

# Draft Environmental Impact Report

## FLYING J TRAVEL PLAZA

**Prepared for:**

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August 2006

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### 1.0.1 INTRODUCTION

This Draft Environmental Impact Report (DEIR) has been prepared to provide an assessment of the proposed Flying J Travel Plaza and related discretionary actions. The project applicant is requesting to develop 27 acres of a 60-acre parcel in the City of Dixon's Northeast Quadrant Specific Plan (NQSP) area into a truck stop and travel plaza. The project applicant (applicant) is requesting approval of the proposed project by the City of Dixon.

This DEIR has been prepared by the City of Dixon, which is serving as Lead Agency for the environmental review of the proposed project. This document will be used to inform city decision makers, responsible and trustee agencies, as defined by the California Environmental Quality Act (CEQA) and *CEQA Guidelines*, other public agencies, and members of the public as to the potential environmental effects associated with the development of the Flying J Travel Plaza. A summary of the permit and review requirements for this project, as currently identified by the City of Dixon, are summarized in **Table 1.0-1, Permit and Review Requirements**, on the following page.

The proposed Project would develop a Flying J Travel Plaza on 27 acres of the 60-acre project site. Implementing the project would require a conditional use permit and an amendment to the City's NQSP. Project entitlements include:

- Design approval of the buildings, signs and landscaping;
- Development agreement as per NQSP regarding infrastructure improvements, public dedications and other contributions, in return for guarantees by the City;
- A conditional use permit to allow fast-food services;
- An variance to subsection 12.26.09F.1 of the Zoning Ordinance to reduce parking lot shade requirements; and
- A variance to Section 12.20.03K of the Zoning Ordinance, which prohibits flashing and moving signs.

These actions constitute the "project" as defined by the *CEQA Guidelines* and assessed in this DEIR.

**Table 1.0-1  
Permit and Review Requirements**

<b>Agency</b>	<b>Permit/Approval</b>
<i>Local Government</i>	
City of Dixon	Adoption of the proposed project, conditional use permit, development agreement, variances, design review, and possibly a parcel map.
Dixon-Solano Municipal Water Service (DSMWS)	The project would require provision of domestic water supply from DSMWS, which serves the area.
Dixon Regional Watershed Joint Powers Authority (JPA)	The project drainage would have to participate in the funding of the Eastside Drainage Project or other drainage solution approved by the members of JPA.
Solano County Health Department	(Restaurant and shower accommodations inspected and permitted).
Solano Irrigation District	The project would require modifications to be made to existing irrigation infrastructure in order to be provided with irrigation services.
Yolo-Solano Air Pollution District	The fueling stations and truck emissions generated by the project would have to comply with local and state air quality standards and, as a result, permits from the District would be required.
<i>State Agencies</i>	<b>Permit/Approval</b>
Caltrans/Solano County	Encroachment Permits would be requested of Solano County and Caltrans to allow access within County and Caltrans rights-of-way, for the construction of various roadway/circulation and drainage improvements.
Central Valley Regional Water Quality Control Board	Construction of the project requires a General Construction Activity Stormwater Permit. Stormwater Pollution Prevention Plan (SWPPP) must be developed and implemented.

*Source: Impact Sciences, Inc. 2006.*

## 1.0.2 PURPOSE OF THIS EIR

As the Lead Agency for the environmental review of this project, the City of Dixon has prepared this DEIR to assess the environmental impacts of implementing the Project. The DEIR has been prepared pursuant to the CEQA (Public Resources Code Section 21000 et seq.) and the *CEQA Guidelines* (California Code of Regulations, Section 15000 et seq.), as amended. CEQA requires that all State and local government agencies consider consequences of projects over which they have discretionary authority.

This DEIR is a public document that discloses the potential significant environmental impacts associated with the proposed Flying J Travel Plaza and identifies mitigation measures to reduce these effects; identifies significant impacts that cannot be avoided; growth-inducing impacts; effects found not to be significant; and significant cumulative impacts of present and reasonably foreseeable future projects. This DEIR serves an informational document to be used in the planning and decision-making process. It is not the purpose of a DEIR to recommend approval or denial of a project. CEQA requires decision makers to balance the benefits of a proposed project against the environmental risks.

### 1.0.3 SCOPE OF THIS EIR

The City of Dixon completed a preliminary review of the application for the proposed Travel Plaza, as described in Section 15060 of the *CEQA Guidelines*, and determined that an EIR should be prepared. The City completed a Notice of Preparation (NOP) on October 20, 2005, which is included as an appendix (**Appendix 1.0**) to this DEIR. The NOP proposed that the EIR evaluate several environmental topics and noted that the City would consider comments received in response to the NOP in determining the final scope and content of the EIR.

A public scoping meeting was held in the City of Dixon on November 9, 2005. This meeting was intended to inform the public and interested agencies of the proposed project, solicit comments, and identify areas of concern. A majority of the comments expressed concern regarding the effects the project would have on drainage, traffic, and air quality.

Based on the preliminary review conducted by the City and responses to the NOP, issues addressed in this DEIR include the following:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality



- Land Use and Planning
- Noise
- Public Services and Recreation
- Transportation
- Utilities

#### 1.0.4 REPORT ORGANIZATION

This DEIR is organized into the following sections:

**Section 1.0, Introduction,** summarizes the purpose and organization of the DEIR.

**Section 2.0, Summary,** summarizes environmental consequences that would result from the proposed Flying J Travel Plaza, provides a summary table that identifies significant environmental impacts, describes mitigation measures, and indicates the level of significance of impacts before and after mitigation.

**Section 3.0, Project Description,** describes the proposed Flying J Travel Plaza and related entitlement approvals.

**Section 4.0, Environmental Setting, Impacts and Mitigations,** describes the environmental setting, including applicable plans and policies, provides an analysis of the potential environmental impacts of the proposed project and cumulative impacts, and identifies mitigation measures to reduce any significant impacts.

**Section 5.0, Other CEQA Required Discussions,** provides discussion of the following CEQA-mandated subjects: growth inducement, significant irreversible environmental changes, unavoidable significant effects, and effects found not to be significant.

**Section 6.0, Alternatives,** presents alternatives to the proposed project that would reduce significant environmental impacts and evaluates the comparative environmental consequences and benefits of each alternative. This section includes an analysis of the No Project Alternative as required by CEQA.

**Section 7.0, References**, identifies the references, organizations, and persons contacted during preparation of this EIR.

**Section 8.0, Report Preparation**, identifies the Lead Agency and consultants involved in the preparation of this EIR.

### 1.0.5 ENVIRONMENTAL REVIEW PROCESS

The City of Dixon has filed a Notice of Completion (NOC) with the Governor's Office of Planning and Research (State Clearinghouse), indicating that this DEIR has been completed and is available for review and comment by the public (SCH# 1999082090).

The DEIR will be available for review by the public and interested parties, agencies and organizations for a review period of at least 45 days, as required by California law. In reviewing the DEIR, reviewers should focus on the document's adequacy in identifying and analyzing significant effects on the environment and ways in which the significant effects of the project might be avoided or mitigated (see *CEQA Guidelines* Section 15204(a)). Comments on the DEIR may be submitted in writing during the 45-day public review period to:

Mr. David Dowswell  
Community Development Director  
600 East A Street  
Dixon, CA 95620-3697  
ddowswell@ci.dixon.ca.us

Although pursuant to State law (Pub. Resources Code Section 21091(d)(3)), the City will accept email comments in lieu of traditional mailed or hand-delivered comments; reviewers are encouraged to follow up any email comments with letters. Following the close of the review period, responses to comments on the DEIR will be prepared and published as a separate document. The DEIR text and appendices, together with the responses to comments document and any text changes to the original DEIR made in response to comments or other new information, will constitute the Final EIR (FEIR).

The City of Dixon will review the FEIR for adequacy and will exercise its independent judgment regarding certification pursuant to the requirements of Section 15090 of the *CEQA Guidelines*. If the City certifies the FEIR, it will then consider the project separately for approval or denial. If the City chooses to

approve the project, findings on the feasibility of reducing or avoiding significant environmental effects will be made and, if necessary, a Statement of Overriding Considerations will be prepared.

If the City approves the project, a Notice of Determination (NOD) will also be prepared and will be filed with the State Clearinghouse. The NOD will include a description of the project, the date of approval, and an indication of whether Findings and Statement of Overriding Considerations were prepared. The NOD will also provide the address where the EIR and record of project approval are available for review.

## 2.0 EXECUTIVE SUMMARY

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### 2.1 INTRODUCTION

This section summarizes the information and analyses presented in this Draft Environmental Impact Report (EIR). Section 15123 of the *California Environmental Quality Act (CEQA) Guidelines* require an EIR to include a brief summary of the information presented in an EIR in language as clear and as simple as reasonably practical. In accordance with the *CEQA Guidelines*, this section presents a brief description of the proposed Flying J Travel Plaza project and discussion of the potential environmental impacts of the project and the measures recommended to mitigate these impacts.

### 2.2 PROJECT SUMMARY

The 60-acre project parcel is located in the Central Valley region of Northern California, in the City of Dixon, which is approximately 65 miles northeast of San Francisco and 23 miles southwest of Sacramento between the cities of Davis and Vacaville. The project area is in the northwestern portion of the City and is bounded to the west and northwest by Interstate 80 (I-80), to the east by Pedrick Road, and to the south by undeveloped land. The project area is located within the Dixon Northeast Quadrant Specific Plan (NQSP), which is generally defined by North First Street to the west, Pedrick Road to the east, the I-80 corridor to the north, and Vaughn Road to the south. The project area is located on relatively flat terrain, although there is a mild slope from the northwest to the easterly and southerly portions of the site.

The project is the proposed development of a Flying J Travel Plaza on a portion of the 60-acre property, south of the Pedrick Road/I-80 interchange, in the City of Dixon. The project would develop approximately 27 acres of the 60-acre property with a Flying J Travel Plaza. In addition to providing fueling services for diesel and gasoline vehicles, the facility would include a 17,638-square-foot structure with a 24-hour convenience store, restaurant, fast-food court, driver lounge, and laundry and shower facilities. The project would also develop an off-site stormwater detention basin facility on the east side of Pedrick Road. No development of the remaining 33 acres is proposed at this time.

Trucks using the site would be approximately 68 feet long with trailers and approximately 28 feet long without trailers. Recreational vehicles (RVs) would range in length from 25 to 55 feet. The project includes 16-foot-high fueling canopies and fuel pumps for autos/RVs on the southern side of the main structure, and fueling areas for trucks on the western side of the main structure. The fueling stations would be comprised of lanes where a single vehicle could drive under the canopy, park, and refuel.

A separate Truck Area containing 12 fueling stations would be located west of the Travel Plaza structure. This area would also contain a 92-foot-long truck scale along its southern edge. There would be four separate and staggered groups of truck parking spaces with smaller groups of truck parking spaces along the western boundary of the development. The Auto/RV Area, approximately one-third the size of the Truck Area, would contain five fueling stations and RV dump stations. The remaining developable area would contain large surface parking lots, three freestanding signs, and landscaping.

## 2.3 SUMMARY OF ENVIRONMENTAL ANALYSIS

A summary of the potential environmental impacts of the proposed project as identified in this EIR is provided below. The resources addressed in this EIR are based, in part, from comments received in response to the Notice of Preparation (NOP) and the preparation of the Initial Study (see **Appendix 1.0**). This discussion also addresses the measures recommended to mitigate the impacts identified in this EIR and the level of impact anticipated after these measures have been implemented.

### 2.3.1 Aesthetics

The City of Dixon is characterized by urban uses including residential, commercial, industrial, roadways, a railroad line, schools, parks, and infrastructure. The undeveloped portions of the City and surrounding unincorporated lands are dominated by active agricultural operations. Cities in the Sacramento Valley are often buffered from each other by large tracts of agricultural land and open space. Water bodies in the Dixon area include Putah Creek to the north, the Sacramento River to the east. These rivers and creek create the boundary of the Solano sub-basin. The project site is generally flat,

with vertical variations of approximately 8 feet between the lowest and highest elevations within the 60-acre site. The site has historically been used for agriculture but is currently undeveloped and uncultivated. The two most visually prominent boundaries of the site are Pedrick Road, which abuts the site's eastern border, and I-80, which is the site's northwestern boundary. There are no visually distinctive geographic features on the project site. The surrounding area is also flat with portions of land to the south, east, and north across I-80 characterized as having an agricultural landscape.

Implementation of the project would develop 27 acres of undeveloped land into a Travel Plaza and would substantially change the visual character of the project site. The project would adhere to adopted design guidelines to reduce some visual impacts to a less-than-significant level. While the 85-foot-high, freeway-oriented sign would create a significant visual impact, this impact could be mitigated by reducing the height of the sign by 20 feet. Other visual impacts associated with signage would be softened by the landscape plan. New sources of light and glare would be created by the project, but these impacts would be less than significant because the uses proposed by the project would be consistent with those in the NQSP.

### **2.3.2 Agricultural Resources**

In the past, lands within the project site consisted primarily of row crops, including corn, tomatoes, and alfalfa. The entire 60-acre project parcel is classified as Prime Farmland. The majority of the project site consists of Class II Capay-silty Loam soil with an index of 69. A small portion of the site is Class I Yolo Loam soil with an index of 100. Land uses adjacent to the project site consist of agricultural, commercial, and light industrial uses. The Campbell Soup and Supply Company, LLC and Dixon Truck and Tractor are southeast of the site. Row, field crops, and orchards are among the agricultural uses that surround the site to the east, south, and west. Rural residential uses are also located to the south. Developing portions of the NQSP are to the west. Lands east of Pedrick Road and west of I-80 are unincorporated parts of Solano County. The proposed Dixon Downs project site is located to the south and comprises the rest of the NQSP area. The Milk Farm project is located west of I-80 and is proposing highway commercial facilities. According to the NQSP, in 1995, there

were lands under Williamson Act contract immediately adjacent to the project site, to the northeast, across Pedrick Road.

Implementation of the project would convert 27 acres of Prime Farmland to non-agricultural use. This new use would not interfere with surrounding agricultural uses, but it would be a significant and unavoidable impact even with use of conservation easements or payment of impact fees.

### 2.3.3 Air Quality

Air quality in the Sacramento Valley Air Basin (SVAB) is influenced by the climate of the region, topography, and the region's growing population. Air quality is also affected by pollution that is generated in other locations and transported to the Valley. The project site is located in Solano County, which is at the southwestern end of the Sacramento Valley. The Valley is bounded by the coastal ranges on the west and the Sierra Nevada Mountains on the east. The Yolo-Solano Air Quality Management District (YSAQMD) boundary is approximately 20 miles northeast of the Carquinez Strait, a sea-level gap between the Coast Range and the Diablo Range; the intervening terrain is flat. The northern portion of Solano County, in which the project is located, is in the Sacramento Regional Nonattainment Area, which is currently classified as being in "serious" nonattainment for the eight-hour federal ozone ambient air quality standard and the one-hour state ozone standard.

