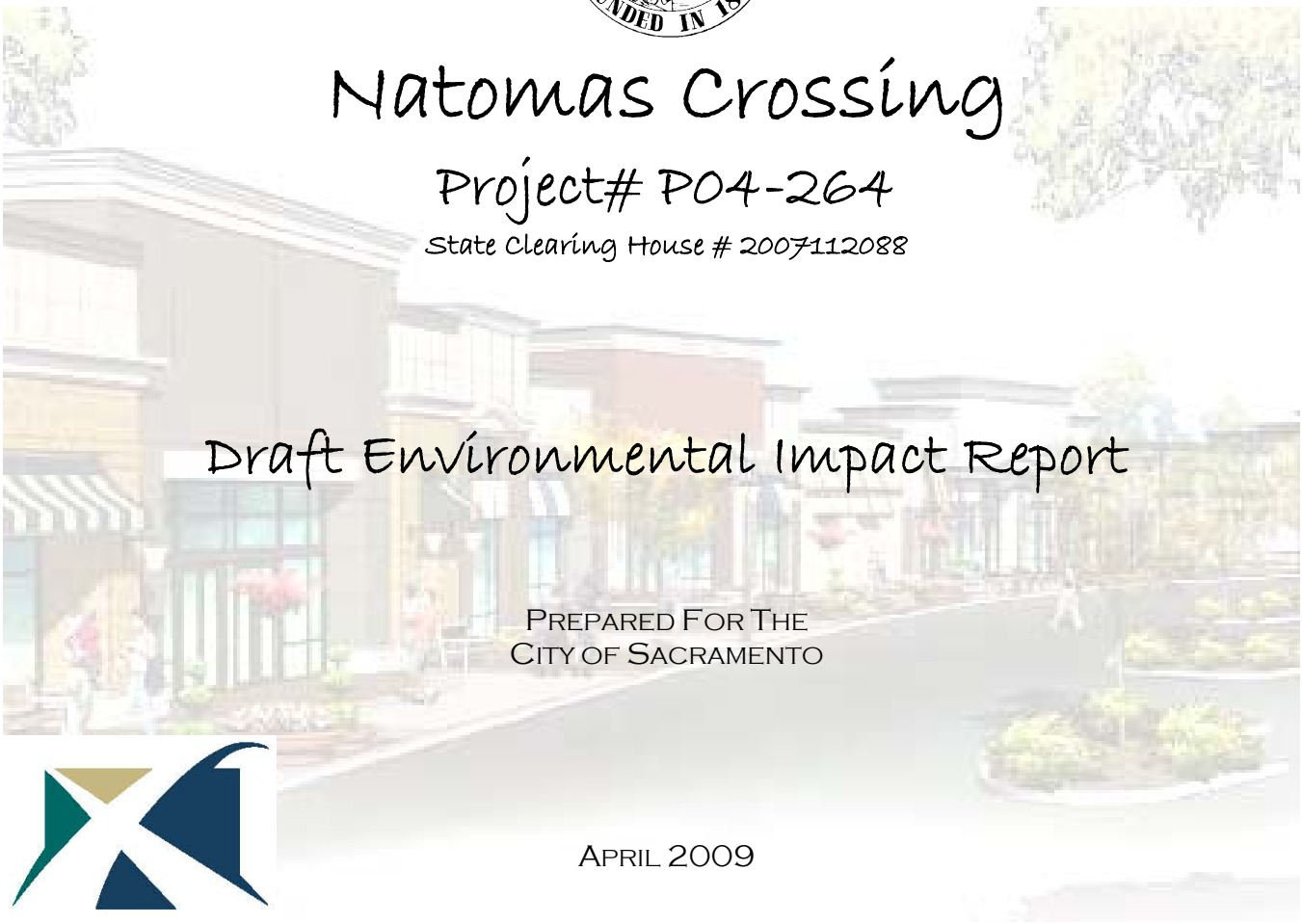
Natomas Crossing

Project# P04-264

State Clearing House # 2007112088



Draft Environmental Impact Report

Prepared For The
City of Sacramento

April 2009

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DRAFT ENVIRONMENTAL IMPACT REPORT
Natomas Crossing Project (P04-264)

State Clearing House # 2007112088

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April 2009

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1. INTRODUCTION

1 INTRODUCTION

1.0 INTRODUCTION

The Natomas Crossing Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) of 1970, Pub. Res. Code §§ 21000-21178, as amended and the Guidelines for Implementation of the California Environmental Quality Act, Cal. Code Regs. Title 14, §§ 15000-15387 (CEQA Guidelines). The City of Sacramento is the lead agency for the environmental review of the Natomas Crossing project and has the principal responsibility for approving the project. As required by Section 15121 of the CEQA Guidelines, this Draft EIR assesses the potential environmental impacts resulting from approval, construction, and operation of the proposed project, and identifies feasible means of minimizing potential adverse environmental impacts.

1.1 PROJECT DESCRIPTION

The project site is located between Interstate 5 and East Commerce Way, with 66.8 net acres north of Arena Boulevard (referred to as Quadrant B), and 83.6 net acres south of Arena Boulevard (referred to as Quadrant C (47.2 net acres) and Quadrant D (36.4 net acres)) for a total of 150.4 net acres in the North Natomas area of the City of Sacramento (See Figure 3-1, Project Location Map). The project site comprises the majority of the Natomas Crossing – Alleghany Area #3 PUD, which consists of Quadrants A-D (See Figure 3-2, Natomas Crossing PUD). The project encompasses 74.9 gross acres for Quadrant B, 52.9 gross acres for Quadrant C, and 39.8 gross acres for Quadrant D for a total of 167.6 gross acres. Quadrant A has already been largely developed and is not part of this project.

Quadrant B

The southern portion of Quadrant B will be rezoned from Employment Center and Commercial to Shopping Center to allow for the future development of retail space within the range of 309,276 to 463,914 s.f. (See Figure 3-7, Proposed PUD Schematic Plan). The northern portion of Quadrant B would not require a rezone, as the proposed land uses are generally consistent with those planned for the site in previous approvals. Future development of the northern portion of Quadrant B would include:

- 10 acres of Residential with approximate total of 180 units
- 5 acres of Hotel use consisting of approximately 130,000 s.f. or 300 rooms
- 14 acres of Office consisting of approximately 240,000 s.f.

It is important to note that development of Quadrant B is not proposed at this time. The Draft EIR therefore evaluates development of Quadrant B at a programmatic level, rather than project level.

Quadrant C

The 47.2 net acres in Quadrant C portion of the project are proposed for both retail and office development (See Figure 3-8, Quadrant C Tentative Parcel Map). More specifically, Quadrant C includes 404,580 s.f. of regional retail uses and 200,000 s.f. of office uses (See Table 3-1). One large retail pad is proposed in the northern portion of Quadrant C, consisting of a 137,933-square-foot large format retail pad with an attached 31,179-square-foot garden center (See Figure 3-9, Quadrant C Site Plan). Quadrant C would include a total of 20 retail pads and two office pads. Primary access to this portion of the project site would be provided via three entrances along East Commerce Way and a right-in only from Arena Boulevard. Various land use entitlements are required for these uses to be developed on Quadrant C, as described below.

Quadrant D

Quadrant D includes the future development of approximately 600,000 s.f. for a hospital, and an additional 600,000 s.f. for medical office uses (See Figure 3-10, Quadrant D Conceptual Site Plan). The northeastern portion of the hospital building (i.e., side closest to East Commerce Way) is anticipated to be a multi-story building, with a maximum of five stories. In addition, the project includes the construction of a 30,000 s.f. Central Utility Plant (CUP) that would house the heating and cooling equipment for the hospital's air and water systems, as well as a back-up generator system for power outages.

In order to meet City parking standards, 2,900 parking spaces are proposed to serve both the 300 bed hospital as well as the proposed medical office uses. Per the current Conceptual Hospital Site Plan, two above-ground parking structures would ultimately be developed to accommodate a substantial number of these parking spaces.

For further information regarding the proposed project, please refer to Chapter 3, Project Description.

1.2 PURPOSE OF EIR

As provided in the CEQA Guidelines Section 15021, public agencies are charged with the duty to avoid or minimize environmental damage where feasible. The public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social issues.

The EIR is an informational document that informs decision-makers and the general public of the potential significant environmental effects of a proposed project. An EIR must identify possible means to minimize the significant effects and describe a reasonable range of feasible alternatives to the project. The EIR is an informational document used in the planning and decision-making process. The EIR is not intended to recommend either approval or denial of a project. The lead agency, which is the City of Sacramento for this project, is required to consider the information in the EIR along with any other available information in deciding whether to approve the application. The basic requirements for an EIR include discussions of the environmental setting, environmental impacts, mitigation measures, alternatives, growth inducing impacts, and cumulative impacts.

1.3 TYPE OF DOCUMENT

This EIR functions as both a Program and Project Specific EIR. Specifically, the EIR evaluates at a program level the effects of the maximum growth that could occur on the Quadrant B portion of the site under the Natomas Crossing project. The Program component of the EIR, therefore, establishes a foundation for "tiered" project-level environmental documents that may be prepared subsequently in accordance with the overall program for Quadrant B (Pub. Resources Code § 21083.3; see also CEQA Guidelines, §§ 15183, 15152 & 15168). For the program level analysis, the City invokes Public Resources Code Section 21083.3 and declares that the analysis of subsequent projects consistent with approved zoning will focus on "effects upon the environment which are peculiar to the parcel or the project" (Pub. Resources Code, § 21083.3, subd. (a)).

A Program EIR is appropriate for land use decisionmaking at a broad level that contemplates future, site-specific review of individual development proposals. CEQA and the CEQA Guidelines state that subsequent projects should be examined in light of the Program EIR to determine whether additional environmental documentation must be prepared. If, pursuant to CEQA Guidelines Section 15162, new significant effects would not result from the proposed project, all significant effects have been adequately addressed and new mitigation measures would not be required, then subsequent projects (i.e., development of Quadrant B) within the scope of the approved Natomas Crossing project may rely on the environmental analysis provided in the Program EIR and additional environmental documentation would not be required. Otherwise, a subsequent or supplemental environmental document must be prepared.

If a subsequent document is prepared, the environmental analyses would be tiered from this Program EIR by incorporating by reference the EIR's general discussions and analysis of cumulative impacts. Subsequent environmental documents would be focused on project and site-specific impacts. Separate CEQA findings must be made for each subsequent project, unless the project is exempt from CEQA review.

As an alternative, if future projects would be developed consistent with the general plan, community plan, or zoning, CEQA review of such project shall be limited to effects on the environment which are peculiar to the parcel or to the project and which were not addressed as significant effects in the prior EIR, or which substantial new information shows will be more significant than described in the prior EIR. (Pub. Resources Code, § 21083.3, CEQA Guidelines, § 15183.)

Project EIRs examine the environmental impacts of a specific development project. This EIR also functions as a project-specific EIR in that it includes a project-level analysis for Quadrant C, for which a tentative map has been prepared, as well as for Quadrant D.

1.4 USE OF PREVIOUSLY PREPARED ENVIRONMENTAL DOCUMENTATION

The Natomas Crossing Draft EIR relies in part on data, environmental evaluations, mitigation measures and other components of EIRs and Plans prepared by the City for areas within the project vicinity. These documents are listed here and used as source documents for this EIR. All

documents are available for public review and inspection at the City of Sacramento Development Services Department, Environmental Planning Services, 300 Richards Boulevard, Sacramento, CA 95811.

1. *Sacramento 2030 General Plan*, City of Sacramento, March 2009.
2. *Sacramento 2030 General Plan Master Environmental Impact Report*, City of Sacramento, March 2009.
3. *City of Sacramento Zoning Code*, City of Sacramento.
4. *Guide to Air Quality Assessment in Sacramento County*, Sacramento Metropolitan Air Quality Management District, July 2004.
5. *Natomas Crossing Initial Study/Mitigated Negative Declaration*, Analytical Environmental Services, City of Sacramento, April 2002.

The Natomas Crossing EIR also relies on the information contained in the technical reports prepared by subconsultants for the project including the Noise Analysis prepared by j.c. brennan & associates, Inc. (March 2009), and the Air Quality Analysis prepared by Ambient Air Quality & Noise Consulting (March 2009). In addition, the Natomas Crossing EIR relies on the traffic report prepared for the project by DKS Associates (January 2009).

1.5 INTENDED USES OF THE EIR

This EIR is intended to evaluate the environmental impacts of the project to the greatest extent possible and to be used to modify, approve, or deny approval of the proposed project based on the analysis in the EIR. In accordance with CEQA Guidelines Section 15126, this EIR should be used as the primary environmental document to determine whether to approve, modify, or deny the project based on the environmental impacts and to evaluate all subsequent planning and permitting actions associated with the project. Subsequent actions include, but are not limited to, the following:

- General Plan Amendment;
- Rezone;
- Planned Unit Development Schematic Plan Amendment;
- Planned Unit Development Guidelines Amendment;
- Tentative Parcel Map;
- Planned Unit Development Special Permits; and
- Planning Director Plan Review(s).

1.6 EIR PROCESS

The EIR process begins with the decision by the lead agency to prepare an EIR, either during a preliminary review of a project or at the conclusion of an Initial Study. Once the decision is made to prepare an EIR, the lead agency sends a Notice of Preparation (NOP) to appropriate government agencies, and when required, to the State Clearinghouse (SCH) in the Office of Planning and Research (OPR), which ensures that responsible State agencies reply within the required time. The SCH assigns an identification number to the project, which then becomes the

identification number for all subsequent environmental documents on the project. The public and agencies have 30 days to respond to the NOP, indicating any potential environmental issues, reasonable alternatives and/or mitigation measures they wish to have explored in the Draft EIR and whether the agency will be a responsible agency or a trustee agency for the project.

As soon as the Draft EIR is completed, a notice of completion is filed with the SCH and a public notice is published to inform interested parties that a Draft EIR is available for agency and/or public review and to provide information regarding location of drafts and any public meetings or hearings that are scheduled. The Draft EIR is circulated for a specified period, typically 45 days, during which time reviewers may make comments. The lead agency must evaluate and respond to comments in writing, describing the disposition of any significant environmental issues raised and explaining in detail the reasons for not accepting any specific comments concerning major environmental issues or proposed mitigation measures. Should comments received result in the addition of significant new information to an EIR, after public notice is given, the revised EIR or affected chapters must be recirculated for another public review period with related comments and responses.

Once the lead agency is satisfied that the EIR has adequately addressed the pertinent issues in compliance with CEQA, a Final EIR will be prepared comprised of the Draft EIR, Mitigation Monitoring Plan, comments, responses to comments, and any errata and/or changes. The Final EIR is a public document, and is available for review by the public or commenting agencies. Before approving a project, the lead agency must certify that the Final EIR has been completed in compliance with CEQA; has been presented to the decision-making body of the lead agency; has been reviewed and considered by that body, and that the Final EIR reflects the lead agency's independent judgment and analysis.

An NOP for this Draft EIR was released for a 30-day review ending December 18, 2007 for the original version of the Natomas Crossing project which included Quadrant C as well as the southern portion of Quadrant B. Since the release of the initial NOP, the applicant revised the Natomas Crossing project to include all of Quadrant B as well as Quadrant D. Specific types of development proposed for these newly added quadrants are described in the EIR Project Description, Chapter 3. Given the changes in the project design, a second NOP was released for a 30-day public review ending December 29, 2008 (See Appendix A for copies of the NOPs). Public scoping meetings were held for the first and second NOPs on December 12, 2007 and January 22, 2009, respectively. Comments provided by public agencies in response to the NOPs were received by the City of Sacramento and are provided in Appendix B. In addition, an Initial Study was prepared to focus the scope of the Natomas Crossing EIR (See Appendix C).

The Draft EIR will be circulated for a 45-day public review period. Comments received during the comment period will be addressed in the Final EIR. The City of Sacramento Planning Commission and/or City Council, in accordance with CEQA, will review the Draft and Final EIR prior to certification.

Before approving a project for which a certified Final EIR has identified significant environmental effects, the lead agency must make one or more specific written findings for each of the identified significant impacts. These findings are limited to the following:

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

- Such changes or alterations are within the responsibility and jurisdiction of other public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such another agency.

- Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR (CEQA Guidelines, Section 19091 [a]).

If significant environmental effects remain, even with the adoption of all feasible mitigation measures or alternatives, the agency must adopt a "statement of overriding considerations" before proceeding with the project. The statement of overriding consideration must be supported by substantial evidence in the record (CEQA Guidelines, Sections 15092, 15093).

Overriding considerations include the economic, legal, social, technological, or other benefits of the proposed project. The lead agency must balance these potential benefits against the project's unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the lead agency may consider the adverse environmental impacts to be "acceptable"(CEQA Guidelines, Section 15093[a]). The benefits are set forth in the statement of overriding considerations, and are based on the Final EIR and/or other information in the record of proceedings (CEQA Guidelines, Section 15093[b]).

1.7 SCOPE OF THE DRAFT EIR

Pursuant to the State CEQA Guidelines, the scope of this Draft EIR includes specific issues and concerns identified as potentially significant. The Initial Study prepared for the proposed project concluded that potential impacts related to several environmental issues would be considered less than significant (see Appendix C). The less than significant impacts are summarized in Chapter 4.0 of this Draft EIR. In addition, the potentially significant impacts for the project that could be adequately discussed, analyzed, and mitigated in the Initial Study are summarized in Chapter 4.0. Those items identified in the Initial Study as potentially significant are addressed in this Draft EIR.

The City of Sacramento determined that the preparation of an EIR was appropriate due to potentially significant environmental impacts that could be caused by implementation of the proposed project. This Draft EIR evaluates the existing environmental resources in the vicinity of the project site, analyzes potential impacts on those resources resulting from the proposed project, and identifies mitigation measures that could avoid or reduce the magnitude of those impacts. Resources identified for study in this Draft EIR include the following:

- Land Use;
- Transportation and Circulation;
- Noise;
- Air Quality;
- Hydrology, Water Quality, and Drainage;
- Hazards;
- Aesthetics; and
- Public Services.

The evaluation of effects is presented on a resource-by-resource basis in subchapters 4.1 through 4.8. Each subchapter is divided into four sections: Introduction, Existing Environmental Setting, Regulatory Background, and Impacts and Mitigation Measures.

Impacts that are determined to be significant in Chapter 4, and for which feasible mitigation measures are not available to reduce those impacts to a less-than-significant level, are identified as *significant and unavoidable.* Chapter 5 in the Draft EIR presents a discussion and comprehensive list of all significant and unavoidable impacts presented in Chapter 4.

1.8 LEAD AGENCY, RESPONSIBLE AGENCY, PROJECT SPONSOR, AND CONTACT PERSONS

The City of Sacramento (City) is the lead agency for preparation of the Natomas Crossing Project EIR. Sections 15050 and 15367 of the State CEQA Guidelines define the lead agency as the public agency, which has the principal responsibility for carrying out or approving a project.

CEQA Guidelines section 15381 defines a Responsible Agency as a public agency which proposes to carry out or approve a project for which a lead agency has prepared and EIR and includes all agencies other than the lead agency with discretionary approval power over the project. For the Natomas Crossing project, the following agencies have been identified as responsible agencies:

- California Department of Toxic Substances Control (DTSC);
- California Office of Statewide Health and Planning and Development (OSHPD);
- Sacramento Metropolitan Air Quality District;
- California Department of Parks and Recreation;
- California Reclamation Board;
- California Department of Water Resources;
- California Department of Fish and Game, Region 2;
- California Office of Emergency Services;
- California Native American Heritage Commission;
- California Highway Patrol;
- Caltrans, District 3; and
- California Regional Quality Control Board, Region 5.

The environmental consultant to the City is Raney Planning and Management, Inc. with sub-consultants Ambient Air and Noise Consulting (air quality analysis) and j.c. brennan & associates (noise/vibration analysis). The project traffic study was prepared by DKS under contract with the City. Preparers and contributors to this report are listed in Chapter 8 of this EIR. The key City contact person for this project is:

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Development Services Department
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Fax: (916) 808-7185

1.9 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

The City of Sacramento received one comment letter on the first Notice of Preparation (NOP) for the Natomas Crossing EIR and six comment letters on the second NOP. A copy of the letters is provided in Appendix B of this EIR. The primary comments and/or concerns stated in the letter is briefly listed below and directed, when applicable, to the appropriate technical chapter(s) of the Draft EIR.

- Borkenhagen, Jeane - Sacramento Metropolitan Air Quality Management District
  Ms. Borkenhagen requests the proposed project analyze an alternative that includes residential, office, and retail. Ms. Borkenhagen recommends that the document include analysis of greenhouse gas emissions. Ms. Borkenhagen also raises concerns related to the design of the project, including the maximization of pedestrian and bicycle amenities and connectivity to the Natomas Landing Development. For post-construction emissions Ms. Borkenhagen recommends that an Air Quality Management Plan be developed which seeks to achieve a 15 percent reduction in emissions and follow the SMAQMD Guidelines with respect to construction-related emissions. These concerns are addressed in Chapter 4.2, **Transportation & Circulation**, Chapter 4.4, **Air Quality**, and Chapter 5, **CEQA Considerations**.

- Wright, Molly – Sacramento Metropolitan Air Quality Management District
  Ms. Wright requests the proposed project analyze the effects of job/housing balance on operational air quality impacts and that the document include analysis of greenhouse gas emissions. In addition, Ms. Wright recommends that an Air Quality Management Plan be developed which seeks to achieve a 15 percent reduction in emissions and follow the SMAQMD Guidelines with respect to construction-related emissions. These concerns are addressed in Chapter 4.2, **Transportation & Circulation** and Chapter 4.4, **Air Quality**.

- Walder, William J. – Citizen
  Mr. Walder identifies several project design considerations that do not pertain to the analysis of environmental impacts conducted in this EIR. Mr. Walder requests the

proposed project analyze the expansion of alternative commute routes to and around downtown that include safe bicycle paths. Mr. Walder believes that a helistop would be a negative addition for the Natomas residential area due to the high volume of noise. Additional concerns expressed include the threat of flooding in Natomas, water quality, improper drainage, and public health and hazards. These concerns are addressed in Chapter 4.1, **Land Use**, Chapter 4.2, **Transportation & Circulation,** Chapter 4.3, **Noise**, Chapter 4.5, **Hydrology, Water Quality, & Drainage,** and Chapter 4.6, **Hazards.**

- Darrow, Matthew G. – Sacramento County of Transportation
  Mr. Darrow requests the EIR analyze the traffic increase from continuing growth in the Natomas area and its negative impacts on traffic conditions on El Centro Road. In addition, Mr. Darrow recommends that the environmental document discuss the acceleration of improvements needed to address sub-standard conditions on El Centro Road, as well as identify funding for all necessary improvements. These concerns are addressed in Chapter 4.2, **Transportation & Circulation**.

- Singh, Jaskamal – Sacramento County of Transportation
  Mr. Singh requests the EIR analyze the amount of traffic increase from continuing growth in the Natomas area and its negative impacts on County facilities. In addition, Mr. Singh recommends that the transportation modeling being conducted for the project shall include buildout of Metro Air Park, Elverta Specific Plan, Sutter Pointe Measure M Project, Placer Vineyards, and Greenbriar as part of the cumulative base conditions. These concerns are addressed in Chapter 4.2, **Transportation & Circulation**.

- Begley, Alyssa – Caltrans
  Ms. Begley recommends that a Traffic Impact Study be completed, including the identification of appropriate mitigation measures. In addition, Ms. Begley requests pre- and post- project hydrologic/hydraulic calculations and sign plans for any proposed freeway monument signage be completed and reviewed by Caltrans prior to final project approval. The commenter also requests that noise impacts be evaluated in the EIR. These concerns are addressed in Chapter 4.2, **Transportation & Circulation,** Chapter 4.3, **Noise,** and Chapter 4.5, **Hydrology, Water Quality, & Drainage.**

- Morgan, Scott – State Clearinghouse
  The commenter notes that the Notice of Preparation was received November 26, 2008 by the State Clearinghouse, and routed to state agencies.

1.10 ORGANIZATION OF THE DRAFT EIR

The Draft EIR is organized into the following chapters:

Chapter 1 - Introduction and Scope of Draft EIR
Provides an introduction and overview describing the intended use of the Draft EIR and the review and certification process.

Chapter 2 - Executive Summary
Summarizes the elements of the project and the environmental impacts that could result from implementation of the proposed project and provides a table which lists impacts, describes proposed mitigation measures, and indicates the level of significance of impacts after mitigation.

Chapter 3 - Project Description
Provides a detailed description of the proposed project, including location, background information, major objectives, and technical characteristics.

Chapter 4 - Environmental Setting, Impacts and Mitigation Measures
Describes the existing land use setting for the project, including the proposed project's relationship to adopted plans and policies. Chapter 4 also contains a project-specific analysis of environmental issue areas. The chapters for each environmental issue contain an introduction and description of the setting of the project site, identify project-specific impacts and recommend mitigation measures, if appropriate.

Chapter 5 - CEQA Considerations
Provides discussions required by CEQA regarding impacts that would result from the proposed project, including a summary of cumulative impacts, potential growth-inducing impacts, secondary impacts, and significant irreversible changes to the environment.

Chapter 6 - Project Alternatives
Describes and evaluates the alternatives to the proposed project. Alternatives evaluated include the following:

- No Project – No Build Alternative;
- No Project – Existing Zoning Alternative; and
- Reduced Intensity Alternative.

Chapter 7 - References
Provides bibliographic information for all references and resources cited.

Chapter 8 - EIR Authors and Persons Consulted
Lists report authors who provided technical assistance in the preparation and review of the Draft EIR.

Appendices
Include the NOPs, responses to the NOPs, the Initial Study and Environmental Checklist, Air Quality Analysis, Noise Analysis, and Traffic Study technical appendices.

2. EXECUTIVE SUMMARY

2 EXECUTIVE SUMMARY

2.0 INTRODUCTION

The Executive Summary chapter provides an overview of the Natomas Crossing project and the conclusions of the environmental review. Chapter 3 provides a detailed description of the project, and Chapters 4.1 through 4.8 provide the environmental analysis and assessment. The Executive Summary chapter also summarizes the evaluation of the alternatives to the proposed project that are described in Chapter 6, Project Alternatives.

2.1 PROJECT DESCRIPTION

The project site is located between Interstate 5 and East Commerce Way, with 66.8 net acres north of Arena Boulevard (referred to as Quadrant B), and 83.6 net acres south of Arena Boulevard (referred to as Quadrant C (47.2 net acres) and Quadrant D (36.4 net acres)) for a total of 150.4 net acres in the North Natomas area of the City of Sacramento. The project site comprises the majority of the Natomas Crossing – Alleghany Area #3 PUD, which consists of Quadrants A-D (See Figure 3-2, Natomas Crossing PUD). The project encompasses 74.9 gross acres for Quadrant B, 52.9 gross acres for Quadrant C, and 39.8 gross acres for Quadrant D for a total of 167.6 gross acres. The project is identified by Sacramento County Assessor's Parcel Numbers (APNs) 225-0070-113, 225-0070-115, 225-0140-065 & 067, 225-0150-043, 053 & 054, 225-0180-059, 225-0310-026.

The project site is currently vacant and mass-graded. The project site does not contain trees, wetlands, or riparian areas. The Current 2030 Sacramento General Plan (SGP) and North Natomas Community Plan (NNCP) land use designation for the project site is Planned Development (PD). The current zoning is Limited Commercial (C-1), EC-40, and EC-50.

The project site is part of the larger Natomas Crossing Planned Unit Development (PUD). The Natomas Crossing PUD consists of three separately defined development areas described as Areas 1 through 3. The proposed project is situated in Area 3 of the PUD. The Area 3 component of the PUD is further segregated into four quadrants described as Quadrants A through Quadrant D. The proposed project consists of Quadrants B, C, and D.

Quadrant B is not proposed for development at this time; although, the southern portion will be rezoned from Employment Center and Commercial to Shopping Center to allow for the future development of retail space within the range of 309,276 to 463,914 s.f. and the future development of the northern portion of Quadrant B is anticipated to include 10 acres of residential, five acres for a hotel, and 14 acres of office space. Quadrant C, with approximately 42.7 acres, is proposed for both retail and office development to include 404,580 s.f. of regional retail uses and 200,000 s.f. of office uses. Quadrant D includes the development of approximately 600,000 s.f. for a hospital and an additional 600,000 s.f. for medical office uses.

Please refer to Chapter 3, Project Description, for a more detailed description of the proposed project.

2.2 LAND USE ANALYSIS

The Land Use chapter includes discussion and analysis of the proposed project's consistency with the Sacramento 2030 General Plan and the City's Comprehensive Zoning Ordinance. In addition, the proposed project's compatibility with surrounding land uses is addressed.

The Land Use chapter concludes that the proposed project is consistent with the goals and policies in the General Plan that provide for commercial and employment center development. For example, General Plan Goal 5.4 applies to Regional Centers, and establishes an overall goal to "establish major mixed-use activity centers through development and reinvestment in existing regional commercial centers that are vibrant, regionally accessible destinations where people live, work, shop, and congregate in a mix of retail, employment, entertainment, and residential uses." The proposed project would meet this goal via its inclusion of 180 residential units in the northern portion of Quadrant B, and for both Quadrants B and C, a regional commercial center that would provide a mix of retail, commercial, restaurant and employment uses, including a large format home improvement center. The policies in support of Goal 5.4 include: LU 5.4.1, LU 5.4.2, and LU 5.4.3.

As discussed in the PUD Guidelines, the project achieves consistency with Policy 5.4.3 by providing pedestrian and bicycle connections between surrounding uses. An off-street bike path within the freeway buffer, which is part of the regional bikeway system, provides community connectivity. The project site offers a bike plaza with lockers to encourage alternate transportation to the site. Designated bike lanes through the site provide connectivity from the bike path to East Commerce Way.

Employment Center Mid Rise areas are specifically discussed in the General Plan as playing a critical role in accommodating new businesses and creating new jobs. The combination of high-density buildings and low site coverage in existing employment centers provides the opportunity for new infill development in these areas with complementary uses that transform the existing single-use areas into more self-sufficient mixed-use areas with reduced dependence on automobile transportation. The specific policies include LU 7.1.1, LU 7.1.2, LU 7.1.3, and LU 7.1.4.

The proposed project includes employment intensive uses including medical office buildings and a hospital in Quadrant D, consistent with the General Plan's policies encouraging medical offices and "campus environments." Accessory support uses such as regional and community retailers are located in adjacent Quadrant C. The project as a whole will also provide a housing component near to the employment centers, with the 180 residential units proposed for future development in Quadrant B.

Some elements of the proposed project are inconsistent with the Employment Center zoning designation(s) of the project site. The project applicant has therefore requested that the project site be appropriately rezoned. To accommodate the proposed regional commercial center, the

applicant is requesting that 83.4 acres of the project site in Quadrants B and C be rezoned to Shopping Center (SC) (74.7), and 8.7 acres in Quadrant C zoned from EC-40 to EC-50, and 36.4 acres in Quadrant D from EC-40 to EC-50. The proposed zoning changes would bring the project into consistency with the 2030 General Plan designation and anticipated commercial uses of the project.

2.3 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION

Under the California Environmental Quality Act (CEQA), a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, traffic and circulation, noise, air, and water. For these areas, this Draft EIR discusses the impacts and mitigation measures that could be implemented to reduce potential adverse impacts to a level that is considered less than significant. The impacts and mitigation measures are summarized in Table 2-1 at the end of this chapter. An impact that remains significant after mitigation is considered an unavoidable adverse impact of the proposed project. The mitigation measures presented in the Draft EIR form the basis of the Mitigation Monitoring Plan.

Transportation and Circulation

The Transportation and Circulation chapter discusses existing transportation and circulation conditions, as well as the effects on the transportation and circulation system resulting from vehicle trips associated with the development of the proposed project under baseline and cumulative conditions. In addition, the analysis includes consideration of automobile traffic impacts on roadway capacity, transit impacts, bicycle impacts, parking impacts, construction impacts, and pedestrian impacts. The proposed mitigation measures reflect City policies and practices, while considering phasing, feasibility, and the availability of right-of-way.

Project-Specific Impacts

The Transportation and Circulation analysis regarding project-specific impacts concluded that impacts to roadway segments, the freeway mainline, freeway ramp junctions, freeway ramp queuing, and the transit system would be less than significant. Significant impacts would occur related to the intersection of East Commerce Way / Arena Boulevard, pedestrian and bicycle circulation, parking requirements, and impacts to construction vehicles disrupting the transportation network near the site; however the impacts would be reduced to a less than significant level with implementation of the mitigation measures identified in the chapter.

Alternative-Specific Impacts

The Transportation and Circulation analysis regarding alternative-specific impacts concluded that impacts related to roadway segments, the freeway mainline, freeway ramp junctions, freeway ramp queuing, and the transit system would be less than significant. Significant impacts would occur to pedestrian and bicycle circulation, parking requirements, and impacts related to construction vehicles disrupting the transportation network near the site; however, the impacts would be reduced to less than significant level with the incorporation of the mitigation measures

identified in the chapter. It should be noted that the alternative-specific assessment in this chapter was utilized in the evaluation of alternatives in the Alternatives Analysis chapter.

Cumulative Impacts

The Transportation and Circulation analysis regarding cumulative concluded that impacts to roadway segments would be less than significant. Significant cumulative impacts were identified for the following intersections: Arena Boulevard / I-5 Northbound Ramps; East Commerce Way / Del Paso Road; East Commerce Way / Arco Arena Main Entrance / Road B3; East Commerce Way / Arena Boulevard; East Commerce Way / Natomas Crossing Drive; East Commerce Way / Road D2; East Commerce Way / San Juan Road; Truxel Road / Arena Boulevard; and Truxel Road / Natomas Crossing Drive. Cumulative impacts for these intersections could be reduced to less than significant levels with implementation of the mitigation measures identified in the chapter. In addition, a significant cumulative impact was identified for freeway ramp queuing; however, this impact could be reduced to a less than significant level with implementation of the mitigation measure identified in the chapter. Significant cumulative impacts were identified for the freeway mainline and freeway ramp junctions. These cumulative impacts would remain significant and unavoidable because feasible mitigation measures could not be identified and, even with incorporation of the mitigation measures identified in the chapter, the impacts would remain significant and unavoidable.

Noise

The Noise chapter describes the existing noise environment in the project vicinity, and identifies potential impacts and mitigation measures related to the construction and operation of the proposed project, including the potential noise and vibration impacts due to construction. The method by which the potential impacts are analyzed is discussed, followed by the identification of potential impacts and the recommended mitigation measures designed to reduce significant impacts to levels that are less than significant.

The Noise chapter concludes that impacts associated with construction noise, construction-induced vibrations, project-related increases in existing traffic noise levels at off-site residential uses, noise levels associated with the proposed helistop, and the cumulative increase in noise levels in the project vicinity would be less than significant. Stationary noise impacts from truck circulation, loading docks, and rooftop HVAC equipment, traffic noise levels at proposed on-site residential uses, and traffic noise levels at the proposed hospital could exceed the applicable noise level standard at existing and proposed residential uses would be reduced to less than significant levels with the implementation of mitigation measures identified in the chapter.

Air Quality

The Air Quality chapter describes the impacts of the proposed project on local and regional air quality. The chapter was prepared using methodologies and assumptions recommended within the indirect source review guidelines of the Sacramento Metropolitan Air Quality Management District (SMAQMD). In keeping with the SMAQMD guidelines, the Air Quality chapter describes existing air quality, construction-related air quality impacts resulting from grading and

equipment emissions, direct and indirect emissions associated with the proposed project, the impacts of these emissions on both the local and regional scales, and mitigation measures warranted to reduce or eliminate any identified significant impacts.

The Air Quality chapter concludes that the impact associated with the project's long-term increase in carbon monoxide emissions, as well as the project's cumulative contribution to local air quality conditions would be less than significant. The analysis determined that impacts related to short-term increases of construction-generated emissions of criteria air pollutants, short-term increases in fugitive dust, exposure of sensitive receptors to toxic air contaminants, and exposure of sensitive receptors to odors would be significant; however, the impacts would be reduced to less than significant levels with the implementation of mitigation measures identified in the chapter. However, the air quality analysis determined that the impact related to long-term increases of criteria air pollutants and the project's cumulative contribution to regional air quality conditions would be significant and unavoidable, even with the implementation of feasible mitigation measures.

In addition, a discussion of greenhouse gases (GHG) is included in the Air Quality chapter. During construction of the project, GHGs would be emitted from the operation of construction equipment and from worker and building supply vendor vehicles. The largest source of GHGs associated with the proposed project would be on- and off-site motor vehicle use. The proposed project has been designed to minimize emissions of GHGs and thereby reduce the project's contribution to global climate change. The project is an example of the type of new urban development in the City that takes the lead in helping achieve the goals of State and local policies and regulations to reduce the State's contribution to global climate change. The analysis determined that impacts related to GHG emissions would be less than significant.

Hydrology, Water Quality, and Drainage

The Hydrology, Water Quality, and Drainage chapter describes existing drainage and water resources for the project site, and evaluates potential impacts of the project with respect to flooding, surface water resources, and groundwater resources. The method by which the potential impacts are analyzed is discussed, followed by the identification of potential impacts and the recommended mitigation measures designed to reduce significant impacts to levels that are less than significant.

The Hydrology, Water Quality, and Drainage analysis concludes that the project impacts to existing drainage facilities, construction-related impacts to surface water quality, operational water quality degradation associated with urban runoff from the project site, and long-term risks to property owners or tenants from flooding hazards would be less than significant. The analysis determined that the exposure of people and structures to flood hazards on the project site would be significant; however, the impacts would be reduced to less than significant levels with the implementation of mitigation measures identified in the chapter.

Hazards

The Hazards chapter of the EIR describes existing and potentially occurring hazards and hazardous materials within the project area. The chapter discusses potential impacts posed by these hazards to the environment, as well as to workers, visitors, and residents within and adjacent to the project area. More specifically, the chapter describes potential effects on human health that could result from the proposed operation of the hospital proposed for Quadrant D of the Natomas Crossing project site. The evaluation includes the potential exposure to hazardous materials used, generated, stored, or transported within or immediately adjacent to the project site, as well as hazards associated with the proposed helicopter helistop.

The Hazards chapter concludes that impacts related to routine transport, use, and disposal of hazardous materials, hazardous material storage, proposed on-site helistop, and the cumulative long-term hazards-related impacts from the proposed project would have a less than significant impact.

Aesthetics

The Aesthetics chapter describes existing visual and aesthetic resources for the project site and the region, and evaluates potential impacts of the project with respect to urbanization of the area. The proposed site plan, conceptual drawings, and Natomas Crossing Design Guidelines were used to evaluate the potential effects of project development of the visual character of the project site and surrounding area.

The Aesthetics analysis concludes that impacts to existing alteration or degradation of the existing visual character and quality of the project site and surroundings, light and glare, long-term impacts to visual character of the region from proposed project in combination with existing and future developments would have a less than significant impact.

Public Services

The Public Services chapter describes the existing and proposed public service systems and facilities within the project area. The chapter discusses potential impacts to public services including law enforcement and fire protection. The analysis of the project's potential to adversely impact existing City fire and police services is based on information provided in the Sacramento 2030 General Plan and MEIR.

The Public Services chapter concludes that impacts to increased demand of law enforcement and fire protection services and long-term impacts to public services and facilities from the proposed project in combination with existing and future developments in the Sacramento area would have a less than significant impact.

2.4 SUMMARY OF PROJECT ALTERNATIVES

The following summary describes the alternatives to the proposed project that are evaluated for environmental impacts in this Draft EIR. For a complete discussion of project alternatives, please refer to Chapter 6, Project Alternatives.

Alternatives Considered But Dismissed

The following alternative was considered but dismissed from further consideration in this EIR analysis.

Off-Site Alternative

The Off-Site Alternative would involve the construction of the proposed project on an alternative location. The Off-Site Alternative would locate the proposed project on other lands located within the Natomas Crossing Planned Unit Development (PUD) that are owned by the project applicant. The Off-Site Alternative would instead include the development of Quadrant E and Quadrant F located west of Interstate 5 (I-5), east of Duckhorn Drive, and south of Arena Boulevard. Development of the land located in Quadrant E and Quadrant F would include the development of fewer acres than the proposed project. As the Off-Site Alternative location(s) consist of fewer acres, the alternative could not accommodate the uses associated with the proposed project. Further, two vehicle lanes of travel on Duckhorn Drive currently front Quadrant E and Quadrant F, which would provide primary access to the Off-Site Alternative; this is compared to the four vehicle lanes of travel on East Commerce Way that currently front the proposed project.

In addition, it should be noted that, by definition, the CEQA Guidelines Section 15126.6(b) and (c) state that an alternative should avoid or substantially lessen one or more of the environmental effects of the project. Alternative locations within North Natomas, including Quadrant E and Quadrant F, generally contain characteristics similar to the proposed project site. For example, Quadrant E and Quadrant F would be accessed by the same I-5 ramps as the proposed project site and significant impacts related to transportation and circulation would be expected to be the same under the Off-Site Alternative, as compared to the proposed project. Furthermore, like portions of Quadrant C for the proposed project, residential uses are located directly adjacent to Quadrant E and Quadrant F and the Off-Site Alternative's impacts related to air quality and noise would be similar to, if not greater than, the proposed project's impacts on surrounding sensitive receptors. Therefore, development of the project on an alternative location in North Natomas would be expected to result in the same significant impacts as the proposed project. As a result, an environmentally feasible off-site location that would meet the requirements of CEQA, as well as meet the basic objectives of the project, does not exist.

Alternatives Considered

The following feasible alternatives to the proposed project were evaluated with respect to the proposed project.

- No Project – No Build Alternative;
- No Project – Existing Zoning Alternative; and
- Reduced Intensity Alternative.

No Project – No Build Alternative

The No Project – No Build Alternative is defined in this section as the continuation of the existing condition of the project site, which is currently vacant and mass-graded. The No Project – No Build Alternative would allow the project site to continue in the site's existing state. The No Project – No Build Alternative would not meet any of the project objectives.

No Project – Existing Zoning Alternative

Section 15126.6(e)(1)(B) of the CEQA Guidelines states, "[…] where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment."

The existing zoning for the project site would allow the development of up to 1,526,390 to 3,968,715 s.f. of structures with approximately 1,016,900 to 2,977,919 s.f. of office; 67,090 to 280,956 s.f. of retail; 290,400 to 457,600 s.f. of hotels, and the balance of square footage related to potential daycare and residential uses. In comparison, at full buildout, the proposed project would include up to 180 residential units and 2,638,494 s.f. of buildings, which would include retail, hotel, office, hospital, and restaurant uses. The No Project – Existing Zoning Alternative would develop the same amount of acreage as the proposed project, but would provide more employment opportunities and less commercial/retail and hospital development. For example, this Alternative could include commercial/retail uses ranging from a potential low of 44,510 s.f. to a high of 217,456 s.f., and employment uses ranging from a low of 777,600 s.f. to a high of 2,248,559 s.f. Therefore, with the decrease in commercial/retail uses that would result from this Alternative, development of the No Project – Existing Zoning Alternative, while still meeting Project Objectives 3 and 5, would not fully satisfy Project Objectives 1, 2, and 5.

Reduced Intensity Alternative

The Reduced Intensity Alternative would include a 50 percent reduction in square footage associated with the proposed project. The Reduced Intensity Alternative would retain the same mixture of retail, support retail, and restaurant uses as the proposed project, and would utilize the same access points. Under the Reduced Intensity Alternative, Quadrant C would be reduced from 404,580 s.f. of retail uses and 200,000 s.f. of office uses to approximately 202,290 s.f. of retail uses and 100,000 s.f. of office uses. The southern portion of Quadrant B, development of which is not proposed at this time, would be reduced from a range of 309,276 to 463,914 s.f. of retail uses to a range of 154,638 to 231,957 s.f. of retail uses. The northern portion of Quadrant B, would be reduced from 180 residential units, 130,000 s.f. of hotel uses, and 240,000 s.f. of office uses to 90 residential units, 65,000 s.f. of hotel uses, and 120,000 s.f. of office uses. The development of Quadrant D would be reduced from 600,000 to 300,000 s.f. of medical office uses. However, the development of hospital uses on Quadrant D would not be reduced in this alternative. Development of the Reduced Intensity Alternative would result in less intense development and fewer impacts than the Existing Zoning Alternative.

Environmentally Superior Alternative

In addition to the comparison and discussion of the proposed project's impacts and the alternatives' impacts, CEQA requires that an "environmentally superior" alternative be selected and the reasons for such selection disclosed. The environmentally superior alternative must reduce the overall impact of the proposed project on the project roadways.

The Reduced Intensity Alternative would be the environmentally superior alternative to the proposed project because the Reduced Intensity Alternative would result in the addition of fewer vehicle trips to the project area and air quality and noise impacts would be reduced due to the reduction of vehicle trips. It should be noted that the significant and unavoidable impacts related to transportation and circulation and air quality would be expected to remain under the Reduced Intensity Alternative.

2.5 ISSUES OF KNOWN CONTROVERSY

Based on the project site's location within the NNCP area, the following areas of known controversy have been identified for the proposed project:

- **Traffic** (addressed in the Transportation and Circulation chapter of the Draft EIR);
- **Noise** (addressed in the Noise chapter of the Draft EIR);
- **Air Quality** (addressed in the Air Quality chapter of the Draft EIR); and
- **Flooding and Water Quality** (addressed in the Hydrology, Water Quality, and Drainage chapter of the Draft EIR).

2.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

The following table (Table 2-1) summarizes the impacts identified in this Draft EIR. The level of significance of each impact, any mitigation measures required for each impact and the resultant level of significance after implementation of mitigation measures are given within the table.

Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.2 Transportation and Circulation			
Baseline With Project			
4.2-1 Intersections.	S	*4.2-1* *East Commerce Way and Arena Boulevard – The project applicant shall add southbound, westbound, and eastbound exclusive right turn signal phases to this intersection. The project applicant shall provide funding to the City Traffic Operations Center (TOC) to monitor and retime the traffic signal. This mitigation shall be implemented on or before 80 percent of development as measured by a.m. peak hour trip generation, 60 percent of development as measured by p.m. peak hour trip generation, and 65 percent of development as measured by Saturday peak hour trip generation. This mitigation measure improves intersection operating conditions to LOS "C" (21.9 seconds average delay) during the a.m. peak hour, LOS "C" (34.2 seconds average delay) during the p.m. peak hour, and LOS "C" (29.2 seconds average delay) during the Saturday peak hour. This mitigation measure may require prohibiting u-turns on the northbound, southbound, and eastbound intersection approaches. This mitigation measure would reduce the impact of the project to a less-than-significant level.*	LS
4.2-2 Roadway Segments.	LS	*None required.*	N/A
4.2-3 Freeway Mainline.	LS	*None required.*	N/A

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.2-4 Freeway Ramp Junctions.	LS	*None required.*	N/A
4.2-5 Freeway Ramp Queuing.	LS	*None required.*	N/A
4.2-6 Pedestrian and Bicycle Circulation Impacts.	PS	*4.2-6 Prior to the issuance of building permits, the project applicant shall identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development to the satisfaction of the City of Sacramento Traffic Engineering Division. These facilities shall be incorporated into the project and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, and pedestrian signal heads. Sidewalks would be required as part of the frontage improvements along all new roadway construction in the project vicinity in conformance with City design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards. This mitigation measure would reduce the impact of the project to a **less-than-significant** level.*	LS
4.2-7 Transit System Impacts.	LS	*None required.*	N/A
4.2-8 Parking Impacts.	PS	*4.2-8 The project shall provide parking in accordance with City zoning requirements. Table 4.2-20 summarizes the parking requirements based upon the City zoning code. This mitigation measure would reduce the impact of the project to a less-*	LS

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		than-significant level.	
Baseline With Existing Zoning Alternative			
4.2-9 Intersections.	LS	*None required.*	N/A
4.2-10 Roadway Segments.	LS	*None required.*	N/A
4.2-11 Freeway Mainline.	LS	*None required.*	N/A
4.2-12 Freeway Ramp Junctions.	LS	*None required.*	N/A
4.2-13 Freeway Ramp Queuing.	LS	*None required.*	N/A
4.2-14 Pedestrian and Bicycle Circulation Impacts.	PS	*4.2-14 Implement Mitigation Measure 4.2-6.*	LS
4.2-15 Transit System Impacts.	LS	*None required.*	N/A
4.2-16 Parking Impacts.	PS	*4.2-16 Implement Mitigation Measure 4.2-8.*	LS
Construction Impacts (Baseline with Project, Baseline with Existing Zoning Alternative)			
4.2-17 Construction.	S	*4.2-17 Prior to beginning of construction, a construction traffic and parking management plan shall be prepared by the applicant to the satisfaction of the City traffic engineer and subject to review by all affected agencies. The plan shall ensure that acceptable operating conditions on local roadways and freeway facilities are maintained. At a minimum, the plan shall include:* • *The number of truck trips, time, and day of street closures.* • *Time of day of arrival and departure of trucks.* • *Limitations on the size and type of trucks,*	LS

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		provision of a staging area with a limitation on the number of trucks that can be waiting. • *Provision of a truck circulation pattern.* • *Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas).* • *Maintain safe and efficient access routes for emergency vehicles.* • *Manual traffic control when necessary.* • *Proper advance warning and posted signage concerning street closures.* • *Provisions for pedestrian safety.* *A copy of the construction traffic management plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways. Implementation of the mitigation measure would reduce this impact to less-than-significant.*	

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
Cumulative with Project				
4.2-18 Intersections.	S	*4.2-18(a)*	*Arena Boulevard and I-5 Northbound Ramps – The project applicant shall pay a fair share contribution toward future restriping of the northbound ramp approach to the intersection to provide a single left turn lane and a triple right turn lane, subject to review and approval by Caltrans. This mitigation measure improves intersection operating conditions to LOS "B" (18.1 seconds average delay) during the Saturday peak hour and would reduce the impact of the project to a less-than-significant* level.	LS
		4.2-18(b)	*East Commerce Way and Del Paso Road – The project applicant shall pay a fair share contribution toward adding a northbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "E" (73.0 seconds average delay) during the Saturday peak hour and would reduce the impact of the project to a less-than-significant level.*	
		4.2-18(c)	*East Commerce Way and Arco Arena Main Entrance / Road B3 – The project applicant shall pay a fair share contribution toward adding a*	

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		westbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "D" (48.2 seconds average delay) during the p.m. peak hour and LOS "C" (25.9 seconds average delay) during the Saturday peak hour. This would reduce the impact of the project to a less-than-significant level.	
		4.2-18(d) *East Commerce Way and Arena Boulevard – The project applicant shall pay a fair share contribution toward adding exclusive right turn signal phases to all four approaches at this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "F" (92.0 seconds average delay) during the a.m. peak hour and LOS "D" (38.7 seconds average delay) during the Saturday peak hour. This would reduce the impact of the project to a less-than-significant level.*	
		4.2-18(e) *East Commerce Way and Natomas Crossing Drive – The project applicant shall pay a fair share contribution toward adding a northbound exclusive right turn signal phase to this intersection, and*	

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "E" (75.5 seconds average delay) during the p.m. peak hour and would reduce the impact of the project to a less-than-significant level.	
		4.2-18(f) East Commerce Way and Road D2 – The project applicant shall provide an eastbound double left turn lane, pay a fair share contribution toward adding an exclusive right turn signal phase to the southbound intersection approach, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "C" (28.5 seconds average delay) during the a.m. peak hour and LOS "C" (30.5 seconds average delay) during the p.m. peak hour. This would reduce the impact of the project to a less-than-significant level.	
		4.2-18(g) East Commerce Way and San Juan Road – The project applicant shall pay a fair share contribution toward adding a westbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This	

Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
			mitigation measure improves intersection operating conditions to LOS "D" (36.8 seconds average delay) during the a.m. peak hour and LOS "B" (14.5 seconds average delay) during the p.m. peak hour. This would reduce the impact of the project to a less-than-significant level.	
		4.2-18(h)	*Truxel Road and Arena Boulevard – The project applicant shall pay a fair share contribution toward adding an eastbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "E" (72.0 seconds average delay) during the a.m. peak hour and LOS "C" (32.7 seconds average delay) during the Saturday peak hour. This would reduce the impact of the project to a less-than-significant level.*	
4.2-19 Roadway Segments.	LS	*None required.*		N/A
4.2-20 Freeway Mainline.	S	*4.2-20*	*The project applicant shall pay development fees for infrastructure projects as outlined in the North Natomas Financing Plan ("NNFP") as its required share of all freeway-related improvements. In addition to payment for freeway related improvements, ramps and interchanges, the North Natomas Finance Plan includes a share of the Downtown Natomas Airport Light Rail Extension*	SU

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		(DNA) project costs. The DNA project provides future congestion relief for both the I-80 and I-5 freeways and is included in the Metropolitan Transportation Plan. *In conjunction with the North Natomas Community Plan ("NNCP") and the NNFP, in 1994 the City of Sacramento prepared the North Natomas Freeway-Related Improvements Study (the "Kittleson Report"), which analyzed freeway-related impacts associated with development of the NNCP. The Kittleson Report recommended various improvements to the freeway mainlines, auxiliary lanes and interchanges and estimated that 43 percent of the cost for the proposed improvements are attributable to North Natomas. The Kittleson Report was discussed in further detail in the NNFP, which, in order to implement the Kittleson Report, provides that a portion of the PFF will be earmarked for the freeway-related improvements identified in the Kittleson Report.* *Payment of the PFF fees cannot assure that impacts at the freeway ramp junctions will be reduced to a less than significant level. To partially offset these impacts, the applicant will pay its required share of freeway-related improvements by paying the PFF. Nevertheless, given the uncertainty regarding the*	

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		timing and completion of the proposed freeway improvements and because the California Environmental Quality Act (Pub. Resources Code, §21000 et seq.) defines "feasible" for these purposes as capable of being accomplished in a successful manner with a reasonable period of time, taking into account economic, environmental, social, and technological factors (Pub. Resources Code, Section 21061.1), the impacts of the project on the freeway mainline would remain significant and unavoidable.	
4.2-21 Freeway Ramp Junctions.	S	*4.2-21* *Implement Mitigation Measure 4.2-20. Payment of the PFF fees cannot assure that impacts at the freeway ramp junctions will be reduced to a less than significant level. To partially offset these impacts, the applicant will pay its required share of freeway-related improvements by paying the PFF. Nevertheless, given the uncertainty regarding the timing and completion of the proposed freeway improvements and because the California Environmental Quality Act (Pub. Resources Code, §21000 et seq.) defines "feasible" for these purposes as capable of being accomplished in a successful manner with a reasonable period of time, taking into account economic, environmental, social, and technological factors (Pub. Resources Code, Section 21061.1).The impacts of the project on the freeway ramp junctions would remain*	SU

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
			significant and unavoidable.	
4.2-22 Freeway Ramp Queuing.	S	*4.2-22*	*Implement Mitigation Measure 18(a). This mitigation measure would reduce the queue to 2,175 feet and would increase the available storage space for the right turn movement to 3,135 feet. This would reduce the impact of the project to a less-than-significant level.*	LS
4.3 Noise				
4.3-1 Construction noise impacts.	LS	*None required.*		N/A
4.3-2 Loading dock and truck circulation noise impacts.	PS	*4.3-2*	*In conjunction with the submittal of a site plan for Quadrant B, the applicant shall retain a qualified acoustical consultant to prepare a site-specific noise analysis for Quadrant B. If the report determines that on-site operations would exceed the City of Sacramento significance thresholds, which are 45 dB Ldn for interior noise levels at residential uses and 60 dB Ldn for exterior noise levels at outdoor common areas, the report shall include recommendations to reduce noise below the City's applicable noise level standards, for the review and approval of the Development Services Department. If the report determines that on-site operations would not exceed the City of Sacramento significance thresholds, further mitigation is not required.*	LS
4.3-3 Rooftop HVAC noise impacts.	PS	*4.3-3(a)*	*Implement Mitigation Measure 4.3-2 for Quadrant B.*	LS

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		4.3-3(b) *Prior to the issuance of a building permit for the Central Utility Plant (CUP) building located adjacent to the proposed parking structure on Quad D, the overall noise levels associated with the CUP building's typical operations shall not exceed 45 dB Ldn for interior noise levels and 60 dB Ldn for exterior noise levels at the nearest residence, as demonstrated by an acoustical consultant for the review and approval of the Development Services Department. Mitigation measures shall include the use of silencers or acoustical louvers on openings for air intake or exhaust, and locating openings for air intake and exhaust on the opposite sides of the building from residences to the east. In addition, emergency generators shall be equipped with hospital grade mufflers to reduce the overall noise levels associated with their operations during periods of power failures or other emergencies. Emergency generators shall be exercised during the daytime hours for a period of no more than 30 minutes to reduce the potential for annoyance.*	
4.3-4 Construction-induced vibration impacts.	LS	*None required.*	N/A
4.3-5 Project-related increase in existing traffic noise levels at off-site residential uses.	LS	*None required.*	N/A

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.3-6 Traffic noise levels at proposed on-site residential uses.	PS	*4.3-6* *In conjunction with the submittal of a site plan for Quadrant B, the applicant shall retain a qualified acoustical consultant to prepare a site-specific noise analysis for Quadrant B. If the report determines that noise levels for the residential portion of the site would exceed the City of Sacramento significance thresholds, which are 45 dB Ldn for interior noise levels at residential uses and 60 dB Ldn for exterior noise levels at outdoor common areas, the report shall include recommendations to reduce noise below the City's applicable noise level standards, for the review and approval of the Development Services Department. If the report determines that on-site operations would not exceed the City of Sacramento significance thresholds, further mitigation is not required.*	LS
4.3-7 Traffic noise levels at the proposed hospital.	PS	*4.3-7* *Prior to issuance of a building permit for Quadrant D, the site plan(s) shall indicate that patient rooms and offices on the west-facing facades of the hospital shall include windows with an STC rating of 40, windows on the north- and south-facing facades shall have an STC rating of 38, and windows on the east-facing facade shall have an STC rating of 35. The site plan(s) shall be submitted for the review and approval of the Development Services Department.*	LS
4.3-8 Noise levels associated with the helistop.	LS	*None required.*	N/A

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.3-9 Cumulative increase in project vicinity noise levels.	LS	*None required.*	N/A
4.4 Air Quality			
4.4-1 Short-term increases of construction-generated emissions of criteria air pollutants.	PS	*4.4-1(a)* *Prior to the issuance of any grading permit, the project applicant/developer shall provide a plan for approval by the City, in consultation with SMAQMD, demonstrating that the heavy-duty (>50 horsepower), off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NO_X reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at the time of construction. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, particulate matter traps, engine retrofit technology, after-treatment products, and/or such other options as become available.* *4.4-1(b)* *Prior to the issuance of any grading permit, the project applicant/developer shall submit to the City and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that will be used an aggregate of 40 or more hours during any portion of the project. The inventory shall be updated and*	LS

Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction operations occur. At least 48 hours before subject heavy-duty off-road equipment is used, the project representative shall provide the SMAQMD with the anticipated construction timeline including start date, and the name and phone number of the project manager and on-site foreman.	
		4.4-1(c) *During construction, the project applicant/developer shall ensure that emissions from off-road, diesel-powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour, as determined by an on-site qualified inspector trained in visual emissions assessment. Any equipment found to exceed 40 percent opacity (or Ringlemann 2.0) shall be repaired immediately, and the SMAQMD shall be notified of non-compliant equipment within 48 hours of identification. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of visual survey results shall be submitted throughout the duration of the construction project, except that the monthly summary shall not be required for any 30-day*	

Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		period in which no construction operations occur. The monthly summary shall include the quantity and type of vehicles surveyed, as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance.	
		4.4-1(d) The project applicant shall pay a mitigation fee to the SMAQMD to offset any remaining construction-generated daily NOX emissions in excess of the SMAQMD's significance threshold of 85 lbs/day. SMAQMD mitigation fees shall be calculated and paid in coordination with SMAQMD prior to issuance of building or grading permits. Based on the currently proposed construction schedule, the simultaneous development of Quadrant B, Quadrant C-Phase IV, and Quadrant D would generate 14.64 lbs/day of NOX in excess of SMAQMD's significance threshold. Based on this estimate and the SMAQMD's current mitigation fee ($16,000/ton), the proposed project proponent shall pay a fee of $123 to mitigate excess NOX emissions. In the event that the project phasing schedule would differ from the schedule used for this analysis (See Table 4.4-5), the project proponent shall notify SMAQMD and recalculate construction-related emissions and mitigation fees, if applicable, in	

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
			accordance with the most current SMAQMD-recommended methodologies. Verification of payment of the mitigation fee shall be provided to the City prior to issuance of any grading permits.	
4.4-2 Short-term increases in fugitive dust.	PS	*4.4-2*	*Prior to the approval of any grading permit, the project proponent shall submit a dust-control plan to the City of Sacramento Development Services Department. The dust-control plan shall stipulate grading schedules associated with the project phase (i.e., Quadrants B, C1-4, and D), as well as the dust-control measures to be implemented. Grading of proposed project phases shall be scheduled so that the total area of disturbance would not exceed 15 acres on any given day. The dust control plan shall be incorporated into all construction contracts issued as part of the proposed project development. The dust-control plan shall, at a minimum, incorporate the following measures:* • *Apply water, chemical stabilizer/suppressant, or vegetative cover to disturbed areas, including storage piles that are not being actively used for construction purposes, as well as any portions of the construction site that remain inactive for longer than 3 months;*	LS

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• *Water exposed surfaces sufficient to control fugitive dust emissions during demolition, clearing, grading, earth-moving, or excavation operations. Actively disturbed areas should be kept moist at all times;* • *Cover all vehicles hauling dirt, sand, soil or other loose material or maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114;* • *Limit or expeditiously remove the accumulation of project-generated mud or dirt from adjacent public streets at least once every 24 hours when construction operations are occurring; and* • *Limit onsite vehicle speeds on unpaved surfaces to 15 mph, or less.*	
4.4-3 Long-term increases of criteria air pollutants.	S	*4.4-3* *Prior to project approval, the project applicant shall obtain written endorsement from the SMAQMD for an Air Quality Mitigation Plan (AQMP) for the proposed project. The AQMP shall be reviewed and endorsed by SMAQMD staff prior to project implementation. In accordance with SMAQMD recommendations, the AQMP shall achieve a minimum overall reduction of 15 percent in the project's*	SU

Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		anticipated operational emissions of NO_X and ROG. Measures anticipated to be applicable to the proposed project and currently recommended by the SMAQMD include, but are not limited to, the following: *a. Provide on-site short-term and long-term bicycle parking.* *b. Provide "end-of-trip" bicycle facilities including showers, lockers, and changing space.* *c. Provide bicycle network that includes linkage to existing Class I or Class II bike lanes.* *d. Provide pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site.* *e. Incorporate on-site transit facility improvements (e.g., pedestrian shelters, route information, benches, lighting) to coincide with existing or planned transit service.* *f. Provide pedestrian/bicycle safety and*	

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		traffic calming measures in excess of jurisdiction requirements that reduce motor vehicle speeds and encourage pedestrian and bicycle trips. *g. Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.* *h. Provide a mix of onsite land uses, proximate to existing or planned transit facilities.* *i. Install Energy-Star rated roofing materials.* *j. Provide shade (within fifteen years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30 percent of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; or, place a minimum of 50 percent of parking spaces underground or covered by structured parking; or, use an open-grid pavement system (less than 50 percent impervious) for a minimum of 50 percent of the*	

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		parking lot area. *k. Incorporate landscaping and/or sun screens to reduce energy use. Deciduous trees should be utilized for building shading to increase solar heating during the winter months.* *The project applicant shall implement the emission reduction strategies contained in the endorsed Air Quality Mitigation Plan. Documentation confirming implementation of the Air Quality Mitigation Plan shall be provided to the SMAQMD and the City prior to the issuance of occupancy permits.*	
4.4-4 Long-term increases of carbon monoxide.	LS	*None required.*	N/A
4.4-5 Exposure of sensitive receptors to toxic air contaminants.	PS	*4.4-5(a) Sensitive land (i.e., the proposed medical center and residential dwelling units) uses shall not be located in an area that exceeds the SMAQMD screening criteria for cancer risks associated with toxic air contaminants. Based on SMAQMD's current screening methodology, if proposed sensitive receptors are located within 200 feet of Interstate 5, a more detailed assessment of potential health risks shall be required. If sensitive land uses are proposed*	LS

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		within 200 feet of the near-travel-lane of Interstate 5, the project applicant shall coordinate with the SMAQMD and the City of Sacramento Development Services Department to conduct a health-risk analysis. The health-risk analysis shall be prepared in accordance with SMAQMD's Recommended Protocol For Evaluating The Location Of Sensitive Land Uses Adjacent To Major Roadways prior to the approval of a site plan. *4.4-5(b) The project applicant shall plant vegetation (e.g., trees) between proposed on-site sensitive land uses and the I-5 corridor, the type and location to be determined in consultation with SMAQMD.*	
4.4-6 Project-level impacts related to greenhouse gas emissions.	LS	*None required.*	N/A
4.4-7 Cumulative contribution to local air quality conditions (Carbon Monoxide).	LS	*None required.*	N/A
4.4-8 Cumulative contribution to local air quality conditions (Toxic Air Contaminants).	LS	*None required.*	N/A
4.4-9 Cumulative contribution to regional air quality conditions (Construction and Operation).	S	*4.4-9(a) Prior to the issuance of each grading permit, the City of Sacramento shall coordinate with the SMAQMD and SACOG to ensure that increases or decreases in VMT attributable to the proposed*	SU

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		project are accounted for in the VMT calculations used for the development of regional emissions inventories.	
		4.4-9(b) *Implement Mitigation Measures 4.4-1(a-d), 4.4-2, and 4.4-3.*	
4.4-10 Cumulative impacts related to greenhouse gas emissions.	LS	*None required.*	N/A
4.5 Hydrology, Water Quality, and Drainage			
4.5-1 Exposure of people and structures to flood hazards on the project site.	PS	*4.5-1(a)* *Construction and operation of the Natomas Crossing project shall not commence prior to recertification of the Natomas levees by the SAFCA and FEMA, and the subsequent removal of Natomas Basin from the 100-year floodplain and associated flood zone redesignation; or until FEMA redesignates the Natomas Basin with a flood zone designation that would permit development of the proposed project.*	LS
		4.5-1(b) *The project applicant shall participate in a funding mechanism such as an assessment district established by SAFCA and/or the City for the purpose of implementing measures that would provide no less than 100-year flood protection including the North Natomas Area, or for that portion of the Natomas Basin requiring re-certification for 100-year flood protection including*	

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		the Project site provided that such funding mechanism is (i) based on a nexus study; (ii) is regional in nature; (iii) is proportionate; (iv) complies with all applicable laws and ordinances; and (3) the requirements of the applicable FEMA zone and corresponding requirements under the City of Sacramento's Floodplain Ordinance shall be satisfied prior to the issuance of building permits for the project. Any future homeowners within the floodzone shall maintain federal flood insurance, as required under the applicable FEMA and City of Sacramento Floodplain Management Ordinance regulations. *The above measures shall terminate upon the first recertification of the levees by the U.S. Army Corps of Engineers.*	
4.5-2 Project impacts to existing drainage facilities.	LS	*None required.*	N/A
4.5-3 Construction-related impacts to surface water quality.	LS	*None required.*	N/A
4.5-4 Operational water quality degradation associated with urban runoff from the project site.	LS	*None required.*	N/A
4.5-5 Long-term increases in peak stormwater runoff flows from	LS	*None required.*	N/A

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
the proposed project in combination with existing and future developments in the Sacramento area.			
4.5-6 Long-term risk to project tenants from flooding hazards.	LS	*None required.*	N/A
4.6 Hazards			
4.6-1 Impacts related to routine transport, use and disposal of hazardous materials.	LS	*None required.*	N/A
4.6-2 Impacts related to hazardous material storage.	LS	*None required.*	N/A
4.6-3 Impacts related to potential hazards associated with the proposed on-site helistop.	LS	*None required.*	N/A
4.6-4 Long-term hazards-related impacts from the proposed project in combination with existing and future developments in the Sacramento area.	LS	*None required.*	N/A
Chapter 4.7 Aesthetics			
4.7-1 Impacts related to alteration or degradation of the existing visual character and quality of the project site and its	LS	*None required.*	N/A

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

	Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
	surroundings, as well as compatibility with design guidelines.			
4.7-2	**Impacts related to light and glare.**	LS	*None required.*	N/A
4.7-3	**Long-term impacts to the visual character of the region from the proposed project in combination with existing and future developments in the Sacramento area.**	LS	*None required.*	N/A
	Chapter 4.8 Public Services			
	Project-Specific Impacts and Mitigation Measures			
4.8-1	**Increase in demand for law enforcement services.**	LS	*None required.*	N/A
4.8-2	**Increase in demand for fire protection services.**	LS	*None required.*	N/A
4.8-3	**Long-term impacts to public services and facilities from the proposed project in combination with existing and future developments in the Sacramento area.**	LS	*None required.*	N/A
	Initial Study Mitigation Measures (also presented in Chapter 4.0 of the EIR, Introduction to the Analysis)			
3	**Seismicity, Soils, and Geology**	PS	*MM-1. Prior to issuance of grading permits, final foundation investigations shall be performed for*	LS

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		each commercial lot, in order to evaluate specific soil conditions at each structure location and to analyze support conditions based on anticipated structural loads and configurations. The final foundation investigations shall provide information about specific site preparation, including chemical treatment types and procedures, and foundation, floor support and pavement section recommendations. The final foundation investigations shall be submitted for the review and approval of the City Engineer to ensure that the proposed project implements all recommendations in the investigations.	
7 Biological Resources	PS	*MM-2.* *Prior to and within 14 days of site disturbance, pre-construction surveys for special-status species shall be conducted by a qualified biologist retained by the project applicant and approved by the Development Services Department. Should any special-status species be identified, appropriate measures shall be implemented in compliance with the NBHCP (including implementation of Incidental Take Minimization Measures) for the review and approval of the Planning Director.*	LS
14 Cultural Resources	PS	*MM-3.* *In the event that any prehistoric subsurface archeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian and/or mortars are discovered during construction*	LS

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Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		related earth-moving activities, all work within 100 feet of the resource shall be halted, and the City shall consult with a qualified archeologist, representatives of the City and the qualified archeologist shall coordinate to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis and professional museum curation. In addition, a report shall be prepared by the qualified archeologist according to current professional standards. *MM-4.* *If a Native American site is discovered, the evaluation process shall include consultation with the appropriate Native American representatives.* *If a Native American archeologist, ethnographic, or spiritual resources are discovered, all identification and treatment shall be conducted by qualified archeologists, who are certified by the Society of Professional Archeologists (SOPA) and/or meet the federal standards as stated in the Code of Federal Regulations (36 CFR 61), and Native American representatives, who are approved by the local Native American community as scholars of the cultural traditions.* *In the event that no such Native American is*	

Table 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted. If historic archeological sites are involved, all identified treatment is to be carried out qualified historical archeologists, who shall meet either Register of Professional Archeologists (RPA), or 36 CFR 61 requirements.	
		MM-5. *If a human bone or bone of unknown origin is found during construction, all work shall stop within 100 feet of the find, and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission, who shall notify the person most likely believed to be a descendant. The most likely descendant shall work with the contractor to develop a program for re-internment 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 taken place.*	

3. PROJECT DESCRIPTION

3 PROJECT DESCRIPTION

3.0 INTRODUCTION

The Project Description chapter of the EIR describes the location, setting, surrounding land uses, and components of the proposed Natomas Crossing project, as well as the background, project objectives, and required entitlements.

3.1 PROJECT LOCATION

The project site is located between Interstate 5 and East Commerce Way, with 66.8 net acres north of Arena Boulevard (referred to as Quadrant B), and 83.6 net acres south of Arena Boulevard (referred to as Quadrant C (47.2 net acres) and Quadrant D (36.4 net acres)) for a total of 150.4 net acres in the North Natomas area of the City of Sacramento (See Figure 3-1, Project Location Map). The project site comprises the majority of the Natomas Crossing – Alleghany Area #3 PUD, which consists of Quadrants A-D (See Figure 3-2, Natomas Crossing PUD). The project encompasses 74.9 gross acres for Quadrant B, 52.9 gross acres for Quadrant C, and 39.8 gross acres for Quadrant D for a total of 167.6 gross acres. The project is identified by Sacramento County Assessor's Parcel Numbers (APNs) 225-0070-113, 225-0070-115, 225-0140-065 & 067, 225-0150-043, 053 & 054, 225-0180-059, 225-0310-026.

3.2 PROJECT SETTING AND SURROUNDING LAND USES

The project site is currently vacant and mass-graded. The project site does not contain trees, wetlands, or riparian areas. The frontage of the project site along East Commerce Way includes existing infrastructure improvements, such as water and sewer lines. Land uses surrounding Quadrant C include the Natomas Field residential subdivision, which is currently under construction to the east, and a proposed retail center (Natomas Landing) to the north of Natomas Field. East of Quadrant B, from north to south, are existing residential units, office uses, and vacant lots. Vacant land is located west (across Interstate 5) of Quadrants B, C, and D. The vacant land is designated for Mixed Use development in the Sacramento General Plan. A drainage channel, open space buffer, and Interstate 5 adjoin the western boundary of the entire project site. Quadrant D is located adjacent to land zoned residential and Employment Center (EC-30). Arco Arena is located northeast of the Quadrant C portion of the project site.

The current 2030 Sacramento General Plan (SGP) and North Natomas Community Plan (NNCP) land use designation for the project site is Planned Development (PD) (See Figure 3-3, Existing and Proposed General Plan Designations and Figure 3-4, General Plan Land Use & Urban Form Diagram). The current zoning is Limited Commercial (C-1), EC-40, and EC-50 (See Figure 3-5, Existing and Proposed Zoning Designations).

Figure 3-1
Project Location

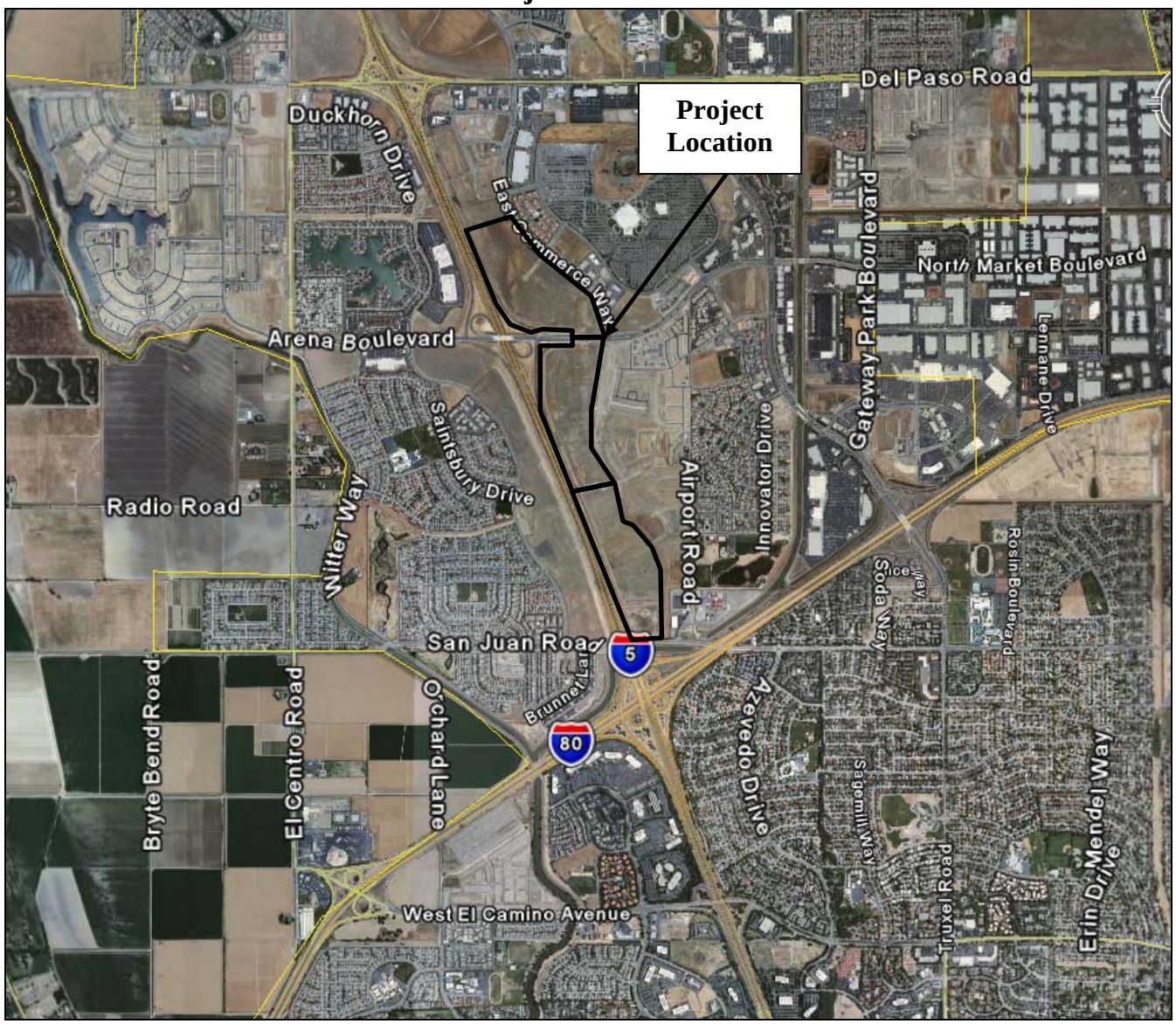


Figure 3-2
Natomas Crossing PUD

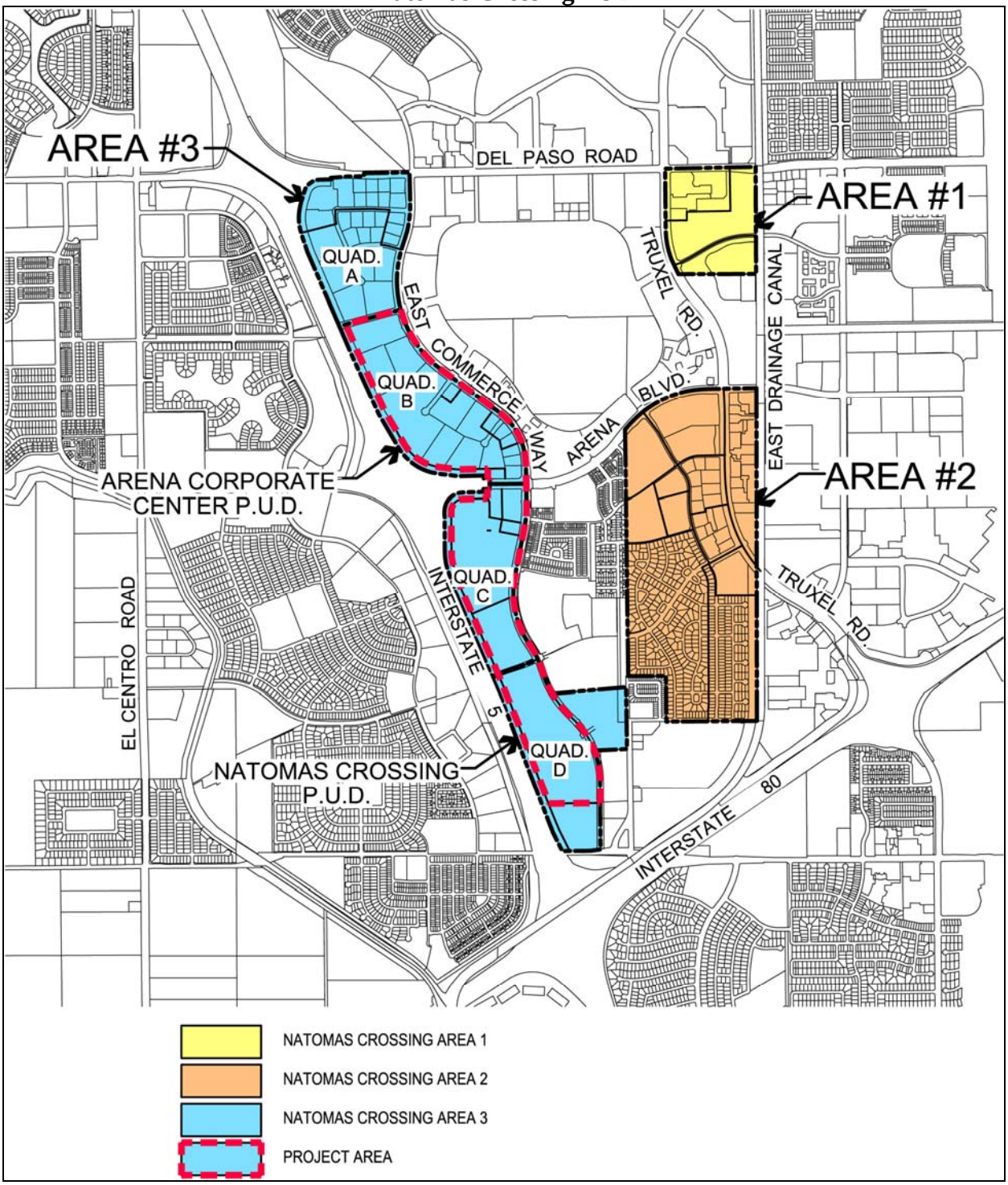
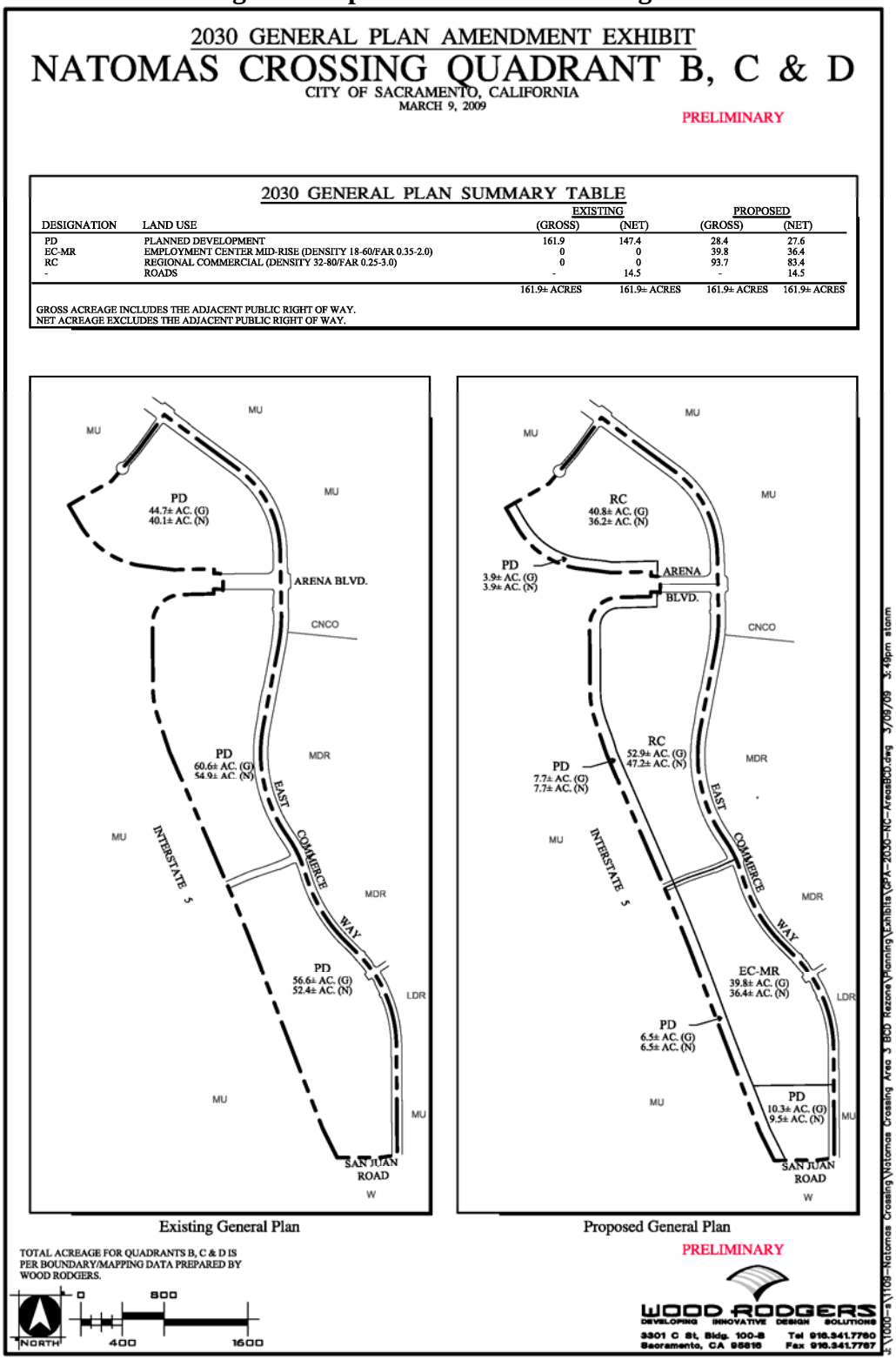


Figure 3-3
Existing and Proposed General Plan Designations



Note: While the northern portion of Quadrant B is in the project boundaries, the quadrant is not shown because amendments are not proposed.

