manufactured Gas (Coal Gas) Sites

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

CERCLIS-NFRAP: As of February 1995. CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

A review of the CERC-NFRAP list, as provided by EDR, and dated 11/21/2001 has revealed that there is 1 CERC-NFRAP site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	*3801 AIRPORT RD*	*1/8 - 1/4 E*	*A4*	*8*

EXECUTIVE SUMMARY

RCRIS: The Resource Conservation and Recovery Act database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Act. The source of this database is the U.S. EPA.

A review of the RCRIS-SQG list, as provided by EDR, and dated 06/21/2000 has revealed that there are 3 RCRIS-SQG sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A4***	***8***
SAN SIERRA BUSINESS SYSTEM	***1326 N MARKET BLVD***	***1 - 2 ENE***	***H38***	***29***
INTEGRATED CARE SYSTEMS	***1515 SPORTS DR 2***	***1 - 2 ENE***	***54***	***34***

ERNS: The Emergency Response Notification System records and stores information on reported releases of oil and hazardous substances. The source of this database is the U.S. EPA.

A review of the ERNS list, as provided by EDR, and dated 08/08/2000 has revealed that there are 5 ERNS sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
4061 GATEWAY PARK	4061 GATEWAY PARK	1/2 - 1 ENE	B6	11
4061 GATEWAY PARK	4061 GATEWAY PARK	1/2 - 1 ENE	B7	11
4061 GATEWAY PARK BLVD	4061 GATEWAY PARK BLVD	1/2 - 1 ENE	B8	12
JUNCTION OF I-5 & I-80/	JUNCTION OF I-5 & I-80/	1 - 2 S	K45	31
JCT I-80 AND I-5	JCT I-80 AND I-5	1 - 2 S	K46	31

STATE ASTM STANDARD

CAL-SITES: Formerly known as ASPIS, this database contains both known and potential hazardous substance sites. The source is the California Department of Toxic Substance Control.

A review of the Cal-Sites list, as provided by EDR, has revealed that there is 1 Cal-Sites site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A4***	***8***

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 12/31/1994 has revealed that there is 1 CHMIRS site within approximately 1.5 miles of the target property.

Lower Elevation	Address	Dist / Dir	Map ID	Page
Not reported	SAN JUAN RD. / WITTER W	1 - 2 SW	53	34

EXECUTIVE SUMMARY

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 2 Cortese sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A4***	***8***
ELIXIR INDUSTRIES	3321 AIRPORT RD	1/2 - 1 SSE	C16	15

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 01/17/2002 has revealed that there are 2 LUST sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A4***	***8***
ELIXIR INDUSTRIES	***3321 AIRPORT RD***	***1/2 - 1 SSE***	***C18***	***15***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 01/17/2002 has revealed that there are 3 UST sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SACRAMENTO AERO SERVICES	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A1***	***6***
RALEY'S DIST CENTER	***4061 GATEWAY PARK BLVD***	***1/2 - 1 ENE***	***B9***	***12***
TRUXEL SHELL	***3721 TRUXEL RD***	***1 - 2 SE***	***N52***	***33***

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, has revealed that there are 4 CA FID UST sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A3***	***7***
JACOB BALEN & SONS	2360 DEL PASO RD	1/2 - 1 NNE	D13	14

Lower Elevation	Address	Dist / Dir	Map ID	Page
BASTIAO FARMS, INC.	3845 EL CENTRO RD	1 - 2 W	J42	30
FARM	3705 EL CENTRO RD	1 - 2 WSW	L48	32

EXECUTIVE SUMMARY

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 6 HIST UST sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A3***	***7***
JACOB BALEN & SONS	2360 DEL PASO RD	1/2 - 1 NNE	D14	14
ELIXIR INDUSTRIES	***3321 AIRPORT RD***	***1/2 - 1 SSE***	***C18***	***15***

Lower Elevation	Address	Dist / Dir	Map ID	Page
E.D. WITTER	3480 WITTER WAY	1 - 2 WSW	36	28
BASTIAO FARMS, INC.	3845 EL CENTRO RD	1 - 2 W	J43	30
WILHERT ROSA	3705 EL CENTRO RD	1 - 2 WSW	L47	31

FEDERAL ASTM SUPPLEMENTAL

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 10/29/2001 has revealed that there are 4 FINDS sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A4***	***8***
RALEYS DISTRIBUTION CENTER	4061 GATEWAY PARK BLVD.	1/2 - 1 ENE	B11	13
SAN SIERRA BUSINESS SYSTEM	***1326 N MARKET BLVD***	***1 - 2 ENE***	***H38***	***29***
INTEGRATED CARE SYSTEMS	***1515 SPORTS DR 2***	***1 - 2 ENE***	***54***	***34***

HMIRS: The Hazardous Materials Incident Report System contains hazardous material spill incidents reported to the Department of Transportation. The source of this database is the U.S. EPA.

A review of the HMIRS list, as provided by EDR, and dated 09/30/2001 has revealed that there is 1 HMIRS site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
Not reported	1900 DEL PASO ROAD	1 - 2 NE	40	30

STATE OR LOCAL ASTM SUPPLEMENTAL

CS: Contaminated Sites.

A review of the Sacramento Co. CS list, as provided by EDR, has revealed that there are 2 Sacramento Co. CS sites within approximately 1.5 miles of the target property.

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A4***	***8***
ELIXIR INDUSTRY	3321 AIRPORT RD	1/2 - 1 SSE	C17	15

CA SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the CA SLIC list, as provided by EDR, has revealed that there is 1 CA SLIC site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A4***	***8***

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, has revealed that there are 18 HAZNET sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SACRAMENTO AERO SERVICES INC	3801 AIRPORT RD	1/8 - 1/4 E	A2	6
SPRINT/CALIFORNIA RELAY SERVIC	1625 NORTH MARKET BLVD	1/2 - 1 ENE	5	11
RALEYS DISTRIBUTION	***4061 GATEWAY PARK BLVD***	***1/2 - 1 ENE***	***B10***	***12***
SACRAMENTO COCA COLA BOTTLING	4101 GATEWAY PARK BLVD.	1/2 - 1 ENE	F26	21
RAYMOND HANDLING CONCEPTS	1418W N MARKET BLVD	1/2 - 1 ENE	E28	23
TRI CITY PRINT & MAIL TECHNOLO	1415 N MARKET BLVD	1/2 - 1 ENE	E32	25
ALLEGHANY PROPERTIES	2631 SAN JUAN RD	1 - 2 S	33	26
DEPT OF GENERAL SERVICES PROC	1700 W NATIONAL DR	1 - 2 E	G35	27
INLAND BUSINESS MACHINES INC	1346 N MARKET BLVD	1 - 2 ENE	H37	28
ARCO ARENA	***ONE SPORTS PARKWAY***	***1 - 2 E***	***I39***	***29***
WAL-MART STORE #2598	3661 TRUXEL ROAD	1 - 2 SE	O55	35
THE HOME DEPOT #6649	***3611 TRUXEL RD***	***1 - 2 SE***	***O57***	***36***
MATHEWS MANUFACTURING CO	1143 NO. MARKET BLVD. #	1 - 2 E	P61	39
SYSTEM INTEGRATORS INC	3920 LENNANE DRIVE	1 - 2 E	R62	40
METRO MAILING SERVICE	3920 LENNANE DR	1 - 2 E	R63	41
THE STELLAR GROUP/JOB # 994004	1420 NATIONAL DR	1 - 2 E	Q65	42
SYSTEM INTEGRATORS INC	3900 LENNANE DRIVE	1 - 2 E	S68	44

Lower Elevation	Address	Dist / Dir	Map ID	Page
BASTIAO FARMS CORPORATION	3845 EL CENTRO RD	1 - 2 W	J41	30

CA ML: Sacramento County Master List. Any business that has hazardous materials on site - hazardous materials storage sites, underground storage tanks, waste generators.