Through control measures adopted by State, local, and federal agencies, all areas of the Sacramento Valley, including the northern part of Solano County, have attained the current California and federal carbon monoxide CO standards. The northern portion of Solano County is currently designated as nonattainment for the State PM10 standard. The SVAB is in attainment or unclassified with respect to the State and federal standards for all other criteria pollutants, which include nitrogen dioxide (NO<sub>2</sub>), sulfates, sulfur dioxide (SO<sub>2</sub>), lead (Pb), hydrogen sulfide (H<sub>2</sub>S), visibility reducing particles, and vinyl chloride.

Construction of the proposed project would occur in two separate phases. The NO<sub>x</sub> and PM10 emissions during Phase I construction of the proposed project would exceed the YSAQMD's recommended construction thresholds of significance for these pollutants. However, implementation of the suggested

mitigation measures would reduce PM10 emissions to a less-than-significant level. The emissions during Phase II construction would not exceed any of the YSAQMD's thresholds of significance for construction. Following construction of the proposed project, daily activities at the Travel Plaza would generate criteria pollutants and diesel exhaust particulate matter (DPM) due to heavy heavy-duty trucks and other vehicles visiting the site, as well as direct emissions associated with Travel Plaza operation.

Operational emissions generated from the proposed project would exceed the YSAQMD's recommended operational threshold of significance for NOx. Although the PM10 operational threshold of significance was not exceeded, DPM has been classified by the California Air Resources Board as toxic air contaminant and a carcinogen. As a result, a health risk assessment was performed to evaluate the health impacts of DPM emissions due to the proposed project's operation. The cancer risk at the maximally impacted workplace receptor would exceed the YSAQMD's recommended cancer risk threshold of 10 in a million. Therefore, this air quality impact would be considered significant. The proposed project would not generate DPM emissions that exceed the YSAQMD's recommended threshold for noncancer health impacts (i.e., chronic hazard index of one). Potential mitigation measures could reduce DPM emissions; however, they are not feasible with respect to the proposed project. In the future, more stringent emission standards and lower emitting technology would reduce the air quality impacts quantified in this analysis.

#### **2.3.4 Biological Resources**

The project site supports typical central valley agricultural fields with small linear areas of ruderal non-native annual grassland species, with a few intermittent perennial species, bordering the agricultural fields. Currently the project site is vacant. The topography of the site is flat, with an elevation of 55 to 60 feet above mean sea level (msl). There were no wetlands observed that exhibited seasonal wetland characteristics such as wetland hydrology (e.g., swales, topographic depressions, vernal pools) or plant communities that support a predominance of hydrophytic plant species.

Construction of the project could result in loss of active nest sites for special-status bird species including burrowing owl, horned lark, and loggerhead shrike.



Burrowing owls could have a direct loss if occupying the project site during construction. While no special status species were observed on the project site, the Applicant shall have surveys conducted prior to construction or site preparation by a qualified biologist to determine if active nest sites and burrowing owls are observed on the project site. Active nest sites would not be disturbed if found and any burrowing owls on the project site would be relocated.

Project construction would result in the loss of foraging habitat for special-status and common bird species. The Applicant shall preserve habitat in the same proportion as the project site for Swainson's Hawk at a location approved by the California Department of Fish and Game. The Applicant would also agree to a mitigation fee to the City for the purposes of habitat development. Finally, suitable habitat would be purchased through a conservation easement to mitigate the lost habitat of project implementation.

### 2.3.5 Hazards and Hazardous Materials

The project area is generally dominated by agricultural uses with scattered vacant lands and commercial and industrial uses, including the Campbell Soup and Supply Company, LLC and a truck repair and parts company 0.8 mile to the southeast, a produce market and two gas stations within 0.5 mile to the north, a Caltrans maintenance yard and a roof truss manufacturer within 0.5 mile to the northeast, and a Walmart 1.5 miles to the southwest. Agricultural land uses are associated with hazardous materials use and storage because of the use of pesticides, herbicides, fungicides, fertilizers, petroleum-related compounds, and other chemicals in farming. However, Phase 1 Environmental Site Assessments done in the NQSP found no evidence of existing hazards related to former uses.

Implementation of the project would involve the regular use, storage, and transportation of diesel and gasoline fuel. In addition, products such as cleaning agents, paints, and solvents may contain hazardous materials that would be used in varying amounts during construction and operation of the project. All new uses would be required to comply with hazardous regulatory requirements, which would minimize potential exposure to hazardous materials. There are no known contaminated soils present, but mitigation measures establish procedures to eliminate potential hazards associated with exposure to any unidentified

contaminated soil. Construction of the Travel Plaza structure would be required to comply with current building and fire codes, as well as other applicable local requirements. With the characteristics of the project as proposed and implementation of the mitigation measures in this Draft EIR, impacts associated with hazards and hazardous materials would be less-than-significant.

### **2.3.6 Hydrology and Water Quality**

The project site is located within the City of Dixon Basin D, in the Lower Putah Creek area (watershed number 511.20, USGS HUC 18020109) of the Valley Putah-Cache Creek hydrologic unit in the Sacramento River Basin, Central Valley, California. Watershed D drains into the Dixon Resource Conservation District's Tremont 3 Drain. The Tremont 3 Drain discharges into the Reclamation District (RD) 2068 Main Canal and Lateral Number 5, which, in turn drains into RD 2068's V-Drain. The V-Drain discharges into the Hass Slough, which outfalls into the Sacramento River. According to the Dixon Resources Conservation District (DRCD), management of drainage ways has been an ongoing problem due to lack of maintenance, increased runoff, soil erosion, siltation, and periodic flooding. As a result, the DRCD, Reclamation District 2068, Main Prairie Water District, and City of Dixon are working together with landowners to establish a long-term plan for handling existing and future drainage.

Sacramento River is currently listed as impaired due to unknown toxicity, mercury, and diazinon. Causes of impairment are agriculture, resource extraction, and unknown causes.

A series of privately maintained culverts and ditches drain approximately 2,700 acres of agricultural land north of I-80. The project site lies downstream of a 360-acre watershed that is bisected by I-80, with the larger portion consisting of 300 acres northwest of the freeway. Runoff from this area drains southeast through four 24-inch by 36-inch culverts under I-80 and onto the project site. The runoff then discharges near the Pedrick Road offramp, approximately 600 feet east of the Pedrick Road intersection.

Implementing the project would create a travel plaza on currently undeveloped land, increasing runoff on-site and to the neighboring drainages. Based on an analysis of pre- and post-development conditions, the project would increase

peak flows by 19 percent for the 10-year storm and 16 percent for the 100-year storm. This increase in runoff would potentially increase the volume and concentration of non-point and point source pollutants. The Tremont 3 Drainage Canal, Hass Slough, and the Sacramento River would be the ultimate recipients of these pollutants, potentially affecting wildlife, vegetation, human health, and groundwater drinking sources. Furthermore, alternations in drainage patterns and grading during the construction period could result in construction-related erosion and turbid runoff. Lastly, implementing the project would increase risk of exposing people to the occasionally local flooding on adjacent roadways.

The project applicant has prepared preliminary drainage improvements including water quality swales along the north and south sides of the proposed developed, and an off-site detention pond east of the site. However, these improvements require further analysis to ensure that they are constructed in accordance with the NQSP, City of Dixon, and Joint Powers Authority (JPA) requirements. Therefore, additional drainage analysis and possible design modifications would be required as part of the project conditions of approval and as mitigation for impacts identified in this EIR. Compliance with these requirements would be needed to make the project consistent with the NQSP policies and to reduce significant impacts to a less-than-significant level. The Applicant would also be required to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit to minimize potential water quality impacts in the project area.

### **2.3.7 Land Use and Planning**

The topography of the project site is flat. In the past, lands within the project site consisted primarily of field and row crops, including corn, tomatoes, and alfalfa. Interstate 80 abuts the site along the northwest edge. According to the NQSP the project site is zoned Highway Commercial (CH) with a General Plan designation of Employment Center (E). The project site is surrounded by agricultural and developed uses. The Campbell Soup and Supply Company, LLC and a truck repair and parts company are near the site to the southeast. Row, field crops, and orchards are among the agricultural uses that surround the site to the east, south, and north across I-80 to the north. Rural residential uses are also located to the south. Developing portions of the NQSP are to the west. Lands to the east and north of I-80 of the project site are outside of the City of Dixon city limits and

are, therefore, in the County's jurisdiction. A proposed development project, Dixon Downs, is located to the south, adjacent to the project site, but within the NQSP area. The Milk Farm project is located on the opposite side of I-80 and has a development proposal into the City of Dixon for highway commercial facilities.

General Plan policies for the NQSP area encourage new commercial, business, and light industry development near existing road and utility infrastructure and City services. The policies set forth in the NQSP also address the need for the North Quadrant Planning Area to accommodate a majority of planned commercial and retail growth for the City. The project would be consistent with applicable General Plan policies for NQSP area, and, for this reason, land use and planning impacts would be less-than-significant.

### 2.3.8 Noise

The project is located in a rural/agricultural environment adjacent to the intersection of I-80 and Pedrick Road. The site is currently vacant with no significant sound barriers of any kind. There are no roadways running through the site. Noise generated by I-80 and Pedrick Road represents the largest source of noise on the project site. There are no nearby "sensitive receptors," such as single- and multifamily residences, hospitals, churches, libraries, schools, and retirement homes. The closest sensitive receptors to the project site are three single-family residences located to the south along Vaughn Road. Industrial and big-box commercial land uses exist nearby, including the Campbell Soup Supply Company, LLC and Dixon Truck and Tractor to the southeast and a Wal-Mart to the southwest. The nearest passenger airport to the project site is Travis Air Force Base, which is located approximately 16 miles to the southwest of the project site. Sacramento International Airport is located approximately 22 miles to the north east of the project site.

Over the projected seven-month construction period of the project, ambient noise levels and vibration levels would temporarily increase. Although ambient noise levels from construction activities would exceed noise performance standards, the closest sensitive receptor, three single-family residences along Vaughn Road, are approximately 1.15 miles from the project site. Compliance with applicable regulations and implementation of the recommended measures would reduce potential noise impacts to a less-than-significant level.

### 2.3.12 Public Services

The Dixon Police Department (DPD) provides police protection for the project site and the City of Dixon. The DPD employs 26 sworn officers and six non-sworn employees, including one chief, one captain, one lieutenant, six sergeants, 17 officers, one public safety administrative manager, four community service officers, and one records clerk. Patrol personnel are available on call 24 hours per day; the minimum staffing level is one sergeant and one officer although there are typically three or more officers on duty at any given time.

The DPD does not expect the Project to result in a substantial increase in calls for police service. The planned police station expansion would adequately serve the project. Prior to approval, the City would verify that there is adequate funding for the facility. In addition, the Applicant would provide on-site security upon project construction completion. Therefore, there would be a less-than-significant impact to police services.

The Dixon Fire Department (DFD) serves the City of Dixon. The DFD also contracts its services to the Dixon Fire District that covers a 300-square-mile rural area from Winters to Rio Vista. The DFD operates out of a single station located at 205 Ford Way, approximately 2 miles from the project site. The 16,500-square-foot station was constructed in 1998 and houses the following equipment: 4 fire engines, 1 ladder truck, 2 rescue squad, 2 water tenders, 3 command/staff vehicles, and 2 utility vehicles. The department operates with 21 sworn, 3 non-sworn, and 30 volunteer firefighters, including the following: 2 administrative clerks, 1 code compliance technician, 3 chief officers, 3 fire captains, 6 fire engineers, 3 fire fighters, 6 fire fighter/paramedics, and 30 volunteer personnel.

The DFD expects an increase in fire-related calls because of the increased truck traffic from the project. The response times for these calls would not substantially increase as a result of the proposed project. Additionally, the new fire station located in the southwest portion of the City would eliminate any increase in response times to the project site. The Applicant shall dedicated land, funds, or an assessment district for the establishment of adequate fire protection services. The Applicant shall also prepare an emergency plan that includes information about each facility and location of fire hydrants. Therefore, there would be a less-than-significant impact to fire services.

### 2.3.10 Traffic and Circulation

A comprehensive traffic study has been prepared that assesses the impact of the traffic that would be generated by the project. The study also assesses project-related and projected growth impacts in the area on local and regional transportation facilities.

The project would not result in any significant impacts that cannot be mitigation to a less-than-significant level. More specifically, development of the project would not result in unacceptable levels of service at existing intersections in the vicinity of the project. While the project would result in the need for signalization of the I-80 Westbound Ramps/Pedrick Road and I-80 Eastbound Ramps/Pedrick Road intersections, the project applicant would contribute its fair share towards improvements. Additionally, the project would result in an increase in traffic volumes to the existing I-80 freeway mainline, but the increase would not exceed the 2.5 percent limit established by the City of Dixon. Project access points would be constructed to provide clear sightlines for inbound and outbound traffic, thereby minimizing safety issues with regards to site access.

### 2.3.11 Public Utilities and Service Systems

The City of Dixon, Solano County, and private utility and service providers do not currently provide water service and supply, wastewater collection and treatment, and solid waste collection and disposal to the project site.

The project as proposed would involve the use of a planned new water production and storage facility in the NQSP area. This system would serve the project site's future demands for potable water and landscape irrigation water. This system would be constructed even without this project and would reduce any impacts to the water supply system from implementation of the project to a less-than-significant level. A Water Supply Assessment was prepared to determine the adequacy of available groundwater supplies to meet the long-term needs of the NQSP area. This study concludes that available groundwater supplies are adequate to meet the needs of the area for potable water and supplemental landscape irrigation water.

Water supply and delivery capacity required for buildout of the NQSP was determined through the preparation of a Water Supply Assessment (WSA). The

WSA identified the need to construct, infrastructure improvements in the NQSP area, including the construction of two groundwater deep-well facilities, a water storage tank, and booster pump station to accommodate future growth. Future development within the NQSP area can only proceed after these supply improvements are implemented.

The project applicant would be required to fund the construction of a new water facility through mitigation. The fee amount and type of improvement would be determined by the City of Dixon and the DSMWS. This would meet the policies in the NQSP, as well as reduce significant impacts to a less-than-significant level.