Figure 3-4
General Plan Land Use and Urban Form Diagram

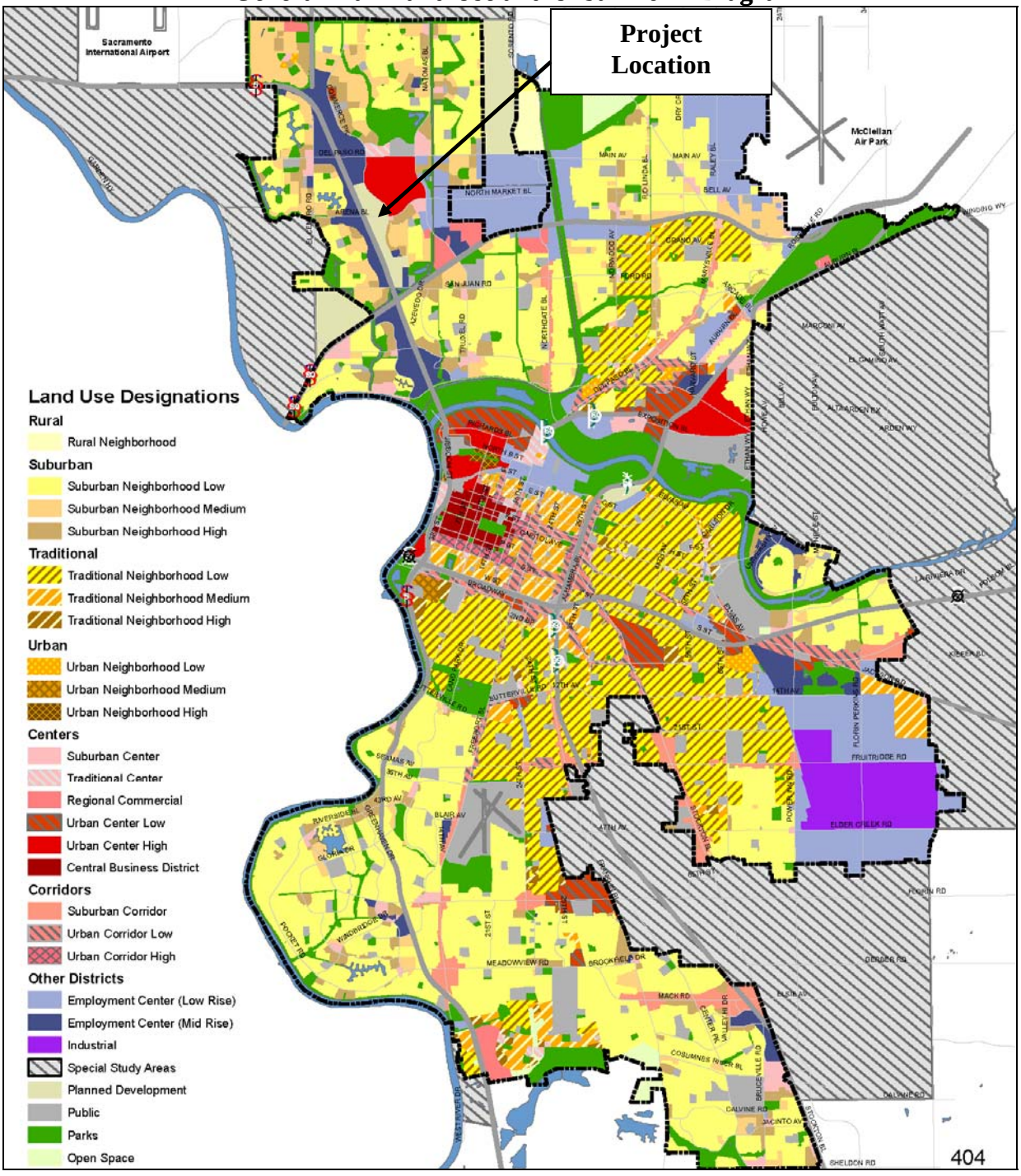
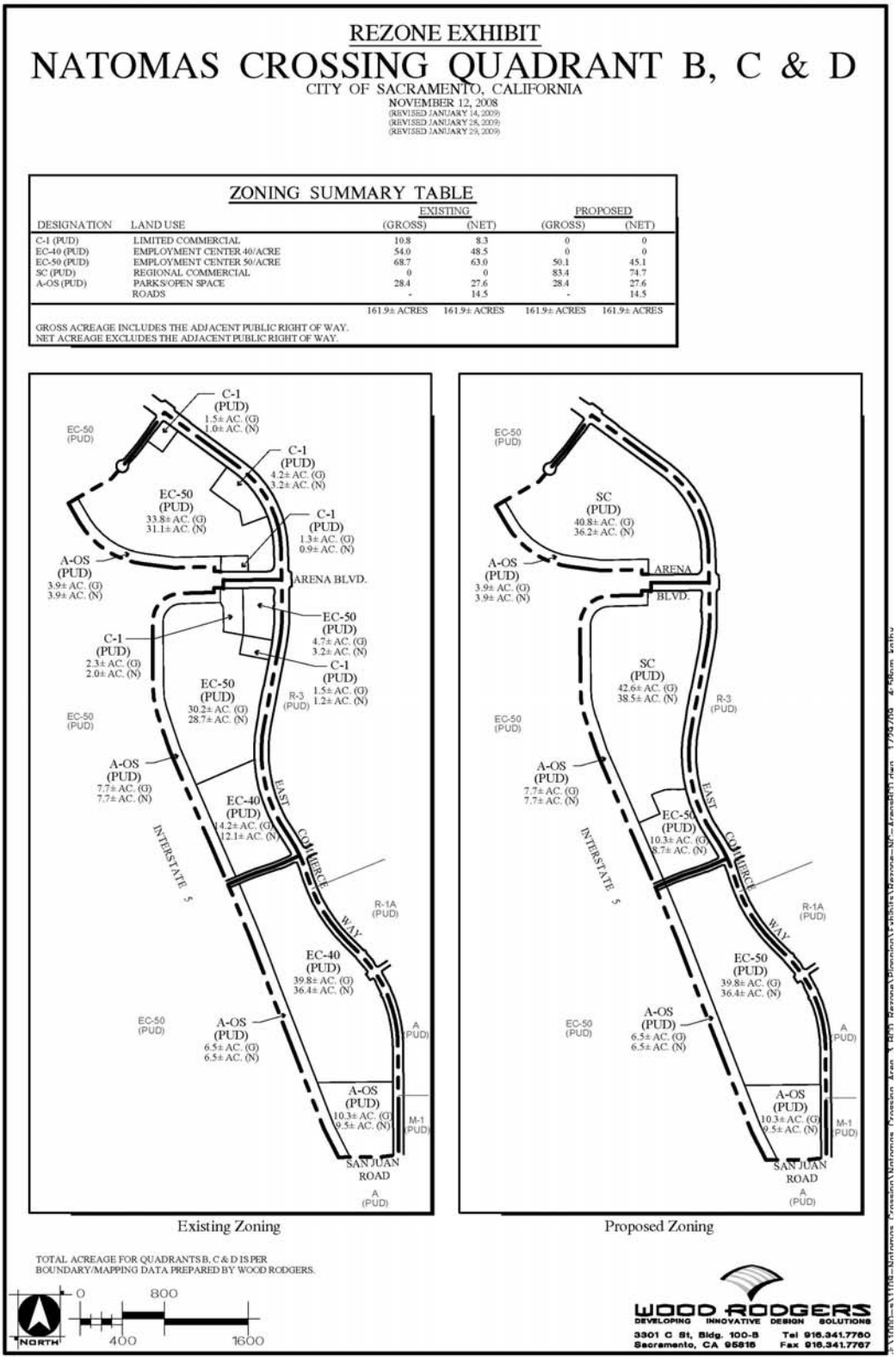


Figure 3-5
Existing and Proposed Zoning Designations



Project Background

The project site is part of the larger Natomas Crossing Planned Unit Development for which entitlements were approved by the City of Sacramento in 1997. The entire Natomas Crossing PUD consists of 555 total acres, is within the repealed 1994 North Natomas Community Plan. On May 8, 1997 the Planning Commission initially approved a Tentative Master Parcel Map for the development (P96-084). Soon after, on June 24, 1997, City Council approved a development agreement, rezone, schematic plan and development guidelines (P96-084).

The Natomas Crossing PUD consists of 3 separately defined development areas described as Areas 1 through 3. The subject area is situated in Area 3 of the PUD. The Area 3 component of the PUD is further segregated into 4 quadrants described as Quadrants A through Quadrant D. The subject area is more specifically defined as Quadrants B, C, and D.

Subsequent entitlements for the Area 3 component of the PUD included Community Plan Amendments, Rezone, PUD Guidelines and Schematic Plan Amendments to accommodate Employment Commercial uses at a greater intensity and to re-locate the Hotel Site within the plan area, a Lot Line adjustment, Tentative Subdivision Map, and two Special Permits in 2001. One of the special permits allowed the development of a 153,000-square-foot office building and the other special permit allowed the project to exceed the maximum amount of parking allowed for the development, however, the development allowed by the two special permits was not constructed.

The land uses planned for the Area 3 component of the PUD included offices, hotels, restaurants, retail, open space, detention basin, and residential. The schematic buildout total of approximately 1,526,390 to 3,968,715 square feet (s.f.) of structures was approved in June 2002, with approximately 1,016,900 to 2,977,919 s.f. proposed as office; 67,090 to 280,956 s.f. of retail; 290,400 to 457,600 s.f. of hotels and the balance of square footage related to potential daycare and residential uses. Existing land uses for each quadrant of the proposed project include (it should be noted that although specific assumptions are not listed below for residential uses, residential uses could be allowed in certain areas of Quadrant B upon subsequent schematic plan amendment approvals, given the provisions in the NNCP Employment Center land use designation):

<u>Quadrant B</u>

- 353,580 to 1,219,070 s.f. of office
- 19,215 to 99,856 s.f. of retail
- 47,850 to 75,400 s.f. of hotel

<u>Quadrant C</u>

- 198,800 to 500,639 s.f. of office
- 25,295 to 117,600 s.f. of retail
- 97,350 to 153,400 s.f. of hotel
- 7,000 to 16,800 s.f. of daycare

Quadrant D

- 253,600-584,700 s.f. of office
- 9.5 acres of drainage basin (designated Water)

Chapter 4.1, *Land Use*, addresses the compatibility of the uses proposed for the subject project evaluated in this Draft EIR with existing and planned uses for the project site (see the *Discussion of Project's Compatibility with Surrounding Land Uses, and Consistency with Adopted Plans and Policies* in Section 4.1.3 of the Land Use chapter).

3.3 PROJECT OBJECTIVES

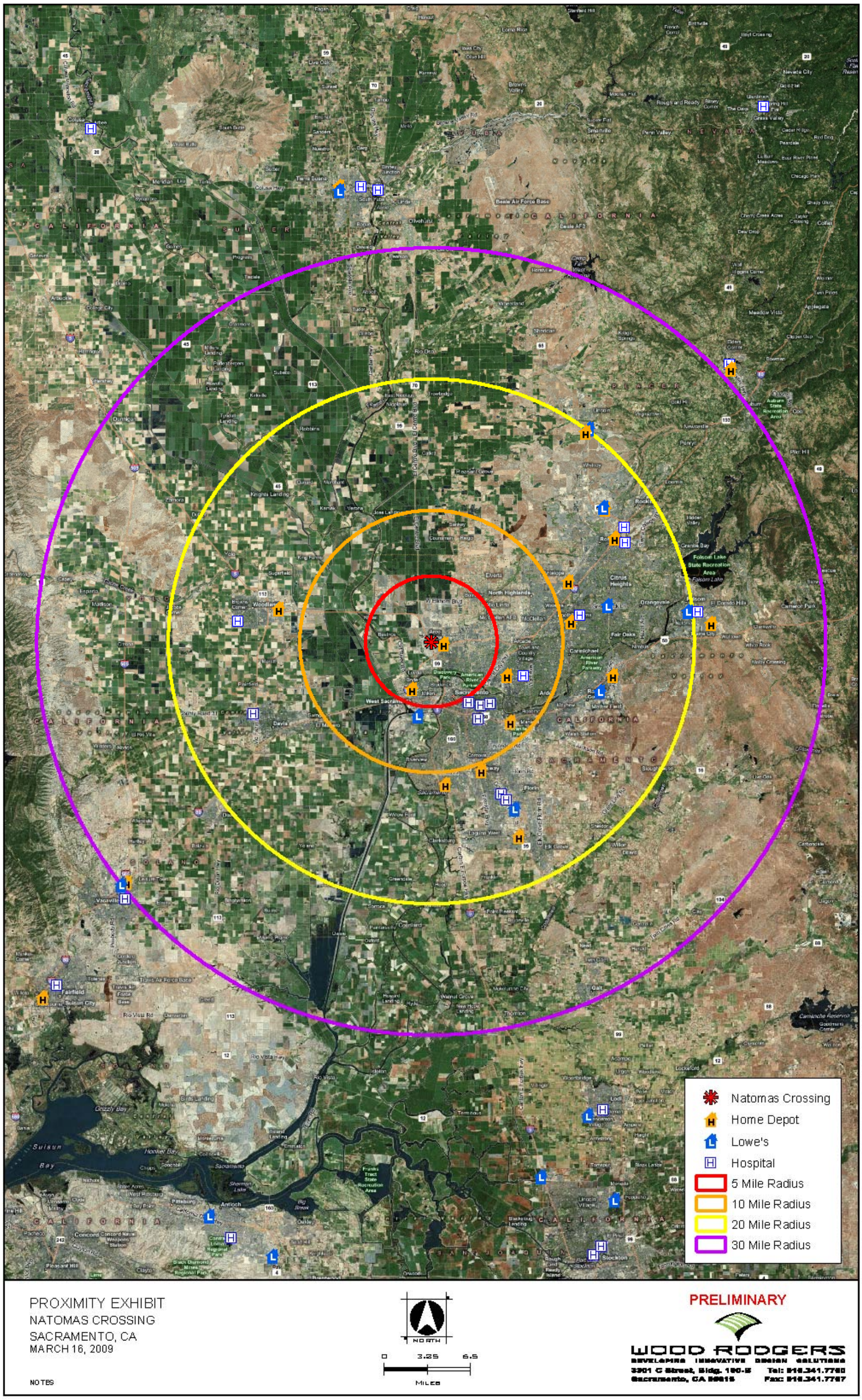
The objectives for the proposed project are as follows:

- To construct retail development on property adjacent to Interstate 5.
- To promote the development of regional commercial uses to meet current commercial needs and demand.
- To foster economic and employment opportunities within the City of Sacramento through the development of vacant property within greater northern Sacramento area.
- To provide the necessary circulation and infrastructure improvements to accommodate development of the property.
- To promote strong architectural and design features that are compatible with adjacent uses and provide a unique identity for the project as a whole.
- To provide essential healthcare and emergency room services options to Natomas and the greater region.
- To develop a project that will ultimately provide a mix of uses, including residential, hotel, office, medical, and retail, that are a logical extension of adjacent uses.

3.4 PROJECT COMPONENTS

The proposed project would help achieve the smart growth principles, by reducing vehicle miles traveled. Currently, residents who reside in and near North Natomas access most in- and out-patient services at hospitals located at 2801 L Street and 1650 Response Road, which are located greater than five miles, generally south of the project site (See Figure 3-6). The most direct route from the North Natomas area to the hospital at 2801 L Street is via I-5. The most direct route to the hospital on 1650 Response Road is via I-5 and I-80. The development of a hospital is anticipated to reduce travel distance for residents living in and near Natomas who currently access services in downtown, which would reduce traffic on regional routes such as I-5 and I-80.

Figure 3-6
Proximity to Nearby Hospitals and Home Improvement Retailers



Quadrant B

The southern portion of Quadrant B will be rezoned from Employment Center and Commercial to Shopping Center to allow for the future development of retail space within the range of 309,276 to 463,914 s.f. (See Figure 3-7, PUD Schematic Plan Amendment Exhibit). The northern portion of Quadrant B would not require a rezone, as the proposed land uses are generally consistent with those planned for the site in previous approvals. Future development of the northern portion of Quadrant B would include:

- 10 acres of Residential with approximate total of 180 units
- 5 acres of Hotel use consisting of approximately 130,000 s.f. or 300 rooms
- 14 acres of Office consisting of approximately 240,000 s.f.

It is important to note that development of Quadrant B is not proposed at this time. The Draft EIR therefore evaluates development of Quadrant B at a programmatic level, rather than project level.

Quadrant C

The 47.2 net acres in Quadrant C portion of the project are proposed for both retail and office development (See Figure 3-8, Quadrant C Tentative Parcel Map). More specifically, Quadrant C includes 404,580 s.f. of regional retail uses and 200,000 s.f. of office uses (See Table 3-1). One large retail pad is proposed in the northern portion of Quadrant C, consisting of a 137,933-square-foot large format retail pad with an attached 31,179-square-foot garden center (See Figure 3-9, Quadrant C Site Plan). Quadrant C would include a total of 20 retail pads and two office pads. Primary access to this portion of the project site would be provided via three entrances along East Commerce Way and a right-in only from Arena Boulevard. Various land use entitlements are required for these uses to be developed on Quadrant C, as described below.

Quadrant D

Quadrant D includes the future development of approximately 600,000 s.f. for a hospital, and an additional 600,000 s.f. for medical office uses (See Figure 3-10, Quadrant D Conceptual Site Plan). The northeastern portion of the hospital building (i.e., side closest to East Commerce Way) is anticipated to be a multi-story building, with a maximum of five stories. In addition, the project includes the construction of a 30,000 s.f. Central Utility Plant (CUP) that would house the heating and cooling equipment for the hospital's air and water systems, as well as a back-up generator system for power outages.

In order to meet City parking standards, 2,900 parking spaces are proposed to serve both the 300 bed hospital as well as the proposed medical office uses. Per the current Conceptual Hospital Site Plan, two above-ground parking structures would ultimately be developed to accommodate a substantial number of these parking spaces.

Figure 3-7
Schematic Plan Amendment Exhibit

PRELIMINARY

PUD SCHEMATIC PLAN AMENDMENT EXHIBIT
NATOMAS CROSSING QUADRANT B, C & D
CITY OF SACRAMENTO, CALIFORNIA
NOVEMBER 12, 2008
(REVISED JANUARY 3, 2009)
(REVISED JANUARY 14, 2009)
(REVISED FEBRUARY 25, 2009)

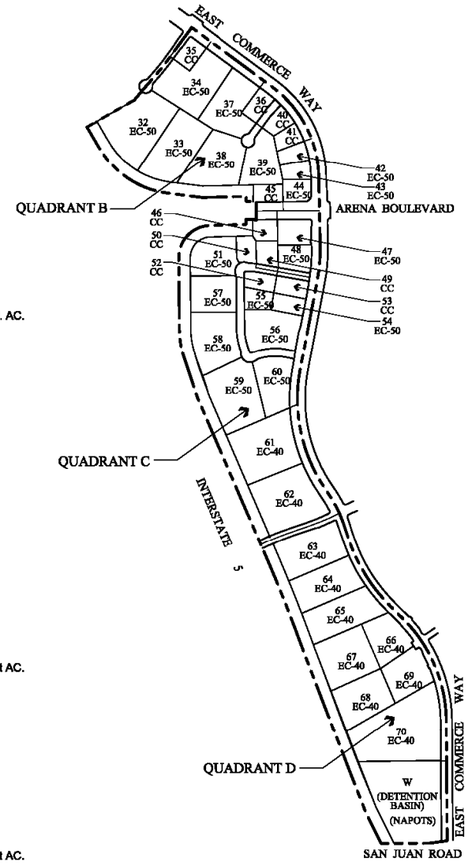
SUMMARY TABLE

Quadrant B	Zone	Bldg. Type	Square Footage	Acres
32	EC-50 (PUD)	Office	36,000 - 129,600	6.0
33	EC-50 (PUD)	Office	30,000 - 96,000	5.0
34	EC-50 (PUD)	Office	31,200 - 99,840	5.2
35	CC (PUD)	Retail	2,800 - 12,000	1.0
36	CC (PUD)	Retail	2,800 - 12,000	1.0
37	EC-50 (PUD)	Office	25,200 - 80,640	4.2
38	EC-50 (PUD)	Office	27,000 - 86,400	4.5
39	EC-50 (PUD)	Office	21,180 - 67,790	3.0
40	CC (PUD)	Retail	2,520 - 10,800	0.9
41	CC (PUD)	Retail	2,520 - 10,800	0.9
42	EC-50 (PUD)	Retail	2,340 - 19,728	0.9
43	EC-50 (PUD)	Retail	2,340 - 19,728	0.9
44	EC-50 (PUD)	Retail	1,375 - 4,000	1.1
45	CC (PUD)	Retail	2,520 - 10,800	0.9
Subtotal				
Office			170,580 - 560,270	27.9
Retail			19,215 - 99,856	7.6
Quadrant B Total			189,795 - 660,126	35.5 Net. AC.

Quadrant C	Zone	Bldg. Type	Square Footage	Acres
46	CC (PUD)	Retail	2,520 - 10,800	0.9
47	EC-50 (PUD)	Retail	1,875 - 21,000	1.5
48	EC-50 (PUD)	Retail	3,900 - 21,000	1.5
49	CC (PUD)	Retail	2,520 - 10,800	0.9
50	EC-50 (PUD)	Retail	2,340 - 12,600	0.9
51	EC-50 (PUD)	Hotel	49,500 - 78,000	3.0
52	EC-50 (PUD)	Retail	2,340 - 12,600	0.9
53	CC (PUD)	Retail	2,800 - 12,000	1.0
54	EC-50 (PUD)	Retail	7,000 - 16,800	1.0
55	EC-50 (PUD)	Daycare	7,000 - 16,800	1.0
56	EC-50 (PUD)	Office	25,200 - 83,999	3.6
57	EC-50 (PUD)	Hotel	47,850 - 75,400	2.9
58	EC-50 (PUD)	Office	30,800 - 73,920	4.4
59	EC-50 (PUD)	Office	37,800 - 90,720	5.4
60	EC-50 (PUD)	Office	22,400 - 53,760	3.2
61	EC-40 (PUD)	Office	41,300 - 99,120	5.9
62	EC-40 (PUD)	Office	41,300 - 99,120	5.4
Subtotal				
Office			198,800 - 500,839	27.9
Retail			25,295 - 117,600	8.6
Hotel			97,350 - 153,400	5.9
Daycare			7,000 - 16,800	1.0
Quadrant C Total			328,445 - 788,439	43.4 Net AC.

Quadrant D	Zone	Bldg. Type	Square Footage	Acres
63	EC-40 (PUD)	Office	30,800 - 73,920	3.8
64	EC-40 (PUD)	Office	28,700 - 68,880	4.1
65	EC-40 (PUD)	Office	30,800 - 73,920	4.4
66	EC-40 (PUD)	Office	17,500 - 42,000	2.7
67	EC-40 (PUD)	Office	31,500 - 75,600	4.6
68	EC-40 (PUD)	Office	26,600 - 63,840	3.8
69	EC-40 (PUD)	Office	18,200 - 43,680	2.6
70	EC-40 (PUD)	Office	59,500 - 142,800	8.9
Subtotal				
Office			253,600 - 584,700	34.9
Quadrant D Total			253,600 - 584,700	34.9 Net AC.
TOTAL				113.8 Net AC.

TOTAL ACREAGE FOR QUADRANTS B, C & D (113.8 AC.) IS PER APPROVED PUD SCHEMATIC PLAN.



Existing PUD Schematic Plan

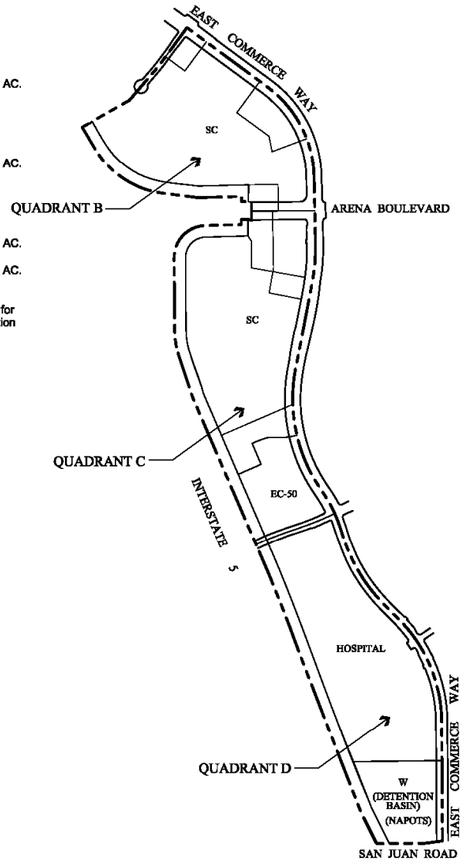
SUMMARY TABLE

Quadrant B	Zone	Bldg. Type	Square Footage	Acres
Retail	SC (PUD)	Retail	309,276 - 463,914	38.2 Net. AC.

Quadrant C	Zone	Bldg. Type	Square Footage	Acres
Office	EC-50 (PUD)	Office	82,600 - 200,000	8.7
Retail	SC (PUD)	Retail	302,306 - 432,300	38.5
Quadrant C Total			384,906 - 632,300	47.2 Net. AC.

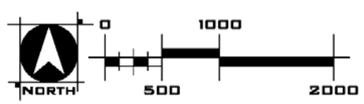
Quadrant D	Zone	Bldg. Type	Square Footage	Acres
Hospital	EC-50 (PUD)	Hospital	253,600 - 600,000	36.4
Office	EC-50 (PUD)	Office	253,600 - 600,000	-
Quadrant D Total			507,200 - 1,200,000	36.4 Net. AC.
TOTAL				119.8 Net AC.

Note: The Detention Basin located in the southern area of Quadrant D is shown for illustrative purposes only. No entitlements are being sought for the Detention Basin.



TOTAL ACREAGE FOR QUADRANTS B, C & D (119.8 AC.) IS PER BOUNDARY/MAPPING DATA PREPARED BY WOOD RODGERS.

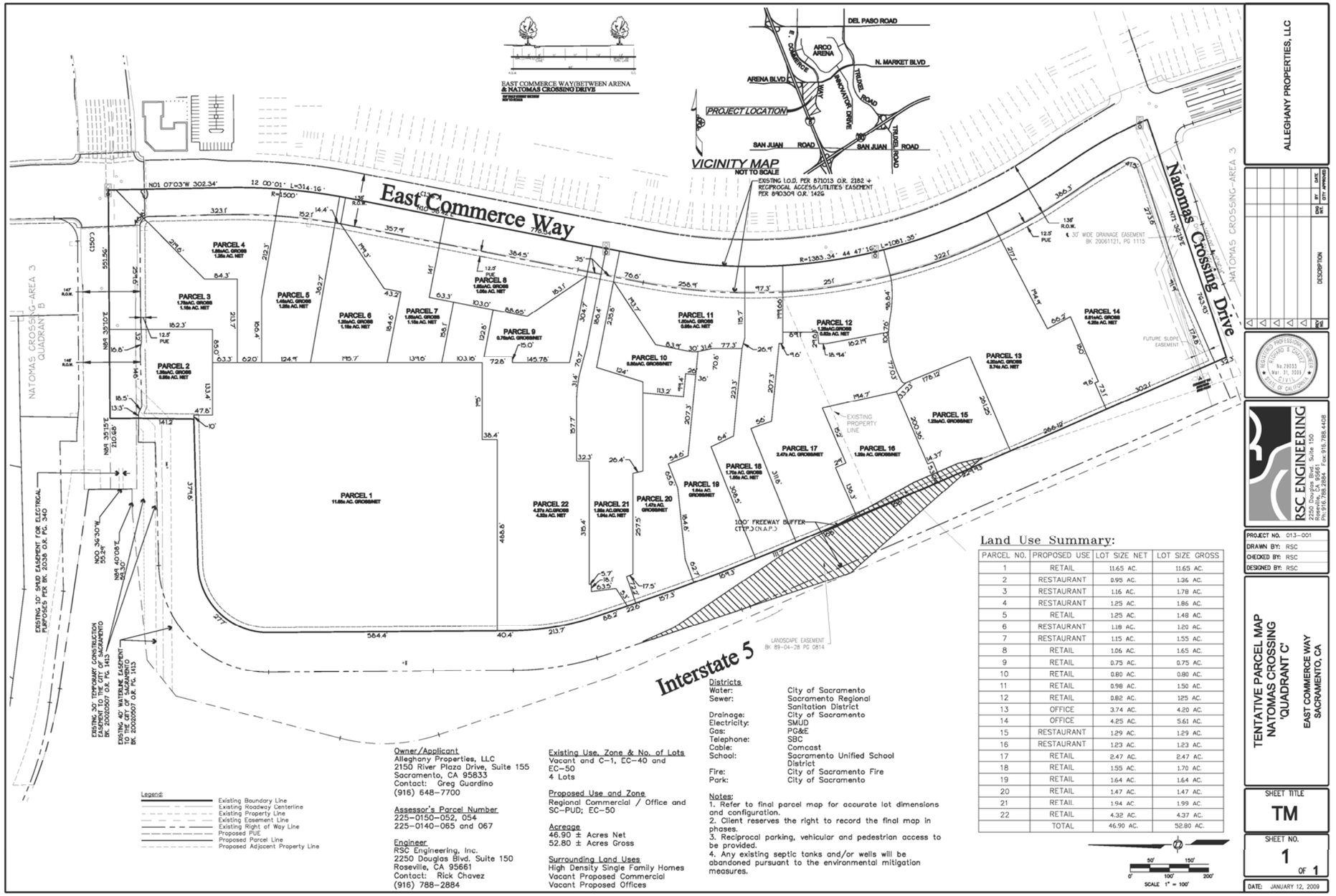
Proposed PUD Schematic Plan



PRELIMINARY

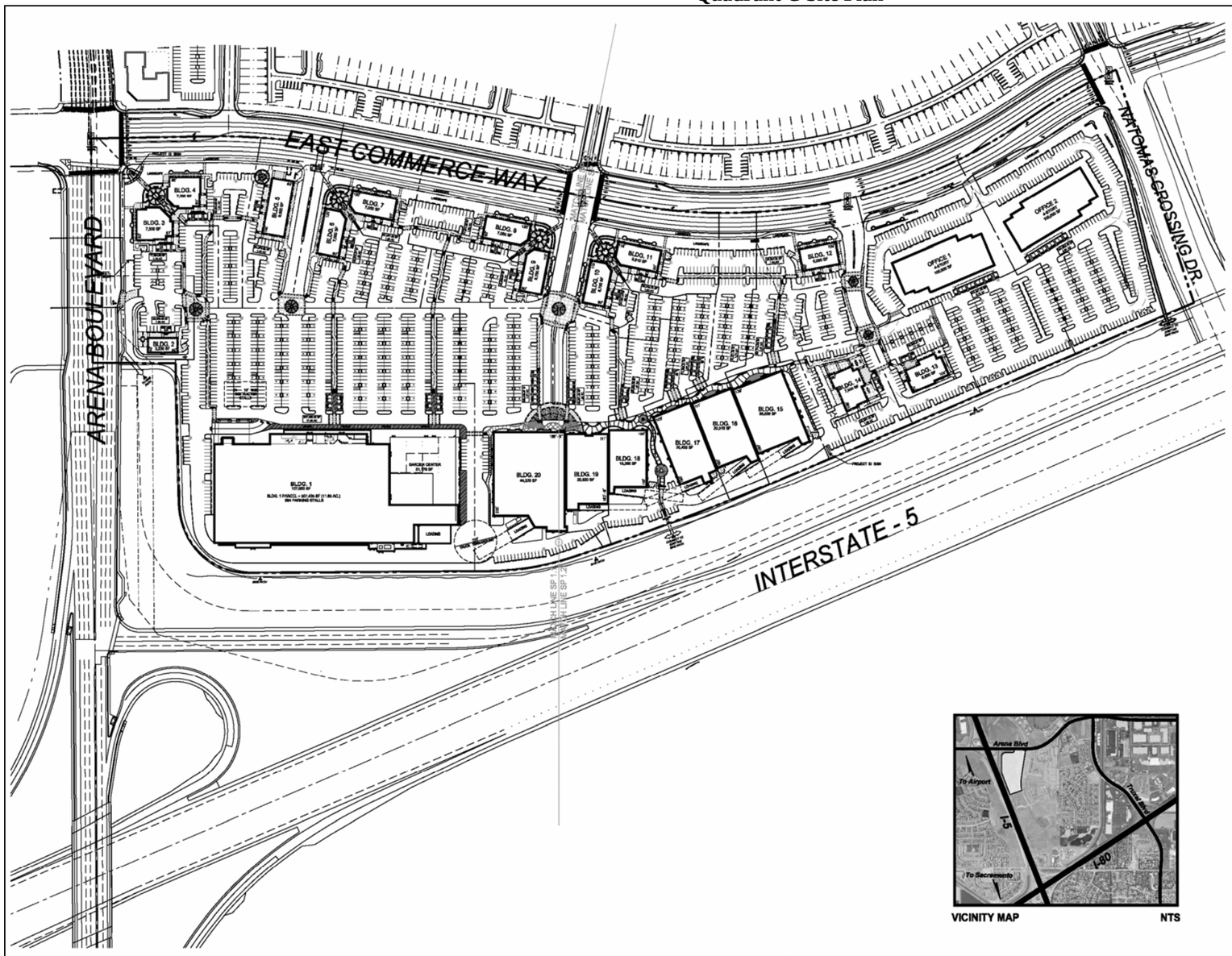
WOOD RODGERS
DEVELOPING INNOVATIVE DESIGN SOLUTIONS
3301 C St, Bldg. 100-B Tel 916.341.7760
Sacramento, CA 95816 Fax 916.341.7767

Figure 3-8
Quadrant C Tentative Parcel Map



Note: The figure is for reference only.

Figure 3-9
Quadrant C Site Plan



BLDG	TENANT	SF	PARKING CALC		PARKING REQ'D	AVAIL PRKG
BUILDING 1	HOME IMP.	137,933	1 PER	250	552	582
	GARDEN CENTER	31,179	1 PER	1000	31	
BUILDING 2	FOOD	3,230		1/3 SEATS	35	35
			105	SEATS		
BUILDING 3	FOOD	7,500		1/3 SEATS	87	61
			260	SEATS		
BUILDING 4	FOOD	7,000		1/3 SEATS	80	68
			240	SEATS		
BUILDING 5	RETAIL	9,000	1 PER	250	36	47
BUILDING 6	FOOD*	7,050	1 PER	250	28	62
BUILDING 7	FOOD*	7,650	1 PER	250	28	73
BUILDING 8	FOOD*	3,450	1 PER	250	14	50
	RETAIL	3,600	1 PER	250	14	
BUILDING 9	FOOD*	2,400	1 PER	250	10	38
	RETAIL	4,350	1 PER	250	17	
BUILDING 10	FOOD*	2,400	1 PER	250	10	41
	RETAIL	4,350	1 PER	250	17	
BUILDING 11	FOOD*	2,400	1 PER	250	10	44
	RETAIL	4,410	1 PER	250	18	
BUILDING 12	RETAIL	6000	1 PER	250	24	24
BUILDING 13	FOOD	5,800		1/3 SEATS	67	76
			200	SEATS		
BUILDING 14	FOOD	7,500		1/3 SEATS	78	78
			235	SEATS		
BUILDING 15	RETAIL	20,530	1 PER	250	102	103
BUILDING 16	RETAIL	20,518	1 PER	250	82	86
BUILDING 17	RETAIL	20,430	1 PER	250	82	89
BUILDING 18	RETAIL	15,260	1 PER	250	61	61
BUILDING 19	RETAIL	20,920	1 PER	250	84	88
BUILDING 20	RETAIL	44,320	1 PER	250	177	212
OFFICE 1	OFFICE	100,000	1 PER	400	250	269
OFFICE 1	OFFICE	100,000	1 PER	400	250	269
TOTALS		604,580			2,243	2,474

*Up to 10% of total building area of the center may be used as restaurant(s) and bar(s) with parking based on the shopping center as a whole rather than the seating capacity. Allowable food use square footage parked at shopping center standards shall not exceed 40,400 SF - Current calculations include a total of 24,780 SF food use parked at shopping center standards.

TOTAL LAND AREA (SF):	2,278,189.10
TOTAL BUILDING AREA (SF):	604,580
COVERAGE (%):	0.27
PARKING PROVIDED:	
ADA STALLS	94
COMPACT	326
STANDARD	2,054
TOTAL	2,474

VICINITY MAP NTS

Project:
Natomas Crossing Quad-C
Arena Boulevard & East Commerce Way
Sacramento, CA

Developer:
Allegheny Properties, LLC
2150 River Plaza Drive #155
Sacramento, CA 95833
916.648.7711
916.648.7739
www.alleghenygroup.com

SITE PLAN
(PRELIMINARY)

Job Number:	A06-031
Date:	3.13.09
Drawn By:	RSC / BOSKO
Revised:	RSC121208_ITERATION-L2EIR

Sheet: **SP 1.0**

RMB
RAUSCHENBACH MARVELLI BECKER

Figure 3-10
Quadrant D Conceptual Site Plan

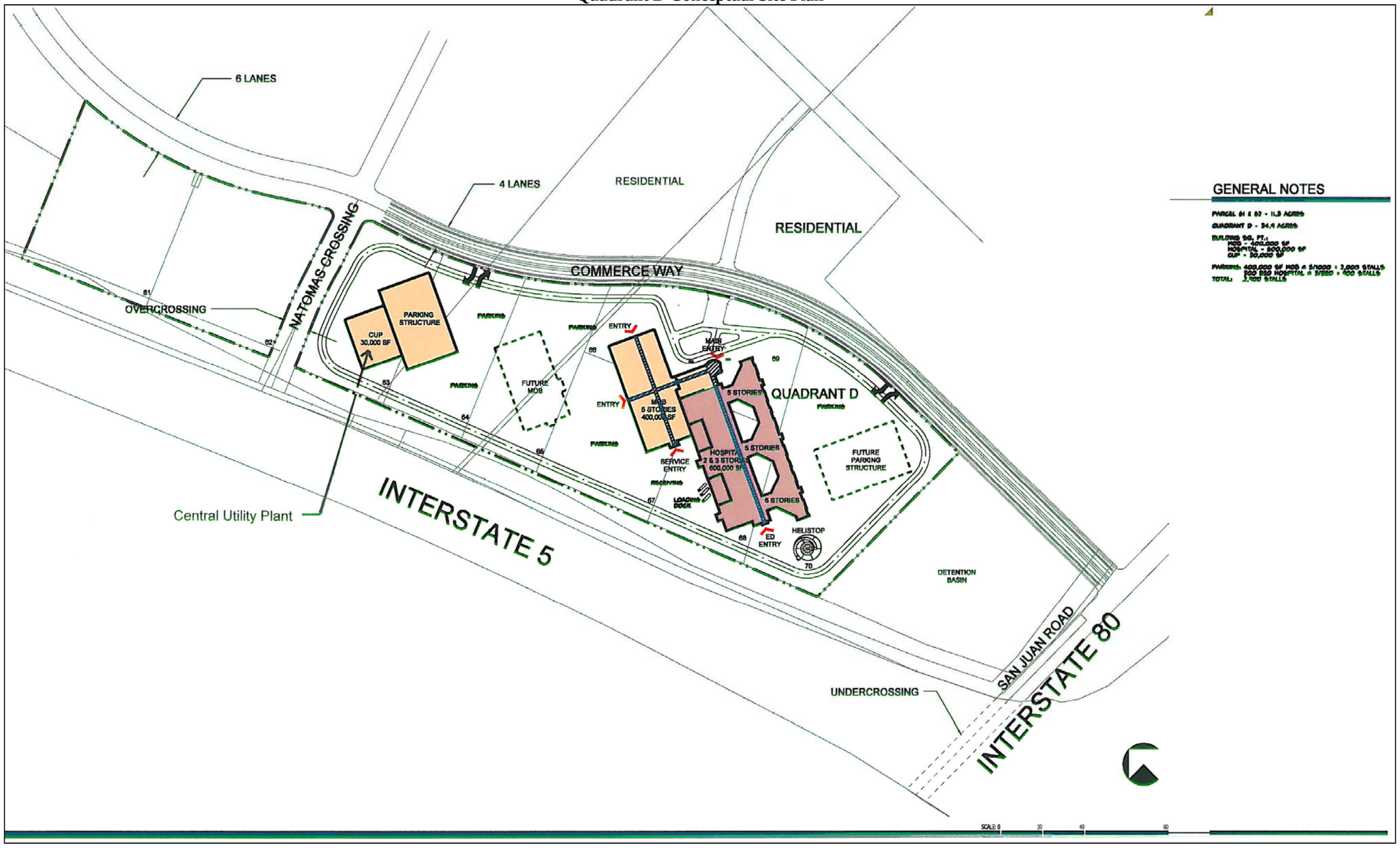


Table 3-1
Natomas Crossing – Quadrant C Statistics

Buildings	Tenant	Retail Area	City Required Parking	Parking Proposed
1	Home Imp.	137,933	552	582
	Garden Ctr.	31,179	31	
2	Food	3,230	35	35
3	Food	7,500	87	61
4	Food	7,000	80	68
5	Retail	9,000	36	47
6	Food	7,050	28	62
7	Food	7,050	28	73
8	Food	3,450	14	50
	Retail	3,600	14	
9	Food	2,400	10	38
	Retail	4,350	17	
10	Food	2,400	10	41
	Retail	4,350	17	
11	Food	2,400	10	44
	Retail	4,410	18	
12	Retail	6,000	24	24
13	Food	6,800	67	76
14	Food	7,500	78	78
15	Retail	25,530	102	103
16	Retail	20,518	82	86
17	Retail	20,430	82	89
18	Retail	15,260	61	61
19	Retail	20,920	84	86
20	Retail	44,320	177	212
Office 1	Office	100,000	250	269
Office 2	Office	100,000	250	289
Total		**604,580**	**2,243**	**2,474**

It should be noted that both of these parking structures would not be needed during the early phase(s) of the buildout of Quadrant D; therefore, it is anticipated that the structures would be completed commensurate with the phase of the project necessitating its construction.

Three project driveways are proposed along East Commerce Way. Internal circulation will be provided primarily via a "ring road" around the inside perimeter of Quadrant D.

The Conceptual Hospital Site Plan also indicates a transport helistop at the southern corner of the Hospital in order to accommodate air carrier operators providing scheduled or unscheduled service with large helicopters. The helistop is proposed to be constructed at ground level. The California Department of Transportation (Caltrans) Division of Aeronautics regulates the location and operation of heliports in the State. Caltrans' policies are based on the State Aeronautical Act, Public Utilities Code Sections 21001 et seq.

General Plan Amendment

The City of Sacramento recently adopted the *Sacramento 2030 General Plan*. The 2030 General Plan was adopted March 3, 2009 by the Sacramento City Council. The Land Use & Urban Form Diagram of the 2030 General Plan designates the project site as Planned Development (PD). Under the 2030 General Plan, a General Plan Amendment would be needed to redesignate the project site from PD to the following designations (See Figure 3-3 and Tables 3-2, 3-3, and 3-4):

- Quadrant B
  Northern: N/A
  Southern: Regional Commercial

- Quadrant C
  Regional Commercial

- Quadrant D
  Employment Center Mid-Rise

North Natomas Community Plan

With recent approval of the 2030 SGP, the North Natomas Community Plan Land Use Map was updated to be consistent with the SGP designations assigned to each property. As part of the General Plan Amendment above, the NCCP map will also be amended to reflect the proposed SGP designations for the site of Employment Center Mid-Rise (Quadrant D – hospital) and Regional Commercial (Southern portion of Quadrant B and all of Quadrant C).

Rezone

Quadrants B and C are currently zoned a combination of Employment Center (EC) and Limited Commercial (C-1). The EC zone is intended for employment generating uses in a pedestrian friendly setting with ample private and/or public open space. The EC zone also provides the opportunity for a variety and mix of supporting uses, including support retail, residential and light industrial. The proposed project includes a rezone of the southern portion of Quadrant B to Shopping Center Planned Unit Development (SC-PUD). Quadrant C would be rezoned to SC-PUD and EC-50 (southern 8.7 acres). In addition, future development of hospital and medical office uses on Quadrant D would require a zone change from EC-40 to EC-50. See Figure 3-5 and Tables 3-2 and 3-3 for the proposed changes in zoning.

Planned Unit Development Schematic Plan Amendment

The proposed project includes a PUD Schematic Plan amendment to make modifications to the Natomas Crossing Area #3 Schematic Plan approved in 1997 for application #P01-028, and updated in 2002.

Table 3-2 Quadrant B Designations		
Northern Portion		
Designations	**Existing (acres)**	**Proposed (acres)**
2030 General Plan		
Planned Development	30.6	30.6
Zoning		
Employment Center 50 (EC-50)	30.6	30.6
Southern Portion		
2030 General Plan		
Planned Development	36.2	-
Regional Commercial (RC)	-	36.2
Zoning		
Commercial C-1	5.1	-
Employment Center 50 (EC-50)	31.1	-
Shopping Center (SC-PUD)	-	36.2

Table 3-3 Quadrant C Designations		
Designations	**Existing (acres)**	**Proposed (acres)**
2030 General Plan		
Planned Development	47.2	-
Regional Commercial (RC)		47.2
Zoning		
Limited Commercial C-1	3.2	-
Employment Center 40 (EC-40)	12.1	-
Employment Center 50 (EC-50)	31.9	8.7
Shopping Center (SC-PUD)	-	38.5

Table 3-4 Quadrant D Designations		
Designations	**Existing (acres)**	**Proposed (acres)**
2030 General Plan		
Planned Development	45.9	-
Employment Center Mid-Rise (EC-MR)	-	36.4
Water	-	9.5
Zoning		
Employment Center 40 (EC-40)	36.4	-
Employment Center 50 (EC-50)	-	36.4
Agricultural Open Space(A-OS)	9.5	9.5

The proposed Schematic Plan, when completed, would permit the following uses for:

Northern Portion of Quadrant B:

- 10 acres of residential with approximate total of 180 units
- 5 acres of hotel use consisting of approximately 130,000 s.f.
- 14 acres of office consisting of approximately 240,000 s.f.

Southern Portion of Quadrant B:

- 309,276 to 463,914 s.f. of Shopping Center uses on 36.2 acres in the southern portion of Quadrant B.

Quadrant C

Quadrant C includes 404,580 s.f. of regional retail uses and 200,000 s.f. of office uses. While a development potential would exist on Quadrant C of up to 432,300 s.f. of retail under the proposed designations, it should be noted that the Tentative Parcel Map being processed as part of this project indicates a total development footprint of 604,580 s.f., including the office component (200,000 s.f.) (See Figure 3-7, Schematic Plan Amendment Exhibit), which would be established as the maximum via the Planning Director Plan Review process.

Quadrant D

Quadrant D includes the development of approximately 600,000 s.f. for a hospital, and an additional 600,000 s.f. for medical office uses (See Figure 3-10, Quadrant D Conceptual Site Plan). In addition, development of Quadrant D would include a 30,000 s.f. central utility plant, designated 'CUP' on Figure 3-10, that would provide backup power for the hospital and medical offices.

Planned Unit Development Guidelines Amendment

As outlined above, the proposed project would result in changes to the permitted uses on the project site. As a result, the proposed project also includes a request to amend the Natomas Crossing PUD Development Guidelines (application #P01-028) approved in 2002 to reflect the character and design aesthetic proposed by the project proponent for the updated Schematic Plan. The amended PUD Development Guidelines have been designed to comply with the North Natomas Development Guidelines. Among the design standards included in the PUD Development Guidelines is the requirement for the installation of rooftop parapets on all building containing HVAC equipment.

Tentative Parcel Map

The proposed Tentative Parcel Map (TPM) subdivides Quadrant C into 22 parcels, which may be developed by the project proponent or sold to other developers (See Figure 3-8, Quadrant C

Tentative Parcel Map). The 22 parcels include a large retail parcel with a garden center, 12 additional retail parcels, seven (7) restaurant parcels, and two (2) office parcels.

Planned Unit Development Special Permits and Planning Director Plan Reviews

Development within the NNCP requires a PUD Special Permit or Planning Director Plan Review prior to construction. The Special Permit and Planning Director Plan Review process allows an opportunity for the City to conduct a review to ensure that the proposed project complies with the Natomas Crossing PUD, the NNCP, and the City's General Plan. This review would be conducted at a future date when elevations and other required materials are submitted for staff review. In keeping with the NNCP Development Guidelines, 11 of the 22 buildings in Quadrant C would be oriented towards the project frontages (East Commerce Way, Natomas Crossing Drive, and Arena Boulevard) and parking would be placed in the center of the project to reduce the visual impact of large parking lots and create a more attractive streetscape.

Infrastructure

In addition to the proposed buildings, Quadrant C would include the installation of water, sewer, and drainage infrastructure improvements to serve the site. Road and traffic improvements would be necessary. The applicant would also be required to provide the appropriate connections to the local providers of electricity, natural gas, telephone service, and other dry utilities.

Streets

The Quadrant C Tentative Parcel Map (Figure 3-8) outlines the proposed entrances for Quadrant C. The plan includes three entrances/exits onto East Commerce Way, which are evenly spaced along the project frontage. A right-in only from Arena Boulevard would also be provided. Internal circulation would be accomplished through a looped primary roadway network that would connect the buildings and parking lots.

Water System

An existing 12-inch water line runs the length of the project site within East Commerce Way. A second parallel 12-inch line would be constructed on the west side of East Commerce Way to serve Quadrant C and connect to the proposed on-site 12-inch water line. It should be noted, future development of Quadrant B would connect future on-site water lines to the water lines in East Commerce Way, north of Arena Boulevard. For Quadrant D the applicant will also be required to extend a new 12-inch water main along the west side of East Commerce Way between Natomas Crossing Drive and San Juan Road. The on-site fire system will need to be "looped" and the main size will be 12-inch with hydrants and fire department connections along said loop. However, the entitlements being processed at this time would not result in the ability to construct water infrastructure in Quadrant B. Future construction within Quadrant B, including water improvements, would require approval of additional entitlements.

Wastewater System

The proposed project is included within the current Sacramento Area Sewer District (SASD) for wastewater collection and Sacramento Regional County Sanitation District (SRCSD) for wastewater treatment. Sewage from Quadrant C, and future flows from Quadrant B, would be conveyed through existing SASD eight-inch sewer lines in East Commerce Way, which convey sewer flows southeast to SASD trunk and the SRCSD interceptor facilities. The proposed on-site Quadrant C system consists of six-inch and eight-inch sewer lines that would connect to the existing system in East Commerce Way. The proposed on-site Quadrant D system would connect to the 54-inch trunk sewer main in East Commerce Way. It should be noted, future development of Quadrant B would connect future on-site sewer lines to the sewer lines in East Commerce Way; however, the entitlements being processed at this time would not result in the ability to construct sewer infrastructure in Quadrant B. Future construction within Quadrant B, including sewer improvements, would require approval of additional entitlements.

Storm Drainage

The proposed project is within Drainage Basin Six of the Master Drainage Study for Natomas Crossing Area 3, which was redesignated as Drainage Basin 16. The proposed on-site drainage lines for Quadrant C range from 12 inches to 36 inches and would discharge into the North Natomas drainage channel along the western boundary of the project site. Quadrant C would discharge into the drainage channel at five existing outfall locations through 18-inch, 30-inch, 42-inch, and 48-inch pipes. Future development of Quadrant B would be designed to discharge stormwater at three existing outfall locations through 36-inch pipes. For Quadrant D, the majority of the site would drain to the west and outfall into the existing freeway buffer channel located along the east side of I-5. Individual properties that are adjacent to East Commerce Way may connect into the limited stubs that are designated to be placed along the west side of the street. Future construction within Quadrant B, including storm drainage infrastructure, would require approval of additional entitlements.

3.5 PROJECT ENTITLEMENTS

The City of Sacramento has discretionary authority and is the lead agency for the proposed project. The required entitlements for the Quadrant C portion of the proposed project include the following:

- General Plan Amendment;
- Rezone of the portions of the project site zoned for employment uses (Employment Center [EC] -40 and -50) and commercial uses (C-1) to Shopping Center (SC);
- Schematic Plan Amendment;
- PUD Guidelines Amendment;
- Use Permit (Retail Portion); and
- Tentative Map.

The required entitlements for the Quadrant B portion of the proposed project include the following:

- General Plan Amendment;
- Rezone of the southern portion of the project site zoned for employment uses (Employment Center [EC] -50) and commercial uses (C-1) to Shopping Center (SC-PUD);
- Schematic Plan Amendment; and
- PUD Guidelines Amendment.

The required entitlements for Quadrant D include the following:

- Rezone from Employment Center [EC] -40 to Employment Center [EC] -50;
- Schematic Plan Amendment; and
- PUD Guidelines Amendment.

In addition to the approvals required from the City of Sacramento, development of the proposed project would require entitlements, approvals, and permits from other state and local agencies. Such other project approvals may include, but are not limited to the following:

- National Pollutant Discharge Elimination System (NPDES) permit from the RWQCB;
- General Construction Permit from RWQCB; and
- Any Sacramento Metropolitan Air Quality Management District (SMAQMD) permits required for operation of any commercial, medical, and office uses.

4. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

4.0 INTRODUCTION TO THE ANALYSIS

4.0 INTRODUCTION TO THE ANALYSIS

4.0.1 INTRODUCTION

The Introduction to the Analysis chapter analyzes the potential impacts of the Natomas Crossing project on a range of environmental issue areas. Chapters 4.1 through 4.8 describe the focus of the analysis, references and other data sources for the analysis, the environmental setting, project-specific impacts and mitigations measures, and cumulative impacts of the proposed project for each specific issue area. The format of each of these chapters is described below.

4.0.2 DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial or potentially substantial adverse change in the environment (Public Resources Code § 21068). The Guidelines implementing CEQA direct that this determination be based on scientific and factual data. The specific criteria for determining the significance of a particular impact are identified within the impact discussion in each chapter, and are consistent with significance criteria set forth in the CEQA Guidelines.

4.0.3 ISSUES ADDRESSED IN THIS DRAFT EIR

The Initial Study (See Appendix C) prepared for the Natomas Crossing Project as a part of this EIR includes a detailed environmental checklist addressing a range of technical environmental issues. For each technical environmental issue, the Initial Study identifies the level of impact for the proposed project. The Initial Study identifies the environmental effects as either "less than significant," "potentially significant unless mitigated," or "potentially significant." The Initial Study provided the following conclusions:

Impacts identified in the Initial Study as less than significant, which do not require mitigation, are presented below.

- Land Use and Planning (*1. b*):

  The Sacramento 2030 General Plan, including the North Natomas Community Plan (NNCP), the Natomas Crossing Planned Unit Development (PUD), and associated environmental documents have planned for the project site to be developed with urban uses. In addition, the project site has not been used for agricultural activities in several years and was mass-graded in 2002. In evaluating the development of the General Plan area, the Sacramento 2030 General Plan Master EIR (SGP MEIR) found that remaining agricultural areas within the Sacramento Policy Area are not considered viable or suitable for large scale agricultural operations. The proposed project would not result in impacts to

farmland soils beyond those previously evaluated in the SGP MEIR. Therefore, the proposed project's impacts to Prime Farmland would be considered ***less than significant***.

- Population, Employment, and Housing (*2. a,b*):

  At full buildout, the proposed project would involve the construction of a maximum of 2,637,494 square feet (s.f.) of hotel, housing, office, hospital, retail, restaurant uses, and the development of associated infrastructure. The infrastructure for the project will not be oversized to accommodate previously unserved growth. In addition, the project site and surrounding areas have been designated for urban development in previous planning documents, and impacts from the infrastructure related to growth inducement have already been evaluated within the SGP MEIR. Population increases resulting from the project would not be substantial because buildout of the project includes up to 180 residential units. In addition, the proposed project site is currently vacant land that has been designated for urban uses. The development of the project site would not displace existing residents or housing because the site is not currently residentially developed. Therefore, the proposed project would not have an adverse impact on population or housing in the area, resulting in a ***less than significant*** impact.

- Seismicity, Soils, and Geology (*3. a,c,d*):

  Although the project site is not located near any active or potentially active faults, several outlying regional faults exist. A major earthquake on any of the regional faults could cause strong ground-shaking at the project site.

  Title 8 of the California Code of Regulations and Occupational Safety and Health Act (OSHA) regulates excavation and grading activities. These regulations require that excavations must be shored or otherwise stabilized to preclude slope failure during construction. This requirement is incorporated in the Uniform Building Code (UBC) (Section A33 - Excavation and Grading), which also requires that shoring of trenches or other structural integrity measures be implemented, as well as erosion control measures. These regulations would apply to any excavations of the project site in preparation for construction of the proposed project. In addition, the NNCP EIR adopted measures to address seismic hazards including the following: requiring site-specific design-level soil investigations, and building to UBC standards or better. These existing regulations and requirements are enforced through the City's building review and inspection process and would ensure that the proposed project would not be subjected to or cause significant seismic impacts. Therefore, any impacts associated with seismic hazards would be ***less than significant***.

  In addition, groundwater at the proposed project site is approximately 17 feet below the surface near Arena Boulevard. The proposed project excavation and construction activities would not require dewatering because the excavation

activities would occur above the minimum groundwater level. Furthermore, the project site has been mass graded and does not contain unique geologic or physical features. Therefore, subsidence from dewatering would not occur and construction would not impact any unique geological features, resulting in a ***less than significant*** impact.

- Water (*4. f-h*):

  The presence of groundwater can influence construction methods and materials utilized. Groundwater can be relatively shallow in the City of Sacramento, particularly in the Natomas Basin. In general, groundwater levels in the vicinity of the City of Sacramento are reported to be stable, between 20 feet above and 40 feet below mean sea level (msl). The preliminary soil investigation prepared for the project area determined the groundwater level to be approximately 17 feet below surface level at the northern border of the project site. However, proposed project construction activities would not include excavating to depths where groundwater is present. Therefore, because dewatering would not be required, a ***less than significant*** impact would occur.

- Air Quality *(5. d)*:

  At full buildout of the proposed project, the project would include up to 2,637,494 s.f. of hotel, housing, office, hospital, retail, and restaurant uses. Odors are not typical of the proposed uses. In addition, the proposed project would not include industrial or intensive agricultural uses. Therefore, objectionable odors affecting a substantial number of people would not be expected to occur, and a ***less than significant*** impact would result.

- Transportation and Circulation (*6. g*):

  The proposed project would not require any changes to existing regional rail, waterborne, or air traffic activity because the proposed project would not directly interfere with rail, water, or air traffic facilities. Nor would the proposed project increase population beyond what has been anticipated in the Sacramento 2030 General Plan. Therefore, a ***less than significant*** impact would occur related to rail, waterborne, and air traffic patterns.

- Biological Resources: (*7. b,c*):

  Trees are not located on the proposed project site; therefore, the project would not include the removal of any native or heritage trees. In addition, the concrete-lined North Natomas Drainage Channel, which occurs along the western boundary of the proposed project site, would not be filled or developed, and the project site does not contain any riparian areas, vernal pools, or wetlands. Therefore, ***less than significant*** impacts to trees and wetlands would result.

- Energy and Mineral Resources (*8. a-c*):

  The project site was planned for urban development in the Sacramento 2030 General Plan. Development of the project would generate similar demand for gas and electricity services as anticipated for the site in the Sacramento 2030 General Plan. Gas and electricity lines currently exist adjacent to the project site, and the applicant would be required to construct the necessary infrastructure on-site to serve the project. The Sacramento 2030 General Plan determined that at buildout PG&E would have sufficient natural gas supplies. In addition, the project site is not located in an area that has been identified as containing significant mineral deposits. Because the project has been designed to minimize the use of energy and electricity and the demand for PG&E and SMUD services attributed to the project would not require new sources of energy, ***less than significant*** impacts would result.

- Hazards and Hazardous Materials *(9. b,d,e)*:

  A surface soil evaluation was conducted in 1996 by Wallace-Kuhl & Associates for the majority of the Natomas Crossing Area #3 PUD project site. According to the soil evaluation, evidence of persistent agricultural chemical residues, which would be problematic with respect to unrestricted development of the proposed project site, does not exist. In addition, a 2002 site survey performed by AES, Inc. did not reveal any evidence of hazardous materials on the project site.

  The retail development proposed for the project site is not expected to require routine use of hazardous or toxic materials during regular operations. In addition, development of the project site would be located within an area planned for urban development, and would not impair implementation of, or physically interfere with, an emergency response plan or emergency evacuation plan. Furthermore, vegetation management practices related to the agricultural and urban uses in the project area ensure that wildland fires would be unlikely to occur.

  Therefore, the project would result in ***less than significant*** impacts related to exposure of people to hazardous materials or wildland fires.

- Public Services (*11. c,d*):

  Buildout of Quadrant C and Quadrant D would not result in the development of any new residential units. However, development of the northern portion of Quadrant B would include up to 180 residential units; therefore, additional students would be introduced to the Natomas Unified School District. The project applicant would be required per SB 50 and AB 1600 to pay school impact fees, and the payment of these impact fees is considered full mitigation for school facilities. Because development of the northern portion of Quadrant B would include up to 180 residential units, the proposed project could result in an increase of residents in the North Natomas area. Using the City of Sacramento standard for

acquiring park and recreation areas under provisions of the State Quimby Act, five acres of developed recreation land is required per every 1,000 residents. The PUD Guidelines for the proposed project discuss the park areas proposed, including one neighborhood park, one community park, and one conjunctive use detention basin/park south of the hospital site. An additional detention basin/conjunctive use park is located immediately off-site, adjacent to Quadrant D. Various plaza areas and landscaped easements are also identified on-site in the project's PUD Guidelines. The proposed neighborhood park is adjacent to the civic center where Roadways D and J intersect. This park is anticipated to primarily provide passive uses, while active uses such as playgrounds, ballfields, etc., would be located on the conjunctive use park within Drainage Basin 6A. The neighborhood park will have strong connections to the adjacent parcels and a linkage to the entire parks and open space system. The project will be required to provide sufficient parklands or pay in-lieu fees in accordance with City of Sacramento standards.

In addition, the proposed project would pay development fees and applicable taxes toward the maintenance of roads in the vicinity of the project. Therefore, the proposed project's impacts to schools, parks, and roads in the vicinity of the project would be ***less than significant***.

- Utilities (*12. a-d,f,g*):

Communication Systems

Currently, communication systems are not located on or adjacent to the project site. The proposed project would consist of various building heights ranging from one-story to five-story buildings; however, the heights of the buildings would not be sufficient to interfere with communications equipment in the greater vicinity. Therefore, the proposed project would have a ***less than significant*** impact on communication systems.

Water Supply

The proposed project site was included in the City of Sacramento UWMP. Although the proposed project includes a change in land uses, the water demand for the proposed project would be equal to the demand anticipated for the project site in the UWMP, which indicates that the City will have adequate water supply to serve the total anticipated demand associated with City buildout, even in the multiple dry year scenarios out to 2030. Because the UWMP determined the City would have adequate water supply for the 20-year forecast period and the amount of water needed to serve the Natomas Crossing Project was accounted for in the UWMP, adequate water supply exists to serve the project, and a ***less than significant*** impact to water supply would result.

Sewer Facilities

Sewer service within the vicinity of the project site is provided by the Sacramento Area Sewer District (SASD) and the Sacramento Regional County Sanitation District (SRCSD). A Revised Master Sewer Study was prepared in May 2002 for Natomas Crossing Area 3, within which the project site is located. The Sacramento County design criteria used in the Master Sewer Study assumed flow rates for Quadrants B, C, and D equivalent to office/commercial/industrial uses. The SCRCSD has indicated that the land uses proposed for the Natomas Crossing project do not change the flow rates assumed for the site in the 2002 sewer study. Therefore, adequate sewer treatment capacity exists to serve the project and impacts would be ***less than significant***.

Solid Waste Disposal

Full buildout of the project would generate approximately 6,080 to 7,068 tons per year of solid waste during operation and approximately 5,422 to 5,723 tons during construction. Buildout of the existing zoning designations would generate approximately 1,707 to 5,170 tons per year of solid waste during operation and approximately 1,895 to 5,274 tons during construction. Operation of the proposed project would generate approximately 1,898 additional tons per year and 449 tons during construction. The Lockwood Landfill does not have a maximum daily disposal limit and has a remaining capacity of 32.5 million tons. The Kiefer Landfill is permitted for 10,815 tons/day and as of 2000 had a remaining capacity of 86 million cubic yards. The waste generated by the proposed project would represent a tiny fraction of the amount of solid waste received by the Kiefer and Lockwood landfills in a single day, and would not create a measurable effect on the capacities of the landfills. Furthermore, the proposed project would comply with all federal, State, and local statutes and regulations related to solid waste reduction. Therefore, the proposed project would result in a ***less than significant*** impact.

- Cultural Resources (*14. e*):

The proposed project site has not been used for agricultural activities in several years and has been mass-graded. Religious or sacred uses are not associated with the proposed project site. Therefore, the proposed project would have a ***less than significant*** impact on existing religious or sacred uses.

- Recreation (*15. a,b*):

The proposed project includes development of Quadrant C with approximately 404,580 s.f. of retail uses and 200,000 s.f. of office uses. Development of the southern portion of Quadrant B would include up to 463,914 s.f. of retail uses and development of the northern portion of Quadrant B would include approximately 180 residential units, 130,000 s.f. of hotel uses, and 240,000 s.f. of office uses.

Development of Quadrant D would include 600,000 s.f. of hospital uses and 600,000 s.f. of medical office uses. The proposed project includes the development of new residences in the northern portion of Quadrant B; therefore, the project would result in an increase in the area's population, and demand for recreational facilities would increase. The PUD Guidelines for the proposed project discuss the park areas proposed, including one neighborhood park, one community park, and one conjunctive use detention basin/park south of the hospital site. An additional detention basin/conjunctive use park is located immediately off-site, adjacent to Quadrant D. Various plaza areas and landscaped easements are also identified on-site in the project's PUD Guidelines. The proposed neighborhood park is adjacent to the civic center where Roadways D and J intersect. This park is anticipated to primarily provide passive uses, while active uses such as playgrounds, ballfields, etc., would be located on the conjunctive use park within Drainage Basin 6A. The neighborhood park will have strong connections to the adjacent parcels and a linkage to the entire parks and open space system. The project will be required to provide sufficient parklands or pay in-lieu fees in accordance with City of Sacramento standards. Therefore, the proposed project would have a ***less than significant*** impact related to recreational facilities.

Impacts identified in the Initial Study as potentially significant unless mitigation is incorporated are presented below.

- Seismicity, Soils, and Geology (*3. b*):

  The preliminary soil investigation indicates that the strength and compressibility properties of the on-site soils are favorable for support of the construction associated with the proposed project. The surface soils, to depths of approximately 12 inches, are loose, having been previously disturbed by cultivation, but can be recompacted during normal site grading procedures. Undisturbed surface soils below a depth of 12 inches have sufficient strength to support light to moderate loads such as the loads imposed by one- and two-story buildings on conventional spread foundations with negligible settlement. Stiff clays and medium dense to dense sands that are capable of contributing to support of heavily loaded deep foundations with negligible settlement are present below depths of five to 12 feet.

  The report further indicates that street pavement subgrades should be prepared and compacted in accordance with City of Sacramento standards and materials, and construction within the structural pavement section shall conform to City standards. In addition, in terms of expansive soil, the geotechnical report determined that the surface clays present on most of the site, to depths of at least two feet, are of moderate to high plasticity and could develop significant swelling pressures with variations in moisture content. Therefore, the report recommends compaction of in place soils, as well as engineered and treated fills to 90 percent of the maximum dry density, to provide adequate support for floor slabs and

building foundations. In addition, chemical treatment of building pads with five percent high calcium or dolomitic quicklime by dry weight to a depth of 12 inches is recommended for reduction of the expansive tendencies of the soils.

The preliminary soil investigation also indicates that the low densities of the near-surface soils over most of the project site would, under the recommended compaction procedures, result in moderate subsidence of the native subgrades, as well as shrinkage of soils placed as engineered fill. Subgrades could subside an average of approximately three inches and excavated soils could shrink 15 to 20 percent when compacted as engineered fill.

Liquefaction is a phenomenon in which loose and saturated soils are subject to a temporary but essentially total loss of shear strength because of pore pressure build-up under the reversing cyclic shear stresses associated with earthquakes. The weight of structures on such liquefied material can precipitate structural damage. As stated above, the North Natomas basin is at risk for earthquake-related liquefaction. According to the *Preliminary Soil Investigation for Natomas Crossing Freeway Commercial Properties* (geotechnical report), due to the poor drainage characteristics of the surface and near-surface clayey soils on the project site, the surface could become saturated and unstable during the wet season. Therefore, the project site could be adversely impacted by potential liquefaction.

Because the proposed project site contains expansive soils, would likely experience subsidence, and could be subject to liquefaction, development of the proposed project could result in a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the potential expansive soil and subsidence impact to a *less than significant* level.

MM-1. *Prior to issuance of grading permits, final foundation investigations shall be performed for each commercial lot, in order to evaluate specific soil conditions at each structure location and to analyze support conditions based on anticipated structural loads and configurations. The final foundation investigations shall provide information about specific site preparation, including chemical treatment types and procedures, and foundation, floor support and pavement section recommendations. The final foundation investigations shall be submitted for the review and approval of the City Engineer to ensure that the proposed project implements all recommendations in the investigations.*

- Biological Resources (*7. a*):

The proposed project site is currently vacant, undeveloped land that was previously mass-graded in September 2002. A biological survey was conducted

prior to grading activities, and the survey did not detect the presence of any special-status species. In addition, prior to grading, the applicant paid the appropriate Natomas Basin Habitat Community Plan (NBHCP) mitigation fees.

Special-Status Plants: Seven special-status plant species occur within the NBHCP. Of the listed plants, the Delta Tule Pea (*Lathyrus jepsonii var. jepsonii*), Sanford's Arrowhead (*Sagittaria sanfordii*), Boggs Lake Hedge-Hyssop (*Gratiaola heterosepala*), and Legenere (*Legenere limosa*) could occur within the project site. However, all of the plants are riparian or wetland species and would occur within drainage features. The only drainage feature located on the project site is the North Natomas Drainage Channel, for which development is not proposed.

Special-Status Animals: The NBHCP listed 18 special-status species. The following species may use the project site for nesting habitat or foraging: Tricolored Blackbird (*Agelaius tricolor*), Aleutian Canada Goose (*Branta Canadensis leucopareia*), White-faced Ibis (*Plegadis chihi*), American Peregrine Falcon (*Falco Peregrinus anatum*), Loggerhead Shrike (*Lanius ludovicianus*), Greater Sandhill Crane (*Grus canadensis tabida*), Burrowing Owl (*Athene cunicularia*), Bank Swallow (*Riparia riparia*), Northwestern Pond Turtle (*Clemmys marmorata marmorata*), California Tiger Salamander (*Ambystoma hammondi*), and Western Spadefoot Toad (*Scaphiopus hammondi*). In addition, the Federally-listed Giant Garter Snake (*Thamnophis spp.*) and the State-listed Swainson's hawk (*Buteo swainsoni*) may be found on-site. The NNCP EIR found that impacts to Swainson's hawk foraging habitat would be significant and unavoidable. All other impacts to special-status species could be reduced to a less than significant level through participation in the Habitat Conservation Plan (HCP).

The project site has been designated for urban development within the Sacramento 2030 General Plan, and the project proponent has previously paid the required NBHCP mitigation fees. However, should specific protected species be found on-site, additional mitigation would be required under the NBHCP. Failure to implement this mitigation would result in a ***potentially significant*** impact.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less than significant* level.

MM-2. *Prior to and within 14 days of site disturbance, pre-construction surveys for special-status species shall be conducted by a qualified biologist retained by the project applicant and approved by the Development Services Department. Should any special-status species be identified, appropriate measures shall be implemented in compliance with the NBHCP (including implementation of*

Incidental Take Minimization Measures) for the review and approval of the Planning Director.

- Cultural Resources (*14. a-d*):

The project site does not currently contain any structures. However, as mentioned previously, the site is identified as a Primary Impact Area in the Sacramento 2030 General Plan. In addition, the Cultural Resources Inventory and Evaluation that was performed for the site discovered one prehistoric archaeological resource within the project area. (It should be noted that the prehistoric resource was not discovered within the boundaries of the proposed project site.) In January 1987, Peak and Associates performed a systematic excavation of the area in which the prehistoric resource was found. According to the IS/MND that was previously prepared for the project site, the investigation determined that the area represented a surface manifestation of fill material and did not contain an in situ cultural deposit. However, due to the size of the recorded area and the limited number of units excavated at that time, Peak and Associates recommended that a qualified archaeologist be present during surface and subsurface modifications to the site during future projects.

Because the site is located within an area known for previous Native American habitation, the disruption of undiscovered human remains and archaeological resources on the proposed project site could occur during construction (e.g., excavation of trenches for installation of utilities). Therefore, implementation of the proposed project would result in a ***potentially significant*** impact.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less than significant* level.

MM-3. *In the event that any prehistoric subsurface archeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits, animal bone, obsidian and/or mortars are discovered during construction related earth-moving activities, all work within 100 feet of the resource shall be halted, and the City shall consult with a qualified archeologist, representatives of the City and the qualified archeologist shall coordinate to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis and professional museum curation. In addition, a report shall be prepared by the qualified archeologist according to current professional standards.*

MM-4. *If a Native American site is discovered, the evaluation process shall include consultation with the appropriate Native American representatives.*

If a Native American archeologist ethnographic, or spiritual resources are involved, all identification and treatment shall be conducted by qualified archeologists, who are certified by the Society of Professional Archeologists (SOPA) and/or meet the federal standards as stated in the Code of Federal Regulations (36 CFR 61), and Native American representatives, who are approved by the local Native American community as scholars of the cultural traditions.

In the event that no such Native American is available, persons who represent tribal governments and/or organizations in the locale in which resources could be affected shall be consulted. If historic archeological sites are involved, all identified treatment is to be carried out qualified historical archeologists, who shall meet either Register of Professional Archeologists (RPA), or 36 CFR 61 requirements.

MM-5. If a human bone of bone of unknown origin is found during construction, all work shall stop within 100 feet of the find, and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission, who shall notify the person most likely believed to be a descendant. The most likely descendant shall work with the contractor to develop a program for re-internment 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 taken place.

This Draft EIR provides the additional analysis necessary to address the technical environmental impacts not fully resolved in the Initial Study. Consistent with the conclusions of the Initial Study, the following environmental issues are addressed in the Draft EIR:

- Land Use;
- Transportation and Circulation;
- Noise;
- Air Quality;
- Hydrology, Water Quality, and Drainage;
- Hazards;
- Aesthetics; and
- Public Services.

4.0.4 Section Format

Each technical chapter addresses a specific environmental issue and begins with an **introduction** describing the purpose of the chapter. The introduction is followed by a description of the project's **environmental setting** as the description pertains to that particular issue. The setting

description is followed by the **regulatory background** and the **impacts and mitigation measures** discussion. The *impacts and mitigation measures* discussion contains the **significance criteria**, followed by the **methods of analysis**. The *impact and mitigation measures* discussion includes impact statements prefaced, by a number in bold-faced type. An explanation of each impact and an analysis of the impact's significance follow each impact statement. All mitigation measures pertinent to each individual impact follow directly after the impact statement. The degree of relief provided by identified mitigation measures is also evaluated. An example of the format is shown below:

4.x-1 Statement of Impact

Discussion of impact for the proposed project in paragraph format.

Statement of *level of significance* of impact prior to mitigation is included at the end of each impact discussion.

Mitigation Measure(s)
Statement of ***level of significance*** after the mitigation is included immediately preceding mitigation measures.

4.x-1(a) *Recommended mitigation measure(s) presented in consecutive order in italics.*

4.x-1(b) *etc. etc.*

4.1 LAND USE

4.1 LAND USE

4.1.0 INTRODUCTION

The Land Use chapter is intended to provide the reader with information regarding current General Plan land use and zoning designations; as well as land use policies in the City of Sacramento and in the vicinity of the proposed project. Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines states that "the EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans."

The proposed Natomas Crossing project is analyzed in this chapter for compatibility with the recently adopted Sacramento 2030 General Plan, which was adopted on March 3, 2009,[1] and the City's Comprehensive Zoning Ordinance.[2] In addition, the chapter discusses the existing land use setting of the project site and the adjacent area, including the identification of existing land uses. A detailed discussion of the relevant goals and policies from the above-mentioned Sacramento comprehensive planning documents is also included in the below analysis.

4.1.1 EXISTING AND PROPOSED LAND USES

The following provides the existing land uses on the project site as well as the proposed land uses designations and zoning.

Existing Land Uses

The project site is located between Interstate 5 and East Commerce Way, with 66.8 net acres north of Arena Boulevard (referred to as Quadrant B), and 83.6 net acres south of Arena Boulevard (referred to as Quadrant C [47.2 net acres] and Quadrant D [36.4 net acres]) for a total of 150.4 net acres in the North Natomas area of the City of Sacramento.

The project site is currently vacant and mass-graded. The project site does not contain trees, wetlands, or other riparian areas. Arco Arena is located east of the Quadrant B portion of the project site. Land uses surrounding Quadrant B include existing office uses (i.e., medical and dental) and vacant lots to the east; a gated townhouse development, entitled Bella Rose – Villas at Natomas, to the northeast; and an undeveloped residential project site, entitled Provence, to the north (utilities are currently stubbed and models have been built), across from which is the Natomas Pointe Plaza Office/Medical Park that is currently under construction. A drainage channel, open space buffer, and Interstate 5 adjoin the western boundary of the entire project site. Two access roads for Arco Arena are also located off of East Commerce Way, east of Quadrant B, including the Arco Main Entry and the West Entrance.

Land uses surrounding Quadrant C include the Natomas Field residential subdivision, which is currently under construction to the east, and the recently completed Natomas Landing retail center to the north of Natomas Field.

Land uses surrounding Quadrant D include the proposed Natomas Crossing Drive and Quadrant C to the north; Elixir Industries and vacant land to the east, across from which is a residential single family neighborhood; and San Juan Road and the Interstate 80 interchange to the south.

The type and intensity of land uses approved for the specific location of the subject project include:

Quadrant B

- 353,580 to 1,219,070 s.f. of office
- 19,215 to 99,856 s.f. of retail
- 47,850 to 75,400 s.f. of hotel

Quadrant C

- 198,800 to 500,639 s.f. of office
- 25,295 to 117,600 s.f. of retail
- 97,350 to 153,400 s.f. of hotel
- 7,000 to 16,800 s.f. of daycare

Quadrant D

- 253,600-584,700 s.f. of office
- 9.5 acres of drainage basin (designated Water)

Proposed Land Uses

The list of project-level entitlements for the project, if approved, would enable the development of a shopping center and office uses on Quadrant C with a Planning Director Plan Review before building permit issuance. The program-level entitlements being requested by the applicant would result in various land use and zoning designation changes that would enable the future development of a hospital and associated medical office uses on Quadrant D, and retail space within the range of 309,276 to 463,914 s.f. on the southern portion of Quadrant B. The northern portion of Quadrant B would not require a rezone, as the proposed land uses are generally consistent with those planned for the site in previous approvals. The proposed uses for the project include:

Northern Portion of Quad B

- 10 acres of Residential consisting of approximately 180 units;
- 5 acres of Hotel consisting of approximately 130,000 s.f. or 300 rooms; and
- 14 acres of Office consisting of approximately 240,000 s.f.

Southern Portion of Quadrant B:

- 309,276 to 463,914 s.f. of Shopping Center uses on 36.2 acres.

It should be noted that in order for Quadrant B to be developed at a later date, additional entitlements would need to be secured; in order for Quadrant and D to be developed, additional entitlements would need to be secured (see Pub. Resources Code, § 21083.3).

Quadrant C

The 47.2 net acres in Quadrant C portion of the project are proposed for 404,580 s.f. of regional retail uses and 200,000 s.f. of office uses. One large retail pad is proposed in the northern portion of Quadrant C, consisting of a 137,933-square-foot large format retail pad with an attached 31,179-square-foot garden center. Quadrant C would include a total of 20 retail pads and two office pads. Primary access to this portion of the project site would be provided via three entrances along East Commerce Way and a right-in only from Arena Boulevard.

Quadrant D

Quadrant D includes the development of approximately 600,000 s.f. for a hospital, and an additional 600,000 s.f. for medical office uses.

Existing 2030 Sacramento General Plan Land Use Designations

The City of Sacramento City Council recently adopted the *Sacramento 2030 General Plan* on March 3, 2009. The Preferred Land Use & Urban Form Diagram of the 2030 General Plan designates the project site as Planned Development (PD) (See Figure 3-3). The Planned Development designation is defined in the General Plan as follows:

Planned Development

The Planned Development designation is applied to four areas with pending projects that were in the development review process as of March 2008. These include McKinley Village, Panhandle, Camino Norte, and Natomas Crossing. Specific land use and urban form designations (i.e., designations outlined in this plan) will be applied to these areas once planning is complete and the City has approved the development.

Proposed 2030 Sacramento General Plan Land Use Designation(s)

Under the 2030 General Plan, the proposed project would require a General Plan Amendment to redesignate the project site from PD to the following designations (See Figure 3-3):

- Quadrant B
  Northern: N/A
  Southern: Regional Commercial

- Quadrant C
  Regional Commercial

- Quadrant D
  Employment Center Mid-Rise

The RC and EC-MR land use designations are defined in the 2030 General Plan as follows:

Regional Commercial

Regional Commercial centers exist along major corridors and major freeway interchanges in the City. Regional Commercial centers represent a significant opportunity for transformation and enhancement (i.e., increased residential and employment uses) of the City. New infill development can be added to surface parking areas and along adjoining corridors to create a more compact development pattern that creates a regional destination for living, working, and shopping. Parking can be relocated to structures and behind building, while residential and office uses can be integrated into the regional commercial centers to create a more balanced mix of uses. Broad sidewalks with street trees and pedestrian amenities within the centers can create an active pedestrian component that promotes walking.

Employment Center Mid-Rise

Employment Center Mid-Rise areas play a critical role in accommodating new businesses and creating new jobs. The combination of high-density buildings and low site coverage in existing employment centers provides the opportunity for new infill development in these areas with complementary uses that transforms the existing single-use areas into more self-sufficient mixed-use areas with reduced dependence on automobile transportation.

Existing Zoning

The project site currently has a zoning designation of Employment Commercial-40 PUD (EC-40 PUD), EC-50 PUD, and Limited Commercial (C-1) PUD (See Figure 3-4). The City of Sacramento Zoning Code (Title 17) defines the above zoning designations as follows:

Employment Center (EC) Zone

This zone is a flexible zone primarily for employment generating uses in a pedestrian friendly setting with ample private and/or public open space. The EC zone also provides the opportunity for a variety and mix of supporting uses, including support retail, residential, and light industrial. The EC zone has several categories of permitted intensity ranging from 30 employees per net acre (EC-30) to 80 employees per net acre (EC-80). The designation of intensity is determined by proximity to planned transit service, freeway/roadway access, maintaining or improving housing opportunities, and maintaining or improving the environmental qualities within the EC zoned area.

Planned Unit Development (PUD)

Planned Unit Developments are designed to encourage the development of well-planned facilities that offer a variety of housing or other land uses through creative and imaginative planning; among them the following types of developments are allowable:

B. Residential-Business Development. Mixed residential-business developments combining among other things, apartment, convenience shopping facilities, motel-hotel combination, offices, commercial recreation facilities, or other compatible uses grouped in a well-designed and coordinated site development.

On June 24, 1997, the City Council approved a Development Agreement and Rezone (P96-084) of the 298.5-acre site to designate the site as the Natomas Crossing – Alleghany #3 Planned Unit Development (PUD). The development guidelines and a schematic plan for the PUD were approved with the development agreement. On May 8, 1997 the Planning Commission approved a Tentative Master Parcel Map for the site (P96-084).

In 2001, the applicant requested Community Plan Amendments, Rezone, PUD Guidelines and Schematic Plan Amendments to accommodate Employment Commercial uses at a greater intensity, a Lot Line adjustment, Tentative Subdivision Map, and two Special Permits for the subject site known as Natomas Crossing – Alleghany Area #3. A buildout total of approximately 1,525,790 to 3,955,995 s.f. of structures was approved in June 2002, with approximately 1,020,500 to 2,980,799 s.f. proposed as office.

Limited Commercial (C-1)

A zone that allows certain office, retail stores, and commercial service establishments that are compatible with residential developments. This zone is intended to be applied to small parcels surrounded by a residential neighborhood. Any nonresidential development in the C-1 zone that requires a discretionary entitlement shall also be subject to review for consistency with the commercial corridor design principles.

Proposed Zoning

The proposed project includes a rezone of the southern portion of Quadrant B to Shopping Center Planned Unit Development (SC-PUD). Quadrant C would be rezoned to SC-PUD and EC-50 (southern 8.7 acres). In addition, Quadrant D would require a zone change from EC-40 to EC-50 (See Figure 3-4). The EC zoning designation has been defined earlier. The Sacramento Zoning Code (Title 17) defines the SC designation as follows:

Shopping Center (SC) Zone

This is a general shopping center zone, which provides a wide range of goods and services to the community. This zone, however, prohibits general commercial uses, which are not compatible with a retail shopping center.

Adjacent Land Use Designations and Zoning

The City of Sacramento has adopted the following land use and zoning designations for the surrounding areas (See Figure 3-3, Existing and Proposed General Plan Land Use Designations, Figure 3-4, General Plan Land Use & Urban Form Diagram, and Figure 3-5, Existing and Proposed Zoning Designations):

2030 Sacramento General Plan and North Natomas Community Plan:

Employment Center Mid-Rise	West, East, North, South
Urban Center High	Northeast
Suburban Center	East
Suburban Neighborhood High (15-30 du/ac)	East
Parks and Recreation	South

Zoning:

A-OS PUD	Agriculture-Open Space	West (Buffer)
EC-40 PUD	Employment Center-40	South, East
EC-50 PUD	Employment Center-50	North, West
R-2B PUD	Multi-Family Zone	East
TC PUD	Transportation Corridor	West (Buffer)
SPX	Sports Complex	Northeast

The 2030 Sacramento General Plan defines the Employment Center Mid-Rise, Urban Center High, Suburban Center, Suburban Neighborhood High, and Parks and Recreation designations as follows:

Employment Center Mid-Rise

The Employment Center Mid-Rise designation is discussed above.

Urban Center High

The Urban Center High designation provides thriving areas with concentrations of uses similar to downtown. Each center includes employment-intensive uses, high-density housing, and a wide variety of retail uses including large format retail, local shops, restaurants, and services. These areas include major transportation hubs accessible by public transit, major highways and local arterials, and pedestrian travel. Building heights vary from low to high rise. Other characteristics, such as building orientation, frontage-type, access, parking, streetscape, and open space, are similar to those in the Central Business District.

Suburban Center

Suburban centers are automobile-oriented and represent a significant opportunity for transformation and enhancement of the City. Because of the large amount of land dedicated to

parking, new infill development can be added to surface parking areas and along adjoining public corridors to create more compact and consistent development. Parking can be relocated behind buildings and out of public view, while residential and office uses can be integrated into the suburban centers. Broad sidewalks with street trees and pedestrian zone amenities, as well as public gathering places, can be created to promote walking and social interaction.

Suburban Neighborhood High

The Suburban Neighborhood High designation allows residential uses within densities from 15 to 30 dwelling units per net acre. This designation provides for single-use multifamily housing and predominantly residential mixed-use development in areas served by major transportation routes and facilities, and near major shopping areas, including the following:

- Multifamily dwellings (e.g., apartments and condominiums);
- Mixed-use neighborhood-serving commercial; and
- Compatible public, quasi-public, and special uses.