A review of the Sacramento Co. ML list, as provided by EDR, has revealed that there are 33 Sacramento Co. ML sites within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
SACRAMENTO AERO SERVICES	***3801 AIRPORT RD***	***1/8 - 1/4 E***	***A1***	***6***

EXECUTIVE SUMMARY

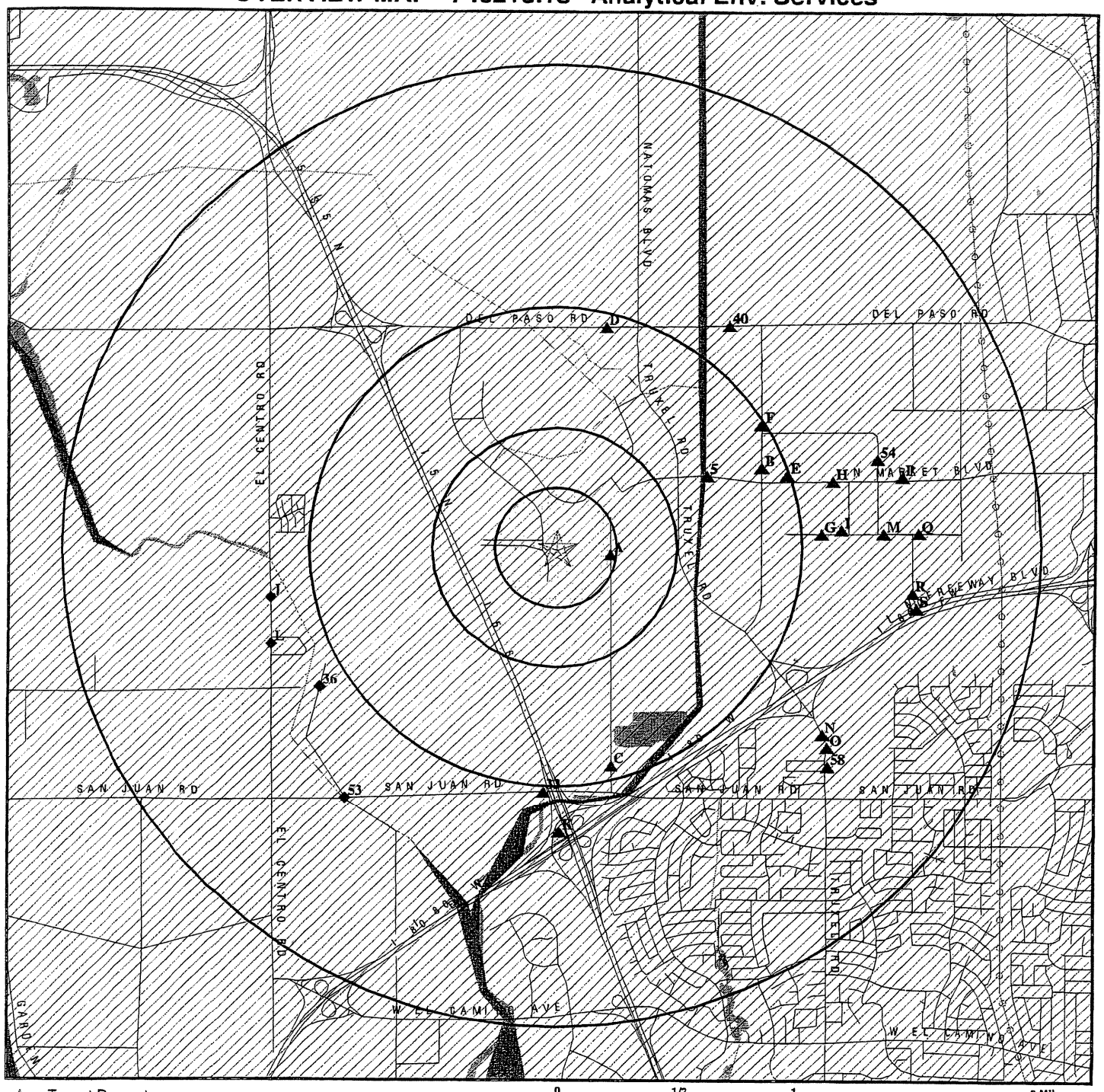
Equal/Higher Elevation	Address	Dist / Dir		Map ID	Page
NATOMAS AIRPORT	***3801 AIRPORT RD***	***1/8 - 1/4***	***E***	***A4***	***8***
RALEY'S DIST CENTER	***4061 GATEWAY PARK BLVD***	***1/2 - 1***	***ENE***	***B9***	***12***
RALEYS DISTRIBUTION	***4061 GATEWAY PARK BLVD***	***1/2 - 1***	***ENE***	***B10***	***12***
KIEWIT PACIFIC CO	3330 AIRPORT RD	1/2 - 1	SSE	C12	14
ELIXIR INDUSTRIES	3321 AIRPORT RD	1/2 - 1	SSE	C15	15
ELIXIR INDUSTRIES	***3321 AIRPORT RD***	***1/2 - 1***	***SSE***	***C18***	***15***
CARRIER CORP	1431 N MARKET BLVD	1/2 - 1	ENE	E19	18
LINCARE	1431 N MARKET BLVD 1	1/2 - 1	ENE	E20	18
OMEGA MACHINE & TOOL INC	1427 N MARKET BLVD, #1	1/2 - 1	ENE	E21	19
CENTRAL GARDEN AND PET COMP	1424 W MARKET BLVD, #10	1/2 - 1	ENE	E22	19
WAYNE DALTON	1424 W MARKET BLVD, #20	1/2 - 1	ENE	E23	20
ST OF CA-GEN SERVICES (SURPLUS	1421 N MARKET BLVD	1/2 - 1	ENE	E24	20
SACRAMENTO COCA COLA	4101 GATEWAY PARK BLVD	1/2 - 1	ENE	F25	21
RAYMOND HANDLING CONCEPT CORP	1418 N MARKET BLVD	1/2 - 1	ENE	E27	23
PURITAN BENNET	1418 N MARKET BLVD 300A	1/2 - 1	ENE	E29	24
MILLAR ELEVATOR SERVICE CO	1419 N MARKET BLVD 10	1/2 - 1	ENE	E30	24
TRI-CITY MAILING & PRINTING	1415 N MARKET BLVD	1/2 - 1	ENE	E31	25
STATE OF CA PROCUREMENT DIVISI	1700 W NATIONAL DR	1 - 2	E	G34	26
ARCO ARENA	***ONE SPORTS PARKWAY***	***1 - 2***	***E***	***I39***	***29***
CHIPMAN MOVING & STORAGE	1625 W NATIONAL DR	1 - 2	E	I44	31
EASTERDAY JANITORIAL SUPPLY	4201 SIERRA POINT DR	1 - 2	E	M49	32
CORE MARK DISTRIBUTOR	1520 NATIONAL DR	1 - 2	E	M50	33
TRUXEL SHELL	3721 TRUXEL RD	1 - 2	SE	N51	33
TRUXEL SHELL	***3721 TRUXEL RD***	***1 - 2***	***SE***	***N52***	***33***
WAL-MART #2598	3661 TRUXEL RD	1 - 2	SE	O56	35
THE HOME DEPOT #6649	***3611 TRUXEL RD***	***1 - 2***	***SE***	***O57***	***36***
GLENN M MISONO DDS	3291 TRUXEL RD 13	1 - 2	SE	58	37
MATHEWS MFG COMPANY	1143 N MARKET BLVD 4	1 - 2	ENE	P59	38
NATIONAL WELL W-36	NATIONAL/LENNANE DR	1 - 2	E	Q60	38
AIRCON	4234 N FREEWAY BLVD 100	1 - 2	E	S64	42
PACIFIC FRESH SEA FOOD CO	1420 W NATIONAL DR	1 - 2	E	Q66	43
ARAMARK UNIFORM SERVICES	1419 NATIONAL DR	1 - 2	E	Q67	43