Implementation of the project would create a demand for wastewater services. The project, as proposed, would include construction of a sewer line that would have adequate capacity to convey all of the wastewater generated by the project to the treatment plant. The treatment plant is undergoing expansion and is in the process of upgrading to comply with new State regulations and provide new permitted capacity. Compliance with the identified mitigation measures would reduce impacts related to the project's demand for wastewater collection and treatment system to a less-than-significant level.

Construction and operation of the project would increase the generation of solid waste for disposal at the Hay Road Landfill. The project as proposed includes a program to recycle construction waste, and the County landfill has the permitted capacity to accept the solid waste generated by construction and operation of the project. Therefore, project impacts related to solid waste collection and disposal would be less-than-significant.

## 2.4 SUMMARY OF PROJECT ALTERNATIVES

Based on the requirements of CEQA and the potential significant impacts of the project, several alternatives to the project are evaluated in this EIR. These alternatives consider different mixes of uses including an alternative that would provide an off-site location and an alternative that includes reduced intensity of use. In addition, as required by the *CEQA Guidelines*, this section of the EIR considers the No Project Alternative as well as other land use concepts considered during the planning process.

The *CEQA Guidelines* require that an environmentally superior alternative to the proposed project be identified in an EIR. The *CEQA Guidelines* also require that "...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(e)(2)) In general, the environmentally superior alternative minimizes adverse impacts to the environment, while still achieving the basic project objectives.

In light of these guidelines, as well as a review of the different alternatives, it was determined that the Reduced Development Alternative would be environmentally superior to the proposed project. While some impacts under this alternative would be similar in significance to the proposed project, other resources would experience a reduced degree of significance, namely aesthetics, air quality, noise, public services, transportation and utilities.

## 2.5 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Responses to the Notice of Preparation for this EIR, which was prepared and circulated for review by the City of Dixon, identified key issues to be addressed during the environmental review of the proposed Specific Plan project. These issues included the following resources.

### 2.5.1 Air Quality

- Potential for increased diesel exhaust from an increase in the number of trucks in the area adding to an already bad situation.
- Project would result in excessive idling from trucks with refrigeration units and lack of a purifying exhaust system.
- Effects of P.M. 2.5 on public health from operation of the project.
- Ensuring the use of Urbemis2002 version 8.7 for estimation project mass emissions.
- Mitigating construction equipment exhaust and including strategies to reduce NO<sub>x</sub>, ROG, and PM 10 emissions.
- Mitigating operational emissions by installing truck stop electrification technology; planting trees and shrubs near buildings; improving reflectivity of buildings to reduce the amount of solar heat buildings absorb; increasing shade for parking lots and the incorporation of energy saving measures.



## 2.5.2 Biological Resources

- If wetlands present on the site, a 401 Water Quality Certification application would be required (RWQCB).

## 2.5.3 Drainage

- Concern over localized flooding stemming from flows off properties to the north and east of the Campbell's facility and the overtopping of Pedrick Road.
- Concern over the cumulative drainage impacts from the large increase in impervious surface area and alteration of existing drainage patterns.
- Specific drainage flow data and drainage facility mitigation measures should be developed as part of the EIR process.
- Identification of drainage infrastructure, timing of construction, and source of funding should be identified prior to project development.

## 2.5.4 Traffic

- Potential LOS impacts to the I-80/Pedrick Road interchange during both weekday and weekend peak hours of operation.
- Any improvements to the I-80/Pedrick Road interchange must be approved by the local Caltrans district. Improvements over one million dollars requires completion of a PSR/PR document.

## 2.6 SUMMARY OF PROJECT IMPACTS AND RECOMMENDED MITIGATION MEASURES

**Table 2.0-1, Summary of Project Impacts and Mitigation Measures**, summarizes the impacts identified for the proposed project as well as any mitigation measures that would reduce impacts associated with the project. This table also includes the level of impact significance after mitigation, if applicable.

**Table 2-1  
Summary of Project Impacts**

Impacts	Mitigation Measures	Significance after Mitigation
<b>AESTHETICS</b>		
<b><i>Impact 4.1-1</i></b>	<b>Mitigation Measure 4.1-1</b>	
Project implementation would introduce buildings, paved areas, bright-colored signage, and new vegetation onto 27 acres of undeveloped land, which would substantially change the visual character of the project site. This would be a significant impact.	<p>The 85-foot-high, freeway-oriented sign shall be reduced in height by 20 feet. Per subsection 12.20.06 E.A of the Dixon Zoning Ordinance (ZO) and the NQSP, only one freestanding sign measuring more than six feet in height is permitted. To minimize visual impacts associated with project signage, the following measures shall be implemented.</p> <ul style="list-style-type: none"> <li>• The applicant shall prepare a sightline study to justify the height of the proposed 85-foot freeway oriented sign;</li> <li>• The applicant shall obtain a Conditional Use Permit for all freestanding signs, which must be approved by the Planning Commission;</li> <li>• The applicant shall avoid the use of animated signs, such as electronic reader / message boards;</li> <li>• The applicant shall ensure that all proposed freestanding signs incorporate architectural design features in order to enhance their appearance; and</li> <li>• The applicant shall prepare and submit a master sign program to the City for approval, which is required for all multi-tenant complexes.</li> </ul>	Less-than-significant
<b><i>Impact 4.1-2</i></b>	<b>Mitigation Measure 4.1-2</b>	
Constructing buildings and lighted parking areas would introduce new sources of light and glare on the project site. Lighting guidelines required by the NQSP would reduce impacts to less-than-significant.	In addition to the mitigation measures listed in the NQSP, the applicant shall prepare a photometric analysis demonstrating compliance with subsection 12.24.09 of the Dixon Zoning Ordinance.	Less-than-significant
<b>AGRICULTURAL RESOURCES</b>		
<b><i>Impact 4.2-1</i></b>	<b>Mitigation Measure 4.2-1</b>	
Implementation of the project would convert 27 acres of Prime Farmland to non-agricultural use. This would be a significant impact.	The development agreement to be entered into by the City and developer shall require that the developer either provide for a 1:1 conservation of agricultural land within the Dixon area or pay the appropriate fee to participate in the City's master agricultural conversion program. If feasible, this may be coupled with land for Swainson's hawk or burrowing owl mitigation, when agreeable to the California Department of Fish and Game.	Significant

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Impacts	Mitigation Measures	Significance after Mitigation
<b>Impact 4.2-2</b>	No mitigation measures would be required for this less-than-significant impact.	
Implementation of the project close to nearby agricultural operations would not significantly impact the continued application of agricultural practices.		N/A
<b>AIR QUALITY</b>		
<b>Impact 4.3-1</b>	<b>Mitigation Measure 4.3-1</b>	
The earthmoving and construction activities during construction of the proposed development would generate criteria pollutant emissions. This would result in a significant impact.	<p><b>Mitigation Measure 4.3-1a:</b></p> <p>The Applicant shall implement the following NQSP mitigation measures:</p> <ul style="list-style-type: none"> <li>• AQ-B Tarpaulins or other effective covers shall be used on haul trucks when transferring earth materials.</li> <li>• AQ-C Where feasible, all inactive portions of the project construction site shall be seeded and watered until vegetation is grown.</li> <li>• AQ-D All disturbed soil areas not subject to re-vegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the YSAQMD.</li> <li>• AQ-E Soils shall not be exposed nor grading occur during periods where wind speeds are greater than 20 mph averaged over one hour.</li> <li>• AQ-F Vehicle speed shall not exceed a maximum of 15 mph on all unpaved roads.</li> <li>• AQ-G All roadways, driveways, and sidewalks shall be paved as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.</li> <li>• AQ-H Proper maintenance of equipment and engines shall be maintained at all times.</li> <li>• AQ-J During smog season (April through October), the construction period shall be lengthened so as to minimize the number of vehicles and equipment operating at the same time.</li> <li>• AQ-K Construction activities should utilize new technologies to control ozone precursor emissions as they become available and feasible.</li> </ul> <p><b>Mitigation Measure 4.3-1b:</b></p> <p>The Applicant shall water all disturbed surfaces at least three times per day.</p>	Significant
<b>Impact 4.3-2</b>	<b>Mitigation Measure 4.3-3</b>	
The development envisioned by the project would generate criteria pollutant emissions from motor vehicles associated with motor vehicle trips, idling, and point and stationary and area sources (e.g., gasoline storage and	<p><b>Mitigation Measure 4.3-3a:</b></p> <p>The Applicant shall implement the following NQSP mitigation measures:</p> <ul style="list-style-type: none"> <li>• AQ-M Convenient access, such as shuttle services, to public transit systems</li> </ul>	Significant

Impacts	Mitigation Measures	Significance after Mitigation
<p>dispensing, natural gas combustion, consumer products). This would result in a significant impact.</p>	<p>shall be provided to encourage shoppers, employees and visitors to use mass transit, thereby reducing vehicle emissions.</p> <ul style="list-style-type: none"> <li>• AQ-N Information shall be provided at various locations within the project site about carpool, vanpool, or transit use facilities. Incentives, such as parking stalls for carpool and vanpool vehicles shall also be exercised.</li> <li>• AQ-R Parking lots, drive-through facilities, and egress/ingress areas shall be designed to reduce vehicle idling.</li> <li>• AQ-S Secure, convenient indoor or outdoor bike storage racks shall be provided at commercial centers, office buildings, and other places of employment.</li> </ul> <p><b>Mitigation Measure 4.3-3b:</b></p> <p>The site development shall include the planting of trees for shading in all parking areas in accordance with the requirements of the City of Dixon. The tree design plan shall be submitted along with building plans and be subject to approval by city staff.</p>	
	<p><b>Mitigation Measure 4.3-3c: TRU Emission Reduction</b></p> <p>Several alternatives and/or emission controls may be available to reduce emissions from the TRUs, which account for 54 percent of the project's NOx emissions. These measures would also comply with future ultra-low emission performance standards of the ATCM for TRUs. They include:</p> <ul style="list-style-type: none"> <li>• Electric standby;</li> <li>• Cryogenic temperature control systems or hybrid with diesel engine;</li> <li>• Alternative-fueled engines (includes natural gas, propane, ethanol, and methanol);</li> <li>• Exclusively fueled with alternative diesel fuel that has been verified by the ARB; and</li> <li>• Fuel cells (California Air Resources Board (a) 2004).</li> </ul> <p>Installation of alternative technologies for TRUs, such as fuel cells or electric units, is the responsibility of the owner of the refrigerated trailer and is beyond the control of the Applicant. Similarly, Flying J would have little or no control over the fuels used in the TRUs, which could be purchased elsewhere. Accordingly, these potential mitigation measures are not feasible to reduce the project's NOx emissions.</p>	

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Impacts	Mitigation Measures	Significance after Mitigation
	<p><b>Mitigation Measure 4.3-3db: APU and Truck Emission Reduction</b></p> <p>Another potential mitigation measure is a so-called “off-board power infrastructure.” Off-board power infrastructure would provide 110-volt electrical power for driver accessories such as heater, air conditioning, telephone, computers, and television. A console that would contain all connections and payment options would connect to the truck window using a template insert. Installation and use of such a system would require the modifications to heavy-duty trucks and offer a potential mitigation measure for truck and APU emissions. It would not provide a means to reduce the on-site traveling emissions or TRU emissions, which account for 78 percent of the on-site NOx emissions associated with the proposed project.</p> <p>Installation of off-board power infrastructure would cost \$12,000 to \$20,000 per parking space depending on the number of parking spaces installed (California Air Resources Board 2005). The infrastructure system would provide service to those trucks that would stay for an extended period (i.e., for two to 10 hours). It has been estimated that up to 108 heavy-heavy-duty trucks would stay for more than one hour, although up to 50 percent would not rely on an APU to provide electricity, heating and cooling. Of the 108 heavy-heavy-duty trucks, 60 percent would stay for 10 hours (nighttime) and 40 percent would stay for two hours (daytime). Thus, it is assumed that up to 65 parking spaces (out of the total 221 proposed truck parking spaces) would be serviced by this system. Assuming an average cost of \$16,000 per parking space, installation would cost of \$1,040,000 to provide off-board electrification for all heavy-heavy-duty trucks staying for more than one hour.</p>	
<p><b>Impact 4.3-3</b></p>	<p>No mitigation measures would be required for this less-than-significant impact.</p>	
<p>Traffic generated by motor vehicle trips associated with the project could contribute to carbon monoxide concentrations in excess of state and federal ambient air quality standards at sensitive receptors. This would result in a less-than-significant impact.</p>		<p>N/A</p>
<p><b>Impact 4.3-4</b></p>	<p><b>Mitigation Measure 4.3-4</b></p>	
<p>The emission of diesel particulate matter associated with the project could expose sensitive receptors to toxic air contaminants in excess of acceptable levels. This would result in a significant impact.</p>	<p>The mitigation measures for mobile source emissions discussed in Impact 4.3-2 could also reduce DPM emissions. However, as discussed previously, these measures are not considered feasible for this project.</p>	<p>Significant</p>

Impacts	Mitigation Measures	Significance after Mitigation
<b>Impact 4.3-5</b>	No mitigation measures would be required for this less-than-significant impact.	
The project has the potential to create objectionable odors. This would result in a less than significant impact.		N/A
<b>BIOLOGICAL RESOURCES</b>		
<b>Impact 4.4.1</b>	<b>Mitigation Measure 4.4-1</b>	
Project construction could result in the loss of active nests of special-status bird species. This would be considered a significant impact.	<p><b>Mitigation Measure 4.4-1a:</b></p> <p>Within 30 days of ground disturbance activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August in the project region), the applicant shall have surveys conducted by a qualified biologist (e.g., experienced with the nesting behavior of bird species of the region). The intent of the surveys would be to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the construction zone or within 300 feet (500 feet for raptors) of the construction zone. The surveys shall be timed such that the last survey is concluded no more than one week prior to initiation of clearance/construction work. If ground disturbance activities are delayed, then additional pre-construction surveys will be conducted such that no more than one week will have elapsed between the last survey and the commencement of ground disturbance activities.</p> <p>If active nests are found, clearing and construction within 300 feet of the nest (500 feet for raptors) shall be postponed or halted until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barrier, and construction personnel shall be instructed on the sensitivity of nest areas. The biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts on these nests will occur. The results of the survey, and any avoidance measures taken, shall be submitted to the City of Dixon within 30 days of completion of the pre-construction surveys and/or construction monitoring to document compliance with applicable state and federal laws pertaining to the protection of native birds.</p>	Less-than-significant