Parks and Recreation

The Parks and Recreation designation includes greenways, large developed parks, and other areas primarily used for recreation. Typically, these areas are characterized by a high degree of open area, and a limited number of buildings. Recreational facilities frequently include sports fields, playground equipment, picnic areas, sitting areas, concession businesses, open turf and natural areas, trails, and golf courses.

<u>The Sacramento Zoning Ordinance defines these designations as follows:</u>

AOS Agriculture-Open Space Zone

This is an exclusive agricultural zone designed for the long-term preservation of agricultural and open space land. This zone is designated to prevent the premature development of land in this category to urban uses.

EC Employment Center

The Employment Center designation is discussed above.

R-2B Multi-Family Zone

The R-2B zone is a multi-family residential zone. This zone offers broader density flexibility as a transition from the garden apartment setting to a more traditional apartment setting. Units can be individually owned through compliance with the condominium regulations in Chapter 17.192. Minimum land area per unit is 2,000 s.f. Maximum density for the R-2B zone is 21 dwelling units per acre.

SPX Sport Complex

Primary uses include professional and amateur sports events and sports exhibitions, such as: baseball, football, basketball, boxing, hockey, gymnastics, soccer, tennis, track and field, and bicycling. Other uses, as specified by the planned unit development not directly related to the sports complex but compatible with on-site and adjacent existing or designated land uses, may be allowed if they are to be located within the sports facility structure. Such uses include, but are not limited to, offices, health clubs, and child care centers.

Transportation Corridor (TC)

The transportation corridor zone (hereinafter TC zone) is intended to regulate land uses within, above and below public agency transportation corridors to insure that the development thereof is consistent with the general plan, and to provide uniform standards for the development of ground rights and/or air rights within such corridor.

4.1.2 REGULATORY BACKGROUND

Sacramento General Plan

The following Elements from the 2030 Sacramento General Plan, adopted March 3, 2009, contain goals and policies that are applicable to the proposed project.

Community Plan Element

Goal CP 1.1 Community Plans. Maintain community plans that provide community specific policy direction within the framework of citywide General Plan goals and policies.

Policy CP 1.1.5 Land Use Direction. The City shall not prepare or adopt a separate community plan land use diagram as part of the community planning process. Community plans shall refer to and be consistent with the General Plan Land Use and Urban Form Diagram. As community plans are prepared, updated, or amended, the City shall review the citywide Land Use and Urban Form Diagram and shall amend the diagram as appropriate using the designations in the citywide Land Use and Urban Design Element to reflect community issues related to infill, redevelopment, reuse, and new growth.

Land Use Element

Goal LU 2.5 City Connected and Accessible. Promote the development of an urban pattern of well-connected, integrated, and accessible neighborhoods corridors, and centers.

Policy LU 2.5.1 Connected Neighborhoods, Corridors, and Centers. The City shall require that new development, both infill and greenfield, maximizes connections and minimizes barriers between neighborhoods corridors, and centers within the city.

Policy LU 2.5.2 Overcoming Barriers to Accessibility. The City shall strive to remove and minimize the effect of natural and manmade barriers to accessibility between and within existing neighborhoods corridors, and centers.

Goal LU 2.6 City Sustained and Renewed. Promote sustainable development and land use practices in both new development and redevelopment that provide for the transformation of Sacramento into a sustainable urban city while preserving choices (e.g., where to live, work, and recreate) for future generations.

Policy LU 2.6.1 Sustainable Development Patterns. The City shall promote compact development patterns and higher development intensities that use land efficiently; reduce pollution and automobile dependence and the expenditure of energy and other resources; and facilitate walking, bicycling, and transit use.

Policy LU 2.6.5 Green Building Retrofit. The City shall promote the retrofitting of existing structures with green building technologies/practices and encourage structures being renovated to be built to a green building standard such as Leadership in Energy and Environmental Design (LEED).

Policy LU 2.6.6 Heat Island Effect. The City shall seek to reduce the "heat island effect" by promoting such features as reflective roofing, green roofs, light-colored pavement, and urban shade trees and by reducing the unshaded extent of parking lots.

Goal LU 5.1 Centers. Promote the development throughout the city of distinct, well-designed mixed-use centers that are efficiently served by transit, provide higher-density, urban housing opportunities and serve as centers of civic, cultural, and economic life for Sacramento's neighborhoods and the region.

Policy LU 5.1.1 Diverse Centers. The City shall encourage development of local, citywide, and regional mixed-use centers that address different community needs and market sectors, and complement and are well integrated with the surrounding neighborhoods.

Policy LU 5.1.2 Centers Served by Transit. The City shall promote the development of commercial mixed-use centers that are located on existing or planned transit lines in order to facilitate and take advantage of transit service, reduce vehicle trips, and enhance community access.

Policy LU 5.1.4 Major Retail and Office Development. The City shall work with developers to develop major regional commercial and office projects in centers throughout the city that provide shopping and jobs for all city residents.

Policy LU 5.1.5 Vertical and Horizontal Mixed-use. The City shall encourage the vertical and horizontal integration of uses within commercial centers and mixed-use centers, particularly residential and office uses over ground floor retail.

Goal LU 5.4 Regional Commercial Centers. Establish major mixed-use activity centers through development and reinvestment in existing regional commercial centers that are vibrant, regionally accessible destinations where people live, work, shop, and congregate in a mix of retail, employment, entertainment, and residential uses.

Policy LU 5.4.1 Incorporating Housing and Employment Uses. The City shall promote the introduction of housing and employment uses in the city's existing regional commercial centers as a means of enhancing retail viability, establishing pedestrian-oriented shopping districts, creating more attractive buildings and public spaces, supporting transit viability, and reducing vehicle trips.

Policy LU 5.4.2 Enhanced Design Character. The City shall encourage redevelopment of existing regional commercial centers into dynamic mixed-use centers by replacing surface parking with structured parking, replacing parking area drive aisles with pedestrian-friendly shopping streets, infilling parking areas with multi-story mixed-use buildings, and creating attractive, well-appointed streetscapes and plazas.

Policy LU 5.4.3 Neighborhood Centers and Destinations. The City shall encourage greater pedestrian and bicycle connections between mixed-use regional commercial centers and surrounding neighborhoods.

Goal LU 7.1 Employment Centers. Encourage employee-intensive uses throughout the city in order to strengthen Sacramento's role as a regional and West Coast employment

center and to encourage transit ridership and distribute peak hour commute directions.

Policy LU 7.1.1 Employment Intensive Uses. The City shall encourage employee-intensive uses such as medical and professional offices, light industry, research, and skill training.

Policy LU 7.1.2 Housing in Employment Centers. The City shall promote compatible integration of housing in existing and proposed employment centers to help meet housing needs and reduce vehicle trips and commute times, where such development will not compromise the City's ability to attract and maintain employment-generating uses.

Policy LU 7.1.3 Accessory Support Uses. The City shall require new employment centers and industrial development to incorporate such accessory uses as public open space amenities, transit amenities, child care facilities, and non-office retail uses based on the size and location of the development and the availability and capacity of existing accessory uses.

Policy LU 7.1.4 Urban Design. The City shall require that new and renovated employment center development be designed to accommodate safe and convenient walking, biking, and transit use, and provide an attractive, high-quality "campus environment," characterized by the following:

- A highly interconnected system of streets and walkable blocks.
- Buildings sited around common plazas, courtyards, walkways, and open spaces.
- Extensive on-site landscaping that emphasizes special, features such as entryways, and screens parking lots and service areas.
- A coordinated and well-designed signage program for tenant identification and way finding.
- Attractive streetscapes and lighting to promote pedestrian activity.
- Clearly marked entrance drives, pedestrian routes, and building entries that minimize potential conflict between service vehicles, private automobiles, and pedestrians.
- Facilities and services such as child care, cafes, and convenience retail that address employee needs.

Goal LU 10.1 Growth and Change beyond the Policy Area. Plan comprehensively for growth and change in Planned Development areas consistent with the Regional Blueprint principles and the City's Vision and Guiding Principles, and ensure that annexation and development provide regional and community benefits.

Policy LU 10.1.4 Planned Development. The City shall require areas designated Planned Development on the Land Use and Urban Form Diagram be developed consistent with the General Plan's Vision and Guiding Principles and obtain a General Plan Amendment to designate the area consistent with the proposed project using the appropriate designations contained in the Land Use and Urban Design Element.

North Natomas Community Plan

As stated in the North Natomas Community Plan section of the 2030 General Plan, "The following section contains policies relating to Planned Unit Developments (PUD). Development agreements that were executed prior to the 2008 adoption of the 2030 General Plan are subject to the North Natomas Community Plan, zoning regulations, and PUD policies that were enforced at that time. PUD and development policies were originally included in each policy subsection of the 1994 North Natomas Community Plan have been consolidated here for readability."

NN.LU 1.1 Designation Required. All development in the plan area shall be designated as a Planned Unit Development (PUD) and shall include Schematic Plan and Development Guidelines for the PUD.

NN.LU 1.2 Participation in Financing Plan. The City shall ensure that land owners who are restricted from development for reasons beyond their control should not be required to participate in the Financing Plan until the restriction is resolved.

NN.LU 1.3 Employment Center Development Guidelines. The City shall require any development in an Employment Center area to comply with the North Natomas Development Guidelines.

NN.LU 1.4 Financing Plan. The City shall ensure that the Financing Plan will provide assurance that all essential infrastructure and public facilities (necessary for public health, safety, welfare, and education) are in place and operational to serve each phase of development.

NN.LU 1.5 Development Agreements. The City shall ensure that all phased drainage facilities be implemented in accordance with the Finance Plan. Development agreements formalizing financial commitments

for the CDP must be in place prior to approval of any phased incremental development.

NN.LU 1.16 Employment Center Heights. The City shall ensure that buildings are varied to create an interesting skyline.

NN.LU 1.18 Support Retail Required in Each Employment Center. The City shall require every Employment Center to provide some level of support retail goods and services, either ancillary (within a primary use building) or support (within a stand alone building). An Employment Center that is 2 acres or less in size and is located adjacent to a PUD with support retail is exempt from the retail requirement.

NN.LU 1.19 Residential Exception. The City shall provide a residential exception within the geographic area bounded by the East Drain, I-5, Del Paso Road, and Arena Boulevard (this area comprises about 340 acres and includes several PUDs). Acreage devoted to residential use(s) may exceed 25 percent of the individual Employment Center subject to a Special Permit. In addition to the Special Permit and the findings required by Chapter 17.212, the following findings must also be made:

- The proposed increase in residential use is compatible with adjacent uses in the PUD as well as with adjacent uses within contiguous PUDs
- The residential use has a component of mixed-use or conjunctive use within the residential project to serve the residents and nearby workers or provides a component of affordable housing
- The proposed increase in residential use will improve the balance of jobs and housing as provided in the Community Plan
- The proposed increase in residential use will not result in an over-concentration of multi-family projects in the area
- The project meets the Community Plan factors used to gauge the appropriateness of residential uses in an Employment Center
- The total amount of acreage devoted to residential use(s) within this geographic area does not exceed 25 percent

NN.LU 1.20 Development Guidelines. Any development in an EC area shall comply with the North Natomas Development Guidelines.

NN.LU 1.21 Support Retail Required. Every EC PUD will be required to provide some level of support retail goods and services, either ancillary (within a primary use building) or support (within a stand alone building). An EC PUD that is 2 acres or less in size and is located adjacent to a PUD with support retail is exempt from the retail requirement.

NN.LU 1.27 Market Study Requirement. The City shall require a feasibility study and apportionment study during the Special Permit entitlement process for a proposed commercial project that is not designated for commercial use. This review is designed to ensure that the site is feasible for the commercial use and does not contribute to too much commercial area in the community. Incentives should be provided to commercial developers who propose to develop within the first five years of buildout to foster the provision of retail goods and services at the beginning of residential development.

North Natomas Planned Unit Development Requirement

All development proposed in the North Natomas Community Plan area is required to be designated a Planned Unit Development (PUD). The purpose of the Planned Unit Development District is to allow diversification in the relationship of various buildings, structures, and open spaces in order to be relieved from the rigid standards of conventional zoning.

4.1.3 DISCUSSION OF PROJECT'S COMPATIBILITY WITH SURROUNDING LAND USES, AND CONSISTENCY WITH ADOPTED PLANS AND POLICIES

Method of Analysis

This section analyzes the compatibility of the proposed project with surrounding land uses and the consistency of the proposed project with adopted plans and policies. Environmental impacts resulting from the proposed project or alternatives are discussed in the respective environmental categories. This analysis differs from the analyses in Chapters 4.2 through 4.8 in that plan consistencies and land use compatibilities are addressed instead of environmental impacts. This discussion complies with Section 15125(d) of the CEQA Guidelines, which requires that EIRs discuss inconsistencies to local plans as part of the environmental setting.

Compatibility with Existing Uses

The proposed project is evaluated for its compatibility with the existing land uses adjacent to the project site. The evaluation considers the existing and planned type and intensity of uses in the project vicinity and those proposed for the project site. The analysis assumes the construction and implementation of the proposed project within the existing and planned environment to determine if the project is compatible with those existing and planned uses surrounding the project site.

Consistency with the Adopted Plans and Policies

The proposed project is examined for consistency between the proposed project and the General Plan based on the goals and policies of the General Plan. The project's consistency with the NNCP and Zoning Ordinance is also discussed. It should be noted that ultimate determination of consistency rests with the City Council.

Consistency with Blueprint

The Sacramento Area Council of Governments (SACOG) adopted the Sacramento Region Blueprint Transportation and Land Use Study Preferred Blueprint Scenario (Blueprint) in December 2004. The Blueprint is a vision for long-term land uses within the Sacramento region that promotes compact, mixed use development over the type of lower density, sprawling land uses emblematic of past regional growth and development. The overall goal of the Blueprint is to advocate more efficient land use planning that reduces vehicle miles travelled.

The proposed project incorporates numerous land use, conservation, renewable energy, and transportation measures designed to reduce contributions to global warming, consistent with the most current recommendations by the Attorney General. For example, Mitigation Measure 4.4.3, developed in consultation with the Air District as part of the project's Air Quality Management Plan, requires energy efficient building design, and cool roofs; Measure 4.4-9 requires various water conservation and efficiency measures such as water efficient landscapes and irrigation systems; Measure 4.4-1 limits idling time for construction vehicles; and Measure 4.4-3 requires bicycle parking areas in commercial projects. The project design and project PUD Guidelines ensure development of a mixed-use project that will support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and promote efficient delivery of services and goods – all of which help reduce greenhouse gas emissions. Please refer to Chapter 4.4 of the EIR for a complete discussion of air quality impacts and global warming.

The Blueprint designates that the project site should be developed as medium density, mixed use center or corridor. The proposed project's mix of regional retail uses, residential units, and medical and hospital facilities, is consistent with the Blueprint's mixed use designation. The project would be consistent with the smart growth principles identified in the Blueprint by focusing on compact development to maximize use of existing land; offering a range of mixed land uses; using existing assets by infilling or intensifying the use of parcels in urbanized areas; encouraging a distinctive, attractive community with high quality design; and providing transportation choices to encourage people to walk, ride bicycles, ride the bus, ride light rail, take the train, or car pool.

The project exemplifies Smart Growth Blueprint design by providing mixed uses (i.e., residential, retail, medical office, commercial and hospital land uses) on the project site. As designed, the project will provide for housing proximate to existing employment centers and adjacent to the project's planned large format retail pad, supporting commercial and retail uses, and a 600,000 square foot medical office campus and 600,000 square foot hospital. The site will be easily accessed by the I-5 traveler. The project will provide medical and office uses in North Natomas, thereby providing local health services and reducing the need of residents and north

County communities to travel greater than five miles. In addition, the project is expected to reduce vehicle miles travelled which is a cornerstone of the Blueprint principles. An additional benefit of the Blueprint's goal of more compact, smart growth patterns is a reduction in greenhouse gas emissions which will assist the region in achieving emerging targets and goals under AB32 and SB 375, which were adopted after the Blueprint.

The project would also provide a variety of transit opportunities including walking and bicycling, and would be positioned in close proximity to local bus service (future bus stops will be located along East Commerce Way) and the future Downtown-Natomas-Airport rail line's planned Natomas Marketplace and Arena Boulevard Stations. By mixing the needs of the local community and regional shoppers through a mix of retail, residential and commercial uses, and reducing overall vehicle miles traveled, the project is consistent with Blueprint principles.

Consistency with the 2030 General Plan.

The 2030 General Plan designates the project site as Planned Development. Policy 10.1.4 of the 2030 General Plan states "[…] The City shall require areas designated Planned Development on the Land Use and Urban Form Diagram be developed consistent with the General Plan's Vision and Guiding Principles and *obtain a General Plan Amendment* to designate the area consistent with the proposed project using the appropriate designations contained in the Land Use and Urban Design Element." (Emphasis added.) The project is seeking a General Plan Amendment from PD to Regional Center (RC) for Quadrant B (40.8 gross acres), from PD to RC for Quadrant C (52.9 gross acres), and from PC to Employment Center-Mid Rise (EC-MR) for Quadrant D (39.8 gross acres).

Several of the goals and policies in the General Plan provide for the intensification, redevelopment, and revitalization of Sacramento's uniquely identifiable centers that are defined by their common functional role, mix of uses, density/intensity, physical form and character, and/or environmental setting as places for commerce, employment, entertainment, culture, and living. Pedestrian-oriented activities are encouraged with plazas, cafes, bookstores, and restaurants that draw a variety of people and offer a welcome setting. Policies accommodate development of property exclusively for commercial and employment uses (without housing) and/or mixed-use projects that integrate housing with retail, office, community facilities, and other uses within the same structure or on the same site.

<u>Regional Commercial</u>

General Plan Goal 5.4 applies to Regional Centers, and establishes an overall goal to "establish major mixed-use activity centers through development and reinvestment in existing regional commercial centers that are vibrant, regionally accessible destinations where people live, work, shop, and congregate in a mix of retail, employment, entertainment, and residential uses." The proposed project would meet this goal by establishing in Quadrants B and C a regional commercial center that would provide a mix of retail, commercial, restaurant and employment uses, including a large format retail pad for a home improvement center. The policies in support of Goal 5.4 include: LU 5.4.1, LU 5.4.2, and LU 5.4.3.

The project as a whole introduces both housing and employment uses, and establishes pedestrian oriented shopping areas and public spaces, consistent with Policy 5.4.1. The project's retail component has been designed to evoke a "Main Street" feel coupled with a modern influence, and the Design Guidelines for the project establish a public plaza space that encourages outdoor dining, provides access for bicyclists, proximity to transit, easy access to surrounding freeways and roadways, and a pleasant walking experience for pedestrians.

As discussed in the PUD Guidelines, the project achieves consistency with Policy 5.4.3 by providing pedestrian and bicycle connections between surrounding uses. An off-street bike path within the freeway buffer, which is part of the regional bikeway system, provides community connectivity. The project site offers a bike plaza with lockers to encourage alternate transportation to the site. Designated bike lanes through the site provide connectivity from the bike path to East Commerce Way. In addition, the site is connected for pedestrian use through meandering walkways, and connections have been located to connect the major tenants to the shops and restaurant pads. The pedestrian connectivity has been designed to link all buildings to each other, as well as to the public sidewalks, bus stops, parking areas, and adjacent developments. The project would also be positioned in close proximity to local bus service (future bus stops will be located along East Commerce Way) and the future Downtown-Natomas-Airport rail line's planned Natomas Marketplace and Arena Boulevard Stations.

Employment Center Mid-Rise

The EC designation provides for large mixed-use office/employment centers that include the following: mid-rise office complexes; support retail and service uses, such as restaurants, dry-cleaners, gym/fitness centers, markets, hotels, and office services (e.g., printing/copying/shipping); landscaped gathering places that include support uses; residential uses as a supportive mixed use or adjacent to large employment center; and compatible public, quasi-public, and special uses. The EC-Mid Rise designation allows a density of 18 to 60 du/acre and an FAR of 0.35 to 2.0. The project includes development of a 600,000 square foot medical office campus and a 600,000 square foot hospital, consistent with the General Plan designation for public and quasi-public uses.

Employment Center Mid Rise areas are specifically discussed in the General Plan as playing a critical role in accommodating new businesses and creating new jobs. The combination of high-density buildings and low site coverage in existing employment centers provides the opportunity for new infill development in these areas with complementary uses that transform the existing single-use areas into more self-sufficient mixed-use areas with reduced dependence on automobile transportation. The specific policies include LU 7.1.1, LU 7.1.2, LU 7.1.3, and LU 7.1.4.

The proposed project includes employment intensive uses including medical office buildings and a hospital in Quadrant D, consistent with the General Plan's policies encouraging medical offices and "campus environments." Accessory support uses such as regional and community retailers are located in adjacent Quadrant C. The project as a whole will also provide a housing component near to the employment centers, with the 180 residential units proposed for future development in Quadrant B.

The project's urban design, which is in concert with policy 7.1.4, is focused on interconnectivity, walkability, and a campus environment. In addition, development of the proposed hospital and medical campus is consistent with the General Plan goals and policies focused on reducing vehicle miles traveled and commute times and decreasing greenhouse gas emissions (e.g., policies LU 1.1.1, LU 5.1.2, LU 5.4.1, and LU 7.1.2). Currently, residents who reside in and near North Natomas access most in- and out-patient services at hospitals located at 2801 L Street and 1650 Response Road, which are located greater than five miles, generally south of the project site (see Figure 3-6). The most direct route from the North Natomas area to the hospital at 2801 L Street is via I-5. The most direct route to the hospital on 1650 Response Road is via I-5 and I-80. The development of a hospital is anticipated to reduce travel distance for residents living in and near Natomas who currently access medical services at Response Road and L Street facilities, which would reduce traffic on regional routes such as I-5 and I-80.

General Plan Policy ED 2.1.4, Attract Skilled Workers, states that "the City shall work to improve the quality of life in the city to retain existing skilled workers and attract skilled workers from beyond the region." Policy ED 1.1.7, Sustainable Businesses, states that "the City shall attract and retain long-term, economically sustainable businesses." The project's proposed hospital and medical campus will achieve both of these important goals by drawing skilled medical professionals to Sacramento and proving a long-term sustainable hospital and related medical uses.

Consistency with the North Natomas Community Plan.

Pursuant to General Plan Policy CP 1.1.5, **"**The City shall not prepare or adopt a separate community plan land use diagram as part of the community planning process. Community plans shall refer to and be consistent with the General Plan Land Use and Urban Form Diagram. As community plans are prepared, updated, or amended, the City shall review the citywide Land Use and Urban Form Diagram and shall amend the diagram as appropriate using the designations in the citywide Land Use and Urban Design Element to reflect community issues related to infill, redevelopment, reuse, and new growth." Consistent with this policy, the 2030 North Natomas Community Plan (NNCP) designation for the project site is PD. As discussed above, the project is seeking a General Plan Amendment from PD to RC and to EC-MR. The project is consistent with the North Natomas Community Plan and policies described above.

Consistency with the City of Sacramento Zoning Ordinance.

Some elements of the proposed project are inconsistent with the Employment Center zoning designation(s) of the project site. The project applicant has therefore requested that the project site be appropriately rezoned. To accommodate the proposed regional commercial center, the applicant is requesting that 83.4 acres of the project site in Quadrants B and C be rezoned to Shopping Center (SC) (74.7), and 8.7 acres in Quadrant C zoned from EC-40 to EC-50, and 36.4 acres in Quadrant D from EC-40 to EC-50. The proposed zoning changes would bring the project into consistency with the 2030 General Plan designation and anticipated commercial uses of the project.

Compatibility with existing adjacent land uses.

The determination of compatibility of land uses typically relies on a general discussion of the types of adjacent land uses to a proposed project and whether any sensitive receptors exist on the adjacent properties or are associated with the proposed project. Incompatibilities typically exist when uses such as residences, parks, churches, and schools are located adjacent to more disruptive uses such as heavy industrial, major transportation corridors, and regional commercial centers where traffic levels and attendant noise may be high. The identification of incompatible uses occurs if one land use is anticipated to be disruptive of the existing or planned use of an adjacent property.

Approval of the proposed project would result in the development of a shopping center where Employment Center and Community Commercial uses are currently planned, and are needed in the community. Although many retail centers exist in the North Natomas area, the majority are community or neighborhood serving spaces including the Park Place shopping center which includes Raley's and Kohl's, and neighborhood serving drug stores, grocery stores and restaurants. The proposed Natomas Crossing project will be a community shopping center. On a regional level, the Natomas Marketplace shopping center along Truxel Road contains Wal-Mart, Home Depot, Ross, Michael's, and other retail stores similar in demographic with stores planned for Natomas Crossing. The project's retail component, combined with these existing and planned uses, will provide needed retail uses that meet demand and create a market synergy within the community and the region. In addition, the project's retail uses will provide shopping and dining opportunities for the anticipated employees working at the proposed medical office campus and hospital. This influx of new workers would be expected to frequent the shopping center and serve as a base consumer for the proposed retail and commercial uses.

The area to the east across East Commerce Way is the Natomas Field residential development. The proposed project is anticipated to be compatible with nearby residential uses, as convenient, smaller retail uses of the project would front East Commerce Way while the larger retail pads of the project would be located closest to the freeway, furthest away from the Natomas Field residential development. The area to the south of the proposed project is currently undeveloped and is anticipated for Employment Center uses. The southern portion of the proposed project site (Quadrant D) would be developed with a hospital and medical offices. Currently, there are not any hospitals in North Natomas, and residents seeking the nearest facility must travel greater than five miles. Locating a 600,000 square foot hospital and 600,000 square foot medical office campus on the project site provides much needed services to residents of Natomas, surrounding communities and the region at large.

As an added benefit, providing medical services in a currently under-serviced area will reduce vehicle miles traveled by patients that would otherwise have to travel to distant hospitals and medical facilities. The overall reduction in trips would reduce freeway congestion and diesel particulate emissions. In addition, the proposed project would include the construction of traffic infrastructure to reduce potential traffic and safety hazards to less than significant levels. Traffic infrastructure would include the installation of right-turn signals along East Commerce Way and improvements to the intersection of Truxel Road and Arena Boulevard. Furthermore, East Commerce Way separates the project site and the Natomas Field subdivision with a four-lane

roadway that is planned to be widened to six lanes, thus the proposed project would be in excess of 100 feet from the nearest residential building.

The physical environmental impacts such as noise, air quality, and traffic that would arise from development of the proposed project are assessed in other chapters of the EIR (See Chapter 4.2, Transportation and Circulation; Chapter 4.3, Noise; and Chapter 4.4, Air Quality, for further analysis of these issues).

Conclusion.

As noted above, the proposed project is consistent with the 2030 General Plan policies, including the North Natomas Community Plan as a part of the General Plan, the Zoning Ordinance, and is compatible with surrounding land uses.

Endnotes

[1] City of Sacramento, *Sacramento 2030 General Plan*, March 2009.
[2] City of Sacramento, *Zoning Ordinance, Ordinance No. 2550, Fourth Series*, Revised January 1, 1997.

4.2 TRANSPORTATION AND CIRCULATION

4.2 TRANSPORTATION AND CIRCULATION

4.2.0 INTRODUCTION

The Transportation and Circulation chapter of the EIR discusses existing and cumulative transportation and circulation conditions associated with the proposed project. The analysis includes consideration of automobile traffic impacts on roadway capacity, transit impacts, bicycle impacts, parking impacts, construction impacts, and pedestrian impacts. Quantitative transportation analyses have been conducted for the following scenarios:

- Existing (without project);
- Baseline (without project);
- Baseline with existing zoning;
- Baseline with project;
- Cumulative (assuming development under existing zoning); and
- Cumulative with project.

The analysis is including the existing conditions as well as baseline conditions because several major North Natomas development projects have been approved in the site vicinity. These projects will add traffic to the roadway network in the study area. These projects are called "baseline" projects and the traffic associated with these projects has been added to existing traffic to provide baseline traffic volumes. For more details of the project, please see "Project Land Use and Circulation" later in this chapter.

4.2.1 PROJECT DESCRIPTION

As illustrated in Figure 4.2-1, the project site is located east of I-5 in the North Natomas area of the City of Sacramento. The site is located between I-5 and East Commerce Way. The future Snowy Egret Drive forms the northern boundary of the site. The site is divided by Arena Boulevard and the future Natomas Crossing Drive. For purposes of the transportation analysis, the portion of the site north of Arena Boulevard is known as Quad B (North and South), the portion between Arena Boulevard and Natomas Crossing Drive is known as Quad C, and the portion of the site south of Natomas Crossing Drive is known as Quad D. Figure 4.2-2 illustrates the proposed access point location and intersection control plan.

The project consists of residential, office, retail, and medical land uses, including a hospital as described in "Project Land Use and Circulation" later in this chapter.

Access to the site is proposed via five signalized and seven unsignalized East Commerce Way intersections, as well as a right-turn-in only entrance from Arena Boulevard.

4.2.2 EXISTING ENVIRONMENTAL SETTING

The existing roadway, transit, bicycle, and pedestrian transportation systems within the study area are described below. Figure 4.2-1 illustrates the roadway system near the project site.

Roadway System - Regional Access

Regional automobile access to the site is provided by the freeway system. **I-5** is a north-south facility that is located immediately west of the site. Primary access to I-5 is via an interchange at Arena Boulevard. Secondary access to I-5 is provided via an interchange at Del Paso Road. To the south, I-5 provides access to I-80, downtown Sacramento, southern portions of the City and County, as well as other Central Valley communities. To the north, I-5 provides access to Sacramento International Airport, the City of Woodland, and other Central Valley communities. Interstate Route 80 (**I-80**) is an east-west freeway located about 1.3 miles south of the site. Primary access to I-80 is via I-5. Additional access is provided via an interchange with Truxel Road. To the west, I-80 provides access to West Sacramento, the City of Davis, and the San Francisco Bay Area. To the east, I-80 provides access to northern portions of the City and County, and extends to Placer County and the state of Nevada.

SR 99 is a north-south state highway that has an interchange with I-5 north of Del Paso Road. SR 99 provides access to northern portions of Sacramento County, western Placer County, California State Route 70, Yuba City, Marysville, and other Central Valley communities.

Roadway System - Local Access

Direct access to the site is provided via Arena Boulevard and East Commerce Way. Other roadways providing site access include Amelia Earhart Avenue, Del Paso Road, Duckhorn Drive, El Centro Road, Natomas Crossing Drive, North Market Boulevard, Snowy Egret Drive, San Juan Road, and Truxel Road.

Amelia Earhart Avenue is a local two lane east-west street opposite Quad C. It extends from East Commerce Way to Samuelson Way, serving the Natomas Field development.

Arena Boulevard is an east-west roadway that divides the project site. To the west, the roadway has a full interchange with I-5 and extends westerly to El Centro Road. West of El Centro Road, Arena Boulevard becomes **Natomas Central Drive**. To the east, Arena Boulevard extends to Gateway Park Boulevard. East of Gateway Park Boulevard, Arena Boulevard becomes **North Market Boulevard**. Arena Boulevard is four to eight lanes wide.

Figure 4.2-1
Project Location

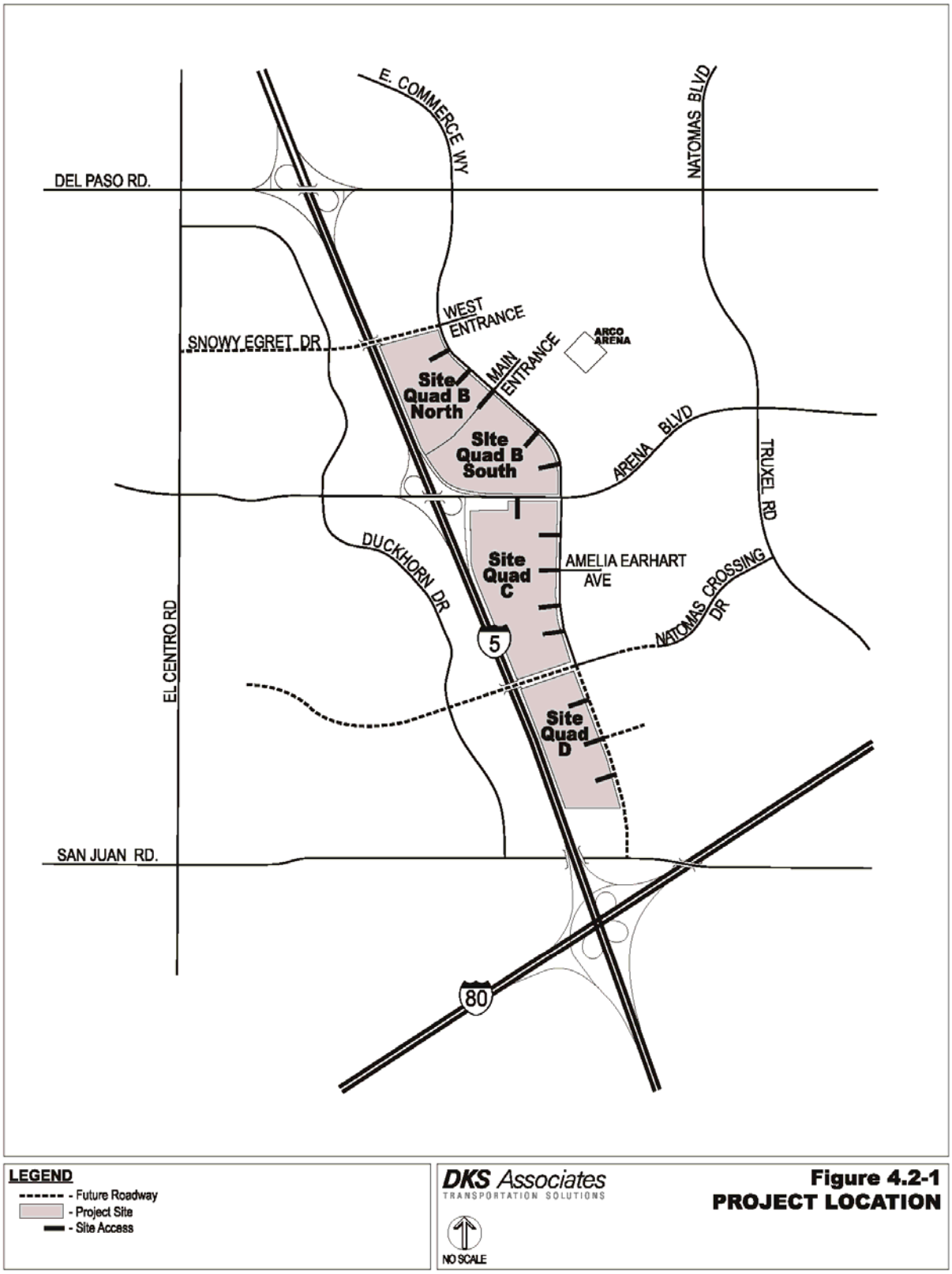
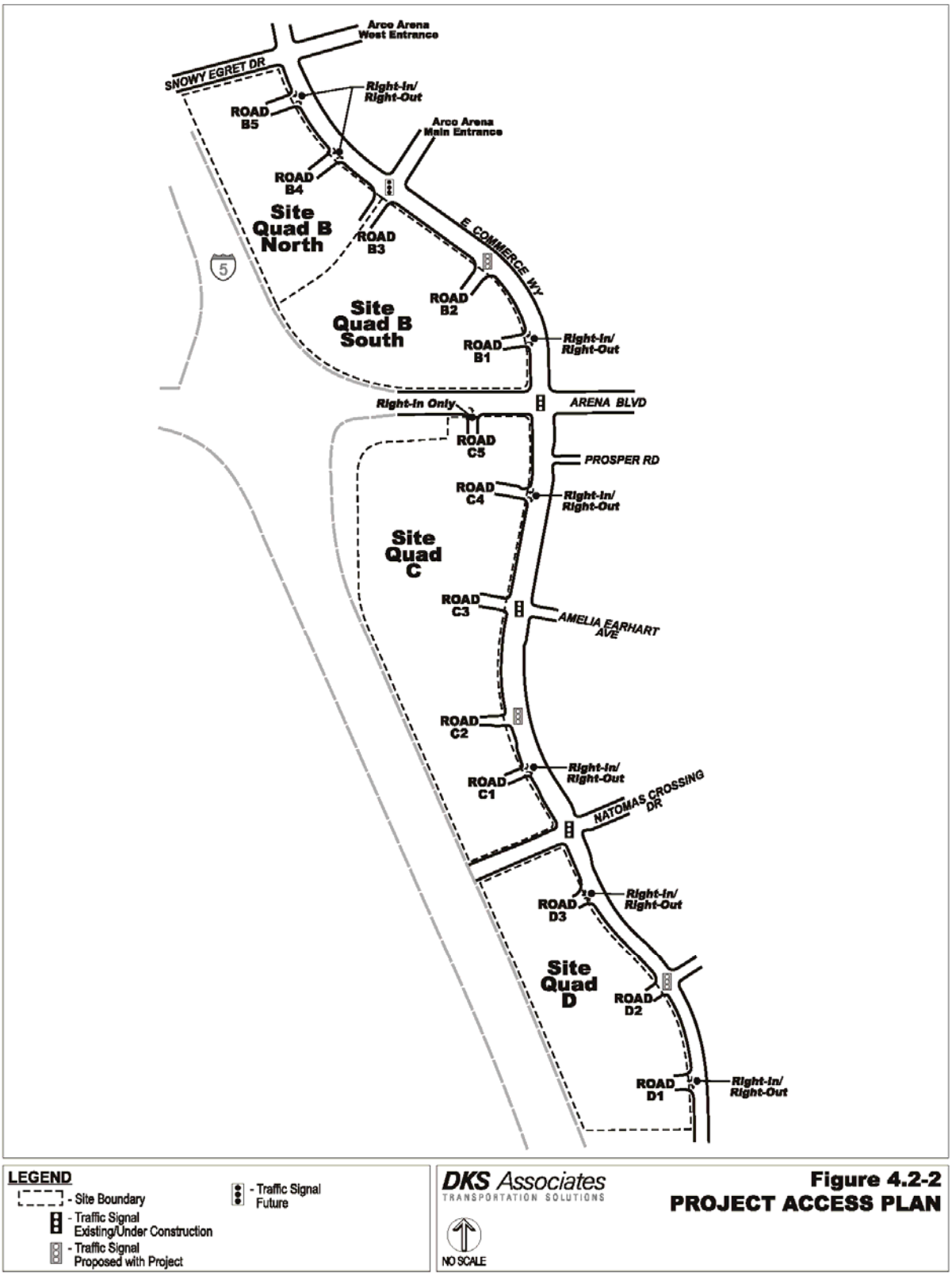


Figure 4.2-2
Site Plan



East Commerce Way is a north-south roadway adjacent to the site. To the north, the roadway extends to Elkhorn Boulevard. The southerly terminus of the road is currently at Amelia Earhart Avenue. The roadway is planned to be extended southerly to San Juan Road. In its ultimate configuration, East Commerce Way will be six lanes wide from Natomas Crossing Drive to Club Center Drive, and four lanes wide north of Club Center Drive and south of Natomas Crossing Drive.

Del Paso Road is an east-west roadway. It provides access to I-5 via a full interchange. West of I-5, Del Paso Road extends to Power Line Road. East of I-5, Del Paso Road extends to the Natomas East Main Drainage Canal. East of the canal, the roadway becomes **Main Boulevard**. Del Paso Road is two to six lanes wide.

Duckhorn Drive is a north-south roadway west of I-5. North of Arena Boulevard, Duckhorn Drive extends northwesterly to El Centro Road. South of Arena Boulevard, Duckhorn Drive extends southerly to San Juan Road. South of San Juan Road it becomes **Tolliver Street**. Duckhorn Drive is a two-lane (plus) roadway.

El Centro Road is a north-south roadway located west of I-5. It is primarily a two-lane roadway, although it has been widened in some locations as development has occurred. Most of El Centro Road is planned to ultimately serve as a four-lane roadway. To the south of Arena Boulevard, it extends to West El Camino Avenue and an interchange with I-80. About one-half mile north of Del Paso Road, it becomes Bayou Way. El Centro Road is planned to extend easterly from Bayou Way over I-5, where it will intersect with East Commerce Way.

Natomas Crossing Drive is an east-west roadway that divides the site. At the current time, a portion of Natomas Crossing Drive has been constructed west of Truxel Road. Eventually, Natomas Crossing Drive is planned to cross I-5 adjacent to the site. The roadway is planned as a two-plus to four-lane roadway.

Snowy Egret Drive is a planned east-west roadway located at the northern boundary of the project site. The roadway will begin at East Commerce Way opposite Arco Arena and extend westerly over I-5 to El Centro Road. West of El Centro Road, it will become **Manera Rica Drive**. Snowy Egret Drive is planned as a four-lane roadway.

San Juan Road is an east-west roadway located south of the project site. To the west, the roadway extends to Garden Highway. To the east, San Juan Road extends to the Natomas East Main Drainage Canal. East of the canal, the roadway becomes **Silver Eagle Road**. San Juan Road is two to four lanes wide.

Truxel Road is a north-south roadway located about 0.6 miles east of the project site. To the north, the roadway extends to Del Paso Road. North of Del Paso Road, Truxel Road becomes **Natomas Boulevard**. To the south, Truxel Road has a full interchange with I-80 and extends to Garden Highway. Truxel Road is four to eight lanes wide.

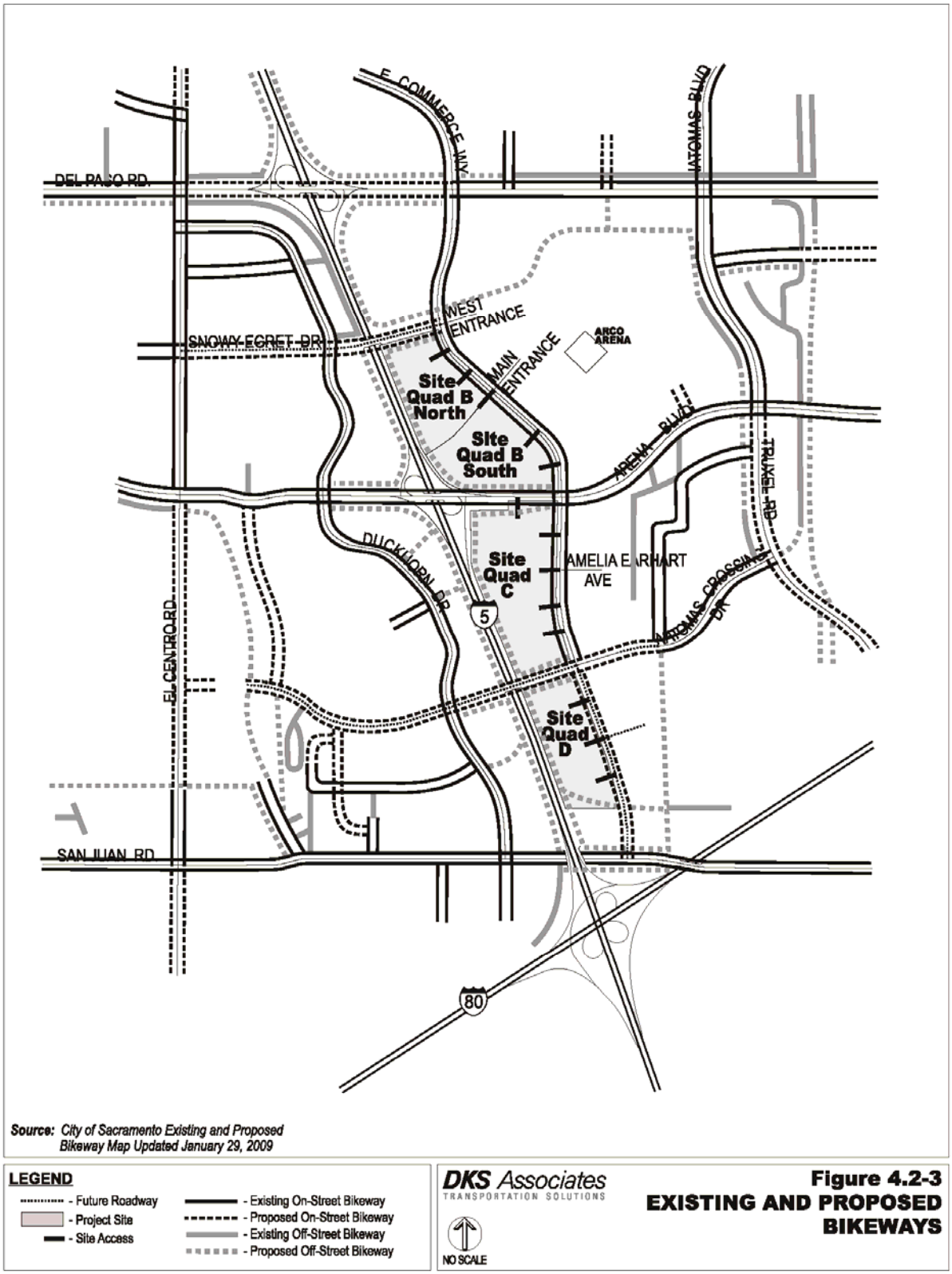
Pedestrian System

The pedestrian sidewalk system is incomplete near the site. As development occurs, sidewalks are being installed along virtually all roadways in North Natomas. With the exception of those locations where such improvements have already occurred, pedestrian access in the immediate vicinity of the project is limited to roadway shoulders.

Bicycle System

Similar to the pedestrian system, the bicycle system is also incomplete in the site vicinity. Figure 4.2-3 illustrates the existing and proposed bikeway system in the site vicinity. On-street bikeways currently exist along East Commerce Way from Del Paso Road to Arena Boulevard, along Arena Boulevard from El Centro Road to Gateway Park Boulevard, and along Duckhorn Drive throughout its entirety. Bikeways are being added in accordance with the North Natomas Community Plan as roadways and developments are completed.

Figure 4.2-3
Existing and Proposed Bikeways



A Sacramento City / County Bicycle Task Force developed a 2010 Bikeway Master Plan for the region. The Master Plan is a policy document that was prepared to coordinate and develop a bikeway system that will benefit and serve the recreational and transportation needs of the public. Officially designated bicycle facilities are classified as follows:

Class I: Off-street bike trails or paths which are physically separated from streets or roads used by motorized vehicles.

Class II: On-street bike lanes with signs, striped lane markings, and pavement legends.

Class III: On-street bike routes marked by signs and shared with motor vehicles and pedestrians. Optional four-inch edge lines painted on the pavement.

The City of Sacramento is currently considering extensive amendments to the Bikeway Master Plan in the North Natomas area. The following bikeways would be adjacent to or near the project site:

- 2010 Bikeway Master Plan (without amendments)
  - Del Paso Road – On-street from Power Line Road (to the west) to Main Avenue (to the east).
  - El Centro Road – On-street from I-80 (to the south) to East Commerce Way (via future overcrossing).
  - East Commerce Way – On-street from Elkhorn Boulevard to San Juan Road.
  - Elkhorn Boulevard – On-street from Power Line Road (to the west) to I-80 (to the east).
  - Natomas Crossing Drive – On-street along its entire length.
  - Snowy Egret Drive – On-street along its entire length.
  - SR 99 – Off-street along the eastern side of SR 99 beginning at I-5.
- Proposed 2010 Bikeway Master Plan Amendments
  - Bayou Way – On-street from westerly City Limit to El Centro Road.
  - Project Site – Off-street immediately east of I-5, including off-street connections to the intersections of East Commerce Way with Snowy Egret Drive, Arena Boulevard, and Natomas Crossing Drive.

Transit System

The Sacramento Regional Transit District (RT) operates 97 bus routes and 37.4 miles of light rail covering a 418 square-mile service area. Buses and light rail run 365 days a year using 76 light rail vehicles, 256 buses powered by compressed natural gas (CNG) and 16 shuttle vans. Buses operate daily from 5:00 a.m. to 11:30 p.m. every 15 to 75 minutes, depending on the route. Light rail trains begin operation at 4:30 a.m. with service every 15 minutes during the day and every 30 minutes in the evening. The Blue Line trains run until 1:00 a.m. and the Gold Line to Folsom runs until 7:00 p.m.

Passenger amenities include 47 light rail stops or stations, 25 bus and light rail transfer centers and 18 free park-and-ride lots. RT also serves more than 3,600 bus stops throughout Sacramento County.[1]

There is currently no RT transit service provided in the immediate site vicinity. Figure 4.2-4 illustrates the current transit service. The closest bus routes are located about 0.6 miles east of the site along Truxel Road. **Route 11** (Truxel Road) operates between Downtown Sacramento and North Natomas. To the north, it extends to Club Center Drive. Route 11 offers weekday service only. **Route 13** (Northgate) operates between Truxel Road in North Natomas and the Arden/Del Paso Light Rail Station via Northgate Boulevard. Route 13 offers weekday, evening, Saturday, Sunday, and holiday service. **Route 14** (Norwood) operates between Truxel Road in North Natomas and the Arden / Del Paso Light Rail Station via Norwood Avenue. Route 14 offers weekday, evening, Saturday, Sunday, and holiday service.

Study Area

For traffic analysis purposes, a set of intersections, roadway segments, and freeway facilities were selected based upon the anticipated volume of project traffic, the distributional patterns of project traffic, and known locations of operational difficulty based on previous studies in the area. The following locations, illustrated in Figure 4.2-5, were identified:

- Intersections

    1. El Centro Road and Arena Boulevard
    2. Duckhorn Drive and Arena Boulevard
    3. Arena Boulevard and I-5 Southbound Ramps
    4. Arena Boulevard and I-5 Northbound Ramps
    5. East Commerce Way and Del Paso Road
    6. East Commerce Way and Snowy Egret Drive / Arco Arena West Entrance
    7. East Commerce Way and Road B5
    8. East Commerce Way and Road B4
    9. East Commerce Way and Road B3 / Arco Arena Main Entrance
    10. East Commerce Way and Road B2
    11. East Commerce Way and Road B1

[1] www.sacrt.com, accessed December 15, 2007.

Figure 4.2-4
Regional Transit Service

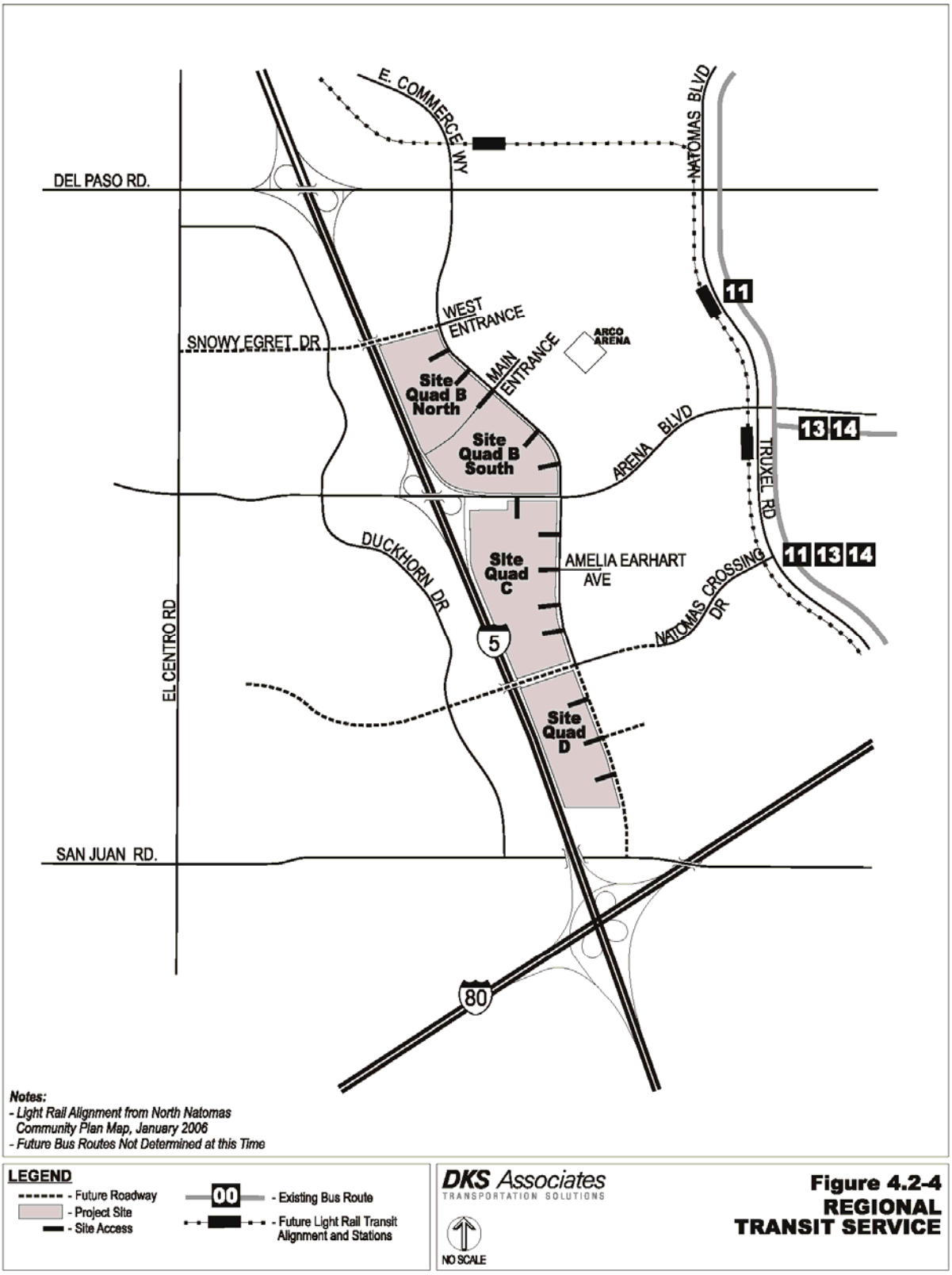
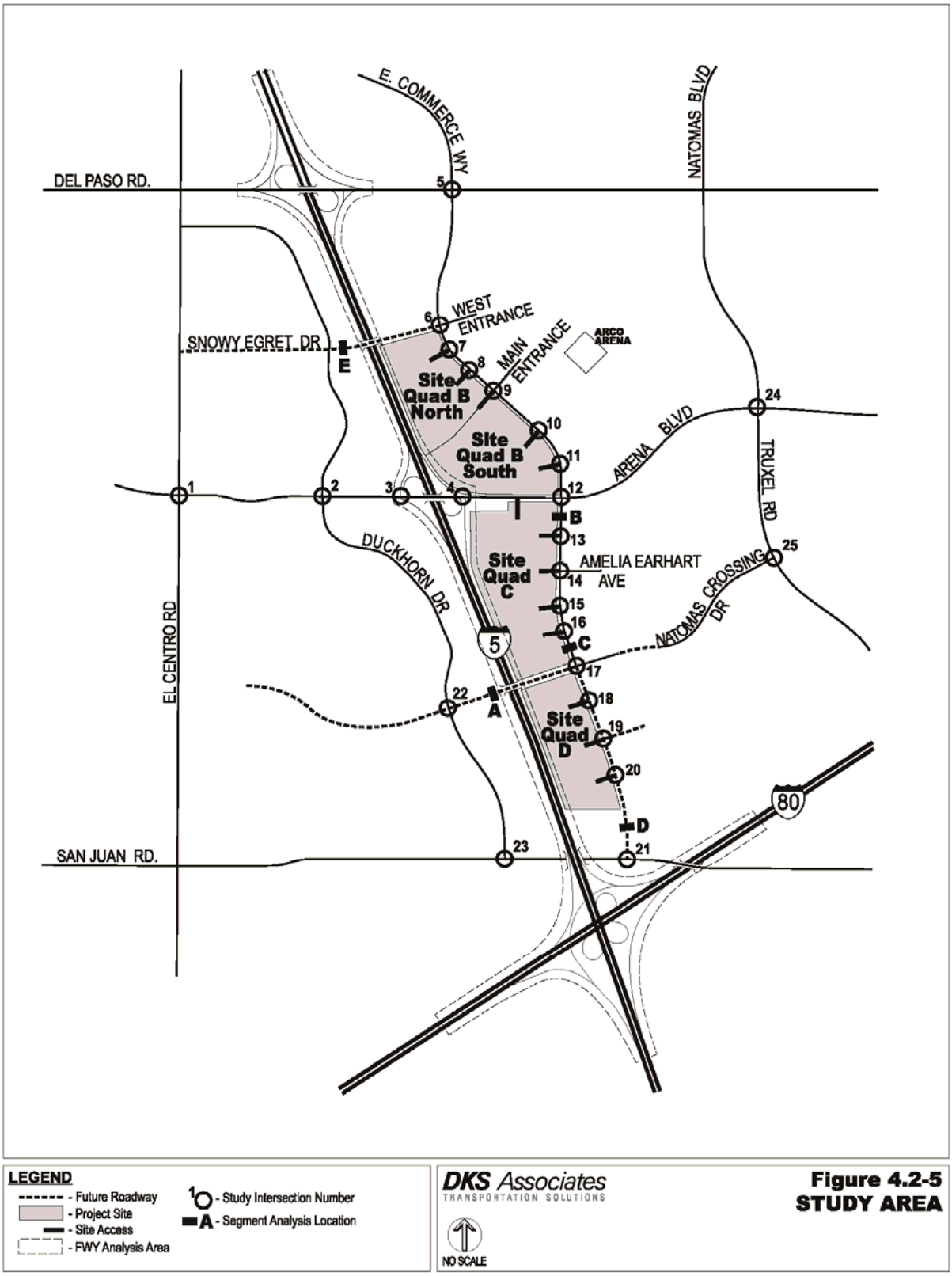


Figure 4.2-5
Study Area



12. East Commerce Way and Arena Boulevard
13. East Commerce Way and Road C4
14. East Commerce Way and Road C3 / Amelia Earhart Avenue
15. East Commerce Way and Road C2
16. East Commerce Way and Road C1
17. East Commerce Way and Natomas Crossing Drive
18. East Commerce Way and Road D3
19. East Commerce Way and Road D2
20. East Commerce Way and Road D1
21. East Commerce Way and San Juan Road
22. Duckhorn Drive and Natomas Crossing Drive
23. Duckhorn Drive and San Juan Road
24. Truxel Road and Arena Boulevard
25. Truxel Road and Natomas Crossing Drive

- Roadway Segments

1. Natomas Crossing Drive – I-5 Overcrossing
2. East Commerce Way – South of Arena Boulevard
3. East Commerce Way – North of Natomas Crossing Drive
4. East Commerce Way – North of San Juan Road
5. Snowy Egret Way – I-5 Overcrossing

- Freeway Mainline Segments

1. I-5 – I-80 to Arena Boulevard
2. I-5 – Arena Boulevard to Del Paso Road
3. I-5 – Del Paso Road to SR 99
4. I-5 – North of SR 99

- Freeway Interchanges

1. I-5 – I-80
2. I-5 – Arena Boulevard
3. I-5 – Del Paso Road
4. I-5 – SR 99

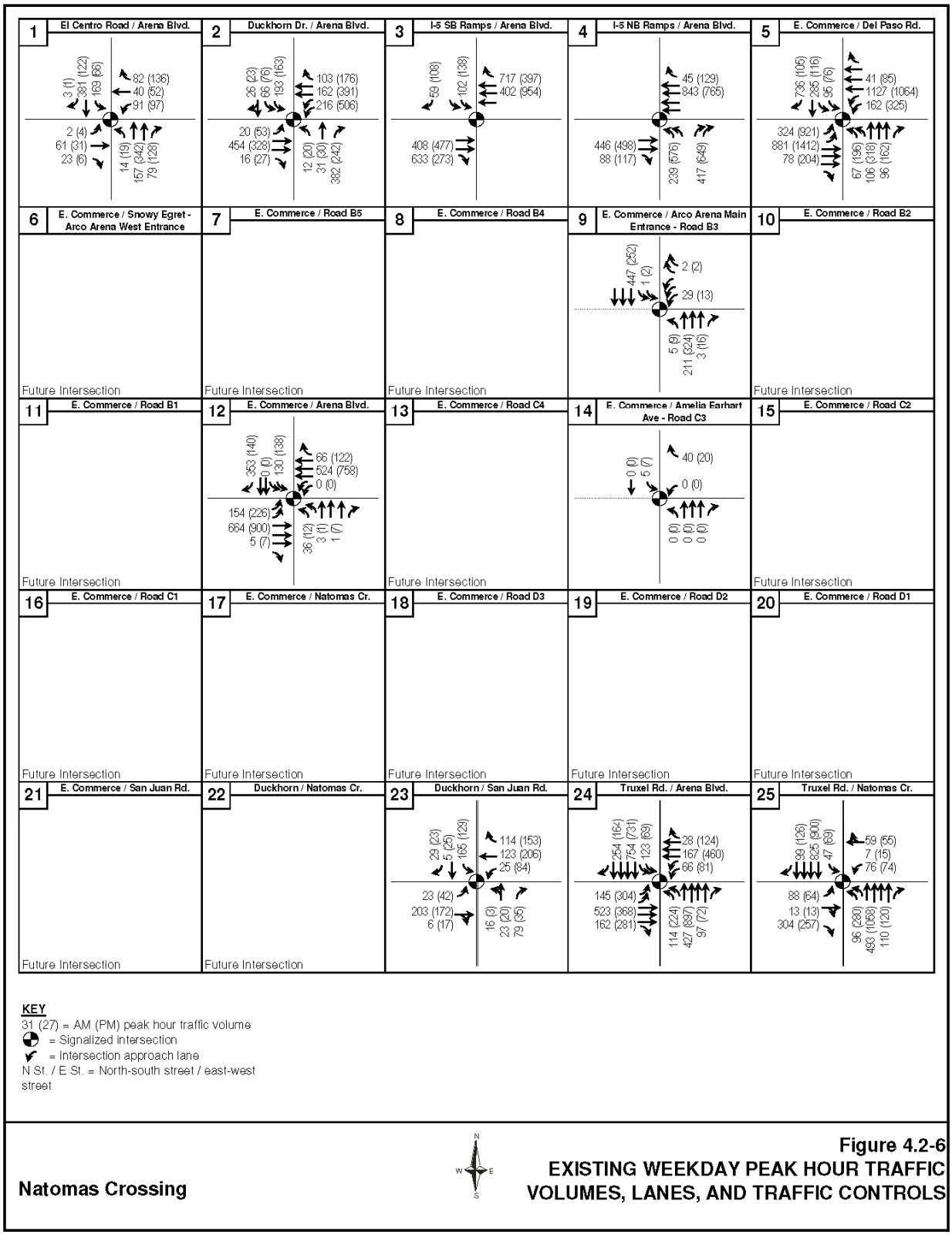
- Freeway Ramp Queuing

1. I-5 – Arena Boulevard Northbound Exit Ramp
2. I-5 – Arena Boulevard Southbound Exit Ramp

Existing Intersection Geometry

Existing intersection geometry (number of approach lanes and traffic control) is illustrated in Figure 4.2-6.

Figure 4.2-6
Existing Weekday Peak Hour Traffic Volumes, Lanes, and Traffic Controls



Existing Traffic Volumes

All traffic counts conducted for this transportation analysis occurred during periods that did not include major events at Arco Arena. The City's Level of Service policy is based upon typical operating conditions that do not include special events.

For the existing study area intersections, peak period intersection turning movement counts were conducted for the a.m. weekday peak period (7:00 to 9:00 a.m.), the p.m. weekday peak period (4:00 to 6:00 p.m.), and the Saturday peak period (1:00 to 3:00 p.m.). The Saturday peak period is based upon the typical peak for large retail facilities. All of the weekday peak period counts were conducted on Thursday, November 13, 2008. Existing weekday peak hour intersection turning movement volumes are illustrated on Figure 4.2-6.

All of the Saturday peak period intersection counts were conducted on November 15, 2008. Existing Saturday peak hour intersection turning movement volumes are illustrated on Figure 4.2-7.

For the existing study area roadway segment (East Commerce Way south of Arena Boulevard), 24-hour machine counts were conducted on Thursday, November 17, 2008.

Caltrans provided peak hour traffic counts on the freeway system at available traffic count station locations. For analysis purposes, a.m. and p.m. peak hour freeway volumes were calculated based upon an average of Tuesday, Wednesday, and Thursday counts from September 9 through 30, 2008.

Detailed traffic count data is contained in the Appendix D of this DEIR.

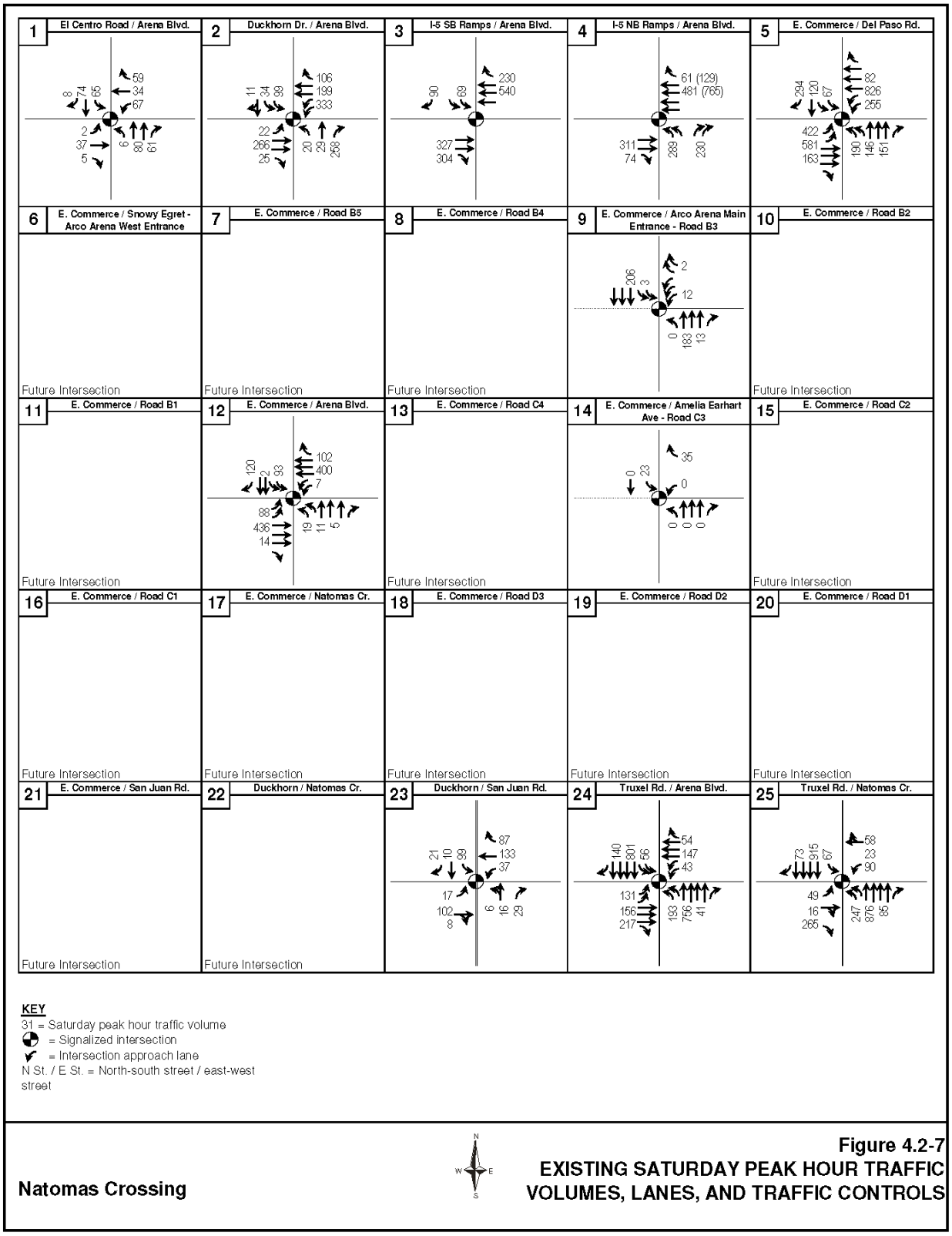
4.2.3 REGULATORY BACKGROUND

Roadway operations are regulated by agencies with jurisdiction of the particular roadway. Study area roadways are under the jurisdiction of the City of Sacramento and the California Department of Transportation (Caltrans).

Methodology

Field reconnaissance was undertaken to ascertain the traffic control characteristics of each of the study area intersections and roadway segments. Determination of roadway operating conditions is based upon comparison of known or projected traffic volumes during peak hours to roadway capacity. In an urban setting, roadway capacity is generally governed by intersection characteristics, and intersection delay is used to determine "levels of service." Levels of service describe roadway operating conditions. Level of service is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, delay, and operating costs.

Figure 4.2-7
Existing Saturday Peak Hour Traffic Volumes, Lanes, and Traffic Controls



Levels of service are designated "A" through "F" from best to worst, which cover the entire range of traffic operations that might occur. Levels of Service (LOS) "A" through "E" generally represent traffic volumes at less than roadway capacity, while LOS "F" represents over capacity and / or forced flow conditions.

The City of Sacramento 2030 General Plan includes flexible LOS standards with a goal of maintaining a base LOS "D" throughout the roadway network. Caltrans utilizes a LOS "E" standard for the Sacramento urban freeway system (I-5 Route Concept Report).

The City of Sacramento 2030 General Plan level of service policy states:

> ***LOS Standard.*** *The City shall allow for flexible Level of Service (LOS) standards, which will permit increased densities and mix of uses to increase transit ridership, biking, and walking, which decreases auto travel, thereby reducing air pollution, energy consumption, and greenhouse gas emissions.*
>
> ***a.*** ***Level of Service Standard for Multi-Modal Districts*** *– The City shall seek to maintain the following standards in multi-modal districts including the Central Business District, areas within 1/2 mile walking distance of light rail stations, and mixed use corridors as designated by the City. These areas are characterized by frequent transit service, enhanced pedestrian and bicycle systems, a mix of uses, and higher density development.*
>
> - *Maintain operations on all roadways and intersections at Level of Service E or better at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of Level of Service E may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or a City-initiated project.*
>
> ***b.*** ***Base Level of Service Standard*** *– the City shall seek to maintain the following standards for all areas outside of multi-modal districts.*
>
> - *Maintain operations on all roadways and intersections at LOS D or better at all times, including peak travel times, unless maintaining this Level of Service would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of Level of Service D may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or a City-initiated project.*[2]

[2] Sacramento 2030 General Plan Draft Environmental Impact Report, Page 6.12-50, July 2008.

Intersection Analysis

Intersection analyses were conducted using a methodology outlined in the Transportation Research Board's Special Report 209, *Highway Capacity Manual*, 2000. The methodology utilized is known as "operational analysis." This procedure calculates an average control delay per vehicle at an intersection, and assigns a level of service designation based upon the delay. The method also provides a calculation of the volume-to-capacity (v/c) ratio of the critical movements at signalized intersections. Tables 4.2-1 and 4.2-2 present the level of service criteria for signalized and unsignalized intersections, respectively.

Table 4.2-1
Level of Service Criteria
Signalized Intersections

Level of Service (LOS)	Control Delay Per Vehicle (seconds)	Description
A	≤ 10.0	Very low control delay. Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10.0 and ≤ 20.0	Generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS "A," causing higher levels of average delay.
C	> 20.0 and ≤ 35.0	These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	> 35.0 and ≤ 55.0	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55.0 and ≤ 80.0	These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	> 80.0	This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Source: Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.

Table 4.2-2 Level of Service Criteria – Unsignalized Intersections	
Level of Service (LOS)	**Total Delay Per Vehicle (seconds)**
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50
Source: Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.	

Daily Segment Analysis

Level of service analyses were conducted for roadway segments in the study area based upon daily traffic volumes, number of traffic lanes between intersections, and roadway characteristics. In this methodology, the major arterial network is divided into three "capacity class" categories for level of service determination, as shown in Table 4.2-3. The capacity class categories are based upon the nature of traffic flow along the facility, including number of interruptions due to intersection control and "side-friction" due to driveways and local streets. For each capacity class, relationships were developed between daily traffic volumes and roadway level of service.

Table 4.2-3 summarizes the maximum daily traffic volumes for each capacity class / level of service combination. Although the segment-based level of service calculation is based upon daily traffic volumes, the resultant level of service is representative of peak hour conditions.

Freeway Analysis

Freeway mainline segments were analyzed utilizing a methodology outlined in the Transportation Research Board's Special Report 209, Highway Capacity Manual (2000). Maximum service flow rates of 2,200 vehicles per lane per hour for typical freeway lanes and 1,600 vehicles per lane per hour for auxiliary lanes were utilized, based upon data collected by Caltrans in the Sacramento urban area.

Table 4.2-4 presents the relationship of freeway volume-to-capacity ratios and density to level of service. For freeway ramp junction capacity analyses, level of service is based upon traffic density. Table 4.2-5 applies the level of service definitions to freeway ramp junction density.

Table 4.2-3
Daily Volume Threshold for Roadway Segments

Facility Type	Number of Lanes	Daily Volume Threshold (Level of Service)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Arterial, Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Collector, minor	2	5,250	6,125	7,000	7,875	8,750
Residential	2	3,000	3,500	4,000	4,500	5,000

Facility Type	Stops per Mile	Driveways	Speed
Arterial, Low Access Control	4 +	Frequent	25 – 35 mph
Arterial, Moderate Access Control	2 – 4	Limited	35 – 45 mph
Arterial, High Access Control	1 - 2	None	45 – 55 mph

LOS = level of service

Source: City of Sacramento Traffic Impact Analysis Guidelines, 1996; City of Sacramento, Department of Transportation Staff, 2007.

Table 4.2-4
Level Of Service Criteria – Freeway Mainline

Level of Service (LOS)	Maximum Volume-to-Capacity Ratio	Maximum Density (passenger vehicles per mile per lane)
A	0.32	11
B	0.53	18
C	0.74	26
D	0.90	35
E	1.00	45
F	Varies	Varies

Source: Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.

Table 4.2-5 Level Of Service Criteria – Freeway Ramp Junctions	
Level of Service (LOS)	**Maximum Density (Passenger Cars Per Mile Per Lane)**
A	10
B	20
C	28
D	35
E	Greater than 35
F	Demand flows exceed capacity.
Source: Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.	

Results of Existing Conditions Analysis

Existing conditions were evaluated for weekday a.m. and p.m. peak hour, Saturday peak hour, and daily conditions.

Intersection Operations

Table 4.2-6 summarizes the existing a.m., p.m., and Saturday peak hour operating conditions at the study area intersections. At unsignalized intersections, the average intersection level of service is utilized to determine conformity with the City's goal. Individual movements may operate at worse levels of service. All of the intersections currently meet the City's level of service "D" goal.

Segment Operations

Level of service analyses were also conducted for the roadway segment in the vicinity of the project based upon daily traffic volumes, number of traffic lanes between intersections, and roadway characteristics. Table 4.2-7 summarizes the roadway level of service. The roadway segment meets the City's LOS "D" goal.

Freeway Operations

Table 4.2-8 summarizes the existing peak hour freeway mainline levels of service. All of the freeway mainline segments meet the Caltrans' LOS "E" goal. Table 4.2-9 summarizes the existing peak hour freeway ramp junction levels of service. All of the freeway ramp junctions meet the Caltrans' LOS "E" goal. Table 4.2-10 summarizes the existing exit ramp queuing. None of the existing peak hour queues extends onto the freeway mainline.

Table 4.2-6
Existing Intersection Operating Conditions

Intersection	Traffic Control	A.M. Peak Hour		P.M. Peak Hour		Saturday Peak Hour	
		LOS	Delay (Seconds)	LOS	Delay (Seconds)	LOS	Delay (Seconds)
1. El Centro Road and Arena Boulevard	Signal	B	15.8	B	15.9	B	17.0
2. Duckhorn Drive and Arena Boulevard	Signal	C	21.0	B	19.6	B	19.3
3. Arena Boulevard and I-5 Southbound ramps	Signal	A	6.3	A	6.3	A	7.1
4. Arena Boulevard and I-5 Northbound ramps	Signal	B	11.0	B	11.7	B	10.9
5. East Commerce Way and Del Paso Road	Signal	D	40.5	C	20.7	C	21.3
9. East Commerce Way and Road B3 / Arco Arena Main Entrance	Signal	A	2.9	A	1.6	A	1.0
12. East Commerce Way and Arena Boulevard	Signal	B	17.4	B	12.6	B	14.2
14. East Commerce Way and Road C3 / Amelia Earhart Avenue	Signal	A	0.6	A	0.5	A	9.7
23. Duckhorn Drive and San Juan Road	Signal	B	13.2	B	14.3	B	13.4
24. Truxel Road and Arena Boulevard	Signal	B	16.8	B	18.6	B	17.0
25. Truxel Road and Natomas Crossing Drive	Signal	B	17.2	B	16.7	B	17.3

Source: DKS Associates, 2009.

Table 4.2-7
Existing Roadway Segment Daily Operating Conditions

Roadway	Segment	Volume	Lanes	V/C[1]	LOS
East Commerce Way	B. South of Arena Boulevard	508	4	0.01	A

1. Based on moderate access control.

Source: DKS Associates, 2009.

Table 4.2-8
Existing Peak Hour Freeway Mainline Level of Service

Direction	Location	Through Lanes	Aux. Lanes	Volume	V/C Ratio	LOS
A.M. Peak Hour						
North-bound I-5	I-80 to Arena Boulevard	4	1	3,915	0.376	B
	Arena Boulevard to Del Paso Road	3	1	3,392	0.414	B
	Del Paso Road to SR 99	3	0	2,853	0.432	B
	North of SR 99	2	0	2,386	0.542	C
South-bound I-5	North of SR 99	2	0	2,142	0.487	B
	Del Paso Road to SR 99	3	1	4,280	0.522	B
	Arena Boulevard to Del Paso Road	3	1	5,902	0.720	C
	I-80 to Arena Boulevard	4	1	7,091	0.682	C
P.M. Peak Hour						
North-bound I-5	I-80 to Arena Boulevard	4	1	7,460	0.717	C
	Arena Boulevard to Del Paso Road	3	1	6,481	0.790	D
	Del Paso Road to SR 99	3	0	4,762	0.722	C
	North of SR 99	2	0	2,471	0.562	C
South-bound I-5	North of SR 99	2	0	3,080	0.700	C
	Del Paso Road to SR 99	3	1	3,462	0.422	B
	Arena Boulevard to Del Paso Road	3	1	4,044	0.493	B
	I-80 to Arena Boulevard	4	1	4,468	0.430	B

Source: DKS Associates, 2009.

Table 4.2-9
Existing Peak Hour Freeway Ramp Junction Level of Service

Direction	Location	Junction Type	A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS
North-bound I-5	I-80 Exit	Major diverge	2,279	B	2,605	D
	I-80 Entrance	Major merge	1,267	B	2,281	D
	Arena Boulevard Exit	Major diverge	656	B	1,225	C
	Eastbound Arena Boulevard Entrance	Single lane on ramp	88	B	117	C
	Westbound Arena Boulevard Entrance	Single lane on ramp	45	B	129	C
	Del Paso Road Exit	Major diverge	831	B	2,077	D
	Del Paso Road Eastbound Entrance	Single lane on ramp	63	B	81	B
	Del Paso Road Westbound Entrance	Single lane on ramp	229	B	277	C
	SR 99 Exit	Major diverge	934	B	2,529	C
	SR 99 Entrance	Single lane on ramp	467	C	238	C
South-bound I-5	SR 99 Exit	Single lane off ramp	166	B	604	D
	SR 99 Entrance	Major merge	2,304	C	986	C
	Del Paso Road Exit	Lane drop	312	C	338	C
	Del Paso Road Westbound Entrance	Single lane on ramp	1,379	D	723	C
	Del Paso Road Eastbound Entrance	Lane addition	555	C	197	C
	Arena Boulevard Exit	Major Diverge	161	D	246	C
	Arena Boulevard Westbound Entrance	Lane addition	717	C	397	C
	Arena Boulevard Eastbound Entrance	Lane addition	633	C	273	C
	I-80 Exit	Major Diverge	1,919	C	1,356	B
	I-80 Entrance	Lane addition	2,506	D	2,393	C
North-bound SR 99	I-5 Southbound Entrance	Single lane on ramp	166	B	604	D

Table 4.2-9 (continued)
Existing Peak Hour Freeway Ramp Junction Level of Service

Direction	Location	Junction Type	A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS
South-bound SR 99	I-5 Northbound Exit	Single lane off ramp	467	C	238	B
East-bound I-80	I-5 Exit	Single lane off ramp	585	B	1,382	D
	I-5 Southbound Entrance	Single lane on ramp	864	C	786	D
	I-5 Northbound Entrance	Lane addition	2,289	C	2,612	D
West-bound I-80	I-5 Exit	Major diverge	3,362	C	3,464	C
	I-5 Northbound Entrance	Single lane on ramp	104	B	144	B
	I-5 Southbound Entrance	Single lane on ramp	1,055	C	570	B

Source: DKS Associates, 2009.

Table 4.2-10
Existing Peak Hour Freeway Ramp Termini Queuing

Ramp	Movement	Available Queue Length (feet)[1]	Maximum Queue (feet)		
			A.M. Peak Hour	P.M. Peak Hour	Saturday Peak Hour
I-5 Northbound Exit to Arena Boulevard	Left	2,300	150	350	150
	Right	2,300	300	400	150
I-5 Southbound Exit to Arena Boulevard	Left	1,605	100	150	50
	Right	1,450	50	100	75

1. Measured from intersection stop bar to gore point. Total queue length in all lanes associated with the subject movement.

Source: DKS Associates, 2009.

4.2.4 INTRODUCTION TO ANALYSIS

Project Land Use and Circulation

Land Use

Project

The proposed project consists of the following uses:

- Quadrant B North
  - 180 units residential (townhouse / condominium)
  - 300 hotel rooms
  - 240,000 square feet office
- Quadrant B South
  - 426,000 square feet retail
- Quadrant C
  - 393,200 square feet retail
  - 200,000 square feet office
- Quadrant D
  - 600,000 square feet hospital
  - 600,000 square feet medical office

Existing Zoning Alternative

The existing zoning alternative consists of the following uses:

- Quadrant B North
  - 447,000 square feet office
- Quadrant B South
  - 63,600 square feet retail
  - 453,000 square feet office
- Quadrant C
  - 98,400 square feet retail
  - 568,700 square feet office
- Quadrant D
  - 546,000 square feet office

Access

Access to the site is proposed via twelve connections to East Commerce Way and one connection to Arena Boulevard. As shown on Figure 4.2-2, the connections to East Commerce Way consist of five signalized and seven unsignalized intersections. The unsignalized intersections are right-in / right-out only. The single connection to Arena Boulevard is a right-in only roadway to Quad C.

Trip Generation

Trip generation of the project and existing zoning alternative is based upon information on trip generation compiled by the Institute of Transportation Engineers (Trip Generation, Eighth Edition, 2008).

Table 4.2-11 summarizes the trip generation of the project and existing zoning alternative.

Project

For trip generation purposes, the overall trip generation was broken down by into separate Quads based on the project site plan and vehicle trips were estimated independently for Quad B, Quad C, and Quad D. Details of the trip generation estimation are included in the technical appendix of the traffic study, Appendix D to the EIR. The project is anticipated to generate 3,689 a.m. peak hour gross trips, 6,218 p.m. peak hour gross trips, 5,880 Saturday peak hour gross trips, and 74,823 weekday daily gross trips.

For retail uses, some external vehicular trips attracted to the site are not new trips. Studies have found that a significant number of the vehicles entering the driveways of a retail center would already be on the adjacent roadway, making a different trip. “Pass-by trips” are vehicle trips already traveling on the adjacent roadway system that are diverted into and out of the driveways serving the retail center. The percentage of pass-by trips varies by size of retail development and time of day. Based upon data collected by ITE, the number of pass-by trips at a retail center of the size proposed by the project was calculated. For Quad B, the number of pass-by trips is estimated at about 26 percent on a weekday (based upon p.m. peak hour statistics) and about 28 percent on a Saturday. These percentages yield 92 pass-by trips in the a.m. peak hour, 429 pass-by trips in the p.m. peak hour, 624 pass-by trips in the Saturday peak hour, and 4,444 weekday pass-by trips. For Quad C, the number of pass-by trips is estimated at about 26 percent on a weekday and about 29 percent on a Saturday. These percentages yield 90 pass-by trips in the a.m. peak hour, 416 pass-by trips in the p.m. peak hour, 608 pass-by trips in the Saturday peak hour, and 4,318 weekday pass-by trips.