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
NATOMAS MIDDLE SCHOOL (PROPOSED)	Cal-Sites
SMUD PCB SUBSTATION SITE #14	Cal-Sites
TWO RIVERS ELEMENTARY SCHOOL - PRO	Cal-Sites
NATOMAS MIDDLE SCHOOL	LUST, Cortese
SIGNETICS CORP	RCRIS-SQG, FINDS, CORRACTS, CERC-NFRAP
KILGORE DUMP	SWF/LF
14TH AVENUE LANDFILL	SWF/LF
OFFICE/WAREHOUSE	HIST UST
URRUTIA LANDFILL	WMUDS/SWAT
CLANDESTINE DRUG LAB OPERATOR UNKN	HAZNET
ANACOMP INC	HAZNET, Sacramento Co. ML
SACRAMENTO REFRIGERATION COMPANY I	HAZNET
MOTOROLA SACRAMENTO SERVICE	HAZNET
OMEGA MACHINE INC.	HAZNET
CAL DEPT OF GENERAL SRVS	HAZNET
EDUCATIONAL MEDIA FOUNDATION	HAZNET
HUNTER INOVATION	HAZNET
PRINTER ON RETAINER	HAZNET
PAC FAST	HAZNET
UNISYS CORP	HAZNET
YORK INTERNATIONAL	HAZNET
RECORD RETENTION CENTER	HAZNET
EMPLOYMENT DEVELOPMENT DEPT	HAZNET
SCHINDLER ELEVATOR CORP	HAZNET
S30 NATOMAS SEWAGE PUMPING STATION	FINDS
AT & T WIRELESS SERVICES	Sacramento Co. ML
PACIFIC BELL (UB429)	Sacramento Co. ML
STERLING BUSINESS FORMS	Sacramento Co. ML
PWA: ARENA WELL SITE (W37)	Sacramento Co. ML
LITHO DEVELOPMENT & RESEARCH	Sacramento Co. ML
RRS INDUSTRIES	Sacramento Co. ML
BAY MICROFILM INC	Sacramento Co. ML
SOUTHERN WINE & SPIRITS OF NO CA	Sacramento Co. ML
BELTSERVICE CORP	Sacramento Co. ML
TRUEGREEN CHEMLAWN	Sacramento Co. ML
PWA: N FREEWAY BL WELL ST (W15)	Sacramento Co. ML
STATE OF CALIFORNIA EDD PUBLICATI	Sacramento Co. ML
DFI TECHNOLOGIES INC	Sacramento Co. ML
C & G TOOL INC	Sacramento Co. ML
CITY OF SACRAMENTO	Sacramento Co. CS

OVERVIEW MAP - 745218.1s - Analytical Env. Services

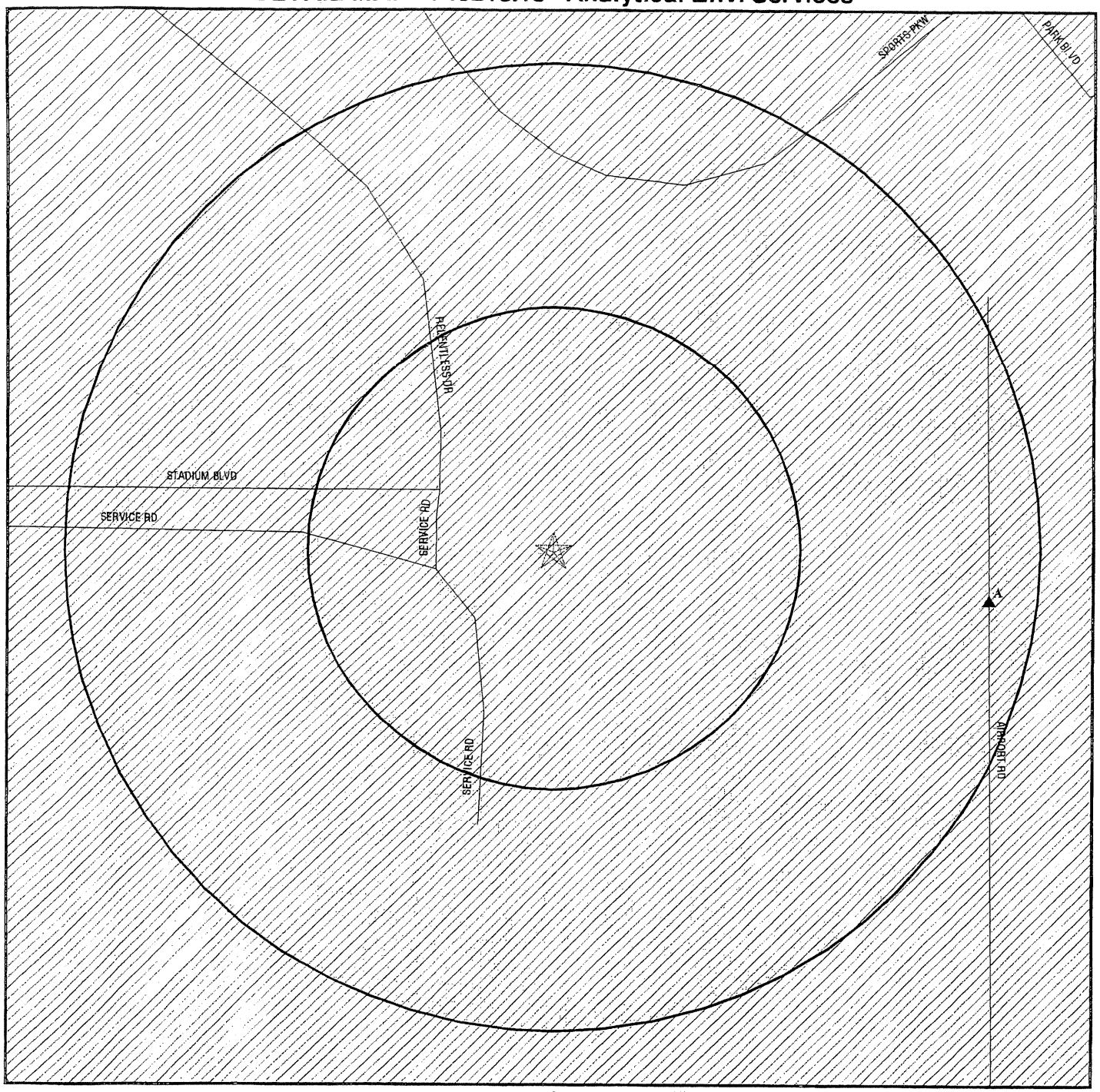


0 1/2 1 2 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Wetlands
- Areas of Concern

TARGET PROPERTY:	Natomas Crossing	CUSTOMER:	Analytical Env. Services
ADDRESS:	E. Commerce Pkwy/Interstate 5	CONTACT:	Michael J. Rivera
CITY/STATE/ZIP:	Sacramento CA 95834	INQUIRY #:	745218.1s
LAT/LONG:	38.6426 / 121.5183	DATE:	March 14, 2002 7:39 am

DETAIL MAP - 745218.1s - Analytical Env. Services



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	Natomas Crossing	CUSTOMER:	Analytical Env. Services
ADDRESS:	E. Commerce Pkwy/Interstate 5	CONTACT:	Michael J. Rivera
CITY/STATE/ZIP:	Sacramento CA 95834	INQUIRY #:	745218.1s
LAT/LONG:	38.6426 / 121.5183	DATE:	March 14, 2002 7:39 am