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Impacts	Mitigation Measures	Significance after Mitigation
	<p><b>Mitigation Measure 4.4-1b:</b></p> <p>The applicant shall retain a qualified biologist to conduct winter burrowing owl surveys prior to construction or site preparation activities occurring during the non-nesting season of burrowing owl (typically September through January). The survey shall be conducted no more than 14 days prior to commencement of construction activities. If burrowing owls are observed using burrows during the non-breeding season, or after young have fledged following the conclusion of the breeding season, owls shall be excluded from all active burrows through the use of exclusion devices placed in occupied burrows in accordance with CDFG protocols. Specifically, exclusion devices utilizing one-way doors shall be installed in the entrance of all active burrows. The devices shall be left in the burrows for at least 48 hours to ensure that all owls have been excluded from the burrows. Each of the burrows shall then be excavated by hand and refilled to prevent reoccupation. Exclusion shall continue until the owls have been successfully excluded from the site, as determined by a qualified biologist.</p>	
<p><b>Impact 4.4.2</b></p> <p>Project construction would result in the loss of foraging habitat for Swainson’s hawk. This would be considered a significant impact.</p>	<p><b>Mitigation Measure 4.4-2</b></p> <p>Pursuant to CDFG Guidelines, the applicant shall preserve an equal acreage of raptor foraging habitat as is proposed for development (i.e., a 1:1 ratio). The preserved habitat shall be suitable Swainson’s hawk foraging habitat and shall be at a location approved by the CDFG. Preservation may occur through either:</p> <ul style="list-style-type: none"> <li>• Payment of a mitigation fee to an established mitigation bank, or similar habitat development and management company, or the City of Dixon through a negotiated agreement (subject to approval by CDFG) between the City and the applicant. The monies shall be held in a trust fund, and used to purchase mitigation credits to offset the loss of suitable foraging habitat for Swainson’s hawk. The credits would become incorporated into the mitigation bank, owned and operated by the habitat development and management company, and protected in perpetuity (consistent with CDFG guidelines); or</li> <li>• Purchase of conservation easements or fee title of lands with suitable Swainson’s hawk foraging habitat (consistent with CDFG guidelines).</li> </ul> <p>If mitigation lands or a conservation easement have not been acquired prior to issuance of the building permit, the City shall hold the applicant’s contribution in a separate, interest-bearing account until the appropriate lands are identified (through consultation with CDFG and City) and acquired by the City or preserved through other methods acceptable to the CDFG. These funds must be used compensate for the loss of Swainson’s hawk foraging habitat.</p>	<p>Less-than-significant</p>

Impacts	Mitigation Measures	Significance after Mitigation
<b>HAZARDS AND HAZARDOUS MATERIALS</b>		
<b><i>Impact 4.5-1</i></b>	No mitigation measures would be required for this less-than-significant impact.	
Implementation of the project would involve the regular use of diesel and gasoline fuel and other hazardous substances, which under reasonably foreseeable upset and accident conditions could result in the release of hazardous materials into the environment. This would be considered a less-than-significant impact.		N/A
<b><i>Impact 4.5-2</i></b>	<b>Mitigation Measure 4.5-2</b>	
Construction of the project could involve disturbance of soil-containing hazardous substances from previous uses, thereby creating a hazard to the public or the environment. This would be considered a significant impact.	<p>The Applicant shall ensure that all construction personnel are aware of the potential for encountering previously unidentified contamination on the project site. Should evidence of hazardous materials contamination be observed or suspected (i.e., stained or odorous soil, or oily or discolored water) during site preparation and construction activities, beyond that identified in the Phase I and Phase II ESAs, construction activities shall cease, and an environmental professional shall assess the situation.</p> <p>The environmental professional shall determine whether additional investigation is needed and specify control measures for the affected site to reduce the potential for exposing construction personnel to hazards. If the investigator determines soil samples should be collected, results of the investigation and a plan to manage the hazard to minimize risks to construction personnel shall be submitted to the Solano County Environmental Management Department if the release is subject to reporting.</p>	Less-than-significant
<b><i>Impact 4.5-3</i></b>	No mitigation measures would be required for this less-than-significant impact.	
Implementation of the project could result in workers (construction and operations) being exposed to hazardous materials such as cleaning agents, solvents, and the regular use of diesel and gasoline fuel and other hazardous substances. This would be considered a less-than-significant impact.		N/A
<b><i>Impact 4.5-4</i></b>	No mitigation measures would be required for this less-than-significant impact.	
Implementation of the project would involve storage and routine transport of diesel and gasoline fuel, which, under reasonably foreseeable upset and accident conditions, could result in the release of fuel into the environment. This would be considered a less-than-significant impact.		N/A



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Impacts	Mitigation Measures	Significance after Mitigation
<b>Impact 4.5-5</b>	No mitigation measures would be required for this less-than-significant impact.	
Implementation of the project would increase traffic congestion and require additional emergency services in the project vicinity, thereby potentially interfering with an adopted emergency response plan or emergency evacuation plan by limiting access/egress or overwhelming existing emergency response services.		
<b>HYDROLOGY AND WATER QUALITY</b>		
<b>Impact 4.6-1</b>	<b>Mitigation Measure 4.6-1</b>	
Implementation of the project would increase stormwater runoff and could create or contribute runoff water that would exceed the capacity of the existing or planned storm water drainage systems. This would be considered a significant impact.	<p><b>Mitigation Measure 4.6-1a:</b> Implementation of on-site detention for increased peak runoff in accordance with the NQSP, City of Dixon, and JPA Requirements.</p> <p>The applicant shall complete a design-level analysis of increased peak runoff from the project site per City of Dixon Standards. All proposed infrastructure improvements shall comply with City of Dixon, NQSP, and JPA requirements. Proposed infrastructure shall include proposed detention and water quality treatment features and establish adequate culvert conveyance underneath Pedrick Road, including handling runoff from Basin G. Figure 4.6-3, Post Project Drainage shows the drainage patterns for the project site following development of the project.</p> <p>The program shall include an inspection and maintenance program for drainage infrastructure, with a schedule to remove sediment that could clog the system.</p> <p><b>Mitigation Measure 4.6-1b:</b> The project applicant shall pay a storm drainage fee pursuant to facilities impact fees for the City of Dixon. The amount of the drainage fee shall be issued by the City of Dixon.</p>	Less-than-significant

Impacts	Mitigation Measures	Significance after Mitigation
<p><b>Impact 4.6-2</b></p> <p>Increased runoff following development would increase the volume and concentration of non-point source pollutants. This would be a considered significant impact</p>	<p><b>Mitigation Measure 4.6-2</b></p> <p>Review and approval of onsite storm water treatment measures for conformance with the NQSP and Dixon Stormwater Management Program.</p> <p>Details of the proposed water quality swales 1 and 2 shall be provided to the City of Dixon for approval in accordance with the NQSP and all applicable stormwater regulations.</p> <p>Site runoff shall be tested for water quality at discharge points in accordance with NPDES requirements. Each proposed water quality system shall undergo regular water quality analysis that includes calculations of residence times for all non-structural (vegetative) water quality systems and a long-term management and maintenance plan that provides details on performance criteria and maintenance thresholds. The plan shall be approved by the City of Dixon and RWQCB.</p>	<p>Less-than-significant</p>
<p><b>Impact 4.6-3</b></p> <p>Alterations in drainage patterns and grading during the construction period could result in construction-related erosion and turbid runoff. This would be considered a significant impact.</p>	<p><b>Mitigation Measure 4.6-3</b></p> <p>Preparation, implementation, and approval of a project SWPPP in accordance with terms of the General Construction Permit. Pursuant to NPDES requirements and the City of Dixon Stormwater Management Program, the applicant shall develop a SWPPP to protect water quality during and after construction. The project SWPPP shall include, but is not limited, to the following mitigation measures for the construction period:</p> <ul style="list-style-type: none"> <li>• Grading and earthwork shall be prohibited during the wet season (October 15 through April 15), and such work shall be stopped before pending storm events.</li> <li>• Erosion control/soil stabilization techniques such as straw mulching, erosion control blankets, erosion control matting, and hydro-seeding shall be used in accordance with the regulations outlined in the California Storm Water Best Management Practices Handbooks, California Department of Transportation (Caltrans) Storm Water Quality Handbook, or other approved manuals. Silt fences shall be installed down slope of all graded slopes, and drain inlet protection such as hay bales or straw wattles shall be installed along the flow paths of graded areas receiving concentrated flows.</li> <li>• Erosion control and sediment filtration measures shall be used during dewatering operations.</li> <li>• The applicant shall verify that any imported fill is “clean” and meets minimum RWQCB standards for shallow soils within commercial and residential developments, such as the ESLs.</li> </ul>	<p>Less-than-significant</p>

2.0 Executive Summary

Impacts	Mitigation Measures	Significance after Mitigation
	<ul style="list-style-type: none"> <li>• The applicant shall apply non-stormwater BMPs to prevent the discharge of construction-related NPDES pollutants besides other than sediment (e.g., paint, concrete, asphalt coatings, etc.) to downstream waters.</li> <li>• After construction is completed, all drainage facilities shall be inspected for accumulated sediment and cleared of debris and sediment.</li> <li>• Long-term mitigation measures to be included in the project SWPPP shall include, but are not limited to, the following:</li> <li>• Potential sources of erosion and sediment at the project site shall be identified and industrial activities and significant materials and chemicals that could be used at the proposed project site shall be described. This will include a thorough assessment of existing and potential pollutant sources.</li> <li>• The SWPPP shall identify BMPs to be implemented at the project site based on identified industrial activities and potential pollutant sources. Emphasis shall be placed on source-control BMPs, with treatment controls used as needed.</li> <li>• The applicant shall develop a monitoring and implementation plan. Maintenance requirements and frequency shall be carefully described and shall include vector control, clearing of clogged or obstructed inlet or outlet structures, vegetation/landscape maintenance, replacement of media filters, regular sweeping of parking lots and other paved areas, etc.</li> </ul>	
	<ul style="list-style-type: none"> <li>• The monitoring and maintenance program shall be conducted at the frequency agreed upon by the RWQCB and/or City of Dixon. Monitoring and maintenance shall be recorded and submitted annually to the SWRCB. The SWPPP shall be adjusted, as necessary, to address any inadequacies of the BMPs.</li> <li>• The applicant shall prepare informational literature and guidance on industrial and commercial BMPs to minimize pollutant contributions from the proposed development. This information shall be distributed to all employees at the project site. At a minimum, the information shall cover: (a) proper disposal of commercial cleaning chemicals; (b) proper use of landscaping chemicals; (c) clean-up and appropriate disposal of hazardous materials and chemicals; and (d) prohibition of any washing and dumping of materials and chemicals into storm drains.</li> </ul>	

Impacts	Mitigation Measures	Significance after Mitigation
<p><b>Impact 4.6-4</b></p> <p>The proposed project would create a potential for contamination of local groundwater related to on-site fuel storage and pumping operations and other point sources. This would be considered a significant impact.</p>	<p><b>Mitigation Measure 4.6-4</b></p> <p><b>Mitigation Measure 4.6-4a:</b> Utility design and approval in accordance with The City of Dixon Engineering Design Standards and Construction Specifications. All utilities, including the sanitary sewer and underground tanks, shall be designed, constructed, and backfilled in accordance with City of Dixon Standards and Standards. Conditions to be met include the following:</p> <ul style="list-style-type: none"> <li>• Tracer wire or other approved method shall be used to permanently locate lines. All road crossings shall be marked at the surface, as well as at locations where pipes are buried on top of each other. Minimum separation shall be maintained between wastewater and domestic and storm water lines.</li> <li>• Project design shall include adequate backflow prevention and use of approved corrosion resistant and durable materials only.</li> <li>• The site operator shall establish a sufficient cleanout and maintenance schedule for all pipelines, as required by the Fire Department and Solano County Environmental Health Division.</li> <li>• Final pressure testing of all utility lines shall be performed in accordance with applicable standards.</li> </ul> <p><b>Mitigation Measure 4.6-4b:</b> Storage tank design and approval in accordance with Fire Department, Solano County Environmental Health Division, and City of Dixon requirements. This shall included registration and permitting through the hazardous materials business and waste plan programs, as well as all other programs for tank users and owners.</p>	<p>Less-than-significant</p>
<p><b>Impact 4.6-5</b></p> <p>The proposed project could cause increased erosion or siltation to receiving waters. This would be considered a significant impact.</p>	<p><b>Mitigation Measure 4.6-5</b></p> <p>Implementation of <b>Mitigation Measures 4.6-1, 4.6-2, and 4.6-3</b> described above would reduce this impact to a less-than-significant level.</p>	<p>Less-than-significant</p>
<p><b>Impact 4.6-6</b></p> <p>The proposed project could increase risks related to flooding. This would be considered a significant impact.</p>	<p><b>Mitigation Measure 4.6-6</b></p> <p><b>Mitigation Measure 4.6-6a:</b></p> <p>Review of Preliminary Drainage Design to Ensure Compliance with the NQSP and City of Dixon Engineering Design and Construction Standards, including the following standards:</p> <ul style="list-style-type: none"> <li>• Storm drains must be sized adequately to carry flow from the 10-year storm with the hydraulic grade line at least 1 foot below the gutter flow line.</li> <li>• The 100-year hydraulic grade line may exceed the gutter flow line and flood streets, parking lots and other areas where structures would not be permanently damaged, but must be at least one foot below the building pad elevations and be demonstrated to not cause damage to or flood businesses or residences.</li> </ul>	<p>Less-than-significant</p>

2.0 Executive Summary

Impacts	Mitigation Measures	Significance after Mitigation
	<ul style="list-style-type: none"> <li>• Open channels shall only be allowed upon written approval of the City Engineer. Where allowed, they shall be designed to convey the 100-year storm, with a minimum freeboard of at least 1 foot if the design water level is below the surrounding ground and 3 feet if the design water level is above the surrounding ground surface. Channels shall be designed to allow a maximum velocity of 3 feet per second unless additional erosion protection is provided. The side slopes shall be no steeper than four horizontal to one vertical. Additional requirements, per City Standards, include maintenance roads, erosion control, and perimeter fencing.</li> <li>• Detention ponds must be sized for the critical 100-year four-day storm. The minimum freeboard shall be 1 foot if the design water level is below the surrounding ground surface and three feet if the water design level is above the surrounding ground surface. The side slopes shall be no steeper than four horizontal to one vertical, and side slopes within public access areas (e.g., parks or green belts) shall be no steeper than six horizontal to one vertical. The detention basin discharge design and flow rate shall be determined on a case-by-case basis and shall be subject to review and approval by the City Engineer.</li> <li>• Final drainage design shall be developed and subject to approval based on City recommendations and requirements.</li> </ul> <p><b>Mitigation Measure 4.6-6b:</b> Applicant shall develop an emergency plan, including evacuation or shelter procedures in the event of an emergency. The plan shall include conditions for site closure when roadways are flooded and shall be approved by the City of Dixon.</p>	
<b>Impact 4.6-7</b>	No mitigation measures would be required for this less-than-significant impact.	
The proposed project could cause a decrease in groundwater recharge. This would be considered a less-than-significant impact		N/A
<b>LAND USE AND PLANNING</b>		
No impacts were identified for this resource.		N/A
<b>NOISE</b>		
<b>Impact 4.8-1</b>	No mitigation measures would be required for this less-than-significant impact.	
Project construction activities could generate a temporary increase in groundborne vibration. This would be considered a less-than-significant impact.		N/A
<b>Impact 4.8-2</b>	No mitigation measures would be required for this less-than-significant impact.	
Project construction activities could generate a temporary increase in ambient noise levels above levels existing without the project. This would be considered a less-than-significant impact.		N/A