Table 4.2-11
Trip Generation

Site Area	Land Use	ITE Code / Variable	Units	Vehicle Trips									
				A.M. Peak Hour			P.M. Peak Hour			Saturday Peak Hour			Daily
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	
Proposed Project													
Quad B	Residential	Townhouses / Condominiums (230 / Units)	180	14	69	83	65	32	97	51	44	95	1,073
	Hotel	Hotel (310 / Rooms)	300	98	62	160	94	83	177	118	93	211	2,312
	Office	General Office (710 / 1,000 sq. ft.)	240	333	45	378	59	289	348	41	34	75	2,618
	Retail	Shopping Center (820 / 1,000 sq. ft.)	426	221	141	362	823	857	1,680	1,143	1,055	2,198	17,420
	Retail Pass-By Trips			***56***	***36***	***92***	***210***	***219***	***429***	***324***	***299***	***624***	***4,444***
	Quad B Internal Trips			***7***	***7***	***14***	***38***	***38***	***76***	***55***	***55***	***110***	***867***
	New External Trips			***603***	***274***	***877***	***793***	***1,004***	***1,797***	***974***	***872***	***1,845***	***18,112***
Quad C	Office	General Office (710 / 1,000 sq. ft.)	200.0	288	39	327	52	251	303	35	30	65	2,275
	Retail	Shopping Center (820 / 1,000 sq. ft.)	393.2	210	135	345	780	812	1,592	1,085	1,002	2,087	16,536
	Retail Pass-By Trips			***55***	***35***	***90***	***204***	***212***	***416***	***316***	***292***	***608***	***4,318***
	Quad C Internal Trips			***34***	***34***	***68***	***91***	***91***	***182***	***112***	***112***	***224***	***1,889***
	New External Trips			***409***	***105***	***514***	***537***	***760***	***1,297***	***692***	***628***	***1,320***	***12,604***

Table 4.2-11 (continued)
Trip Generation

Site Area	Land Use	ITE Code / Variable	Units	Vehicle Trips									
				A.M. Peak Hour			P.M. Peak Hour			Saturday Peak Hour			Daily
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	
Quad D	Hospital	Hospital (610 / 1,000 sq. ft.)	600.0	386	268	654	275	380	655	306	305	611	8,270
	Medical Office Building	Medical – Dental Office Building (720 / 1,000 sq. ft.)	600.0	1,090	290	1,380	369	997	1,366	307	231	538	24,319
	Quad D Internal Trips			***13***	***13***	***26***	***21***	***21***	***42***	***8***	***8***	***16***	***516***
	New External Trips			***1,463***	***545***	***2,008***	***623***	***1,356***	***1,979***	***605***	***528***	***1,133***	***32,073***
Total	Total Trips			2,640	1,049	3,689	2,517	3,701	6,218	3,086	2,794	5,880	74,823
	Retail Pass-By Trips			*111*	*71*	*182*	*414*	*431*	*844*	*641*	*591*	*1,232*	*8,762*
	Internal Trips			*54*	*54*	*108*	*150*	*150*	*300*	*175*	*175*	*350*	*3,273*
	New External Trips			*2,475*	*924*	*3,399*	*1,953*	*3,120*	*5,074*	*2,270*	*2,028*	*4,298*	*62,788*
Existing Zoning Alternative													
Quad B	Office (North)	General Office (710 / 1,000 sq. ft.)	447.0	546	75	621	98	481	579	67	57	124	4,226
	Office (South)	General Office (710 / 1,000 sq. ft.)	453.0	553	75	628	100	486	586	68	58	126	4,269
	Retail	Shopping Center (820 / 1,000 sq. ft.)	63.6	72	46	118	230	240	470	332	307	639	5,060
	Retail Pass-By Trips			***32***	***20***	***52***	***102***	***106***	***209***	***123***	***114***	***237***	***2,245***
	Quad B Internal Trips			***12***	***12***	***24***	***16***	***16***	***32***	***22***	***22***	***44***	***373***
	New External Trips			***1,127***	***1645***	***1,291***	***3101***	***1,085***	***1,394***	***322***	***286***	***608***	***10,937***
Quad C	Office (EC-40)	General Office (710 / 1,000 sq. ft.)	165.2	246	34	280	45	219	264	30	26	56	1,964
	Office (EC-50)	General Office (710 / 1,000	403.5	504	69	573	90	441	531	62	52	114	3,905

Table 4.2-11 (continued)
Trip Generation

Site Area	Land Use	ITE Code / Variable	Units	Vehicle Trips									
				A.M. Peak Hour			P.M. Peak Hour			Saturday Peak Hour			Daily
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	
		sq. ft.)											
	Retail	Shopping Center (820 / 1,000 sq. ft.)	98.4	93	60	153	308	321	629	441	407	848	6,720
	Retail Pass-By Trips			***36***	***23***	***60***	***120***	***125***	***246***	***160***	***147***	***307***	***2,626***
	Quad C Internal Trips			***55***	***55***	***110***	***43***	***43***	***86***	***50***	***50***	***100***	***1,124***
	New External Trips			***752***	***85***	***836***	***280***	***813***	***1,092***	***323***	***288***	***611***	***8,839***
Quad D	Office	General Office (710 / 1,000 sq. ft.)	546.0	642	87	729	117	753	690	79	67	146	4,930
Total	Total Trips			2,656	446	3,102	988	2,761	3,749	1,079	974	2,053	31,074
	Retail Pass-By Trips			*68*	*44*	*112*	*222*	*232*	*455*	*283*	*261*	*544*	*4,871*
	Internal Trips			*67*	*67*	*134*	*59*	*59*	*118*	*72*	*72*	*144*	*1,498*
	New External Trips			*2,521*	*335*	*2,856*	*707*	*2,470*	*3,176*	*724*	*641*	*1,365*	*24,705*

Source: *DKS Associates, 2009, based on ITE Trip Generation, Eighth Edition.*

Within Quad B, Quad C, and Quad D, trips can be made between the various land uses without accessing the public roadway system. These trips are known as internal trips. The number of internal trips was calculated by the SACMET travel model. The travel model divides all trips by trip purposes, such as trips from home to work, work to shopping, and work to home. The model then distributes and assigns these trips between appropriate trips origins and destinations. The distribution process considers the land use type, land use size, type of trip, time of day, and competing off-site uses. The trips that remain on-site are the internal trips.

For Quad B, the number of internal trips is estimated to be 14 trip-ends in the a.m. peak hour, 76 trip-ends in the p.m. peak hour, 110 trip-ends in the Saturday peak hour, and 867 daily trip ends. For Quad C, the number of internal trips is estimated to be 68 trip-ends in the a.m. peak hour, 182 trip-ends in the p.m. peak hour, 224 trip-ends in the Saturday peak hour, and 1,889 daily trip ends. For Quad D, the number of internal trips is estimated to be 26 trip-ends in the a.m. peak hour, 42 trip-ends in the p.m. peak hour, 16 trip-ends in the Saturday peak hour, and 516 daily trip ends.

After consideration of pass-by and internal trips, the project is estimated to generate 3,399 a.m. peak hour new external trips, 5,074 p.m. peak hour new external trips, 4,298 Saturday peak hour new external trips, and 62,788 weekday daily new external trips.

Existing Zoning Alternative

Trip generation of the existing zoning alternative was estimated utilizing the same methodology employed for the project. The existing zoning alternative is anticipated to generate 3,102 a.m. peak hour trips, 3,749 p.m. peak hour gross trips, 2,053 Saturday peak hour gross trips, and 31,074 weekday daily gross trips.

For the retail components of Quad B, the number of pass-by trips is estimated at about 44 percent on a weekday and about 37 percent on a Saturday. These percentages yield 52 pass-by trips in the a.m. peak hour, 209 pass-by trips in the p.m. peak hour, 237 pass-by trips in the Saturday peak hour, and 2,245 weekday pass-by trips. For the retail components of Quad C, the number of pass-by trips is estimated at about 39 percent on a weekday and about 36 percent on a Saturday. These percentages yield 60 pass-by trips in the a.m. peak hour, 246 pass-by trips in the p.m. peak hour, 307 pass-by trips in the Saturday peak hour, and 2,626 weekday pass-by trips.

For Quad B, the number of internal trips is estimated to be 24 trip-ends in the a.m. peak hour, 32 trip-ends in the p.m. peak hour, 44 trip-ends in the Saturday peak hour, and 373 daily trip ends. For Quad C, the number of internal trips is estimated to be 110 trip-ends in the a.m. peak hour, 86 trip-ends in the p.m. peak hour, 100 trip-ends in the Saturday peak hour, and 1,124 daily trip ends.

After consideration of pass-by and internal trips, the existing zoning alternative is estimated to generate 2,856 a.m. peak hour new external trips, 3,176 p.m. peak hour new external trips, 1,365 Saturday peak hour new external trips, and 24,705 weekday daily new external trips.

Trip Distribution

The distribution of trips associated with development on the project site was derived utilizing the regional SACMET travel model, observations of travel patterns near the site, and knowledge of the proposed access locations associated with the site. Trip distribution varies by land use and time period. Figure 4.2-8 illustrates the baseline trip distribution based upon project traffic during the a.m. and p.m. peak hours. The Saturday peak hour distribution is similar.

4.2.5 IMPACTS AND MITIGATION MEASURES

Method of Analysis

This analysis assumes that the traffic associated with the project and Existing Zoning Alternative is fully additive to other traffic on the roadway system. Full development of the project and existing zoning alternative are assumed to occur "instantaneously." In other words, phasing of project development is not anticipated. In this manner, the traffic and impacts associated with the project and alternative can be directly compared to known and measured conditions. Baseline impacts are determined by comparing the traffic operating conditions associated with the project or alternative with the traffic operating conditions associated with the baseline (without project) conditions.

For the cumulative scenarios, traffic associated with full development of the project and Existing Zoning Alternative have been added to year 2030 traffic on the roadway system. The year 2030 forecasts were developed through use of the regional SACMET travel model. The SACMET model version used in these analyses was developed for studies of Regional Transit's Downtown – Natomas – Airport (DNA) light rail line through North Natomas. This model version has been updated with land use within the City of Sacramento and the North Natomas Regional Analysis District (RAD) based upon the City of Sacramento 2030 General Plan Update. The regional travel model encompasses the entire Sacramento region, and forecasts peak hour and daily traffic volumes based upon projections of future land use and transportation networks throughout the region.

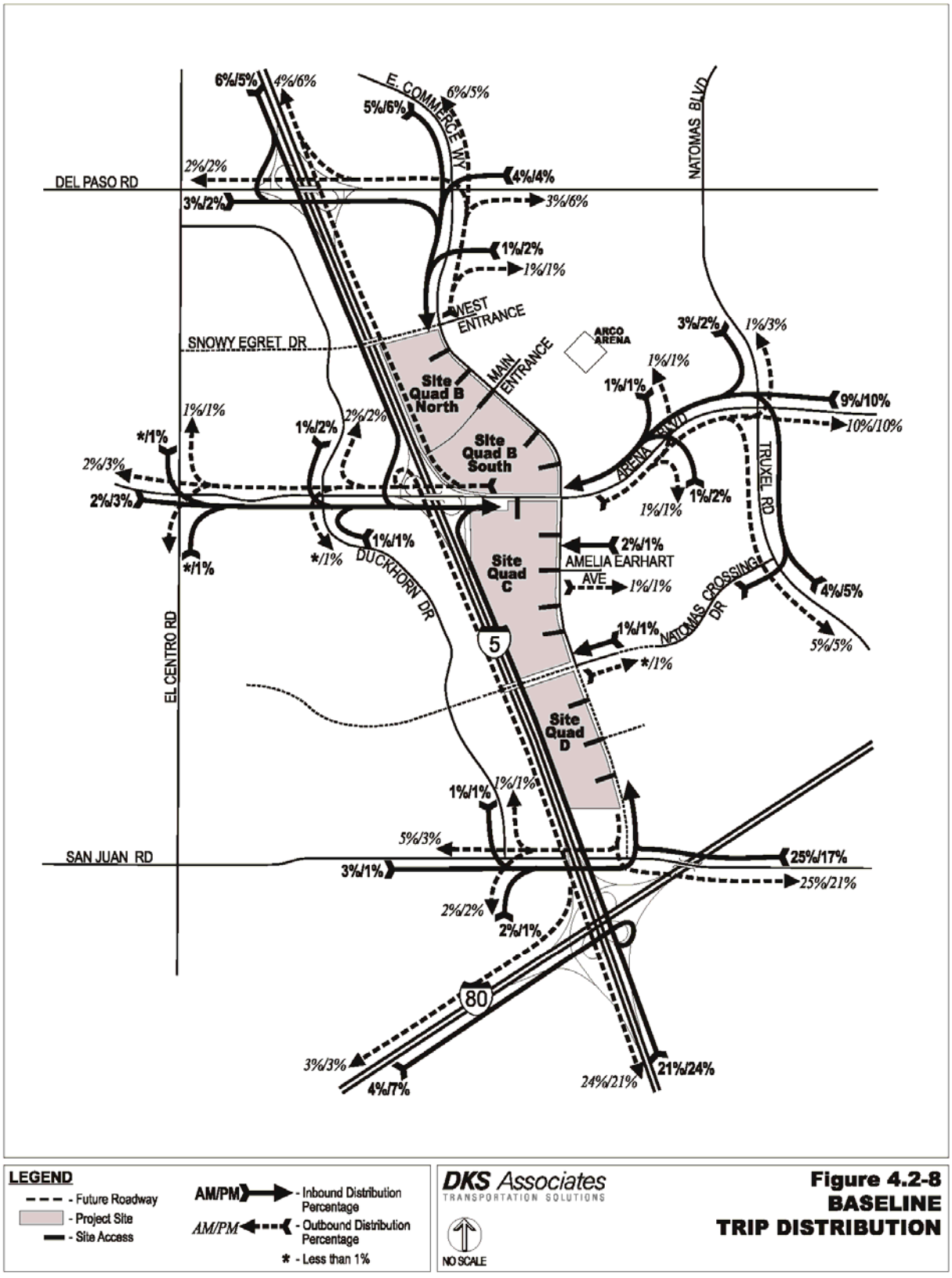
Cumulative impacts are determined by comparing the traffic operating conditions associated with the project with the traffic operating conditions associated with the cumulative with existing zoning scenario.

Standards of Significance

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. For purposes of this analysis, an impact is considered significant if implementation of the project would have the effects described below.

The standards of significance in this analysis are based upon current practice of the appropriate regulatory agencies. For most areas related to transportation and circulation, the standards defined in the City's *2030 General Plan* have been used. For traffic flow on the freeway system, the standards of Caltrans have been used.

Figure 4.2-8
Baseline Trip Distribution



Roadway Segments

In the City of Sacramento, a significant traffic impact occurs when:

1. The traffic generated by a project degrades peak period *Level of Service* (LOS) from A, B, C or D (without project) to E or F (with project); or
2. The LOS (without project) is E or F, and project generated traffic increases the *Volume-to-Capacity Ratio* (V/C ratio) by 0.02 or more.

Intersections

In the City of Sacramento, a significant traffic impact (intersection) occurs when:

1. The traffic generated by a project degrades peak period level of service from A, B, C or D (without project) to E or F (with project); or
2. The LOS (without project) is E or F, and project generated traffic increases the peak period average vehicle delay by five seconds or more.

These standards have been developed consistent with a goal set forth in the City of Sacramento, 2030 General Plan which seeks to maintain operations on all roadways and intersections at LOS D or better at all times unless maintaining this Level of Service would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. Congestion in excess of Level of Service D may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation.

Transit

For the purposes of this EIR, impacts to the transit system are considered significant if the proposed project would:

- Increase ridership, when added to the existing or future ridership, would exceed available or planned system capacity. Capacity is defined as the total number of passengers the system of busses and light rail vehicles can carry during the peak hours of operation.

Bicycle Facilities

For the purposes of this EIR, impacts to bikeways are considered significant if the proposed project would:

- Hinder or eliminate an existing designated bikeway, or interfere with implementation of a proposed bikeway; or
- Result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

Freeway Facilities

Caltrans considers the following to be significant impacts:

- Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway;

- Project traffic increases that cause any ramp's merge/diverge level of service to be worse than the freeway's level of service;
- Project traffic increases that cause the freeway level of service to deteriorate beyond level of service threshold defined in the Caltrans Route Concept Report for the facility; or
- The expected ramp queue is greater than the storage capacity.

Pedestrian Circulation

For the purposes of this EIR, impacts to pedestrian circulation are considered significant if the proposed project would:

- Result in unsafe conditions or create a hindrance for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle access.

Parking

For the purposes of this EIR, impacts to parking are considered significant if the proposed project would:

- Result in parking demand that exceeds the available or planned parking supply. However, the impact would not be significant if the project is consistent with the parking requirements stipulated in the City code.

Baseline Conditions

Several major North Natomas development projects have been approved in the site vicinity. These projects will add traffic to the roadway network in the study area. These projects are called "baseline" projects and the traffic associated with these projects has been added to existing traffic to provide baseline traffic volumes. Table 4.2-12 summarizes the trip generation of the baseline projects. These projects do not include portions of the projects that have already been constructed and occupied, since that traffic is included in the existing traffic counts.

Table 4.2-12
Baseline Projects Trip Generation

Approved Development	Land Use	Size	Vehicle Trips		
			A.M. Peak Hour	P.M. Peak Hour	Daily
Commerce Station (Baseline)	Office Retail	1,900 employees 322,200 square feet	1,155	2,118	19,808
Commerce Station (Cumulative only)	Office Retail Townhomes Restaurants	11,184 employees 322,200 square feet 124 units 25,000 square feet	5,402	6,137	48,502
Creekside Learning (Baseline)	Schools	2,000 students	961	255	2,943
Creekside Parcel 3 (Baseline)	Housing	121 units	94	127	1,239
Crown Plaza (Baseline)	Restaurants Retail	9,210 square feet 4,080 square feet	129	175	2,020
Greenbriar (Cumulative only)	Housing Retail School	3,473 units 373,700 square feet 122,500 square feet	3,153	4,467	41,119
Natomas Central (Baseline)	Housing	2,453 units	1,497	1,721	17,977
Natomas Field (Baseline)	Housing	708 units	516	643	6,662
Natomas Landing (Baseline)	Office Shopping Center Restaurant Hotel	200,000 square feet 261,000 square feet 50,000 square feet 450 rooms	1,445	2,294	24,955
Natomas Place (Baseline)	Housing Office Light Industrial	881 units 374 employees 252,000 square feet	1,042	1,155	10,825
Panhandle (Cumulative only)	Commercial Housing School	208,600 square feet 3,237 units 1 Elementary	2,277	3,353	35,383
Parkview Business Park South (Baseline)	Office	200,000 square feet	2,275	327	303

Table 4.2-12 (continued)
Baseline Projects Trip Generation

Approved Development	Land Use	Size	Vehicle Trips		
			A.M. Peak Hour	P.M. Peak Hour	Daily
Point West Plaza (Baseline)	Retail Office Gas Station	396,000 square feet 45,000 square feet 32 fuel positions	796	2,110	22,230
Promenade at Natomas (Baseline)	Retail Office Hotel	663,200 square feet 650,000 square feet 232 rooms	30,569	1,442	3,126
Riverdale North (Baseline)	Housing	174 units	131	176	1,731
Riverdale North (Cumulative only)	Housing Retail	174 units 4.8 gross acres	247	625	6,626
Westlake Village Shopping Center (Baseline)	Retail	75,101 square feet	132	518	5,638

Source: City of Sacramento, 2008; DKS Associates, 2009, based on ITE Trip Generation, Seventh and Eighth Editions.

Traffic Volumes

Baseline

Figures 4.2-9 and 4.2-10 illustrate a.m. peak hour, p.m. peak hour, and Saturday peak hour traffic volumes associated with the baseline scenario.

Baseline with Existing Zoning Alternative

Figures 4.2-11 and 4.2-12 illustrate a.m. peak hour, p.m. peak hour, and Saturday peak hour traffic volumes associated with the baseline with existing zoning alternative.

Baseline with Project

Figures 4.2-13 and 4.2-14 illustrate the weekday a.m. peak hour, p.m. peak hour, and Saturday peak hour traffic volumes associated with the baseline with project scenario.

Intersection Geometry

Baseline

Figure 4.2-9 illustrates baseline intersection geometry (number of approach lanes and traffic control). Compared to existing conditions, the baseline geometry assumes the following roadway changes:

- Widening of El Centro Road from two lanes to four lanes within the City Limits north of Del Paso Road (adjacent to the Natomas Landing project).

- Construction of East Commerce Way from Amelia Earhart Avenue to south of Natomas Crossing Drive. This roadway would have one southbound and three northbound lanes in the segment adjacent to Quad C under baseline conditions. The roadway would extend south of Natomas Crossing Drive only adjacent to the Natomas Field development, and would not be constructed southerly to San Juan Road for the analysis of baseline conditions.

- Construction of Natomas Crossing Drive as a two-lane roadway easterly from East Commerce Way. The roadway would extend east of East Commerce Way only adjacent to the Natomas Field development, and would not be constructed easterly to the existing portion of Natomas Crossing Drive (west of Truxel Road) for the analysis of baseline conditions.

Figure 4.2-9
Baseline (Without Development) Weekday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

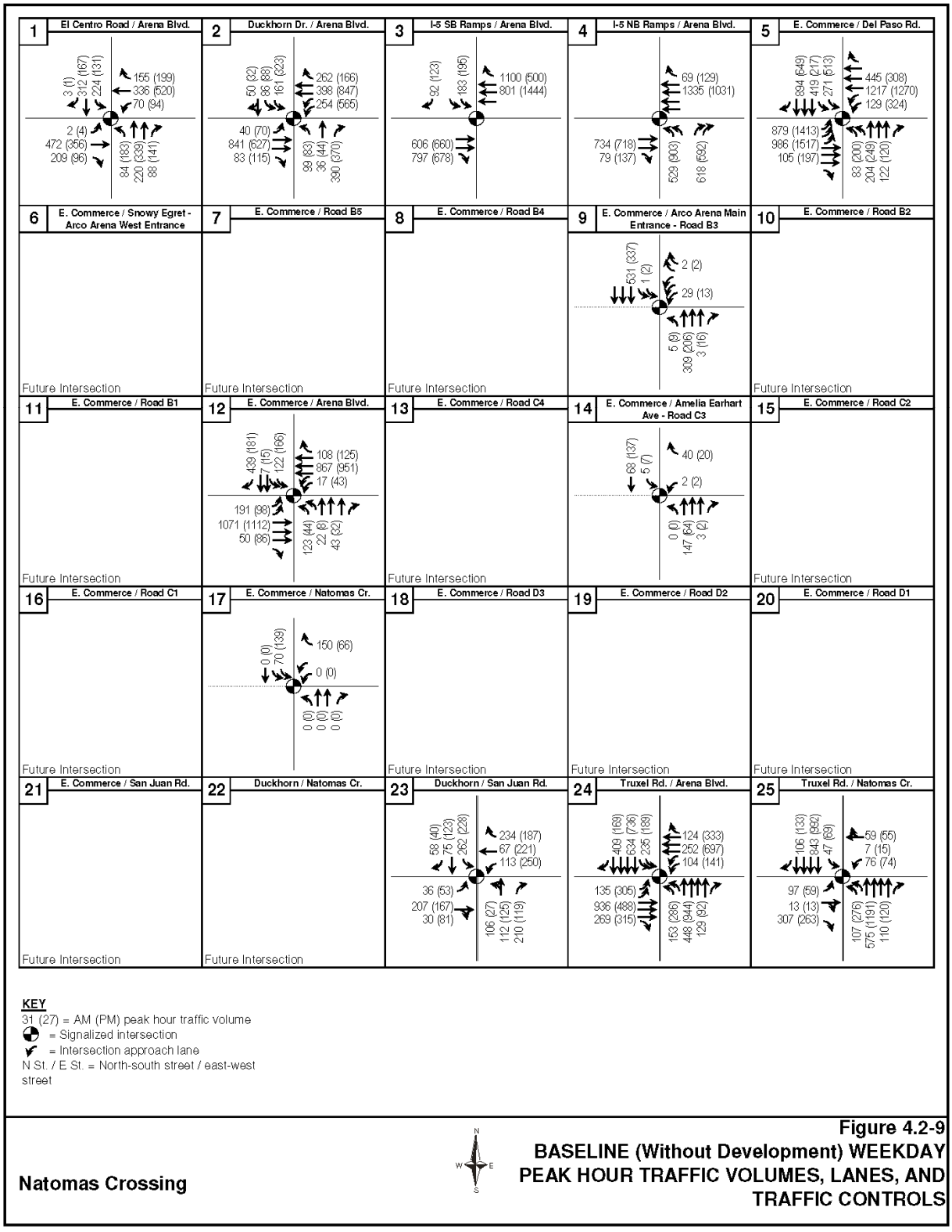


Figure 4.2-10
Baseline (Without Development) Saturday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

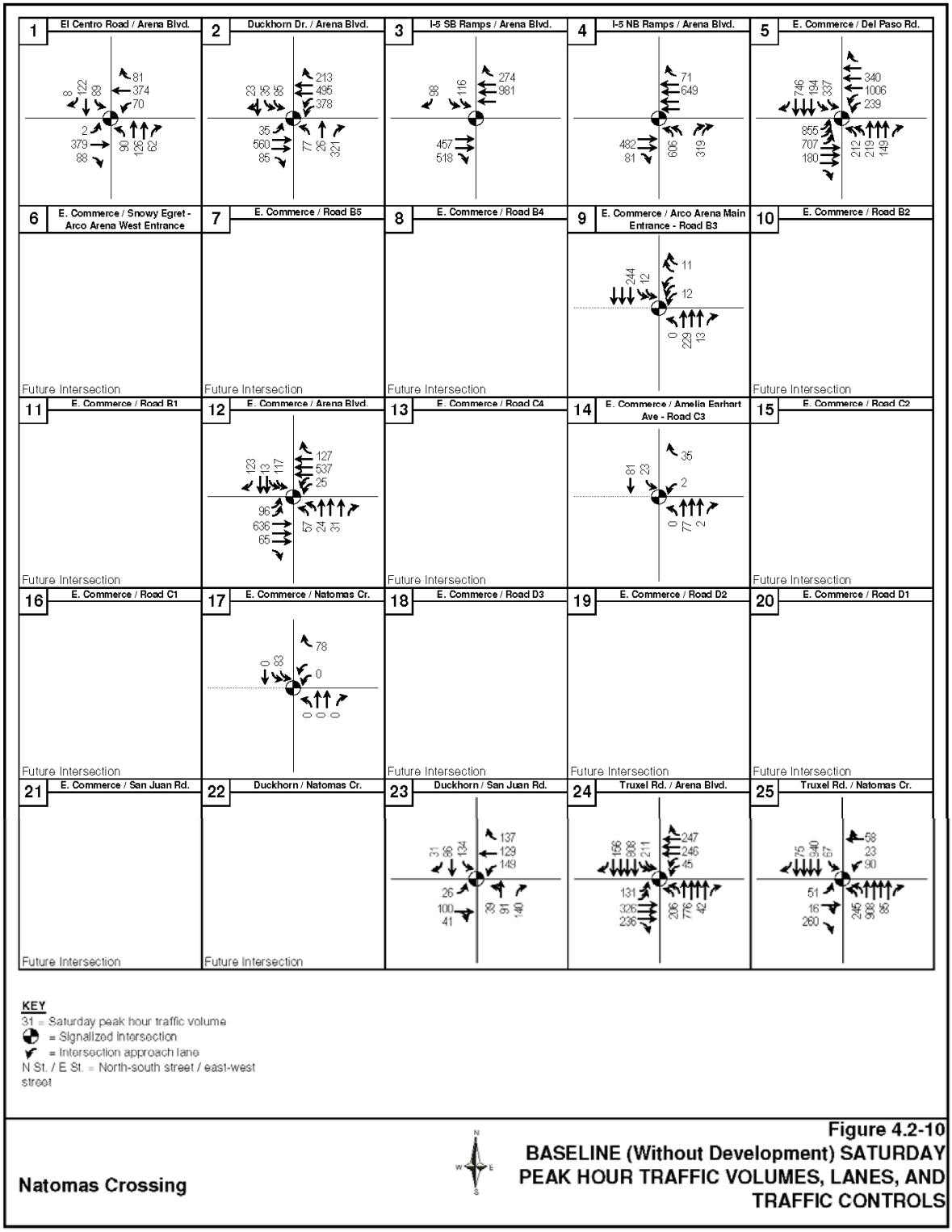


Figure 4.2-11
Baseline Plus Existing Zoning Weekday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

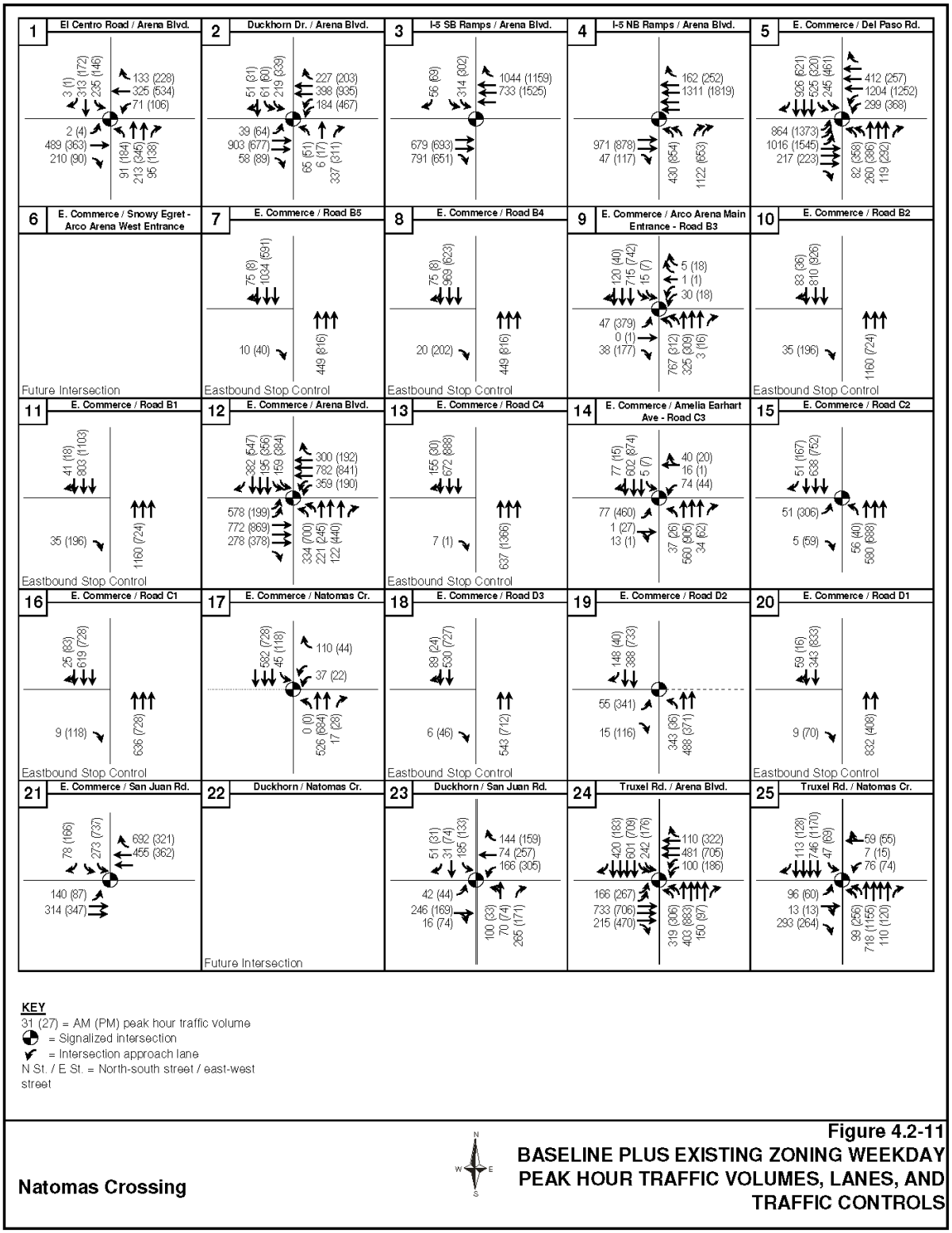


Figure 4.2-12
Baseline Plus Existing Zoning Saturday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

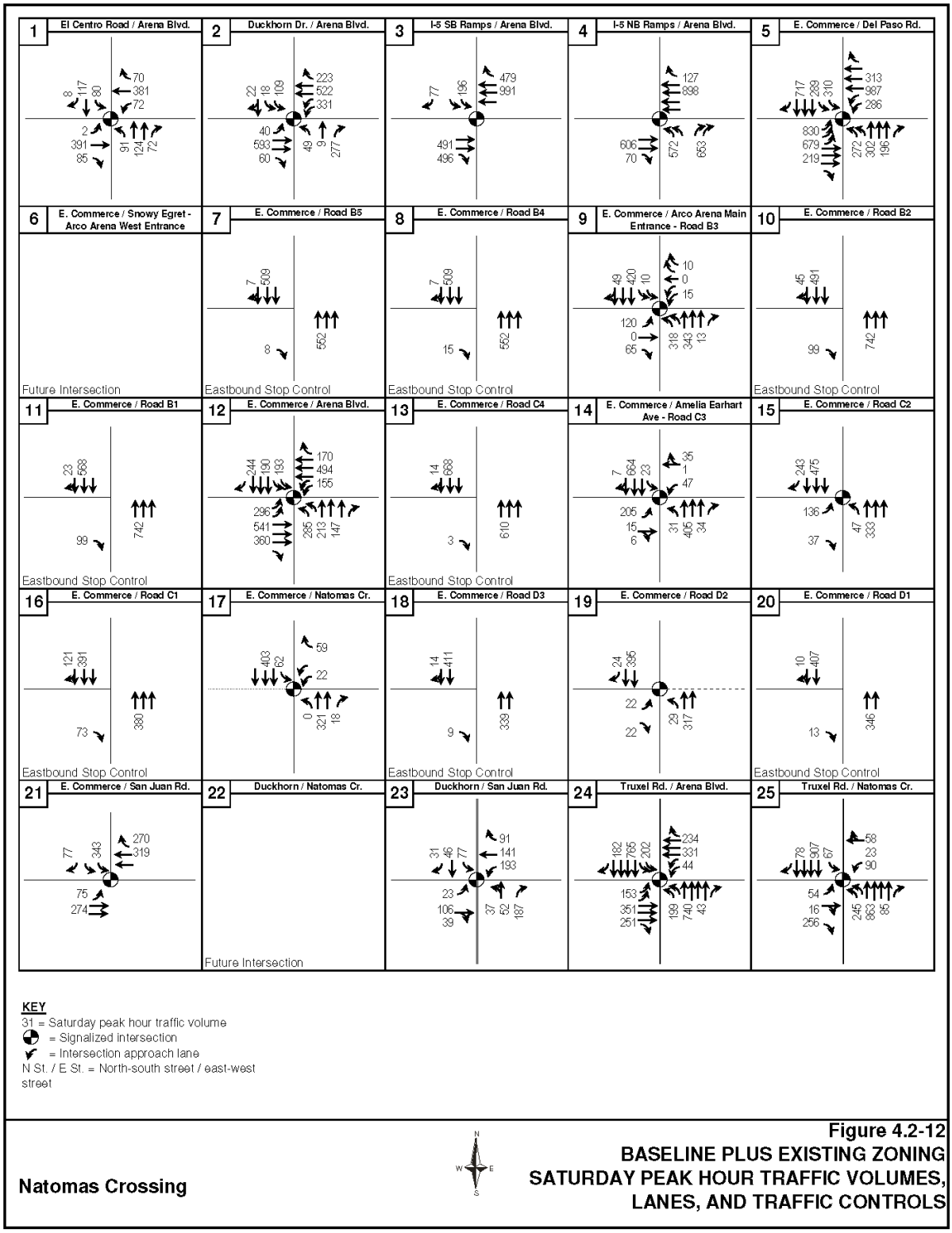


Figure 4.2-13
Baseline Plus Project Weekday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

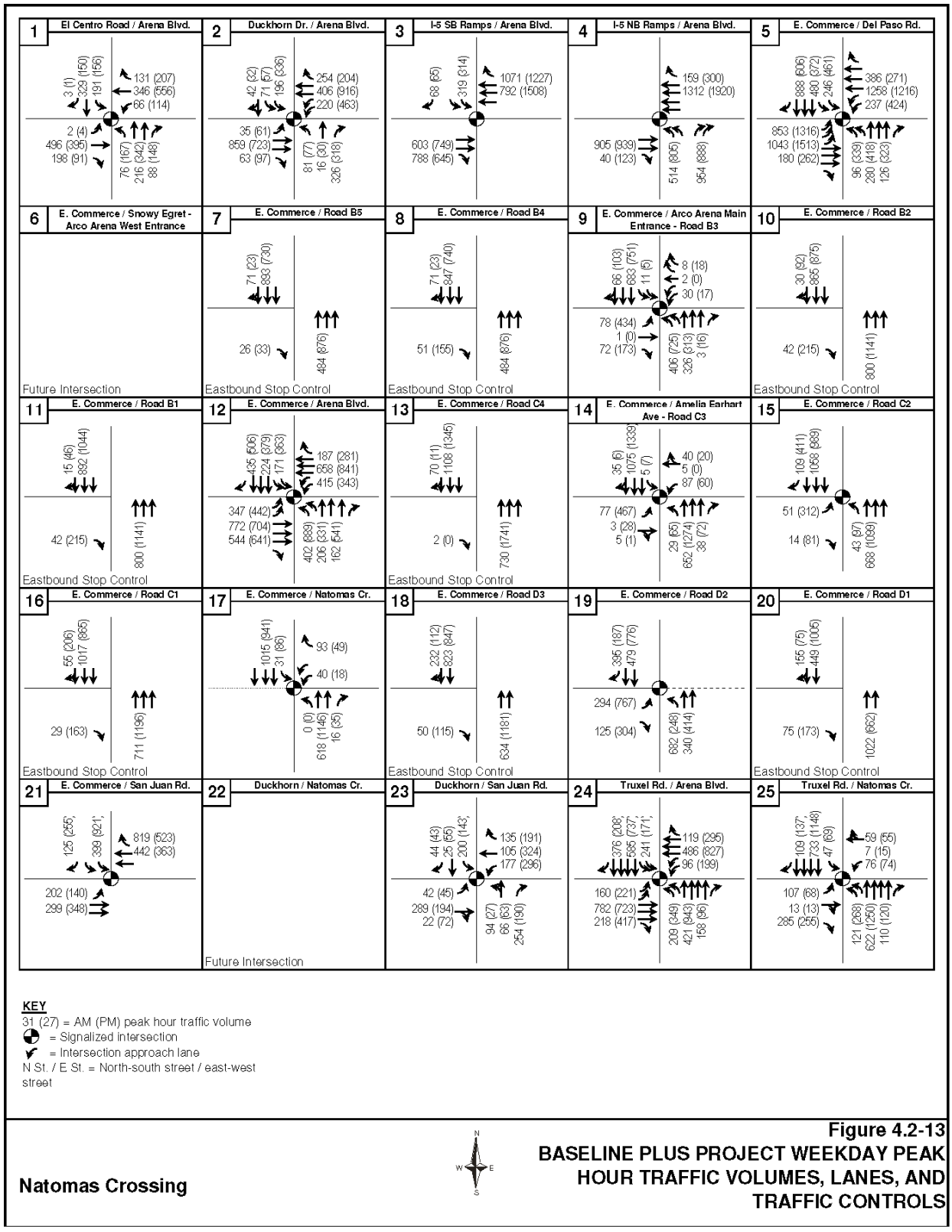
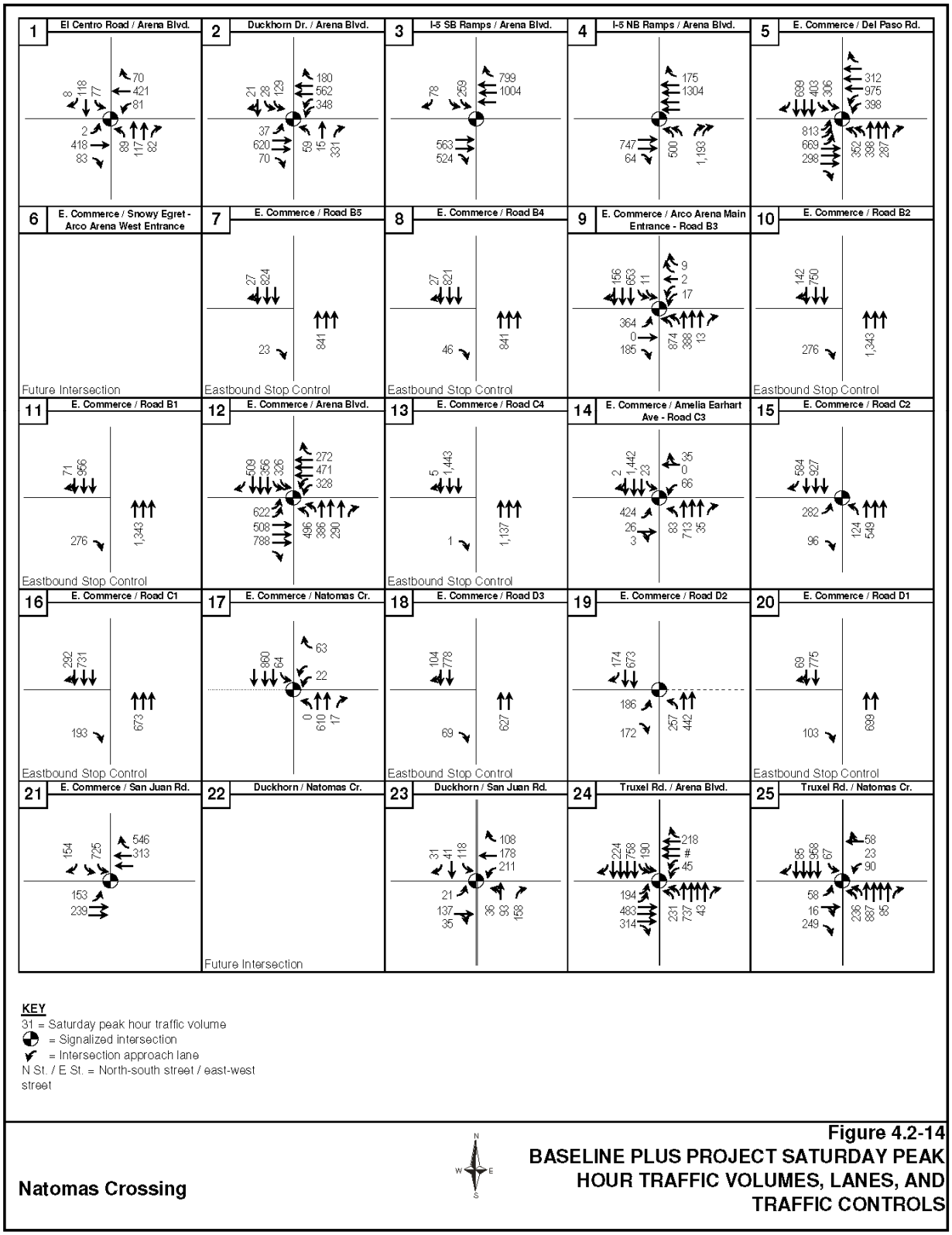


Figure 4.2-14
Baseline Plus Project Saturday Peak Hour Traffic Volumes, Lanes, and Traffic Controls



KEY
31 = Saturday peak hour traffic volume
= Signalized intersection
= Intersection approach lane
N St. / E St. = North-south street / east-west street

Natomas Crossing

Figure 4.2-14
BASELINE PLUS PROJECT SATURDAY PEAK HOUR TRAFFIC VOLUMES, LANES, AND TRAFFIC CONTROLS

Baseline with Existing Zoning Alternative

Figure 4.2-11 illustrates baseline with existing zoning alternative intersection geometry. Compared to the baseline scenario, the baseline with existing zoning geometry assumes the following roadway changes:

- Widening of East Commerce Way to six lanes along the site frontage from Arena Boulevard to Natomas Crossing Drive.

- Completion of East Commerce Way from Natomas Crossing Drive to San Juan Road as a four-lane roadway.

.

- Signalization of site intersections 15 (East Commerce Way and Road C2) and 19 (East Commerce Way and Road D2).

Baseline with Project

Figure 4.2-13 illustrates baseline with project intersection geometry. This geometry is the same as the baseline with existing zoning alternative geometry.

Baseline Analysis

Intersection Operations

Table 4.2-13 summarizes a.m., p.m., and Saturday peak hour intersection operations for baseline, baseline with project, and baseline with existing zoning alternative scenarios. Under baseline conditions, all intersections operate at an acceptable LOS "D" or better, except for the intersection of East Commerce Way and Del Paso Road. This intersection is projected to operate at LOS "F" during the a.m. and p.m. peak hours, and LOS "E" during the Saturday peak hours. These operating conditions would also be unacceptable under the City's 2030 General Plan level of service policy.

Segment Operations

Table 4.2-14 summarizes daily segment analysis for baseline, baseline with project, and baseline with existing zoning alternative scenarios. Under baseline conditions, all roadway segments operate at an acceptable LOS "D" or better.

Freeway Operations

Table 4.2-15 summarizes a.m. and p.m. weekday peak hour freeway mainline operating conditions. Under baseline conditions, all freeway mainline segments operate at conditions better than Caltrans' LOS "E" standard.

Table 4.2-13
Baseline Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Baseline		Baseline Plus Existing Zoning 2030 GP Threshold		Baseline Plus Project 2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. El Centro Road and Arena Boulevard	Signal	A.M.	B	19.0	B	19.6	B	18.9
		P.M.	B	18.7	B	19.0	B	19.1
		Saturday	B	15.6	B	15.5	B	15.3
2. Duckhorn Drive and Arena Boulevard	Signal	A.M.	C	22.1	C	21.2	C	20.7
		P.M.	C	27.4	C	24.1	C	24.5
		Saturday	B	19.5	B	18.9	C	20.2
3. Arena Boulevard and I-5 Southbound Ramps	Signal	A.M.	A	7.3	A	9.4	A	10.0
		P.M.	A	6.1	A	7.7	A	7.9
		Saturday	A	5.8	A	7.1	A	8.3
4. Arena Boulevard and I-5 Northbound Ramps	Signal	A.M.	B	12.0	B	14.6	B	13.4
		P.M.	B	13.7	B	14.9	B	14.7
		Saturday	B	12.1	B	11.9	B	14.6
5. East Commerce Way and Del Paso Road	Signal	A.M.	F	85.6	F	87.6	F	86.2
		P.M.	F	83.0	F	87.2	F	82.2
		Saturday	E	74.0	E	71.4	E	73.9
7. East Commerce Way and Road B5	Eastbound Stop Sign	A.M.			A	0.1	A	0.2
		P.M.			A	0.3	A	0.2
		Saturday			A	0.1	A	0.1

Table 4.2-13
Baseline Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Baseline		Baseline Plus Existing Zoning 2030 GP Threshold		Baseline Plus Project 2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]
8. East Commerce Way and Road B4	Eastbound Stop Sign	A.M.			A	0.1	A	0.4
		P.M.			A	1.3	A	1.0
		Saturday			A	0.1	A	0.3
9. East Commerce Way and Arco Arena Main Entrance / Road B3	Signal	A.M.	A	2.6	B	16.9	B	14.5
		P.M.	A	1.7	B	18.4	C	23.3
		Saturday	A	1.6	C	21.3	C	25.3
10. East Commerce Way and Road B2	Eastbound Stop Sign	A.M.			A	0.2	A	0.3
		P.M.			A	1.3	A	1.2
		Saturday			A	0.7	A	1.5
11. East Commerce Way and Road B1	Eastbound Stop Sign	A.M.			A	0.2	A	0.3
		P.M.			A	1.3	A	1.2
		Saturday			A	0.7	A	1.5
12. East Commerce Way and Arena Boulevard	Signal	A.M.	C	20.6	C	29.6	D	54.2
		P.M.	B	13.2	D	51.3	**F**	**94.8**
		Saturday	B	14.6	C	20.4	**F**	**89.0**
13. East Commerce Way and Road C4	Eastbound Stop Sign	A.M.			A	0.0	A	0.0
		P.M.			A	0.0	A	0.0
		Saturday			A	0.0	A	0.0

Table 4.2-13
Baseline Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Baseline		Baseline Plus Existing Zoning 2030 GP Threshold		Baseline Plus Project 2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]
14. East Commerce Way and Amelia Earhart Avenue / Road C3	Signal	A.M.	A	9.7	B	11.4	A	8.9
		P.M.	A	6.0	B	17.4	B	17.7
		Saturday	B	11.9	B	15.2	B	18.4
15. East Commerce Way and Road C2	Signal	A.M.			A	6.1	A	4.5
		P.M.			B	13.2	B	11.9
		Saturday			A	9.5	B	12.4
16. East Commerce Way and Road C1	Eastbound Stop Sign	A.M.			A	0.1	A	0.2
		P.M.			A	0.8	A	0.9
		Saturday			A	0.7	A	1.4
17. East Commerce Way and Natomas Crossing Drive	Signal	A.M.	A	9.1	A	8.6	A	5.7
		P.M.	B	10.5	A	6.0	A	4.5
		Saturday	B	11.1	A	8.4	A	5.5
18. East Commerce Way and Road D3	Eastbound Stop Sign	A.M.			A	0.1	A	0.4
		P.M.			A	0.3	A	0.7
		Saturday			A	0.1	A	0.5
19. East Commerce Way and Road D2	Signal	A.M.			B	10.9	C	32.9
		P.M.			B	12.8	C	31.0
		Saturday			A	4.9	B	14.4

Table 4.2-13
Baseline Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Baseline		Baseline Plus Existing Zoning 2030 GP Threshold		Baseline Plus Project 2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]
20. East Commerce Way and Road D1	Eastbound Stop Sign	A.M.			A	0.1	A	0.5
		P.M.			A	0.6	A	1.5
		Saturday			A	0.2	A	0.8
21. East Commerce Way and San Juan Road	Signal	A.M.			B	12.7	C	21.7
		P.M.			B	14.2	B	18.9
		Saturday			B	12.4	B	18.4
23. Duckhorn Drive and San Juan Road	Signal	A.M.	B	14.6	B	16.2	B	16.7
		P.M.	B	16.5	B	15.9	B	15.6
		Saturday	B	14.8	B	15.2	B	15.3
24. Truxel Road and Arena Boulevard	Signal	A.M.	B	19.0	C	20.4	B	19.2
		P.M.	C	20.4	C	20.5	C	20.4
		Saturday	B	18.7	B	18.6	B	18.5
25. Truxel Road and Natomas Crossing Drive	Signal	A.M.	B	17.1	B	17.2	B	17.4
		P.M.	B	16.2	B	15.7	B	15.6
		Saturday	B	17.1	B	17.3	B	17.0

[1] Level of Service
[2] Seconds of Delay

Source: DKS Associates, 2009.

Table 4.2-14
Baseline Roadway Segment Operating Conditions

Roadway	Segment	Lanes	Baseline			Baseline Plus Existing Zoning			Baseline Plus Project		
			Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
East Commerce Way	B. South of Arena Boulevard	4/6[1]	2,844	0.08	A	17,584	0.33	A	32,342	0.60	A
	C. North of Natomas Crossing Drive	4/6[1]	2,396	0.07	A	13,962	0.26	A	25,077	0.46	A
	D. North of San Juan Road	4				11,764	0.33	A	20,797	0.58	A

[1] Four lanes for baseline scenario only.

Source: DKS Associates, 2009.

Table 4.2-15
Baseline Freeway Mainline Peak Hour Operating Conditions

Direction	Segment	Through Lanes	Auxiliary Lanes	Baseline			Baseline Plus Existing Zoning			Baseline Plus Project		
				Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
A.M. Peak Hour												
North-bound I-5	I-80 to Arena Boulevard	4	1	4,680	0.450	B	5,122	0.493	B	4,991	0.480	B
	Arena Boulevard to Del Paso Road	3	1	3,681	0.449	B	3,779	0.461	B	3,772	0.454	B
	Del Paso Road to SR 99	3	0	2,819	0.427	B	2,842	0.428	B	2,762	0.419	B
	North of SR 99	2	0	2,342	0.532	C	2,296	0.522	B	2,256	0.513	B
South-bound I-5	North of SR 99	2	0	2,164	0.492	B	2,218	0.504	B	2,225	0.506	B
	Del Paso Road to SR 99	3	1	4,282	0.522	B	4,396	0.536	C	4,389	0.535	C
	Arena Boulevard to Del Paso Road	3	1	5,911	0.721	C	5,977	0.729	C	6,008	0.733	C
	I-80 to Arena Boulevard	4	1	7,533	0.724	C	7,442	0.716	C	7,480	0.719	C

Table 4.2-15
Baseline Freeway Mainline Peak Hour Operating Conditions

Direction	Segment	Through Lanes	Auxiliary Lanes	Baseline			Baseline Plus Existing Zoning			Baseline Plus Project		
				Volume	V/C	LOS	Volume	V/C	LOS	Volume	V/C	LOS
P.M. Peak Hour												
North-bound I-5	I-80 to Arena Boulevard	4	1	7,771	0.747	D	7,733	0.744	D	7,872	0.757	D
	Arena Boulevard to Del Paso Road	3	1	6,542	0.798	D	6,595	0.804	D	6,602	0.805	D
	Del Paso Road to SR 99	3	0	4,663	0.707	C	4,832	0.732	C	4,816	0.730	C
	North of SR 99	2	0	2,401	0.546	C	2,522	0.573	C	2,513	0.571	C
South-bound I-5	North of SR 99	2	0	3,073	0.698	C	3,060	0.695	C	3,051	0.693	C
	Del Paso Road to SR 99	3	1	3,488	0.425	B	3,496	0.426	B	3,524	0.430	B
	Arena Boulevard to Del Paso Road	3	1	4,391	0.535	C	4,340	0.529	B	4,384	0.535	C
	I-80 to Arena Boulevard	4	1	5,251	0.505	B	5,779	0.556	C	5,877	0.565	C

Source: DKS Associates, 2009.

Table 4.2-16 summarizes a.m. and p.m. weekday peak hour freeway ramp junction operating conditions. Under baseline conditions, all freeway ramp junctions operate at conditions better than Caltrans' LOS "E" standard.

Table 4.2-17 summarizes a.m., p.m., and Saturday peak hour freeway ramp queuing. Under baseline conditions, the ramp queues do not exceed the available storage capacity.

4.2.6 PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES (BASELINE WITH PROJECT)

4.2-1 Intersections

Table 4.2-18 summarizes the intersection impacts under the 2030 General Plan level of service thresholds. The project would increase traffic volumes at study area intersections and would cause a significant impact under the baseline with project scenario at the following intersection:

(a) East Commerce Way and Arena Boulevard – Traffic from the project would result LOS "F" conditions in the p.m. and Saturday peak hours. This is considered a ***significant impact.***

Mitigation Measures

4.2-1 East Commerce Way and Arena Boulevard – The project applicant shall add southbound, westbound, and eastbound exclusive right turn signal phases to this intersection. The project applicant shall provide funding to the City Traffic Operations Center (TOC) to monitor and retime the traffic signal. This mitigation shall be implemented on or before 80 percent of development as measured by a.m. peak hour trip generation, 60 percent of development as measured by p.m. peak hour trip generation, and 65 percent of development as measured by Saturday peak hour trip generation. This mitigation measure improves intersection operating conditions to LOS "C" (21.9 seconds average delay) during the a.m. peak hour, LOS "C" (34.2 seconds average delay) during the p.m. peak hour, and LOS "C" (29.2 seconds average delay) during the Saturday peak hour. This mitigation measure would reduce the impact of the project to a ***less-than-significant*** level.

Table 4.2-19 summarizes the intersection level of service with mitigation.

Table 4.2-16
Baseline Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Baseline		Baseline Plus Existing Zoning		Baseline Plus Project	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
A.M. Peak Hour								
North-bound I-5	I-80 Exit	Major diverge	2,314	C	2,423	C	2,425	C
	I-80 Entrance	Major merge	1,373	B	1,491	C	1,436	C
	Arena Boulevard Exit	Major diverge	1,147	B	1,552	B	1,468	B
	Eastbound Arena Boulevard Entrance	Single lane on ramp	79	B	47	B	40	B
	Westbound Arena Boulevard Entrance	Single lane on ramp	69	B	162	B	159	B
	Del Paso Road Exit	Major diverge	1,172	B	1,230	B	1,236	B
	Del Paso Road Eastbound Entrance	Single lane on ramp	67	B	59	B	59	B
	Del Paso Road Westbound Entrance	Single lane on ramp	243	B	216	B	216	B
	SR 99 Exit	Major diverge	928	B	920	B	928	B
	SR 99 Entrance	Single lane on ramp	451	C	392	C	422	C

Table 4.2-16
Baseline Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Baseline		Baseline Plus Existing Zoning		Baseline Plus Project	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
A.M. Peak Hour								
South-bound I-5	SR 99 Exit	Single lane off ramp	172	C	163	C	156	C
	SR 99 Entrance	Major merge	2,290	B	2,342	C	2,320	C
	Del Paso Road Exit	Lane drop	352	C	393	C	373	C
	Del Paso Road Westbound Entrance	Single lane on ramp	1,413	D	1,408	D	1,420	E
	Del Paso Road Eastbound Entrance	Lane addition	569	C	567	C	572	C
	Arena Boulevard Exit	Major Diverge	275	D	370	D	387	D
	Arena Boulevard Westbound Entrance	Lane addition	1,100	D	1,044	D	1,071	D
	Arena Boulevard Eastbound Entrance	Lane addition	797	C	791	C	788	C
	I-80 Exit	Major Diverge	2,066	C	2,007	C	2,022	C
	I-80 Entrance	Lane addition	2,414	D	2,391	C	2,364	C

Table 4.2-16
Baseline Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Baseline		Baseline Plus Existing Zoning		Baseline Plus Project	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
A.M. Peak Hour								
North-bound SR 99	I-5 Southbound Entrance	Single lane on ramp	172	B	163	B	156	B
South-bound SR 99	I-5 Northbound Exit	Single lane off ramp	451	C	392	C	422	C
East-bound I-80	I-5 Exit	Single lane off ramp	610	C	764	C	700	C
	I-5 Southbound Entrance	Single lane on ramp	840	C	828	C	845	C
	I-5 Northbound Entrance	Lane addition	2,304	C	2,398	C	2,387	C
West-bound I-80	I-5 Exit	Major diverge	3,352	C	3,292	C	3,274	C
	I-5 Northbound Entrance	Single lane on ramp	124	B	139	B	152	B
	I-5 Southbound Entrance	Single lane on ramp	1,227	C	1,180	C	1,177	C

Table 4.2-16
Baseline Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Baseline		Baseline Plus Existing Zoning		Baseline Plus Project	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
P.M. Peak Hour								
North-bound I-5	I-80 Exit	Major diverge	2,528	D	2,499	D	2,440	D
	I-80 Entrance	Major merge	2,344	D	2,341	D	2,313	D
	Arena Boulevard Exit	Major diverge	1,495	D	1,507	D	1,693	D
	Eastbound Arena Boulevard Entrance	Single lane on ramp	137	C	117	C	123	C
	Westbound Arena Boulevard Entrance	Single lane on ramp	129	D	252	D	300	D
	Del Paso Road Exit	Major diverge	2,353	D	2,306	D	2,355	D
	Del Paso Road Eastbound Entrance	Single lane on ramp	107	B	123	B	129	B
	Del Paso Road Westbound Entrance	Single lane on ramp	367	C	420	C	441	C
	SR 99 Exit	Major diverge	2,495	C	2,561	C	2,528	C
	SR 99 Entrance	Single lane on ramp	234	C	251	C	225	C

Table 4.2-16
Baseline Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Baseline		Baseline Plus Existing Zoning		Baseline Plus Project	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
P.M. Peak Hour								
South-bound I-5	SR 99 Exit	Single lane off ramp	613	D	582	D	563	D
	SR 99 Entrance	Major merge	1,029	C	1,018	C	1,036	C
	Del Paso Road Exit	Lane drop	338	C	380	C	407	C
	Del Paso Road Westbound Entrance	Single lane on ramp	989	C	966	C	971	C
	Del Paso Road Eastbound Entrance	Lane addition	294	C	286	C	288	C
	Arena Boulevard Exit	Major Diverge	318	C	371	C	379	C
	Arena Boulevard Westbound Entrance	Lane addition	500	C	1,159	C	1,227	C
	Arena Boulevard Eastbound Entrance	Lane addition	678	C	651	C	645	C
	I-80 Exit	Major Diverge	1,526	B	1,597	C	1,654	C
	I-80 Entrance	Lane addition	2,394	C	2,375	C	2,369	C

Table 4.2-16
Baseline Peak Hour Freeway Ramp Junction Level of Service

Direction	Location	Junction Type	Baseline		Baseline Plus Existing Zoning		Baseline Plus Project	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
P.M. Peak Hour								
Northbound SR 99	I-5 Southbound Entrance	Single lane on ramp	613	D	582	D	563	D
Southbound SR 99	I-5 Northbound Exit	Single lane off ramp	234	B	251	B	225	B
Eastbound I-80	I-5 Exit	Single lane off ramp	1,358	D	1,357	D	1,330	D
	I-5 Southbound Entrance	Single lane on ramp	882	D	835	D	894	D
	I-5 Northbound Entrance	Lane addition	2,359	D	2,500	D	2,451	D
Westbound I-80	I-5 Exit	Major diverge	3,553	C	3,531	C	3,525	C
	I-5 Northbound Entrance	Single lane on ramp	140	B	150	B	140	B
	I-5 Southbound Entrance	Single lane on ramp	644	B	762	B	759	B

Source: DKS Associates, 2009.

Table 4.2-17
Baseline Freeway Ramp Termini Queuing

Ramp	Movement	Available Queue Length (feet)[1]	Peak Hour	Estimated Maximum Queue (feet)		
				Baseline	Baseline Plus Existing Zoning	Baseline Plus Project
I-5 Northbound Exit to Arena Boulevard	Left	2,300	A.M.	400	250	350
			P.M.	650	750	700
			Saturday	350	400	300
	Right	2,300	A.M.	450	1,000	800
			P.M.	350	450	700
			Saturday	150	650	900
I-5 Southbound Exit to Arena Boulevard	Left	1,605	A.M.	150	250	250
			P.M.	200	300	300
			Saturday	100	200	200
	Right	1,450	A.M.	75	25	50
			P.M.	125	50	50
			Saturday	100	50	50

[1] Measured from intersection stop bar to gore point. Total queue length in all lanes associated with the subject movement.

Source: DKS Associates, 2009.

4.2-2 Roadway Segments

The project would increase traffic volumes on study area roadway segments. With the addition of project traffic, all segments would continue to operate at LOS A. The impacts of the project would be ***less-than-significant.***

Mitigation Measures
None required.

4.2-3 Freeway Mainline

The project would increase traffic volumes on the freeway mainline. The changes in freeway mainline operating conditions do not exceed the standards of significance for impacts to the freeway mainline. The impacts of the project would be ***less than significant.***

Mitigation Measures
None required.

4.2-4 Freeway Ramp Junctions

The project would increase traffic volumes at freeway ramp junctions. The changes in freeway ramp junction operating conditions do not exceed the standards of significance for impacts to the freeway ramp junctions. The impacts of the project would be ***less than significant.***

Mitigation Measures
None required.

4.2-5 Freeway Ramp Queuing

The project would increase traffic volumes on the freeway ramps. The changes in freeway ramp queuing do not exceed the available storage space. The impacts of the project would be ***less than significant.***

Mitigation Measures
None required.

4.2-6 Pedestrian and Bicycle Circulation Impacts

The project would add pedestrian and bicycle demands within the project site and to and from nearby land uses. Specific information on improvements to on- and off-site bicycle and pedestrian facilities is not available at this time. Because the project would add demand for pedestrian and bicycle facilities that may not be available, the impact of the project on pedestrian and bicycle circulation is ***potentially significant.***

Table 4.2-18 Baseline Intersection Impacts		
	Baseline Plus Existing Zoning	**Baseline Plus Project**
Intersection	**2030 GP Threshold**	**2030 GP Threshold**
1. El Centro Road and Arena Boulevard		
2. Duckhorn Drive and Arena Boulevard		
3. Arena Boulevard and I-5 Southbound Ramps		
4. Arena Boulevard and I-5 Northbound Ramps		
5. East Commerce Way and Del Paso Road		
7. East Commerce Way and Road B5		
8. East Commerce Way and Road B4		
9. East Commerce Way and Arco Arena Main Entrance / Road B3		
10. East Commerce Way and Road B2		
11. East Commerce Way and Road B1		
12. East Commerce Way and Arena Boulevard		√
13. East Commerce Way and Road C4		
14. East Commerce Way and Amelia Earhart Avenue / Road C3		
15. East Commerce Way and Road C2		
16. East Commerce Way and Road C1		
17. East Commerce Way and Natomas Crossing Drive		
18. East Commerce Way and Road D3		
19. East Commerce Way and Road D2		
20. East Commerce Way and Road D1		
21. East Commerce Way and San Juan Road		
23. Duckhorn Drive and San Juan Road		
24. Truxel Road and Arena Boulevard		
25. Truxel Road and Natomas Crossing Drive		
Source: DKS Associates, 2009.		

Table 4.2-19
Baseline Intersection Operating Conditions with Mitigation

Intersection	Traffic Control	Peak Hour	Baseline		Baseline Plus Existing Zoning				Baseline Plus Project			
					Without Mitigation		With Mitigation		Without Mitigation		With Mitigation	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]
12. East Commerce Way and Arena Boulevard	Signal	A.M.	C	20.6	C	29.6	-	-	D	54.2	C	21.9
		P.M.	B	13.2	D	51.3	C	31.2	**F**	**94.8**	C	34.2
		Saturday	B	14.6	C	20.4	-	-	**F**	**89.0**	C	29.2

Source: DKS Associates, 2009.

Mitigation Measures

4.2-6 Prior to the issuance of building permits, the project applicant shall identify the necessary on- and off-site pedestrian and bicycle facilities to serve the proposed development to the satisfaction of the City of Sacramento Traffic Engineering Division. These facilities shall be incorporated into the project and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, and pedestrian signal heads. Sidewalks would be required as part of the frontage improvements along all new roadway construction in the project vicinity in conformance with City design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards. This mitigation measure would reduce the impact of the project to a ***less-than-significant*** level.

4.2-7 Transit System Impacts

The project would increase demand for transit services. The project would result in the addition of employees, residents, patrons, and visitors to the site, some of whom would travel by transit. Although particular transit vehicles operate at or near capacity during the peak commuter periods, a review of existing transit operations and plans for future transit services indicate that there is ample capacity on the Regional Transit system to support the anticipated increase in trips. Because the existing and planned future transit system capacity is sufficient to accommodate the increased project generated transit ridership, and because the project applicant will be required to contribute to the funding of the North Natomas transit system as spelled out in North Natomas Finance Plan and to join the North Natomas Transportation Management Association (TMA), the impact on the transit system is ***less than significant.***

Mitigation Measures
None required.

4.2-8 Parking Impacts

The project would increase demand for off-street parking. The number of parking spaces that would be provided is unknown at this time. Because the number of spaces is unknown, the impact of the project on parking is ***potentially significant.***

Mitigation Measures

4.2-8 The project shall provide parking in accordance with City zoning requirements. Table 4.2-20 summarizes the parking requirement based upon the City zoning code. This mitigation measure would reduce the impact of the project to a ***less-than-significant*** level.

Table 4.2-20
Parking Analysis

Scenario	Quad	Land Use	Size	City Zoning Requirements	
				Rate	Spaces
Project	B North	Townhouse / Condominium	180 units	1.5 spaces per dwelling unit plus 1 guest space per 15 units	282
		Hotel	300 rooms	1 space per 2 rooms	150
		Office	240,000 s.f.	1 space per 400 square feet	600
	B South	Retail	426,000 s.f.	1 space per 250 square feet	1,704
	C	Retail	393,200 s.f.	1 space per 250 square feet	1,573
		Office	200,000 s.f.	1 space per 400 square feet	500
	D	Hospital	340 beds	1 space per bed	340
		Medical Office	600,000 s.f.	1 space per 200 square feet	3,000
Existing Zoning	B North	Office	447,000 s.f.	1 space per 400 square feet	1,118
	B South	Retail	63,600 s.f.	1 space per 250 square feet	254
		Office	453,000 s.f.	1 space per 400 square feet	1,133
	C	Retail	98,400 s.f.	1 space per 250 square feet	394
		Office	568,700 s.f.	1 space per 400 square feet	1,422
	D	Office	546,000 s.f.	1 space per 400 square feet	1,365

Source: DKS Associates, 2009, based upon City Zoning Ordinance.

4.2.7 ALTERNATIVE-SPECIFIC IMPACTS AND MITIGATION MEASURES (BASELINE WITH EXISTING ZONING ALTERNATIVE)

4.2-9 Intersections

Table 4.2-18 summarizes the intersection impacts under 2030 General Plan level of service thresholds. The alternative would increase traffic volumes at study area intersections; however, it would result in acceptable LOS D conditions. Therefore the impact would be ***less-than-significant***.

Mitigation Measures
None required.

4.2-10 Roadway Segments

The existing zoning alternative would increase traffic volumes on study area roadway segments. With the addition of alternative traffic, all segments would continue to operate at LOS "A" or better. The impacts of the alternative would be ***less-than-significant.***

Mitigation Measures
None required.

4.2-11 Freeway Mainline

The existing zoning alternative would increase traffic volumes on the freeway mainline. The changes in freeway mainline operating conditions do not exceed the standards of significance for impacts to the freeway mainline. The impacts of the existing zoning alternative would be ***less than significant.***

Mitigation Measures
None required.

4.2-12 Freeway Ramp Junctions

The existing zoning alternative would increase traffic volumes at freeway ramp junctions. The changes in freeway ramp junction operating conditions do not exceed the standards of significance for impacts to the freeway ramp junctions. The impacts of the existing zoning alternative would be ***less than significant.***

Mitigation Measures
None required.

4.2-13 Freeway Ramp Queuing

The alternative would increase traffic volumes on the freeway ramps. The changes in freeway ramp queuing do not exceed the available storage space. The impacts of the alternative would be ***less than significant.***

Mitigation Measures
None required.

4.2-14 Pedestrian and Bicycle Circulation Impacts

The alternative would add pedestrian and bicycle demands within the site and to and from nearby land uses. Specific information on improvements to on- and off-site bicycle and pedestrian facilities is not available at this time. Because the alternative would add demand for pedestrian and bicycle facilities that may not be available, the impact of the alternative on pedestrian and bicycle circulation is ***potentially significant.***

Mitigation Measures

4.2-14 Implement Mitigation Measure 4.2-6.

4.2-15 Transit System Impacts

The existing zoning alternative would increase demand for transit services. The existing zoning alternative would result in the addition of employees, residents, patrons, and visitors to the site, some of whom would travel by transit. Although particular transit vehicles operate at or near capacity during the peak commuter periods, a review of existing transit operations and plans for future transit services indicate that there is ample capacity on the Regional Transit system to support the anticipated increase in trips. Because the existing and planned future transit system capacity is sufficient to accommodate the increased existing zoning alternative generated transit ridership and because the project applicant will be required to contribute to the funding of the North Natomas transit system as spelled out in North Natomas Finance Plan and to join the North Natomas Transportation Management Association (TMA), the impact on the transit system is ***less than significant.***

Mitigation Measures
None required.

4.2-16 Parking Impacts

The alternative would increase demand for off-street parking. The number of parking spaces that would be provided is unknown at this time. Because the number of spaces is unknown, the impact of the alternative on parking is ***potentially significant.***

Mitigation Measures

4.2-16 Implement Mitigation Measure 4.2-8.

4.2.8 CONSTRUCTION IMPACTS (BASELINE WITH PROJECT, BASELINE WITH EXISTING ZONING ALTERNATIVE)

4.2-17 Construction

Construction will include disruptions to the transportation network near the site, including the possibility of temporary lane closures, street closures, sidewalk closures, and bikeway closures. Pedestrian, bicycle, and transit access may be disrupted. Heavy vehicles will access the site and may need to be staged for construction. These activities could result in degraded roadway operating conditions. Therefore, the impacts are considered ***significant***.

Mitigation Measures

4.2-17 Prior to beginning of construction, a construction traffic and parking management plan shall be prepared by the applicant to the satisfaction of the City traffic engineer and subject to review by all affected agencies. The plan shall ensure that acceptable operating conditions on local

roadways and freeway facilities are maintained. At a minimum, the plan shall include:

- The number of truck trips, time, and day of street closures.
- Time of day of arrival and departure of trucks.
- Limitations on the size and type of trucks, provision of a staging area with a limitation on the number of trucks that can be waiting.
- Provision of a truck circulation pattern.
- Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas).
- Maintain safe and efficient access routes for emergency vehicles.
- Manual traffic control when necessary.
- Proper advance warning and posted signage concerning street closures.
- Provisions for pedestrian safety.

A copy of the construction traffic management plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways. Implementation of the mitigation measure would reduce this impact to ***less-than-significant***.

Cumulative Conditions

Methodology

Future traffic volume forecasts were developed through utilization of SACOG's regional SACMET travel model. The SACMET model version used in these analyses was developed for studies of Regional Transit's Downtown – Natomas – Airport (DNA) light rail line through North Natomas. This model version has been updated with land use within the City of Sacramento and the North Natomas Regional Analysis District (RAD) based upon the City of Sacramento 2030 General Plan. The regional travel model encompasses the entire Sacramento region, and forecasts peak hour and daily traffic volumes based upon projections of future land use and transportation networks throughout the region. In the study area, the following roadway improvements are included in the analysis:

- Extend East Commerce Way from south of Natomas Crossing Drive to San Juan Road as a four-lane roadway (NNCP) (not included in the Baseline scenario).

- Construct Natomas Crossing Drive overcrossing of I-5 (NNCP).

- Construct remaining portion of Natomas Crossing Drive to provide connectivity between East Commerce Way and Truxel Road (NNCP).

- Construct Snowy Egret Drive overcrossing of I-5 (NNCP).

- Widen East Commerce Way north of Del Paso Road to four and six lanes (NNCP).

- Widen southbound I-5 at Del Paso Road interchange to provide two continuous lanes from southbound SR 99 (NNCP).

- Add a northbound I-5 auxiliary lane from Del Paso Road interchange to SR 99 (NNCP).

- Add northbound and southbound auxiliary lanes on SR 99 from I-5 to the Elkhorn Boulevard interchange (Metropolitan Transportation Plan [MTP]).

- Add HOV lanes to I-5 from Sacramento International Airport to Pocket Road (MTP).

- Implement the Downtown-Natomas-Airport light rail line in its entirety, including all optional stations (MTP).[3]

Scenarios

Two scenarios of future (year 2030) conditions have been analyzed. The cumulative scenario assumes full development of the project site under existing zoning. The cumulative with project scenario assumes full development of the project.

Figure 4.2-15 illustrates the cumulative trip distribution based upon project traffic during the a.m. and p.m. peak hours. The Saturday peak hour distribution is similar.

Traffic Volumes

Cumulative

Figures 4.2-16 and 4.2-17 illustrate a.m. peak hour, p.m. peak hour, and Saturday peak hour traffic volumes associated with the cumulative scenario.

Cumulative With Project

Figures 4.2-18 and 4.2-19 illustrate a.m. peak hour, p.m. peak hour, and Saturday peak hour traffic volumes associated with the cumulative with project scenario.

[3] Downtown / Natomas / Airport Draft EIR, RT Presentation, November 15, 2006.

Intersection Geometry

Cumulative

Figure 4.2-16 illustrates cumulative geometry, including improvements discussed in the "Methodology" section.

Cumulative With Project

Figure 4.2-18 illustrates cumulative with project geometry, which is identical to the cumulative geometry.

Cumulative Analysis

Intersection Operations

Table 4.2-21 summarizes a.m., p.m., and Saturday peak hour intersection operations for cumulative and cumulative with project scenario.

Segment Operations

Table 4.2-22 summarizes daily segment analysis for cumulative and cumulative with project scenarios.

Figure 4.2-15
Cumulative Trip Distribution

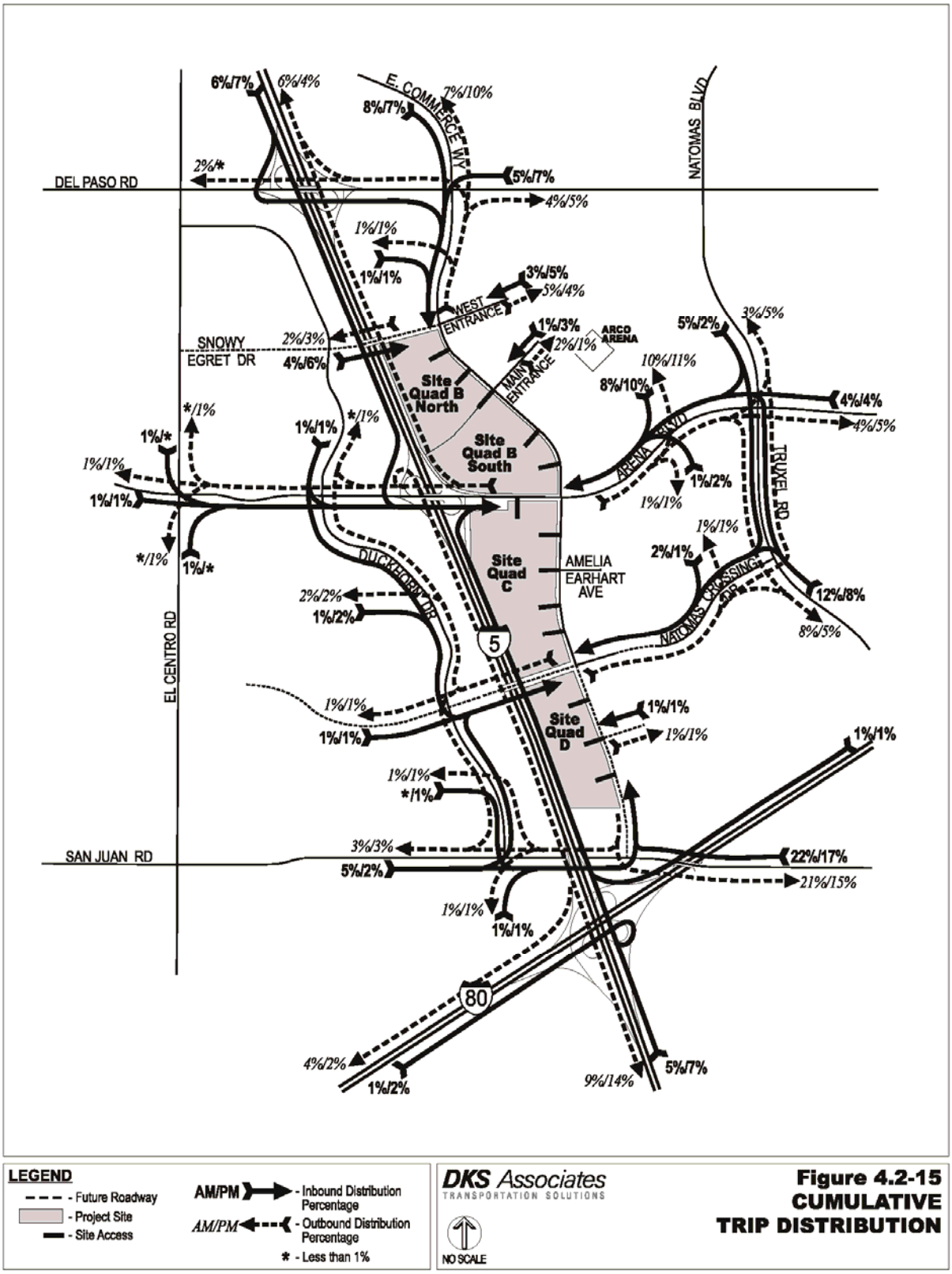


Figure 4.2-16
Cumulative (With Existing Zoning) Weekday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

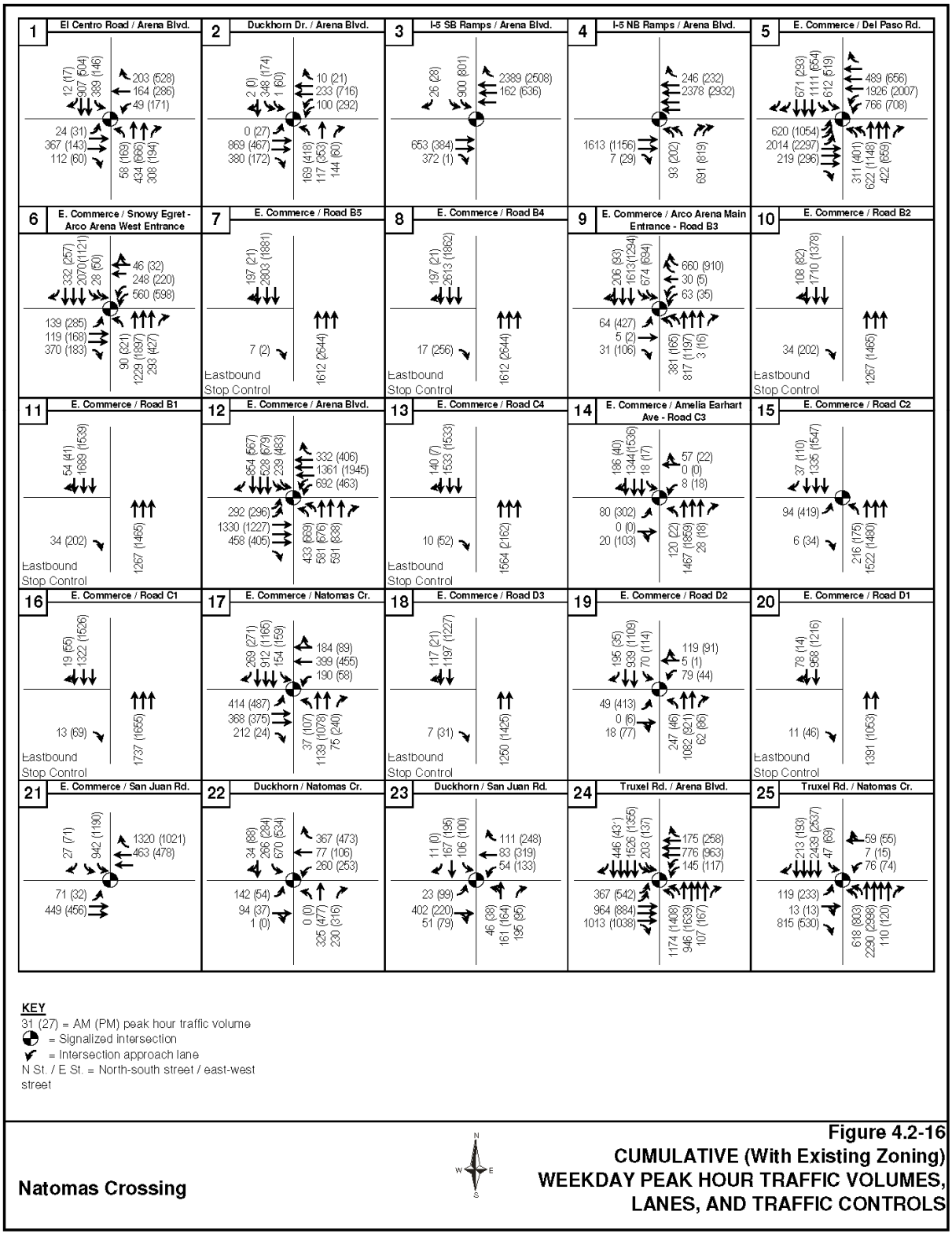


Figure 4.2-17
Cumulative (With Existing Zoning) Saturday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

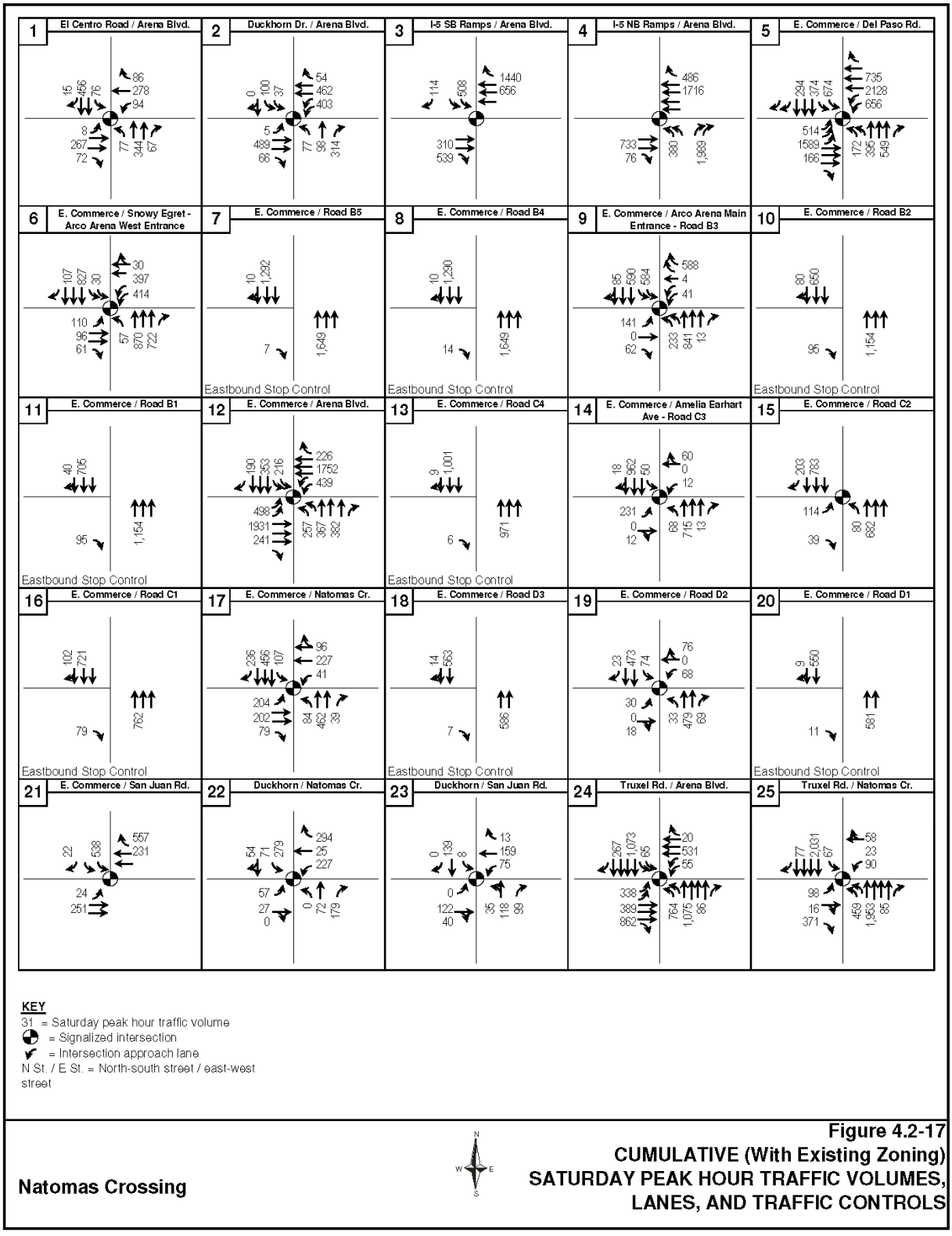


Figure 4.2-18
Cumulative Plus Project Weekday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

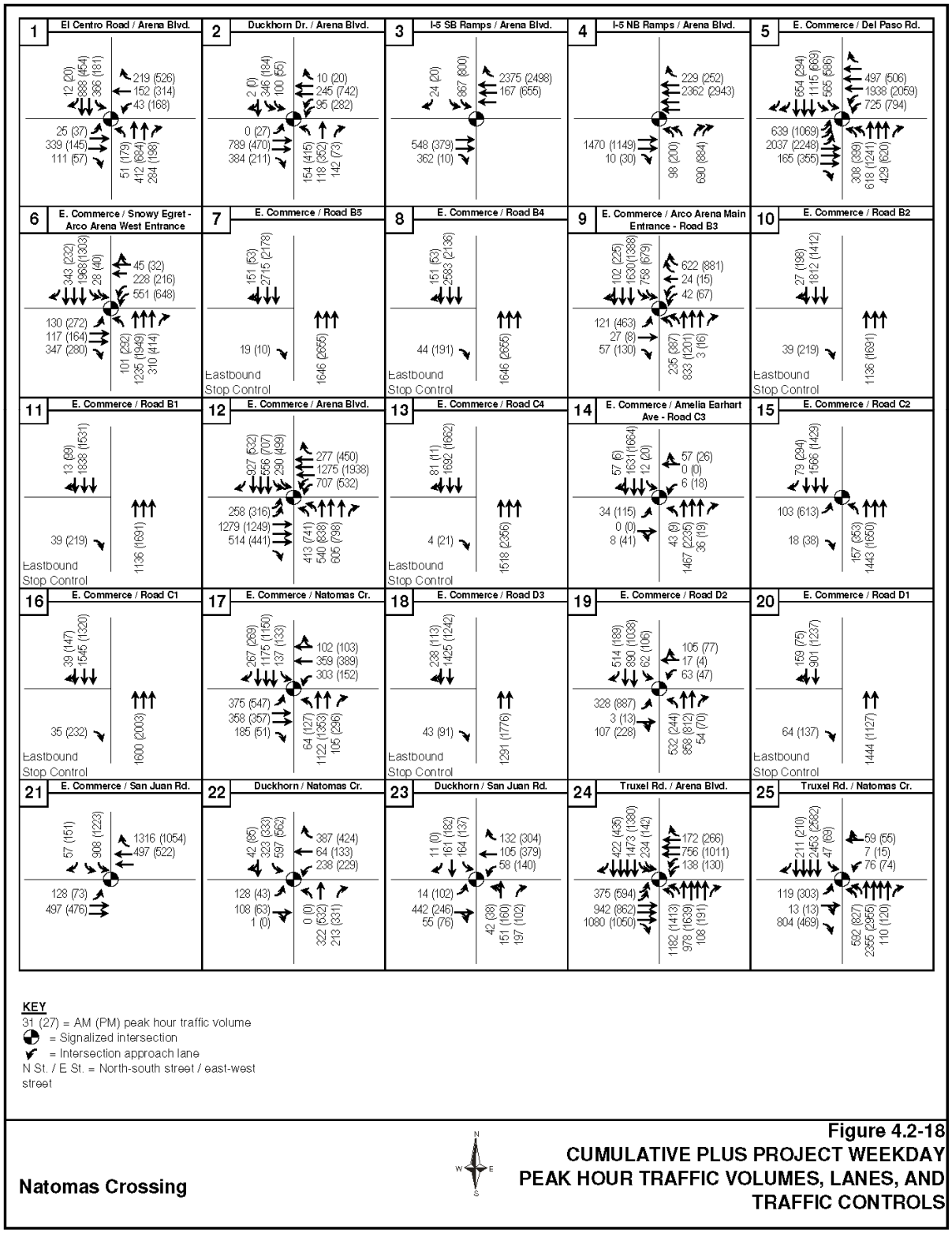


Figure 4.2-19
Cumulative Plus Project Saturday Peak Hour Traffic Volumes, Lanes, and Traffic Controls

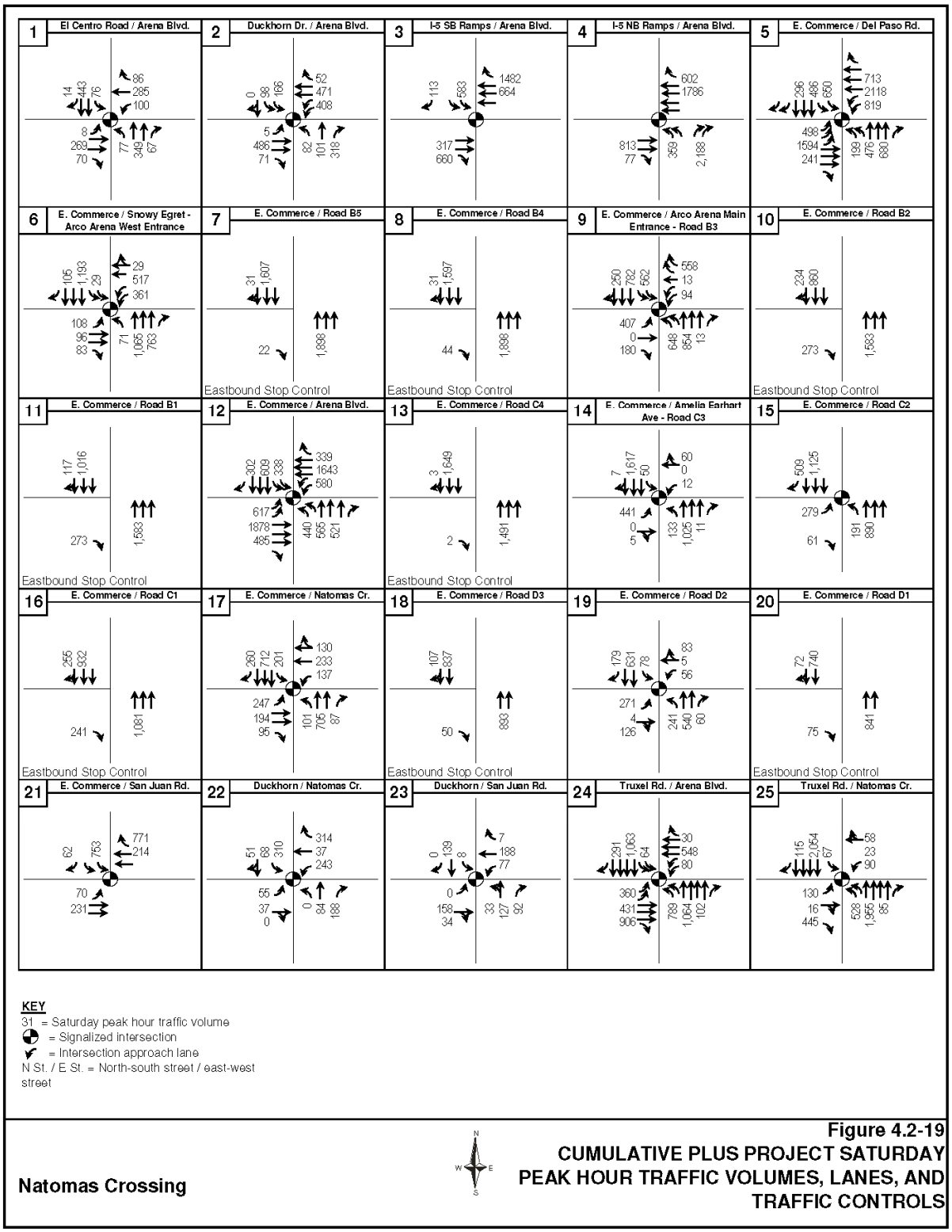


Table 4.2-21
Cumulative Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Cumulative		Cumulative With Project	
			2030 GP Threshold		2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
1. El Centro Road and Arena Boulevard	Signal	A.M.	B	19.5	B	18.8
		P.M.	C	23.5	C	25.0
		Saturday	B	17.8	B	17.9
2. Duckhorn Drive and Arena Boulevard	Signal	A.M.	B	19.8	B	19.7
		P.M.	C	22.1	C	22.3
		Saturday	B	18.4	C	20.3
3. Arena Boulevard and I-5 Southbound Ramps	Signal	A.M.	B	13.5	B	12.6
		P.M.	B	13.8	B	13.8
		Saturday	B	12.2	B	12.5
4. Arena Boulevard and I-5 Northbound Ramps	Signal	A.M.	B	11.4	B	11.4
		P.M.	B	13.3	B	14.3
		Saturday	E	57.5	**E**	**78.7**
5. East Commerce Way and Del Paso Road	Signal	A.M.	F	90.4	F	87.7
		P.M.	F	148.5	F	146.8
		Saturday	F	107.9	**F**	**142.8**
6. East Commerce Way and Snowy Egret Drive / Arco Arena West Entrance	Signal	A.M.	D	45.1	D	38.4
		P.M.	C	26.2	D	36.9
		Saturday	B	18.3	C	20.5

Table 4.2-21
Cumulative Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Cumulative		Cumulative With Project	
			2030 GP Threshold		2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
7. East Commerce Way and Road B5	Eastbound Stop Sign	A.M.	A	0.0	A	0.1
		P.M.	A	0.0	A	0.0
		Saturday	A	0.0	A	0.1
8. East Commerce Way and Road B4	Eastbound Stop Sign	A.M.	A	0.1	A	0.2
		P.M.	A	1.3	A	1.0
		Saturday	A	0.1	A	0.2
9. East Commerce Way and Arco Arena Main Entrance / Road B3	Signal	A.M.	C	31.9	C	29.0
		P.M.	F	96.4	**F**	**113.9**
		Saturday	C	24.5	D	54.6
10. East Commerce Way and Road B2	Eastbound Stop Sign	A.M.	A	0.2	A	0.2
		P.M.	A	1.0	A	1.2
		Saturday	A	0.5	A	1.5
11. East Commerce Way and Road B1	Eastbound Stop Sign	A.M.	A	0.2	A	0.2
		P.M.	A	1.1	A	1.2
		Saturday	A	0.5	A	1.4
12. East Commerce Way and Arena Boulevard	Signal	A.M.	F	108.2	**F**	**115.6**
		P.M.	F	113.4	F	113.1
		Saturday	D	41.5	**E**	**79.7**

Table 4.2-21
Cumulative Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Cumulative		Cumulative With Project	
			2030 GP Threshold		2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
13. East Commerce Way and Road C4	Eastbound Stop Sign	A.M.	A	0.0	A	0.0
		P.M.	A	0.2	A	0.1
		Saturday	A	0.0	A	0.0
14. East Commerce Way and Amelia Earhart Avenue / Road C3	Signal	A.M.	A	9.6	A	6.4
		P.M.	B	13.3	A	7.7
		Saturday	B	15.7	C	23.2
15. East Commerce Way and Road C2	Signal	A.M.	A	7.8	A	7.2
		P.M.	B	15.2	C	31.9
		Saturday	A	8.9	B	12.7
16. East Commerce Way and Road C1	Eastbound Stop Sign	A.M.	A	0.0	A	0.1
		P.M.	A	0.3	A	1.1
		Saturday	A	0.5	A	1.5
17. East Commerce Way and Natomas Crossing Drive	Signal	A.M.	D	43.1	D	37.8
		P.M.	E	71.6	**E**	**77.1**
		Saturday	B	19.6	C	21.7
18. East Commerce Way and Road D3	Eastbound Stop Sign	A.M.	A	0.0	A	0.3
		P.M.	A	0.2	A	0.5
		Saturday	A	0.1	A	0.3

Table 4.2-21
Cumulative Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Cumulative		Cumulative With Project	
			2030 GP Threshold		2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]
19. East Commerce Way and Road D2	Signal	A.M.	B	14.8	**E**	**60.5**
		P.M.	C	22.7	**F**	**84.3**
		Saturday	B	12.8	C	20.5
20. East Commerce Way and Road D1	Eastbound Stop Sign	A.M.	A	0.1	A	0.3
		P.M.	A	0.3	A	1.0
		Saturday	A	0.1	A	0.5
21. East Commerce Way and San Juan Road	Signal	A.M.	F	104.8	**F**	**109.8**
		P.M.	E	67.9	**F**	**81.7**
		Saturday	B	12.8	C	23.1
22. Duckhorn Drive and Natomas Crossing Drive	Signal	A.M.	E	64.8	D	52.2
		P.M.	E	69.1	E	69.9
		Saturday	C	20.5	C	21.6
23. Duckhorn Drive and San Juan Road	Signal	A.M.	B	15.0	B	14.7
		P.M.	B	15.9	B	15.9
		Saturday	B	13.7	B	13.7
24. Truxel Road and Arena Boulevard	Signal	A.M.	F	132.2	**F**	**140.7**
		P.M.	F	134.1	F	137.8
		Saturday	E	71.6	**E**	**77.3**
25. Truxel Road and Natomas Crossing Drive	Signal	A.M.	D	40.5	D	38.3
		P.M.	C	33.5	D	36.1
		Saturday	B	17.2	B	19.3

Table 4.2-21
Cumulative Intersection Operating Conditions

Intersection	Traffic Control	Peak Hour	Cumulative		Cumulative With Project	
			2030 GP Threshold		2030 GP Threshold	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]

[1] Level of Service
[2] Seconds of Delay

Source: DKS Associates, 2009.