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.500	0	0	0	0	0	0
Proposed NPL		1.500	0	0	0	0	0	0
CERCLIS		1.500	0	0	0	0	0	0
CERC-NFRAP		1.500	0	1	0	0	0	1
CORRACTS		1.500	0	0	0	0	0	0
RCRIS-TSD		1.500	0	0	0	0	0	0
RCRIS Lg. Quan. Gen.		1.500	0	0	0	0	0	0
RCRIS Sm. Quan. Gen.		1.500	0	1	0	0	2	3
ERNS		1.500	0	0	0	3	2	5
STATE ASTM STANDARD								
AWP		1.500	0	0	0	0	0	0
Cal-Sites		1.500	0	1	0	0	0	1
CHMIRS		1.500	0	0	0	0	1	1
Cortese		1.500	0	1	0	1	0	2
Notify 65		1.500	0	0	0	0	0	0
Toxic Pits		1.500	0	0	0	0	0	0
State Landfill		1.500	0	0	0	0	0	0
WMUDS/SWAT		1.500	0	0	0	0	0	0
LUST		1.500	0	1	0	1	0	2
CA Bond Exp. Plan		1.500	0	0	0	0	0	0
UST		1.500	0	1	0	1	1	3
CA FID UST		1.500	0	1	0	1	2	4
HIST UST		1.500	0	1	0	2	3	6
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.500	0	0	0	0	0	0
ROD		1.500	0	0	0	0	0	0
Delisted NPL		1.500	0	0	0	0	0	0
FINDS		1.500	0	1	0	1	2	4
HMIRS		1.500	0	0	0	0	1	1
MLTS		1.500	0	0	0	0	0	0
MINES		1.500	0	0	0	0	0	0
NPL Liens		1.500	0	0	0	0	0	0
PADS		1.500	0	0	0	0	0	0
RAATS		1.500	0	0	0	0	0	0
TRIS		1.500	0	0	0	0	0	0
TSCA		1.500	0	0	0	0	0	0
FTTS		1.500	0	0	0	0	0	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
Sacramento Co. CS		1.500	0	1	0	1	0	2
AST		1.500	0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CLEANERS		1.500	0	0	0	0	0	0
CA WDS		1.500	0	0	0	0	0	0
DEED		1.500	0	0	0	0	0	0
CA SLIC		1.500	0	1	0	0	0	1
HAZNET		1.500	0	1	0	5	12	18
Sacramento Co. ML		1.500	0	2	0	16	15	33
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.500	0	0	0	0	0	0

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

APPENDIX E

CULTURAL RESOURCES REPORT

W. 9 I-5

CULTURAL RESOURCES INVENTORY AND EVALUATION FOR THE PROPOSED ALLEGHANY PROPERTY DEVELOPMENT, CITY OF SACRAMENTO, SACRAMENTO COUNTY,CALIFORNIA

FINAL REPORT

Prepared for

Mr. David Bugatto
Alleghany Properties, Inc.
2150 River Plaza Drive, Suite 155
Sacramento, CA 95833

Prepared by

PAR ENVIRONMENTAL SERVICES, INC.
P.O. Box 160756
1906 21st Street
Sacramento, CA 95816-0756

March 1997

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INTRODUCTION

In January 1997, PAR ENVIRONMENTAL SERVICES, INC. (PAR) contracted with Mr. David J. Bugatto of Alleghany Properties, Inc., to conduct a cultural resources inventory for a parcel proposed for development located within the North Natomas area of the City of Sacramento, several miles north of downtown Sacramento, Sacramento County, California. The proposed project has the potential to adversely affect both surface and subsurface manifestations of cultural resources. Therefore, in compliance with the California Environmental Quality Act (CEQA - Appendices G and K of the CEQA Guidelines California Administrative Code, 1983:324.13-324.16), the decision was made to perform a cultural resource inventory of all property currently being proposed for future improvements and/or developments. Cultural resources include prehistoric or historical archaeological sites, paleontological resources, or properties of historic, cultural or architectural significance to a community, ethnic, or social group. Given the possibility that historical properties within the proposed project area might qualify as important sites under CEQA or the new California Register of Historic Places (established with the 1993 passage of AB 2881), Alleghany Properties, Inc. contracted with PAR to conduct an archaeological survey of the project area.

Fieldwork for this project was preceded by archival research which provided field archaeologists with background information regarding potential archaeological sensitivity. The field investigation consisted of an archaeological pedestrian inventory of the area and was conducted on January 31, 1997. The work was managed by J. Gary Maniery, PAR's principal, with assistance from Blossom Hamusek-McGann and Keith Syda, PAR staff. Mr. Maniery holds a M.A. degree in Anthropology from California State University, Sacramento (CSUS) and has 20 years of experience working as a professional cultural resource manager in California and other states. Ms. Hamusek-McGann holds a B.A. and M.A. degree in Anthropology from CSUC and has been working in California archaeology for the past 13 years. Mr. Syda holds a B.A. degree from CSU Sacramento (CSUS) and has been working in California Archaeology since 1981. He has served as PAR's field director for ten years.

Project Description and Location

The Alleghany Property Project is located within the North Natomas area of the City of Sacramento, in northwestern Sacramento County. It comprises approximately 450 acres of land within Sections 10, 11, 14, and 15, Township 9 North (T9N), Range 4 East (R4E), M.D.M. (Figures 1 and 2). The proposed project entails the development of the parcel for mixed uses such as residential, neighborhood, commercial, and/or civic public. At the present time the land is vacant.