Impacts	Mitigation Measures	Significance after Mitigation
<b>Impact 4.8-3</b>	No mitigation measures would be required for this less-than-significant impact.	
Development of the project would generate an increase in ambient noise levels above the existing levels without the project. This would be a less-than-significant impact.		N/A
<b>PUBLIC SERVICES</b>		
<b>Impact 4.9-1</b>	<b>Mitigation Measure 4.9-1</b>	
Operation of the project would not result in a substantial increase of calls for service by the Dixon Police Department. This would be considered a less-than-significant impact.	<p>With implementation of the NQSP mitigation measures below, no additional mitigation would be required for this impact.</p> <p><b>Mitigation Measure PS-L:</b> Prior to final map approval or issuance of a building permit, the applicant shall request the City to commit to increase funding for necessary police services and required equipment. The City shall also verify that funding can be increased during buildout of the proposed project, through either a combination of impact fees imposed on new development and/or an increase in general fund allocations. In any event, the project proponent shall be responsible for paying its fair share for additional staff and equipment to serve the project site. This shall be established prior to occupancy of any structure occupying the project site.</p> <p><b>Mitigation Measure PS-M:</b> The project proponent shall be responsible for providing an on-site private security staff to adequately serve the proposed project. This staff would be responsible for securing future structures and providing security in parking lots during and after normal business hours.</p>	N/A
<b>Impact 4.9-2</b>	<b>Mitigation Measure 4.9-2</b>	
Operation of the project would not result in a substantial increase in calls for service at DFD. This would be a less-than-significant impact.	<p>With implementation of the NQSP mitigation measures below, no additional mitigation would be required for this impact.</p> <p><b>Mitigation Measure PS-I:</b> Prior to recordation of a final map or issuance of a grading permit, the project proponent shall either dedicate land for a fire station and provide financial contributions toward equipment and/or personnel or shall participate in establishment of an assessment district in which all property owners in the area would dedicate funds toward establishment of adequate fire protection facilities, or shall make financial contributions to operation of fire protection services.</p> <p><b>Mitigation Measure PS-J:</b> Prior to the issuance of building permits, the project proponent shall design and submit a plan to the Dixon Fire Department showing all required fire hydrant locations, detailed calculations to determine fire flow based on future structural design requirements, and access to all developed areas in accordance with city standards.</p>	N/A

2.0 Executive Summary

Impacts	Mitigation Measures	Significance after Mitigation
	<p><b>Mitigation Measure PS-K:</b> Prior to the issuance of building permits, the project proponent shall prepare and submit a plan for emergency response, including details of each proposed facility and the business conducted, an inventory of hazardous materials handled or stored on-site and a training program for employees.</p>	
<b>TRAFFIC AND CIRCULATION</b>		
<b>Impact 4.10-1</b>	No mitigation measures would be required for this less-than-significant impact.	N/A
<p>Development of the project would not result in unacceptable levels of service at existing intersections in the vicinity of the project. This would be considered a less-than-significant impact.</p>		N/A
<b>Impact 4.10-2</b>	<b>Mitigation 4.10-2</b>	
<p>Development of the project would generate the need for signalization at existing intersections in the vicinity of the project. This would be considered a significant impact.</p>	<p>The project shall contribute its fair share towards signalization of the I-80 Westbound Ramps/Pedrick Road and I-80 Eastbound Ramps/Pedrick Road intersections.</p>	Less-than-significant
<b>Impact 4.10-3</b>	No mitigation measures would be required for this less-than-significant impact.	N/A
<p>Implementation of the project would result in an increase in traffic volumes to the existing I-80 freeway mainline. This increase would not exceed the 2.5 percent limit established by the City of Dixon and would therefore be considered a less-than-significant impact.</p>		N/A
<b>Impact 4.10-4</b>	<b>Mitigation 4.10-4</b>	
<p>The project would construct three access points to the project site. Because these access areas would be used by both large trucks and passenger vehicles, safety in these areas would be affected due to turning movements by large trucks and reduced sightlines from on-street parking. This would be considered a significant safety impact.</p>	<p><b>Mitigation Measure 4.10-4a:</b> Pay all applicable City and regional traffic impact fees, to include a fair share through the City’s CIP toward the cost of future improvements at the Interstate 80/Pedrick Road interchange.</p> <p><b>Mitigation Measure 4.10-4b:</b> Prohibit on-street parking along the project’s Pedrick Road frontage (west side of the street) between the I-80 freeway and Professional Way, and along the north side of Professional Drive (just west of Pedrick Road). This would preserve sight lines for drivers turning at the project access areas.</p> <p><b>Mitigation Measure 4.10-4c:</b> Pay for or contribute to financing for shoulder improvements wherever possible through the affected I-80/ Pedrick Road interchange ramps and overcrossing to improve roadway dimensions and maximize space for large truck turn movements.</p>	Less-than-significant

Impacts	Mitigation Measures	Significance after Mitigation
<b>Impact 4.10-5</b>	<b>Mitigation 4.10-5</b>	
The increased truck traffic volumes generated by the project would result in deterioration of roadway pavement in the vicinity of the project. This would be considered a significant impact.	The City, Caltrans and Applicant shall agree on a program of ongoing pavement inspection starting before project construction to determine the extent of pavement degradation due to the project, or reconstruction of roads in the interchange area, activities. The Applicant shall pay reasonable fees for pavement repair, as determined by the City and Caltrans.	Less-than-significant
<b>UTILITIES AND SERVICE SYSTEMS</b>		
<b>Impact 4.11-1</b>	<b>Mitigation Measure 4.11-1</b>	
Implementation of the project would require the construction of new water supply facilities in the NQSP area. This would be considered a significant impact.	The project applicant shall fund construction of a new water supply facility. The fee amount and type of improvement shall be determined by the City of Dixon and the DSMWS. All water improvement plans, including water distribution pipelines and individual services would be constructed pursuant to DSMWS standards and approved by DSMWS prior to implementation.	Less-than-significant
<b>Impact 4.11-2</b>	<b>Mitigation Measure 4.11-2</b>	
Implementation of the project would generate constituents into the WWTP that could exceed the treatment abilities of the plant and/or the standards of the Central Valley Regional Water Quality Control Board. This would be considered a significant impact.	The City shall require a wastewater flow measuring and sampling facility so that flows can be monitored (limited) and quality samples be taken to insure petroleum products, salts, pesticides, herbicides and chemicals from recreational vehicle tanks are not discharged into the sewer. Provisions shall be made to ensure the surface flows do not overwhelm the sewers during large storms. Storage treatment facilities may be needed to meter the flow into the sewer.	Less-than-significant
<b>Impact 4.11-3</b>	<b>Mitigation Measure 4.11-3</b>	
Implementation of the project would exceed the capacity of the existing WRP and would require immediate expansion of existing wastewater conveyance and treatment facilities. This would be considered a significant impact.	A final certificate of occupancy for commercial development for the project shall not be issued for the project until the interim Phase 1 improvements to the WWTP are completed. With implementation of this mitigation measure, there would be adequate capacity in both the existing and proposed sewer lines, as well as the WWTP to accommodate the project's wastewater flows prior to project occupancy.	Less-than-significant
<b>Impact 4.11-4</b>	No mitigation measures would be required for this less-than-significant impact.	
Implementation of the project would generate an increase in the amount of solid waste entering local landfills but would not exceed landfill capacity. This would be considered a less-than-significant impact.		N/A
<b>Impact 4.11-5</b>	<b>Mitigation Measure 4.11.5</b>	
The project would contribute solid waste to the local waste stream. A large portion of this waste would likely not be diverted, thereby increasing the amount of waste needing to be diverted. This would be considered significant impact.	In an attempt to divert the maximum amount of solid waste possible, the project shall provide clearly marked bins for the collection of recyclable materials and shall separate these materials for collection by the waste services provider. Implementation of this mitigation measure would help to ensure that the project contributes positively toward the City continuing to achieve its CIWMA diversion requirements.	Less-than-significant



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Impacts	Mitigation Measures	Significance after Mitigation
	<p>Because of the nature of the waste that would be generated by the project, it is not anticipated that the project would be able to divert 50 percent of its own waste for recycling. However, with implementation of the mitigation measure previously identified, contribution of the project to the City's diversion requirements/goals would be a considered less-than-significant.</p>	

## 3.0 PROJECT DESCRIPTION

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### 3.1 INTRODUCTION

The project evaluated in this Environmental Impact Report (EIR) is the Flying J Travel Plaza, which proposes to develop a portion of the Northeast Quadrant Specific Plan (NQSP) area into a truck stop and travel plaza. The Applicant for the project is Property Development Group Inc., a subsidiary of Flying J Inc. Implementing the project requires a development agreement, multiple variances, parcel map, design review, a conditional use permit and an amendment to the City's NQSP. This EIR will analyze environmental impacts of implementing the project and consider alternatives to the project as required by CEQA.

In accordance with Section 15124 of the *California Environmental Quality Act (State CEQA) Guidelines* this chapter includes (1) the project location; (2) a statement of project objectives; (3) a general description of the project's characteristics; and (4) a statement describing the intended uses of the EIR. CEQA notes that the project description need not be exhaustive but that it should provide the level of detail needed for the evaluation and review of potential environmental impacts.

### 3.2 PROJECT LOCATION

The project site is located in the City of Dixon, which is part of the Central Valley region of Northern California, approximately 65 miles northeast of San Francisco and 23 miles southwest of Sacramento, between the cities of Davis and Vacaville (**Figure 3.0-1, Regional Location**). The Interstate 80 (I-80) Freeway and State Highway 113 are the two major regional roadways that provide primary access to the City of Dixon. The I-80 Freeway connects the San Francisco Bay area and Central Valley regions with the Sierra Nevada and other cities and states to the east. State Highway 113 connects the City and I-80 to the Central Valley regions to the north and south.

As shown in **Figure 3.0-2, Project Vicinity**, the project site is in the northwestern corner of the City, bounded to the west and northwest by I-80, to the east by Pedrick Road, and to the south by undeveloped land. Land uses in the project area include the Campbell Soup and Supply Company, LLC and a truck repair and parts company 0.8 mile to the southeast, a produce market and two gas

stations within 0.5 mile to the north, and a Caltrans maintenance yard and a roof truss manufacturer within 0.5 mile to the northeast.

The project site is located within the 1995 Dixon NQSP, which is generally defined by North First Street to the west, Pedrick Road to the east, the I-80 corridor to the north and Vaughn Road to the south. The NQSP area encompasses a total of 643 acres of land located in the northeast corner of the City. The site is currently designated Employment Center (E) in the City of Dixon General Plan (1993) and Highway Commercial (CH) in the NQSP.

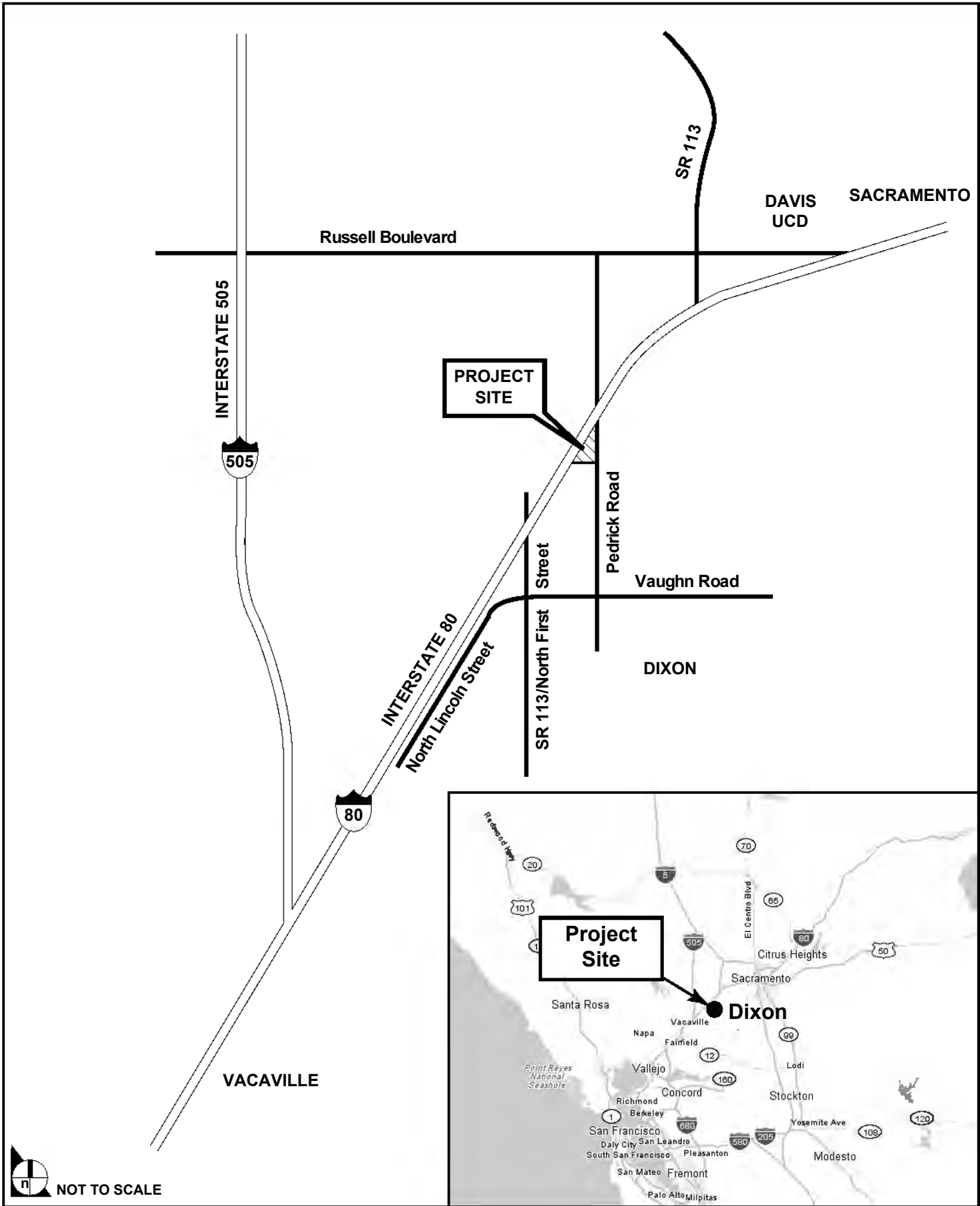
The project site is relatively flat, with a one percent average cross slope and an elevation of 55 to 60 feet above sea level. Historically, the site was used for agriculture. It was most recently cultivated with field and row crops, but is presently fallow. The site is vegetated with non-native grasses and wildflowers that may include bind weed, Johnson grass, common wild geranium, wild out, and red-stemmed filaree.