Table 4.2-22
Cumulative Roadway Segment Operating Conditions

Roadway	Segment	Lanes	Cumulative			Cumulative With Project		
			Volume	V/C	LOS	Volume	V/C	LOS
Natomas Crossing Drive	A. I-5 Overcrossing	4	14,481	0.40	A	14,941	0.42	A
East Commerce Way	B. South of Arena Boulevard	6	29,825	0.55	A	41,491	0.77	C
	C. North of Natomas Crossing Drive	6	26,375	0.49	A	34,204	0.63	B
	D. North of San Juan Road	4	19,924	0.55	A	24,470	0.68	B
Snowy Egret Way	E. I-5 Overcrossing	4	10,396	0.29	A	11,631	0.32	A

Source: DKS Associates, 2009.

Freeway Operations

Table 4.2-23 summarizes a.m. and p.m. weekday peak hour freeway mainline operating conditions.

Table 4.2-24 summarizes a.m. and p.m. weekday peak hour freeway ramp junction operating conditions.

Table 4.2-25 summarizes a.m., p.m., and Saturday peak hour freeway exit ramp queuing.

4.2.9 CUMULATIVE IMPACTS AND MITIGATION MEASURES (CUMULATIVE WITH PROJECT)

Table 4.2-26 summarizes the intersection impacts under 2030 General Plan level of service thresholds. Analysis of cumulative impacts focuses on intersections, roadway segments, and freeway facilities. Impacts on the pedestrian, bicycle, parking, and transit systems are the same as identified for the baseline with project scenario.

4.2-18 Intersections

The project would increase traffic volumes at study area intersections and would cause significant impacts under the cumulative with project scenario at the following intersections:

(a) Arena Boulevard and I-5 Northbound Ramps - Traffic from the project would result in LOS "E" conditions in the Saturday peak hour with an increase in average delay of greater than 5 seconds. This is considered a ***significant impact.***

(b) East Commerce Way and Del Paso Road – Traffic from the project would result in LOS "F" conditions in the Saturday peak hour with an increase in average delay of greater than 5 seconds. This is considered a ***significant impact.***

(c) East Commerce Way and Arco Arena Main Entrance / Road B3 – Traffic from the project would result in LOS "F" conditions in the p.m. peak hour with an increase in average delay of greater than 5 seconds. This is considered a ***significant impact.***

Table 4.2-23
Cumulative Freeway Mainline Peak Hour Operating Conditions

Direction	Segment	Through Lanes	Auxiliary Lanes	Cumulative			Cumulative With Project		
				Volume	V/C	LOS	Volume	V/C	LOS
A.M. Peak Hour									
North-bound I-5	I-80 to Arena Boulevard	4	1	6,490	0.624	C	6,531	0.628	C
	Arena Boulevard to Del Paso Road	3	1	5,960	0.727	C	5,983	0.730	C
	Del Paso Road to SR 99	3	1	4,625	0.564	C	4,665	0.569	C
	North of SR 99	2	0	3,096	0.704	C	3,090	0.702	C
South-bound I-5	North of SR 99	2	0	3,010	0.684	C	2,982	0.678	C
	Del Paso Road to SR 99	3	1	6,320	0.771	D	6,301	0.768	D
	Arena Boulevard to Del Paso Road	3	1	7,738	0.944	E	7,708	0.940	E
	I-80 to Arena Boulevard	4	1	9,573	0.920	E	9,554	0.919	E

Table 4.2-23
Cumulative Freeway Mainline Peak Hour Operating Conditions

Direction	Segment	Through Lanes	Auxiliary Lanes	Cumulative			Cumulative With Project		
				Volume	V/C	LOS	Volume	V/C	LOS
P.M. Peak Hour									
North-bound I-5	I-80 to Arena Boulevard	4	1	9,484	0.912	E	9,564	0.920	E
	Arena Boulevard to Del Paso Road	3	1	8,724	1.064	F	8,762	1.069	**F**
	Del Paso Road to SR 99	3	1	6,906	0.842	D	6,933	0.846	D
	North of SR 99	2	0	3,730	0.848	D	3,734	0.849	D
South-bound I-5	North of SR 99	2	0	3,983	0.905	E	3,971	0.903	E
	Del Paso Road to SR 99	3	1	5,648	0.689	C	5,641	0.688	C
	Arena Boulevard to Del Paso Road	3	1	6,699	0.817	D	6,733	0.821	D
	I-80 to Arena Boulevard	4	1	8,379	0.806	D	8,421	0.810	D

Source: DKS Associates, 2009.

Table 4.2-24
Cumulative Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Cumulative		Cumulative With Project	
			Ramp Volume	LOS	Ramp Volume	LOS
A.M. Peak Hour						
North-bound I-5	I-80 Exit	Major diverge	3,128	D	3,036	D
	I-80 Entrance	Major merge	1,755	C	1,728	C
	Arena Boulevard Exit	Major diverge	784	C	788	C
	Eastbound Arena Boulevard Entrance	Single lane on ramp	7	C	10	C
	Westbound Arena Boulevard Entrance	Single lane on ramp	246	C	229	C
	Del Paso Road Exit	Major diverge	2,063	C	2,043	C
	Del Paso Road Eastbound Entrance	Single lane on ramp	157	B	156	B
	Del Paso Road Westbound Entrance	Lane addition	571	C	568	C
	SR 99 Exit	Major diverge	2,216	C	2,207	C
	SR 99 Entrance	Single lane on ramp	688	D	632	D

Table 4.2-24
Cumulative Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Cumulative		Cumulative With Project	
			Ramp Volume	LOS	Ramp Volume	LOS
A.M. Peak Hour						
South-bound I-5	SR 99 Exit	Single lane off ramp	546	C	550	C
	SR 99 Entrance	Major merge	3,857	D	3,869	D
	Del Paso Road Exit	Single lane off ramp	631	E	623	E
	Del Paso Road Westbound Entrance	Single lane on ramp	1,461	D	1,447	D
	Del Paso Road Eastbound Entrance	Single lane on ramp	588	D	583	D
	Arena Boulevard Exit	Major Diverge	926	F	891	**F**[1]
	Arena Boulevard Westbound Entrance	Lane addition	2,389	F	2,375	**F**[1]
	Arena Boulevard Eastbound Entrance	Lane addition	372	D	362	D
	I-80 Exit	Major Diverge	1,417	E	1,435	E
	I-80 Entrance	Lane addition	1,369	D	1,380	D

Table 4.2-24
Cumulative Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Cumulative		Cumulative With Project	
			Ramp Volume	LOS	Ramp Volume	LOS
A.M. Peak Hour						
North-bound SR 99	I-5 Southbound Entrance	Lane addition	546	B	550	B
South-bound SR 99	I-5 Northbound Exit	Lane drop	688	D	632	D
East-bound I-80	I-5 Exit	Single lane off ramp	1,171	D	1,142	D
	I-5 Southbound Entrance	Single lane on ramp	453	D	470	D
	I-5 Northbound Entrance	Lane addition	2,760	D	2,692	D
West-bound I-80	I-5 Exit	Major diverge	2,128	C	2,141	C
	I-5 Northbound Entrance	Single lane on ramp	482	D	458	D
	I-5 Southbound Entrance	Single lane on ramp	964	D	965	D

Table 4.2-24
Cumulative Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Cumulative		Cumulative With Project	
			Ramp Volume	LOS	Ramp Volume	LOS
P.M. Peak Hour						
North-bound I-5	I-80 Exit	Major diverge	2,829	F	2,807	**F[1]**
	I-80 Entrance	Major merge	2,794	F	2,786	**F[1]**
	Arena Boulevard Exit	Major diverge	1,021	E	1,084	E
	Eastbound Arena Boulevard Entrance	Single lane on ramp	29	D	30	D
	Westbound Arena Boulevard Entrance	Single lane on ramp	232	D	252	D
	Del Paso Road Exit	Major diverge	2,847	F	2,876	**F**
	Del Paso Road Eastbound Entrance	Single lane on ramp	221	C	225	C
	Del Paso Road Westbound Entrance	Lane addition	807	E	822	E
	SR 99 Exit	Major diverge	3,864	D	3,894	D
	SR 99 Entrance	Single lane on ramp	688	D	695	D

Table 4.2-24
Cumulative Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Cumulative		Cumulative With Project	
			Ramp Volume	LOS	Ramp Volume	LOS
P.M. Peak Hour						
South-bound I-5	SR 99 Exit	Single lane off ramp	811	E	809	E
	SR 99 Entrance	Major merge	2,475	C	2,478	C
	Del Paso Road Exit	Single lane off ramp	593	E	597	E
	Del Paso Road Westbound Entrance	Single lane on ramp	1,225	C	1,256	C
	Del Paso Road Eastbound Entrance	Single lane on ramp	420	D	433	D
	Arena Boulevard Exit	Major Diverge	829	D	820	D
	Arena Boulevard Westbound Entrance	Lane addition	2,508	F	2,498	**F**[1]
	Arena Boulevard Eastbound Entrance	Lane addition	1	D	10	D
	I-80 Exit	Major Diverge	1,774	D	1,765	D
	I-80 Entrance	Lane addition	1,614	D	1,641	C

Table 4.2-24
Cumulative Peak Hour Freeway Ramp Junction Level of Service

Direc-tion	Location	Junction Type	Cumulative		Cumulative With Project	
			Ramp Volume	LOS	Ramp Volume	LOS
P.M. Peak Hour						
North-bound SR 99	I-5 Southbound Entrance	Lane addition	811	D	809	D
South-bound SR 99	I-5 Northbound Exit	Lane drop	688	B	695	C
East-bound I-80	I-5 Exit	Single lane off ramp	1,955	E	1,973	E
	I-5 Southbound Entrance	Single lane on ramp	750	F	750	**F**[1]
	I-5 Northbound Entrance	Lane addition	2,506	D	2,510	D
West-bound I-80	I-5 Exit	Major diverge	2,625	C	2,626	C
	I-5 Northbound Entrance	Single lane on ramp	474	C	448	C
	I-5 Southbound Entrance	Single lane on ramp	1,024	C	1,015	C

[1] Total freeway volume increases at the ramp junction.

Source: DKS Associates, 2009.

Table 4.2-25
Cumulative Freeway Ramp Termini Queuing

Ramp	Movement	Available Queue Length (feet)[1]	Peak Hour	Estimated Maximum Queue (feet)	
				Cumulative	Cumulative With Project
I-5 Northbound Exit to Arena Boulevard	Left	2,300	A.M.	50	50
			P.M.	150	150
			Saturday	350	350
	Right	2,300	A.M.	800	750
			P.M.	950	1,000
			Saturday	4,900	**6,050**
I-5 Southbound Exit to Arena Boulevard	Left	1,605	A.M.	650	550
			P.M.	450	450
			Saturday	300	350
	Right	1,450	A.M.	25	25
			P.M.	25	25
			Saturday	50	50

[1] Measured from intersection stop bar to gore point. Total queue length in all lanes associated with the subject movement.

Source: DKS Associates, 2009.

Table 4.2-26 Cumulative Intersection Impacts	
	Cumulative With Project
Intersection	**2030 GP Threshold**
1. El Centro Road and Arena Boulevard	
2. Duckhorn Drive and Arena Boulevard	
3. Arena Boulevard and I-5 Southbound Ramps	
4. Arena Boulevard and I-5 Northbound Ramps	√
5. East Commerce Way and Del Paso Road	√
6. East Commerce Way and Snowy Egret Drive / Arco Arena West Entrance	
7. East Commerce Way and Road B5	
8. East Commerce Way and Road B4	
9. East Commerce Way and Arco Arena Main Entrance / Road B3	√
10. East Commerce Way and Road B2	
11. East Commerce Way and Road B1	
12. East Commerce Way and Arena Boulevard	√
13. East Commerce Way and Road C4	
14. East Commerce Way and Amelia Earhart Avenue / Road C3	
15. East Commerce Way and Road C2	
16. East Commerce Way and Road C1	
17. East Commerce Way and Natomas Crossing Drive	√
18. East Commerce Way and Road D3	
19. East Commerce Way and Road D2	√
20. East Commerce Way and Road D1	
21. East Commerce Way and San Juan Road	√
22. Duckhorn Drive and Natomas Crossing Drive	
23. Duckhorn Drive and San Juan Road	
24. Truxel Road and Arena Boulevard	√
25. Truxel Road and Natomas Crossing Drive	
Source: DKS Associates, 2009.	

(d) East Commerce Way and Arena Boulevard - Traffic from the project would result in LOS "F" conditions in the a.m. peak hour with an increase in average delay of greater than 5 seconds. Traffic from the project would result in LOS "E" conditions in the Saturday peak hour with an increase in average delay of greater than 5 seconds. This is considered a ***significant impact.***

(e) East Commerce Way and Natomas Crossing Drive - Traffic from the project would result in LOS "E" conditions in the p.m. peak hour with an increase in average delay of greater than 5 seconds. This is considered a ***significant impact.***

(f) East Commerce Way and Road D2 - Traffic from the project would result in a change in level of service from "B" to "E" during the a.m. peak hour. Traffic from the project would result in a change in level of service from "C" to "F" during the p.m. peak hour. This is considered a ***significant impact.***

(g) East Commerce Way and San Juan Road – Traffic from the project would result in LOS "F" conditions in the a.m. and p.m. peak hours with an increase in average delay of 5 seconds or greater. This is considered a ***significant impact.***

(h) Truxel Road and Arena Boulevard – Traffic from the project would result in LOS "F" conditions in the a.m. peak hour with an increase in average delay of greater than 5 seconds. Traffic from the project would result in LOS "E" conditions in the Saturday peak hour with an increase in average delay of greater than 5 seconds. This is considered a ***significant impact.***

Mitigation Measures

4.2-18(a) Arena Boulevard and I-5 Northbound Ramps – The project applicant shall pay a fair share contribution toward future restriping of the northbound ramp approach to the intersection to provide a single left turn lane and a triple right turn lane, subject to review and approval by Caltrans. This mitigation measure improves intersection operating conditions to LOS "B" (18.1 seconds average delay) during the Saturday peak hour and would reduce the impact of the project to a ***less-than-significant*** level.

4.2-18(b) East Commerce Way and Del Paso Road – The project applicant shall pay a fair share contribution toward adding a northbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "E" (73.0 seconds average delay) during the Saturday peak hour and would reduce the impact of the project to a ***less-than-significant*** level.

4.2-18(c) East Commerce Way and Arco Arena Main Entrance / Road B3 – The project applicant shall pay a fair share contribution toward adding a westbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "D" (48.2 seconds average delay) during the p.m. peak hour and LOS "C" (25.9 seconds average delay) during the Saturday peak hour. This would reduce the impact of the project to a ***less-than-significant*** level.

4.2-18(d) East Commerce Way and Arena Boulevard – The project applicant shall pay a fair share contribution toward adding exclusive right turn signal phases to all four approaches at this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "F" (92.0 seconds average delay) during the a.m. peak hour and LOS "D" (38.7 seconds average delay) during the Saturday peak hour. This would reduce the impact of the project to a ***less-than-significant*** level.

4.2-18(e) East Commerce Way and Natomas Crossing Drive – The project applicant shall pay a fair share contribution toward adding a northbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "E" (75.5 seconds average delay) during the p.m. peak hour and would reduce the impact of the project to a ***less-than-significant*** level.

4.2-18(f) East Commerce Way and Road D2 – The project applicant shall provide an eastbound double left turn lane, pay a fair share contribution toward adding an exclusive right turn signal phase to the southbound intersection approach, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "C" (28.5 seconds average delay) during the a.m. peak hour and LOS "C" (30.5 seconds average delay) during the p.m. peak hour. This would reduce the impact of the project to a ***less-than-significant*** level.

4.2-18(g) East Commerce Way and San Juan Road – The project applicant shall pay a fair share contribution toward adding a westbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "D" (36.8 seconds average delay) during the a.m. peak hour and LOS "B" (14.5 seconds average delay) during the p.m.

peak hour. This would reduce the impact of the project to a ***less-than-significant*** level.

4.2-18(h) Truxel Road and Arena Boulevard – The project applicant shall pay a fair share contribution toward adding an eastbound exclusive right turn signal phase to this intersection, and provide a fair share contribution to the City's TOC to monitor and retime the traffic signal when needed. This mitigation measure improves intersection operating conditions to LOS "E" (72.0 seconds average delay) during the a.m. peak hour and LOS "C" (32.7 seconds average delay) during the Saturday peak hour. This would reduce the impact of the project to a ***less-than-significant*** level.

Table 4.2-27 summarizes the intersection level of service with mitigation.

4.2-19 Roadway Segments

The project would increase traffic volumes on study area roadway segments. With the addition of project traffic, all segments would continue to operate at LOS "C" or better. The impacts of the project would be ***less-than-significant.***

Mitigation Measures
None required.

4.2-20 Freeway Mainline

The project would increase traffic volumes on the freeway mainline. During the p.m. peak hour, LOS "F" operating conditions would degrade on the northbound I-5 segment from Arena Boulevard to Del Paso Road. This is considered a ***significant impact.***

Mitigation Measures

4.2-20 The project applicant shall pay development fees for infrastructure projects as outlined in the North Natomas Financing Plan ("NNFP") as its required share of all freeway-related improvements. In addition to payment for freeway related improvements, ramps and interchanges, the North Natomas Finance Plan includes a share of the Downtown Natomas Airport Light Rail Extension (DNA) project costs. The DNA project provides future congestion relief for both the I-80 and I-5 freeways and is included in the Metropolitan Transportation Plan.

In conjunction with the North Natomas Community Plan ("NNCP") and the NNFP, in 1994 the City of Sacramento prepared the North Natomas Freeway-Related Improvements Study (the "Kittleson Report"), which analyzed freeway-related impacts associated with development of the NNCP. The Kittleson Report recommended various improvements to

the freeway mainlines, auxiliary lanes and interchanges and estimated that 43 percent of the cost for the proposed improvements are attributable to North Natomas. The Kittleson Report was discussed in further detail in the NNFP, which, in order to implement the Kittleson Report, provides that a portion of the PFF will be earmarked for the freeway-related improvements identified in the Kittleson Report.

Payment of the PFF fees cannot assure that impacts at the freeway ramp junctions will be reduced to a less than significant level. To partially offset these impacts, the applicant will pay its required share of freeway-related improvements by paying the PFF. Nevertheless, given the uncertainty regarding the timing and completion of the proposed freeway improvements and because the California Environmental Quality Act (Pub. Resources Code, §21000 et seq.) defines "feasible" for these purposes as capable of being accomplished in a successful manner with a reasonable period of time, taking into account economic, environmental, social, and technological factors (Pub. Resources Code, Section 21061.1), the impacts of the project on the freeway mainline would remain ***significant and unavoidable.***

Table 4.2-27
Cumulative Intersection Operating Conditions With Mitigation

Intersection	Traffic Control	Peak Hour	Cumulative		Cumulative With Project			
					Without Mitigation		With Mitigation	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]
4. Arena Boulevard and I-5 Northbound Ramps	Signal	A.M.	B	11.4	B	11.4	-	-
		P.M.	B	13.3	B	14.3	-	-
		Saturday	E	57.5	**E**	**78.7**	B	18.1
5. East Commerce Way and Del Paso Road	Signal	A.M.	F	90.4	F	87.7	-	-
		P.M.	F	148.5	F	146.8	-	-
		Saturday	F	107.9	**F**	**142.8**	E	73.0
9. East Commerce Way and Arco Arena Main Entrance / Road B3	Signal	A.M.	C	31.9	C	29.0	-	-
		P.M.	F	96.4	**F**	**113.9**	D	48.2
		Saturday	C	24.5	**D**	**54.6**	C	25.9
12. East Commerce Way and Arena Boulevard	Signal	A.M.	F	108.2	**F**	**115.6**	F	92.0
		P.M.	F	113.4	F	113.1	-	-
		Saturday	D	41.5	**E**	**79.7**	D	38.7
17. East Commerce Way and Natomas Crossing Drive	Signal	A.M.	D	43.1	D	37.8	-	-
		P.M.	E	71.6	**E**	**77.1**	E	75.5
		Saturday	B	19.6	C	21.7	-	-
19. East Commerce Way and Road D2	Signal	A.M.	B	14.8	**E**	**60.5**	C	28.5
		P.M.	C	22.7	**F**	**84.3**	C	30.5
		Saturday	B	12.8	C	20.5	-	-

Table 4.2-27
Cumulative Intersection Operating Conditions With Mitigation

Intersection	Traffic Control	Peak Hour	Cumulative		Cumulative With Project			
					Without Mitigation		With Mitigation	
			LOS[1]	Delay[2]	LOS[1]	Delay[2]	LOS[1]	Delay[2]
21. East Commerce Way and San Juan Road	Signal	A.M.	F	104.8	**F**	**109.8**	D	36.8
		P.M.	E	67.9	**F**	**81.7**	B	14.5
		Saturday	B	12.8	C	23.1	-	-
24. Truxel Road and Arena Boulevard	Signal	A.M.	F	132.2	**F**	**140.7**	E	72.0
		P.M.	F	134.1	F	137.8	-	-
		Saturday	E	71.6	**E**	**77.3**	C	32.7

[1] Level of Service
[2] Seconds of Delay

Source: DKS Associates, 2009.

4.2-21 Freeway Ramp Junctions

The project would increase traffic volumes at freeway ramp junctions. The project would cause significant impacts at the following locations:

(a) I-5 Northbound – I-80 Exit Ramp - During the p.m. peak hour, traffic from the project would add volume to a ramp junction already operating at LOS "F." This is considered a ***significant impact.***

(b) I-5 Northbound – I-80 Entrance Ramp - During the p.m. peak hour, traffic from the project would add volume to a ramp junction already operating at LOS "F." This is considered a ***significant impact.***

(c) I-5 Northbound – Del Paso Road Exit Ramp - During the p.m. peak hour, traffic from the project would add volume to a ramp junction already operating at LOS "F." This is considered a ***significant impact.***

(d) I-5 Southbound – Arena Boulevard Exit Ramp - During the a.m. peak hour, traffic from the project would add volume to a ramp junction already operating at LOS "F." This is considered a ***significant impact.***

(e) I-5 Southbound – Arena Boulevard Westbound Entrance Ramp – During the a.m. and p.m. peak hours, traffic from the project would add volume to a ramp junction already operating at LOS "F." This is considered a ***significant impact.***

(f) I-80 Eastbound – I-5 Southbound Entrance Ramp - During the p.m. peak hour, traffic from the project would add volume to a ramp junction already operating at LOS "F." This is considered a ***significant impact.***

Mitigation Measures

4.2-21 Implement Mitigation Measure 4.2-20. Payment of the PFF fees cannot assure that impacts at the freeway ramp junctions will be reduced to a less than significant level. To partially offset these impacts, the applicant will pay its required share of freeway-related improvements by paying the PFF. Nevertheless, given the uncertainty regarding the timing and completion of the proposed freeway improvements and because the California Environmental Quality Act (Pub. Resources Code, §21000 et seq.) defines "feasible" for these purposes as capable of being accomplished in a successful manner with a reasonable period of time, taking into account economic, environmental, social, and technological factors (Pub. Resources Code, Section 21061.1).The impacts of the project on the freeway ramp junctions would remain ***significant and unavoidable.***

4.2-22 Freeway Ramp Queuing

The project would increase traffic volumes on the freeway ramps. At the I-5 Northbound Exit to Arena Boulevard, the right turn queue would increase and would exceed the available storage space during the Saturday peak hour. This is considered a ***significant impact.***

Mitigation Measures

4.2-22 Implement Mitigation Measure 4.2-18(a). This mitigation measure would reduce the queue to 2,175 feet and would increase the available storage space for the right turn movement to 3,135 feet. This would reduce the impact of the project to a ***less-than-significant*** level.

4.2.10 PROJECT LOCAL CIRCULATION IMPACTS

In addition to the analysis of project impacts in conjunction with the City's standards of significance for CEQA review, an analysis of site access and vehicular circulation was also conducted. This analysis focuses on the project's entrances and potential effects on the adjacent City street system. The analysis of Quad C is based upon available site plans illustrating the proposed driveway system, which includes the distance from the East Commerce Drive intersection to the first on-site intersection (throat length). For Quads B and D, as detailed plans are not available, the analysis is based upon the assumed driveway geometry illustrated in Figure 4.2-13.

As shown on Figures 4.2-1 and 4.2-2, the project has twelve entering / exiting access points to / from East Commerce Way. Exiting movements from the site will be controlled by a traffic signal or a stop sign. Traffic queued at the intersections will extend into the project site. If ample space is not provided for the queuing of exiting vehicles, such vehicles could interrupt the operation of adjacent on-site intersections, whether they are signalized or unsignalized. A blockage at the adjacent on-site intersections could cause vehicles entering the site to queue back onto East Commerce Way, adversely affecting operations on the City street system.

Table 4.2-28 summarizes the results of the queuing analysis. At three of the Quad C driveway intersections, the expected maximum queue lengths exceed the available storage space.

Table 4.2-28
On-Site Queuing at Project Exits to East Commerce Way

Intersection	Approach	Move-ment	Available Queue Length (lane-feet)	Estimated Maximum Queue (lane-feet)					
				Baseline Plus Project			Cumulative Plus Project[1]		
				A.M. Peak Hour	P.M. Peak Hour	Satur-day Peak Hour	A.M. Peak Hour	P.M. Peak Hour	Satur-day Peak Hour
7. East Commerce Way and Road B5	Eastbound	Right	-	25	25	25	25	25	25
8. East Commerce Way and Road B4	Eastbound	Right	-	25	25	25	25	75	25
9. East Commerce Way and Road B3 / Arco Arena Main Entrance	Eastbound	Left	-	75	450	400	175	800	475
		Thru	-	25	25	25	25	25	25
		Right	-	100	150	175	75	175	175
10. East Commerce Way and Road B2	Eastbound	Right	-	25	50	50	25	75	75
11. East Commerce Way and Road B1	Eastbound	Right	-	25	25	25	25	75	25
13. East Commerce Way and Road C4	Eastbound	Right	315	25	25	25	25	25	25
14. East Commerce Way and Amelia Earhart Avenue / Road C3	Eastbound	Left	190	75	**425**	**400**	75	175	**500**
		Thru / Right	190	75	25	25	25	50	25
15. East Commerce Way and Road C2	Eastbound	Left	100	50	**275**	**300**	**125**	**875**	**300**
		Right	100	25	50	75	25	25	50
16. East Commerce Way and Road C1	Eastbound	Right	25	25	50	50	25	75	75
18. East Commerce Way and Road D3	Eastbound	Right	-	25	25	25	25	25	25
19. East Commerce Way and Road D2	Eastbound	Left	-	500	875	175	325	625	175

Table 4.2-28
On-Site Queuing at Project Exits to East Commerce Way

Intersection	Approach	Move-ment	Available Queue Length (lane-feet)	Estimated Maximum Queue (lane-feet)					
				Baseline Plus Project			Cumulative Plus Project[1]		
				A.M. Peak Hour	P.M. Peak Hour	Satur-day Peak Hour	A.M. Peak Hour	P.M. Peak Hour	Satur-day Peak Hour
		Thru / Right	-	175	250	175	150	275	150
20. East Commerce Way and Road D1	Eastbound	Right	-	25	50	25	25	50	25

[1] Assumes implementation of mitigation measures 16(d) (Intersection 9) and 16(g) (Intersection 19).

Source: DKS Associates, 2009.

Quad B Recommendations

The following minimum throat lengths are recommended for the Quad B driveways. (These lengths are based upon the assumed intersection geometry. Changes in intersection geometry could result in different minimum throat lengths).

- Intersections 7, 8, 10, and 11 – East Commerce Way and Roads B5, B4, B2, and B1 – 75 feet.

- Intersection 9 – East Commerce Way and Road B3 / Arco Arena Main Entrance – The analysis indicates a maximum queue length of 800 feet, assuming the implementation of mitigation measure 16(d). However, the lanes exiting the site can be reconfigured to provide improved traffic operations and shorter queue lengths. Reconfiguring the eastbound approach to provide a double left turn lane and a through / right-turn lane would reduce the maximum queue length (and associated minimum throat length) to 350 feet.

Quad C Recommendations

As shown in Table 4.2-28, the available queue lengths are inadequate for intersection 14 (East Commerce Way and Amelia Earhart Way / Road C3), intersection 15 (East Commerce Way and Road C2), and intersection 16 (East Commerce Way and Road C1). The following site roadway changes are recommended:

- Intersection 14 – East Commerce Way and Amelia Earhart Way / Road C3 – Widen the exit roadway to provide a double left turn lane and a single through / right turn lane. This recommendation will reduce the anticipated queue length to the available storage space of about 190 feet or less.

- Intersection 15 – East Commerce Way and Road C2 – Widen the exit roadway to provide a double left turn lane and a single right turn lane. Extend the driveway median to prohibit left turns to and from the driveway for a distance of 350 feet from East Commerce Way. This recommendation will increase the storage length beyond the planned available storage space of about 255 feet.

- Intersection 16 – East Commerce Way and Road C1 – Reconfigure the site plan to provide a minimum throat length of 75 feet.

Quad C also includes an inbound-only right turn lane from Arena Boulevard. The available site plans indicate a throat length of about 55 feet. The following design criteria are recommended:

- A minimum throat length of 75 feet.

- Free-flow movement for traffic entering the site (i.e., no stop sign or other control that would result in queuing on the entry roadway).

- Locate the roadway west of the East Commerce Way right-turn lane and taper area, in accordance with City design standards (Plate 15-17).

- Design the entry to safely accommodate the proposed on-street and off-street bikeways along I-5 and Arena Boulevard.

Quad D Recommendations

The following minimum throat lengths are recommended for the Quad D driveways. (These lengths are based upon the assumed intersection geometry. Changes in intersection geometry could result in different minimum throat lengths).

- Intersections 18 and 20 – East Commerce Way and Roads D3 and D1 – 75 feet.

- Intersection 19 – East Commerce Way and Road D2 – The analysis indicates a maximum queue length of 625 feet, assuming the implementation of mitigation measure 18(g). Given the dimensions of the site, it is doubtful that this throat length could be accommodated on-site. It is suggested that the possibility of two full access points to the site be considered, given the magnitude of trip generation of the hospital and medical office complex.

4.3 NOISE

4.3 NOISE

4.3.0 INTRODUCTION

The Noise chapter describes the existing noise environment in the project vicinity, and identifies potential impacts and mitigation measures related to the construction and operation of the proposed Natomas Crossing project. The method by which the potential impacts are analyzed is discussed, followed by the identification of potential impacts and the recommended mitigation measures designed to reduce significant impacts to levels that are less than significant. The chapter is primarily based on the *Natomas Crossing Environmental Noise Assessment,*[1] prepared by j.c. brennan & associates, Inc. (See Appendix F), the *Sacramento 2030 General Plan,*[2] the *Sacramento 2030 General Plan Master EIR,*[3] the *North Natomas Community Plan,*[4] the *North Natomas Community Plan Supplemental EIR,*[5] and the *City of Sacramento Noise Control Ordinance.*[6]

4.3.1 EXISTING ENVIRONMENTAL SETTING

The Existing Environmental Setting section includes a discussion of the effects of noise on people, existing sensitive receptors in the project vicinity, groundborne vibration, and existing ambient and traffic noise levels in the project vicinity. In addition, a discussion of acoustical terminology has been included.

Major Noise Sources in the Project Vicinity

Transportation

Motor vehicle traffic on East Commerce Way, Arena Boulevard, and I-5 is the major contributor to the existing noise environment in the vicinity of the proposed project site. Periodic increases of traffic noise along these roadways will occur when events are held at Arco Arena. In addition, commercial aircraft overflights from the Sacramento International Airport contribute to the ambient noise environment on the project site.

Non-Transportation

The non-transportation noise sources in the vicinity of the project site are currently primarily due to construction of commercial and residential developments to the east of the project site. This source of noise is temporary.

Existing Sensitive Receptors in the Project Vicinity

Some land uses are considered more sensitive to ambient noise levels than others. Land uses that are considered sensitive receptors include residences, schools, libraries, hospitals, and passive

recreational areas. Noise-sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

More particularly, to protect sensitive receptors (residential, schools, and libraries), the City's General Plan includes the maximum acceptable interior and exterior noise levels that can be generated by new development for traffic/fixed sources, aircraft, and rail traffic. There are not any schools or libraries that could be affected by the noise generated by the project.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. Existing high density residential development is located across East Commerce Way from Quadrant B. In addition, single-family homes are currently under construction to the east of the site (across from Quadrant C) and commercial, office, and some residential uses are proposed to be constructed adjacent to the site. Residents and future residents of nearby housing could potentially experience noise impacts associated with project construction and increased traffic from project operation.

Existing Ambient Noise Levels in the Project Vicinity

To quantify existing ambient noise levels in the project vicinity, j.c. brennan & associates, Inc. conducted short-term noise level measurements at five locations and continuous (24-hour) ambient noise measurements at two locations on, and in the vicinity of, the project site. The noise level measurements were conducted for comparison to project-related noise levels and to determine typical background noise levels. The measured noise levels included the average, median, and maximum noise level at each site during the surveys. The maximum value, denoted Lmax, represents the highest noise level measured. The average value, denoted Leq, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median noise level which is denoted L50 is the noise level exceeded half of the time during the measurement. The continuous 24-hour noise measurements indicate the temporal distribution of the hourly noise levels during the 24-hour period, as well as the measured Day/Night Average Level descriptor (Ldn). The short-term noise measurements provide an indication of measured noise levels during the middle of the day, and how they vary based upon proximity to I-5. Table 4.3-1 includes a summary of the noise measurement results and Figure 4.3-1 depicts the ambient noise measurement locations.

Existing Traffic Noise Environment in the Project Vicinity

Tables 4.3-2 and 4.3-3 show the existing weekday and Saturday traffic noise levels in terms of the Ldn at a standard distance of 75 feet from the centerlines of the existing immediate project-area roadways for existing conditions, as well as distances to existing traffic noise contours. The extent by which existing land uses in the project vicinity are affected by existing traffic noise depends on their respective proximity to the roadways and their individual sensitivity to noise.

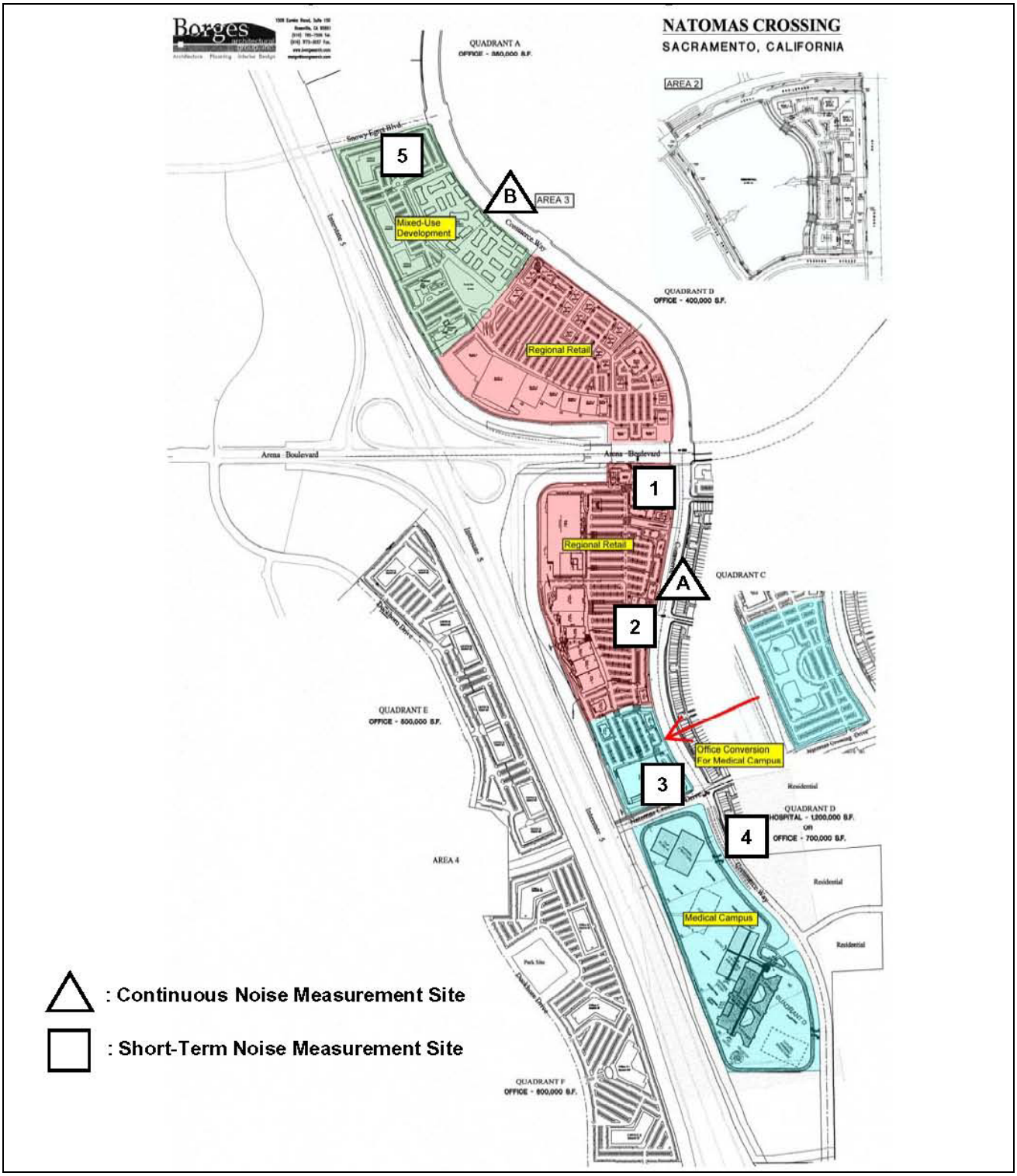
Table 4.3-1
Summary of Measured Noise Levels at the Natomas Crossing Site

Site	Location	Date	Average Measured Hourly Noise Levels, dB						
			Ldn/ CNEL	Daytime (7 AM–10 PM)			Nighttime (10 PM–7 AM)		
				Leq	L50	Lmax	Leq	L50	Lmax
Continuous 24-Hour Noise Measurement Sites									
A	75' East of East Commerce Way and 180' North of Amelia Earhart Street	1/2/2008 through 1/3/2008	60.8	57.2	54.0	71.9	53.7	52.7	60.6
B	90' East of East Commerce Way within the Bella Rose housing community	12/23/2008	66.0	63.6	57.5	78.1	58.3	51.6	77.1
Short-Term Noise Measurement Sites									
1	On Project Site, 95' West of East Commerce Way and 390' South of Arena Blvd.[1]	1/2/2008	-	51.6	50.7	60.8	-	-	-
2	On Project Site, 165' South of Amelia Earhart Street and 75' West of East Commerce Way[2]	1/2/2008	-	49.9	48.7	58.7	-	-	-
3	On Project Site, 120' Northwest of Natomas Crossing Drive and East Commerce Way[3]	1/2/2008	-	53.2	54.5	66.9	-	-	-
4	75' East of East Commerce Way and 100' South of Natomas Crossing Drive[4]	12/22/2008	-	55.5	55.5	57.4	-	-	-
5	On Project Site, 800' East of I-5 and 290' West of East Commerce Way[5]	12/22/2008	-	56.5	56.4	60.1	-	-	-

1. Noise measurement taken at 10:27 a.m.
2. Noise measurement taken at 11:06 a.m.
3. Noise measurement taken at 11:27 a.m.
4. Noise measurement taken at 12:00 p.m.
5. Noise measurement taken at 12:26 p.m.

Source: j.c. brennan & associates, Inc., Environmental Noise Assessment, Natomas Crossing, March 12, 2009.

Figure 4.3-1
Noise Measurement Locations



Source: j.c. brennan & associates, Inc., Environmental Noise Assessment, Natomas Crossing, March 12, 2009.

Table 4.3-2
Existing Weekday Traffic Noise Levels (24-Hour Average)

Roadway	Segment	Distance (feet)	Traffic Noise Levels (Ldn)	Distance to Ldn Contours (feet)[1]		
				70 dB	65 dB	60 dB
El Centro Road	North of Arena	75	63.2 dB	27	57	123
	South of Arena	75	63.5 dB	28	60	129
Duckhorn Drive	North of Arena	75	62.1 dB	22	48	104
	Arena to (future) Natomas Crossing	75	64.5 dB	32	70	150
East Commerce Way	Del Paso to West Entrance	75	66.2 dB	42	90	194
	West Entrance to Arena	75	62.9 dB	25	54	116
	Arena to Amelia Earhart	75	49.3 dB	3	7	14
Truxel Road	North of Arena	75	68.6 dB	60	130	280
	Arena to Natomas Crossing	75	68.6 dB	60	130	279
	South of Natomas Crossing	75	69.3 dB	67	145	311
Arena Boulevard	El Centro to Duckhorn	75	62.1 dB	22	48	103
	Duckhorn to SB 5 Ramps	75	67.5 dB	51	111	239
	NB 5 Ramps to East Commerce	75	68.1 dB	56	120	259
	East Commerce to Truxel	75	67.8 dB	54	116	249
	East of Truxel	75	65.7 dB	39	83	179
San Juan Road	West of Duckhorn	75	61.6 dB	21	45	96
	Duckhorn to East Commerce	75	63.9 dB	29	63	136
Interstate 5	I-80 to Arena	75	82.3 dB	499	1,075	2,316

[1] Distances to traffic noise levels are from the roadway centerline.

Source: j.c. brennan & associates, Inc. Environmental Noise Assessment, Natomas Crossing, March 12, 2009.

Table 4.3-3
Existing Saturday Traffic Noise Levels (24-Hour Average)

Roadway	Segment	Distance (feet)	Traffic Noise Levels (Ldn)	Distance to Ldn Contours (feet)[1]		
				70 dB	65 dB	60 dB
El Centro Road	North of Arena	75	59.6 dB	15	33	70
	South of Arena	75	59.6 dB	15	33	71
Duckhorn Drive	North of Arena	75	59.8 dB	16	34	72
	Arena to (future) Natomas Crossing	75	63.4 dB	27	59	127
East Commerce Way	Del Paso to West Entrance	75	65.1 dB	35	76	164
	West Entrance to Arena	75	61.1 dB	19	42	89
	Arena to Amelia Earhart	75	52.6 dB	5	11	24
Truxel Road	North of Arena	75	67.9 dB	54	116	250
	Arena to Natomas Crossing	75	68.1 dB	56	121	260
	South of Natomas Crossing	75	68.9 dB	64	137	295
Arena Boulevard	El Centro to Duckhorn	75	59.6 dB	15	33	71
	Duckhorn to SB 5 Ramps	75	66.0 dB	40	87	188
	NB 5 Ramps to East Commerce	75	65.3 dB	37	79	170
	East Commerce to Truxel	75	65.2 dB	36	77	166
	East of Truxel	75	61.9 dB	22	47	101
San Juan Road	West of Duckhorn	75	59.6 dB	15	33	70
	Duckhorn to East Commerce	75	61.9 dB	21	46	100
Interstate 5	I-80 to Arena	75	82.3 dB	499	1,075	2,316

[1] Distances to traffic noise levels are from the roadway centerline.

Source: j.c. brennan & associates, Inc., Environmental Noise Assessment, Natomas Crossing, March 12, 2009.

Groundborne Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured as vibration decibels (VdB).

Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel wheeled trains, and traffic on rough roads. However, if a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. Construction activities can generate groundborne vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants.

Construction vibrations can either be transient, random, or continuous. Transient construction vibrations occur from blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between the source and receptor, duration, and the number of perceived vibration events.

Acoustical Terminology

Acoustics is the term applied to the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves to human ears. Noise can be described as a subjective reaction to different types of sounds. If the pressure variations occur frequently enough (at least 20 times per second), then the variations can be heard by the human ear and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as zero dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) 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 A-weighted sound levels. A strong correlation exists between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. 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, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dB is generally perceived as a doubling in loudness. For example, a 70 dB sound is half as loud as an 80 dB sound, and twice as loud as a 60 dB sound.

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 environment. Community Noise Equivalent Level (CNEL) measurements are a weighted average of sound levels gathered throughout a 24-hour period. 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.

The day/night average level (Ldn) is based on the average noise level over a 24-hour day, with a +10 decibel weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based on the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because Ldn represents a 24-hour average, the measurement tends to disguise short-term variations in the noise environment. Table 4.3-4 lists several examples of the noise levels associated with common situations.

4.3.2 REGULATORY BACKGROUND

State Regulations

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings that house people, including hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB Ldn or CNEL in any habitable room. The City of Sacramento utilizes these State interior noise standards. Title 24 also mandates that for structures containing noise-sensitive uses to be located where the Ldn or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels (Section 1208A.8.4). If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

State of California Public Utilities Code

The state legislative authority to adopt noise standards governing the operation of aircraft and aircraft engines for airports is provided in Section 21669, Article 3, Chapter 4, Part 1, Division 9 of the Public Utilities Code (PUC) (Aeronautics Law). The Caltrans Division of Aeronautics is the agency responsible for compliance with this PUC section. The PUC differentiates emergency service helicopters from other aircraft by providing exemptions from local ordinances.

Table 4.3-4 Typical Noise Levels		
Common Outdoor Activities	**Noise Level (dBA)**	**Common Indoor Activities**
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol, October 1998.		

Section 21662.4 (a), Article 3, Chapter 4, Part 1, Division 9 of the PUC states the following concerning exemptions from the noise ordinances:

> Emergency aircraft flights for medical purposes by law enforcement, fire fighting, military, or other persons who provide emergency flights for medical purposes are exempt from local ordinances adopted by a city, county, or city and county, whether general law chartered, that restricts flight departures and arrivals to particular hours of the day or night, that restrict the departure or arrival of aircraft based upon the aircraft's noise level, or that restrict the operation of certain types of aircraft.

Caltrans Division of Aeronautics

The Caltrans Division of Aeronautics has adopted CNEL as the noise descriptor to be used in describing the noise impact boundary of California airports. The Division of Aeronautics has identified a CNEL value of 65 dB as the noise impact criterion for noise-sensitive land uses, such as single-family or multi-family dwellings. The CNEL is typically approximately 1 dB more than the Ldn because the CNEL applies an additional penalty for noise sources between the hours of 7:00 p.m. and 10:00 p.m., while the Ldn descriptor only applies a penalty to noise levels between the hours of 10:00 p.m. and 7:00 a.m.

Local Regulations

Sacramento 2030 General Plan

The City of Sacramento recently adopted the *Sacramento 2030 General Plan*, which contains goals and policies specifically related to noise and vibration. According to the *Sacramento 2030 General Plan*, the normally acceptable exterior noise environment for commercial land uses is 65 dB Ldn, with a conditionally acceptable range up to 80 dB Ldn. In addition, the General Plan establishes 45 dB Ldn as an acceptable interior noise environment for residential uses. In instances where attainment of the normally acceptable exterior noise level is not possible with best available noise reduction measures, the General Plan allows an exterior noise level exceeding the acceptable Ldn, up to the conditionally acceptable range, provided that noise level reduction measures have been implemented and that interior noise level standards are achieved.

Goal EC 3.1 Noise Reduction. Minimize noise impacts on human activity to ensure the health and safety of the community.

Policy EC 3.1.1 Exterior Noise Standards. The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table EC 1 (See Table 4.3-5 on the following page) to the extent feasible.

Table 4.3-5
Exterior Noise Compatibility Standards for Various Land Uses

Land Use Type	Highest Level of Noise Exposure That Is Regarded as "Normally Acceptable"[a] (Ldn[b] or CNEL[c])
Residential – Low Density Single-Family, Duplex, Mobile Homes	60 dBA[d,c]
Residential – Multi-Family	65 dBA
Urban Residential Infill[f] and Mixed-Use Projects[g]	70 dBA
Transient Lodging – Motels, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office buildings – Business, Commercial and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA

Source: Governor's Office of Planning and Research, State of California General Plan Guidelines 2003, October 2003.

a. As defined in the *Guidelines*, "Normally Acceptable" means that the "specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements."
b. Ldn or Day Night Average Level is an average 24-hour noise measurement that factors in day and night noise levels.
c. CNEL or Community Noise Equivalent Level measurements are a weighted average of sound levels gathered throughout a 24-hour period.
d. dBA or A-weighted decibel scale is a measurement of noise levels.
e. The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 dBA.
f. With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High).
g. All mixed-use projects located anywhere in the City of Sacramento.

Policy EC 3.1.2 Exterior Incremental Noise Standards. The City shall require mitigation for all development that increases existing noise levels by more than the allowable increment as shown in Table EC 2 (See Table 4.3-6 on the following page) to the extent feasible.

Policy EC 3.1.3 Interior Noise Standards. The City shall require new development to include noise mitigation to assure acceptable interior noise levels appropriate to the land use type: 45 dBA Ldn for residential, transient lodgings, hospitals, nursing homes and other uses where people normally sleep; and 45 dBA Leq (peak hour) for office buildings and similar uses.

Table 4.3-6
Exterior Incremental Noise Impact Standards for Noise-Sensitive Uses (dBA)

Residences and Buildings Where People Normally Sleep[a]		Institutional Land Uses with Primarily Daytime and Evening Uses[b]	
Existing Ldn	**Allowable Noise Increment**	**Existing Peak Hour Leq**	**Allowable Noise Increment**
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Source: Federal Transit Administration, Transit Noise Impact and Vibration Assessment, March 2006.

a. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
b. This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, mediation, and concentration on reading material.

Policy E.C. 3.1.4 Interior Noise Review Standards for Multiple, Loud Short-Term Events. In cases where new development is proposed in areas subject to frequent, high-noise events (such as aircraft over-flights or train and truck pass-bys) the City shall evaluate noise impacts on any sensitive receptors from such events when considering whether to approve the development proposal, taking into account potential for sleep disturbance, undue annoyance, and interruption in conversation, to ensure that the proposed development is compatible within the context of its surroundings.

City of Sacramento Noise Control Ordinance

Construction activities are regulated under the City of Sacramento Noise Control Ordinance. Construction activities are conditionally exempt from the Noise Ordinance. Construction activities are exempt from the noise standard from 7:00 a.m. to 6:00 p.m. Monday through Saturday, and from 9:00 a.m. to 6:00 p.m. on Sunday. Noise sources due to the construction (including excavation), demolition, alteration or repair of any building or structure between the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday, and from 9:00 a.m. to 6:00 p.m. on Sunday are exempt from the noise control ordinance, provided that the operation of an internal combustion engine is equipped with suitable exhaust and intake silencers which are in good working order. The Chief Building Inspector may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed three days.

4.3.3 IMPACTS AND MITIGATION MEASURES

Standards of Significance

The City of Sacramento has determined that implementation of the project would result in significant noise and vibration impacts if the project would result in any of the following:

- Exterior noise levels at the proposed project that are above the upper value of the normally acceptable category for various land uses caused by noise level increases due to the project, as described in Table 4.3-5;
- Construction noise levels not in compliance with the City of Sacramento Noise Ordinance;
- Occupied existing and project residential and commercial areas are exposed to vibration peak particle velocities greater than 0.5 inches-per-second due to project construction; or
- Project residential and archaeological sites are exposed to vibration peak particle velocities greater than 0.25 inches per second due to project construction, highway traffic, and rail operations.

Methods of Analysis

Traffic Noise Impact Assessment Methodology

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels were predicted at a representative distance for existing, existing plus project, baseline, baseline plus project, cumulative no-project and cumulative plus project conditions. Noise impacts are identified at existing noise-sensitive areas if the noise level increases that result from the project exceed the City's significance threshold. In addition, impacts to project-related noise-sensitive uses are examined to ensure that City standards are not exceeded for new development.

To determine future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The FHWA model is the analytical method currently favored for highway traffic noise prediction by most state and local agencies, including the California Department of Transportation (Caltrans).

Construction Noise Impact Assessment Methodology

Construction noise was analyzed using data compiled by the U.S. Environmental Protection Agency that lists typical noise levels at 50 feet from construction equipment and various construction activities.

Project-Specific Impacts and Mitigation Measures

4.3-1 Construction noise impacts.

Activities associated with the construction of the proposed project would result in elevated noise levels, with maximum noise levels ranging from 85 to 90 dB at 50 feet, as shown in Table 4.3-7.

Table 4.3-7
Construction Noise Levels

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

Source: j.c. brennan & associates, 2009

Construction activities, which could include the operation of excavators, graders, tractors, bulldozers, water trucks, cranes, forklifts, generator sets, and welders, would be temporary in nature and would likely occur during normal daytime working hours. Nonetheless, because construction activities would result in periods of elevated noise levels at nearby sensitive receptors, the development of the proposed project could result in short-term impacts with regard to construction noise. It should be noted that Quadrants B, C, and D would be built out in six separate phases. This could result in the exposure of occupied buildings constructed during the early phases of the project to temporarily elevated noise levels associated with construction of the later phases of the project. However, several factors can be considered as to why future construction noise levels would not be considered an adverse impact, including that the elevated noise levels would be short-term in nature, construction noise would be exempt if construction occurs during normal hours, and most on-site uses would be office or retail, where areas sensitive to noise are limited to indoor spaces. Therefore, impacts related to construction noise would be ***less than significant***.

Mitigation Measure(s)
None required.

4.3-2 Loading dock and truck circulation noise impacts.

Quadrant C

Development of Quadrant C would include approximately 404,580 s.f. of regional retail uses and 200,000 s.f. of office uses.

To determine noise levels associated with trucks circulating on the project site combined with loading dock activities, j.c. brennan & associates, Inc. collected noise level data

associated with the Natomas Center in Sacramento, California. The Natomas Center is located in the northwest quadrant of Truxel Road and I-80. The Natomas Center is a large commercial center. The loading dock and truck unloading area on the west side of the Natomas Center includes six large store loading docks for a Ross Dress for Less, Michael's, Wal-Mart, PetSmart, Staples, and a Home Depot. The Natomas Center is similar in nature to the proposed Natomas Crossing project in that it contains several large box stores, including a home improvement store. In addition, both are located adjacent to a major interstate highway, and both are regional shopping facilities. As noted above, the Natomas Center project is somewhat larger in scale than the proposed Natomas Crossing project. Therefore, for the purposes of this analysis, use of the noise level data collected at the Natomas Center is considered conservative, when applied to the proposed Natomas Crossing project. As a result, the predicted noise levels may be somewhat higher than those that would be generated by the project.

The noise measurements were conducted during the morning hours between 7:00 a.m. and 10:00 a.m. on Friday, January 6, 2006. During the noise measurement survey, the primary noise sources associated with the Natomas Center were loading dock activities, heavy and medium delivery trucks circulating on the site, trash compactors, pallet jacks, trash pick-up activities and truck air brakes. The loading dock and truck circulation configurations and locations of trash compactors and trash bins are generally located at the rear areas of the commercial uses, and are considered to be similar to those associated with the proposed Natomas Crossing project. In addition, the noise measurement data included aircraft overflights and off-site traffic, similar to the proposed project site. However, the contributions from the aircraft overflights and off-site traffic were minimal.

During the Natomas Center noise measurement periods, the measured hourly noise levels ranged between 54 dB and 60 dB L50 and between 79 dB and 85 dB Lmax, at a distance of approximately 40 feet from the center of the truck circulation service road. Based on the site plan for Quadrant C, the nearest residences are a minimum of 450 feet from the unloading docks and rear of the buildings, and are primarily on the opposite side of the building facades from the unloading area of the proposed project. In addition, the noise measurement data that was used for this analysis includes noise levels from trash pickup and trash compactors. Therefore, the predicted noise levels are considered conservative. The predicted Ldn associated with truck circulation and loading docks would be less than 40 dB Ldn. In addition, it is expected that shielding would occur from the proposed building facades. Therefore, the predicted noise levels are actually expected to be less due to the shielding effects, resulting in a *less than significant* impact.

Quadrant D

Development of Quadrant D would include 600,000 s.f. of hospital uses, and an additional 600,000 s.f. for medical offices.

Based on the conceptual site plan for the proposed project, the Quadrant D loading docks would be located more than 500 feet from the nearest residential areas. In addition, the

loading dock areas would be shielded by the main hospital building. Deliveries to the hospital are generally associated with local cleaning services, linen supply providers, and local food suppliers, and therefore, are expected to occur primarily during the daytime hours. Deliveries are expected to be similar to, or less than, those associated with a large commercial development, such as those described in Quadrants B and C, given that no commercial/retail services would be provided on Quadrant D. Therefore, the loading dock activities would generate noise levels of less than 40 dB Ldn, and are not expected to exceed the City of Sacramento noise level criteria. This impact would be *less than significant*.

Quadrant B

Development of Quadrant B would include approximately 319,500 to 426,000 square feet (s.f.) of retail space, 10 acres of residential uses consisting of approximately 180 units, five acres of hotel uses consisting of approximately 130,000 s.f. (or 300 rooms), and 14 acres of office uses consisting of approximately 240,000 s.f.

Quadrant B of the proposed project site is anticipated to be developed at a later date. Because a site plan has not been submitted for the development of Quadrant B, the distance from the nearest residential sensitive receptor to the loading docks and on-site truck circulation route associated with future Regional Commercial development on Quadrant B has yet to be determined. Therefore, noise levels associated with these activities cannot be predicted at this time. Because the noise levels created by loading docks and truck circulation associated with Quadrant B cannot be determined at this time and the noise levels could exceed the City's exterior and/or interior noise level thresholds at nearby residences, the impact would be *potentially significant*.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a ***less than significant*** level by requiring the future development of Quadrant B to adhere to the City of Sacramento significance thresholds for noise levels at residential uses.

4.3-2 *In conjunction with the submittal of a site plan for Quadrant B, the applicant shall retain a qualified acoustical consultant to prepare a site-specific noise analysis for Quadrant B. If the report determines that on-site operations would exceed the City of Sacramento significance thresholds, which are 45 dB Ldn for interior noise levels at residential uses and 60 dB Ldn for exterior noise levels at outdoor common areas, the report shall include recommendations to reduce noise below the City's applicable noise level standards, for the review and approval of the Development Services Department. If the report determines that on-site operations would not exceed the City of Sacramento significance thresholds, further mitigation is not required.*

4.3-3 Rooftop HVAC noise impacts.

Large commercial developments, such as the proposed project, include rooftop heating, ventilation, and air conditioning (HVAC) equipment, which is required for climate control and refrigeration.

Quadrant C

For Buildings #1 and #15 through #20 (See Figure 3-8 in Chapter 3, Project Description, of this Draft EIR), j.c. brennan & associates, Inc. utilized the roof-top HVAC equipment noise level data provided for a typical Home Depot store, which is of a similar size as the proposed project. Based on the Home Depot Store in Auburn, California, 20 packaged rooftop air conditioning systems with 15 to 20 tons of refrigeration each would be required for buildings the size of the proposed Buildings #1 and #15 through #20. The rooftop HVAC units are predicted to generate noise levels of approximately 55 dB per unit, at a reference distance of 100 feet, and approximately 58 dB Ldn.

For the stores located on the west side of Quadrant C, designated as Buildings #1 and Buildings #15 through #20, the HVAC units would be distributed across the roof of the building. These HVAC units, which stand approximately four to five feet tall, would be shielded from view of the nearest residential uses by the rooftop parapets. Parapets along the east sides of the major stores would be required to be five feet in height. The proposed project's PUD Design Guidelines require all mechanical rooftop equipment to be shielded by parapets or through design. More specifically, as noted in the Project Description chapter of this EIR, rooftop parapets will be constructed along the east sides of Buildings #1 and #15 through #20. In addition, rooftop parapets will be constructed along the east roofline sides of the stores designated as #2 through #14. It should be noted that other forms of shielding can be implemented in place of the parapets.

Based on a barrier analysis of the shielding effects from the parapets for Buildings #1 and #15 through #20, the 60 dB Ldn contour would not extend past the property line due to the shielding from the building parapets; therefore, the predicted Ldn value at the roof line of the buildings is expected to be approximately 55 dB Ldn.

The stores located along the east and northeast sides of the project site (Buildings #2 through #14) range between 2,500 square feet and 7,500 square feet in size. These stores will also require some roof-top mechanical equipment. Noise levels from these types of equipment can vary significantly, and can generally range between 45 dB to 65 dB at a distance of 50 feet (*Noise Control for Buildings and Manufacturing Plants, Hoover & Keith Inc., 1990*). Based on the distances from these proposed stores to the nearest residential uses (200 feet), the predicted noise levels could be as high as 56 dB Ldn at the nearest residences to the east. Assuming calculated shielding from the parapets and assuming that the air conditioning units would operate 24 hours a day, a resultant noise level of 53 db Ldn would occur. These noise levels would not exceed the City's exterior noise threshold and this impact would be less than significant.

Quadrant B

Quadrant B is anticipated to be developed at a later date, and the potential exists for Quadrant B noise levels to exceed the City's threshold at nearby residences. Because a site plan has not been submitted for the development of Quadrant B, the determination cannot be conclusively made whether HVAC noise levels on Quadrant B would generate noise levels in exceedance of applicable City noise level thresholds, resulting in a *potentially significant* impact.

Quadrant D

Quadrant D would include medical offices and a main hospital building, both of which require HVAC equipment. The medical office buildings are expected to have either rooftop or ground-mounted HVAC equipment. In the event that the equipment is rooftop mounted, construction of parapets is expected to be sufficient to reduce noise levels to within the City's thresholds.

The main hospital climate control is generally located within a mechanical equipment room, designated as the Central Utility Plant (CUP) building on the Quadrant D conceptual site plan (See Figure 3-9 in the Project Description chapter of this Draft EIR). The CUP building houses all heating and cooling facilities, as well as an emergency generator. The CUP building is located approximately 400 feet from the nearest residential uses. Specific types of cooling towers, heat pumps, and chillers that will reside inside the CUP building have not been determined. In addition, the type and size of the emergency generator has not been determined. Noise levels associated with these types of equipment vary substantially and, therefore, it is not possible to predict the potential noise levels associated with the equipment. In addition, construction of the CUP building will result in the need for air intake and exhaust, and those openings in the building have not been designed. Therefore, the CUP building equipment could result in the exceedance of applicable City noise level thresholds, resulting in a *potentially significant* impact.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a ***less than significant*** level by requiring the future development of Quadrant B to adhere to the City of Sacramento significance thresholds for noise levels at residential uses and by ensuring that the noise levels associated with the CUP building on Quadrant D do not exceed 50 dB Leq at the nearest residence.

4.3-3(a) Implement Mitigation Measure 4.3-2 for Quadrant B.

4.3-3(b) Prior to the issuance of a building permit for the Central Utility Plant (CUP) building located adjacent to the proposed parking structure on Quad D, the overall noise levels associated with the CUP building's typical operations shall not exceed 45 dB Ldn for interior noise levels and 60 dB Ldn for

exterior noise levels at the nearest residence, as demonstrated by an acoustical consultant for the review and approval of the Development Services Department. Mitigation measures shall include the use of silencers or acoustical louvers on openings for air intake or exhaust, and locating openings for air intake and exhaust on the opposite sides of the building from residences to the east. In addition, emergency generators shall be equipped with hospital grade mufflers to reduce the overall noise levels associated with their operations during periods of power failures or other emergencies. Emergency generators shall be exercised during the daytime hours for a period of no more than 30 minutes to reduce the potential for annoyance.

4.3-4 Construction-induced vibration impacts.

Construction activities can generate groundborne vibrations. Construction-related vibrations can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants. Construction vibrations can either be transient, random, or continuous. Transient construction vibrations occur from blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, and compressors. Random vibrations can result from jackhammers, pavement breakers, and heavy construction equipment. The proposed project does not include significant site grading (because the entire site was previously mass graded and the site is generally flat) or demolition of existing buildings. The project could include pile driving on Quadrant D, associated with the hospital and parking garage construction.

j.c. brennan & associates, Inc. staff has conducted vibration measurements of pile driving for the Shriners Pediatric Care facility in Sacramento. The vibration measurements were conducted at a distance of 100 feet from the pile driving activities. The pile driving hammer was driven by a diesel engine and the maximum energy of the hammer was 55,000 ft-lb/blow. The typical operations associated with the pile driving included an auger that drilled a pilot hole; the pile was then set into the hole and tapped with the hammer until the pile was at the bottom of the pilot hole. The pile was then driven the last 15 feet. The final driving of the pile lasts for a duration of approximately 3.5 minutes. The results of the vibration measurements indicated that the peak particle velocity (ppv) was approximately 0.055 to 0.078 inches per second.

Table 4.3-8 indicates that the threshold for damage to structures ranges from two to six inches per second. One-half this minimum threshold, or one inch per second ppv, is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 inch per second ppv.

Table 4.3-8
Effects of Vibration on People and Buildings

Peak Particle Velocity (in/sec)	Peak Particle Velocity (mm/sec)	Human Reaction	Effect on Buildings
0-0.006	0.15	Imperceptible by people	Vibrations unlikely to cause damage of any type
0.006-0.02	0.5	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	2.0	Vibrations clearly perceptible	Recommended upper level of which ruins and ancient monuments should be subjected
0.1	2.54	Level at which continuous vibrations begin to annoy people	Virtually no risk of architectural damage to normal buildings
0.2	5.0	Vibrations annoying to people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
1.0	25.4		Architectural damage
2.0	50.4		Structural damage to residential buildings
6.0	151.0		Structural damage to commercial buildings

Source: Caltrans, Survey of Earth-borne Vibrations due to Highway Construction and Highway Traffic, 1976.

Based on Table 4.3-8, it is expected that the pile driving activities would not adversely affect buildings in the vicinity of the project site and impacts related to vibration would be ***less than significant***.

Mitigation Measure(s)
None required.

4.3-5 Project-related increase in existing traffic noise levels at off-site residential uses.

Development of the proposed project is expected to generate increased traffic on roadways in the vicinity of the project. It should be noted that the traffic noise level estimates account for traffic that would be generated by Quadrants C and D, as well as Quadrant B, which is intended to be developed during a later phase of the project. The Quadrant B assumptions for development are based on the existing zoning of the parcels and the acreage of the parcels.

Table 4.3-9 shows the comparison between weekday Baseline No Project (which includes existing noise levels plus predicted noise levels from currently approved projects located in the vicinity of the proposed project) traffic noise levels and weekday Baseline Plus Project traffic noise levels. Table 4.3-10 shows the comparison between Saturday Baseline No Project traffic noise levels and Saturday Baseline Plus Project

traffic noise levels. Table 4.3-11 shows the comparison between weekday Baseline No Project traffic noise levels and weekday Baseline Plus Existing Zoning traffic noise levels. Table 4.3-12 shows the comparison between Saturday Baseline No Project traffic noise levels and Saturday Baseline Plus Existing Zoning traffic noise levels.

Weekday traffic noise level scenarios are predicted to be greater than the Saturday traffic noise level scenarios. Therefore, weekday traffic noise level scenarios will be used to analyze potential impacts at existing or proposed residential uses.

Existing or proposed residential uses in the vicinity of the project site are generally located on Arena Boulevard from East Commerce Way to Truxel Road, on East Commerce Way from the Arco Arena West Entrance to Arena Boulevard, on East Commerce Way from Arena Boulevard to Amelia Earhart Street, and East Commerce Way south of Amelia Earhart Street.

The predicted traffic noise levels at the existing residential building facades adjacent to Arena Boulevard are predicted to be approximately 69 dB and 70 dB Ldn for both the Baseline and Baseline Plus Project scenario and the Baseline and Baseline Plus Existing Zoning scenario. These are multi-family residential uses that have shielded common outdoor activity areas located in the center of the complex, which is approximately 385 feet from Arena Boulevard. The predicted noise level at the common outdoor activity area, based on a distance of 385 feet is less than 62 dB Ldn for each scenario. Assuming a minimum of a 10 dB shielding from the intervening building facades, the predicted traffic noise level is less than 60 dB Ldn under each scenario.

The predicted traffic noise levels at the existing residential building facades adjacent to East Commerce Way from the Arco Arena West Entrance to Arena Boulevard are predicted to be approximately 63 dB and 68 dB Ldn under the Baseline and Baseline Plus Project scenarios and 63 dB and 67 dB Ldn under the Baseline and Baseline Plus Existing Zoning scenarios. These residences include multi-family units that have a centralized common outdoor activity area, which is shielded from traffic noise by the intervening building facades. Observations and noise measurements indicate that the traffic noise levels at the common outdoor activity area were approximately 15 dB less than those measured at the nearest building facades to the roadway. Therefore, the predicted noise levels would comply with the 60 dB Ldn noise level standard for each of the scenarios.