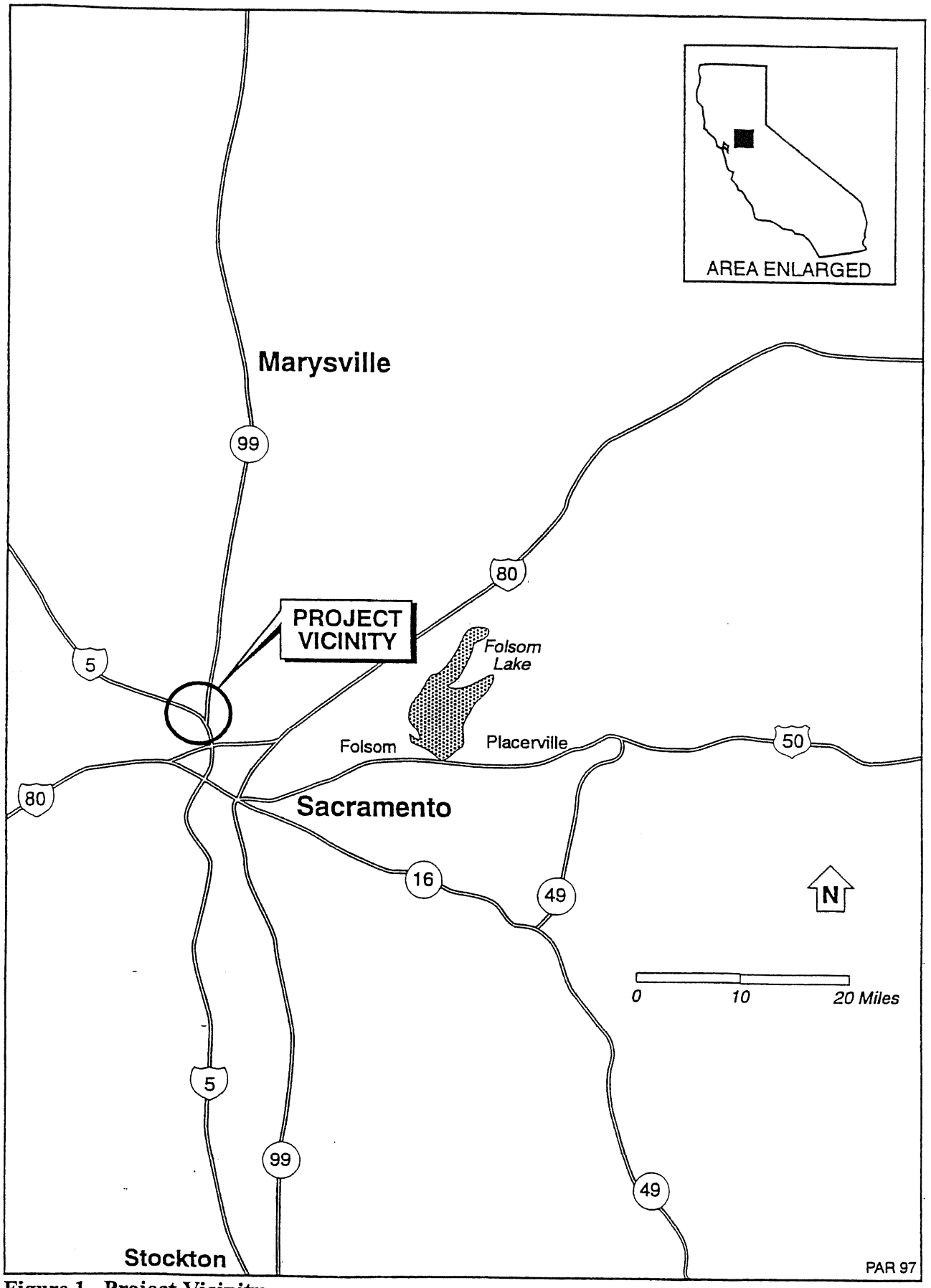

Figure 1. Project Vicinity

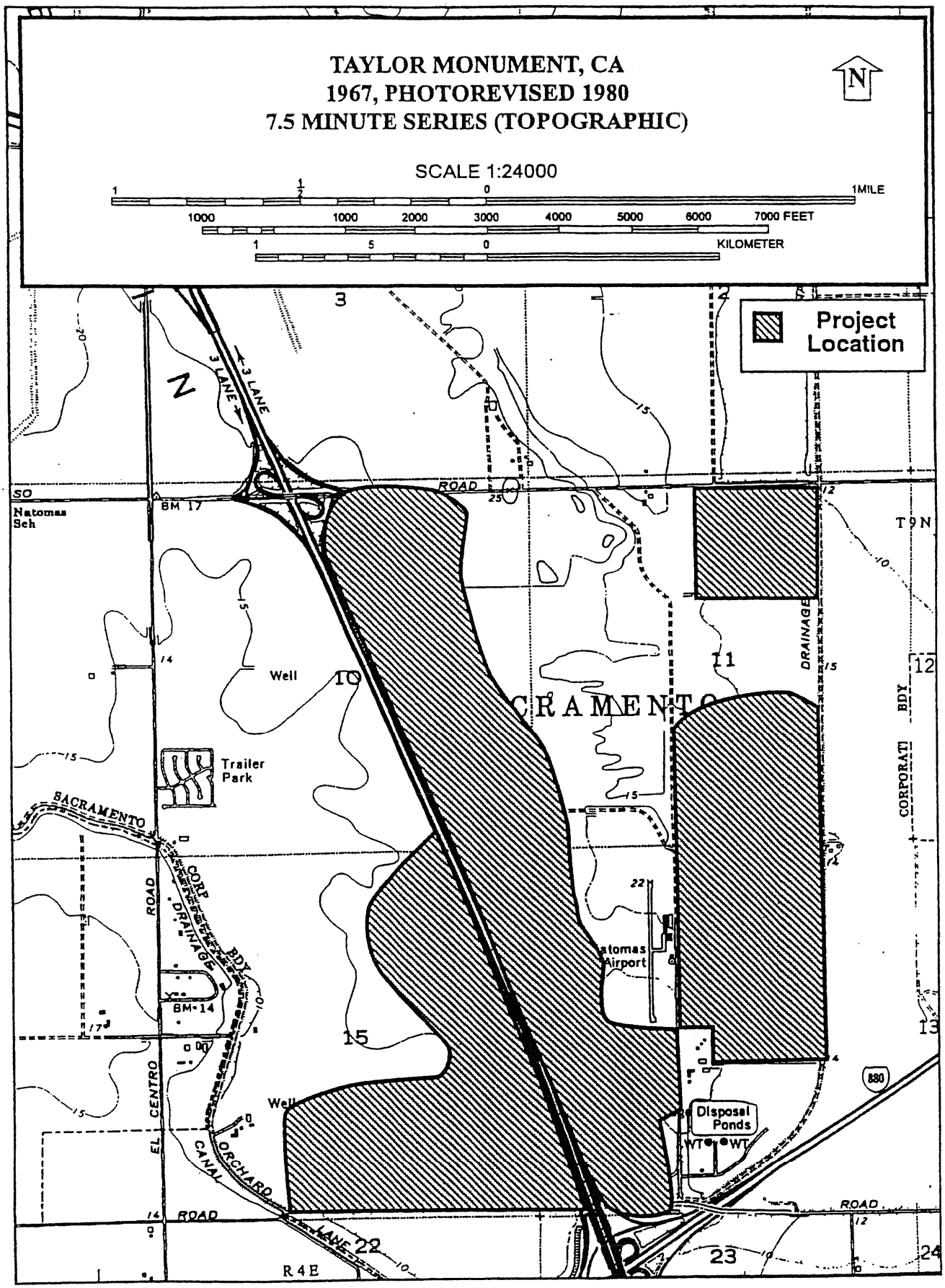

Figure 2. Project Location Map

ENVIRONMENTAL SETTING

Natural Environment

The project area is situated within the lower Sacramento Valley within an area known historically as the American Basin. Elevations range from 25 feet above mean sea level (amsl) along the northern boundary of the project to 15 feet amsl along the southern boundary. Prior to the development of man-made levees along the Sacramento River in the 1860s and 1870s, a vast oak woodland/grassland savanna covered the current study area. This low lying area was subject to annual flooding until the levee system along the Sacramento and American Rivers was completed.

Although these reclamation projects controlled the annual flooding and made agricultural development feasible, portions of the project were still designated as swampland and overflow land at the end of the 1800s (McClatchy and Company 1894). The original oak woodland/grassland savanna characteristic of the valley floor has been replaced by agricultural fields and, in portions of the American Basin, by residential and commercial growth.

Because of these alterations to the natural environment over the last 150 years, the relationship between the natural setting of the area and prehistoric land use is difficult to ascertain. Marshes within the Central Valley were drained for agriculture, and large tracts of oaks and other trees were removed for firewood. On a larger time scale, natural fluctuations in climate and geology have created more drastic changes. In the Sacramento Valley in particular, massive alluvial depositions over the last 10,000 years have greatly altered the existing terrain, frequently burying early archaeological materials, such as those at CA-SAC-164 (Moratto 1984:214).

Cultural Environment

Prehistory

The earliest evidence of prehistoric use within the Central Valley region is present at several sites on the eastern flanks of the San Joaquin Valley. Known as the Farmington Complex, flaked and ground stone artifacts indicate use of the area roughly 10,000 years ago (Moratto 1984:62-64). Archaeological remains of this antiquity are rare within most of the region, possibly because of the deep alluvial sediments that have accrued since that time. However, site locations such as Rancho Murieta to the east and the Borax Lake sites near Clear Lake to the northwest demonstrate Native American use of the entire Central Valley and its margins along the North Coast and Sierra Nevada ranges between 10,000 and 6,000 B.C. (Moratto 1984:62-64, 83).