### 3.3 OBJECTIVES OF THE PROJECT

I-80 is a major cross-country access for long-haul movement of both goods and travelers. The Flying J Travel Plaza would provide a full-service truck and travel center to meet the needs of professional truck drivers, recreational vehicle (RV) drivers, and other travelers on I-80. While required by law to take rest breaks during long hauls, driver access to more full-service travel facilities (those with showers, restaurants, communications, etc.) is limited due to the size of their vehicles. As a result, these drivers have access only to the basic services including parking, restrooms, and vending machines. Traveling to full-service facilities outside the interstate corridor uses additional fuel and can impact their schedules.

The objectives of the project as provided by the Applicant are to provide:

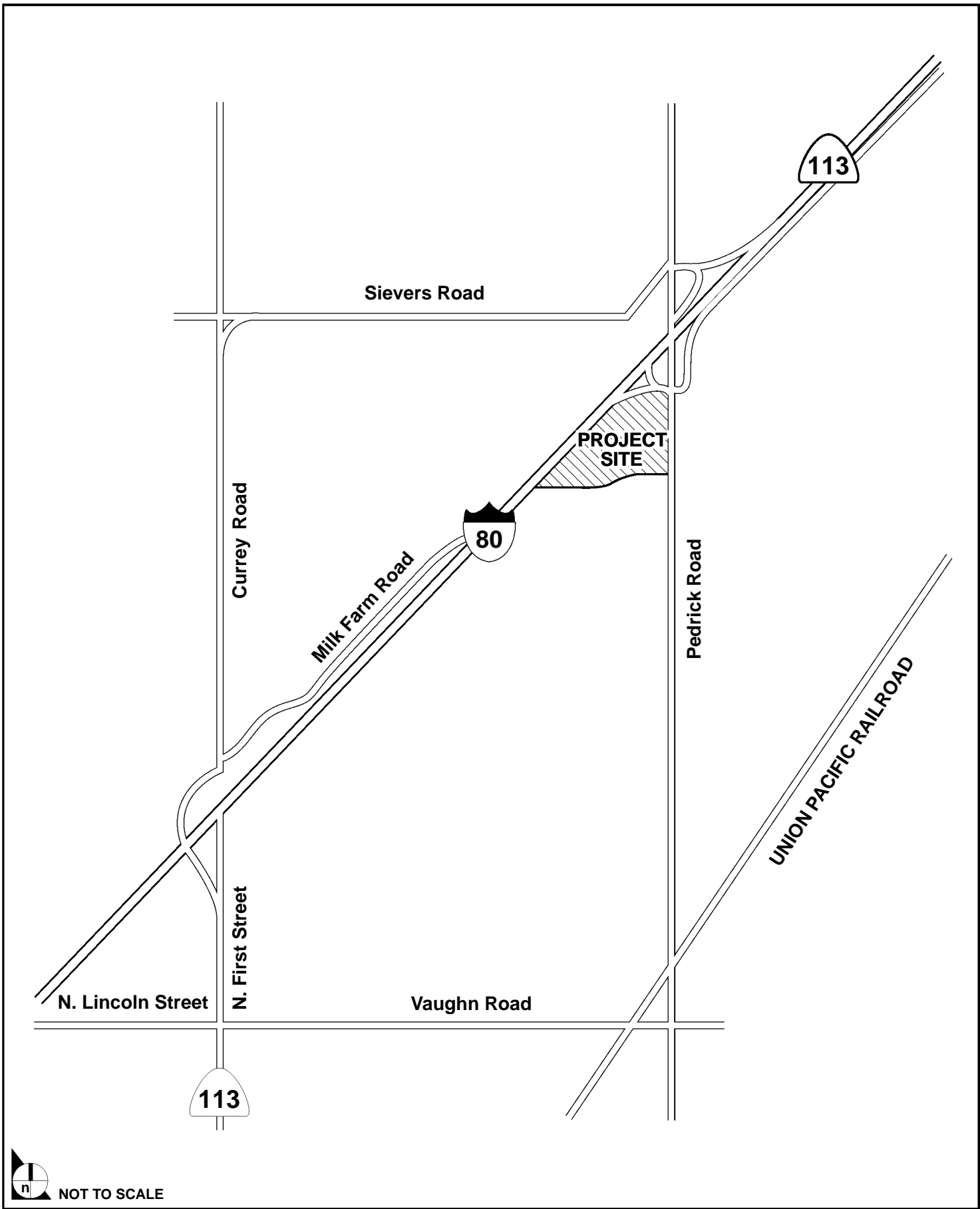
- A unique, comprehensive service that provides for both professional truckers and the traveling public in one location to meet all travel needs;
- A comfortable, relaxing, and rejuvenating full-service destination for truckers to relax and take some of their legally required rest time;
- Services for trucks, RVs, and automobiles that include diesel and gasoline fueling, air, water, propane, RV dumping stations, truck scales, and ample truck parking facilities;



SOURCE: City of Dixon – 2005

FIGURE 3.0-1

Regional Location



 NOT TO SCALE

SOURCE: City of Dixon – 2005

FIGURE 3.0-2

Project Vicinity

- Amenities for drivers that include a full-service restaurant, fast-food court, convenience market, shower and laundry facilities, driver's lounge and TV/game room, and kiosks with telephone, facsimile, online banking, automated teller machines, and load matching services;
- Immediate access to I-80 to minimize fuel consumption, time costs, and vehicular conflicts;
- Safe and efficient ingress and egress for trucks, recreational vehicles, and automobiles from I-80 to the Travel Plaza, without intervening cross-access issues to ensure a safe environment for customers;
- High visibility from I-80 to inform truckers and travelers of available services; and
- A safe and clean, well-known facility in a logical and useful distance from other facilities in the state.

### 3.4 CHARACTERISTICS OF THE PROJECT

#### 3.4.1 Travel Services

The project would develop approximately 27 acres in the north portion of the 60-acre property with a single-story, 17,638-square-foot structure, which would provide a 24-hour convenience store, restaurant, fast-food court, driver lounge, and laundry and shower facilities. The project would also provide parking and fueling services for commercial trucks (Trucks), RVs and automobiles (Autos) in two separate areas, each with their own entrance. These areas are sized assuming that trucks using the site would be approximately 68 feet long with trailers and approximately 28 feet long without trailers. RVs would range in length from 25 to 55 feet. **Figure 3.0-3 Project Site Plan**, shows the proposed layout of the project.

The Auto/RV Area, located south of the main structure and approximately one-third the size of the Truck Area, would contain five fueling stations as well as RV dump stations. The 16-foot-high fueling canopies and fuel pumps for Autos/RVs would be comprised of multiple lanes where a single vehicle could drive under the canopy, park, and refuel. Parking for Autos/RVs would also be provided within this area. The separate Truck area, containing 12 fueling stations, would be located west of the main structure. This area would also contain a 92-foot-long truck scale along its southern edge. The remaining developable area would contain large surface parking lots and landscaping.

### 3.4.2 Parking

As shown in **Figure 3.0-4, Circulation Plan**, the project would include 10 RV parking spaces, 115 automobile parking spaces, and 221 truck parking spaces, totaling 346 onsite parking spaces. As described above in **Section 3.4.1**, parking areas for the commercial trucks and the Autos/RVs would be physically separated by the main Travel Plaza building, resulting in completely separate access to this building from the two different parking areas.

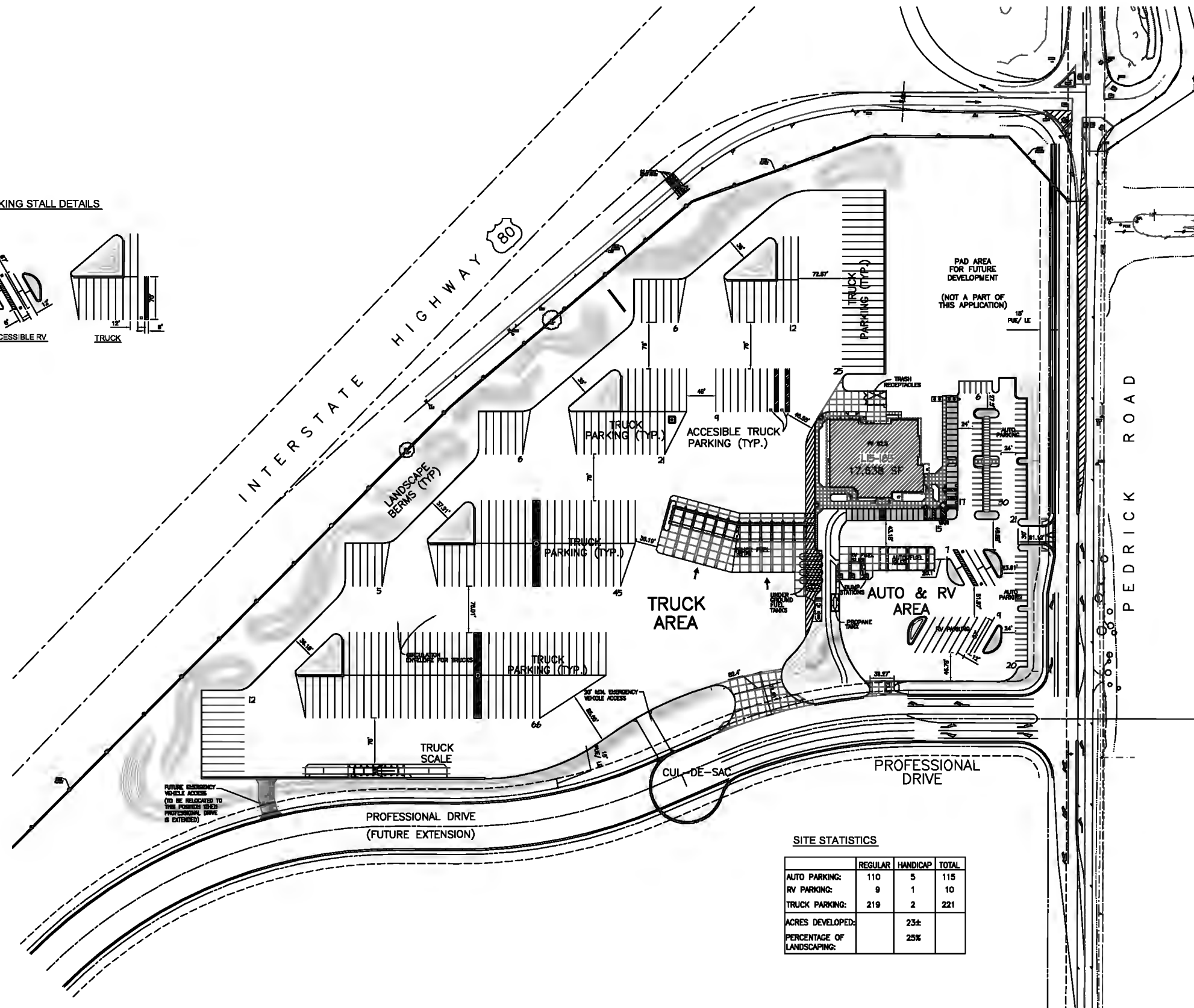
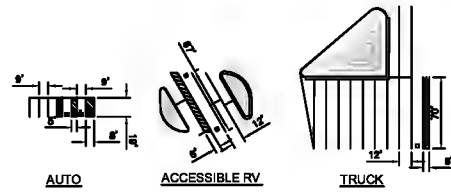
### 3.4.3 Traffic/Circulation

Pedrick Road would be improved with new curbs and gutters and widened to accommodate the project development. Professional Drive would be constructed approximately 150 feet south of the project entrance on Pedrick Road. Professional Drive would be constructed to provide adequate truck turning lanes at the Professional Drive and Pedrick Road intersection. As shown in **Figure 3.0-4**, there would be a total of three access points to the project site. These include:

- **Access 1: Pedrick Road** – This access point would be used by the general public driving Autos/RVs and would enable visitors to access the Country Store, the Merchandise area and the restaurant, as well as indirect access to the auto and RV fueling area. This area would not be accessible to large commercial trucks.
- **Access 2: Professional Drive, East Entrance** – This access point also would be used by the general public driving Autos/RVs and would be located along Professional Drive, just west of Pedrick Road. This entry would allow direct access to auto fueling facilities and RV parking. This area would not be accessible to large commercial trucks.
- **Access 3: Professional Drive, West Entrance** – This access point would be located farther west of Access Point 2 and would allow access only to large commercial trucks and trailers; no auto or RV access would be permitted at this location. This entry would provide the only access for commercial trucks to the truck fueling areas, truck parking areas, a truck scale and the main Travel Plaza building.

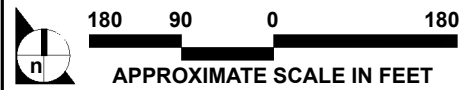
Additionally, a cul-de-sac would be constructed on Professional Drive just beyond the truck entrance (Access 3) to facilitate truck-turning movements.

TYPICAL PARKING STALL DETAILS



SITE STATISTICS

	REGULAR	HANDICAP	TOTAL
AUTO PARKING:	110	5	115
RV PARKING:	9	1	10
TRUCK PARKING:	219	2	221
ACRES DEVELOPED:		23±	
PERCENTAGE OF LANDSCAPING:		25%	



SOURCE: Morton & Pitato, Inc - July 2004

FIGURE 3.0-3

Project Site Plan



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#### 3.4.4 Pedestrian Access

Because parking areas for the Trucks and Autos/RVs would be physically separated, the main Travel Plaza building would also have separate access from the two different parking areas. All visitors would access the Country Store portion of the Travel Plaza via an entrance on the south side of the main building. Access to the restaurant, merchandising, and fast-food area would be from the east side of the main structure, while access to the drivers' lounge, showers, and restrooms would be from an entry point located near the southwest corner of the main building. **Figure 3.0-5, Travel Plaza Floor Plan**, shows the proposed floor plan for the Travel Plaza and the various entry points.