Table 4.3-9
Predicted Weekday Baseline No Development and Baseline Plus Project Traffic Noise Levels

Roadway	Segment	Traffic Noise Levels @ 75 feet, Ldn			Distance to Ldn Contours – Baseline No Development			Distance to Ldn Contours – Baseline + Project		
		Baseline No Development	Baseline + Project	Change	70 dB	65 dB	60 dB	70 dB	65 dB	60 dB
El Centro Rd	North of Arena	64.2 dB	64.3 dB	0.1 dB	31’	67’	143’	31’	68’	146’
	South of Arena	65.1 dB	65.0 dB	0.1 dB	35’	76’	163’	35’	75’	162’
Duckhorn Dr	North of Arena	63.6 dB	63.6 dB	0.0 dB	28’	60’	130’	28’	60’	129’
	Arena to (future) Natomas Crossing	66.0 dB	65.2 dB	-0.8 dB	41’	87’	188’	36’	77’	165’
E. Commerce	Del Paso to West Entrance	66.1 dB	68.3 dB	2.2 dB	41’	89’	192’	58’	124’	267’
	Arco West Entrance to Arena Blvd	62.6 dB	68.0 dB	5.4 dB	24’	52’	112’	55’	118’	255’
	Arena to Amelia Earhart	58.6 dB	69.9 dB	11.3dB	13’	28’	60’	74’	160’	344’
	Amelia Earhart to Natomas Crossing	58.1 dB	69.5 dB	11.4dB	12’	26’	56’	69’	149’	321’
	Natomas Crossing to San Juan	--	68.3 dB	--	--	--	--	58’	124’	267’
Truxel	North of Arena	69.3 dB	69.1 dB	-0.2 dB	67’	144’	310’	65’	140’	302’
	Arena to Natomas Crossing	69.0 dB	69.4 dB	0.4 dB	64’	138’	298’	68’	146’	315’
	South of Natomas Crossing	69.6 dB	69.9 dB	0.3 dB	71’	153’	329’	74’	159’	343’
Arena	El Centro to Duckhorn	66.6 dB	67.0 dB	0.4 dB	44’	95’	205’	47’	101’	218’
	Duckhorn to SB I-5 Ramps	69.6 dB	69.7 dB	0.1 dB	71’	152’	327’	72’	154’	332’
	NB I-5 Ramps to E. Commerce	68.9 dB	71.0 dB	2.1 dB	63’	137’	294’	88’	190’	409’
	E. Commerce to Truxel	68.8 dB	69.9 dB	1.1 dB	63’	135’	291’	73’	158’	340’
	East of Truxel	67.9 dB	68.6 dB	0.8 dB	54’	116’	250’	61’	131’	281’
Natomas Crossing	East of E. Commerce	58.1 dB	57.7 dB	-0.4 dB	12’	26’	56’	11’	25’	53’
San Juan	West of Duckhorn	62.7 dB	63.5 dB	0.8 dB	24’	53’	113’	27’	59’	128’
	Duckhorn to E. Commerce	65.7 dB	66.2 dB	0.6 dB	39’	83’	179’	42’	91’	196’
	East of E. Commerce	--	68.3 dB	--	--	--	--	58’	125’	269’

Table 4.3-10
Predicted Saturday Baseline No Development and Baseline Plus Project Traffic Noise Levels

Roadway	Segment	Traffic Noise Levels @ 75 feet, Ldn			Distance to Ldn Contours – Baseline No Development			Distance to Ldn Contours – Baseline + Project		
		Baseline No Development	Baseline + Project	Change	70 dB	65 dB	60 dB	70 dB	65 dB	60 dB
El Centro Rd	North of Arena	61.3 dB	60.9 dB	-0.4 dB	20’	42’	91’	19’	40’	86’
	South of Arena	62.4 dB	62.5 dB	0.1 dB	24’	51’	109’	24’	51’	111’
Duckhorn Dr	North of Arena	61.2 dB	61.1 dB	-0.1 dB	19’	42’	90’	19’	41’	89’
	Arena to (future) Natomas Crossing	64.6 dB	64.3 dB	-0.3 dB	33’	71’	153’	31’	67’	145’
E. Commerce	Del Paso to West Entrance	65.7 dB	68.3 dB	2.6 dB	39’	84’	181’	58’	124’	267’
	Arco West Entrance to Arena Blvd	61.9 dB	68.3 dB	6.4 dB	22’	47’	101’	57’	124’	267’
	Arena to Amelia Earhart	58.3 dB	69.2 dB	10.9dB	12’	27’	58’	66’	143’	308’
	Amelia Earhart to Natomas Crossing	57.1 dB	68.7 dB	11.6dB	10’	22’	48’	61’	132’	284’
	Natomas Crossing to San Juan	--	66.8 dB	NA	--	--	--	46’	98’	212’
Truxel	North of Arena	68.6 dB	68.6 dB	0.0 dB	61’	131’	283’	61’	131’	282’
	Arena to Natomas Crossing	68.2 dB	68.3 dB	0.1 dB	57’	123’	265’	57’	124’	266’
	South of Natomas Crossing	69.0 dB	69.0 dB	0.0 dB	64’	139’	299’	64’	138’	297’
Arena	El Centro to Duckhorn	65.2 dB	65.6 dB	0.4 dB	36’	77’	167’	38’	82’	177’
	Duckhorn to SB I-5 Ramps	68.1 dB	68.3 dB	0.2 dB	56’	121’	260’	58’	125’	270’
	NB I-5 Ramps to E. Commerce	66.8 dB	70.3 dB	3.5 dB	46’	99’	213’	79’	170’	365’
	E. Commerce to Truxel	66.7 dB	68.4 dB	1.7 dB	45’	97’	208’	59’	126’	272’
	East of Truxel	65.5 dB	66.6 dB	1.1 dB	37’	80’	173’	44’	95’	206’
Natomas Crossing	East of E. Commerce	57.0 dB	57.2 dB	0.2 dB	10’	22’	48’	10’	23’	49’
San Juan	West of Duckhorn	60.8 dB	61.4 dB	0.6 dB	18’	40’	85’	20’	43’	93’
	Duckhorn to E. Commerce	63.9 dB	64.6 dB	0.7 dB	30’	64’	137’	33’	70’	151’
	East of E. Commerce	--	67.6 dB	NA	--	--	--	52’	112’	240’

Table 4.3-11
Predicted Weekday Baseline No Development and Baseline Plus Existing Zoning Traffic Noise Levels

Roadway	Segment	Traffic Noise Levels @ 75 feet, Ldn			Distance to Ldn Contours – Baseline No Development			Distance to Ldn Contours – Baseline + Existing Zoning		
		Baseline No Development	Baseline + Existing Zoning	Change	70 dB	65 dB	60 dB	70 dB	65 dB	60 dB
El Centro Rd	North of Arena	64.2 dB	64.5 dB	0.3 dB	31’	67’	143’	32’	69’	150’
	South of Arena	65.1 dB	65.1 dB	0.0 dB	35’	76’	163’	35’	76’	165’
Duckhorn Dr	North of Arena	63.6 dB	63.5 dB	-0.1 dB	28’	60’	130’	28’	60’	129’
	Arena to (future) Natomas Crossing	66.0 dB	65.0 dB	-1.0 dB	41’	87’	188’	35’	74’	160’
E. Commerce	Del Paso to West Entrance	66.1 dB	67.9 dB	1.8 dB	41’	89’	192’	54’	117’	251’
	Arco West Entrance to Arena Blvd	62.6 dB	66.9 dB	4.3 dB	24’	52’	112’	47’	101’	218’
	Arena to Amelia Earhart	58.6 dB	68.6 dB	10.0dB	13’	28’	60’	61’	131’	281’
	Amelia Earhart to Natomas Crossing	58.1 dB	67.8 dB	9.7 dB	12’	26’	56’	53’	115’	248’
	Natomas Crossing to San Juan	--	66.6 dB	0.0 dB	--	--	--	45’	96’	207’
Truxel	North of Arena	69.3 dB	69.0 dB	-0.3 dB	67’	144’	310’	65’	139’	300’
	Arena to Natomas Crossing	69.0 dB	69.2 dB	0.2 dB	64’	138’	298’	66’	143’	308’
	South of Natomas Crossing	69.6 dB	69.8 dB	0.2 dB	71’	153’	329’	73’	157’	338’
Arena	El Centro to Duckhorn	66.6 dB	66.8 dB	0.2 dB	44’	95’	205’	46’	99’	212’
	Duckhorn to SB I-5 Ramps	69.6 dB	69.6 dB	0.0 dB	71’	152’	327’	71’	153’	330’
	NB I-5 Ramps to E. Commerce	68.9 dB	70.5 dB	1.6 dB	63’	137’	294’	82’	176’	378’
	E. Commerce to Truxel	68.8 dB	69.6 dB	0.8 dB	63’	135’	291’	71’	153’	329’
	East of Truxel	67.9 dB	68.4 dB	0.5 dB	54’	116’	250’	59’	126’	272’
Natomas Crossing	East of E. Commerce	58.1 dB	58.2 dB	0.1 dB	12’	26’	56’	12’	27’	57’
San Juan	West of Duckhorn	62.7 dB	62.8 dB	0.1 dB	24’	53’	113’	25’	54’	116’
	Duckhorn to E. Commerce	65.7 dB	65.7 dB	0.0 dB	39’	83’	179’	39’	84’	181’
	East of E. Commerce	--	67.4 dB	0.0 dB	--	--	--	51’	109’	235’

Table 4.3-12
Predicted Saturday Baseline No Development and Baseline Plus Existing Zoning Traffic Noise Levels

Roadway	Segment	Traffic Noise Levels @ 75 feet, Ldn			Distance to Ldn Contours – Baseline No Development			Distance to Ldn Contours – Baseline + Existing Zoning		
		Baseline No Development	Baseline + Existing Zoning	Change	70 dB	65 dB	60 dB	70 dB	65 dB	60 dB
El Centro Rd	North of Arena	61.3 dB	61.0 dB	-0.3 dB	20’	42’	91’	19’	41’	88’
	South of Arena	62.4 dB	62.5 dB	0.1 dB	24’	51’	109’	24’	51’	110’
Duckhorn Dr	North of Arena	61.2 dB	61.2 dB	0.0 dB	19’	42’	90’	19’	42’	90’
	Arena to (future) Natomas Crossing	64.6 dB	63.7 dB	-0.9 dB	33’	71’	153’	28’	61’	132’
E. Commerce	Del Paso to West Entrance	65.7 dB	66.9 dB	1.2 dB	39’	84’	181’	47’	101’	217’
	Arco West Entrance to Arena Blvd	61.9 dB	65.7 dB	3.8 dB	22’	47’	101’	39’	83’	179’
	Arena to Amelia Earhart	58.3 dB	66.3 dB	8.0 dB	12’	27’	58’	42’	91’	197’
	Amelia Earhart to Natomas Crossing	57.1 dB	65.7 dB	8.6 dB	10’	22’	48’	39’	84’	181’
	Natomas Crossing to San Juan	--	63.8 dB	NA	--	--	--	29’	62’	135’
Truxel	North of Arena	68.6 dB	68.5 dB	-0.1 dB	61’	131’	283’	60’	129’	279’
	Arena to Natomas Crossing	68.2 dB	68.1 dB	-0.1 dB	57’	123’	265’	56’	120’	259’
	South of Natomas Crossing	69.0 dB	68.9 dB	-0.1 dB	64’	139’	299’	63’	136’	292’
Arena	El Centro to Duckhorn	65.2 dB	65.3 dB	0.1 dB	36’	77’	167’	36’	78’	168’
	Duckhorn to SB I-5 Ramps	68.1 dB	68.1 dB	0.0 dB	56’	121’	260’	56’	121’	260’
	NB I-5 Ramps to E. Commerce	66.8 dB	68.6 dB	1.8 dB	46’	99’	213’	60’	130’	279’
	E. Commerce to Truxel	66.7 dB	67.3 dB	0.6 dB	45’	97’	208’	49’	106’	229’
	East of Truxel	65.5 dB	65.8 dB	0.3 dB	37’	80’	173’	39’	85’	182’
Natomas Crossing	East of E. Commerce	57.0 dB	57.0 dB	0.0 dB	10’	22’	48’	10’	22’	48’
San Juan	West of Duckhorn	60.8 dB	60.7 dB	-0.1 dB	18’	40’	85’	18’	39’	84’
	Duckhorn to E. Commerce	63.9 dB	64.0 dB	0.1 dB	30’	64’	137’	30’	64’	138’
	East of E. Commerce	--	65.8 dB	NA	--	--	--	39’	85’	182’

The predicted traffic noise levels at the future residential building facades adjacent to East Commerce Way from Arena Boulevard to Amelia Earhart Street are predicted to be approximately 59 dB and 70 dB Ldn under the Baseline and Baseline Plus Project scenario and 59 dB and 69 dB Ldn under the Baseline and Baseline Plus Existing Zoning scenario. These residences are in early construction stages and include both single-family and multi-family units. The outdoor activity areas are expected to be located behind the building facades and, therefore, shielded from traffic noise. This analysis assumes a worst-case exterior noise level of approximately 68 dB Ldn at the outdoor activity areas and a 10 dB shielding due to the building facades, resulting in a 58 dB exterior noise level at the common outdoor activity areas.

The predicted traffic noise levels at the future residential building facades adjacent to East Commerce Way south of Amelia Earhart Street are predicted to be approximately 58 dB and 70 dB Ldn under the Baseline and Baseline Plus Project scenario and 58 dB and 68 dB Ldn under the Baseline and Baseline Plus Existing Zoning scenario. These residences consist of single-family units. Backyard patios are expected to be located behind the building facades and, therefore, will be adequately shielded from traffic noise.

The General Plan applies the exterior noise level criterion of 60 dB Ldn at common outdoor activity areas of multi-family residential uses and backyard areas of single-family residences. The predicted noise level at the common outdoor activity areas and backyard patios or existing residences located near the project site is expected to be less than 60 dB Ldn, when accounting for shielding from the building facades. Because the traffic noise level increases associated with the proposed project would not exceed City thresholds, impacts would be ***less than significant*** under Baseline Plus Project and Baseline Plus Existing Zoning conditions.

Mitigation Measure(s)
None required.

4.3-6 Traffic noise levels at proposed on-site residential uses.

The northern portion of Quadrant B is anticipated to include high density residential development as a part of the project design. Because a site plan has not yet been submitted for the development of Quadrant B, the determination cannot be conclusively made whether the proposed residential portion of the site would exceed the applicable City noise level thresholds. Therefore, a *potentially significant* impact would result.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a ***less than significant*** level by requiring the future development of Quadrant B to adhere to the City of Sacramento significance thresholds for noise levels at residential uses.

4.3-6 In conjunction with the submittal of a site plan for Quadrant B, the applicant shall retain a qualified acoustical consultant to prepare a site-specific noise

analysis for Quadrant B. If the report determines that noise levels for the residential portion of the site would exceed the City of Sacramento significance thresholds, which are 45 dB Ldn for interior noise levels at residential uses and 60 dB Ldn for exterior noise levels at outdoor common areas, the report shall include recommendations to reduce noise below the City's applicable noise level standards, for the review and approval of the Development Services Department. If the report determines that on-site operations would not exceed the City of Sacramento significance thresholds, further mitigation is not required.

4.3-7 Traffic noise levels at the proposed hospital.

Development of Quadrant D would include a hospital. The predicted future I-5 traffic noise level at the nearest facade of the hospital is 81 dB Ldn. Typical construction techniques for a hospital include brick facades. In addition, patient rooms and offices typically include windows. A brick facade generally provides a minimum noise level transmission loss of 40 dB. However, a typical dual glazed window provides a 27 dB to 28 dB transmission loss. Therefore, interior noise levels are expected to be in excess of the 45 dB Ldn interior noise level standard, resulting in a *potentially significant* impact.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above impact to a ***less than significant*** level by requiring development on Quadrant D to have windows with appropriate STC ratings in order to reduce interior noise levels below the City of Sacramento significance threshold.

4.3-7 Prior to issuance of a building permit for Quadrant D, the site plan(s) shall indicate that patient rooms and offices on the west-facing facades of the hospital shall include windows with an STC rating of 40, windows on the north- and south-facing facades shall have an STC rating of 38, and windows on the east-facing facade shall have an STC rating of 35. The site plan(s) shall be submitted for the review and approval of the Development Services Department.

4.3-8 Noise levels associated with the proposed helistop.

The proposed project includes a non-emergency helistop, which would be located at ground level on the south side of Quadrant D. The helistop would be used for periodic scheduled transfers of seriously ill and other patients to and from the proposed hospital.

For discussion and analysis purposes, j.c. brennan & associates, Inc. utilized the noise assessment previously conducted by Bollard & Brennan, Inc. for the Sutter Hospital in Sacramento. The Sutter Hospital helicopter assessment is considered to be somewhat conservative in the fact that it included a trauma center. The noise analysis for the Sutter Hospital included noise measurements of staged helicopter arrivals and departures, based

upon the proposed flight paths. The analysis for the Sutter Hospital estimated approximately 150 round-trips per year. While the primary provider of helicopter service for the hospital has not been identified at this time, it is anticipated that this trip estimate is considered a worst-case estimate, given the fact that the proposed hospital helistop would be used for "non-emergency" purposes.

Two basic approach and departure flight paths were assumed for the proposed project. The approach and departure flight paths generally follow I-5 from the north to the south or from the south to the north. The approach from the north is on a heading of approximately 180 degrees, at an altitude of 1,000 feet mean sea level (msl), and descending at a rate of 500 feet per minute. The departure would continue on the heading of 180 degrees to the south. The approach from the south is on a heading of approximately 360 degrees, at an altitude of 1,000 ft. msl, and descending at a rate of 500 feet per minute. The departure would continue on the heading of 360 degrees to the north.

CNEL contours were developed for the Sutter Hospital in Sacramento utilizing the Federal Aviation Administration (FAA) Integrated Noise Model (INM) Version 6.1. The INM has the ability to develop noise contours for helicopter operations. The INM also allows user input for all aspects of aircraft noise levels and operational characteristics. However, the INM does not account for shielding from buildings. Inputs to the model include the helicopter type, operational characteristics such as flight path, air speed, rate of descent and climb, thrust settings and head wind. The contours that were developed for the Sutter Hospital project were used to assess the potential helicopter noise impacts associated with the proposed project. It was assumed that the helicopter arrivals and departures would generally follow the I-5 corridors.

Noise level measurements were conducted of staged helicopter operations for the Sacramento Sutter Hospital EIR. Typical measured Sound Exposure Levels (SEL) noise levels at a distance of 500 feet from the landing area were 96 dB on arrival and 90 dB on departure. The measured maximum noise levels at a distance of approximately 500 feet from the landing area ranged between 81 dB and 83 dB Lmax. Though the proposed project would be exposed to reduced noise levels given that it does not include a trauma center, it is assumed, for the purposes of a conservative analysis, that the nearest residences for the proposed project would be similarly exposed to single event helicopter noise levels of up to 95 dB SEL, and 83 dB Lmax. Subsequently, interior noise levels at the proposed residences would be expected to be approximately 70 dB SEL and 58 dB Lmax. Based upon the Federal Interagency Committee on Aviation Noise (FICAN), the expected percent of the population which may experience awakening with an interior SEL of 70 dB is approximately 5 percent. Assuming a maximum noise level of 58 dB, the FICAN report assumes that two (2) individuals can have a "normal conversation with 95% speech intelligibility at a distance of 1 meters (10 feet)."

It is expected that the hospital will be exposed to single event noise levels as high as 98 dB SEL and 93 dB Lmax. Assuming that the project includes windows with STC ratings

ranging from 38 to 40 (as required per Mitigation Measure 4.3-7), and the facades are constructed of concrete block or similar construction, interior hospital noise levels are anticipated to be approximately 65 dB SEL and 60 dB Lmax. Therefore, the interior noise levels for the hospital are anticipated to be similar to or lower than those described above for the nearest residences.

Because the helistop is not expected to result in multiple events, similar to train operations or large truck passbys on a roadway, it is anticipated that the impact would not meet the single-event test of Policy EC 3.1.4 of the Sacramento 2030 General Plan, resulting in a ***less than significant*** impact.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

4.3-9 Cumulative increase in project vicinity noise levels.

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the proposed project and other projects within the North Natomas area. Table 4.3-13 shows the comparison between weekday Cumulative Plus Existing Zoning and Cumulative Plus Project traffic noise levels.

Table 4.3-14 shows the between Saturday Cumulative Plus Existing Zoning and Cumulative Plus Project traffic noise levels.

As shown in Table 4.3-13, predicted traffic noise levels at the residential building facades adjacent to Arena Boulevard are predicted to be approximately 72 dB Ldn for the Cumulative and Cumulative Plus Project scenarios. Predicted traffic noise levels at the existing residential building facades adjacent to East Commerce Way from the Arco Arena West Entrance to Arena Boulevard are predicted to be approximately 72 dB Ldn for both the Cumulative and Cumulative Plus Project scenarios. Predicted traffic noise levels at the future residential building facades adjacent to East Commerce Way from Arena Boulevard to Amelia Earhart Street are predicted to be approximately 71 dB Ldn for both the Cumulative and Cumulative Plus Project scenarios.

Table 4.3-13
Predicted Weekday Cumulative Plus Existing Zoning and Cumulative Plus Project Traffic Noise Levels

Roadway	Segment	Traffic Noise Levels @ 75 feet, Ldn			Distance to Ldn Contours – Cumulative + Existing Zoning			Distance to Ldn Contours – Cumulative + Project		
		Cumulative + Existing Zoning	Cumulative + Project	Change	70 dB	65 dB	60 dB	70 dB	65 dB	60 dB
El Centro Rd	North of Arena	67.7 dB	67.8 dB	0.1 dB	53’	114’	246’	53’	115’	247’
	South of Arena	67.4 dB	67.4 dB	0.0 dB	51’	109’	235’	50’	108’	233’
Duckhorn Dr	North of Arena	63.0 dB	63.0 dB	0.0 dB	26’	55’	119’	26’	55’	119’
	Arena to Natomas Crossing	66.6 dB	66.8 dB	0.2 dB	45’	97’	208’	46’	99’	213’
	Natomas Crossing to San Juan	66.2 dB	66.5 dB	0.3 dB	42’	90’	195’	44’	95’	204’
E. Commerce	Del Paso to West Entrance	70.8 dB	71.1 dB	0.3 dB	85’	184’	397’	89’	191’	411’
	Arco West Entrance Main Entrance	71.6 dB	71.8 dB	0.2 dB	95’	205’	442’	99’	212’	457’
	Main Entrance to Arena Blvd	69.5 dB	70.0 dB	0.5 dB	69’	149’	321’	75’	162’	349’
	Arena to Amelia Earhart	70.7 dB	71.1 dB	0.4 dB	83’	180’	387’	88’	190’	410’
	Amelia Earhart to Natomas Crossing	70.5 dB	71.0 dB	0.5 dB	81’	174’	375’	87’	188’	405’
	Natomas Crossing to San Juan	69.2 dB	69.9 dB	0.7 dB	67’	144’	310’	74’	160’	344’
Truxel	North of Arena	71.4 dB	71.5 dB	0.1 dB	93’	200’	430’	94’	202’	436’
	Arena to Natomas Crossing	72.6 dB	72.6 dB	0.0 dB	111’	239’	515’	112’	241’	520’
	South of Natomas Crossing	73.5 dB	73.4 dB	-0.1 dB	128’	275’	593’	127’	274’	591’
Snowy Egret	West of E. Commerce	66.5 dB	66.6 dB	0.1 dB	44’	95’	205’	45’	96’	207’
Arena	El Centro to Duckhorn	66.6 dB	66.8 dB	0.2 dB	45’	97’	208’	46’	99’	214’
	Duckhorn to SB I-5 Ramps	67.1 dB	67.1 dB	0.0 dB	48’	103’	222’	48’	104’	224’
	NB I-5 Ramps to E. Commerce	72.1 dB	72.2 dB	0.1 dB	103’	223’	479’	104’	225’	485’
	E. Commerce to Truxel	72.3 dB	72.4 dB	0.1 dB	106’	229’	493’	108’	232’	500’
	East of Truxel	69.0 dB	69.1 dB	0.1 dB	64’	139’	299’	66’	141’	305’
Natomas Crossing	West of E. Commerce	67.3 dB	67.4 dB	0.1 dB	50’	107’	231’	50’	108’	233’
	East of E. Commerce	66.4 dB	66.5 dB	0.1 dB	43’	92’	199’	44’	95’	204’
San Juan	West of Duckhorn	63.8 dB	64.2 dB	0.4 dB	29’	62’	134’	31’	67’	143’
	Duckhorn to E. Commerce	65.4 dB	66.1 dB	0.7 dB	37’	80’	173’	41’	89’	193’
	East of E. Commerce	70.0 dB	70.1 dB	0.1 dB	74’	160’	346’	76’	165’	355’

Table 4.3-14
Predicted Saturday Cumulative Plus Existing Zoning and Cumulative Plus Project Traffic Noise Levels

Roadway	Segment	Traffic Noise Levels @ 75 feet, Ldn			Distance to Ldn Contours – Cumulative + Existing Zoning			Distance to Ldn Contours – Cumulative + Project		
		Cumulative + Existing Zoning	Cumulative + Project	Change	70 dB	65 dB	60 dB	70 dB	65 dB	60 dB
El Centro Rd	North of Arena	64.9 dB	64.9 dB	0.0 dB	34’	74’	159’	34’	74’	158’
	South of Arena	65.4 dB	65.4 dB	0.0 dB	37’	80’	173’	37’	80’	172’
Duckhorn Dr	North of Arena	59.7 dB	61.2 dB	1.5 dB	15’	33’	71’	20’	42’	91’
	Arena to Natomas Crossing	65.2 dB	65.3 dB	0.1 dB	36’	78’	167’	36’	79’	169’
	Natomas Crossing to San Juan	62.4 dB	62.6 dB	0.2 dB	23’	50’	108’	24’	52’	112’
E. Commerce	Del Paso to West Entrance	68.6 dB	69.6 dB	1.0 dB	61’	131’	282’	71’	152’	328’
	West Entrance Main Entrance	69.7 dB	70.5 dB	0.8 dB	71’	154’	331’	81’	173’	374’
	Main Entrance to Arena Blvd	67.5 dB	69.1 dB	1.6 dB	51’	110’	236’	65’	140’	302’
	Arena to Amelia Earhart	68.1 dB	70.0 dB	1.9 dB	56’	120’	259’	75’	162’	350’
	Amelia Earhart to Natomas Crossing	67.5 dB	69.5 dB	2.0 dB	51’	110’	237’	69’	149’	320’
	Natomas Crossing to San Juan	66.9 dB	67.6 dB	0.7 dB	47’	101’	217’	52’	112’	242’
Truxel	North of Arena	69.5 dB	69.6 dB	0.1 dB	70’	150’	323’	70’	151’	325’
	Arena to Natomas Crossing	70.9 dB	71.0 dB	0.1 dB	86’	186’	400’	87’	188’	406’
	South of Natomas Crossing	72.0 dB	72.1 dB	0.1 dB	101’	218’	470’	104’	223’	481’
Snowy Egret	West of E. Commerce	64.2 dB	64.9 dB	0.7 dB	31’	67’	144’	34’	74’	159’
Arena	El Centro to Duckhorn	64.4 dB	64.4 dB	0.0 dB	32’	68’	147’	32’	69’	148’
	Duckhorn to SB I-5 Ramps	67.4 dB	67.8 dB	0.4 dB	51’	109’	235’	53’	115’	247’
	NB I-5 Ramps to E. Commerce	71.9 dB	72.3 dB	0.4 dB	100’	216’	466’	107’	230’	495’
	E. Commerce to Truxel	71.9 dB	72.2 dB	0.3 dB	101’	217’	467’	105’	227’	489’
	East of Truxel	65.6 dB	66.0 dB	0.4 dB	38’	82’	176’	40’	87’	187’
Natomas Crossing	West of E. Commerce	65.1 dB	65.5 dB	0.4 dB	35’	76’	164’	38’	81’	175’
	East of E. Commerce	63.5 dB	64.9 dB	1.4 dB	28’	60’	128’	34’	74’	159’
San Juan	West of Duckhorn	60.5 dB	61.1 dB	0.6 dB	17’	38’	81’	19’	41’	89’
	Duckhorn to E. Commerce	61.8 dB	62.2 dB	0.4 dB	21’	46’	98’	23’	49’	105’
	East of E. Commerce	67.0 dB	67.9 dB	0.9 dB	47’	101’	218’	54’	117’	253’

Predicted traffic noise levels at the future residential building facades adjacent to East Commerce Way south of Amelia Earhart Street are predicted to be approximately 71 dB Ldn for both the Cumulative and Cumulative Plus Project scenarios.

As discussed in Impact 4.3-5, these are either multi-family residential uses that have a common outdoor activity area located in the center of the complex or single-family units that have backyard patio areas. Both would have a minimum of a 10 dB shielding from the building facades. The General Plan applies the exterior noise level criterion of 60 dB Ldn at the common outdoor activity areas of multi-family residential uses and backyard areas of single-family residential uses. The predicted noise level at these areas is predicted to be less than 60 dB Ldn, when accounting for the 10 dB shielding from the building facades. Therefore, the predicted noise levels would comply with the 60 dB Ldn noise level standard; and the incremental project-related increase in cumulative traffic noise levels would be ***less than significant***.

Mitigation Measure(s)
None required.

Endnotes

[1] j.c. brennan & associates, Inc. *Environmental Noise Assessment, Natomas Crossing,* February 3, 2009.
[2] City of Sacramento, *Sacramento 2030 General Plan,* March 2009.
[3] City of Sacramento, *Sacramento 2030 General Plan Master EIR*, March 2009.
[4] City of Sacramento, *North Natomas Community Plan*, 1986 (amended 1993).
[5] City of Sacramento, *North Natomas Community Plan Supplemental EIR,* March 1993.
[6] City of Sacramento, *Noise Control Ordinance*, December 2003.

4.4 AIR QUALITY

4.4 AIR QUALITY

4.4.0 INTRODUCTION

The Air Quality chapter describes the impacts of the Natomas Crossing project on local and regional air quality. The chapter was prepared using methodologies and assumptions recommended within the indirect source review guidelines of the Sacramento Metropolitan Air Quality Management District (SMAQMD). In keeping with the SMAQMD guidelines, the Air Quality chapter describes existing air quality, construction-related air quality impacts resulting from grading and equipment emissions, direct and indirect emissions associated with the proposed project, the impacts of these emissions on both the local and regional scale, and mitigation measures to reduce or eliminate any identified significant impacts. In addition, this chapter analyzes the project's greenhouse gas emissions and mitigation measures. This chapter is based on the *Sacramento 2030 General Plan*,[1] the *Sacramento 2030 General Plan Master EIR*,[2] and the *Air Quality Impact Assessment for Natomas Crossing* prepared for the proposed project by AMBIENT Air Quality & Noise Consulting (See Appendix E).[3]

It should be noted that exposure of sensitive receptors to odors has not been included in the Air Quality chapter because this potential issue was determined to be less than significant in the Initial Study prepared for the proposed project (See Appendix C of this DEIR).

4.4.1 EXISTING ENVIRONMENTAL SETTING

The following setting information provides an overview of the existing air quality in the proposed project area. In addition, the climate and topography of the region, air pollutants and ambient air quality standards, and wind's effects on air quality are described.

Climate & Topography

The project site is located in the Sacramento Valley Air Basin (SVAB), which is under the jurisdiction of the SMAQMD. The SVAB is relatively flat and bordered by mountains to the east, west, and north. Air flows into the SVAB through the Carquinez Strait, moving across the Delta, and bringing pollutants from the heavily populated San Francisco Bay Area. The climate is characterized by hot, dry summers and cool, rainy winters. Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storms. From May to October, the region's intense heat and sunlight lead to high ozone concentrations. Summer inversions are strong and frequent, but are less troublesome than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Most precipitation in the SVAB results from air masses moving in from the Pacific Ocean during the winter months. Storms usually move through the area from the west or northwest. During the winter rainy season (November through February) over half the total annual precipitation falls while the average winter temperature is a moderate 49 degrees Fahrenheit (^{o}F). During the summer, daytime temperatures can exceed 100 ^{o}F. Dense fog occurs mostly in mid-winter and rarely in the summer. Daytime temperatures from April through October average between 70 and 90 ^{o}F with extremely low humidity. The inland location and surrounding mountains shelter the valley from much of the ocean breeze that keeps the coastal regions moderate in temperature. The only breech in the mountain barrier is the Carquinez Strait, which exposes the midsection of the valley to the coastal air mass.

Wind and Effects on Air Quality

Winds across the project area are an important meteorological parameter because they control the dilution of locally generated air pollutant emissions and their regional trajectory. Based on data obtained from the Sacramento Executive Airport, the station closest to the project site that measures wind speed and direction, southwest winds are the most predominant.

Regional flow patterns affect air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions, such as moderate winds disperse pollutants and reduce pollutant concentrations. However, the mountains surrounding the Sacramento Valley can create a barrier to airflow, which can trap air pollutants in the Valley when meteorological conditions are right. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning or when temperature inversions trap cool air, fog and pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern to circle back south. Essentially, this phenomenon causes the air pollutants to be blown south toward the Sacramento nonattainment area. This phenomenon’s effect exacerbates the pollution levels in the area and increases the likelihood of violating federal or State standards.

Air Pollutants and Ambient Air Quality Standards

Several jurisdictions regulate air quality within the SVAB, including the United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the SMAQMD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although USEPA regulations may not be superseded, both State and local regulations may be more stringent.
Pollutants subject to federal ambient standards are referred to as "criteria" pollutants because the USEPA publishes criteria documents to justify the choice of standards. Criteria air pollutants, common sources, and associated effects are summarized in Table 4.4-1.

Table 4.4-1
Common Pollutant Sources and Adverse Effects

Pollutant	Major Man-Made Sources	Human Health & Welfare Effects
Particulate Matter (PM_{10} & $PM_{2.5}$)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Ozone (O_3)	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, textiles and dyes.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely;' a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

The federal and State standards for the criteria pollutants and other State-regulated air pollutants are shown in Table 4.4-2. One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed “sensitive receptors.” The term “sensitive receptors” refers to specific population groups, as well as the land uses where they would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses are residences, schools, playgrounds, childcare centers, retirement homes or convalescent homes, hospitals, and clinics.

Table 4.4-2
Summary of Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
			Primary[1]	Secondary[2]
Ozone (O_3)	1-hour	0.09 ppm	--	Same as Primary
	8-hour	0.07 ppm	0.075 ppm	
Particulate Matter (PM_{10})	AAM	20 µg/m^3	--	
	24-hour	50 µg/m^3	150 µg/m^3	
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm	None
	8-hour	9 ppm	9 ppm	
	8-hour (Lake Tahoe)	6 ppm	--	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Same as Primary
	1-Hour	0.18 ppm	--	

Notes:
[1] Levels necessary to protect the public health.
[2] Levels necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

Attainment Status

The attainment status of Sacramento County is summarized in Table 4.4-3. An attainment designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A nonattainment designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation(s) was caused by an exceptional event.

Table 4.4-3
Attainment Status Designations

Pollutant	California Standard	Federal Standard
Ozone	Non-Attainment Classification: Serious (1/8-hour Standards)	Non-Attainment Classification: Serious (8-hour Standards)
PM_{10}	Non-Attainment (24-hour Standard and Annual Mean)	Non-Attainment Classification: Moderate (24-hour Standards)
Carbon Monoxide	Attainment (1-hour and 8-hour Standards)	Attainment (1-hour and 8-hour Standards)
Nitrogen Dioxide	Attainment (1-hour Standard)	Attainment (Annual Standard)

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

As depicted in Table 4.4-3, Sacramento County is currently designated nonattainment for the State and federal ozone and PM_{10} standards. Sacramento County is designated either attainment or unclassified for the remaining federal and State ambient air quality standards.

Current Air Quality

Ambient air quality in the project area can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. The Blackfoot Way air quality monitoring station in North Highlands and the T Street monitoring station in Sacramento are the stations located nearest the project site.

Table 4.4-4 summarizes the last three years of published ambient air quality data obtained from the Blackfoot Way monitoring station for ozone, PM_{10}, and CO. As depicted in Table 4.4-4, State and federal ozone and PM_{10} standards have been exceeded on several occasions during the last three years of available data.

Toxic Air Contaminants

Toxic air contaminants (TACs) are not considered criteria pollutants in that the federal and California Clean Air Acts do not address them specifically through the setting of National or State Ambient Air Quality Standards. Instead, EPA and ARB regulate TACs through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with District rules, these federal and state statutes and regulations establish the regulatory framework for TACs.

At the State level, the CARB has authority for the regulation of emissions, including TACs, from motor vehicles, fuels, and consumer products. Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC.

At the local level, air districts have the authority over stationary or industrial sources. All projects that require air quality permits from the SMAQMD are evaluated for TAC emissions. The SMAQMD limits emissions and public exposure to TACs through a number of programs. The SMAQMD prioritizes TAC-emitting stationary sources, based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. The SMAQMD requires a comprehensive health risk assessment for facilities that are classified in the significant-risk category, pursuant to AB 2588.

Table 4.4-4
Summary of Annual Ambient Air Quality Data[1]

Pollutant	2005	2006	2007
Ozone (O_3)			
Maximum Concentration (1-hr/8-hr avg, ppm)	0.108/0.087	0.106/0.090	0.109/0.089
Number of Days 1-hr State/National Standard Exceeded	4/0	6/0	2/0
Number of Days State/National 8-hr Standard Exceeded	5/4	14/6	7/2
Carbon Monoxide (CO)			
Maximum Concentration (1-hr/8-hr avg, ppm)	3.9/2.97	4.7/3.15	6.3/5.58
Number of Days State Standard Exceeded	0	0	0
Number of Days National Standard Exceeded	0	0	0
Respirable Particulate Matter (PM_{10})			
Maximum Concentration ($\mu g/m^3$)	55.0	111.0	57.4
Number of Days State Standard Exceeded (calculated[2])	4	8	5
Number of Days National Standard Exceeded (calculated[2])	0	0	0
Fine Particulate matter ($PM_{2.5}$)			
Maximum Concentration ($\mu g/m^3$)	59.0	54.0	58.0
Number of Days State/National Standard Exceeded (calculated[2])	10/10.7	14/N/A	19/27.6

Notes:
1. Based on data obtained from the Sacramento-1309 T Street monitoring station. CO concentrations obtained from the Sacramento-3801 Airport Road monitoring station.
2. Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.
3. N/A=Data not available

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

Diesel-Exhaust Particulate Matter

Diesel-exhaust particulate matter (DPM) was recently added to the CARB list of TACs. Diesel-exhaust particulate matter is the primary TAC of concern for mobile sources. Of all controlled TACs, emissions of DPM are estimated to be responsible for approximately 70 percent of the total ambient TAC risk. The CARB has made the reduction of the public's exposure to DPM a

high priority, with an aggressive plan to require cleaner diesel fuel and cleaner diesel engines and vehicles.

Land Use Compatibility with TAC Emission Sources

The location of a development project is a major factor in determining whether the project will result in localized air quality impacts. The potential for adverse air quality impacts increases as the distance between the source of emissions and members of the public decreases. While impacts on all members of the population should be considered, impacts on sensitive receptors are of particular concern. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, residential dwellings, and convalescent-care facilities are examples of sensitive receptors.

The CARB released an informational guide entitled: *Air Quality and Land Use Handbook: A Community Health Perspective* (*Handbook*). The purpose of the CARB's *Handbook* is to provide information to aid local jurisdictions in addressing issues and concerns related to the siting of sensitive land uses near major sources of air pollution. The *Handbook* includes recommended separation distances for various sensitive land uses and sources of TACs. One particular source of TACs addressed in the guidance is freeways and high-traffic roadways, such as Interstate 80, which is adjacent to the site. The *Handbook* defines such roadways as "urban roads with 100,000 vehicles/day." These roadways are sources of DPM, which (as noted above) has been listed as a TAC by CARB. The *Handbook* recommends that sensitive land uses should typically not be located closer than 500 feet from a freeway or other high traffic roadway. This recommendation was based on traffic related studies that showed a 70 percent drop in DPM concentrations at a distance of 500 feet from the roadway. However, the recommendations contained in the *Handbook* are not site specific and should not be interpreted as defined "buffer zones." The recommendations of the *Handbook* are advisory and need to be balanced with other State and local policies and site-specific conditions, such as needing to be close to a freeway for emergencies and better ambulance service.[4]

In response to the ARB's recommendations and to further assist local land use jurisdictions in assessing the potential cancer risk of siting sensitive land uses adjacent to major roadways located within the Sacramento region, the SMAQMD recently released a protocol document entitled: *Recommended Protocol For Evaluating The Location Of Sensitive Land Uses Adjacent To Major Roadways* (Protocol). The Protocol was most recently updated in March 2009. The Protocol provides a methodology for the assessment and disclosure of potential cancer risk from DPM along major roadways located within the Sacramento region. As with the methodology relied upon in CARB's Handbook, SMAQMD's screening-level protocol is based on the distance at which a 70-percent reduction in DPM would be predicted to occur. This reduction or drop-off in emissions equates to a predicted cancer-risk criterion threshold of approximately 296 in one million within the Sacramento region (excluding background risks). As a result, predicted incremental increases in cancer risks that exceed this screening-level criterion would be recommended to conduct a more detailed health risk assessment (SMAQMD 2009).

Greenhouse Gases and Global Climate Change

Global climate change refers to the change in the average weather of the earth that may be measured by changes in ocean currents, wind patterns, storms, precipitation and temperature. The climate in California is expected to become increasingly warmer during the 21st century due to the accumulation of greenhouse gases (GHGs) in the atmosphere. The extent of change is linked to the rate of certain human activities, such as the burning of fossil fuels. The Intergovernmental Panel on Climate Change (IPCC) Special Report on Emissions Scenarios (SRES) has developed a set of possible future GHG emissions scenarios based on different assumptions about global development. There are three general SRES emissions scenarios for California: a higher emissions scenario, a medium-high emissions scenario, and a lower emissions scenario. The higher emissions scenario represents rapid fossil-fuel intensive economic growth, global population that peaks mid-century then declines, and the introduction of new and more efficient technologies toward the end of the 21st century. The medium-high emissions scenario is based upon a projection of continuous population growth combined with slower economic growth and technological change than in the other scenarios. In contrast, the lower emissions scenarios represents a world with population growth similar to the highest emissions scenarios, but with rapid changes towards a service and information economy with the introduction of clean and resource-efficient technologies. Under this scenario, despite a reduction in CO_2 emissions, the global CO_2 concentration would double relative to its pre-industrial level, by the end of this century. It is important to note that even at the lower emissions scenario; increases in global temperature are predicted to be between 1.7 and 3.0 degrees Celsius (3 to 5.5 degrees Fahrenheit). In the medium-high emissions scenario and the higher emissions scenario, temperatures are predicted to increase between 3.1 and 4.3 degrees Celsius (5.5 to 8 degrees Fahrenheit) and 4.4 to 5.8 degrees Celsius (8 to 10.5 degrees Fahrenheit), respectively. According to these climate models, the temperature rise in California is expected to increase anywhere between 1.7 and 5.8 degrees Celsius. Among other effects, projected climate changes would affect California's public health through changes in air quality.

4.4.2 REGULATORY BACKGROUND

Federal

Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The USEPA regulates emission sources that are under the exclusive authority of the federal government.

Federal Clean Air Act

At the federal level, the USEPA has been charged with implementing national air quality programs. The USEPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

The FCAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions.

State

California Air Resources Board

The California Air Resources Board (CARB), a part of the USEPA, is responsible for the coordination and administration of both federal and State air pollution control programs within California. The CARB conducts research, sets State ambient air quality measure standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs.

California Clean Air Act

The California Clean Air Act (CCAA), 1988, requires that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for ozone and CO by the earliest practical date. Plans for attaining CAAQS were to be submitted to CARB by June 30, 1991. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either achieve a five percent annual reduction, averaged over consecutive three-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both State and federal planning requirements.

As stated above, the CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the CCAA of 1988. Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts), establishing the CAAQS, and setting emissions standards for new motor vehicles. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

Senate Bill 656 – Reducing Particulate Matter in California

In 2003, the Legislature passed Senate Bill 656 to reduce public exposure to PM_{10} and $PM_{2.5}$. The legislation requires the CARB, in consultation with local air pollution control and air quality management districts (air districts), to adopt a list of the most readily available, feasible, and cost-effective control measures that could be implemented by air districts to reduce PM_{10} and $PM_{2.5}$. The legislation establishes a process for achieving near-term reductions in PM throughout California ahead of federally required deadlines for $PM_{2.5}$, and provides new direction on PM reductions in those areas not subject to federal requirements for PM. Sources categories addressed by SB 656 include measures to address residential wood combustion and outdoor

greenwaste burning; fugitive dust sources such as paved and unpaved roads and construction; combustion sources such as boilers, heaters, and charbroiling; solvents and coatings; and product manufacturing.

Assembly Bills 1807 & 2588 - Air Toxics

Within California, toxic air contaminants (TACs) are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

Local

Sacramento Area Council of Governments Preferred Blueprint Scenario

The project would be consistent with the smart growth principles identified in the Blueprint by focusing on compact development to maximize use of existing land; offering a range of mixed land uses; using existing assets by infilling or intensifying the use of parcels in urbanized areas; encouraging a distinctive, community with high quality design; and providing transportation choices to encourage people to walk, ride bicycles, ride the bus, ride light rail, take the train, or car pool.

As discussed throughout this Chapter 4.4, the proposed project incorporates numerous land use, conservation, renewable energy, and transportation measures designed to reduce contributions to climate change, consistent with the most current recommendations by the Attorney General. For example, Mitigation Measure 4.4-3, developed in consultation with the Air District as part of the project's Air Quality Management Plan, requires energy efficient building design and cool roofs; Mitigation Measure 4.4-9 requires various water conservation and efficiency measures such as water efficient landscapes and irrigation systems; Mitigation Measure 4.4-1 limits idling time for construction vehicles; and Mitigation Measure 4.4-3 requires bicycle parking areas in commercial projects. Moreover, the project design and project PUD Guidelines ensure development of a mixed-use project that will support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and promote efficient delivery of services and goods – all of which serve to reduce greenhouse gas emissions.

The proposed project would help achieve the smart growth principles, by reducing vehicle miles traveled. Currently, residents who reside in and near North Natomas access most in- and out-patient services at hospitals located at 2801 L Street and 1650 Response Road, which are located greater than five miles, generally south of the project site (See Figure 3-6 in the Project Description chapter of this Draft EIR). The most direct route from the North Natomas area to the hospital at 2801 L Street is via I-5. The most direct route to the hospital on 1650 Response Road is via I-5 and I-80. The development of a hospital is anticipated to reduce travel distance for

residents living in and near Natomas who currently access services in downtown, which would reduce traffic on regional routes such as I-5 and I-80. An additional benefit of the Blueprint's goal of more compact, smart growth patterns is a reduction in greenhouse gas emissions which will assist the region in achieving emerging targets and goals under AB32 and SB 375, which were adopted after the Blueprint.

Sacramento Metropolitan Air Quality Management District (SMAQMD)

The SMAQMD, in coordination with the air quality management districts and air pollution control districts of El Dorado, Placer, Solano, Sutter, and Yolo counties prepared and submitted the 1991 Air Quality Attainment Plan (AQAP) in compliance with the requirements set forth in the CCAA, which specifically addressed the nonattainment status for ozone and to a lesser extent, CO and PM_{10}.

The SMAQMD adopted various rules and regulations pertaining to the control of emissions from area and stationary sources. Some of the more pertinent regulatory requirements applicable to the proposed project are identified as follows:

Rule 201: General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD prior to equipment operation. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment, etc.) with an internal combustion engine over 50 horsepower are required to have a SMAQMD permit or ARB portable equipment registration.

Rule 402: Nuisance. The purpose of this rule is to limit emissions which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

Rule 403: Fugitive Dust. The purpose of this rule is to require that reasonable precautions be taken so as not to cause or allow the emissions of fugitive dust from non-combustion sources from being airborne beyond the property line from which the emission originates.

Rule 411: Boiler NO_X. Sets NO_X and CO emissions from industrial, institutional, and commercial boilers, steam generators, and process heaters.

Rule 442: Architectural Coatings. The developer or contractor is required to use coatings that comply with the volatile organic compound (VOC) content limits specified in the rule.

California Building Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. These standards are codified in Title 24, Part 6, of the California Code of Regulations and are generally referred to as "Title 24 Standards." The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

Sacramento 2030 General Plan

The following policies from the recently adopted Sacramento 2030 General Plan are specific to air quality and climate change. It should be noted that community design and growth policies located throughout the Sacramento 2030 General Plan (and addressed in other chapters of this Draft EIR) also serve to reduce emissions by facilitating a more compact development form that encourages alternative forms of transportation.

Environmental Resources Element

Air Quality

Goal ER 6.1 Improved Air Quality. Improve the health and sustainability of the community through improved regional air quality and reduced greenhouse gas emissions that contribute to climate change.

Policy ER 6.1.1 Maintain Standards. The City shall work with the California Air Resources Board and the Sacramento Metropolitan Air Quality Management District to meet State and Federal ambient air quality standards.

Policy ER 6.1.2 Emissions Reduction. The City shall require development projects that exceed the SMAQMD ROG and NO_X operational thresholds to incorporate design or operational features that reduce emissions equal to 15 percent from the level that would be produced by an unmitigated project.

Policy ER 6.1.3 Greenhouse Gas Reduction Goal. The City shall work with the California Air Resources Board to comply with statewide greenhouse gas reduction goals as established in the *Global Warming Solutions Act of 2006 for 2020* and any subsequent targets.

Policy ER 6.1.4 Citywide Greenhouse Gas Assessment. The City shall comply with pertinent State regulations to assess citywide greenhouse gas emissions for existing land uses and the adopted General Plan buildout.

Policy ER 6.1.5 Greenhouse Gas Reduction in New Development. The City shall reduce greenhouse gas emissions from new development by discouraging auto-dependent sprawl and dependence on the private

automobile; promoting development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning, and improving the jobs/housing ratio in each community.

Policy ER 6.1.6 New Development. The City shall review proposed development projects to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases, nitrogen oxides, and particulate matter (PM10 and PM2.5) through project design.

Policy ER 6.1.8 Development near Major Roadways. The City shall require that new development with sensitive uses within 500 feet of a major roadway be designed with consideration of site and building orientation and incorporate appropriate technology for improved air quality, flow, ventilation, and filtration to lessen any potential health risks due to the project's proximity to the roadway.

Policy ER 6.1.12 Zero-Emission and Low-Emission Vehicle Use. The City shall encourage the use of zero-emission vehicles, low-emission vehicles, and car-sharing programs by requiring sufficient and convenient infrastructure and parking facilities in residential developments and employment centers to accommodate these vehicles.

Policy ER 6.1.16 Employer Education Programs. The City shall encourage employers to participate in SMAQMD public education programs.

City of Sacramento Comprehensive Infill Strategy

The City's Infill Program adopts numerical and qualitative infill development goals, targets specific types of infill development, and offers focused procedural and financial incentives to help achieve infill development goals.

Sustainability Master Plan (2007)

As part of the Sustainability Master Plan, the City will integrate environmentally sustainable practices into City policies, procedures, and operations that will provide tools for measuring the City's progress towards sustainability. The foundation for the Sustainability Master Plan is the United Nations Environmental Accords, a set of 21 actions that the United Nations asked city

governments to adopt and implement over a seven-year period. The City has incorporated the pertinent goals and targets identified in the Plan into the 2030 General Plan. The goals and targets will serve as a policy framework for the City to ensure that sustainability concerns are incorporated into the City's decision-making processes.

4.4.3 IMPACTS AND MITIGATION MEASURES

Standards of Significance

The following standards of significance for ozone and particulate matter, carbon monoxide, and toxic air contaminants are based on the City and SMAQMD's air quality thresholds.

Ozone and Particulate Matter. An increase in short-term effects (construction) of nitrogen oxides (NO_X) above 85 pounds per day and an increase in long-term effects (operation) of either ozone precursor - nitrogen oxides (NO_X) and/or organic gases (ROG) - above 65 pounds per day would result in a significant impact.

Carbon Monoxide. Carbon monoxide concentrations are considered significant if they exceed the 1-hour State ambient air quality standard of 20.0 parts per million (ppm) or the 8-hour state ambient standard of 9.0 ppm (state ambient air quality standards are more stringent than their federal counterparts).

Toxic Air Contaminants. Incremental increase in exposure of sensitive receptors to stationary-source TACs exceeds 10 in one million for the Maximally Exposed Individual (MEI) to contract cancer and/or a Hazard Index of one for the MEI; or, if localized concentrations of TACs from nearby existing transportation-sources would conflict with the compatibility of proposed sensitive land uses.

Method of Analysis

The following section discusses the methods utilized to determine the project's impacts.

Short-Term Impacts

The SMAQMD recommends that construction-generated emissions of ROG and NO_X be quantified and presented as part of the analysis of project-generated emissions. However, because construction equipment emits relatively low levels of ROG, and because ROG emissions from other construction processes (e.g., asphalt paving, architectural coatings) are typically regulated by the SMAQMD, the SMAQMD has not adopted a construction emissions threshold for ROG. The SMAQMD has, however, adopted a construction emissions threshold of 85 lbs/day for NO_X. In addition, if daily emissions of NO_X from heavy-duty mobile equipment do not exceed the 85 lbs/day threshold, then SMAQMD considers exhaust emissions of other pollutants to also be less than significant.

Short-term construction emissions of ROG and NO_X were estimated using the URBEMIS2007 (Version 9.2.4) computer program, as recommended by the SMAQMD. The URBEMIS2007

program is designed to model construction emissions for land use development projects and allows for the input of project-specific information. For development sites greater than 10 acres, URBEMIS modeling default parameters assume that one-quarter of the project area could be under construction on any given day.

Based on information provided by the project applicant, Quadrant B would be constructed in two separate phases over an approximate 24 month period beginning in 2013 (See Table 4.4-5). Quadrant C would be developed in four separate phases, with each of these four phases being constructed over an approximate 12-month period. Phases I and III of Quadrant C would begin construction in 2011, followed by Phase II in 2012 and Phase IV in 2013. Quadrant D would be constructed over an approximate 36-month period with construction beginning in 2013.

Table 4.4-5
Project Construction Schedules

Project Phase	Start Year	Overall Duration of Construction
Quadrant B	2013	24 Months
Quadrant C, Phase I	2011	12 Months
Quadrant C, Phase II	2012	12 Months
Quadrant C, Phase III	2011	12 Months
Quadrant C, Phase IV	2013	12 Months
Quadrant D	2013	36 Months

Note: Construction start dates and overall construction duration schedules are based on information provided by the project applicant.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

For modeling of Quadrant C phases, the URBEMIS default construction phase durations were used, which assume an approximate overall 12-month construction period. However, the URBEMIS2007 computer model does not account for longer construction periods in excess of 12 months. Although current modeling guidance allows for modification of construction schedules to reflect proposed project construction schedules, detailed construction information (including schedules) is not yet available for the proposed construction phases. As a result, the modeling of construction-generated emissions associated with Quadrants B and D, were based on construction schedules derived from the San Joaquin Valley Air Pollution Control District's *URBEMIS Development Timeline Calculator*, approved for use by the SMAQMD. The calculator provides estimated construction schedules for projects that are anticipated to be developed over multiple years, but for which detailed schedules are not yet available. At the recommendation of the SMAQMD, the construction schedules were adjusted to reflect an average five-day workweek. All other modeling parameters, including equipment usage requirements, were based on URBEMIS model defaults. Based on information provided by the project applicant, development is not anticipated to require the export or import of soil. As a result, modeling does not include off-site transport of excavated material.

The SMAQMD provides screening criteria that can also be used for the evaluation of construction-generated PM_{10}, based on the overall maximum daily area of disturbance associated with proposed projects (See Table 4.4-6).

Table 4.4-6
SMAQMD Particulate Matter Screening Levels for Construction Projects

Maximum Daily Area of Disturbance	Recommended Mitigation
5 Acres and Below	Mitigation not required.
5.1 – 8 Acres	Level One mitigation required: • Water exposed soil twice daily; and • Maintain two feet of freeboard space on haul trucks.
8.1 – 12 Acres	Level Two mitigation required: • Water exposed soil three times daily; • Water soil piles three times daily; and • Maintain two feet of freeboard space on haul trucks.
12.1 – 15 Acres	Level Three mitigation required: • Keep soil moist at all times; • Maintain two feet of freeboard space on haul trucks; and • Use emulsified diesel or diesel catalysts on applicable heavy-duty diesel construction equipment.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

In accordance with these criteria, areas of disturbance in excess of SMAQMD's screening criteria would also be considered potentially significant. These screening levels are based on the maximum actively disturbed area of the project site. For example, assuming a maximum daily disturbance of less than 15 acres, implementation of recommended "Level Three Mitigation" would typically be considered sufficient to reduce fugitive dust-related impacts to a less than significant level.

If the maximum daily area of disturbance would exceed the screening criteria or if the project cannot undertake the mitigation measures that would be required, a more detailed analysis, involving dispersion modeling, may be required.

Long-Term Impacts

Regional area- and mobile-source emissions associated with the proposed project were estimated using the URBEMIS2007 computer program, which includes options for the estimation of operational emissions for land use development projects. Emissions were calculated for both summer and winter conditions based on the default parameters contained in the model. Default trip generation rates contained in the model were revised to correspond with predicted trip generation rates identified in the traffic analysis prepared for this project. The trip-generation rates obtained from the traffic analysis take into account reductions due to pass-by vehicle trips.

For comparison purposes, modeling was conducted for both the proposed project and existing zoning conditions.

Helicopter emissions associated with the use of the proposed helistop at the proposed medical center were also calculated and included in the estimated project-generated emissions. A helicopter landing site feasibility study has not yet been prepared for the proposed project. Helicopter flights were, therefore, assumed to be similar to those estimated for the recently proposed Sutter Elk Grove Hospital, which assumes a conservative average of approximately 150 flights per year. For the estimation of daily emissions, one helicopter flight per day was assumed, consisting of one approach and one departure flight. For modeling purposes, a combined average approach and departure flight length of 100 miles was assumed based on information obtained from similar facilities (UCSF LRDP 2005). A 50-mile radius would encompass the Sacramento metropolitan area and outlying communities located within the county and, therefore, would represent a reasonable estimation of maximum flight distance. Average flight distances for the transport of patients within the metropolitan area would be considerably less.

Screening procedures have been developed by SMAQMD that can be used for the evaluation of the project's contribution to localized concentrations of mobile-source carbon monoxide (CO) concentrations. The screening procedures are used to determine whether detailed intersection-level modeling is required for a proposed development project. In addition, the screening procedures conservatively estimate related impacts associated with buildout of a proposed project, based on an estimation of total peak-hour vehicle trips attributable to the proposed project, and the procedures can be used for projects that generate up to approximately 3,000 peak-hour vehicle trips. However, based on the traffic analysis prepared for this project, the proposed project would generate approximately 5,074 peak-hour trips. As a result, a more detailed intersection-level screening procedure that was developed by the Bay Area Air Quality Management District (BAAQMD) was utilized for the evaluation of local mobile-source CO concentrations, as approved by SMAQMD. The BAAQMD screening procedure is based on the CALINE4 computer model, which was developed by the California Department of Transportation. For modeling purposes, the highest measured 1-hour and 8-hour CO concentrations obtained from the nearest monitoring stations for the last three years of available data were used (i.e., 6.3 and 5.6 ppm, respectively). Emission factors were derived from the Emfac2007 computer model for Sacramento County, year 2010 operational conditions for the month of January. Modeling of localized CO concentrations was conducted for a.m., p.m., and Saturday peak-hour conditions.

Exposure to localized concentrations of stationary-source TACs was qualitatively assessed. Emissions of DPM associated with diesel-fueled trucks traveling along I-5 were evaluated using the SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways, Version 2.2* (March 2009).

Project-Specific Impacts and Mitigation Measures

4.4-1 Short-term increases of construction-generated emissions of criteria air pollutants.

Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but possess the potential to represent a significant air quality impact. The construction and development of the proposed land uses would result in the temporary generation of emissions resulting from site grading and excavation, road paving, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities.

Development of the proposed project would occur in six separate phases. Quadrant C would be developed in four phases, beginning in the year 2011, with each phase being constructed over an approximate one-year period. Quadrant D would be developed over an approximate 3-year period, beginning in 2013. Although not proposed for development at this time, Quadrant B is estimated to begin construction in 2013 and would be constructed over an approximate two-year period (See Table 4.4-5).

Estimated daily construction-generated emissions associated with the development of the proposed project phases (i.e., Quadrants B, C1-4, and D) are summarized in Table 4.4-7. In addition to emissions of NO_X, for which the SMAQMD has adopted a recommended significance threshold, estimated construction-generated emissions of ROG, PM_{10}, and $PM_{2.5}$ associated with the development of the various project phases are also depicted, for informational purposes. As depicted in Table 4.4-7, construction-generated emissions of NO_X attributable to the individual project phases would range from approximately 35 to 82 lbs/day, depending on the specific activities being conducted. However, as previously discussed, development of some project phases could occur simultaneously. Maximum daily construction-generated emissions of NO_X, assuming multiple project phases being constructed simultaneously, are summarized in Table 4.4-8 in comparison to the SMAQMD's significance threshold of 85 lbs/day. As depicted, predicted maximum daily emissions of NO_X, assuming multiple project phases under simultaneous construction, could reach levels of approximately 125 lbs/day.

Table 4.4-7
Short-Term Construction-Generated Emissions – Proposed Project
Ozone-Precursor Pollutants by Construction Phase (Unmitigated)

Building Phase/Site Alternative	Maximum Daily Emissions (lbs/day) [1]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Quadrant C - Phase I				
Fine Grading	3.94	31.66	125.29	27.37
Asphalt Paving	4.31	18.45	1.44	1.31
Building Construction	3.93	17.83	1.32	1.16
Architectural Coatings	248.47	0.12	0.02	0.01
Maximum Daily Emissions:	252.40	50.11	126.74	28.67
Quadrant C - Phase II				
Fine Grading	2.72	21.98	70.08	15.40
Asphalt Paving	3.76	18.36	1.52	1.38
Building Construction	3.48	16.15	1.16	1.03
Architectural Coatings	172.80	0.08	0.01	0.01
Maximum Daily Emissions:	176.28	40.34	71.60	16.78
Quadrant C - Phase III				
Grading	2.86	23.48	84.58	18.50
Asphalt Paving	2.85	15.94	1.37	1.25
Building Construction	3.62	16.60	1.22	1.10
Architectural Coatings	107.14	0.05	0.01	0.00
Maximum Daily Emissions:	110.76	39.42	85.95	19.75
Quadrant C - Phase IV				
Grading	2.57	20.60	84.39	18.33
Asphalt Paving	2.55	4.22	1.19	1.08
Building Construction	3.07	14.64	1.00	0.90
Architectural Coatings	107.14	0.04	0.01	0.00
Maximum Daily Emissions:	110.20	34.82	85.58	19.41
Quadrant B				
Grading	4.69	35.79	325.18	69.31
Asphalt Paving	4.64	18.61	1.47	1.33
Building Construction	5.24	27.71	2.08	1.67
Architectural Coatings	486.88	0.18	0.04	0.02

Table 4.4-7 (Continued)
Short-Term Construction-Generated Emissions – Proposed Project
Ozone-Precursor Pollutants by Construction Phase (Unmitigated)

Building Phase/Site Alternative	Maximum Daily Emissions (lbs/day) [1]			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions[2]:	491.67	82.10	328.72	72.31
Quadrant D				
Grading	3.54	27.81	178.42	38.27
Asphalt Paving	2.89	14.20	1.17	1.06
Building Construction	5.18	22.77	1.82	1.39
Architectural Coatings	367.30	0.12	0.03	0.02
Maximum Daily Emissions:	367.30	27.81	178.42	38.27

1. Based on URBEMIS2007computer modeling. Quadrant C, Phases I-4 assume a 12-month overall construction period for each phase. Quadrant B assumes a 24-month construction period. Quadrant D assumes a 36-month construction period.
2. Maximum daily emissions assume multiple construction phases could occur simultaneously, based on the default construction periods and schedules contained within the URBEMIS2007 model. As a result, maximum daily emissions may not reflect the sum total of individual construction phase emissions.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

Table 4.4-8
Short-Term Construction-Generated NO_X Emissions – Proposed Project by Construction Year (Unmitigated)

Year	Period	Project Phases	Emissions (lbs/day)	Exceeds Threshold (85 lbs/day)?
2011	1/3-1/28	Quad C-Phase I & Quad C-Phase III	55.14	*No*
	1/31-2/11	Quad C-Phase I & Quad C-Phase III	89.53	*Yes*
	2/14-9/9	Quad C-Phase I & Quad C-Phase III	34.43	*No*
	9/12-9/23	Quad C-Phase I & Quad C-Phase III	34.62	*No*
	9/26-10/7	Quad C-Phase I & Quad C-Phase III	0.14	*No*
2012	1/2-1/27	Quad C-Phase II	21.98	*No*
	1/30-2/10	Quad C-Phase II	40.34	*No*
	2/13-9/7	Quad C-Phase II	16.15	*No*
	9/10-9/21	Quad C-Phase II	16.23	*No*
	9/24-10/5	Quad C-Phase II	0.08	*No*
2013	1/1-1/2	Quad B, Quad D & Quad C-Phase IV	63.6	*No*
	1/3-1/30	Quad B, Quad D & Quad C-Phase IV	84.2	*No*
	1/31-2/13	Quad B, Quad D & Quad C-Phase IV	98.42	*Yes*
	2/14-3/14	Quad B, Quad D & Quad C-Phase IV	78.24	*No*
	3/15	Quad B, Quad D & Quad C-Phase IV	124.55	*Yes*
	3/18-4/15	Quad B, Quad D & Quad C-Phase IV	88.76	*Yes*
	4/16-4/19	Quad B, Quad D & Quad C-Phase IV	70.16	*No*
	4/20-4/30	Quad B, Quad D & Quad C-Phase IV	42.35	*No*
	5/1-6/7	Quad B, Quad D & Quad C-Phase IV	79.32	*No*
	6/8-6/9	Quad B, Quad D & Quad C-Phase IV	42.35	*No*
	6/10-9/11	Quad B, Quad D & Quad C-Phase IV	65.12	*No*
	9/12-9/26	Quad B, Quad D & Quad C-Phase IV	65.17	*No*
	9/27-9/31	Quad B, Quad D & Quad C-Phase IV	50.48	*No*
2014	1/1-10/3	Quad B & Quad D	46.18	*No*
	10/4-10/5	Quad B & Quad D	20.84	*No*
	10/6-12/4	Quad B & Quad D	46.36	*No*
	12/5-12/31	Quad B & Quad D	20.84	*No*
2015	1/1-9/18	Quad D	19.05	*No*
	9/21-11/20	Quad D	19.17	*No*
	11/23-12/25	Quad D	0.12	*No*

Note: Based on URBEMIS2007 modeling results and assumptions identified in Table 4.4-7.
Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

Estimated maximum daily emissions of NO_X would exceed the SMAQMD's significance threshold of 85 lbs/day. Therefore, short-term construction-generated emissions of NO_X would result in a *potentially significant* impact.

Mitigation Measure(s)

Mitigated construction-generated emissions of NO_X and associated mitigation fees are summarized in Table 4.4-9. Implementation of SMAQMD's standard construction mitigation measures would reduce NO_X emissions by approximately 20 percent. As depicted, implementation of SMAQMD's standard mitigation measures would be sufficient to reduce maximum daily emissions to below SMAQMD's NO_X significance threshold of 85 lbs/day, with the exception of a single day during which construction activities associated with Quadrant B, Quadrant D, and Quadrant C-Phase IV are projected to overlap (i.e., March 15, 2014). On this day, mitigation emissions of NO_X would total approximately 99.64 lbs; 14.64 lbs over the SMAQMD's significance threshold of 85 lbs/day. Based on the current mitigation fee ($16,000/ton), a fee of $123 shall be paid to SMAQMD to offset mitigated NO_X emissions in excess of the threshold. The proposed project shall adhere to the phasing schedule provided for this project, which is the basis for the emissions calculations and mitigation fee. In the event that changes to the construction schedules occur, emissions of NO_X and associated mitigation fees shall be recalculated based on the mitigation fee in place at the time fees are to be paid. Therefore, implementation of the following mitigation measures would reduce the impact to a ***less than significant*** level.

4.4-1(a) *Prior to the issuance of any grading permit, the project applicant/developer shall provide a plan for approval by the City, in consultation with SMAQMD, demonstrating that the heavy-duty (>50 horsepower), off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average 20 percent NO_X reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at the time of construction. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, particulate matter traps, engine retrofit technology, after-treatment products, and/or such other options as become available.*

Table 4.4-9
Mitigated Construction-Generated NO_X Emissions

Year	Period	Project Phases	NO_X (lbs/day) Unmitigated	NO_X (lbs/day) Mitigated[1]	NO_X Over Threshold	Duration (Days)	Total Significant NO_X (lbs)
2013	1/31-2/13	Quad B, Quad D & Quad C-Phase IV	98.42	78.74	0	10	0
2013	3/15	Quad B, Quad D & Quad C-Phase IV	124.55	99.64	14.64	1	14.64
2013	3/18-4/15	Quad B, Quad D & Quad C-Phase IV	88.76	71.01	0	21	0
Total Project NO_X Over Threshold (lbs):					14.64		
Total Project NO_X Over Threshold (tons):					0.01		
MITIGATION FEE ($16,000/TON)[2]			$117				
SMAQMD ADMINISTRATIVE FEE:			$6				
TOTAL FEE:			$123				

[1] Assumes a construction mitigation plan which achieves a 20% reduction in NO_X from onsite, off-road equipment.
[2] Or the $/ton of NO_X cost-effectiveness value in effect at the time the fee is collected.
Based on SMAQMD Construction Mitigation Fee Calculator and URBEMIS modeling results for the proposed project (Table 4.4-8). Fee is to be paid to the SMAQMD prior to any ground disturbance.
Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

4.4-1(b) Prior to the issuance of any grading permit, the project applicant/developer shall submit to the City and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 hp, that will be used an aggregate of 40 or more hours during any portion of the project. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction operations occur. At least 48 hours before subject heavy-duty off-road equipment is used, the project representative shall provide the SMAQMD with the anticipated construction timeline including start date, and the name and phone number of the project manager and on-site foreman.

4.4-1(c) During construction, the project applicant/developer shall ensure that emissions from off-road, diesel-powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour, as determined by an on-site qualified inspector trained in visual emissions assessment. Any equipment found to exceed 40 percent opacity (or Ringlemann 2.0) shall be repaired immediately, and the SMAQMD shall be notified of non-compliant equipment within 48 hours of identification. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of visual survey results shall be submitted throughout the duration of the construction project, except that the monthly summary shall not be required for any 30-day period in which no construction operations occur. The monthly summary shall include the quantity and type of vehicles surveyed, as well as the dates of each survey. The SMAQMD and/or other officials may conduct periodic site inspections to determine compliance.

4.4-1(d) The project applicant shall pay a mitigation fee to the SMAQMD to offset any remaining construction-generated daily NO_X emissions in excess of the SMAQMD's significance threshold of 85 lbs/day. SMAQMD mitigation fees shall be calculated and paid in coordination with SMAQMD prior to issuance of building or grading permits. Based on the currently proposed construction schedule, the simultaneous development of Quadrant B, Quadrant C-Phase IV, and Quadrant D would generate 14.64 lbs/day of NO_X in excess of SMAQMD's significance threshold. Based on this estimate and the SMAQMD's current mitigation fee ($16,000/ton), the proposed project proponent shall pay a fee of $123 to mitigate excess NO_X emissions. In the event that the project phasing schedule would differ from the schedule used for this analysis (See Table 4.4-5), the project proponent shall notify SMAQMD and recalculate construction-related emissions and mitigation fees, if applicable, in accordance with the most current SMAQMD-recommended methodologies. Verification of payment of the mitigation fee shall be provided to the City prior to issuance of any grading permits.

4.4-2 Short-term increases in fugitive dust.

Construction projects that require grading or other earth-moving activities generate large amounts of particulate matter. While construction related emissions produce only temporary impacts, these short-term impacts contribute to the emission inventory. Under certain conditions, the increased pollution load can exceed State and National Ambient Air Quality Standards.

As depicted in Table 4.4-6, development of each of the proposed phases would generate maximum unmitigated daily emissions of up to approximately 328 lbs/day of PM_{10} and 72 lbs/day of $PM_{2.5}$. A majority of total particulate emissions would be fugitive dust generated during initial site preparation. Assuming that multiple phases would be constructed simultaneously, the proposed project would generate a combined total of approximately 593 lbs/day of PM_{10} and 131 lbs/day of $PM_{2.5}$ (See Table 4.4-7).

To assist in the evaluation of fugitive dust-related impacts, SMAQMD staff has developed screening criteria for construction projects (See Table 4.4-6). As previously discussed, these screening levels are based on the maximum actively disturbed area of the project site. Based on construction data provided by the project applicant, initial grading associated with each of the proposed development phases would range from approximately four to nine acres per day of active ground disturbance. However, multiple phases could be under construction simultaneously on any given day. The highest potential for ground disturbance would occur in the year 2013 associated with the simultaneous development of Quadrant B, Quadrant C-Phase IV, and Quadrant D. Assuming that one-quarter of the project areas were to be actively disturbed on any given day, the simultaneous development of Quadrant B, Quadrant C-Phase IV, and Quadrant D would result in a combined area of daily disturbance of approximately 29 acres. However, it should be noted that Quadrants B and D are separated by a distance of approximately 2,400 feet. As a result, the combined contribution to localized concentrations of PM at nearby individual receptor locations due to the simultaneous development of these areas would be somewhat diminished. Nonetheless, given that the proposed project does not include measures for reducing fugitive dust emissions, as recommended by the SMAQMD, this impact would be considered *potentially significant*.

Mitigation Measure(s)

Implementation of the below mitigation measures would reduce fugitive dust emissions by approximately 44 to 84 percent. Based on the URBEMIS modeling conducted and assuming that multiple project phases could be constructed simultaneously, implementation of the below mitigation measures would reduce maximum daily emissions to approximately 56 lbs/day of PM_{10} and 17 lbs/day of $PM_{2.5}$. For projects resulting in less than 15 acres of disturbance/day, the SMAQMD considers implementation of recommended mitigation measures for the control of fugitive dust to be sufficient to reduce project-generated emissions of fugitive dust to a less than significant level; therefore, implementation of the following mitigation

would reduce short-term increases of construction-generated PM to a ***less than significant*** level.

4.4-2 Prior to the approval of any grading permit, the project proponent shall submit a dust-control plan to the City of Sacramento Development Services Department. The dust-control plan shall stipulate grading schedules associated with the project phase (i.e., Quadrants B, C1-4, and D), as well as the dust-control measures to be implemented. Grading of proposed project phases shall be scheduled so that the total area of disturbance would not exceed 15 acres on any given day. The dust control plan shall be incorporated into all construction contracts issued as part of the proposed project development. The dust-control plan shall, at a minimum, incorporate the following measures:

- *Apply water, chemical stabilizer/suppressant, or vegetative cover to disturbed areas, including storage piles that are not being actively used for construction purposes, as well as any portions of the construction site that remain inactive for longer than 3 months;*
- *Water exposed surfaces sufficient to control fugitive dust emissions during demolition, clearing, grading, earth-moving, or excavation operations. Actively disturbed areas should be kept moist at all times;*
- *Cover all vehicles hauling dirt, sand, soil or other loose material or maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code Section 23114;*
- *Limit or expeditiously remove the accumulation of project-generated mud or dirt from adjacent public streets at least once every 24 hours when construction operations are occurring; and*
- *Limit onsite vehicle speeds on unpaved surfaces to 15 mph, or less.*

4.4-3 Long-term increases of criteria air pollutants.

The project would include a mix of land uses, which would generate emissions of ozone-precursor pollutants (i.e., ROG and NO_X). Long-term increases in area- and mobile-source emissions associated with the proposed land uses were estimated using the CARB-approved URBEMIS2007 computer program, which is designed to model emissions for land use development projects. The default settings for Sacramento County contained in the model were used for this analysis. In accordance with SMAQMD recommendations, predicted operational emissions were calculated for both summer and winter conditions. Predicted operational emissions for interim and buildout conditions are summarized in Table 4.4-10.

Table 4.4-10
Long-Term Operational Emissions – Criteria Air Pollutants (Unmitigated)

Source	Estimated Emissions (lbs/day)							
	Summer Conditions				Winter Conditions			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
Existing Zoning								
Mobile Sources	155.34	148.61	348.62	66.69	140.31	221.66	348.62	66.69
Natural Gas Usage	1.08	14.85	0.03	0.03	1.08	14.85	0.03	0.03
Landscape Maintenance	0.25	0.04	0.01	0.01	No Winter Emissions			
Architectural Coatings	12.74	--	--	--	12.74	--	--	--
Total:	169.41	163.50	348.66	66.73	154.13	236.51	348.65	66.72
SMAQMD thresholds (lbs/pollutant/day)	*65*	*65*	--	--	*65*	*65*	--	--
Total Emissions Exceeds Thresholds?	*Yes*	*Yes*	--	--	*Yes*	*Yes*	--	--
Proposed Project								
Mobile Sources	339.60	353.58	824.27	157.61	332.30	526.76	824.27	157.61
Natural Gas Usage	1.58	21.59	0.04	0.04	1.58	21.59	0.04	0.04
Landscape Maintenance	0.98	0.17	0.04	0.04	No Winter Emissions			
Architectural Coatings	16.48	--	--	--	16.48	--	--	--
Hearth	No Summer Emissions				16.35	3.55	24.22	23.32
Helicopter Emissions	0.5	0.4	1.20	1.20	0.5	0.4	1.20	1.20
Total:	367.27	375.74	825.55	158.89	367.18	552.30	849.73	182.17
Net Increases In Comparison to Existing Zoning:	197.36	211.84	475.69	90.96	213.05	315.79	501.08	115.45
SMAQMD thresholds (lbs/pollutant/day)	*65*	*65*	--	--	*65*	*65*	--	--
Total Emissions Exceeds Thresholds?	*Yes*	*Yes*	--	--	*Yes*	*Yes*	--	--

Operational emissions were calculated using the URBEMIS2007 (Version 9.2.4) computer program.
Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

During the summer ozone season, operation of the proposed project would generate maximum daily emissions of approximately 367 lbs/day of ROG, 376 lbs/day of NO_X, 826 lbs/day of PM_{10}, and 159 lbs/day of $PM_{2.5}$. During the winter months, the proposed project would generate maximum daily emissions of approximately 367 lbs/day of ROG, 552 lbs/day of NO_X, 850 lbs/day of PM_{10}, and 182 lbs/day of $PM_{2.5}$. In comparison to existing zoning, the proposed project would result in net increases of up to approximately 213 lbs/day of ROG, 316 lbs/day of NO_X, 501 lbs/day of PM_{10}, and 116 lbs/day of $PM_{2.5}$. Predicted maximum daily emissions of ROG and NO_X attributable to the proposed project would exceed SMAQMD's recommended significance threshold of 65 lbs/pollutant/day. Because the proposed project's maximum daily emissions of ROG and NO_X would exceed SMAQMD's significance threshold, the impact would be *significant*.

Mitigation Measure(s)

In accordance with SMAQMD recommendations, implementation of Mitigation Measure 4.4-3 would reduce long-term operational emissions attributable to the proposed project by a minimum of approximately 15 percent. Assuming an overall minimum emissions reduction of 15 percent, maximum daily operational emissions at buildout would total approximately 312 lbs/day of ROG and 466 lbs/day of NO_X.

With implementation of recommended emission-reduction measures, predicted operational emissions of ROG and NO_X would still be anticipated to exceed SMAQMD's corresponding significance threshold of 65 lbs/pollutant/day. As a result, this impact would be considered ***significant and unavoidable***.

4.4-3 *Prior to project approval, the project applicant shall obtain written endorsement from the SMAQMD for an Air Quality Mitigation Plan (AQMP) for the proposed project. The AQMP shall be reviewed and endorsed by SMAQMD staff prior to project implementation. In accordance with SMAQMD recommendations, the AQMP shall achieve a minimum overall reduction of 15 percent in the project's anticipated operational emissions of NO_X and ROG. Measures anticipated to be applicable to the proposed project and currently recommended by the SMAQMD include, but are not limited to, the following:*

- *a. Provide on-site short-term and long-term bicycle parking.*
- *b. Provide "end-of-trip" bicycle facilities including showers, lockers, and changing space.*
- *c. Provide bicycle network that includes linkage to existing Class I or Class II bike lanes.*
- *d. Provide pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site.*
- *e. Incorporate on-site transit facility improvements (e.g., pedestrian shelters, route information, benches, lighting) to coincide with existing or planned transit service.*

f. Provide pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements that reduce motor vehicle speeds and encourage pedestrian and bicycle trips.

g. Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.

h. Provide a mix of onsite land uses, proximate to existing or planned transit facilities.

i. Install Energy-Star rated roofing materials.

j. Provide shade (within fifteen years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30 percent of the site's non-roof impervious surfaces, including parking lots, walkways, plazas, etc.; or, place a minimum of 50 percent of parking spaces underground or covered by structured parking; or, use an open-grid pavement system (less than 50 percent impervious) for a minimum of 50 percent of the parking lot area.

k. Incorporate landscaping and/or sun screens to reduce energy use. Deciduous trees should be utilized for building shading to increase solar heating during the winter months.

The project applicant shall implement the emission reduction strategies contained in the endorsed Air Quality Mitigation Plan. Documentation confirming implementation of the Air Quality Mitigation Plan shall be provided to the SMAQMD and the City prior to the issuance of occupancy permits.

4.4-4 Long-term increases of carbon monoxide.

Carbon monoxide (CO) is the criteria air pollutant of primary concern associated with the proposed project. Under specific meteorological and operational conditions, such as near areas of heavily congested vehicle traffic, CO concentrations may reach unhealthy levels. Predicted CO concentrations were evaluated for roadway intersections projected to operate at unacceptable levels of service (i.e., LOS E or F). Modeling was conducted for weekday a.m. and p.m. peak-hour and Saturday peak-hour conditions, based on traffic volumes obtained from the traffic analysis prepared for this project. As shown in Table 4.4-11, modeling was conducted for the proposed project and existing zoning conditions.

Table 4.4-11
Local Mobile-Source Carbon Monoxide Concentrations

Intersection	CO Concentration (ppm)					
	Weekday AM		Weekday PM		Saturday	
	1-hr	8-hr	1-hr	8-hr	1-hr	8-hr
Baseline Plus Existing Zoning						
E. Commerce Way and Del Paso Road	9.2	7.0	9.8	7.2	8.8	6.8
Baseline Plus Project						
E. Commerce Way and Del Paso Road	9.1	6.9	9.7	7.2	8.8	6.8
E. Commerce Way and Arena Boulevard	8.3	6.6	9.0	6.9	8.6	6.7
California Ambient Air Quality Standard (CAAQS):	*20.0*	*9.0*	*20.0*	*9.0*	*20.0*	*9.0*
Predicted CO Concentrations Exceed CAAQS?	*No*					

Note: Predicted CO concentrations are the sums of a background component, which includes the cumulative effects of all CO sources in the project area vicinity, and the proposed project's contribution.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

Based on the modeling conducted, implementation of the proposed project would contribute to unacceptable LOS at two nearby roadway intersections, including the intersection of E. Commerce Way and Del Paso Road, and the intersection of E. Commerce Way and Arena Boulevard. The predicted highest localized CO concentrations would occur during the p.m. peak hour. Under near-term baseline-plus-project conditions, predicted maximum weekday 1-hour and 8-hour CO concentrations would be 9.7 ppm and 7.2 ppm, respectively. Under near-term baseline conditions, predicted CO concentrations would not be anticipated to exceed the 1-hour or 8-hour CAAQS (i.e., 20 ppm and 9.0 ppm, respectively). As a result, this impact would be considered ***less than significant***.

Mitigation Measure(s)
None required.

4.4-5 Exposure of sensitive receptors to toxic air contaminants.

Implementation of the proposed project could result in the exposure of sensitive receptors toxic air contaminants (TACs). Emissions of TACs can occur during both the construction and operational phases of the project. Health-related impacts associated with short-term construction and long-term stationary and mobile source operational emissions are discussed separately, as follows:

Short-Term Construction

Construction of the proposed land uses would result in temporary emissions of diesel-exhaust particulates (diesel PM or DPM) associated with the operation of offroad construction equipment. DPM was identified as a TAC by the CARB in 1998.

Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. For residential land uses, the calculation of cancer risk associated with exposure to TACs are typically calculated based on a 70-year period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively large area. Assuming an overall construction period of approximately five years, construction activities would constitute approximately seven percent of the total exposure period typically applied for the calculation of risk. For these reasons, diesel-exhaust PM generated by project construction, in and of itself, would not be expected to significantly impact nearby receptors. Therefore, short-term exposure to construction-generated TACs would not be considered adverse.

Long-Term Operation – Stationary Sources

As discussed above, major stationary sources of TACs have not been identified within the vicinity of the project site. However, the proposed project could result in the development of commercial land uses, such as gasoline stations and dry cleaning establishments, which could generate emissions of TACs. Such sources of TACs would be subject to SMAQMD rules and regulations, including SMAQMD Rule 201 (General Permit Requirements), Rule 202 (New Source Review), Rule 904 (Air Toxics Control Measures), and Rule 207 (Title V-Federal Operating Permit Program). All stationary sources that have the potential to emit TACs are required to obtain permits from the SMAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations. Given that, as part of the SMAQMD's permitting requirements, sources having the potential to emit TACs would be required to implement measures designed to ensure that potential health risks to nearby receptors would not exceed established standards, impacts related to emissions of TACs associated with the proposed project would not be adverse.

Long-Term Operation – Mobile Sources

In addition to the development of new stationary-sources of emissions, implementation of the proposed project includes the development of sensitive land uses in the vicinity of Interstate 5 (I-5). Diesel-fueled trucks traveling on I-5 would be considered a major source of diesel-exhaust PM that could adversely affect nearby sensitive land uses. As part of the proposed project, development of Quadrant D would include the construction of a proposed medical center. Based on the Quadrant D conceptual site plan, the nearest building façade of the proposed medical center

would be located approximately 200 feet from the nearest travel lane of I-5. Future development of the northern portion of Quadrant B would include sensitive land uses, including 180 residential townhouse/condominium units. However, Quadrant B is not proposed for development at this time and the location of these land uses has not yet been identified.

As previously discussed, the ARB released an informational guide entitled: *Air Quality and Land Use Handbook: A Community Health Perspective* (*Handbook*). The purpose of the *Handbook* is to provide information to aid local jurisdictions in addressing issues and concerns related to the siting of sensitive land uses near major sources of air pollution, such as I-80, which is adjacent to the site. The *Handbook* recommends that sensitive land uses should typically not be located closer than 500 feet from a major roadway, which is based on an approximate 70 percent drop in DPM concentrations. However, the recommendations of the *Handbook* are advisory and do not take into account local policies or site-specific conditions (CARB 2005). In response to the recommendations identified in the ARB's *Handbook* and to assist local jurisdictions in assessing the potential cancer risks of siting sensitive land uses adjacent to major roadways located within the Sacramento metropolitan region, the SMAQMD released a protocol document entitled: *Recommended Protocol For Evaluating The Location Of Sensitive Land Uses Adjacent To Major Roadways* (*Protocol*), which was most recently updated in March 2009. As with the ARB's *Handbook*, the SMAQMD's *Protocol* also provides recommended distances for the siting of sensitive land uses near major roadways, taking into account traffic volumes and orientation to the roadway. The SMAQMD's *Protocol* establishes a screening criterion of 296 in one million for mobile sources (SMAQMD 2009).

Based on the traffic analysis prepared for this project, traffic volumes on I-5 (adjacent to Quadrant D) total 11,006 vehicles during the a.m. peak hour and 11,928 vehicles during the p.m. peak hour. Based on these traffic volumes and taking into account the orientation of the project site to I-5 (i.e., east and downwind), sensitive land uses should not be located nearer than approximately 200 feet of I-5.

As noted above, the nearest exterior facade of the proposed medical center would be located approximately 200 feet east of I-5. Based on this distance and orientation to I-5, the SMAQMD's screening methodology estimates that the predicted cancer risk at the proposed medical center would be 223 in one million. Predicted cancer risks would not exceed the SMAQMD's screening criterion of 296 in one million and, therefore, a more detailed health risk assessment would not be required for the proposed medical center. However, given that the site plan for the proposed medical center is conceptual, it is possible that the site plan could change. In the event that the proposed medical center buildings were to be moved closer to I-5 (less than 200 feet), predicted cancer risks could exceed SMAQMD's screening criteria of 296 in one million. In addition, given that the location of residential development proposed as part of Quadrant B is currently unknown, it is conceivable that predicted cancer risks at proposed residential land uses could also be located within 200 feet of I-5 and thus would exceed SMAQMD's screening criteria of 296 in one million. For these

reasons, exposure of proposed on-site sensitive land uses to TACs from vehicles traveling along I-5 would be considered a *potentially significant* impact.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the impact to a ***less than significant*** level.

4.4-5(a) Sensitive land (i.e., the proposed medical center and residential dwelling units) uses shall not be located in an area that exceeds the SMAQMD screening criteria for cancer risks associated with toxic air contaminants. Based on SMAQMD's current screening methodology, if proposed sensitive receptors are located within 200 feet of Interstate 5, a more detailed assessment of potential health risks shall be required. If sensitive land uses are proposed within 200 feet of the near-travel-lane of Interstate 5, the project applicant shall coordinate with the SMAQMD and the City of Sacramento Development Services Department to conduct a health-risk analysis. The health-risk analysis shall be prepared in accordance with SMAQMD's Recommended Protocol For Evaluating The Location Of Sensitive Land Uses Adjacent To Major Roadways prior to the approval of a site plan.

4.4-5(b) The project applicant shall plant vegetation (e.g., trees) between proposed on-site sensitive land uses and the I-5 corridor, the type and location to be determined in consultation with SMAQMD.

4.4-6 Project-level impacts related to greenhouse gas emissions.

To date, analysts have yet to define protocols for establishing the effect of a specific local development project on a cumulative global temperature increase. The IPCC notes that "difficulties remain in attributing temperature on smaller than continental scales and over time scales on less than 50 years. Attribution at these scales, with limited exceptions, has not yet been established." The following discussion focuses on the proposed project's contribution to global climate change by quantifying GHG emissions and qualitatively discussing project GHG reductions, which would be consistent with the regulatory context presented below. The assessment focuses on the quantification of major greenhouse gases: carbon dioxide (CO_2), Nitrous oxide (N_2O), and methane gas (CH_4), which contributes to global warming.

Short-Term Construction Emissions

Estimated greenhouse gas emissions attributable to the proposed project were calculated using the URBEMIS2007 computer program and emission factors obtained from the CEC and CARB. Emissions were calculated for short-term construction and long-term operational activities, including emissions generated by mobile sources, energy consumption, and decomposition of project-generated waste. Emissions were

converted to CO_2 equivalent units of measure, expressed in metric tons, based on the global warming potential of the individual pollutants.

During construction of the project, GHGs would be emitted from the operation of construction equipment and from worker and building supply vendor vehicles. The project construction emissions of CO_2 equivalents are shown in Table 4.4-12, below. It was estimated that the proposed project would emit a total of approximately 13,474 tons per year of CO_2 equivalent during the approximate four-year construction period. Emissions of nitrous oxide and methane are negligible in comparison and were not estimated.

Table 4.4-12
Short-Term Construction-Generated Greenhouse Gas Emissions

Construction Year	Maximum CO_2 Equivalent (Tons/Year)		
	Equipment Exhaust	Construction Waste	Total
2011	599	577	1,176
2012	291	382	674
2013	2,850	1,679	4,529
2014	3,007	1,878	4,885
2015	1,432	778	2,210

Notes:
1. Equipment Exhaust: Emissions were calculated using the URBEMIS2007 (version 9.2.4) computer program.
2. Construction Waste: Landfill emissions were calculated based on data obtained from the U.S. EPA for construction-generated debris and waste (U.S. EPA 1998).
3. Emissions may not sum due to rounding.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

Long-Term Operation

The largest source of GHGs associated with the proposed project would be on- and off-site motor vehicle use. CO_2 emissions, the primary GHG from mobile sources, are directly related to the quantity of fuel consumed. CO_2 emissions during operation of the project at full buildout were estimated using URBEMIS2007, as shown in Table 4.4-13. As shown, total CO_2 emissions generated by the project would be 116,412 tons per year, which equates to approximately 0.01 percent of California's total emissions.