Utian populations are thought to have entered this portion of California about 4,000 years ago. First identified at the Windmiller site (CA-SAC-107 on the Cosumnes River), the Windmiller Pattern (Early Horizon), as defined by Fredrickson (1973:124-125a), is characterized by extended burials oriented towards the west and often contain grave goods, baked clay balls, charmstones, and exotic minerals. During this time period there appears to have been an emphasis on fishing and gathering of acorns. Elk, deer, pronghorn antelope, rabbits, and waterfowl were hunted in quantity. Villages appear to have been occupied year-round and were situated along drainages. Radiocarbon dates from Windmiller Pattern deposits point to an occupation beginning 2400 B.C. and continuing until around 500 B.C. (cf. Heizer 1949; Johnson 1982:21; Moratto 1984:201-210; Ragir 1972).

Most of what is known about the Early Horizon in the Central Valley comes from cemetery and habitation sites along the Cosumnes and Mokelumne rivers. The typical site is stratified with later period components located above the basal Windmiller Pattern deposits. Johnson (1982:24) notes that virtually all Early Horizon sites have some detectable midden, and every Windmiller site in the lower Sacramento Valley and Sacramento, San Joaquin River Delta known to date contains human remains. Meighan argues that the evidence for residential occupation or the presence of midden at the classic Early Horizon sites is very weak, and the sites actually represent specialized mortuary mounds (Meighan 1987:28).

The Windmiller Pattern is succeeded over a range of years (from about 500 B.C. in the Delta to A.D. 500 in the Central Valley) by the Berkeley Pattern (Middle Horizon). A refinement in subsistence strategies and eastward population movements related to Miwok occupations is suggested by this pattern (Moratto 1984:207-211). A distinct focus upon acorns as a dietary staple is evident in the archaeological record of this period. Technologically, the Berkeley Pattern is set apart from the Windmiller by evidence of more frequent use of mortars and pestles, a well-developed bone industry, distinctive diagonal flaking of large concave-based projectile points, and certain forms of *Olivella* and *Haliotis* beads and ornaments (Fredrickson 1973:125a-127; Moratto 1984:208-211).

The final pattern defined by Fredrickson is the Augustine (Late Horizon) and appears to represent large, dense populations, each with a major tribelet center surrounded by smaller villages. Subsistence practices within this pattern include the development of an intensive fishing industry, along with the hunting of game and the continued use of acorns (Fredrickson 1973:127-129); all these practices are seen in the archaeological record after about A.D. 500 (Moratto 1984:213). Native American populations appear to have been highly socialized and hierarchically stratified during this time. Both cremations and flexed burials were used. Cook (1955) estimates that at least 50,000 individuals lived in the Sacramento Valley at one time, with dense population concentrations in the region. Complex exchange systems and elaborate ritual ceremonies became integral components of the Native American culture in the Central Valley during this time (Fredrickson 1973:128). Radiocarbon analysis has dated sites in the valley, such as the Blodgett site (CA-SAC-267) and CA-YOL-13 at Knights Landing, from A.D. 580 to A.D. 1605 (Elsasser

Moratto (1984:211-214) postulates that the Augustine Pattern represents the southward incursion of Wintu populations and the introduction of many of the cultural materials found in archaeological contexts, including shaped mortars and pestles, bone awls, the bow and arrow, and shell and steatite beads. Pottery-making technology is also found in some parts of the Central Valley during the late prehistoric period (Moratto 1984:213).

The reader is referred to Johnson's (1982) overview of the prehistory of the lower Sacramento Valley, and to Moratto's book (1984) for a synthesis of California prehistory up to 1984.

Ethnography

The Native Americans who occupied the project vicinity at the time of Euroamerican contact (ca. 1845) are known as the Southern Maidu or Nisenan. Ethnographers who have studied these Penutian-speaking people generally agree that their territory included the drainages of the Bear, American, Yuba, and southern Feather rivers. Dialectic differences were apparent between those Nisenan residing on the valley floor and those living in the Sierra Nevada foothills (Kroeber 1925:393).

Valley Nisenan resided primarily along the Sacramento and other rivers. Few Indian villages existed between the Sacramento River and the foothills; this area, encompassing the valley plains, was used by the Valley Nisenan for hunting and gathering purposes. Those villages that were in the area were located on low, natural rises along streams and rivers, or on gentle slopes with a southern exposure, usually in places protected from flooding. The ethnographic village of *Pusune* or *Pushuni* (CA-SAC-26), located at the confluence of the American and Sacramento rivers in present-day Discovery Park, served as the head village for the vicinity (Wilson and Towne 1978:388-389). A few miles north of the project, on the eastern bank of the Sacramento River, was the ethnographic village of *Newe*; occupied in historic times.

Territories varied in size and were controlled by community groups. Each community group encompassed a central village, often with several outlying smaller villages surrounding it. The central village functioned as the principal political nucleus for the group and could rely upon outlying villages for social and political support (Wilson and Towne 1978:388). Village populations numbered from 15 to over 500 persons.

Dwellings consisted of a simple conical structure built of poles covered with bark, sticks, leaves, and pine needles. The structures measured 10 to 15 feet across and were constructed over a shallow pit with the earth bermed around its perimeter. Larger villages contained a dance house that measured from 20 to 40 feet in diameter. This type of structure was semisubterranean with 10- to 20-foot-high posts supporting a domed roof constructed of poles, sticks, bark, and pine needles. An outer layer of earth about one foot thick sealed the structure against the elements. Similar structures, differing mainly in size, also functioned as sweat houses and lodges (Kroeber 1925:407-408; Wilson and Towne 1978:388).

The lower foothills and great valley were rich in natural resources and the Valley Nisenan took advantage of many available foods. Acorns provided the basic subsistence and were supplemented with seeds, nuts, berries, herbs, and native fruits. Fish and game provided additional seasonal sustenance throughout the year. Deer, bear, elk, antelope, rabbit, salmon, trout, eel, waterfowl, crows, and pigeons were hunted or trapped by individuals or groups. Kroeber (1925:409) notes that dogs, coyotes, wolves, grizzly bears, buzzards, amphibians, and reptiles were not eaten. The Valley Nisenan were nomadic throughout much of the year, following game and gathering plants.

Euroamerican impacts in the early nineteenth century were limited to a few Spanish explorers and Hudson Bay Company trappers venturing through the region. The epidemic of 1833, which is believed to have been malaria, brought the first substantial consequence of Euroamerican contact. This epidemic annihilated as much as 75 percent of the native valley population, including the Valley Nisenan (Cook 1955:322). In 1839, Captain John Sutter settled into the area and conscripted many of the surviving indigenous peoples to work for him (Wilson and Towne 1978:396).

Stephen Powers, a California ethnographer, traveled through the region in the 1870s and noted that the Nisenan had the misfortune to occupy the heart of the Sierra mining region, resulting in their demise through disease, starvation, and corruption (Powers 1976). By the time of his visit, Nisenan were surviving by working for Euroamericans in mines or on ranches, panning for gold, or hiring out as day laborers.

Local Native American populations were severely depleted and nearly eliminated in the 1800s and early 1900s (Cook 1955), yet were able to retain certain elements of their traditional culture. Today, Nisenan people still reside in the region and are concerned about the disposition of archaeological sites and Native American interments in the area.

History

Although early Spanish explorers and subsequent Franciscan and Jesuit missionaries were the first Europeans to reach northern California, the remote interior lands of the Sacramento Valley was left largely untouched by the Spanish and "Californios" (Hoover et al. 1990:285-286). However, with the discovery of gold in 1848, a torrent of non-native peoples flooded into the Sacramento region. As populations increased and gold became more scarce, the newcomers who decided to remain turned to more lucrative vocations, particularly agriculture. Many of these early settlers found land plentiful and cheap in comparison with what they might have expected to find back home. Thus, raising grain, livestock and produce for sale to the thousands of miners heading to the gold fields proved a profitable venture.