#### 3.4.5 Truck Idle Reduction Program

In an effort to limit emissions from trucks using the proposed Flying J Travel Plaza, the Applicant has determined that the Dixon facility would be a "no-idle" facility. This would mean that trucks parked at the Travel Plaza could not idle for longer than five minutes, whether at the Travel Plaza for an hour or nine hours. This limitation on idling would conform to the California Air Resources Board's requirements with respect to commercial truck idling.

Additionally, in order to encourage the use of auxiliary power units (APUs) and the associated reduction of fuel emissions at all of their Truck Plaza locations, the Applicant is in the process of establishing a network of APU sales and installation locations. These "Install Locations" would sell and install APUs for those trucks, which do not already have them installed. The APUs offered to drivers would be fully integrated with a liquid-cooled diesel direct drive engine generator and a combined air-conditioning/heating unit. The APUs would consume only small amounts of diesel fuel (0.1 to 0.21 gallons/hour depending on engine idle RPM). It should be noted that the Install Location for the Dixon facility would not be located at the Truck Plaza itself, but would be located in close proximity to it, at a location yet to be determined.

#### 3.4.6 Landscaping Plan

As shown in **Figure 3.0-6, Landscaping Plan**, the project site perimeter and the border between the Auto/RV Area and the Truck Area would contain earth mounds covered by lawn and planted with a mix of 24- to 36-inch box trees. The tree palette includes Cider Gum, Goldenrain Tree, Tuscarora Crape Myrtle,

Calabrian Pine, Chinese Pistacio, and Bloodgood Plane Tree. Islands planted with similar landscaping would be located within each parking area. An automatic drip irrigation system would be installed. A sidewalk would be constructed around the perimeter of the Auto/RV Area, and a boulder-lined dry creek bed would be located between the Auto/RV Area and the Truck Area.

### 3.4.7 Signage Plan

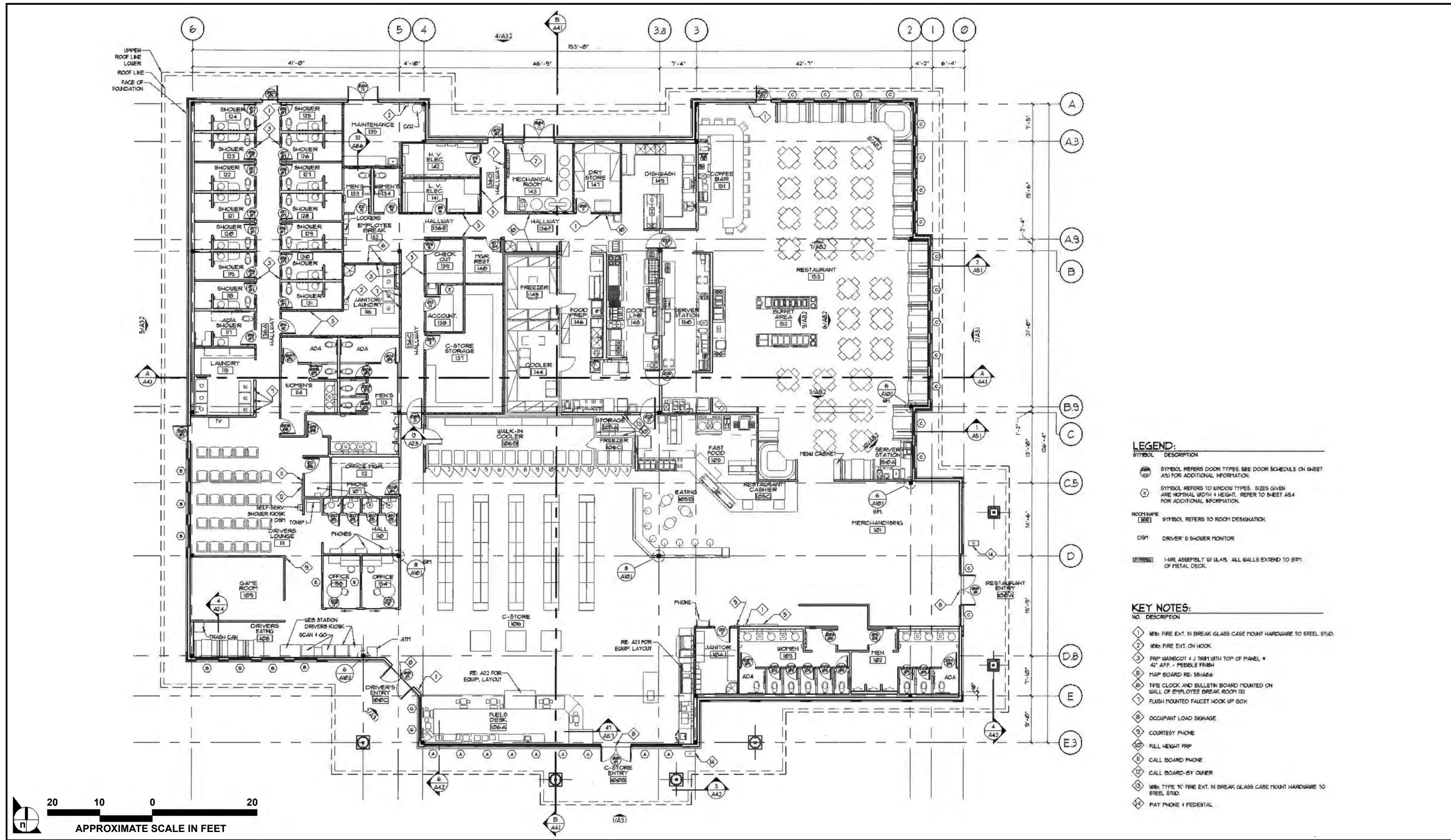
As shown in **Figure 3.0-7, 85-Foot Sign**, an 85-foot-high, freeway-oriented Flying J Travel Plaza sign would be placed along the site's western boundary fronting I-80. Advertisements for the different businesses to be located within the facility would be mounted on this sign. The red, orange, and yellow square-shaped Flying J logo would be at the top of the pole sign, with a rectangular electronic scrolling message sign under the logo, followed by a red, square-shaped Country Market Restaurant sign.

Two other smaller signs would be built on the site. A 26-foot-high fuel price sign containing the Flying J logo as well as multiple red, green, and gray fuel price signs (**Figure 3.0-8, Fuel Price Sign**), would be placed at the southwest corner of the project site. A 22-foot-high, red Country Market Restaurant sign (**Figure 3.0-9, Country Market Sign**) would be located on the eastern portion of the site. A complete signage plan is included in **Appendix 3.0** of this EIR.

### 3.4.8 Infrastructure and Utilities

#### 3.4.8.1 Drainage

The project site is part of Basin G, located within the NQSP and has elevations ranging between 60.5–63.5 North American Vertical Datum (NAVD). The site is relatively flat, with a 0.1 percent average cross slope and, as previously mentioned, is currently fallow, with little vegetation. The project site receives runoff from across I-80, which flows east and south via the ditch located along the I-80 off ramp. The existing culvert under Pedrick Road is completely blocked resulting in frequent overtopping of Pedrick Road with water following a storm event.



SOURCE: PDG Design & Development - 2006

FIGURE 3.0-5

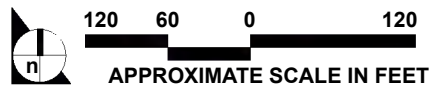
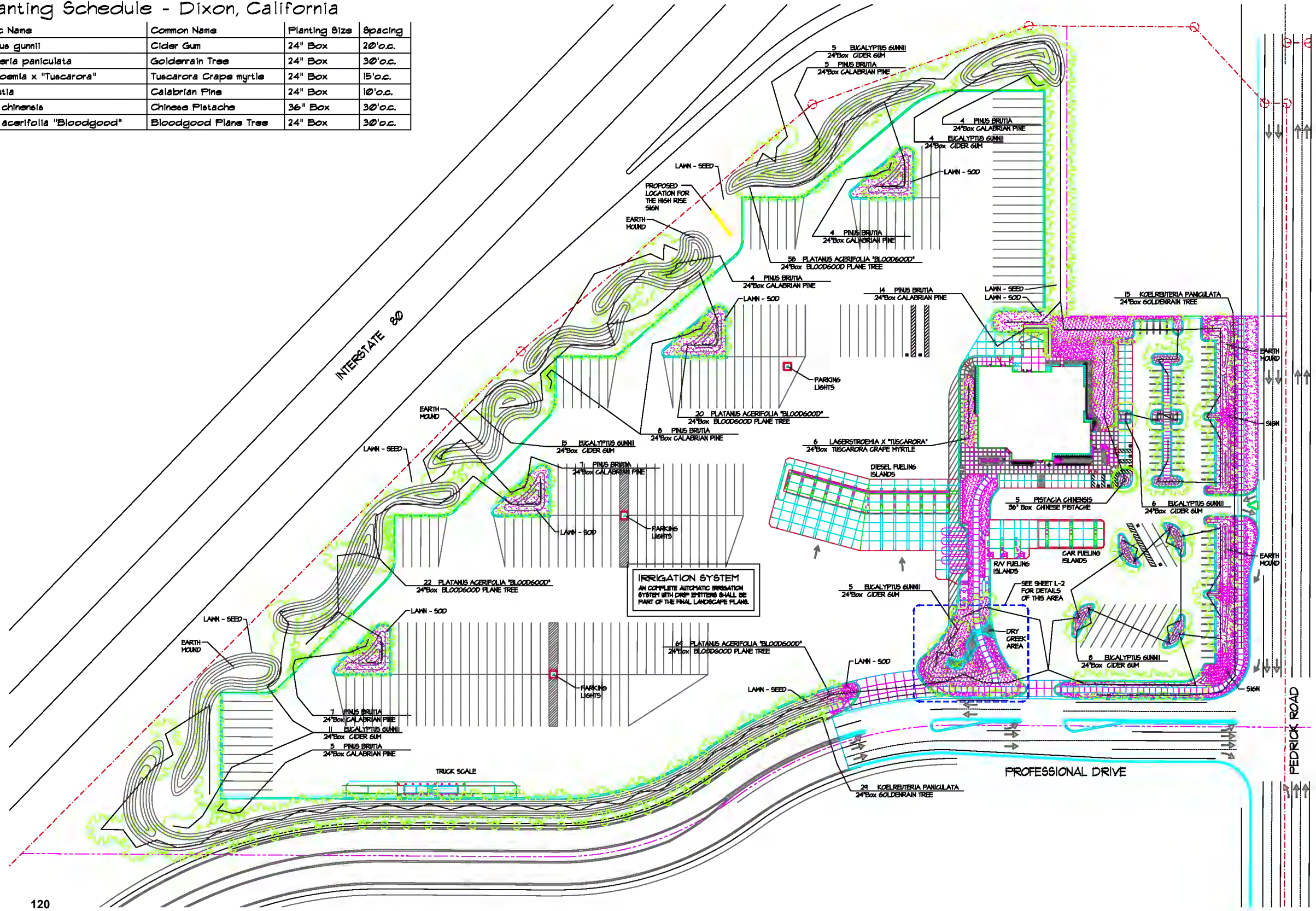
Travel Plaza Floor Plan

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### Planting Schedule - Dixon, California

Quantity	Scientific Name	Common Name	Planting Size	Spacing
54	<i>Eucalyptus gunnii</i>	Cider Gum	24" Box	20' o.c.
44	<i>Koeleruteria paniculata</i>	Goldenrain Tree	24" Box	30' o.c.
6	<i>Lagerstroemia x "Tuscarora"</i>	Tuscarora Crape myrtle	24" Box	15' o.c.
58	<i>Pinus brutia</i>	Calabrian Pine	24" Box	10' o.c.
5	<i>Pistacia chinensis</i>	Chinese Pistache	36" Box	30' o.c.
169	<i>Platanus acerifolia "Bloodgood"</i>	Bloodgood Plane Tree	24" Box	30' o.c.



SOURCE: PDG, Inc. Design & Development - March 2004

FIGURE 3.0-6

Landscaping Plan

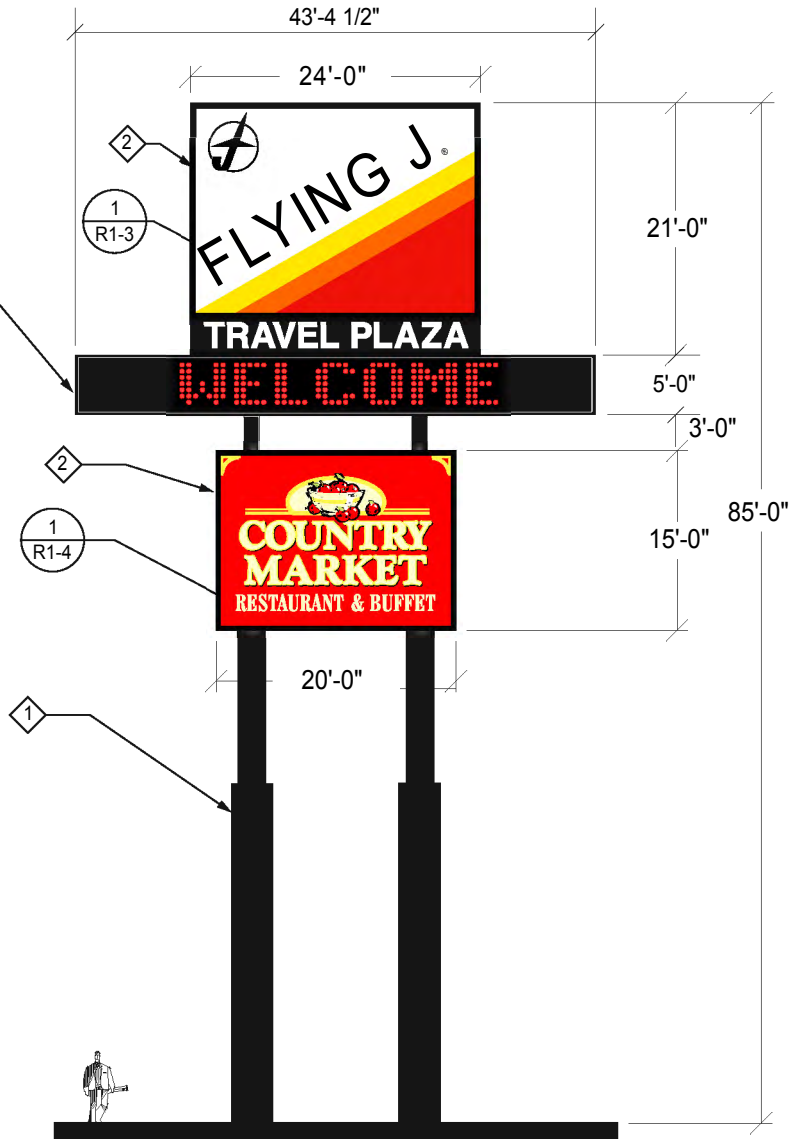


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OWNER PROVIDE ELECTRONIC MESSAGE CENTER WITH MODEM DATA CONNECTION TO BE ORDERED/INSTALLED BY SIGN CONTRACTOR. SEE KEY NOTE 3.