Table 4.4-13
Long-Term Operational Greenhouse Gas Emissions

Emissions Source	CO_2 Equivalent (Tons/Year)	Percent of Total Project Emissions
Motor Vehicles	83,957	72
Electricity	20,049	17
Natural Gas	4,328	4
Solid Waste	8,078	7
Total:	116,412	

Notes:

1. Motor Vehicles: CO2 emissions derived from URBEMIS2007 (version 9.2.4) computer program. N2O and CH4 emissions based on vehicle fleet data obtained from the URBEMIS2007 (version 9.2.4) computer program and emission factors obtained from California Climate Action Registry General Reporting Protocol, version 2.2, March 2007.
2. Electricity: Based on commercial usage rates derived from California Energy Commission's California Commercial End-Use Survey, Table 12-1 (March 2006).
3. Natural Gas: CO2 emissions derived from URBEMIS2007 (version 9.2.4) computer program. N2O and CH4 emissions were calculated based on commercial usage rates derived from California Energy Commission's California Commercial End-Use Survey, Table 12-1 (March 2006).
4. Solid Waste: Based on a ratio of project-generated waste and estimated 2005 waste generation rates for City of Sacramento. Emission factors derived from U.S. EPA State Workbook: Methodologies for Estimating Greenhouse Gas Emissions. Waste generation rates derived from California Integrated Waste Management Board, 2007 and U.S. EPA, 1998.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

Strategies to Reduce GHG Emissions

No governmental agency has provided specific guidance on how to conduct GHG analysis for CEQA documents. The following qualitative approach for assessing the project's compliance with AB 32 and other climate change reduction strategies was developed in accordance with several approaches outlined in white papers and technical advisories provided by the Governors Office of Planning and Research, the California Air Pollution Control Officers Association (CAPCOA, 2008), the consulting firm of Jones and Stokes (2007), and the Association of Environmental Professionals (AEP, 2007).

The proposed project would result in high-density mixed-use development within an urbanized area of the City. The project site is within a relatively short distance to downtown Sacramento, which is a regional employment and retail center. Residential development in proximity to the downtown Sacramento area has been shown to reduce average commuting lengths, according to the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan, 2035. Given the high density and mixed-use nature of the proposed development coupled with the proximity to existing employment centers and retail attractions in the City, the proposed project could reduce daily vehicle travel. This would aide in California's goal to reduce GHG under AB 32. Furthermore, the Sacramento 2030 General Plan

includes goals and policies that would reduce GHG emissions from future projects. These goals and policies are included in the Environmental Resources, Air Quality, Mobility, Land Use and Urban Design, Economic Development, Public Health and Safety, Utilities, Education, Recreation, and Culture Elements.

Project Compliance with Assembly Bill 32

In March 2008, the California Attorney General issued a paper for use by local agencies in carrying out their duties under CEQA as they relate to global climate change. Included were examples of various measures that may reduce the emissions of individual projects that result in global warming. As noted in the paper, each of the measures should not be considered in isolation, but as part of a larger set of measures, that together, would help reduce greenhouse gas emissions and the effects of global warming.

As discussed above, statewide emission reduction strategies and measures would result in a substantial decrease in statewide emissions to levels far below current background levels. Of the approximately 228 strategies and measures currently under consideration that would ensure a statewide reduction in GHG emissions, 24 would apply to the proposed project and are shown in Table 4.4-14. Table 4.4-14 lists the measures from the California Attorney General's office that are applicable to the proposed Natomas Crossing project and indicates whether, and how, the project would conform to the measures. The other policies are not applicable to the proposed project because they are directed at State entities (e.g., CARB), are planning-level measures (e.g., for general plans), or apply to particular industries (e.g., auto repair). As shown in Table 4.4-14, the proposed project would be in compliance with each of the 24 applicable State climate change strategies.

There is not any current consensus on identification of a quantitative threshold of significance for greenhouse gas emissions for private development projects. Active discussions at the CARB may lead to such a standard, or a scientific consensus may emerge from the ongoing debate. Based on the information available at this time, the City does not believe that basing impact significance on an arbitrary emission level would contribute to a meaningful analysis on GHG emissions or climate change in the context of CEQA.

Recognizing the importance of the issue, the City is currently working with the CARB, the SMAQMD, and the State Attorney General to develop a comprehensive approach for identifying, assessing, and reducing impacts associated with GHG emissions. State legislation requires action by the Office of Planning and Research within the next year establishing regulations for the evaluation of GHGs, and the City reasonably expects that agreement on methodology and procedures will occur with that time period.

Table 4.4-14
Greenhouse Gas Emissions Measures – Natomas Crossing Project

Office of the California Attorney General Methods to Offset or Reduce Global Warming Impacts	Natomas Crossing Compliance
Energy Efficiency	
Design buildings to be energy efficient. Site buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use.	Mitigation Measure 4.4-3 (i) through (k)
Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings.	See PUD Guidelines Appendix C
Install light colored "cool" roofs, cool pavements, and strategically placed shade trees.	Mitigation Measure 4.4-3 (i) and (j)
Provide information on energy management services for large energy users.	The applicant will provide information on energy management services to future tenants
Install energy efficient heating and cooling systems, appliances and equipment, and control systems.	See PUD Guidelines Appendix C
Install light emitting diodes (LEDs) for traffic, street, and other outdoor lighting.	See PUD Guidelines Appendix C
Limit the hours of operation of outdoor lighting.	See PUD Guidelines Appendix C
Renewable Energy	
Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning. Educate consumers about existing incentives.	The project applicant is working in partnership with SMUD to ensure that certain renewable energy sources are utilized.
Water Conservation and Efficiency	
Create water-efficient landscapes.	See PUD Guidelines Appendix C
Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.	See PUD Guidelines Appendix C
Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.	See PUD Guidelines Appendix C
Restrict the use of water for cleaning outdoor surfaces and vehicles.	See PUD Guidelines Appendix C
Implement low-impact development practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment.	See PUD Guidelines Appendix C
Solid Waste Measures	
Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).	See PUD Guidelines Appendix C
Provide interior and exterior storage areas for recyclables and green	See PUD Guidelines Appendix C

Table 4.4-14
Greenhouse Gas Emissions Measures – Natomas Crossing Project

Office of the California Attorney General Methods to Offset or Reduce Global Warming Impacts	Natomas Crossing Compliance
waste and adequate recycling containers located in public areas.	
Land Use Measures	
Include mixed-use, infill, and higher density in development projects to support the reduction of vehicle trips, promote alternatives to individual vehicle travel, and promote efficient delivery of services and goods.	See Project Description and Transportation and Circulation Mitigation Measure 4.2-6(a)
Incorporate public transit into project design.	Mitigation Measure 4.4-3 (e)
Preserve and create open space and parks. Preserve existing trees, and plant replacement trees at a set ratio.	See PUD Guidelines Appendix C
Include pedestrian and bicycle-only streets and plazas within developments. Create travel routes that ensure that destinations may be reached conveniently by public transportation, bicycling or walking.	Mitigation Measure 4.4-3 (c) through (e); See also PUD Guidelines Appendix C
Transportation and Motor Vehicles	
Limit idling time for commercial vehicles, including delivery and construction vehicles.	Mitigation Measures 4.4-1
Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).	See PUD Guidelines Appendix C
Incorporate bicycle lanes and routes into street systems, new subdivisions, and large developments.	See PUD Guidelines Appendix C
Incorporate bicycle-friendly intersections into street design.	See PUD Guidelines Appendix C
For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including, e.g., locked bicycle storage or covered or indoor bicycle parking.	Mitigation Measure 4.4-3(b)

In the absence of a specific quantitative threshold, expressed in terms of metric tons per year for example, the City evaluates projects on a project-by-project basis to reach a conclusion regarding the significance of the GHG emissions that would result from a project. One measure is the extent to which the project complies with directly applicable emission reduction measures that would support the State's efforts to significantly reduce its contribution to global climate change and the associated impacts. These would include each of the project-applicable strategies currently identified by the CARB or the CAT to comply with Executive Order S-3-05 or AB 32. Based on this information, a qualitative threshold of significance has been formulated, as follows:

- Conflict with or obstruct implementation of the goals or strategies of Executive Order S-3-05, the California Global Warming Solutions Act of 2006, or the Attorney General's suggested global warming mitigation measures.

As indicated, the proposed project would include a substantial number of features and mitigation measures that would reduce the project's contribution to global climate change. Based on the information provided in Table 4.4-14, the City has determined that the proposed project would not conflict with or obstruct implementation of the goals or strategies of Executive Order S-3-05, the California Global Warming Solutions Act of 2006, or the Attorney General's suggested global warming mitigation measures. Therefore, the proposed project would have a ***less than significant*** impact associated with the generation of greenhouse gases.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

4.4-7 Cumulative contribution to local air quality conditions (Carbon Monoxide).

The primary criteria air pollutant of local concern under the cumulative scenario is CO emitted from mobile sources. As shown in Table 4.4-15, predicted maximum 1-hour and 8-hour CO concentrations would be 10.7 ppm and 7.7 ppm, respectively. The estimated CO concentrations take into account the incremental contribution of increased vehicle trips attributable to the proposed project, as well as, vehicle trips associated with existing and future development. Under future cumulative conditions, implementation of the proposed project would not contribute to increased mobile-source CO concentrations at congested roadway intersections that would exceed applicable 1-hour or 8-hour CAAQS (i.e., 20 ppm and 9 ppm, respectively). Continued implementation of regulatory controls, improvements in vehicle emissions efficiency standards and technological improvements are anticipated to result in continued reductions in localized CO concentrations attributable to mobile sources. Therefore, the proposed project's incremental contribution to localized CO concentrations would not be considered cumulatively considerable, resulting in a ***less than significant*** impact.

Table 4.4-15
Local Mobile-Source Carbon Monoxide Concentrations
Cumulative Conditions

Intersection	CO Concentration (ppm)					
	Weekday AM		Weekday PM		Saturday	
	1-hr	8-hr	1-hr	8-hr	1-hr	8-hr
Cumulative Plus Existing Zoning						
E. Commerce Way and Del Paso Road	10.3	7.5	10.7	7.7	10.2	7.4
E. Commerce Way and Arco Arena Main Entrance	8.7	6.7	9.1	6.9	8.0	6.4
E. Commerce Way and Arena Boulevard	9.5	7.1	9.8	7.3	--	--
E. Commerce Way and Natomas Crossing	8.3	6.5	8.4	6.6	--	--
E. Commerce Way and San Juan Road	8.0	6.4	7.9	6.4	--	--
Duckhorn Drive and Natomas Crossing	8.1	6.3	8.2	6.4	--	--
Truxel Road and Arena Boulevard	9.6	7.2	10.1	7.5	8.8	6.8
I-5 Northbound Ramps and Arena Boulevard	--	--	--	--	9.5	7.1
California Ambient Air Quality Standard (CAAQS)	*20.0*	*9.0*	*20.0*	*9.0*	*20.0*	*9.0*
Predicted CO Concentrations Exceed CAAQS?	*No*					
Cumulative Plus Project						
E. Commerce Way and Del Paso Road	10.3	7.5	10.7	7.7	10.4	7.5
E. Commerce Way and Arena Boulevard	9.4	7.0	9.9	7.3	9.7	7.2
E. Commerce Way and Arco Arena Main Entrance	8.7	6.7	9.2	6.9	8.4	6.6
E. Commerce Way and Natomas Crossing	8.4	6.6	8.6	6.7	--	--
E. Commerce Way and Road D2	8.0	6.4	8.2	6.5	--	--
E. Commerce Way and San Juan Road	8.4	6.6	8.5	6.6	--	--
Duckhorn Drive and Natomas Crossing	7.5	6.2	7.7	6.2	--	--
Truxel Road and Arena Boulevard	9.8	7.2	10.3	7.5	9.0	6.9
I-5 Northbound Ramps and Arena Boulevard	--	--	--	--	9.6	7.2
California Ambient Air Quality Standard (CAAQS)	*20.0*	*9.0*	*20.0*	*9.0*	*20.0*	*9.0*
Predicted CO Concentrations Exceed CAAQS?	*No*					

Note: Predicted CO concentrations are the sums of a background component, which includes the cumulative effects of all CO sources in the project area vicinity, and the proposed project's contribution.

Source: AMBIENT Air Quality & Noise Consulting, Air Quality Impact Assessment for Natomas Crossing, March 10, 2009.

Mitigation Measure(s)
None required.

4.4-8 Cumulative contribution to local air quality conditions (Toxic Air Contaminants).

Emissions of toxic air contaminants (TACs) are mostly localized. Except in cases where there is information indicating the possible comingling of pollutants from the proposed project and nearby development, implementation of the project-alone mitigation is typically considered to be sufficient for a finding of "not significant" for cumulative impacts (SMAQMD 2004). As previously discussed, major sources of TACs have not been identified in the project area. Implementation of the proposed project would not be anticipated to result in the installation or operation of any major onsite sources of TACs. However, as discussed in Impact 4.4-5, the proposed project could result in the development of commercial land uses, such as gasoline stations and dry cleaning establishments, which could generate emissions of TACs. Such sources of TACs would be subject to SMAQMD rules and regulations and would be required to implement measures designed to ensure that potential health risks to nearby receptors would not exceed established standards. Therefore, the proposed project's incremental contribution to localized TAC concentrations would not be considered cumulatively considerable, resulting in a ***less than significant*** impact.

Mitigation Measure(s)
None required.

4.4-9 Cumulative contribution to regional air quality conditions (Construction and Operation).

The proposed project would result in significant air quality impacts associated with short-term construction and long-term operational emissions of ozone-precursor pollutants (ROG and NO_X), and airborne particulate matter (PM_{10} and $PM_{2.5}$). Ozone impacts are the result of the cumulative emissions from stationary, area, and mobile sources located within the region; as well as, transport from outside the region. Ozone is formed by the chemical reaction of the ozone-precursor pollutants ROG and NO_X in the presence of sunlight, with the highest ozone concentrations occurring during the warmer summer months. The cumulative contribution of ozone-precursor pollutants from multiple sources result in severe ozone problems, which can adversely affect human health. Increased airborne concentrations of PM can also affect human health. High concentrations of airborne PM typically occur during extended periods of dry conditions accompanied by high winds. Construction activities involving the ground-disturbing activities can also contribute to elevated airborne concentrations of PM. The SVAB is classified non-attainment for ozone and PM_{10}.

For the evaluation of cumulative ozone and PM impacts, the SMAQMD recommends that the project-level significance thresholds be relied upon for determination of cumulative air quality impacts. Accordingly, if project-generated emissions of either of the ozone precursor pollutants (i.e., ROG and NO_X) or PM_{10} would exceed the short-term or long-term thresholds, then the project would be considered to have a

cumulatively considerable incremental contribution to a significant cumulative impact. Furthermore, the air emissions inventories and projections that are used for regional air quality attainment and maintenance planning are based, in part, on projected growth levels identified in local planning documents. Therefore, a project that would result in a change in land use that would result in increased emissions, in comparison to existing land use designations, would be considered to have a cumulatively considerable contribution to a significant cumulative impact.

As discussed in Impacts 4.4-1 through 4.4-4, the proposed project's short-term increase in construction-generated emissions of criteria air pollutants, as well as the short-term increase in fugitive dust, and the project's long-term increases of criteria air pollutants are expected to exceed SMAQMD significance thresholds. In addition, implementation of the proposed project would result in a change in land use on the site. In comparison to existing zoning, as discussed earlier in Impact 4.4-3 and depicted in Table 4.4-10, implementation of the proposed project would result in net increases of approximately 367 lbs/day of ROG. Emissions of NO_X would increase by approximately 212 lbs/day during the summer months and approximately 316 lbs/day during the winter months. Emissions of PM_{10} would increase by approximately 476 lbs/day during the summer months and approximately 501 lbs/day during the winter months. A majority of the estimated net increases in emissions would be attributable to increases in vehicle miles traveled (VMT) associated with the proposed land uses. Compared to development under existing zoning for the site, the proposed project would result in an estimated net increase of 38,083 trips/day (DKS 2008). Project-generated increases in emissions could conflict with emissions inventories contained in regional air quality attainment plans and could contribute, on a cumulative basis, to the region's non-attainment status.

Implementation of MM 4.4-1 and MM 4.4-2 would reduce and/or offset short-term construction-generated emissions to a less-than-significant level. Implementation of MM 4.4-3 would result in reductions of onsite emissions associated with energy usage and would include various measures to promote public transit, pedestrian access, and alternative means of transportation. However, because a majority of the emissions would be associated with offsite vehicle travel associated with projected increases in VMT attributable to the proposed project, implementation of the proposed mitigation measures would not reduce operational emissions to a less-than-significant level. Net increases in emissions attributable to the proposed project would not be reduced to below levels estimated for existing zoning conditions. Implementation of the proposed project would, therefore, result in an increase in regional criteria air pollutants that would conflict with the emissions inventories used for regional air quality attainment and maintenance planning. For this reason, and the fact that the project's operational emissions would exceed the air district's long-term emissions threshold, project's cumulative contribution to regional air quality conditions would be considered *significant*.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce short-term and long-term increases in emissions attributable to the proposed project. However, as noted in Impact 4.4-3, long-term operational increases in emissions would still be anticipated to exceed SMAQMD's significance threshold. As a result, the impact would be considered ***significant and unavoidable***.

4.4-9(a) Prior to the issuance of each grading permit, the City of Sacramento shall coordinate with the SMAQMD and SACOG to ensure that increases or decreases in VMT attributable to the proposed project are accounted for in the VMT calculations used for the development of regional emissions inventories.

4.4-9(b) Implement Mitigation Measures 4.4-1(a-d), 4.4-2, and 4.4-3.

4.4-10 Cumulative impacts related to greenhouse gas emissions.

The Sacramento 2030 General Plan Master EIR discusses GHG emissions and climate change. The Master EIR concludes that the GHGs that would be generated by development that is consistent with the 2030 General Plan would result in a significant and unavoidable cumulative impact (See Final MEIR, Errata No. 2). The Sacramento 2030 General Plan implements an overall vision for development in the community that focuses on utilization of infill sites where urban infrastructure and services exist, and which will result in a reduction in vehicle miles traveled, one of the primary sources of GHGs.

The proposed project would be consistent with the land use principles found in the Sacramento 2030 General Plan, which would facilitate the City's efforts to reduce GHG emissions through land use design. As discussed above, Table 4.4-15 demonstrates various components that have been identified by the Attorney General to reduce GHG emissions and identifies the extent to which the proposed project is consistent with such measures.

A full discussion of GHG emissions is included in the Sacramento 2030 General Plan Master EIR (Chapter 8.1) and the Sacramento 2030 General Plan Final Master EIR (See Response to Letter 2). Because the proposed project would not impede the City's efforts with respect to the reduction of GHG emissions, and would be consistent with the land use principles embodied in the Sacramento 2030 General Plan, the proposed project's contribution to greenhouse gases would not be cumulatively considerable, and the impact would be ***less than significant***.

Mitigation Measure(s)
None required.

Endnotes

[1] City of Sacramento, *Sacramento 2030 General Plan*, March 2009.
[2] City of Sacramento, *Sacramento 2030 General Plan Master EIR*, March 2009.
[3] Ambient Air Quality and Noise Consulting, *Air Quality Impact Assessment for Natomas Crossing*, March 10, 2009.
[4] California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective,* April 2005.

4.5 HYDROLOGY, WATER QUALITY, AND DRAINAGE

4.5 HYDROLOGY, WATER QUALITY, AND DRAINAGE

4.5.0 INTRODUCTION

The Hydrology, Water Quality, and Drainage chapter describes existing drainage and water resources for the project site, and evaluates potential impacts of the project with respect to flooding and surface water resources. Groundwater and water supply impact analyses are discussed in the Natomas Crossing Initial Study. Information for this chapter was drawn from the *Sacramento 2030 General Plan,*[1] *Sacramento 2030 General Plan MEIR,*[2] the *Master Drainage Study for Natomas Crossing Area 3,*[3] and the *Draft Engineer's Report for the Sacramento Area Flood Control Agency Capital Assessment District NO. 4.*[4]

4.5.1 EXISTING ENVIRONMENTAL SETTING

The section below describes the existing hydrological features of the project site and the surrounding region, and the water quality of the existing resources in and around the project site.

Regional Geography and Climate

The City of Sacramento is located within the Sacramento River Basin at the confluence of two major rivers: the Sacramento and the American. The Sacramento River Basin is composed of approximately 26,500 square miles, and is bound by the Sierra Nevada Mountain Range to the east, the Coast Range to the west, the Cascade Range and Trinity Mountains to the north, and the Sacramento-San Joaquin Delta (Delta)/Central Sierra Nevada area to the south. The American River watershed encompasses approximately 1,900 square miles and is a tributary to the Sacramento River. The American River watershed is situated on the western slope of the Sierra Nevada, extending from the spine of the Sierra Nevada westward to the City of Sacramento. The Sacramento River flows south from Shasta Lake in Northern California, and the American River flows west from the Sierra Nevada Mountains. The American River meets the Sacramento River at the western boundary of the City. Forty miles south of the City, the Sacramento River is joined by the San Joaquin River. The combined rivers flow into the Delta and San Francisco Bay.

The Sierra Nevada snowfields are 70 miles east of Sacramento and typically provide a plentiful supply of water to the valley streams during the dry season. From east to west, as the watershed elevation decreases, vegetation is principally characterized by coniferous forests, oak-studded grasslands, and finally grasslands. Ninety-five percent of the annual precipitation occurs between November and April as both rain and snow. Although the mountains and reservoir system serve to arrest the full brunt of winter storms, runoff from mountain snowmelt and rainstorms occasionally flood the Sacramento River and associated tributaries.

The climate of Sacramento is characterized by hot, dry summers and cool, rainy winters. The mean maximum July temperature in Sacramento is 93 degrees Fahrenheit (°F) and the mean

minimum is 60°F. The mean maximum January temperature in Sacramento is 54°F and the mean minimum is 40°F. The Sacramento climate is arid with an average annual rainfall of 17.22 inches; with most of the rain occurring during the months of November through April. Major storm events can produce high flows throughout the Sacramento and American River systems. Flood control facilities along these rivers consist of a comprehensive system of dams, levees, overflow weirs (diversion structures intended to ensure that flows in the river do not exceed an identified maximum level), drainage pumping plants, and flood control bypass channels. The flood control network seeks to control water flows by regulating the amount of water passing through a particular reach of the river. Urban runoff flows are directed into this system by the City via two systems: (1) conveyance to the Sacramento River and American River through sumps, pipelines, and treatment facilities; or (2) conveyance by the City's Combined Sewer Service System (CSS), along with sewage to the Sacramento Regional Wastewater Treatment Plant (SRWTP) located near Elk Grove.

Regional Flooding

In the City of Sacramento's past, floods have been the most frequent and considerable natural hazard affecting the local environment and economy. Three different types of flood events occur in the Sacramento area: flash, riverine, and urban stormwater. All of the flood types typically result from severe weather and heavy rainfall, either in the City or in areas upstream of the City (i.e., the Sacramento River watershed in the northern portion of the Valley).

The term "flash flood" describes localized floods of high volume and short duration, generally less than four hours. This type of flood usually results from a heavy rainfall on a relatively small drainage area. Precipitation of this sort usually occurs in the spring and summer. Dam failures also often result in flash flooding.

Riverine flooding occurs when a watercourse exceeds "bank-full" capacity and is the most common type of flood event. Riverine flooding occurs as a result of prolonged rainfall that is combined with saturated soils from previous rain events, or combined with snowmelt, and is characterized by high peak flows of moderate duration and by a large volume of runoff. Riverine flooding occurs in river systems whose tributaries drain large geographic areas and can include many watersheds and sub-watersheds. The duration of riverine floods varies from a few hours to many days. Factors that directly affect the amount of flood runoff include precipitation amount, intensity and distribution of rainfall, soil moisture content, channel capacity, seasonal variation in vegetation, snow depth, and water-resistance of the surface due to urbanization. In Sacramento County, riverine flooding can occur anytime from November through April. Flooding is more severe when previous rainfall events result in saturated ground conditions.

Urbanization may increase peak flow runoff, as well as the total volume of stormwater runoff from a site. The increase is dependent upon the existing soil and topographic conditions as compared to the proposed land uses. The Natural Resources Conservation Service, a division of the U.S. Department of Agriculture, has surveyed the soil types in Sacramento County, and much of the County is characterized by soils with low permeability and high runoff rates.

In general, the area adjacent to a stream, river, or other water channel is called the floodplain. The floodplain is the area that is inundated during a flood event and is often physically discernible as a broad, flat area created by historical floods. Floodplains are illustrated on inundation maps produced by the Federal Emergency Management Agency (FEMA), which show areas of potential flooding and water depths. The floodplain is most often referred to as the area that is inundated by a 100-year flood event. A 100-year flood event has a one percent chance of being equaled or exceeded in any given year. An area within a designated 100-year floodplain may have substantially less protection and be susceptible to flooding on a regular basis; however, the 100-year flood protection is a requirement for most construction. The 100-year flood is the national minimum standard to which communities regulate their floodplains through the National Flood Insurance Program (NFIP).

Major storm events can produce high water flows throughout the Sacramento and American river systems. The watersheds of these two main rivers drain most of northern California and part of southern Oregon, for a total of some 26,000 square miles. An extensive system of dams, levees, overflow weirs, drainage pumping plants, and flood control bypass channels strategically located on the two rivers has been established to protect the area from flooding.

Regional Drainage

As outlined above, the City of Sacramento is at the confluence of the Sacramento River and the American River in the Sacramento River Basin. Six small tributaries of the Sacramento River pass through and provide drainage for the City of Sacramento. These tributaries include Dry Creek, Magpie Creek, and Arcade Creek in the northern portion of the City, and Morrison Creek, Elder Creek, and Laguna Creek in the southern portion of the City.

The volume of water flowing through the Sacramento levee system is primarily controlled by Folsom Dam on the American River, approximately 20 miles east of the project site, and the reserve overflow area of the Yolo Bypass on the Sacramento River. The majority of the City, including the project area, could be subject to flooding from failure of the levee systems along the Sacramento and American rivers. Folsom Dam was completed in 1956 and was designed to reduce flood flows in the American River to a flow rate that could be safely carried by the downstream levees.

Folsom Dam was designed to provide flood control for Sacramento up to a 500-year storm (a storm with a 0.2 percent chance of occurring in any given year). However, after the dam became operational, a series of record storms and flood flows resulted in a re-evaluation of the dam's design flood capacity. In 1986, Folsom Dam's performance was downgraded to an approximately 60-year storm (1.67 percent chance of occurring in any given year). An initial reconnaissance report, "American River Investigation", January 1988, concluded that Folsom Dam and the American River levees were only capable of handling a 70-year flood event (Sacramento County, 1993).[5] Nevertheless, the levees contained a volume of water generated by an 80-100 year storm event with only localized flooding.

In the wake of the 1986 storm, efforts were undertaken to reduce the Sacramento area's vulnerability to catastrophic flooding. In 1989, the Sacramento Area Flood Control Agency

(SAFCA), a joint powers agency established by the City of Sacramento, Sacramento County, Sutter County, the American River Flood Control District, and Reclamation District 1000 (RD-1000), was formed with the goal of ensuring that at least 100-year flood protection was achieved for the area. Ultimately, the goal of SAFCA is to reach 200-year flood protection.

In 1994, SAFCA and the U.S. Bureau of Reclamation agreed to adjust and coordinate operations at Folsom Dam so that upstream reservoirs could assist in flood control measures. Congress approved funding for American River levee improvements in 1996; and approved additional funding for flood control projects, including the enlargement of the outlets on Folsom Dam in 1996. Congress authorized funding to raise the height of Folsom Dam in the Energy and Water Development Appropriations Act of 2004. Due to the rapidly rising cost of construction, the project design, now called the Folsom Dam Joint Federal Project, has been revised to raise the height of the dam and include a spillway for flows greater than the dam outlets can currently handle. Construction on the revised spillway design began in December 2007, and is expected to be completed in 2015.

The Yolo Bypass is part of the Sacramento River Flood Control Project (SRFCP). The SRFCP includes six weirs, three flood control relief structures, and an emergency overflow roadway. Weirs located along the Sacramento River are lowered and armored sections of levees that allow flood waters in excess of the downstream channel capacity to flow into a bypass channel or basin. The Yolo Bypass is a flood bypass area that primarily protects the City of Sacramento and surrounding communities from flooding along the Sacramento River. The Yolo Bypass conveys 80 percent of the Sacramento River's floodwaters through Yolo and Solano Counties until rejoining the Sacramento River near Rio Vista.

Natomas Basin

The Natomas Basin is a low-lying area east of the Sacramento River, north of the confluence of the Sacramento River and American River. Flood protection and drainage in the Natomas Basin is achieved through a system of levees, canals, and pump stations. In the undeveloped areas of Natomas, canals and drains serve the dual purpose of providing flood control and irrigation water for farmers. Irrigation is provided by the Natomas Central Mutual Water Company (NCMWC). Drainage and flood control for the Natomas Basin is provided by RD-1000, a public agency that has a coinciding service area and several joint-use facilities with NCMWC. RD-1000 operates the primary drainage canals within the Natomas Basin and is responsible for conveying and pumping urban and non-urban stormwater runoff from the basin (See Figure 4.5-1, RD-1000 Facilities). Runoff from developed and agricultural lands within the Natomas Basin flows into numerous local drainage ditches that ultimately drain into the primary RD-1000 canals. RD-1000's primary system of interior drains includes the following:

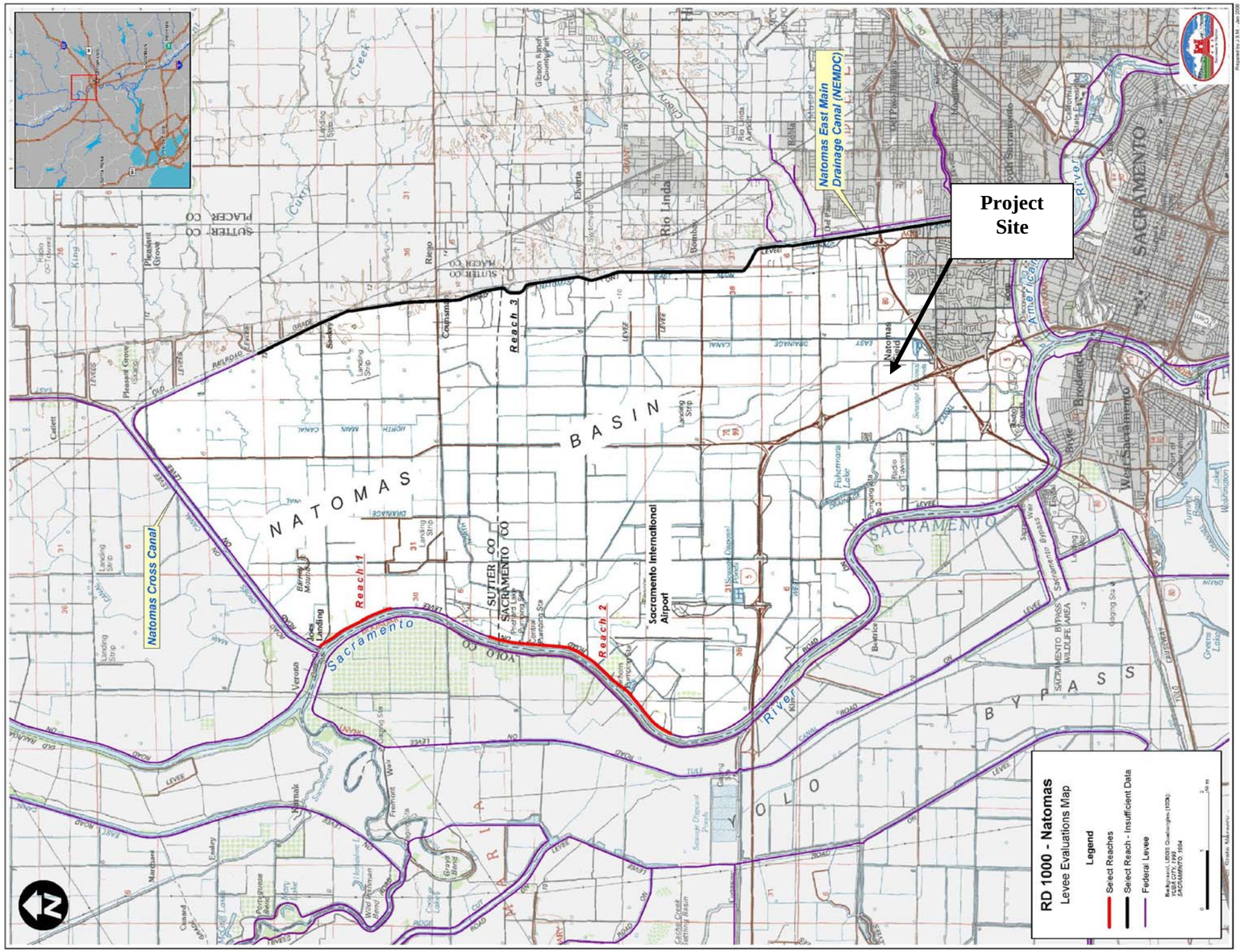
- The East Drainage Canal (EDC) conveys drainage water from the northern and eastern Natomas Basin into the Main Drainage Canal (MDC) northwest of I-80/I-5 interchange. To the east the EDC runs parallel to the project site, before turning and running west just north of the I-80/I-5 interchange. The EDC is approximately 0.55 miles south of the project site at the nearest point.

- The West Drainage Canal (WDC) conveys drainage water from the western Natomas Basin northwest of Sacramento International Airport into the MDC. The WDC is approximately 0.75 miles west of the project site at the nearest point.
- The Main Drainage Canal (MDC) conveys the combined flows of the EDC and WDC through South Natomas west of I-80. Drainage water from the MDC is pumped into the Sacramento River approximately 2.1 miles south of the project site.
- The North Drainage Canal (NDC) is an interior canal that conveys drainage water from the Sutter County portion of the Natomas Basin northward, where the water is pumped into the Natomas Cross Canal (NCC).
- The NCC conveys drainage water from central portions of Sutter County westward to the Sacramento River. The NCC drains into the Sacramento River approximately 10.3 miles northwest of the project site.
- The Natomas East Main Drainage Canal (NEMDC) conveys drainage water from Dry Creek, Arcade Creek, and a portion of the Natomas area north of Dry Creek. The NEMDC outfalls to the Sacramento River near the confluence of the American River and Sacramento River, approximately 2.27 miles southwest of the project site.

The City is responsible for maintenance of internal conveyance, detention basins, and pump stations that discharge into the system; RD-1000 is responsible for maintenance of the canal system. The North Natomas Comprehensive Drainage Plan (CDP) identifies various basin areas including detention basins and pumping facilities to convey discharge to the existing RD-1000 system within the North Natomas Community Plan area. Developed flow discharges to the RD-1000 system are limited to approximately 0.1 cubic foot per second (cfs) per acre, which is generally the standard for development in North Natomas.

Historically, the flood control system within the Natomas Basin was adequate for agricultural use, but the urbanization of the basin has resulted in the need for an increased level of flood protection. The North Natomas CDP is among the flood control efforts that created or modified stormwater detention basins, detention basin pump stations, and trunk lines. As part of the North Natomas CDP, the North Area Local Project, a flood control project begun in 1993 under the direction of the Sacramento Area Flood Control Agency (SAFCA), was completed in 1998. As a result, North and South Natomas (including the project site) were deemed to have a “100-year” level of flood protection by FEMA. However, in December 2008 FEMA determined the levees did not meet the FEMA criteria for 100-year flood protection.

Figure 4.5-1
RD-1000 Facilities



Source: US Army Corps of Engineers, Natomas Basin 3% Event Screening Level Levee Certification Analysis, January 4, 2008.

The Sacramento Area Flood Control Agency has undertaken numerous improvement projects over the last decade, which focused on providing facilities that could contain a 200-year flood in the Lower Sacramento and American Rivers and the diversion channels around the perimeter of the Natomas basin. In 1998, the U.S. Army Corps of Engineers (USACE) concluded that levee raising and strengthening projects completed in 1986 (as part of the Sacramento Urban Levee Reconstruction Project and North Area Local Project) provided the Natomas Basin adequate protection to safely contain a 100-year flood. However, high-water events that occurred during 1997 in the Sacramento Valley and the resulting failure of some levees began to alter the geotechnical engineering community's understanding and approach to deep underseepage issues. (Underseepage occurs when the weight of flood waters forces water under or through a levee and undermines a levee from below, as compared to overtopping which occurs when floodwaters flow over the top of a levee). Following the floods of 1997, USACE and SAFCA assessed subsurface conditions to determine the need for deep underseepage remediation for the Natomas area levees. These studies determined that, at some locations, a potential for subsurface permeability exists that could threaten the stability of the affected levees if the problems are not addressed.

Because deep underseepage was a newly recognized concern in the Sacramento Valley, and because of the magnitude and anticipated cost for needed levee improvements, USACE and other nonfederal partners (i.e., the State and SAFCA) determined that a panel of experts should be convened to review and refine the USACE guidelines for evaluating the risk of underseepage and for designing remedial measures. As a result, the USACE Levee Seepage Task Force convened in early 2003 and completed their work in July 2003. Based on the task force findings, USACE developed a new Standard Operating Procedure Engineering Design Guidance 2003 (SOP EDG-03) for Geotechnical Levee Practice, which recommended guidelines for evaluating, designing, and maintaining levees. These guidelines were adopted by USACE's Sacramento District in August 2004. With the new SOP EDG-03 as a guide, USACE and SAFCA collaborated to develop a plan for moving forward with Natomas levee improvements needed to achieve 200-year flood protection and to address priority levee deficiencies that may be identified.

In 2005 and early 2006, SAFCA conducted additional assessments of seepage potential along the east levee of the Sacramento River, the south levee of the NCC, and the north levee of the American River in the Natomas Levee Evaluation Study (NLES)[6] and concluded that approximately 26 miles of the levees protecting the Natomas Basin were in need of improvements to correct seepage potential. One of the main purposes for the NLES was to evaluate how application of the new underseepage guidelines adopted by USACE's Sacramento District would affect flood protection for the Natomas Basin. The NLES assumed that the principal method of addressing identified problems in Natomas area levees would be to raise and strengthen the affected levees, control seepage, and stabilize eroding banks using techniques similar to those that have been implemented along the Lower American River. In addition, the NLES includes a conceptual assessment of constructing a new secondary levee in the upper reach of the Natomas area set back approximately 1,000 feet from the existing Sacramento River east levee.

In 2006, SAFCA completed the NLES Final Report. The NLES Final Report concluded that considerable improvements would be needed along the south levee of the NCC, the east levee of

the Sacramento River, and the north levee of the American River in order to provide the Natomas area with at least a 200-year level of flood protection and to redesignate the area to a "low" risk status. While the purpose of the study was to address needed improvements to provide 200-year flood protection, the NLES also included an evaluation of the levees' ability to withstand 100-year flood events. USACE and SAFCA determined that at some locations, the calculated seepage exit gradients exceeded adopted guidelines and the borings collected along the levees indicated a potential for subsurface permeability that, if not addressed, could affect the stability of the affected levees. In review of the NLES, USACE issued a letter to SAFCA stating the USACE "can no longer support its original position regarding the certification of the levees in the Natomas area." In December, FEMA designated the Natomas Basin within a Special Flood Hazard Area (SFHA) under the AE designation.

The Sacramento Area Flood Control Agency has completed an environmental document that evaluates the impacts of the Natomas Levee Improvement Project (NLIP). Construction will begin in 2008, and is anticipated to be completed in 2012. The primary goal of the improvements is to correct freeboard deficiencies, levee seepage potential, and streambank erosion conditions to provide a 200-year level of protection. In April of 2007, voters approved the establishment of an assessment district to collect fees that would fund the necessary improvements that would provide 200-year flood protection. SAFCA has also adopted a development impact fee that will be collected from new development within the Natomas area (in addition to the assessment district fee) to fund additional improvements to the levee system that are needed in the future to respond to changing geotechnical and hydrological conditions in order to ensure that adequate flood protection is provided in the Natomas area.

Local Flooding

The proposed project site is located within a potential flood zone. The Sacramento River is located approximately two miles west of the project site, and the American River is approximately four miles south. In December 2006, FEMA announced a revision to the Flood Insurance Rate Map (FIRM) containing the project site. Based on information provided by SAFCA and the USACE, FEMA found that the area constituted a Special Flood Hazard Area (SFHA). FEMA issued a FIRM revision with an updated AE designation for the Natomas Basin on December 8, 2008. The AE designation requires that all new structures be built above the 100-year flood level, which could be as much as 33 feet in some parts of Natomas. FEMA has previously rejected the City's application for an A99 designation. In addition, FEMA has indicated that the AR designation is not appropriate as levee tests have indicated that the levees do not provide 30-year flood protection. The AE Special Flood Hazard Zone is defined as follows:

> **AE** - Zone AE is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the Flood Insurance Study by detailed methods of analysis. In most instances, Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

Capital Assessment District No. 4

In April of 2007 Sacramento residents approved a new assessment district, Capital Assessment District No. 4, to fund levee improvements. Capital Assessment District No. 4 was established to provide the local share of the cost of constructing and maintaining the improvements that, based on current engineering and information, are needed to achieve SAFCA's 100-year and 200-year flood protection goals. Capital Assessment District No. 4 replaces the two former capital assessment districts: North Area Local Project Capital Assessment District No. 2 and American River/South Sacramento Streams Group Capital Assessment District No. 3. The new assessment district covers the properties located in the two former districts and in the 200-year floodplain area covered by SAFCA's Operations and Maintenance Assessment District No. 1. Benefit zones were established for the different areas subject to flooding to reflect their needs and responsibilities. The proposed project is located in the Natomas Basin/North Area Local Project (NB/NALP). The NB/NALP is responsible for funding a share of the levee improvements for the Natomas basin and continuing to contribute to a share of the remaining debt on the North Area Local Project (NALP).

Average property tax assessments within Capital Assessment District No. 4 will increase $35 per year for approximately 140,000 parcels in the metro area, to fund $326 million in projects over 30 years. Leveraged against State and federal funds, the assessment will fund improvements totaling $2.68 billion. The stated goal is to double flood protection to a 200-year standard in a decade. That represents a one-half percent chance of flooding in any given year. Projects that are/will be funded by the assessment include the following:

- In December 2007, the U.S. Bureau of Reclamation began excavating a new spillway at Folsom Dam, a key component of the plan to double the region's flood protection. The $1.3 billion project is expected to take seven years to complete and requires $146 million from SAFCA;
- Construction is expected to begin in the Spring of 2008 on a project to control seepage in the south levee of the Natomas Cross Canal. The $13 million project will build a slurry wall 75 feet deep along 1.2 miles of the levee's western half. The project will address seepage fears that led the U.S. Army Corps of Engineers last year to warn that Natomas does not meet minimal 30-year protection standards; and
- A second cross canal project in 2009, costing at least $40 million, will build deeper slurry walls in the levee's eastern half, raising the entire five-mile cross canal levee by three feet.

More Natomas repairs will come later along the Sacramento River, including 11.5 miles of levee raising, seepage walls and berms to bolster the inside of the levee.

Local Drainage

For stormwater conveyance purposes the North Natomas Community Plan area has been separated into eight drainage basins. The proposed project is located within Drainage Basin No. 6 (currently referred to as Basin 16), which together with Basin No. 5 composes North Natomas Community Facilities District 2 No. 98-02. Stormwater within each basin is managed through

drainage systems consisting of collection, conveyance, detention storage, and pumping facilities. The drainage system conveys runoff by gravity flow through trunk networks, which discharge into regional detention basins. The City of Sacramento storm-drainage pump stations convey water from the detention basins into the RD-1000 channel system. The flow is then conveyed in the RD-1000 channel system to the existing pump stations, which discharge into the Sacramento River. All required improvements to the RD-1000 downstream system have been completed under Community Facilities District 97-01 administered by the City of Sacramento.

Water Quality

The City's municipal water is received from the American River and Sacramento River. The Sacramento General Plan states that the water quality of the American River is considered to be very good. The Sacramento River water is considered to be of good quality, although higher sediment loads and extensive irrigated agriculture upstream of Sacramento tends to degrade the water quality. During the spring and fall, irrigation tailwaters are discharged into drainage canals that flow to the Sacramento River. In the winter, runoff flows over these same agricultural areas. In both instances, flows are highly turbid and introduce large amounts of herbicides and pesticides into the drainage canals, particularly rice field herbicides in May and June. The turbidity (i.e., clarity) of the river is changed from relatively clear to turbid from sediment laden discharges.

The Central Valley Regional Water Quality Control Board (CVRWQCB) has primary responsibility for protecting the quality of surface and groundwaters within the City. The CVRWQCB's efforts are generally focused on preventing either the introduction of new pollutants or an increase in the discharge of existing pollutants into bodies of water that fall under the CVRWQCB's jurisdiction. The CVRWQCB is concerned with all potential sources of contamination that may reach both these subsurface water supplies and rivers through direct surface runoff or infiltration. Stormwater runoff is collected in City drainage facilities and is sent directly to the Sacramento River. Reaches of the Sacramento River flow through the Sacramento urban area that are considered impaired and listed on the Clean Water Act (CWA) Section 303(d) list of impaired and threatened waters for California. Section 303(d) establishes the total maximum daily load (TMDL) process to assist in guiding the application of state water quality standards, requiring the states to identify streams in which water quality is impaired (affected by the presence of pollutants or contaminants) and to establish the TMDL or the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects. The 303(d) list breaks up the Sacramento River into four sections, Keswick Dam to Cottonwood Creek, Cottonwood Creek to Red Bluff, Red Bluff to Knights Landing, and Knights Landing to the Delta. All sections of the Sacramento River are listed on the 303(d) list for unknown toxicity, and Red Bluff to the Delta is also listed for mercury. Mercury is primarily a legacy of gold mining.

The City of Sacramento has received a municipal National Pollutant Discharge Elimination System (NPDES) permit from the CVRWQCB. Under this permit, the Permitees are required to develop, administer, implement, and enforce a Comprehensive Stormwater Management Program (CSWMP) in order to reduce pollutants in urban runoff to the Maximum Extent Practicable. The CSWMP emphasizes all aspects of pollution control, including, but not limited

to, public awareness and participation, source control, regulatory restrictions, water quality monitoring, and treatment control.

Controlling urban runoff pollution during and after construction is critical to the success of the Sacramento Comprehensive Stormwater Management Program. The New Development Management Program (NDMP) is an element of the Comprehensive Stormwater Management Program being implemented by the City to specifically control post-construction urban runoff pollutants from new development or redeveloped areas. The goal of the NDMP is to minimize runoff pollution typically caused by land development and to protect the beneficial uses of receiving waters by employing a sensible combination of pollutant source control and site-specific treatment control measures.

4.5.2 REGULATORY BACKGROUND

The following is a description of federal, State, and local environmental laws and policies that are relevant to the review of hydrology and water quality under the California Environmental Quality Act (CEQA) process.

Federal

Federal Emergency Management Agency (FEMA)

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

FEMA allows non-residential development in the floodplain; however, construction activities are restricted within the flood hazard areas, depending upon the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations (CFR). These standards are implemented at the State level through construction codes and local ordinances; however, these regulations only apply to residential and non-residential structure improvements.

Federal Clean Water Act

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the federal Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. Section 307 of the CWA describes the factors that EPA must consider in setting effluent limits for priority pollutants.

Nonpoint sources are diffuse and originate over a wide area rather than from a definable point. Nonpoint pollution often enters receiving water in the form of surface runoff, but is not conveyed

by way of pipelines or discrete conveyances. As defined in the federal regulations, such nonpoint sources are generally exempt from federal NPDES permit program requirements.

However, two types of nonpoint source discharges are controlled by the NPDES program: nonpoint source discharge caused by general construction activities, and the general quality of stormwater in municipal stormwater systems.

Construction Site Runoff Management

In accordance with NPDES regulations, in order to minimize the potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting one (1) acre or more must obtain a General Construction Activity Stormwater Permit. Permit applicants are required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and implement Best Management Practices (BMPs) to reduce construction effects on receiving water quality by implementing erosion and sediment control measures.

State

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) are responsible for ensuring implementation and compliance with the provisions of the federal CWA and California's Porter-Cologne Water Quality Control Act. As discussed above in the water quality discussion, the project site is situated within the jurisdiction of the Central Valley Region (CVR) of the RWQCB (Region 5). The CVRWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within the CVRWQCB's jurisdiction.

Water quality objectives for the Sacramento River and the associated tributaries (e.g., Cache Creek, Willow Slough, and Yolo Bypass) are specified in the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (Basin Plan) prepared by the CVRWQCB in compliance with the federal CWA and the Porter-Cologne Act. The Basin Plan establishes water quality objectives, and implementation programs to meet stated objectives and to protect the beneficial uses of water in the Sacramento-San Joaquin River Basin. Because the City of Sacramento is located within the CVRWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the Basin Plan requirements.

Local

City of Sacramento General Plan

The following City of Sacramento General Plan goals and policies are applicable to hydrology and water quality:

Environmental Constraints

EC 2.1.5 Floodplain Requirements. The City shall regulate development within floodplains in accordance with State and Federal requirements and maintain the City's eligibility under the National Flood Insurance Program.

EC 2.1.6 New Development. The City shall require evaluation of potential flood hazards prior to approval of development projects, and require proponents of new development to submit drainage studies that adhere to City stormwater design requirements and incorporate measures to prevent on- or off-site flooding.

Utilities

U 4.1.1 Adequate Drainage Facilities. The City shall ensure that all new drainage facilities are adequately sized and constructed to accommodate stormwater runoff in urbanized areas.

U 4.1.4 Watershed Drainage Plans. The City shall require developers to prepare watershed drainage plans for proposed developments that define needed drainage improvements per City standards, estimate construction costs for these improvements, and comply with the City's National Pollutant Discharge Elimination System (NPDES) permit.

Environmental Resources

ER 1.1.4 New Development. The City shall require new development to protect the quality of water bodies and natural drainage systems through site design, storm water treatment, and best management practices (BMPs) consistent with the city's NPDES Permit.

ER 1.1.5 Post-Development Runoff. The City shall impose requirements to control post-development peak storm water runoff discharge rates and velocities to prevent or reduce downstream erosion and protect stream habitat.

ER 1.1.6 Construction Site Impacts. The City shall continue to require construction contractors to comply with the City's erosion and sediment control and stormwater management and discharge control ordinances.

It should be noted that the City of Sacramento is in the process of review and adoption of the City of Sacramento 2030 General Plan.

North Natomas Comprehensive Drainage Plan

The Comprehensive Drainage Plan has the following objectives:

- Provide drainage for urban development within the North Natomas Comprehensive Drainage Plan area; and
- Provide flood control for the Comprehensive Drainage Plan service area while maintaining 100-year water levels at existing levels.

Implementation of the North Natomas Comprehensive Drainage Plan provides flood protection in the North Natomas area. With implementation, the drainage plan conveys urban runoff to the Sacramento River by detaining surface runoff in detention basins prior to slow release matching the pre-development discharge rates.

City of Sacramento Stormwater Management and Control Code

The City Stormwater Management and Control Code (Chapter 13.16 of the City Code) is intended to control non-stormwater discharges to the stormwater conveyance system; eliminate discharges to the stormwater conveyance system from spills, dumping, or disposal of materials other than stormwater; and reduce pollutants in urban stormwater discharges to the maximum extent practicable. Non-stormwater discharges are prohibited except where the discharge is regulated under a NPDES permit (See the descriptions of the NPDES in the discussions of federal and State water quality regulations above). Discharges from specified activities that do not cause or contribute to the violation of any plan standard, such as landscape irrigation and lawn watering and flows from fire suppression activities, are also exempt from this prohibition.

City of Sacramento Grading, Erosion, and Sediment Control Ordinance

The City Grading, Erosion, and Sediment Control Ordinance (Title 15, Chapter 15.88 of the City Code) sets forth rules and regulations to control land disturbances, pollution, and erosion and sedimentation resulting from construction activities. With limited exceptions, grading approval must be received from the City Department of Utilities before construction. All project applicants, regardless of project location, are required to prepare and submit separate erosion and sediment control plans applicable to the construction and post-construction periods. The ordinance also specifies other requirements, such as written approval from the City for grading work within the right-of-way of a public road or street, or within a public easement.

City of Sacramento Stormwater Quality Improvement Plan (2004)

The City of Sacramento Stormwater Management Program is a comprehensive program comprising various program elements and activities designed to reduce stormwater pollution to the maximum extent practicable and eliminate prohibited non-stormwater discharges in accordance with federal and State laws and regulations. These laws and regulations are implemented through NPDES municipal stormwater discharge permits. An element of the program, the Construction Element (CE), was designed to reduce the discharge of stormwater pollutants to the maximum extent practicable by requiring construction sites to reduce sediment

in site runoff and reduce other pollutants such as litter and concrete wastes through good housekeeping procedures and proper waste management. The CE strategy includes the following components:

- Ensure each grading permit or Improvement Plan includes an erosion and sediment control plan detailing erosion, sediment, and pollution control measures to be used during construction of the project.

- Ensure applicable projects obtain a State General Construction Permit and prepare a SWPPP containing:

    1) A vicinity map;
    2) A site map;
    3) A site-specific listing of potential sources of stormwater pollution;
    4) The type and location of erosion and sediment control BMPs to be employed;
    5) The name and telephone number of the person responsible for implementing the SWPPP; and
    6) A certification/signature by the landowner or authorized representative.

- Inspect and enforce the project's erosion and sediment control plan, the Grading, Erosion, and Sediment Control Ordinance, and the Stormwater Discharge Control Ordinance.

Another element of the program, the New Development Element (NDE), was designed to specifically control post-construction urban runoff pollutants from new development or redeveloped areas. The NDE strategy for reducing stormwater pollutants from new development includes the following:

- Employing applicable source controls on all projects;
- Employing regional water quality treatment control measures, such as water quality detention basins, for areas of large development (i.e., areas generally greater than 20 acres), where the opportunity exists; and
- Employing on-site treatment control measures for commercial, industrial, and multifamily residential land uses of one acre or more in areas not served by regional water quality control measures.

<u>City of Sacramento Floodplain Management Ordinance</u>

This Floodplain Management Ordinance is designed to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. The Ordinance regulates development which is or might be dangerous to health, safety and property by requiring at the time of initial development or substantial improvement methods of protection against flood damage in areas vulnerable to flooding in order to minimize flood damage. The Ordinance regulates the following developmental impacts: filling, grading or erosion, alteration of natural flood plains, stream channels or water courses, the imposition of barriers which increase flood hazards, or any other impacts that aggravate or cause flood hazards.

4.5.3 IMPACTS AND MITIGATION MEASURES

Standards of Significance

An impact is considered significant, as identified by Appendix G of the State CEQA Guidelines, if the proposed project would result in any of the following:

- Degrade water quality and violate any water quality objectives set by the State Water Resource Control Board, due to increased sediments and other contaminants generated by consumption and/or operation activities;
- Generate stormwater that would exceed the capacity of the stormwater system; or
- Increase exposure of people and/or property to the risk of injury and damage in the event of a 100-year flood.

Methods of Analysis

The information contained in the Hydrology, Water Quality, and Drainage chapter of this EIR was derived primarily from the *2030 Sacramento General Plan*, SAFCA and USACE levee reports, *Urban Water Management Plan*, and the *Master Drainage Study for Natomas Crossing Area 3*. Determinations of significance were made based on the existing, or planned, infrastructure's ability to accommodate the proposed project. In addition, impacts to water quality were assessed in relation to the City of Sacramento's Ordinances to determine the potential for adverse impacts.

Project Impacts and Mitigation Measures

4.5-1 Exposure of people and structures to flood hazards on the project site.

As discussed above, the project area is protected by a comprehensive reservoir, dam, levee and bypass system designed to protect the region from the floodwaters of the American River and the Sacramento River.

The USACE released a report in January 2008 that found that some portions of the Natomas Basin do not have 30-year flood protection. As a result, FEMA designated the Basin under the AE special hazard flood zone designation in December 2008. The AE designation requires all property owners within the basin with federally backed mortgages to obtain flood insurance.

SAFCA will continue working with State and federal agencies to improve the Natomas Basin levee system to reach 100-year flood protection in 2012, and reach 200-year protection for the Natomas Basin in 2013. As a result of the creation of Capital Assessment District No. 4, a stable funding source is available to provide the local share of the cost of constructing and maintaining the improvements that, based on current engineering and information, are needed to achieve SAFCA's 100-year and 200-year flood protection goals.

Following construction of the improvements and recertification by SAFCA and issuance of a Letter of Map Revision (LOMR) by FEMA, the Natomas Basin could be removed from the 100-year floodplain. It should be noted that the City plans to apply for an A99 FEMA designation, which does not have development requirements, in early 2011. As the applicant did not obtain building permits before December 8, 2008, implementation of the proposed project would occur after improvements have been made and would not be expected to result in an adverse flooding-related impact. However, should conditions change such that the applicant decides to pursue the development of the project prior to recertification of the levees, a *potentially significant* impact would occur.

Mitigation Measure(s)

The following mitigation measures would reduce the above impact to a ***less than significant*** level.

4.5-1(a) *Construction and operation of the Natomas Crossing project shall not commence prior to recertification of the Natomas levees by the SAFCA and FEMA, and the subsequent removal of Natomas Basin from the 100-year floodplain and associated flood zone redesignation; or until FEMA redesignates the Natomas Basin with a flood zone designation that would permit development of the proposed project.*

4.5-1(b) *The project applicant shall participate in a funding mechanism such as an assessment district established by SAFCA and/or the City for the purpose of implementing measures that would provide no less than 100-year flood protection including the North Natomas Area, or for that portion of the Natomas Basin requiring re-certification for 100-year flood protection including the Project site provided that such funding mechanism is (i) based on a nexus study; (ii) is regional in nature; (iii) is proportionate; (iv) complies with all applicable laws and ordinances; and (3) the requirements of the applicable FEMA zone and corresponding requirements under the City of Sacramento's Floodplain Ordinance shall be satisfied prior to the issuance of building permits for the project. Any future homeowners within the floodzone shall maintain federal flood insurance, as required under the applicable FEMA and City of Sacramento Floodplain Management Ordinance regulations.*

The above measures shall terminate upon the first recertification of the levees by the U.S. Army Corps of Engineers.

4.5-2 Project impacts to existing drainage facilities.

The proposed on-site drainage lines for Quadrant C range from 12 inches to 36 inches and would discharge into the North Natomas drainage channel along the western boundary of the project site. The drainage facilities for the project area were master planned in 2002 and sized for buildout of the project site assuming a mixture of Community Commercial and Employment Commercial land uses. The land uses were

assumed to cover 90 percent of the project site with impervious surfaces; which, according to the project engineer, would remain the same under the proposed project. Therefore, the project would not affect the existing drainage channel located onsite adjacent to Interstate 5, or Detention Basin 16B, which have been designed and constructed to accommodate stormwater runoff from the project site.

A Master Drainage Study for Natomas Crossing Area 3 was prepared in June 2002. Under the proposed project the land uses planned for Quadrants B, C, and D would change; however, the drainage plans are still applicable as the site would not include a greater percentage of impervious surfaces than the 90 percent impervious assumption used in the Master Drainage Study.

The proposed project does not include improvements to Quadrant B; however, future development of Quadrant B would have the ability to discharge stormwater to the channel at three locations from 36-inch pipes. The on-site drain lines for Quadrant C would range in size from 12 inches to 36 inches in diameter. Quadrant C would discharge to the drainage channel at five locations with pipes sized from 18 to 48 inches in diameter. Development of Quadrant D is not proposed at this time; however, future development of Quadrant D would require construction of drainage connections along East Commerce Way. The drainage channel flows to Detention Basin 16B, which is then pumped into the existing RD-1000 drainage channel south of the project site. All local 10-year and 100-year downstream improvements to serve the project site have been completed.

The City of Sacramento's existing drainage facilities for the larger drainage basin have also been designed with sufficient capacity to serve this project. Local drainage associated with the project would tie into an existing system with 100 percent of the downstream improvements in place and sized for the proposed project. Additional off-site infrastructure is not required.

The project applicant would be required to construct on-site internal drainage infrastructure to the specification of the City of Sacramento, and connect to the drainage channel west of the project site. In addition, the applicant would be required to pay fees associated with the development and maintenance of the existing drainage infrastructure as part of the project's development fees pursuant to the North Natomas Financing Plan. Therefore, the proposed project would have a ***less than significant*** impact on existing drainage facilities.

Mitigation Measure(s)
None required.

4.5-3 Construction-related impacts to surface water quality.

The development of the proposed project would involve the construction of commercial buildings, roadways, parking lots, and infrastructure, which would require grading, excavation, and other construction-related activities that could cause soil erosion at an

accelerated rate during storm events. All of these activities have the potential to affect water quality by contributing to localized violations of water quality standards if stormwater runoff from construction activities enters receiving waters.

Construction activities such as grading, excavation, and trenching for site improvements would result in disturbance of soils at the project site. Construction site runoff can contain soil particles and sediments from these activities. Dust from construction sites can also be transported to other nearby locations, where the dust can enter runoff or water bodies. Spills or leaks from heavy equipment and machinery, staging areas, or building sites can also enter runoff. Typical pollutants could include petroleum products and heavy metals from equipment and products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of building products could result in water quality degradation if runoff containing the sediment entered receiving waters in sufficient quantities to exceed water quality objectives. Impacts from construction-related activities would generally be short-term and of limited duration.

To reduce or eliminate construction-related water quality effects, the City of Sacramento would require future contractors to comply with the requirements of the City's Stormwater Quality Improvement Plan (SQIP). In addition, before onset of any construction activities, where the disturbed area is one acre or more in size, the City of Sacramento would require contractors to obtain coverage under the NPDES General Construction Permit and include erosion and sediment control plans. As a performance standard, the SQIP and General Construction Permit require controls of pollutant discharges that use best available technology (BAT) that is economically achievable, best conventional pollutant control technology (BCT) to reduce pollutants, and any more stringent controls necessary to meet water quality standards.

Measures range from source controls, such as reduced surface disturbance, to treatment of polluted runoff, such as detention or retention basins. BMPs to be implemented as part of the SQIP and General Construction Permit may include, but are not limited to, the following measures:

- Temporary erosion and sediment control measures (such as straw mulch and tackifier, silt fences, staked wattles, silt/sediment basins and traps, check dams, geofabric, and temporary revegetation or other ground cover) will be employed to control erosion and sedimentation from disturbed areas.
- Drainage facilities in downstream offsite areas will be protected from sediment using BMPs.
- Grass or other vegetative cover or other approved erosion control measures will be established on the construction site as soon as possible after disturbance. No disturbed surfaces will be left without erosion control measures in place.

Prior to issuance of a construction permit, the City would require contractors to provide an erosion and sediment control plan. The City would verify that an NOI has been filed

with the CVRWQCB and a SWPPP has been developed before allowing construction to begin. The City would perform inspections of the construction area, to verify that the BMPs specified in the erosion and sediment control plan are properly implemented and maintained. The City would notify contractors immediately if there is a noncompliance issue and would require compliance.

Adherence to the above-described RWQCB general construction permit requirements would ensure the quality of stormwater runoff meets the water quality standards identified by the RWQCB for water entering the Sacramento River. Therefore, the proposed project would have a ***less than significant*** impact to surface water quality due to construction activities.

Mitigation Measure(s)
None required.

4.5-4 Operational water quality degradation associated with urban runoff from the project site.

The increased impervious area created by the development of the proposed project would alter the types and levels of pollutants that could be present in project site runoff. Runoff from streets, driveways, parking lots, and landscaped areas typically contains nonpoint source pollutants such as oil, grease, heavy metals, pesticides, herbicides, fertilizers, and sediment. Concentrations of pollutants carried in urban runoff are extremely variable, depending on factors such as the following:

- Volume of runoff reaching the storm drains;
- Time since the last rainfall;
- Relative mix of land uses and densities; and
- Degree to which street cleaning occurs.

The *Sacramento 2030 General Plan EIR* notes that water quality impacts due to urban runoff generated by General Plan buildout would be an on-going concern, and requires mitigation for the effects of development on water quality associated with urban runoff. On-going water quality impacts require runoff control measures to trap pollutants, reduce flows, and promote infiltration. Such measures include provision for on-site retention and detention storage; design of storm drainage to slow water flows and depress peak flow volumes; minimize impervious surfaces; and maximize percolation, evaporation, and evapotranspiration of stormwater.

The existing downstream drainage system, including Drainage Basin No. 16B, is designed to control urban runoff pollutants and improve water quality by allowing pollutants to settle out within the detention basin. Furthermore, the applicant will comply with the City's Stormwater Management and Discharge Control Ordinance (Title 13). This ordinance requires that the Improvement Plans incorporate controls to minimize the on-going, post construction discharge of stormwater pollutants from the project. The project would include onsite source and treatment controls as required by the Stormwater

Quality Standards for Development Projects to ensure that stormwater runoff meets the water quality standards identified by the RWQCB for water entering the Sacramento River.[7] Therefore, the potential for adverse impacts from urban runoff generated by the proposed project would be considered ***less than significant***.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

4.5-5 Long-term increases in peak stormwater runoff flows from the proposed project in combination with existing and future developments in the Sacramento area.

As discussed in Impact Statement 4.5-2, the proposed project would create impervious surfaces in an area for which City planning efforts have identified as having 90 percent of the surface area being covered in impervious surfaces following buildout. The addition of impervious surfaces to the project site would increase peak stormwater runoff rates and volumes both onsite and downstream of the site. However, the Drainage Master Plan conducted for the project area designed infrastructure (including the drainage channel west of the project site and Drainage Basins 16A and 16B) that has been sized to accommodate the proposed project and the surrounding development. Therefore, the drainage facilities would be able to accommodate the increased flows resulting from buildout of Drainage Basins 5 and 6. In addition, similar to the proposed project, other projects would be required to provide the necessary on-site drainage infrastructure; and contribute, through the payment of development fees and applicable assessments, the funding of off-site infrastructure. Therefore, the project's incremental contribution to the cumulative peak stormwater runoff flow impact would be ***less than significant***.

Mitigation Measure(s)
None required.

4.5-6 Long-term risk to project tenants from flooding hazards.

The proposed project site is within a Special Flood Hazard Area (SFHA) under the AE designation. The AE designation was assigned by FEMA on December 8, 2008. SAFCA has undertaken a building program to improve the Natomas Basin Levee system to protect against 100-year flood conditions, with an eventual goal of reaching 200-year flood protection levels. The voter approved Capital Assessment District constitutes an identified funding source for flood protection improvements. The proposed project would be subject to the Assessment District, and would participate in the funding of improvements and maintenance of the levee system. Levee improvements are anticipated to take three to five years. Following completion of the improvements, North Natomas would once again be located outside of the 100-year floodplain and would not be considered a SFHA. Cumulative buildout of the North Natomas area is expected to take substantially longer than completion of the flood improvements. After levee improvements are completed and the Assessment District is in place to assure proper

maintenance of the levee and flood protection system, development of the proposed project would occur in conjunction with cumulative buildout of the North Natomas area. Therefore, the project's incremental contribution to flood hazards would result in a ***less than significant*** long-term impact.

Mitigation Measure(s)
None required.

Endnotes

[1] City of Sacramento, *Sacramento 2030 General Plan Draft*, May 2008.
[2] City of Sacramento, *Sacramento 2030 General Plan Draft Master Environmental Impact Report*, July 2008.
[3] Wood Rodgers, *Master Drainage Study for Natomas Crossing Area 3*, June 2002.
[4] SAFCA, *Draft Engineers Report for the Sacramento Area Flood Control Agency Capital Assessment District No. 4*, January 18, 2007.
[5] County of Sacramento, *Sacramento County General Plan*, December 1993.
[6] Bauer, Stein, *Natomas Levee Evaluation Study*, July 2006.
[7] Sacramento Stormwater Quality Partnership, *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*, May 2007.

4.6 HAZARDS

4.6 HAZARDS

4.6.0 INTRODUCTION

The Hazards chapter describes existing and potentially occurring hazards and hazardous materials within the project area. The chapter discusses potential impacts posed by these hazards to the environment, as well as to workers, visitors, and residents within and adjacent to the project area. More specifically, the chapter describes potential effects on human health that could result from the proposed operation of the hospital proposed for Quadrant D of the Natomas Crossing project site. The evaluation includes the potential exposure to hazardous materials used, generated, stored, or transported within or immediately adjacent to the project site, as well as hazards associated with the proposed helicopter pad (helistop). The Hazards chapter is based on information drawn from the *Sacramento 2030 General Plan*[1] and the *Sacramento 2030 General Plan Master EIR*.[2]

Issues related to potential interference with an emergency evacuation plan, exposure of people to existing sources of potential health hazards, and increased fire hazards were addressed in the Initial Study (See Appendix C of this DEIR). Impacts were found to be less than significant, and mitigation was not required.

4.6.1 PROJECT DESCRIPTION

The proposed project, if approved, would enable the development of a shopping center and office uses on Quadrant C, hospital and associated medical office uses on Quadrant D, and retail space within the range of 309,276 to 463,914 s.f. on the southern portion of Quadrant B. The proposed project does not require changes to the existing land use and zoning designations for the northern portion of Quadrant B, which would include approximately 180 residential units, a 300-room hotel, and approximately 240,000 square feet of office space. Only Quadrant C could be developed under the requested entitlements; in order for Quadrants B and D to be developed at a later date, additional development entitlements would need to be secured.

Medical activities involve the frequent use and generation of small quantities of hazardous materials, primarily in clinical offices, cleaning and sterilizing processes, nuclear medicine, and pharmacies. The hazardous materials include sterilizing solutions, pharmaceuticals, chemicals for developing x-ray photographs, formaldehyde, biohazard wastes such as infectious agents or used hypodermic needles, and radioactive materials uses in conjunction with X-rays and radiation treatments. The storage, use, and transportation of all of the above listed hazardous materials is controlled and regulated by local, State, and federal guidelines, which are discussed in detail below.

4.6.2 EXISTING ENVIRONMENTAL SETTING

The project site is currently vacant and mass-graded. Land uses surrounding the project include proposed and existing residential, office uses, and vacant lots. Past land uses include agricultural uses. A drainage channel, open space buffer, and Interstate 5 adjoin the western boundary of the entire project site. Hazards associated with past uses onsite are addressed in the Initial Study, included as Appendix C of the DEIR. As noted in the Initial Study, Section 9(d), chemicals and chemical residues associated with past agricultural uses in Quadrant C have been removed in conformance with State regulations, and do not represent a risk to future residents, workers, or patrons of the project site.

4.6.3 REGULATORY BACKGROUND

The term hazardous substance refers to both hazardous materials and hazardous wastes. For the purposes of this EIR, a "hazardous material" is defined as provided in California Health and Safety Code, Section 25501:

> Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

In addition, the California Environmental Protection Agency, Department of Toxic Substances Control (CAL-EPA, DTSC) defines hazardous waste, as found in the California Health and Safety Code Section 25141(b), as follows:

> […] its quantity, concentration, or physical, chemical, or infections characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) pose a substantial present or potential hazard to human health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bioaccumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed.

Many agencies regulate hazardous substances. The following discussion contains a summary review of regulatory controls pertaining to hazardous substances, including federal, State, and local laws and ordinances.

Federal Regulations

Several federal agencies regulate hazardous materials. These include the EPA, the U. S. Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT). In addition, the Federal Aviation Administration (FAA) regulates the activities of helicopters and helistops.

Worker Safety

The Bloodborne Pathogen Standard has been established by OSHA to protect workers from the exposure of blood and bodily fluids. The Bloodborne Pathogen Standard requires the use of Universal Precautions in the handling of all human blood and certain bodily fluids. Exposure to these materials is the primary means of transmittal for the most harmful infectious agents known. The Bloodborne Pathogen Standard ensures that infectious materials, such as patient laboratory samples, are handled, stored, and transported in a manner that prevents worker, community, and environmental exposure.

Hazardous Waste Handling

The EPA has authorized the California Department of Toxic Substances Control (DTSC) to enforce hazardous waste laws and regulations in California. Therefore, further discussion of hazardous waste handling is located under the State discussion.

Hazardous Materials Transportation

The U.S. DOT has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. DOT regulations specify packaging requirements for different types of materials. The U.S. Postal Service (USPS) has developed additional regulations for the transport of hazardous materials by mail. EPA has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipment manifests to ensure that wastes are delivered to their intended destinations.

Helistop Operations

The FAA is primary overseer of helistop operations. A helistop is a minimally developed heliport for boarding and discharging passengers or cargo. A heliport is an area of land or water or a structural surface which is used or intended to be used for the landing and take-off of helicopters, along with any appurtenant areas which are used, or intended to be used, for heliport buildings and other heliport facilities, and that is permitted or licensed by the California Department of Transportation. The FAA is tasked with providing leadership in planning and developing a safe and efficient national airport system to satisfy the needs of aviation interests in the United States, with due consideration for economic, environmental compatibility, local property rights, and safeguarding the public investment. Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, in addition to providing navigable airspace criteria for airports, also provides imaginary surface criteria for heliports/helistops. Specifically, the approach imaginary surface for civil (i.e., non-military) heliports/helistops extends at a 8:1 slope upward from the designated take off and landing area for a distance of 4,000 feet, and the heliport/helistop transitional surface extends from the lateral boundary of both the primary surface and approach surface at a 2:1 slope for a distance of 250 feet. Due to the proposed project's on-site private helistop, regulations pertinent to aviation hazards apply to the proposed project site.

State Regulations

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

Within Cal/EPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. The DTSC can delegate enforcement of regulation of the generation, transport, and disposal of hazardous materials to local jurisdictions that enter into agreements with DTSC under the authority of the Hazardous Waste Control Law.

Hazardous Materials Management Plans

The management of hazardous materials is governed by the "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program) adopted by the Cal/EPA. The program is composed of six elements which address hazardous waste generation and on-site treatment, underground storage tanks, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency. The Sacramento County Environmental Management Department serves in this role for Sacramento County, also referred to as the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction.

California's Hazardous Materials Release Response Plans and Inventory Law, sometimes called the "Business Plan Act," aims to minimize the potential for accidents involving hazardous materials and to ensure an appropriate response to hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on site, to prepare an emergency response plan, and to train employees to use the materials safely.

State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment.

Worker Safety

The Cal-OSHA is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA requires that many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. In addition, the Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle.

The California Department of Public Health (CDPH), Division of Environmental and Occupational Disease Control, enforces the Bloodborne Pathogen Standard. Title 29, Part 1910 of the CFR describes the Hazard Communication Standard, which requires that workers be informed of the hazards associated with the materials they handle. Training in chemical work practices must include methods in the safe handling of hazardous materials, use of emergency response equipment, and an explanation of the building emergency response plan and procedures. Material Safety Data Sheets (MSDS) must be available in the workplace, and containers must be appropriately labeled.

Uniform Fire Code

The Uniform Fire Code (UFC) contains regulations relating to construction and maintenance of buildings and the use of premises. The UFC addresses fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and premises.

Radioactive Materials Management

The Radiologic Health Branch of the California Department of Public Health (CDPH) administers the federal and state radiation safety laws that govern the storage, use, and transportation of radioactive materials and the disposal of radioactive wastes. The Radiologic Health Branch licenses institutions that use radioactive materials and radiation-producing equipment, such as X-ray equipment. To maintain a radioactive materials license, an institution must meet training and radiation safety requirements and be subject to routine inspections.

Medical Waste Handling

The CDPH Medical Waste Management Program enforces the California Medical Waste Management Act and related regulations. Medical waste is generally regulated in the same manner as hazardous waste, except that special provisions apply to storage, disinfections, containment, and transportation. Requirements place “cradle-to-grave” responsibility for hazardous waste disposal on hazardous waste generators. Generators must ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills).

Many hazardous waste generators are required to prepare Hazardous Waste Minimization Plans pursuant to the California Hazardous Waste Source Reduction and Management Review Act. All hazardous waste generators must certify that, at a minimum, they make a good faith effort to minimize their waste and to select the best waste management method available.

Hazardous Materials Transportation

In California, the California Highway Patrol, the California Department of Transportation (Caltrans), and the DTSC play a role in enforcing hazardous materials transportation requirements.

California Accidental Release Prevention Program (CalARP)

The CalARP program (CCR Title 19, Division 2, Chapter 4.5) covers certain businesses that store or handle more than a certain volume of specific regulated substances at their facilities. The list of regulated substances is found in Article 8, Section 2770.5 of the CalARP program regulations.

Helistop Operations

Caltrans, Division of Aeronautics regulates the siting and operation of private use helistops. The Caltrans' mission in aviation is to foster and promote the development of a safe, efficient, dependable, and environmentally compatible air transportation system. The State's regulation of aviation began in 1947 with the California Aeronautics Commission, which eventually became the Division of Aeronautics under Caltrans.

The State Aeronautics Act, Public Utilities Code (PUC) section 21001 et seq., is the foundation for Caltrans' aviation policies. The Division issues permits for and annually inspects hospital helistops. Caltrans reviews development plans that include helistops, and associated *CEQA* analyses, to determine if the helistop/helistop meets design and safety requirements.

Existing Adopted Local Regulations

Sacramento 2030 General Plan

The following goals and policies from the recently approved Sacramento 2030 General Plan are applicable to hazards:

Public Health and Safety Element

Goal PHS 3.1 Reduce Exposure to Hazardous Materials and Waste. Protect and maintain the safety of residents, businesses, and visitors by reducing, and where possible, eliminating exposure to hazardous materials and waste.

Policy PHS 3.1.1 Investigate Sites for Contamination. The City shall ensure buildings and sites are investigated for the presence of hazardous materials and/or waste contamination before development for which City discretionary approval is required. The City shall ensure appropriate measures are taken to protect the health and safety of all possible users and adjacent properties.

Policy PHS 3.1.2 Hazardous Material Contamination Management Plan. The City shall require that property owners of known contaminated sites work with Sacramento County, the State, and/or Federal agencies to develop and implement a plan to investigate and manage sites that contain or have the potential to contain hazardous materials contamination that may present an adverse human health or environmental risk.

Policy PHS 3.1.4 Transportation Routes. The City shall restrict transport of hazardous materials within Sacramento to designated routes.

Policy PHS 3.1.5 Clean Industries. The City shall strive to maintain existing clean industries in the city and discourage the expansion of businesses, with the exception of health care and related medical facilities that require on-site treatment of hazardous industrial waste.

Policy PHS 3.1.6 Compatibility with Facilities. The City shall ensure that future development of treatment, storage, or disposal facilities is consistent with the County's Hazardous Waste Management Plan, and that land uses near these facilities, or proposed sites for the storage or use of hazardous materials, are compatible with their operation.

Sacramento City Code

The City of Sacramento has adopted the following implementation measures that pertain to hazards and hazardous materials within the City.

Implementation Measures

8.64.040. The City has adopted a hazardous materials disclosure code requiring handlers of hazardous materials to file a disclosure form within fifteen (15) days of a significant change to the handling, use, and/or location of hazardous materials. (Sacramento City Code 8.64.040)

Sacramento County Environmental Management Department

The Sacramento County Environmental Management Department (SCEMD) is responsible for promoting a safe and healthy environment in the County. As the CUPA, SCEMD monitors the proper use, storage, and clean up of hazardous materials, and also monitors groundwater wells, the removal of leaking underground storage tanks (LUSTs), and the issuance of permits for the collection, transport, use, or disposal of refuse.

Hazardous Materials Plan

Hazardous waste laws and regulations are enforced locally by SCEMD. SCEMD requires that businesses that store, handle, and use reportable quantities of hazardous materials, generate any amount of hazardous waste, or have a LUST complete a Hazardous Materials Plan (HMP) and obtain relevant permits. The HMPs are normally updated when there is a substantial change in operations.

Area Plan for Emergency Response to Hazardous Materials Incidents

The Area Plan for Emergency Response to Hazardous Materials Incidents in Sacramento County (Area Plan), developed by SCEMD, provides information for agencies involved in hazardous material response within Sacramento County. The local agencies that may be called upon during an emergency are SCEMD, Sacramento County Sheriff's Department, and the Sacramento City Fire Department. Other agencies, such as the State OES, Sacramento County Health Department, Public Works, and the CHP, may be called upon if additional resources are necessary to respond to a hazardous materials incident.

Sacramento City Fire Department

The Sacramento City Fire Department, a first responder to emergency calls, maintains a Hazardous Materials Response Team (HMRT). Through contractual agreement, the HRMT provides emergency response to hazardous materials incidents within the City of Sacramento. The Sacramento City Fire Department also maintains updated records of the emergency response or evacuation routes for the City.

4.6.4 IMPACTS AND MITIGATION MEASURES

Standards of Significance

For the purposes of this EIR, a significant impact would occur if the proposed project would:

- Expose people (e.g. residents, pedestrians) to hazardous materials or situations.

Method of Analysis

The following analysis of the potential for impacts resulting from hazards associated with the implementation of the proposed project is based on review of the proposed project site design and intended uses and information presented in existing documentation to establish existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that the proposed project would comply with all applicable laws, ordinances, and regulations (summarized above).

Project-Specific Impacts and Mitigation Measures

4.6-1 Impacts related to routine transport, use, and disposal of hazardous materials.

As noted above, the propose project would include retail, commercial, residential, general office, medical office, and hospital uses. As the retail, commercial, residential, and general office uses would not routinely use hazardous materials, the analysis contained in this chapter is focused on the hazards associated with the medical office and hospital uses on Quadrant D. Based upon the Quadrant D Conceptual Site Plan for the hospital (See Figure 3-10 of Chapter 3, Project Description), the hospital could potentially include medical offices, surgery centers, urgent care centers, medical laboratories, research facilities, and a helistop.

During the construction phase on all project quadrants it is possible that construction activities would involve the transportation, use, and disposal of hazardous materials. Any contractor using hazardous materials during the construction of the project would be required to comply with federal, state, and local regulations regarding the handling and transportation of such materials, thereby reducing the potential for accidental release of those materials into the surrounding environment.

Operation of the medical offices and hospital on Quadrant D would include the use, generation, and disposal of hazardous wastes that could include chemical wastes, chemotherapeutic waste, radioactive waste, biohazard waste, used syringes and other sharp implements.

As medical waste generators, both the hospital and medical offices would be required to comply with the regulations established in the Medical Waste Management Act. In particular, the hospital would be required to register and obtain a Unified Program Facility Permit from the Sacramento County Department of Environmental Management, train employees in appropriate hazardous waste management, maintain a Medical Waste Management Plan, and keep documentation that demonstrates the proper disposal of medical waste. The hospital and medical offices would also be subject to on-site inspection by the Sacramento County Department of Environmental Health. Should the hospital decide to treat medical waste onsite, an onsite treatment permit from the California Department of Public Health, Medical Waste Management Program would be required.

Specific hospital and medical office operators have not been identified; however, the following operations and procedures are typical of the industry. Chemical wastes are collected for off-site disposal by a licensed contractor who disposes of the appropriately packaged waste at a certified disposal facility. Chemotherapeutic wastes would be handled and labeled for incineration, and any radioactive waste would be handled subject to a Nuclear Regulatory Commission License. General medical wastes would be collected and disposed of in conformance with the approved Medical Waste Management Plan. Medical wastes include clothing and towels soiled with blood, blood and other

bodily fluids, and materials with sharp edges. Body parts and organs would be referred to a certified pathology laboratory for analysis and proper disposal.

All personnel that handle hazardous waste are required by OSHA regulations to undergo an initial 40-hour training course and subsequent annual training review. In case of an accidental spill during project operation, the project would be required to comply with state and regional cleanup standards. In addition, the packaging and handling of hazardous materials in transit is governed by U.S. DOT, CHP, and USPS regulations.

Based on the uses within the proposed project, hazardous materials would not be used, stored, or transported in a manner that would cause a threat to public safety, either during construction or operation of the proposed project. The use and transportation of hazardous materials are subject to stringent local, state, and federal regulations, the intent of which is to minimize the public's risk of exposure. Therefore, the risk that the proposed project would cause an accidental release of hazardous materials that could create a public or environmental health hazard is unlikely, and the impact of construction and medical operation-related hazardous chemical use would be considered ***less than significant***.

Mitigation Measure(s)
None required.

4.6-2 Impacts related to hazardous material storage.

The hospital facility on Quadrant D would store hazardous materials onsite. In addition to the above listed hazards, hospitals typically store large volumes of the flammable gas oxygen. It should be noted that storage of a hazardous material does not constitute a hazard in and of itself; however, storage does result in concentration of materials which can increase the potential effect if an upset event occurred in the future. As a result, a Hazardous Materials and Waste Management Plan is required for the hospital and medical offices per California Health and Safety Code Chapter 6.95 to ensure that storage facilities, access, and handling does not result in the creation of hazards to workers or the public. Facilities that store medical wastes would be required to complete the Hazardous Materials and Waste Management Plan prior to commencing storage of the materials, and the plan must be updated if any of the following were to occur:

- There is a 100 percent or greater increase in the quantity of a previously disclosed material;
- The facility begins handling a material not previously disclosed above the Hazardous Materials Business Plan reporting quantities, established as part of the initial plan;
- The facility changes address;
- Ownership of the facility changes; or
- There is a change of business name.

In conformance with State law, businesses storing hazardous materials within Quadrant D would complete and update a Hazardous Materials and Waste Management Plan. The controls established by the applicable regulations would minimize the potential for exposure and adverse health, safety, and environmental effects related to the accidental release of stored hazardous materials. Therefore, storage of hazardous materials following implementation of the proposed project would represent a ***less than significant*** impact.

Mitigation Measure(s)
None required.

4.6-3 Impacts related to potential hazards associated with the proposed on-site helistop.

The proposed project includes the construction and operation of a helistop in the southwest corner of Quadrant D. As part of the proposed hospital, the helistop would provide a landing pad for helicopters involved in patient transfer and other air medical operations.