Permanent settlement of the project area was prevented by the periodic flooding of the Sacramento River and, as Shoup (1984:7) pointed out, the central theme in the history of this

part of the valley is the constant struggle with nature to use the land. Shoup provides an excellent detailed overview of the project area history and the reader is referred to his work (Shoup 1984:6-11). The following discussion summarizes this historic setting.

The General Land Office offered parts of the American Basin for sale during the 1860s and 1870s. Unsold lands were turned over to the State of California and sold as "swamp land" with the condition that the buyers build and maintain levee systems to reclaim the land for agricultural use (Shoup 1984:7). Reclamation proved to be difficult due to the unreliable levee system. Although seasonal crops could be grown in some areas, other portions flooded every winter and spring. With a major flood in the winter of 1907, the need for a comprehensive flood control plan was realized, and the state and federal governments assumed a supervisory role. Between 1910 and 1915, monumental reclamation efforts took place, including the construction of the Sacramento River Levee and the East Levee. Canals and pumping stations were established to drain the land and prevent future flooding. Large-scale agricultural interests soon purchased the reclaimed lands and made them productive. Today the lands are used for a mixture of agricultural, residential, and commercial purposes.

METHODS and TECHNIQUES

Office and Archival Procedures

Pre-field research included contacts or visits to a number of repositories, agencies, organizations, and individuals. The sources consulted during this phase of the project are summarized in Table 1. No responses were received except from the Native American Heritage Commission in which they provided us with a list of local Native American contacts. The paragraphs following Table 1 provide more detailed discussions of the most valuable informational sources.

PAR's cultural resources library has copies and originals of the majority of primary and unpublished gray literature on the historical background of the project vicinity. This information has been gathered over a number of years in the course of various undertakings within the general vicinity of the project area.

An archaeological records search was conducted prior to field investigations by the California Historical Resources Information System, North Central Information Center (NCIC), California State University, Sacramento. This request was for locational and informational data on previously recorded prehistoric and historical archaeological sites, previous cultural resources investigations (inventories, excavations, etc.) and known National Register of Historic Places (NRHP) in addition to other historic listings in the vicinity of the study area.

Table 1. Repositories, Individuals, and Agencies Visited or Contacted

Sources of Information	Information Sought
California State Library, Sacramento	Historic maps, county histories, historical society publications.
Native American Heritage Commission, Sacramento	Contemporary Native American concerns, Sacred Lands files information.
State Historic Preservation Officer	Archaeological, historical, and ethnographic data; updated NRHP listings.
North Central Information Center, California State University, Sacramento	Previously recorded sites; past cultural resources investigations; properties listed in the NRHP, other historic resources listings.
USDI, BLM, Sacramento	General Land Office survey plat maps.
Native American Community	Native American concerns and values.
Sacramento Archives and Museum Collections Center, City of Sacramento	Background historic resource information.

The NCIC identified one prehistoric archaeological resource within the project area during a review of the following resources: *National Register of Historic Places* - listed and/or eligible properties (1990 and updates; 1996); *California Inventory of Historic Resources* (State of California 1976); *California Historical Landmarks* (State of California 1990 and updates); *California Points of Historic Interest* (State of California 1992 and updates); *Gold Districts of California* (Clark 1979); *California Gold Camps* (Gudde 1969); *Historic Spots in California* (Hoover et al. 1990); *California Place Names* (Gudde 1969); *Survey of Surveys* (Historic and Architectural Resources 1989), Directory of Properties in the Historical Resources Inventory (HRI, September 1994); *and Caltrans Local Bridge Survey* (1989).

The prehistoric archaeological resource consists of an area containing a light lithic debitage scatter along with several groundstone and flaked stone tool fragments. The site is located adjacent to Airport Road in a plowed field, approximately 200 meters north of the intersection of San Juan Road and Airport Road. The recorder of this site (Chavez 1984) indicated that the placement of artifacts and debitage offers little in the way of observable or inferred cultural significance beyond its location due to the extensive earth moving and leveling that has occurred in the area.

In addition to the above-mentioned resource, there is one National Register of Historic Property located within the immediate vicinity of the project area. This resource is the Edwin Witter (Whitter) Ranch, originally known as the Saylor Ranch. The ranch complex is located to the west of the project area along Orchard Lane and dates from the 1920s.

A search of the NCIC records reveal that the majority of the project area has been subjected to cultural resource inventories. In 1984, David Chavez prepared a document entitled *Cultural Resource Evaluations for the North Natomas Study Area*, that incorporates a large percentage of the present undertaking. Previous archaeological investigations which have included portions of the project area also include cultural resource inventories conducted by Bass (1982), Chavez (1986), Lindstrom (1990), PAR Environmental Services Inc. (1991), and Peak and Associates (1981). In addition to these surveys, a number of cultural resource investigations have also been conducted within the general vicinity of the project area Ebasco Environmental (1990, 1992), McIvers (1988), and Wiant (1982).

Field Procedures

An intensive archaeological survey was conducted of all areas of the project area that had not been previously subjected to a cultural resource inventory. The present investigation resulted in the survey of approximately 100 acres of land on January 31, 1997 (Figure 3). The pedestrian survey involved two trained individuals systematically traversing the area with transects spaced at 20- to 30-meter intervals or less, examining the ground carefully for any evidence of past human activity. Whenever possible, surface exposures caused by road cuts and or cutbank erosion were examined for evidence of buried cultural deposits. Ground visibility throughout the project area was generally poor, with approximately 5 to 30 percent of the ground's surface being visible depending upon the amount of emergent grasses and/or standing water.

RESULTS

The cultural resource inventory did not result in the identification of any additional prehistoric or historical sites, features or isolates. However, observations obtained during the present investigation of the prehistoric archaeological site designated as N-1 revealed that although no artifacts were discerned on the surface of the site, the eastern half of the site has been subjected to agricultural plowing within the past year (Figure 4). As noted by Chavez (1984), the presence of stream-rolled cobble fragments occurring in the field may be groundstone, but all specimens are too fragmentary to be positively identified as being cultural in origins. The entire site has been heavily impacted from years of plowing and planting, and it is conceivable that several hundred years ago this resource occupied an area that possessed greater relief and/or was once mounded.

In addition to the previously identified prehistoric archaeological site several recent historic and/or contemporary features associated with stock raising and agricultural activities were noted. These features included an electrical water pump with associated concrete well heads, concrete culverts, and scattered modern trash. All historic and/or contemporary features noted during this investigation were judged to be less than 50 years in age.

ASSESSMENT AND RECOMMENDATIONS

Regulatory Framework

The California Environmental Quality Act (CEQA) of 1970 mandates that significant effects to cultural resources be determined during the project planning stage. Cultural resources include prehistoric or historical archaeological sites, paleontological resources, or properties of historic, cultural, or architectural significance to a community, ethnic or social group. In accordance with CEQA, Appendix G, a significant effect would be identified as something that would disrupt or adversely affect a site or a property, except as part of a scientific study. In addition, based upon CEQA Appendix K, significant impacts to cultural resources are those actions that would result in damage to a significant archaeological or historical resource. Recommendations based on Appendix G and Appendix K as stated in the CEQA Guidelines are as follows:

- Public agencies should seek to avoid damaging effects on the cultural resource whenever feasible. If avoidance is not feasible, the importance of the site shall be evaluated using the criteria below.