Air medical helicopters are typically flown close to the ground and near buildings; as a result, helicopter operations present hazards to both the operators and persons on the ground. However, when compared to other typical helicopter operations, air medical flights are generally less hazardous than many other types of common helicopter operations, such as flight instruction, aerial application (crop dusting), external load transport, aerial observation (such as power line patrol), and personal use. Industry statistics indicate that air medical operations accounted for only approximately 4.4 percent of all civil helicopter accidents during the 10-year period between 1995 and 2004,[3] which is well below the accident rates of other flight operations.

The plan for Quadrant D is conceptual at this point; therefore, the final design of the helistop, surrounding structures, and other potential flight safety hazards has not been established. Similarly, approach and departure procedures for the helistop have not been established. The specific design and placement of the helistop would be subject to review by the California Department of Transportation (Caltrans), Division of Aeronautics.

Pilots and flight crew involved with the proposed air medical helicopter operations would be required to maintain FAA certification. In addition, the final design of the helistop is subject to the review and approval of the Caltrans, Division of Aeronautics, prior to the commencement of helicopter operations. Therefore, implementation of the proposed project would have a ***less than significant*** impact associated with hazards to people and structures from helistop flight operations.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

4.6-4 Long-term hazards-related impacts from the proposed project in combination with existing and future developments in the Sacramento area.

Impacts associated with hazardous materials are site-specific and generally do not affect nor are affected by cumulative development. Furthermore, regulations established by federal, State, and local agencies serve to regulate the use, storage, and disposal of hazardous materials. However, the possibility exists that transportation of hazardous wastes to and from the site could combine with the transportation of other hazardous materials to create a cumulative hazard.

Transport of hazardous materials to the project site and away from the project site would typically occur on either Interstate 5 or Interstate 80. Both highways are major transportation routes, and carry a substantial volume of hazardous cargo. As noted above, transportation of hazardous materials is regulated by the California Highway Patrol, California Department of Transportation, United States Postal Service, and the Environmental Protection Agency. Compliance with the Hazardous Materials and Waste Management Plan would ensure that all wastes are properly packaged when entering or leaving the hospital, and would be transported by permitted carriers subject to the appropriate regulation. As a result, the hazards posed by the routine transportation of hazardous medical wastes would not pose a potential cumulative impact.

The use, storage, transportation, and disposal of hazardous materials associated with the proposed project would not result in a significant incremental contribution to a cumulative hazard. Therefore, implementation of the proposed project would have a ***less than significant*** impact associated with cumulative hazardous materials use.

Mitigation Measure(s)
None required.

Endnotes

[1] City of Sacramento, *Sacramento 2030 General Plan*, March 2009.
[2] City of Sacramento, *Sacramento 2030 General Plan Master EIR*, March 2009.
[3] Helicopter Association International, *Improving Safety in Helicopter Emergency Medical Service (HMS) Operations*, 2005, available at http://www.rotor.com/membership/rotor/rotorpdf/fall2005/30.pdf.

4.7 AESTHETICS

4.7 AESTHETICS

4.7.0 INTRODUCTION

The Aesthetics chapter describes existing visual and aesthetic resources for the project site and the region, and evaluates potential impacts of the project with respect to urbanization of the area. In addition, the *Sacramento 2030 General Plan* goals and policies pertaining to aesthetics are described. The California Environmental Quality Act (CEQA) describes the concept of aesthetic resources in terms of scenic vistas, scenic resources (such as trees, rock outcroppings, and historic buildings within a state scenic highway), the existing visual character or quality of the project site, and light and glare impacts.

The following impact analysis is based on information drawn from the *Sacramento 2030 General Plan*[1] and the *Sacramento 2030 General Plan Master EIR*.[2] A site survey was also conducted by Raney in January 2009.

4.7.1 EXISTING ENVIRONMENTAL SETTING

The following setting information provides an overview of the existing condition of visual resources in the Natomas Crossing project area, located within the City of Sacramento City Limits, east of Interstate 5 (I-5).

Regional Setting

While the Sacramento region has significant high quality open space areas devoted to agriculture and recreational uses, the City of Sacramento including North Natomas is predominantly an urbanized area.

Project Area Setting

The project site is located in the new development area of North Natomas. The project site borders the eastern side of I-5. Arco Arena is located east of the Quadrant B portion of the project site. Land uses surrounding Quadrant B include existing office uses (i.e., medical and dental) and vacant lots to the east; a gated two story townhouse development, known as Bella Rose – Villas at Natomas, to the northeast; and an undeveloped (utilities are currently stubbed and two story models have been built) residential project site, called Provence, to the north, across from which is the Natomas Pointe Plaza Office/Medical Park that is currently under construction. A drainage channel, open space buffer, and Interstate 5 adjoin the western boundary of the entire project site. Two access roads for Arco Arena are also located off of East Commerce Way, east of Quadrant B, including the Arco Main Entry and the West Entrance.

Land uses surrounding Quadrant C include the Natomas Field residential subdivision, which is currently under construction to the east, and the recently completed Natomas Landing retail center to the north of Natomas Field.

Land uses surrounding Quadrant D include the proposed Natomas Crossing Drive and Quadrant C to the north; Elixir Industries and vacant land to the east, across from which is a residential single family neighborhood; and San Juan Road and the Interstate 80 interchange to the south.

Visual Features of the Project Site

The project site is currently vacant and mass-graded. The project site does not contain trees, wetlands, or riparian areas. A stormwater detention basin is located at the southernmost end of Quadrant D. As outlined above, external views from the site include vacant land that is planned for future development with two story residential uses, I-5, new single-story and two-story residences, and large format commercial development.

Project Features

Buildout of the proposed project includes the development of approximately 200 gross acres with a total of 868,494 square feet of commercial uses, up to 180 residential units, 440,000 square feet of general office uses, 600,000 square feet of medical office uses, a 600,000 square foot hospital, a 130,000 square foot hotel, surface parking, and above ground parking structures to serve the proposed uses. Development would be guided by the project's PUD Design Guidelines, which stipulate the following design requirements. All buildings would be sited to complement adjacent buildings and landscaping. Most buildings would be oriented towards the street; however, parcels fronting on East Commerce Way would accommodate a maximum of two double loaded rows of parking between the building and the street. Internal pedestrian linkages would be included throughout the project, and the drainage basin located south of Quadrant D would provide a passive park area for project residents, workers, and visitors. Most structures would be one to two stories in height; however, the hospital would be up to five stories in height. Building design would be sensitive to the scale and character of East Commerce Way.

4.7.2 REGULATORY BACKGROUND

Specific federal or State regulations do not directly pertain to the visual quality of an area. However, applicable policies and regulations established in the *Sacramento 2030 General Plan* and the Municipal Code are listed below.

Local Regulations

The following are the local government environmental goals and policies relevant to the CEQA review process.

Sacramento 2030 General Plan

The following goals and policies from the recently approved *Sacramento 2030 General Plan* are applicable to aesthetics:

Land Use and Urban Design Element

Goal LU 2.3 City of Trees and Open Spaces. Maintain a multi-functional "green infrastructure" consisting of natural areas, open space, urban forest, and parkland, which serves as a defining physical feature of Sacramento, provides visitors and residents with access to open space and recreation, and is designed for environmental sustainability.

Policy LU 2.3.1 Multi-functional Green Infrastructure. The City shall strive to create a comprehensive and integrated system of parks, open space, and urban forests that frames and complements the city's urbanized areas.

Policy LU 2.3.2 Adjacent Development. The City shall require that development adjacent to parks and open spaces complements and benefits from this proximity by:

- Preserving physical and visual access;
- Requiring development to front, rather than back, onto these areas;
- Using single-loaded streets along the edge to define and accommodate public access;
- Providing pedestrian and multi-use trails;
- Augmenting non-accessible habitat areas with adjoining functional parkland; and
- Extending streets perpendicular to parks and open space and not closing off visual and/or physical access with development.

Goal LU 2.4 City of Distinctive and Memorable Places. Promote community design that produces a distinctive, high-quality built environment whose forms and character reflect Sacramento's unique historic, environmental, and architectural context, and create memorable places that enrich community life.

Policy LU 2.4.1 Unique Sense of Place. The City shall promote quality site, architectural and landscape design that incorporates those qualities and characteristics that make Sacramento desirable and memorable including walkable blocks, distinctive parks and open spaces, tree-lined streets, and varied architectural styles.

Policy LU 2.4.2 Responsiveness to Context. The City shall promote building design that respects and responds to the local context, including use of local materials, responsiveness to Sacramento's climate, and consideration of cultural and historic context of Sacramento's neighborhoods and centers.

Policy LU 2.4.3 Enhanced City Gateways. The City shall ensure that public improvements and private development work together to enhance the sense of entry at key gateways to the city.

Policy LU 2.4.4 Iconic Buildings. The City shall encourage the development of iconic public and private buildings in key locations to create new landmarks and focal features that contribute to the city's structure and identity.

Policy LU 2.4.5 Distinctive Urban Skyline. The City shall encourage the development of a distinctive urban skyline that reflects the vision of Sacramento with a prominent central core that contains the city's tallest buildings, complemented by smaller urban centers with lower-scale mid- and high-rise development.

Goal LU 2.7 City Form and Structure. Require excellence in the design of the City's form and structure through development standards and clear design direction.

Policy LU 2.7.1 Development Regulations. The City shall promote design excellence by ensuring City development regulations clearly express intended rather than prohibited outcomes and reinforce rather than inhibit quality design.

Policy LU 2.7.2 Design Review. The City shall require design review that focuses on achieving appropriate form and function for new and redevelopment projects to promote creativity, innovation, and design quality.

Policy LU 2.7.3 Transitions in Scale. The City shall require that the scale and massing of new development in higher-density centers and corridors provide appropriate transitions in building height and bulk that are sensitive to the physical and visual character of adjoining neighborhoods that have lower development intensities and building heights.

Policy LU 2.7.4 Public Safety and Community Design. The City shall promote design of neighborhoods, centers, streets, and public spaces that enhances public safety and discourages

crime by providing street-fronting uses ("eyes on the street"), adequate lighting and sight lines, and features that cultivate a sense of community 'ownership.'

Policy LU 2.7.5 Development Along Freeways. The City shall promote high quality development character of buildings along freeway corridors and protect the public from the adverse effects of vehicle-generated air emissions, noise, and vibration, using such techniques as:

- Requiring extensive landscaping and trees along the freeway fronting elevation;
- Establish a consistent building line, articulating and modulating building elevations and heights to create visual interest; and
- Include design elements that reduce noise and provide for proper filtering, ventilation, and exhaust of vehicle air emissions.

Policy LU 2.7.6 Walkable Blocks. The City shall require new development and redevelopment projects to create walkable, pedestrian-scaled blocks, publicly-accessible mid-block pedestrian routes where appropriate, and sidewalks appropriately-scaled for the anticipated pedestrian use.

Policy LU 2.7.7 Buildings that Engage the Street. The City shall require buildings to be oriented to and actively engage and complete the public realm through such features as building orientation, build-to and setback lines, façade articulation, ground-floor transparency, and location of parking.

Policy LU 2.7.8 Screening of Off-street Parking. The City shall reduce the visual prominence of parking within the public realm by requiring most off-street parking to be located behind or within structures or otherwise fully or partially screened from public view.

Goal LU 5.1 Centers. Promote the development throughout the City of distinct, well-designed mixed-use centers that are efficiently served by transit, provide higher-density, urban housing opportunities; and serve as centers of civic, cultural, and economic life for Sacramento's neighborhoods and the region.

LU 5.1.5 Vertical and Horizontal Mixed-use. The City shall encourage the vertical and horizontal integration of uses within commercial centers and mixed-use centers,

particularly residential and office uses over ground floor retail.

Goal LU 5.4 Regional Commercial Centers. Establish major mixed use activity centers through development and reinvestment in regional commercial centers that are vibrant, regionally-accessible destinations where people live, work, shop, and congregate in a mix of retail, employment, entertainment, and residential uses.

LU 5.4.2 Enhanced Design Character. The City shall encourage redevelopment of existing regional commercial centers into dynamic mixed-use centers by replacing surface parking with structured parking, replacing parking area drive aisles with pedestrian-friendly shopping streets, infilling parking areas with multi-story mixed-use buildings, and creating attractive, well-appointed streetscapes and plazas.

Environmental Resources Element

Goal ER 7.1 Visual Resource Preservation. Maintain and protect significant visual resources and aesthetics that define Sacramento.

Policy ER 7.1.1 Protect and Enhance Scenic Views. The City shall protect and enhance views from public places to the Sacramento and American rivers, adjacent greenways, landmarks, and urban views of the downtown skyline and the State Capitol along Capitol Mall.

Policy ER 7.1.3 Minimize Removal of Existing Resources. The City shall require new commercial, industrial, and residential development to minimize the removal of mature trees, and other significant visual resources present on the site.

Policy ER 7.1.4 Standards for New Development. The City shall seek to ensure that new development does not significantly impact Sacramento's natural and urban landscapes.

Policy ER 7.1.5 Lighting. The City shall minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary.

Policy ER 7.1.6 Glare. The City shall require that new development avoid the creation of incompatible glare through development design features.

The *Sacramento 2030 General Plan* includes the following goals and policies specific to the North Natomas Community Plan, within which the proposed project would be located:

Policy NN.LU 1.1	PUD Designation Required. All development in the plan area shall be designated as a Planned Unit Development (PUD) and shall include Schematic Plan and Development Guidelines for the PUD.
Policy NN.LU 1.3	Employment Center Development Guidelines. The City shall require any development in an Employment Center area to comply with the North Natomas Development Guidelines.
Policy NN.LU 1.16	Employment Center Heights. The City shall ensure that buildings are varied to create an interesting skyline.
Policy NN.LU 1.20	Development Guidelines. Any development in an EC area shall comply with the North Natomas Development Guidelines.

4.7.3 IMPACTS AND MITIGATION MEASURES

This section provides the standards of significance and method of analysis used to determine aesthetic impacts.

Standards of Significance

For the purposes of this EIR, an impact to aesthetic resources would be considered significant if the proposed project would:

- Substantially alter or degrade the existing visual character or quality of the project site and its surroundings;
- Creation of glare that is cast in such a way as to cause public hazard or annoyance for a sustained period of time; or
- Conflict with design guidelines applicable to the project site.

Method of Analysis

The description of the project area was prepared from visits to the site in January 2009. The proposed site plan, conceptual drawings, and Natomas Crossing Design Guidelines were used to evaluate the potential effects of project development of the visual character of the project site and surrounding area.

The impacts of the proposed project are analyzed in relation to existing conditions. The positive or negative value attached to changes in visual character is subjective. This EIR does not assign a judgment of "good" or "bad" change; rather, it identifies substantive changes as significant.

The visual effects of construction activities are not evaluated in this chapter because they would be intermittent and temporary. Development of the site would be phased over several years. Views of the construction activities would vary depending on where such activities would be focused.

Project-Specific Impacts and Mitigation Measures

4.7-1 Impacts related to alteration or degradation of the existing visual character and quality of the project site and its surroundings, as well as compatibility with design guidelines.

Currently, the proposed project site is bordered on the north, south and east by existing or proposed development. The existing residential development to the east would be considered sensitive receptors for changes to the existing aesthetic environment. The site plan for Quadrant C indicates that small scale commercial establishments would be located along East Commerce Way, across the roadway from residential uses, consistent with the *Sacramento 2030 General Plan* Policy LU 2.7.7. The majority of the parking area would be internally located, with the large- and medium-sized retailers located along the western boundary, adjacent to I-5.

The conceptual site plan, Figure 3-9 in the Project Description chapter of this Draft EIR, indicates that Quadrant D would have a limited number of large buildings, which would provide medical services. The hospital and medical office buildings would be up to five stories in height. The height of the hospital would be substantially higher than most structures in the project area; however, the hospital would have a substantial setback from East Commerce Way. The west side facing I-5 would be stepped down to three stories, which could provide visual interest and variation for motorists passing by. It should be noted that the plans for Quadrant B are program-level, and do not provide information for a detailed analysis of potential visual impacts. Project entitlements for Quadrants B and D do not include a Tentative Map; therefore, future development of Quadrants B and D would require the applicant to submit detailed plans for Planning Director Plan Reviews, as well as approval of Tentative Maps. The Planning Director Plan Review process would ensure consistency with the PUD Development Guidelines and the North Natomas Community Plan Development Guidelines, which would ensure that the architecture and landscaping of specific uses would not adversely affect the adjacent uses.

Loading docks associated with commercial and hospital operations are proposed to be located on Quadrants C and D along I-5. It should be noted that Policy LU 2.7.5 in the *Sacramento 2030 General Plan* requires extensive tree plantings along freeway frontages, and the building line is required to be consistent with articulated building elevations and heights. As shown in Figures 4.7-1 through 4.7-4, the freeway frontage would feature extensive plantings of screen trees. The buffer plantings would consist of a mixture of coast redwood, willow oak, valley oak, and Bosque elm. The type and size of trees would vary so as to provide visual interest and not block project signage. Figures 4.7-1 through 4.7-4 depict the trees at 15 years from the date of planting.

Figure 4.7-1
Interstate 5 View of the Proposed Project through Screening Trees – Southern Quadrant C

NOTE:

1) All trees depicted at 15 years from date of planting.

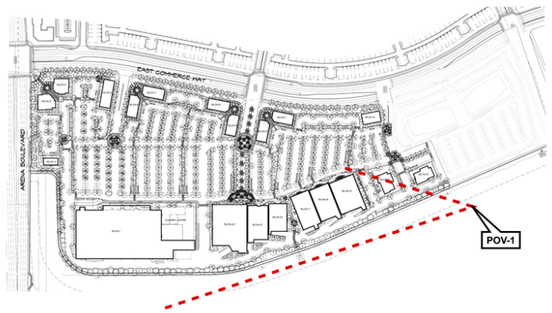
2) Trees that are part of the project are shown at actual count and location.

3) Trees anticipated to be included in the 100' buffer are based on the planting plan executed at I-5 and Del Paso which is similar to the condition at I-5 and Arena.

4) Images created using Google Earth © street views and actual building models.

5) Tree height estimates per the Landscape Architect:

Coast Redwood . . . . . 50'
Willow Oak . . . . . 30'
Valley Oak . . . . . 25'
Bosque Elm . . . . . 40'



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I-5 Views Heading North

Natomas Crossing - Quad C ■ Arena Boulevard & East Commerce Way
Sacramento, California

1a

Figure 4.7-2
Interstate 5 View of the Proposed Project through Transparent Screening Trees – Southern Quadrant C

NOTE:

1) All trees depicted at 15 years from date of planting.

2) Trees that are part of the project are shown at actual count and location.

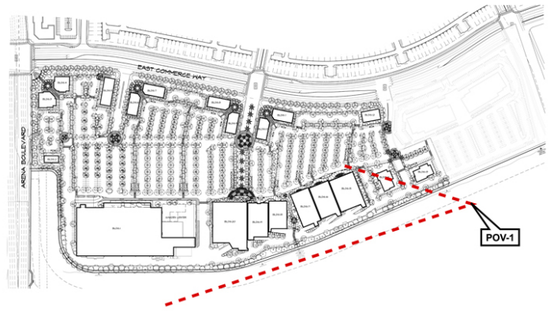
3) Trees anticipated to be included in the 100' buffer are based on the planting plan executed at I-5 and Del Paso which is similar to the condition at I-5 and Arena.

4) Images created using Google Earth © street views and actual building models.

5) Tree height estimates per the Landscape Architect:

Coast Redwood . . . . . 50'
Willow Oak . . . . . 30'
Valley Oak . . . . . 25'
Bosque Elm . . . . . 40'

TRANSPARENT TREES



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I-5 Views Heading North

Natomas Crossing - Quad C ▪ Arena Boulevard & East Commerce Way
Sacramento, California

1b

Figure 4.7-3
Interstate 5 View of the Proposed Project through Screening Trees – Central Quadrant C

NOTE:

1) All trees depicted at 15 years from date of planting.

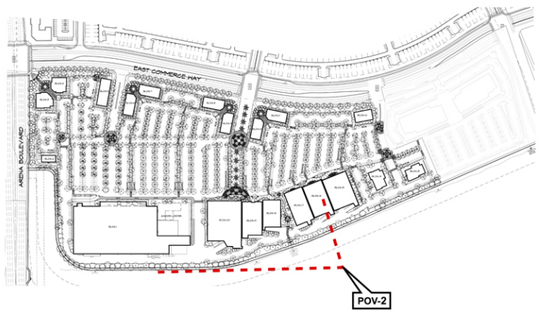
2) Trees that are part of the project are shown at actual count and location.

3) Trees anticipated to be included in the 100' buffer are based on the planting plan executed at I-5 and Del Paso which is similar to the condition at I-5 and Arena.

4) Images created using Google Earth © street views and actual building models.

5) Tree height estimates per the Landscape Architect:

Coast Redwood . . . . . 50'
Willow Oak . . . . . 30'
Valley Oak . . . . . 25'
Bosque Elm . . . . . 40'



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I-5 Views Heading North

Natomas Crossing - Quad C ▪ Arena Boulevard & East Commerce Way
Sacramento, California

2a

Figure 4.7-4
Interstate 5 View of the Proposed Project through Transparent Screening Trees – Central Quadrant C

NOTE:

1) All trees depicted at 15 years from date of planting.

2) Trees that are part of the project are shown at actual count and location.

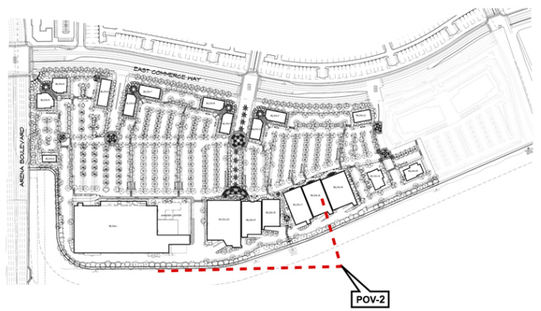
3) Trees anticipated to be included in the 100' buffer are based on the planting plan executed at I-5 and Del Paso which is similar to the condition at I-5 and Arena.

4) Images created using Google Earth © street views and actual building models.

5) Tree height estimates per the Landscape Architect:

Coast Redwood . . . . . 50'
Willow Oak . . . . . 30'
Valley Oak . . . . . 25'
Bosque Elm . . . . . 40'

TRANSPARENT TREES



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I-5 Views Heading North

Natomas Crossing - Quad C ▪ Arena Boulevard & East Commerce Way
Sacramento, California

2b

Tree height estimates at that time are 50 feet for the coast redwood, 40 feet for the Bosque elm, 30 feet for the willow oak, and 25 feet for the valley oak.

In addition, the placement of buildings adjacent to I-5 would ensure that a varied and interesting elevation would be provided to motorists along I-5.

Policies LU 2.7.7 and 2.7.8 in the *Sacramento 2030 General Plan* address views of buildings and parking from City streets. As shown in Figures 4.7-5 and 4.7-6, medium-scale retail buildings would be placed along the roadways surrounding the project site. Development of Quadrant C is based on a "Main Street" concept which would feature varied elevations, textures, and parapet heights. Landscaped pedestrian pathways would connect buildings throughout the site. In addition, extensive street tree and shrub plantings would screen parking areas from public view. Street trees along Arena Boulevard and East Commerce Way would be placed on uniform 50-foot centers, while internal tree use would be massed to create an "orchard" concept. All parking lot plantings would comply with Sacramento Zoning Ordinance requirements.

Currently, the project site does not contain any trees or structures. The project site has been planned for urban development in the *Sacramento 2030 General Plan*. Under the existing Planned Development designation, the majority of the Natomas Crossing site could be developed with uses that are substantially similar to the uses the proposed project would include. By increasing the commercial area, the proposed project would reduce the typical height of the majority of the project. Therefore, the proposed project would not introduce a facade that lacks interest and compatibility that would be visible from a public gathering or viewing area. In addition, as noted above, the Planning Director Plan Review required would ensure that future development of Quadrant B would be in conformance with the PUD Development Guidelines and the North Natomas Community Plan Development Guidelines, which would ensure compatibility with existing and proposed development in the project area. As a result, the proposed project is expected to have ***less than significant*** impacts related to altering the visual character or quality of the project site.

Mitigation Measure(s)
None required.

Figure 4.7-5
Tree Plantings

Figure 4.7-6
Project Entrance along East Commerce Way

4.7-2 Impacts related to light and glare.

The project site consists predominantly of vacant land; therefore, very little light or glare is currently emitted from the project site. The change from an undeveloped property to a mixture of commercial, office, hotel, medical, and residential uses would generate new sources of light and glare such as parking lots, building lighting, and streetlights. The PUD Guidelines for Quadrant C specify that all exterior lighting must be shielded to prevent off-site glare, and that security lighting would be installed so as not to be intrusive to neighboring property owners and motorists. Parking lot fixtures would be a maximum of 25 feet in height, and would be of the same type and size as adjoining properties when possible. The types of lighting and specific locations are not specified for Quadrants B and D; however, the design would likely be substantially similar to Quadrant C.

The Planning Director Plan Review required would ensure that future development of Quadrants B and D would be in conformance with the PUD Development Guidelines, the North Natomas Community Plan Development Guidelines, and the Natomas Crossing Design Guidelines, which would ensure that adverse light and glare impacts would not occur as a result of the project. Therefore, the proposed project would have a ***less than significant*** impact related to light and glare.

Mitigation Measure(s)
None required.

Cumulative Impacts and Mitigation Measures

4.7-3 Long-term impacts to the visual character of the region from the proposed project in combination with existing and future developments in the Sacramento area.

The proposed project is not expected to contribute to a cumulative adverse change in the visual character of the Sacramento region. Due to the existing urban setting of the project area and the continued urban uses planned for the project area, the larger context of the visual impact of the proposed project would not be considered cumulatively significant. The areas surrounding the project site are currently developed for a wide range of uses, including both residential and commercial, and school uses. Development in the project area would be guided by the development regulations provided in the *Sacramento 2030 General Plan*, the PUD Development Guidelines, the North Natomas Community Plan Development Guidelines, the Natomas Crossing Design Guidelines, and the City Zoning Ordinance. In addition, the Planning Director Plan Review required would ensure consistency with the above guidelines. As a result, the project would not conflict with existing adjacent uses, but would instead support those uses. Furthermore, cumulative development within the City of Sacramento would also be subject to similarly stringent design review to ensure that an adverse cumulative impact to aesthetics would not occur. Therefore, cumulative impacts to aesthetics would be ***less than significant***.

Mitigation Measure(s)
None required.

Endnotes

[1] City of Sacramento, *Sacramento 2030 General Plan*, March 2009.
[2] City of Sacramento, *Sacramento 2030 General Plan Master EIR*, March 2009.

4.8 PUBLIC SERVICES

4.8 PUBLIC SERVICES

4.8.0 INTRODUCTION

The Public Services chapter describes the existing and proposed fire and police public service systems and facilities within the project area. All other public services were evaluated in the Initial Study where it was determined that the project would have a less-than-significant impact to schools, parks, and other local government infrastructure and services, such as roads. The Initial Study is included as Appendix C to this Draft EIR.

The Public Services chapter also identifies thresholds of significance to determine whether the project would have an impact to police and fire services. Consideration will be given to on-site as well as off-site infrastructure facilities. Information for this chapter is based upon the *Sacramento 2030 General Plan*[1] and the *Sacramento 2030 General Plan Master EIR*.[2]

4.8.1 EXISTING ENVIRONMENTAL SETTING

The setting section describes the existing law enforcement and fire protection services related to the proposed project site.

Law Enforcement

City of Sacramento Police Department

Police protection services are provided by the Sacramento Police Department (SPD) for areas within the City, and by the County Sheriff's Department for areas outside the City but within the County of Sacramento. In addition to the SPD and Sheriff's Department, the California Highway Patrol, UC Davis Medical Center Police Department, and the Regional Transit Police Department provide police protection within the City of Sacramento.

The proposed project is located within the SPD's Northern Command area. The Northern Command area is bounded by the American River to the south, and the city limits to the west, north, and east. As of May 2008, the SPD was staffed by approximately 798 sworn police officers, 438 civilian staff, and 27 part-time non-career employees. The project site would be served by the North Area station, the William J Kinney Police Facility at 3550 Marysville Boulevard, located approximately five miles from the project site.

The SPD has an unofficial goal of 2.0 to 2.5 sworn police officers per 1,000 residents and one civilian support staff per two sworn officers. The department is currently funded for 1.7 officers per 1,000 residents. The SPD is in the process of preparing a Master Plan, which is expected to provide more specific information regarding the needs of the department and plans for determining appropriate levels of service.

Response Times

Response time is one of the primary means of measuring the adequacy of police services. Priority 1 (P1) calls include officer initiated pursuits. Priority 2 calls (P2) are classified as life threatening situations. The urgency of the call descends as the priority level changes. For example, Priority 3 calls (P3) are less urgent than P2 calls and Priority 4 calls (P4) are less urgent than P3 calls. In 2006 the SPD responded to P2 calls in less than nine minutes.

Table 4.8-1, below, shows the calls for service received by the SPD in 2006.

Table 4.8-1
Sacramento Police Department Workload 2006

Type of Call	Number of Calls Received
9-1-1 Calls	160,431
7-digit emergency and non-emergency calls	518,551
Total calls to communications	949,586
Officer Initiated Calls	133,299

Source: Sacramento Police Department, 2006 Annual Report, 2007.

Crime Prevention

Seven full-time SPD crime prevention community service officers provide community education and crime prevention outreach for the Department. "Neighborhood Watch" programs operate throughout the City.

Mutual Aid Agreements

The SPD contracts its services to the Regional Transit District, Sacramento City Unified School District, and Natomas Unified School District and maintains mutual aid agreements with Sacramento County and the surrounding jurisdictions.

Homeland Security

The SPD's Office of Emergency Services and Homeland Security uses a regional approach in planning, preparing, responding, and recovering from acts of terrorism. Emergency Services and Homeland Security is comprised of two groups: the Sacramento Area Terrorism Early Warning Group and the Urban Area Security Initiative. Personnel from the SPD, Sacramento Fire Department, West Sacramento Police and Fire Departments, Sacramento Metropolitan Fire Department, and Sacramento Health and Human Services staff the office.

Incarceration Facilities

The City uses jail facilities operated by the Sheriff's Department, as discussed below. Because the City does not have its own booking facilities, all arrestees must be taken to the Sacramento County Main Jail for booking. Currently, the booking times can reach one hour at the Main Jail, and the SPD has indicated it will need its own booking facilities for increased efficiency as

Sacramento continues to grow. The Department has temporary holding facilities at its major stations.

Projected Needs

The SPD does not have any currently funded projects for the remodeling or construction of facilities. As the City grows in the south and north areas and traffic congestion correspondingly increases, the SPD is expected to continue to decentralize to maintain adequate response times to areas near the City's borders. New police facilities, with adequate staffing and equipment, would be required as buildout occurs (SGP MEIR, 6.10-12). Adequate staffing requires not only sworn staff, but also civilian employees with technical abilities (including crime scene investigators and dispatchers) to support the Department's services. As previously stated, the SPD is in the process of updating the SPD Master Plan.

The SPD has indicated that although funding for sworn officers has increased over recent years, funding for civilian technical staff to support the Department has not increased proportionally. SPD staff indicates that increasing the number of sworn officers requires an associated increase in civilian employees, specifically with technical abilities (includes crime scene investigators and dispatchers), to adequately provide services. Additionally, SPD staff has also indicted that the maintenance of technology will become increasingly challenging as systems age and technology advances.

Fire Protection

City of Sacramento Fire Department

The Sacramento Fire Department (SFD) provides fire protection services to the entire City and some small areas just outside the City boundaries within the County limits. Contracted areas within SFD's jurisdiction include the Fruitridge, Natomas, and Pacific Fire Protection Districts.

In 2007, the SFD employed 635 personnel (535 fire suppression personnel and 100 fire prevention personnel and support staff) providing protection and response services to the City's residents and visitors. The SFD currently operates 23 fire stations, which house 23 engine companies, eight truck companies, one heavy rescue company, and 12 ambulance units.

Under the direction of the Fire Chief, the SFD is divided into three divisions, the Office of the Fire Chief, providing fiscal management, special projects, and public information; the Office of Operations, providing emergency services, special operations, and shift operations; and the Office of Administrative Services, providing support to operations staff, including fire prevention, training, technical services, human resources, and emergency planning.

Fire Station Locations

Fire stations are strategically located throughout the City to provide assistance to area residents. Each fire station operates within a specific district that comprises the immediate geographical area around the station. Stations are staffed by four-person companies for engine and truck

companies and two-person companies for each medic unit. At a full station, which would include an engine, a truck, and a medic unit, there would be 10 staff per shift, for three shifts per day. The project site would be served by Station 30, located at 1901 Club Center Drive; and if the Station 30 engine is responding to a call, the site would be served by Station 18, located at 746 N. Market Street. These stations are located approximately 2.1 miles northeast and 2.1 miles east, respectively, of the project site[3]. In addition, the SFD has preliminary plans to construct two additional fire station facilities that would service North and South Natomas.

Fire and Medical Incidents

During 2006, the SFD responded to over 69,000 incidents calls. An acceptable service level, defined by the SFD, requires paramedic response to an incident in eight minutes or less, 90 percent of the time. The average response time for all SFD engine companies in 2006 was 4.5 minutes, except in cases where additional resources are needed, which currently takes more than 9 minutes. In recent years, response times have increased in some areas due to increasing population. Other areas have experienced improved response times due to increased coverage, most notably the North Natomas area due to the opening of Station 30, located at 1901 Club Center Drive, approximately 2.1 miles from the project site.

Fires in Sacramento represent approximately six percent of all calls received by the Department, with structure fires representing less than one percent of all calls. Structural fire response requires the simultaneous performance of numerous critical tasks. The number of firefighters required to perform the tasks varies based upon the risk. The number of firefighters needed at a maximum high-risk occupancy event, such as a shopping mall or large industrial building, would be significantly higher than for a fire in lower-risk occupancy structures. Given the large number of firefighters that are required to respond to a high-risk, high-consequence fire, fire departments increasingly rely on automatic and mutual aid agreements to address the fire suppression needs of their community. Although the SFD has the primary responsibility for fire prevention and fire suppression in the City, fire-fighting agencies generally team up and work together during emergencies. These teaming arrangements are handled through automatic and mutual aid agreements.

As stated in the 1993 SFD Master Plan, an activity level of 3,000 calls per year is considered extremely high for a fire company and is used as a “maximum desirable” workload. When the emergency call volume for a company exceeds this level, the SFD Master Plan indicates that the ability to meet training requirements, conduct pre-fire planning and fire prevention activities and perform other non-emergency functions can be compromised. Additionally, above 3,000 calls per year, company availability (the probability that a company will be available to respond to a call in its area) can affect average response times. A maximum company activity level of 3,500 calls per year is often quoted as a practical limit, although some companies operate with even higher activity levels. It should be noted that the SFD is in the process of updating the SFD Master Plan.

According to the 2004 SFD Annual Report, on average, the 2004 dispatches for each of the 21 engine companies ranged from a low of 768 to a high of 4,694, with an average of 2,707

dispatches. However, as discussed in the 1993 SFD Master Plan, some companies operated above 3,000 calls, while others operated below the maximum desirable workload.

Insurance Service Office (ISO) Rating

The ISO provides rating and statistical information for the insurance industry in the United States. The lowest rating is a Class 10, while the best is a Class 1. Based on the type and extent of training provided to fire-company personnel and the City's existing water supply, Sacramento currently has a Class 2 ISO rating.

4.8.2 REGULATORY BACKGROUND

State Regulations

Fire Services

Uniform Fire Code

The Uniform Fire Code contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The Code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, include regulations for building standards (as also set forth in the California Building Code), and fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Local Regulations

The following are the local government environmental goals and policies relevant to the CEQA review process.

Sacramento 2030 General Plan

The following City of Sacramento General Plan goals and policies are applicable to police and fire services:

Public Health and Safety

Police Services

PHS 1.1.2 Response Time Standards. The City shall strive to achieve and maintain appropriate response times for all call priority levels to provide adequate police services for the safety of all city residents and visitors.

PHS 1.1.3 Staffing Standards. The City shall maintain optimum staffing levels for both sworn police officers and civilian support staff in order to provide quality police services to the community.

PHS 1.1.4 Timing of Services. The City shall ensure that development of police facilities and delivery of services keeps pace with development and growth in the City.

PHS 1.1.7 Development Review. The City shall continue to include the Police Department in the review of development projects to adequately address crime and safety, and promote the implementation of *Crime Prevention through Environmental Design* principles.

PHS 1.1.8 Development Fees for Facilities and Services. The City shall require development projects to contribute fees for police protection services and facilities.

Fire Services

PHS 2.1.4 Response Units and Facilities. The City shall provide additional response units, staffing, and related capital improvements, including constructing new fire stations, as necessary, in areas where a company experiences call volumes exceeding 3,500 in a year to prevent compromising emergency response and ensure optimum service to the community.

PHS 2.1.5 Timing of Services. The City shall ensure that the development of fire facilities and delivery of services keeps pace with development and growth of the city.

PHS 2.1.7 Future Station Locations. The City shall require developers to set aside land with adequate space for future fire station locations in areas of new development.

PHS 2.1.11 Development Fees for Facilities and Services. The City shall require development projects to contribute fees for fire protection services and facilities.

PHS 2.2.2 Development Review for New Development. The City shall continue to include the Fire Department in the review of development proposals to ensure projects adequately address safe design and on-site fire protection and comply with applicable fire and building codes.

PHS 2.2.3 Fire Sprinkler Systems. The City shall promote installation of fire sprinkler systems for both commercial and residential use and in structures where sprinkler systems are not currently required by the City Municipal Code or Uniform Fire Code.

PH2 2.2.4 Water Supplied for Fire Suppression. The City shall ensure that adequate water supplies are available for fire-suppression equipment and material, and be served by fire stations containing truck companies with specialized equipment for high-rise and/or emergency incidents.

City of Sacramento Municipal Code

City of Sacramento Municipal Code - Chapter 2.24 (Fire Department)

This chapter sets forth the guidelines for the SFD and includes such regulations associated with the powers and duties of the fire chief and the general organization of the SFD, tampering with fire alarm systems, false alarms, and interference with fire alarm systems. In addition, this chapter establishes the SFD rates and fees for associated services.

Fire Services

Chapter 15.36 of the City Code adopts the Uniform Fire Code with such deletions, amendments, and additions thereof as set forth in the chapter. This is also known as the "fire prevention code" of the City.

4.8.3 IMPACTS AND MITIGATION MEASURES

This section evaluates the project's potential impacts to existing police and fire services.

Method of Analysis

The analysis of the project's potential to adversely impact existing City fire and police services is based on information provided in the 2030 SGP and MEIR.

Standards of Significance

For the purposes of this report an impact would be considered significant if the project would:

- Result in the need for new or altered services related to fire protection or police protection.

Project-Specific Impacts and Mitigation Measures

4.8-1 Increase in demand for law enforcement services.

The proposed project would include the construction of up to 180 residential units in the northern portion of Quadrant B at a future date, as well as substantial retail, office, hospital, and medical office uses in Quadrant B, C, and D. This development would increase the demand for services provided by the Sacramento Police Department

The project site has been planned for development similar in intensity to that proposed in the recently adopted 2030 General Plan, which concluded that upon implementation of the various police-related goals and policies included in the SGP, a less than significant impact would result from general plan buildout (SGP MEIR, 6.10-12).

The Draft North Natomas Finance Plan, expected to be finalized prior to the City's consideration of the Final EIR, provides funding for a new police substation in North Natomas and will meet the anticipated future needs of the community. The project applicant will contribute the project's fair share of funds to the NNFP and will thereby contribute funding for facilities and services that have been identified by the Sacramento Police Department as needed for services in the future.

In addition, the project applicant has agreed to form a Community Facility District (CFD) to fund operations for police services and youth services. The proposed CFD charges would be assessed against approximately 180 multifamily housing units and approximately 2.6 million square feet of nonresidential uses associated with the proposed project. Funding would be allocated equally to police services and youth programs (50 percent/50 percent). By project buildout in year 13, approximately $365,000 is expected to be generated annually, with $184,000 available to fund police services and $184,000 to fund youth services each year. By year 30, approximately $522,000 is expected to be generated annually, with $261,000 available for police and $261,000 available for youth services each year. The applicant's contribution toward operational costs is substantial, and provides mitigation in excess of that which is required by law (see Government Code Section 65913.8, stating that development fees cannot be levied for maintenance and operation of public capital facility improvements).

The project will also provide funds for public services through tax revenues generated by the residential and commercial uses proposed by the project. The City's annual budget allocates a certain percentage of the City's General Fund toward police and fire services. The proposed project would generate significant revenues to the City through property tax, sales tax, Measure A tax, utility tax, and occupancy tax. The project's tax revenues would contribute substantially to the City's General Fund, and would thereby contribute to police and fire services.

The proposed project would comply with the various goals and policies related to police services. For example, the project would comply with SGP Policy PHS 1.1.8 by paying development fees for police protection facilities and services. In addition, the project would be subject to a development review under SGP Policy 1.1.7 to address crime and safety design.

Because the project complies with applicable police-related goals and policies in the general plan, including the payment of applicable development fees, the proposed project would have a ***less than significant*** impact to police protection and services.

Mitigation Measure(s)
None Required.

4.8-2 Increase in demand for fire protection services.

The proposed project would include the construction of up to 180 residential units in the northern portion of Quadrant B at a future date, as well as substantial retail, office, hospital, and medical office uses in Quadrant B, C, and D, and would increase the demand for services currently provided by the Sacramento Fire Department.

The project site has been planned for development similar in intensity to that proposed in the recently adopted 2030 General Plan, and the Master EIR concluded that upon implementation of the various fire-related goals and policies included in the SGP, a less than significant impact would result from general plan buildout. The proposed project would comply with the various goals and policies related to fire services. For example, the project would comply with SGP Policy PHS 2.1.11 by paying development fees for fire protection facilities and services.

In addition, buildings that will be constructed for the project would include fire sprinkler systems and other equipment and infrastructure as required by the California Fire Code. Prior to issuance of each building permit, the proposed fire protection system for each building will be reviewed and approved by the Sacramento Fire Department, and any additions and/or modifications identified by the Department will be incorporated into the proposed fire systems. As a result, the project would comply with SGP policies PHS 2.2.3 and PHS 2.2.4.

The Draft North Natomas Finance Plan (NNFP), expected to be finalized prior to the City's consideration of the Final EIR, provides funding for fire services in North Natomas and will meet the anticipated future needs of the community. The project applicant would contribute the project's fair share of funds to the NNFP and will thereby mitigate the project's impacts to fire services under CEQA.

In addition, the project will provide funds for public services through tax revenues generated by the residential and commercial uses proposed by the project. The City's annual budget allocates a certain percentage of the City's General Fund toward police and fire services. The proposed project would generate significant revenues to the

City through property tax, sales tax, Measure A tax, utility tax, and occupancy tax. The project's tax revenues would contribute to the City's General Fund, and will thereby contribute to police and fire services.

The project is considered to have a ***less than significant*** impact on fire services.

Mitigation Measure(s)
None Required.

Cumulative Impacts and Mitigation Measures

4.8-3 Long-term impacts to public services and facilities from the proposed project in combination with existing and future developments in the Sacramento area.

Implementation of the proposed project would contribute toward an increased demand for police and fire protection services within the City of Sacramento. The recently adopted SGP indicates that the population increase associated with 2030 General Plan buildout would result in the need for approximately 390 new police officers, based upon SPD's goal of 2 officers per 1,000 residents. Additionally, to maintain SPD's 1:2 ratio of support staff to sworn officers, an additional 195 civilian support staff would be required.

For fire protection services, the SGP indicates that based on SFD's goal of 1 fire station per 16,000 residents, approximately 12 new fire stations would be required, as well as additional personnel (SGP MEIR, 6.10-23). Additionally, some existing fire stations are not adequately located to properly serve all the land designated for development within the SGP Policy Area.

These police and fire service needs for the City of Sacramento have been evaluated in the recently adopted 2030 Sacramento General Plan, and the goals and policies included in the General Plan ensure that adequate police and fire facilities and services will be available for build-out of the General Plan according to the 2030 Land Use Diagram. As a result, the 2030 SGP Master EIR concludes that cumulative buildout of SGP would result in a less than significant impact to fire and police services (SGP MEIR, 6.10-12 and 6.10-24)

Development of the project site with the uses proposed for the Natomas Crossing project would generate additional demand for police and fire facilities. However, as demonstrated in this Draft EIR, with payment of development impacts fees for fire and police services and implementation of on-site fire protection systems approved by the SFD prior to issuance of building permits, the project's incremental contribution to the cumulative impact to police and fire services, which was identified as less than significant in the 2030 SGP, would be less then cumulative considerable. Furthermore, other future development projects would be required by the City to pay their fair share fees toward the expansion and creation of public services and

facilities. Therefore, the project would have a ***less than significant*** cumulative impact.

Mitigation Measure(s)
None required.

Endnotes

[1] City of Sacramento, *Sacramento 2030 General Plan*, March 2009.
[2] City of Sacramento, *Sacramento 2030 General Plan Master EIR*, March 2009.
[3] Personal Communication, Sacramento Fire Department, March 12, 2009.

5. CEQA CONSIDERATIONS

5 CEQA CONSIDERATIONS

5.0 INTRODUCTION

The CEQA Considerations chapter of the EIR includes brief discussions regarding the topics that are required to be included in an EIR, pursuant to CEQA Guidelines Section 15126.2. The chapter first includes a discussion of the proposed project's potential to induce economic or population growth. In addition, the chapter includes a list of cumulative impacts, significant cumulative impacts, significant irreversible environmental impacts, and significant and unavoidable environmental impacts that cannot be avoided if the project is implemented.

5.1 GROWTH INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines requires that the EIR discuss the growth-inducing impacts of the proposed project. Specifically, CEQA states:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects, which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities, which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Growth-inducing impacts can result from development that directly or indirectly induces additional growth pressures, which are more intense than what is currently planned for in general plans and community plans. An example of this would be the redesignation to urban uses of property planned for agriculture uses. The growth inducement that could result, in this example, would be the development of services and facilities that could encourage the transition of additional land in the vicinity to more intense urban uses.

Potential Growth-Inducing Effects

The project site is located in an area that has been planned for development in the 2030 Sacramento General Plan (SGP). In fact, this area has been planned for development since 1989. While the project includes an amendment to the SGP, the project would not result in changes that would substantially increase the number of employees and residents beyond what has been anticipated. The project site is surrounded on three sides by existing or planned development, and bordered on the fourth (west) side by Interstate 5.

In addition, the project wastewater and drainage infrastructure would be able to tie into existing utility infrastructure surrounding the project site, and would not result in the extension of utilities

to an area not planned for development or oversizing of any utilities. For example, a 12–inch water line would be constructed west of East Commerce way and sized to serve only Quadrant C. Therefore, neither the proposed project, nor the alternatives considered, would result in growth-inducing effects.

5.2 CUMULATIVE IMPACTS

According to CEQA Guidelines Section 15355, "Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA Guidelines Section 15355(a) requires that cumulative impacts are discussed when the project's incremental effect is cumulatively considerable, as defined in Section 15065(c). "Cumulatively considerable" means that the incremental effects of an individual 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. This section of the EIR identifies the significant cumulative impacts associated with development and operation of the proposed project. Section 15130 of the CEQA Guidelines states, "[…] the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone."

Cumulative Environment

The CEQA Guidelines provide that a lead agency may describe the cumulative environment by either a listing of pending, proposed, or reasonably anticipated projects, or a summary of projections contained in an adopted general plan or a related planning document that describes area-wide or regional cumulative conditions.

The cumulative traffic setting is based on the Sacramento Area Council of Government's (SACOG) regional SACMET Transportation Model. This model has been updated with land use within the City of Sacramento and the North Natomas Regional Analysis District (RAD) based upon the City of Sacramento 2030 General Plan update. The regional travel model encompasses the entire Sacramento region and forecasts traffic volumes based on future land use projections and planned roadway networks throughout the region. This differs from the Baseline setting which only includes existing traffic as well as traffic projected to result from approved, pending, and reasonably foreseeable projects, as identified by the City of Sacramento Development Services Department staff. Table 5-1 summarizes these projects. The traffic associated with these projects has been added to existing traffic to provide baseline traffic volumes.

The cumulative settings for the noise and air quality analyses are identical to the cumulative traffic setting as they are based upon the cumulative traffic data provided in the project traffic study. The land use, hydrology, hazards, and public services cumulative settings are based on buildout projections of the 2030 SGP (available at the City of Sacramento Development Services Department, 300 Richards Boulevard, 3rd Floor, Sacramento).

Table 5-1
Baseline Projects Trip Generation

Approved Development	Land Use	Size	Vehicle Trips		
			A.M. Peak Hour	P.M. Peak Hour	Daily
Commerce Station (Baseline)	Office Retail	1,900 employees 322,200 square feet	1,155	2,118	19,808
Commerce Station (Cumulative only)	Office Retail Townhomes Restaurants	11,184 employees 322,200 square feet 124 units 25,000 square feet	5,402	6,137	48,502
Creekside Learning (Baseline)	Schools	2,000 students	961	255	2,943
Creekside Parcel 3 (Baseline)	Housing	121 units	94	127	1,239
Crown Plaza (Baseline)	Restaurants Retail	9,210 square feet 4,080 square feet	129	175	2,020
Greenbriar (Cumulative only)	Housing Retail School	3,473 units 373,700 square feet 122,500 square feet	3,153	4,467	41,119
Natomas Central (Baseline)	Housing	2,453 units	1,497	1,721	17,977
Natomas Field (Baseline)	Housing	708 units	516	643	6,662
Natomas Landing (Baseline)	Office Shopping Center Restaurant Hotel	200,000 square feet 261,000 square feet 50,000 square feet 450 rooms	1,445	2,294	24,955
Natomas Place (Baseline)	Housing Office Light Industrial	881 units 374 employees 252,000 square feet	1,042	1,155	10,825
Panhandle (Cumulative only)	Commercial Housing School	208,600 square feet 3,237 units 1 Elementary	2,277	3,353	35,383
Parkview Business Park South (Baseline)	Office	200,000 square feet	2,275	327	303
Point West Plaza (Baseline)	Retail Office Gas Station	396,000 square feet 45,000 square feet 32 fuel positions	796	2,110	22,230

Table 5-1
Baseline Projects Trip Generation

Approved Development	Land Use	Size	Vehicle Trips		
			A.M. Peak Hour	P.M. Peak Hour	Daily
Promenade at Natomas (Baseline)	Retail Office Hotel	663,200 square feet 650,000 square feet 232 rooms	30,569	1,442	3,126
Riverdale North (Baseline)	Housing	174 units	131	176	1,731
Riverdale North (Cumulative only)	Housing Retail	174 units 4.8 gross acres	247	625	6,626
Westlake Village Shopping Center (Baseline)	Retail	75,101 square feet	132	518	5,638

Source: City of Sacramento, 2008; DKS Associates, 2009, based on ITE Trip Generation, Seventh and Eighth Editions.

5.3 SIGNIFICANT CUMULATIVE IMPACTS

The following are the significant cumulative impacts that would result from the proposed project plus long-range cumulative development. As noted in the following discussion, most of the cumulative impacts could be reduced to a less than significant level upon implementation of mitigation measures included in the EIR; however, some cumulative impacts would remain significant and unavoidable. All other environmental cumulative impacts were addressed in Chapters 4.2 through 4.8 and found to result in less than significant impacts.

Transportation & Circulation

Cumulative impacts regarding transportation and circulation are discussed in Impacts 4.2-18 through 4.2-22. Significant cumulative impacts were identified for Impact 4.2-18, *Intersections*, Impact 4.2-20, *Freeway Mainline*, Impact 4.2-21, *Freeway Ramp Junctions*, and Impact 4.2-22, *Freeway Ramp Queues*. The EIR concludes that the proposed project would add more trips to the roadway segments, and the projected vehicle trips would degrade the service levels in North Natomas. Therefore, cumulative intersection impacts would result from implementation of the proposed project in combination with other development. Impacts would occur to the following intersections:

- Arena Boulevard/I-5 Northbound Ramps;
- East Commerce Way/Del Paso Road;
- East Commerce Way/Arco Arena Main Entrance/Road B3;
- East Commerce Way/Arena Boulevard;
- East Commerce Way/Natomas Crossing Drive;
- East Commerce Way/Road D2;
- East Commerce Way/San Juan Road;
- Truxel Road/Arena Boulevard; and

However, the Draft EIR includes Mitigation Measures, 4.2-18(a) through 4.2-18(h) that would reduce cumulative intersection impacts to a less than significant level.

The EIR concludes that implementation of the proposed project would result in significant cumulative impacts to the freeway mainline and the following freeway ramp junctions:

- I-5 Northbound – I-80 Exit Ramp;
- I-5 Northbound – I-80 Entrance Ramp;
- I-5 Northbound – Del Paso Road Exit Ramp;
- I-5 Southbound – Arena Boulevard Exit Ramp;
- I-5 Southbound – Arena Boulevard Westbound Entrance Ramp; and
- I-80 Eastbound – I-5 Southbound Entrance Ramp.

Because payment of the project's fair-share toward all freeway-related improvements cannot assure that impacts on the freeway mainline or the freeway ramp junctions will be reduced to a

less than significant level, cumulative impacts to the freeway mainline and ramp junctions were determined to be significant and unavoidable.

The EIR concludes that implementation of the proposed project would result in significant cumulative impacts to the following freeway ramp queuing:

- I-5 Northbound – Arena Boulevard.

However, the Draft EIR includes mitigation measures that reduce the freeway ramp queuing cumulative impacts to a less than significant level.

Air Quality

Cumulative impacts regarding air quality are discussed in Impacts 4.4-7 through 4.4-10. A significant cumulative impact was identified for Impact 4.4-8, *Cumulative Contribution to Regional Air Quality Conditions*. The EIR concludes that the project-generated increases in VMT could conflict with emissions inventories contained in regional air quality attainment plans and could contribute, on a cumulative basis, to the region's non-attainment status. The mitigation provided would not reduce the impact to a less than significant level; therefore, the project's incremental contribution to the identified cumulative impact would be cumulatively considerable, resulting in a significant and unavoidable impact. Impact 4.4-10, *Cumulative impacts related to greenhouse gas emissions*, concludes that because the proposed project substantially complies with AB 32 and the policies contained in the 2030 SGP related to greenhouse gases, the project's incremental contribution to greenhouse gases would not be cumulatively considerable, and the impact would be less than significant.

5.4 SIGNIFICANT IRREVERSIBLE (UNAVOIDABLE) ENVIRONMENTAL IMPACTS

The CEQA Guidelines mandate that an EIR address any significant irreversible environmental changes that would be involved in the proposed action, should the action be implemented (CEQA Guidelines Section 15126.2[c]). A project would be considered to result in significant irreversible environmental changes if the project falls into one of the following categories:

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of a project would generally commit future generations to similar uses (e.g., a highway provides access to a previously remote area);
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing of the proposed consumption of resources is not justified (e.g., the project involves a wasteful use of energy).

Determining whether the proposed project would have significant irreversible environmental changes requires a determination of whether any of the above impacts would occur as a result of the construction and operation of the proposed project. The proposed project would involve the consumption of nonrenewable resources (both materials and energy) for both construction and

ongoing use following completion of the project. However, the project would be compliant with the waste reduction and energy efficiency requirements established by the State. In addition, because the proposed project site is planned for development and is surrounded by existing and planned development, the construction of the project would not have secondary impacts that would commit future generations to similar uses differing from the surrounding existing uses. The project is not likely to result in potential environmental accidents that would cause irreversible damage due to the proposed land uses of retail/commercial. Protected biological resources do not exist on the project site, and cultural resources would be protected if discovered on the site. Therefore, the proposed project would not result in significant irreversible environmental changes.

5.5 SIGNIFICANT ENVIRONMENTAL IMPACTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

According to the CEQA Guidelines Section 15126.2(b), an EIR must include a description of those impacts identified as significant and unavoidable should the proposed action be implemented. Such impacts are unavoidable because either mitigation is not feasible, or only partial mitigation is feasible, without imposing an alternative design on the project. The significant and unavoidable impacts are listed below, followed by a brief discussion. The impact statements are numbered according to the respective chapters in which the issues are discussed.

4.2-20 Freeway mainline.

The project would increase traffic volumes on the freeway mainline. More specifically, the project would cause significant cumulative impacts to the following location:

- I-5 Northbound – from Arena Boulevard to Del Paso Road;

Payment of the Public Facility fees cannot assure that impacts at the freeway ramp junctions will be reduced to a less than significant level. To partially offset these impacts, the applicant will pay its required share of freeway-related improvements by paying the Public Facility fees. Nevertheless, given the uncertainty regarding the timing and completion of the proposed freeway improvements and because the California Environmental Quality Act (Pub. Resources Code, §21000 et seq.) defines "feasible" for these purposes as capable of being accomplished in a successful manner with a reasonable period of time, taking into account economic, environmental, social, and technological factors (Pub. Resources Code, Section 21061.1), the impacts of the project on the freeway mainline would remain significant and unavoidable.

4.2-21 Freeway ramp junctions.

The project would increase traffic volumes at freeway ramp junctions. The project would cause significant cumulative impacts at the following locations:

- I-5 Northbound – I-80 Exit Ramp;
- I-5 Northbound – I-80 Entrance Ramp;
- I-5 Northbound – Del Paso Road Exit Ramp;

- I-5 Southbound – Arena Boulevard Exit Ramp;
- I-5 Southbound – Arena Boulevard Westbound Entrance Ramp; and
- I-80 Eastbound – I-5 Southbound Entrance Ramp.

Mitigation would not reduce the impact to a less than significant level. As stated above for Impact 4.2-20, payment of the Public Facility fees cannot assure that certain Caltrans projects will be built and, thus, that impacts at the freeway ramp junctions will be reduced to a less than significant level. To partially offset these impacts, the applicant will pay its required share of freeway-related improvements by paying the Public Facility fees. Nevertheless, given the uncertainty regarding the timing and completion of the proposed freeway improvements and because the California Environmental Quality Act (Pub. Resources Code, §21000 et seq.) defines "feasible" for these purposes as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors (Pub. Resources Code, Section 21061.1), the impacts of the project on the freeway ramp junctions would remain significant and unavoidable. Therefore, the cumulative impact to the freeway ramp junctions would be significant and unavoidable.

4.4-3 Long-term increases of criteria air pollutants (project-level).

Construction of the proposed project would result in the generation of emissions of ozone-precursor pollutants (i.e., ROG and NO_X). Long-term increases in area- and mobile-source emissions associated with the proposed land uses were estimated using the CARB-approved URBEMIS2007 computer program, which is designed to model emissions for land use development projects. In accordance with SMAQMD recommendations, predicted operational emissions were calculated for both summer and winter conditions During the summer ozone season, operation of the proposed project would generate maximum daily emissions of approximately 367 lbs/day of ROG, 376 lbs/day of NO_X, 826 lbs/day of PM_{10}, and 159 lbs/day of $PM_{2.5}$. During the winter months, the proposed project would generate maximum daily emissions of approximately 367 lbs/day of ROG, 552 lbs/day of NO_X, 850 lbs/day of PM_{10}, and 182 lbs/day of $PM_{2.5}$. It should be noted that these project emission estimates are conservative due to the fact that the model does not account for the fact that the project has been designed to reduce vehicle miles traveled. For example, the development of the hospital is anticipated to reduce travel distance for residents living in and near Natomas who currently access services in downtown, which would reduce traffic on regional routes such as I-5 and I-80.

In comparison to existing zoning, the proposed project would result in net increases of up to approximately 213 lbs/day of ROG, 316 lbs/day of NO_X, 501 lbs/day of PM_{10}, and 116 lbs/day of $PM_{2.5}$. Predicted maximum daily emissions of ROG and NO_X attributable to the proposed project would exceed SMAQMD's recommended significance threshold of 65 lbs/pollutant/day. With implementation of recommended emission-reduction measures, predicted operational emissions of ROG and NO_X would still be anticipated to exceed SMAQMD's corresponding significance threshold of 65 lbs/pollutant/day. As a result, this impact would be considered and unavoidable.

4.4-9 Cumulative contribution to regional air quality conditions (Construction and Operation).

Because the Sacramento Valley Air Basin is classified as non-attainment status for ozone and PM_{10}, if project-generated emissions of either of the ozone precursor pollutants (i.e., ROG and NO_X) or PM_{10} would exceed the long-term thresholds, then the cumulative impacts would be considered significant. In addition, a project that would result in a change in land use and corresponding increases in vehicle miles traveled (VMT) may result in an increase in VMT that is unaccounted for in regional emissions inventories contained in regional air quality control plans. In comparison to existing zoning, the proposed project would result in an estimated increase in vehicle trips (over and above trips that would result from buildout under existing zoning) of approximately 10,383. Therefore, project-generated increases in VMT could conflict with emissions inventories contained in regional air quality attainment plans and could contribute, on a cumulative basis, to the region's existing and/or projected non-attainment status. Implementation of Draft EIR mitigation measures would reduce short-term and long-term increases in emissions attributable to the proposed project. However, long-term operational increases in emissions would still be anticipated to exceed SMAQMD's significance threshold, therefore, the impact to regional air quality would be significant and unavoidable, given the projected emissions for the project would exceed the level of emissions for the site assumed in the existing, adopted Attainment Plan.

6. PROJECT ALTERNATIVES

6 PROJECT ALTERNATIVES

6.0 INTRODUCTION

The primary intent of the alternatives evaluation in an EIR, as stated in Section 15126.6(a) of the California Environmental Quality Act (CEQA) Guidelines, is to "[…] describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Furthermore, Section 15126.6(f) states, "The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice."

The CEQA Guidelines provide the following guidance for discussing alternatives to a proposed project:

- An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6[a]).

- Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly (CEQA Guidelines Section 15126.6[b]).

- The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination […] Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6[c]).

- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A

matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison (CEQA Guidelines Section 15126.6[d]).

- The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decisionmakers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (CEQA Guidelines Section 15126.6[e][1]).

- If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6[e][2]).

In addition, Section 15126.6(d) of the CEQA Guidelines states, "If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed."

6.1 PURPOSE OF ALTERNATIVES

The project alternatives need to feasibly attain most of the basic objectives of the project, but avoid or substantially lessen any of the significant effects of the project.

The following project objectives have been identified by the applicant:

- To construct retail development on property adjacent to Interstate 5.
- To promote the development of regional commercial uses to meet current commercial needs and demand.
- To foster economic and employment opportunities within the City of Sacramento through the development of vacant property within greater northern Sacramento area.
- To provide the necessary circulation and infrastructure improvements to accommodate development of the property.
- To promote strong architectural and design features that are compatible with adjacent uses and provide a unique identity for the project as a whole.
- To provide essential healthcare and emergency room services options to Natomas.
- To develop a project that will ultimately provide a mix of uses, including residential, hotel, office, medical, and retail, that are a logical extension of adjacent uses.

Potentially significant environmental impacts of the proposed project, which would be reduced to a less than significant level with implementation of the mitigation measures in each of the chapters, include:

- ***Transportation and Circulation.*** Implementation of the proposed project would result in increased traffic congestion that would have significant adverse effects on intersections. The proposed project would add pedestrian and bicycle demands within the vicinity of the project site, creating a significant impact related to pedestrian and bicycle circulation. In addition, the project's impacts related to parking would be significant. Furthermore, project-related construction activities could have a significant impact on circulation in the vicinity of the project site.

- ***Noise.*** Activities associated with the construction and operation of the proposed project would result in elevated noise levels. In addition, project-related rooftop HVAC equipment noise and loading dock and truck circulation noise could adversely affect sensitive receptors in the vicinity of the project site. Furthermore, traffic noise levels at proposed on-site residential uses could exceed the City's threshold for acceptable noise levels at residential uses.

- ***Air Quality.*** Short-term construction activities associated with the proposed project would increase temporary emissions of NO_X and PM_{10} that could exceed Sacramento Metropolitan Air Quality Management District's significance thresholds. In addition, the proposed project could have adverse impacts related to the exposure of sensitive receptors to toxic air contaminants. Furthermore, the proposed project's cumulative contribution to global climate change could be significant.

Implementation of mitigation measures required in this Draft EIR would reduce the above impacts to a less than significant level. However, even after implementation of feasible mitigation measures, the following impacts would remain significant and unavoidable:

- ***Transportation and Circulation.*** The proposed project's incremental contribution to the projected cumulative traffic volumes on the freeway mainline and freeway ramp junctions would be considered cumulatively considerable. Although the Draft EIR requires the project's fair share payment toward regional improvements, the impact would remain significant and unavoidable.

- ***Air Quality.*** The proposed project's operational ROG and NO_X emissions would likely exceed Sacramento Metropolitan Air Quality Management District's corresponding significance thresholds. In addition, the proposed project would cumulatively contribute to adverse air quality conditions within the Sacramento Valley Air Basin.

6.2 ALTERNATIVES CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

The following section describes the Off-Site Alternative, which was considered but dismissed from further analysis in this EIR.

Off-Site Alternative

Section 15126.6(f)(2)(B) of the CEQA Guidelines states, "If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reason in the EIR." A feasible location for the proposed project that would result in substantially reduced impacts does not exist.

The CEQA Guidelines Section 15126.6(b) requires that only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. The Off-Site Alternative would involve the construction of the proposed project on an alternative location and, more specifically, on other lands located within the Natomas Crossing Planned Unit Development (PUD) that are owned by the project applicant. According to the CEQA Guidelines Section 15126.6 (f)(1), one factor that may be taken into account to determine the feasibility of an off-site alternative is whether the project proponent already owns, or could reasonably acquire, off-site lands that would accommodate the proposed project. Among the land owned by the project proponent that is of sufficient size to accommodate the majority of the proposed project are Quadrant E and Quadrant F located west of Interstate 5 (I-5), east of Duckhorn Drive, and south of Arena Boulevard, within the Natomas Crossing PUD. Development of Quadrant E and Quadrant F would include the development of fewer acres than the proposed project. Therefore, because the Off-Site Alternative location consists of fewer acres than the proposed project site, the Off-Site Alternative could not accommodate the entirety of uses associated with the proposed project.

In addition, it should be noted that, by definition, the CEQA Guidelines Section 15126.6(b) and (c) state that an alternative should avoid or substantially lessen one or more of the environmental effects of the project. Alternative locations within North Natomas, including Quadrant E and Quadrant F, generally contain characteristics similar to the proposed project site. For example, Quadrant E and Quadrant F would be accessed by the same I-5 ramps as the proposed project site and significant impacts related to transportation and circulation would be expected to be the same under the Off-Site Alternative, as compared to the proposed project. Furthermore, like portions of Quadrant C for the proposed project, residential uses are located directly adjacent to Quadrant E and Quadrant F and the Off-Site Alternative's impacts related to air quality and noise would be similar to, if not greater than, the proposed project's impacts on surrounding sensitive receptors. Therefore, development of the project on an alternative location in North Natomas would be expected to result in the same significant impacts as the proposed project. As a result, an environmentally feasible off-site location that would meet the requirements of CEQA, as well as meet the basic objectives of the project, does not exist.

6.3 ALTERNATIVES CONSIDERED IN THIS EIR

The following section evaluates the alternatives considered for the proposed project, which include:

- No Project – No Build Alternative;
- No Project – Existing Zoning Alternative; and
- Reduced Intensity Alternative.

CEQA requires the evaluation of the comparative impacts of the "No Project" alternative (CEQA Guidelines Section 15126.6[e]). Analysis of the No Project Alternative "shall discuss […] existing conditions […] as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." (*Id.*, subd. [e][2]) "If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the 'no project' alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in the property's existing state versus environmental effects that would occur if the project were approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed. In certain instances, the no project alternative means 'no build,' wherein the existing environmental setting is maintained. However, where failure to proceed with the project would not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment." (*Id.*, subd. [e][3][B])

Given the existing entitlements, the City has decided to evaluate both of the potential "no project" scenarios. Under the No Project – No Build Alternative, the project site would remain vacant, undeveloped land. However, because the project site is entitled to develop with urban uses based on the existing land use designations, denial of the project would likely result in the proposal of another project. Therefore, under the No Project – Existing Zoning Alternative, the full development of the project site pursuant to the existing zoning designations is evaluated.

In addition, the City has decided to evaluate a Reduced Intensity Alternative, which would include the development of 50 percent fewer square feet (s.f.) with the same mixture of retail, residential, office, and hotel uses. The intensity of hospital uses would not be reduced in this alternative. The major characteristics of each of the alternatives are summarized below.

It should be noted here that discussions of the following chapters have not been included for each Alternative because the Draft EIR determined that the proposed project would not result in any significant impacts related to: Noise (Chapter 4.4); Hydrology, Water Quality, and Drainage (Chapter 4.5); Hazards (Chapter 4.6); Aesthetics (Chapter 4.7); or Public Services (Chapter 4.8). Therefore, the impacts related to the proposed project and the impacts related to the Alternatives would be similar.

According to the Noise chapter, the proposed project impacts associated with construction noise, construction-induced vibrations, project-related increases in existing traffic noise levels at off-site residential uses, noise levels associated with the proposed helistop, and the cumulative increase in noise levels in the project vicinity would be less than significant. Stationary noise impacts from truck circulation, loading docks, and rooftop HVAC equipment, traffic noise levels at proposed on-site residential uses, and traffic noise levels at the proposed hospital could exceed the applicable noise level standard at existing and proposed residential uses would be reduced to less than significant levels with the implementation of mitigation measures identified in the chapter.

According to the Hydrology, Water Quality, and Drainage chapter, the proposed project would not result in significant impacts to surface water quality because, prior to construction, the project would be required to prepare a Storm Water Pollution Prevention Plan that includes Best Management Practices (BMPs), as well as comply with the City's Stormwater Management and Discharge Control Ordinance and the Grading, Erosion, and Sediment Control Ordinance. In addition, the project would not result in significant impacts to existing drainage facilities because the project would be required to construct on-site internal drainage infrastructure and pay fees associated with the development and maintenance of the existing drainage infrastructure. Furthermore, the project would not result in the exposure of people to flood hazards because the project cannot be feasibly built out until Natomas levees are recertified by the Federal Emergency Management Agency or until FEMA redesignates the Natomas Basin with a flood zone designation that permits feasible development of the proposed project.

According to the Hazards chapter, impacts related to routine transport, use, and disposal of hazardous materials would not be significant because the use and transportation of hazardous materials are subject to stringent local, State, and federal regulations, the intent of which is to minimize the public's risk of exposure. In addition, because the project would include the completion of a Hazardous Materials and Waste Management Plan, impacts related to the storage of hazardous materials associated with the proposed hospital would not be significant. Furthermore, impacts related to potential hazards associated with the proposed on-site helistop would not be significant because the specific design and placement of the helistop would be subject to review by Caltrans, Division of Aeronautics, and pilots and flight crew involved with the proposed air medical helicopter operations would be required to maintain FAA certification.

According to the Aesthetics chapter, impacts related to alteration or degradation of the existing visual character and quality of the project site and the site's surroundings, and impacts related to light and glare, would not be significant because the project would be required to be consistent with the Sacramento 2030 General Plan goals and policies related to aesthetics, as well as obtain approval of a Planning Director Plan Review in order to be in conformance with the PUD Development Guidelines and the North Natomas Development Guidelines, which would ensure compatibility with existing and proposed development in the project area.

According to the Public Services chapter, impacts related to increased demands on existing police and fire facilities and services would not be significant because the project applicant would be required by the City of Sacramento to pay development impact fees for the project's increased demand for police and fire services.

No Project – No Build Alternative

The No Project – No Build Alternative is defined in this section as the continuation of the existing condition of the project site, which is currently vacant and mass-graded. The No Project – No Build Alternative would allow the project site to continue in the site's existing state. The No Project – No Build Alternative would not meet any of the project objectives.

Transportation and Circulation

As with the proposed project, the No Project – No Build Alternative would not further contribute towards the cumulative need to construct regional roadway improvements, such as freeway ramp modifications. In addition, this Alternative would eliminate the need for the modification of various existing traffic signals to accommodate new vehicle trips resulting from buildout of the project site. Therefore, the No Project – No Build Alternative would result in no impacts to transportation and circulation, as compared to the proposed project.

Air Quality

Under the No Project – No Build Alternative, air quality conditions would remain the same as existing air quality conditions. Because the site is currently vacant and is not being farmed, pollution emissions are not currently generated on-site. In contrast, the proposed project would create increased levels of emissions generated during construction of the project and operation of the future uses on the site, as well as increased traffic in the vicinity of the site. Therefore, the No Project – No Build Alternative would result in fewer impacts to air quality, as compared to the proposed project.

No Project – Existing Zoning Alternative

Section 15126.6(e)(1)(B) of the CEQA Guidelines states, "[…] where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment."

Existing land uses for each quadrant of the proposed project include (it should be noted that although specific assumptions are not listed below for residential uses, residential uses could be allowed in certain areas of Quadrant B upon subsequent schematic plan amendment approvals, given the provisions in the NNCP Employment Center land use designation):

Quadrant B

- 353,580 to 1,219,070 s.f. of office
- 19,215 to 99,856 s.f. of retail
- 47,850 to 75,400 s.f. of hotel

Quadrant C

- 198,800 to 500,639 s.f. of office
- 25,295 to 117,600 s.f. of retail
- 97,350 to 153,400 s.f. of hotel
- 7,000 to 16,800 s.f. of daycare

Quadrant D

- 253,600-584,700 s.f. of office

In comparison, at full buildout, the proposed project would include up to 180 residential units and 2,638,494 s.f. of buildings, which would include retail, hotel, office, hospital, and restaurant uses. The No Project – Existing Zoning Alternative would develop the same amount of acreage as the proposed project, but would provide more employment opportunities and less commercial/retail and hospital development. For example, this Alternative could include commercial/retail uses ranging from a potential low of 44,510 s.f. to a high of 217,456 s.f., and employment uses ranging from a low of 777,600 s.f. to a high of 2,248,559 s.f. Therefore, with the decrease in commercial/retail uses that would result from this Alternative, development of the No Project – Existing Zoning Alternative, while still meeting Project Objectives 3 and 5, would not fully satisfy Project Objectives 1, 2, and 5.

Transportation and Circulation

The No Project – Existing Zoning Alternative would result in a reduction in total external traffic trips. The Natomas Crossing Traffic Study (January 2009) determined that Baseline trips would be reduced by 38,083 trips per day; and that under this Alternative, levels of service (LOS) would not exceed the significance threshold at study intersections, whereas for the proposed project, one study intersection, East Commerce Way / Arena Boulevard, would be significantly impacted (See Chapter 4.2, Transportation and Circulation, Table 4.2-13). The traffic analysis does identify several potentially significant impacts resulting from this Alternative, which would also result from the proposed project; these potentially significant impacts include impacts to pedestrian and bicycle circulation, as well as traffic impacts related to construction of the project. However, several less than significant traffic impacts would result from both the No Project – Existing Zoning Alternative and the proposed project, including impacts to roadway segments, the freeway mainline, freeway ramp junctions, freeway ramp queuing, and transit systems. Because the No Project – Existing Zoning Alternative would result in fewer trips per day, and no potentially significant impact to the East Commerce Way / Arena Boulevard intersection under the Baseline scenario, compared to the proposed project, this Alternative would have fewer traffic impacts.

Air Quality

Under the No Project – Existing Zoning Alternative, vehicle trips would be reduced. The reduction of vehicle trips would result in fewer air pollutants being emitted by project-related traffic. In addition, by not altering the land use designations for the site, the emissions generated by the proposed project would be in substantial conformance with the amounts projected for the site in existing air quality attainment plans.

Detailed construction information is not available for buildout under existing zoning. However, emissions of NO_X generated during construction would be anticipated to be greatest during the initial grading phases, due to the increased amount of off-highway equipment required. Modeling of emissions conducted for the grading phases, is based on the assumption that roughly 25

percent of the project area would be actively disturbed on any given day. Assuming that development, in accordance with existing zoning, were to proceed in a manner similar to that of the proposed project, resultant maximum daily emissions of NO_X would similar to the proposed project emissions. However, it should be noted that the proposed project includes construction of Quadrant C in four separate phases, followed by construction of Quadrant B and Quadrant D. In the event that construction of Quadrant C, Quadrant B, and Quadrant D were to occur simultaneously, predicted maximum daily emissions of NO_X could conceivably be greater than that of the proposed project, and could exceed SMAQMD's threshold of 85 lbs/day.

Emissions of particulate matter generated during construction would be anticipated to be greatest during the initial grading phases. Modeling of emissions conducted for the grading phases is based on the assumption that roughly 25 percent of the project area would be actively disturbed on any given day. Assuming that development, in accordance with existing zoning, were to proceed in a manner similar to that of the proposed project, resultant maximum daily emissions of particulate matter would be similar. However, it should be noted that the proposed project includes construction of Quadrant C in four separate phases, followed by construction of Quadrant B and Quadrant D. Assuming that development of Quadrant B, Quadrant C, and Quadrant D were to occur simultaneously, predicted maximum daily emissions of particulate matter could conceivably be greater than that of the proposed project.

During the summer ozone season, development in accordance with existing zoning would generate maximum daily emissions of approximately 169 lbs/day of ROG, 164 lbs/day of NO_X, and 349 lbs/day of PM_{10}. During the winter months, emissions of ROG would decrease to approximately 154 lbs/day; whereas, emissions of NO_X would increase to approximately 237 lbs/day. Unmitigated maximum daily emissions during both summer and winter operational conditions would exceed SMAQMD's recommended significance threshold of 65 lbs/pollutant/day.

Development consistent with existing zoning would result in predicted 1-hour and 8-hour local mobile-source CO concentrations of approximately 9.1 ppm and 6.4 ppm, respectively. Predicted CO concentrations would not be anticipated to exceed the 1-hour or 8-hour CAAQS; therefore the impact under existing zoning would also not be considered significant.

Assuming that construction proceeds in six phases (four phases for Quad C), consistent with the assumptions made for the proposed project air quality analysis, the resultant maximum daily emissions of criteria air pollutants, as well as particulate matter, would be similar to the emissions created by construction of the proposed project (See Table 4.4-6 in Chapter 4.4, Air Quality, for further detail). However, if construction of Quadrants B, C, and D were to occur simultaneously under this Alternative, predicted maximum daily emissions of criteria air pollutants and particulate matter could conceivably be greater than that of the proposed project.

For long-term criteria air pollutants, the proposed project and the No Project – Existing Zoning Alternative would have similar impacts – both would exceed the Sacramento Air Quality Management District's threshold and result in significant and unavoidable impacts (See Table 6-1 below).

Table 6-1
Long-term Operational Emissions of Criteria Air Pollutants (Unmitigated)

Source	Estimated Emissions (lbs/day)							
	Summer Conditions				Winter Conditions			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
Existing Zoning								
Mobile Sources	155.34	148.61	348.62	66.69	140.31	221.66	348.62	66.69
Natural Gas Usage	1.08	14.85	0.03	0.03	1.08	14.85	0.03	0.03
Landscape Maintenance	0.25	0.04	0.01	0.01	No Winter Emissions			
Architectural Coatings	12.74	--	--	--	12.74	--	--	--
Total:	169.41	163.50	348.66	66.73	154.13	236.51	348.65	66.72
SMAQMD thresholds (lbs/pollutant/day)	*65*	*65*	--	--	*65*	*65*	--	--
Total Emissions Exceeds Thresholds?	*Yes*	*Yes*	--	--	*Yes*	*Yes*	--	--
Proposed Project								
Mobile Sources	339.60	353.58	824.27	157.61	332.30	526.76	824.27	157.61
Natural Gas Usage	1.58	21.59	0.04	0.04	1.58	21.59	0.04	0.04
Landscape Maintenance	0.98	0.17	0.04	0.04	No Winter Emissions			
Architectural Coatings	16.48	--	--	--	16.48	--	--	--
Hearth	No Summer Emissions				16.35	3.55	24.22	23.32
Helicopter Emissions	0.5	0.4	1.20	1.20	0.5	0.4	1.20	1.20
Total:	367.27	375.74	825.55	158.89	367.18	552.30	849.73	182.17
Net Increases In Comparison to Existing CP:	197.36	211.84	475.69	90.96	213.05	315.79	501.08	115.45
SMAQMD thresholds (lbs/pollutant/day)	*65*	*65*	--	--	*65*	*65*	--	--
Total Emissions Exceeds Thresholds?	*Yes*	*Yes*	--	--	*Yes*	*Yes*	--	--

Emissions were calculated using the URBEMIS2007 (v9.2.4) computer program for buildout conditions.

Furthermore, cumulative impacts to regional air quality would be considered significant under both scenarios. Therefore, under the No Project – Existing Zoning Alternative, impacts associated with air quality would be similar to those created by the proposed project.

Reduced Intensity Alternative

The Reduced Intensity Alternative would include a 50 percent reduction in square footage associated with the proposed project. The Reduced Intensity Alternative would retain the same mixture of retail, support retail, and restaurant uses as the proposed project, and would utilize the same access points. Under the Reduced Intensity Alternative, Quadrant C would be reduced from 404,580 s.f. of retail uses and 200,000 s.f. of office uses to approximately 202,290 s.f. of retail uses and 100,000 s.f. of office uses. The southern portion of Quadrant B, development of which is not proposed at this time, would be reduced from a range of 309,276 to 463,914 s.f. of retail uses to a range of 154,638 to 231,957 s.f. of retail uses. The northern portion of Quadrant B, would be reduced from 180 residential units, 130,000 s.f. of hotel uses, and 240,000 s.f. of office uses to 90 residential units, 65,000 s.f. of hotel uses, and 120,000 s.f. of office uses. The development of Quadrant D would be reduced from 600,000 to 300,000 s.f. of medical office uses. However, the development of hospital uses on Quadrant D would not be reduced in this alternative. Development of the Reduced Intensity Alternative would result in less intense development and fewer impacts than the Existing Zoning Alternative.

Transportation and Circulation

Under the Reduced Intensity Alternative, the reduction in retail square footage would result in a significant decrease in the total number of project-related vehicle trips. Using the data contained in the traffic study, the number of new vehicle trips associated with buildout of this Alternative can be calculated as approximately 31,394 (i.e., 50 percent of the 62,788 new vehicle trips generated by the proposed project). In comparison, the traffic study determined that the Existing Zoning Alternative would generate 31,074 trips. Given that the Reduced Intensity Alternative would be expected to generate approximately the same number of vehicle trips as the Existing Zoning Alternative (e.g., the Reduced Intensity Alternative would only generate 320 more trips than the Existing Zoning Alternative), similar to the Existing Zoning Alternative there would be no impacts to study intersections under the Baseline scenario with the Reduced Intensity Alternative. However, for the proposed project, one study intersection, East Commerce Way / Arena Boulevard, would be significantly impacted under the Baseline scenario (See Chapter 4.2, Transportation and Circulation, Table 4.2-13). It should be noted that, under the Baseline Plus Project scenario, all of the transportation and circulation impacts associated with the proposed project would be mitigated to a less than significant level. However, under the Cumulative Plus Project scenario, impacts of the proposed project to freeway ramp junctions would be significant and unavoidable. Although vehicle trips would be reduced under this Alternative as discussed above, the impact to freeway ramp junctions would be expected to remain significant and unavoidable because new vehicle trips would still be added to ramp junctions that are already operating at LOS F and payment of fees would not ensure that impacts would be reduced. Therefore, the Reduced Intensity Alternative would result in slightly reduced impacts to transportation and circulation, as compared to the proposed project, but the Alternative's incremental contribution to the impact on freeway ramp junctions would also be significant.

Air Quality

Under the Reduced Intensity Alternative, the reduction in retail square footage would result in a significant decrease in the total number of project-related vehicle trips. As a result, emissions of criteria pollutants from commercial uses and automobiles would be reduced. Using the URBEMIS computer modeling program, the total operational emissions for the Reduced Intensity Alternative was projected to be approximately 320 lbs/day of ROG; and 300.1 lbs/day of NO_X. Emissions of reactive organic gases (ROG) and nitrous oxides (NO_X) associated with the proposed project were determined to be approximately 367 lbs/day of ROG and 354 lbs/day of NO_X. Both the emissions estimates for the proposed project and this Alternative would exceed the SMAQMD's 65 lbs/day significance threshold. Therefore, although the Reduced Intensity Alternative would result in lower levels of ROG and NO_X emissions than the proposed project, the emissions would still exceed the SMAQMD thresholds of 65 lbs/day for ROG and NO_X, causing the impact to remain significant and unavoidable. As a result, the Reduced Intensity Alternative would result in slightly reduced impacts to air quality, as compared to the proposed project, but a significant and unavoidable impact would remain.

Summary

Table 6-2 summarizes the level of significance of the impacts for the proposed project and each of the project alternatives.

Table 6-2
Environmental Impacts of the Proposed Project and Project Alternatives

Impact[1]	Proposed Project	No Project – No Build Alternative	No Project – Existing Zoning Alternative	Reduced Intensity Alternative
Transportation and Circulation	Significant and Unavoidable	Less	Less[2]	Less[2]
Air Quality	Significant and Unavoidable	Less	Less[2]	Less[2]

[1] Land Use is not included here given that the Land Use chapter of this DEIR discusses the consistency of the proposed project with existing plans and policies, rather than physical impacts, which are addressed in the remaining technical chapters of this DEIR.

[2]Although the alternative would reduce potential impacts, the overall result would remain "Significant and Unavoidable."

Less = fewer impacts than proposed project

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. Section 15126(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states, "[…] if the

environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Designating a superior alternative depends in large part on what environmental effects one considers most important. This EIR does not presume to make this determination; rather, the determinations of which impacts are more important, are left to the reader and the decisionmakers. Finally, it should be noted that the environmental considerations are one portion of the factors that must be considered by the public and the decisionmakers in deliberations on the proposed project and the alternatives. Other factors of importance include urban design, economics, social factors, and fiscal considerations. In addition, the superior alternative would, ideally, still provide opportunities to achieve most of the stated project objectives.

The Reduced Intensity Alternative would be the environmentally superior alternative to the proposed project because the Reduced Intensity Alternative would result in the addition of fewer vehicle trips to the project area and air quality impacts would be reduced due to the reduction of vehicle trips. It should be noted that the significant and unavoidable impacts related to transportation and circulation and air quality would be expected to remain under the Reduced Intensity Alternative. Based on the previous discussion, the Existing Zoning Alternative would be the environmentally superior alternative. However, the Reduced Intensity Alternative was selected as the environmentally superior alternative because CEQA does not permit selection of a No Project alternative, as discussed above.

7. REFERENCES

7 REFERENCES

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