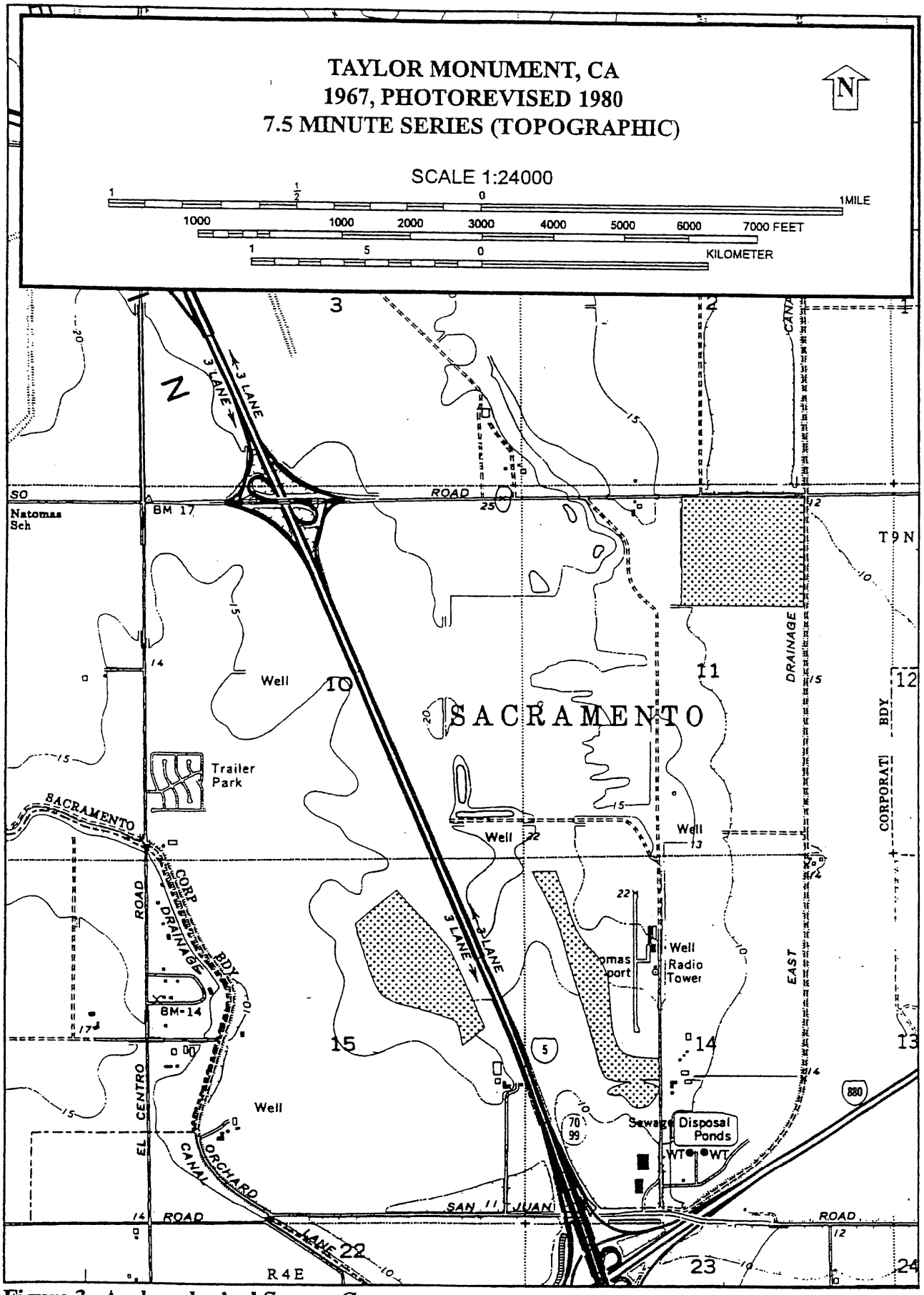

Figure 3. Archaeological Survey Coverage

- In-situ (in position) preservation is the preferred manner of avoidance, as the relationship of artifacts to each other is more important than the sum of their parts.

- Avoidance also provides opportunities for future research on sites and avoids conflict with religious and cultural values.

- Avoidance may be accomplished by planning construction to miss sites or significant architectural resources and by planning parks or other open space to incorporate sites.

Thresholds of significance for cultural resources are based on the following criteria:

A.1 Association with an event or person of recognized significance in California or American history.

A.2 Association with an event or person of recognized scientific importance in prehistory.

B. Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions.

C. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind.

D. Is at least one hundred years old and possesses substantial stratigraphic integrity.

E. Involves important research questions that historical research has shown can be answered only with archaeological methods.

In addition to CEQA, resources must also be evaluated in terms of their eligibility for inclusion in the recently-created California Register of Historical Resources (A.B. 2881). The Register supplements CEQA in defining what constitutes a significant cultural resource and contains guidelines and criteria for determining the significance at the local level. Currently, properties eligible for listing in the National Register of Historic Places automatically qualify for the California Register. Resources that do not meet National Register criteria, but retain state or local values will also be included in the California Register. Although the criteria for listing in the California Register are not finalized, and Sacramento County does not have a local policy pertaining to historical significance, it is logical to assume that any property

meeting CEQA criteria as an important resource would qualify for the California Register. In light of these criteria and guidelines, impacts to resources located within the Alleghany Properties are discussed below.

Recommendations

Archaeological Resources

The previously identified prehistoric archaeological site, designated N1 by Chavez (1984) was subjected to a systematic excavation by Peak and Associates, Inc., in January of 1987. This excavation was conducted at the request of the Spink Corporation for the Gateway Point project. As a result of Peak and Associates' investigation it was determined that the site, N-1, represented a surface manifestation of imported fill material and did not contain an *in situ* cultural deposit (Neunschwander 1987). However, due to the size of the recorded site area, and the limited number of units excavated at that time (e.g., two 1 x 1 meter units), they advanced the recommendation that a "professionally qualified archaeologist be present during surface and subsurface modifications to the site area" during future projects (Neunschwander 1987).

Because of the highly disturbed nature of N-1 created by agricultural practices, it is difficult to ascertain whether or not there are areas of the site that do in fact possess a subsurface cultural component. Thus, if it is not feasible to avoid this location, the recommendations advanced by Peak and Associates for this site should be followed.

If an intact subsurface component is encountered during monitoring activities at the site, then a formal test excavation plan should be implemented to determine if the resource should be considered "important" (cf. CEQA Guidelines, Appendix K). This test excavation plan should be developed in consultation with the State Historic Preservation Officer and the parties noted above. Further mitigation measures may be necessary if the site does contain sufficient data to make it "important".

Recent Historic/Contemporary Resources

The recent historic and/or contemporary features encountered as a result of this investigation do not represent an unique or important cultural resource as defined by CEQA or the California Register criteria. The features associated with these earlier agricultural practices have been described and documented. Therefore, no further work is recommended at this resource.

As with many surface surveys in the Central Valley, ground visibility in parts of the project was partially inhibited by emergent grasses and standing water. Moreover, cultural

deposits buried beneath alluvial deposits are known to exist along the Sacramento River. In light of this, it is possible that unrecorded subsurface deposits may be encountered during construction activity. It is recommended that, in the event any subsurface prehistoric or historical archaeological remains are uncovered during construction, work in that vicinity should halt immediately and the State Historic Preservation Officer be contacted for an evaluation of the situation (cf. CEQA Guidelines, Appendix K, Section IX).

According to Section 7050.5 of the Health and Safety Code, in the event human remains are discovered during excavation, work must stop immediately and the county coroner must be contacted. Section 5097.94 and 5097.98 of the Public Resources Code require consultation with the Native American Heritage Commission, protection of Native American remains, and notification of most likely descendants. SB 447 (Chapter 404, Statutes of 1987) also protects Native American remains or associated grave goods.

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