**General Requirements:**

- a. Construct all work to eliminate burrs, cutting edges, and sharp corners.
- b. Finish welds on exposed surfaces to be imperceptible in the finished work.
- c. Except as indicated or directed otherwise, finish all surfaces smooth.
- d. Surfaces which are intended to be flat shall be without bulges, oil-canning, or other physical deformities.
- e. Surfaces which are intended to be curved shall be smoothly free-flowing to the required shape.
- f. Except where unavoidable, conceal all fasteners.
- g. Make access panels tight-fitting, weaterproof, and flush with adjacent surfaces. No light leaks on inner-illuminated signs.
- h. Conceal all identification labels and U.L. labels inside signs. Do not apply labels of any type which cannot be concealed except what is required by codes.
- i. Position illuminating elements with internally lighted signs at such spacing as will assure uniform high distribution across the portion of the sign faces intended to be illuminated. Sign faces which exhibit "hot-spots" or streaks will be unacceptable.



**KEY NOTES**

- ① PAINT SUPPORTS SATIN BLACK
- ② TWO SIDE FACE WITH PANAFLEX FLEXIBLE SUBSTRATE AND INTERNAL MERCURY VAPOR LIGHTING. SIGN TO INCLUDE TURTLE VENTS ON TOP OF CABINET AS REQUIRED.
- ③ ELECTRONIC MESSAGE CENTER TO BE ORDERED FROM "TRANS-LUX," CONTACT BRIAN BENSON (800) 543-7904

SOURCE: PDG, Inc. Design & Development – November 2005

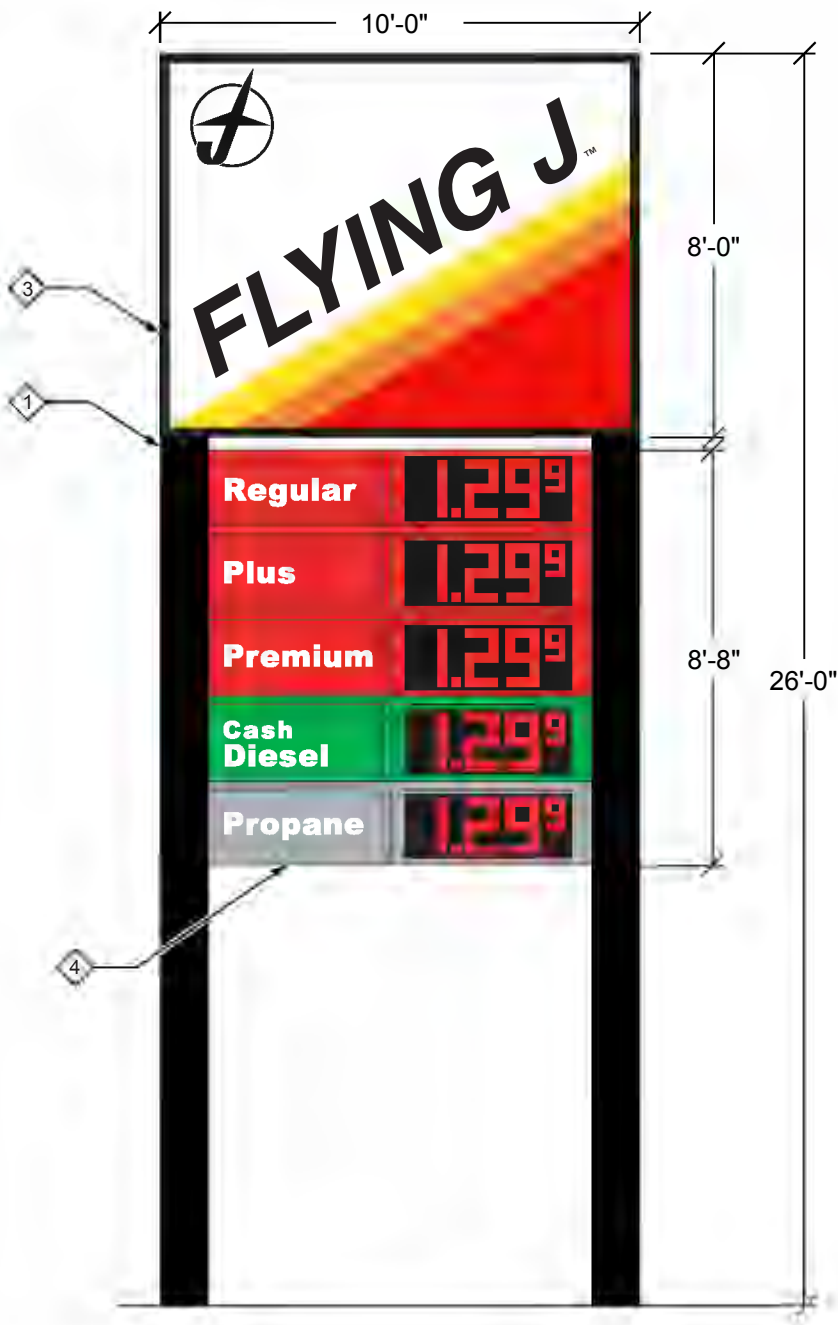
FIGURE 3.0-7

85-Foot Sign





Face Layout Opposite Side  
80 SQ. FT.



### KEY NOTES

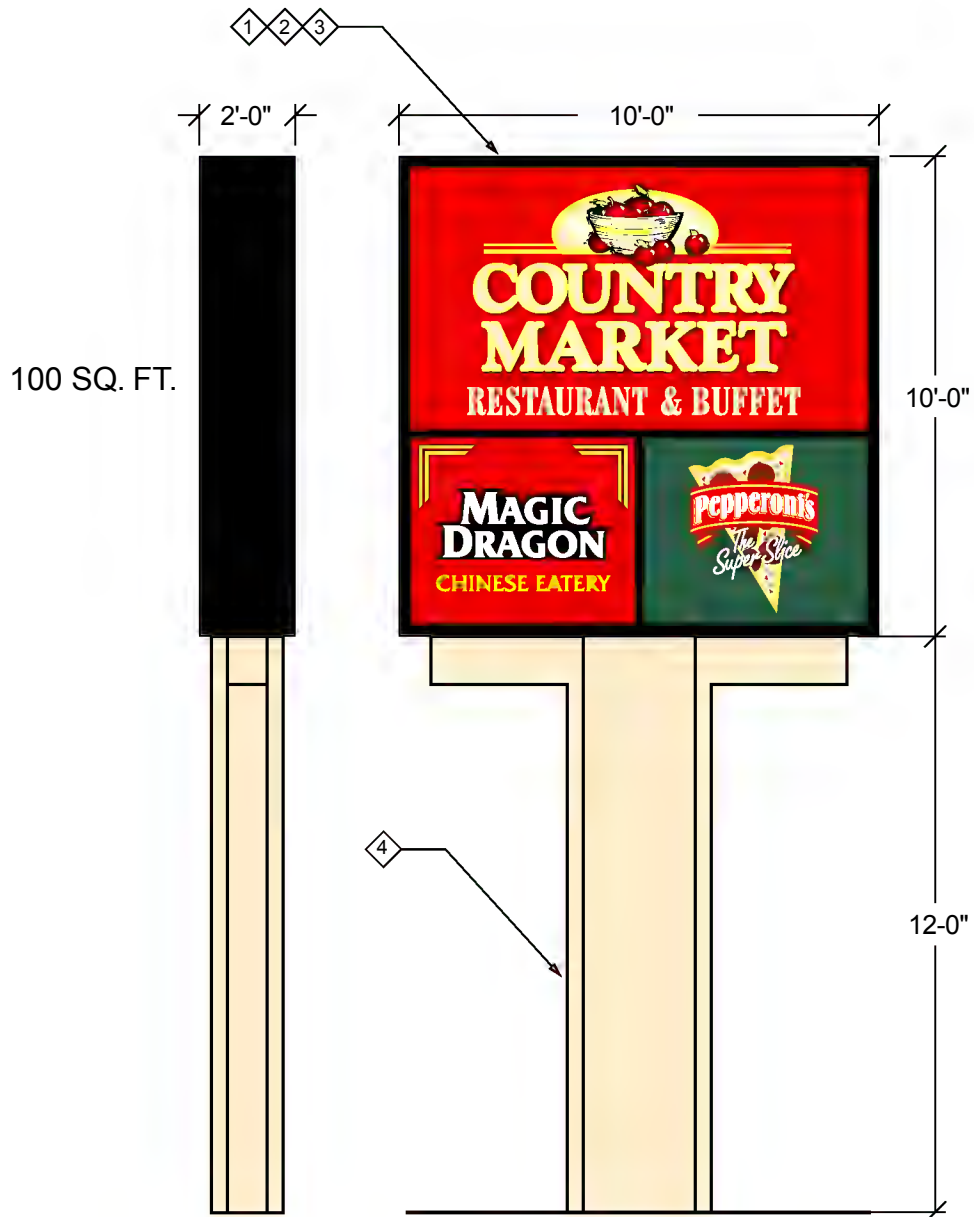
- ① BACKGROUND SUBSTRATE TO BE WHITE 3M PANAFLEX 945 WITH INTERNAL ILLUMINATED WITH H.O. FLUORESCENT LAMPS
- ② SIGN FACE TO MATCH GRAPHICS AND PROPORTIONS OF ADOBE ILLUSTRATOR FILE: FJC.AI
- ③ CABINET/RETAINERS/TUBE STRUCTURE TO BE PAINTED SEMI-GLOSS BLACK
- ④ OWNER PROVIDE, SIGN CONTRACTOR INSTALLED, 5 PRODUCT, LUMIDIGIT SIGN WITH FLAT FACES, BUMP OUT RETAINER AND 14 INCH LED DIGITS.

SOURCE: PDG, Inc. Design & Development – November 2005

FIGURE 3.0-8

Fuel Price Sign





### KEY NOTES

- ① DOUBLE FACE WITH INTERNAL ILLUMINATED H.O. FLUORESCENT LAMPS. BACKGROUND SUBSTRATE TO BE 3M PANAFLEX 945
- ② VINYL GRAPHICS SIGN FACE TO MATCH DESIGN AND PROPORTIONS OF ADOBE ILLUSTRATOR FILE: FF.AI
- ③ CABINET/RETAINERS/TUBE STRUCTURE TO BE PAINTED SEMI-GLOSS BLACK
- ④ ALUMINUM FAB. PYLON COVER W/TEXCOAT & PAINT TO MATCH BLD.

SOURCE: PDG, Inc. Design & Development – November 2005

FIGURE 3.0-9

Country Market Sign



The proposed project would eliminate the roadside ditch located on the west side of Pedrick Road. As part of the project, a piped drainage system would be constructed to convey the 10-year storm runoff and to control the hydraulic grade lines to 1 foot below the gutter flow line. This system, which would run along Pedrick Road and Professional Drive, would be constructed in accordance with the City of Dixon's improvement standards and would be consistent with the Northeast quadrant (NEQ) regional drainage system and the Dixon Regional Drainage Projects intended to serve the NQSP area.

To offset post-development flows leaving the project site, a shallow, off-site detention facility would be constructed. This detention facility would be constructed within the designated Agriculture Buffer zone, located within the NQSP and would include an open channel that extends from Pedrick Road to the detention basin facility. Once water is received at the detention basin facility, water would then gravity drain to the east, then to the north via an existing agricultural ditch to the northeast. From here, the agricultural ditch would convey low flows via an existing 12-inch pipe that ultimately drains to the upstream end of Tremont 3 drain. Ultimately, the proposed detention facility would be part of the NQSP-wide drainage system of inter-connected detention ponds that would have an outfall to the JPA proposed projects.

Storm water runoff from paved areas of the site would be treated using Best Management Practices (BMPs) as listed in the California Stormwater Quality Assurance (CSQA) handbook for new development and redevelopment and would also incorporate source control BMPs as listed in Section 4 of the California Stormwater Quality Association (CSQA) handbook.

#### **3.4.8.2 Water Supply**

The City of Dixon is currently served by the Dixon-Solano Municipal Water Service (DSMWS) and the California Water Service Company. An existing 12-inch water main line is located south of the site at Vaughn Road. The DSMWS system would be extended as part the Northeast Quadrant Development, with new water main lines installed to the north within Pedrick Road and Professional Drive. Moreover, two future wells would be drilled and two storage tanks constructed off-site in the NQSP area as part of the City's Master Water Plan.



Prior to project implementation a well, two tanks, and a booster facility would need to be constructed off site within the NQSP area to provide domestic water production and storage. A second high-volume deep well facility also is planned for the area and may need to be constructed prior to project implementation.

The project water system would include construction of a 12-inch water line within the Pedrick Road right-of-way and a 12-inch water line within the future Professional Drive right-of-way. The Applicant would also finance the extension of the water main lines off site so that they connect to the existing line on Vaughn Road if these lines are not constructed as part of some other project.

#### **3.4.8.3 Wastewater Treatment**

The project site is part of the North First Street Assessment District for sewer capacity and is currently served by an existing trunk sewer line along Vaughn Road. The project sewer system plan would install sewer lines within the Pedrick Road right-of-way and within the future Professional Drive right-of-way. The Applicant would also construct off-site improvements to extend the sewer lines, if necessary, to connect to the existing trunk in Vaughn Road. A privately maintained sewer lift station would be constructed in the western corner of the project site as part of the project.

### **3.5 PROJECT CONSTRUCTION**

The project site is currently vacant and no site preparation or demolition activities would be necessary. Construction of the project would take approximately nine months and require the completion of the activities described below.

#### **3.5.1 Site Development**

##### **3.5.1.1 Utilities**

The Applicant would be responsible for ensuring that adequate utility infrastructure and services are provided to the project site. All utility improvements would conform to the City of Dixon's standards. Utility infrastructure at the site would include electrical, telephone, cable, domestic

water, sanitary sewer, and natural gas. These services would extend to the Travel Plaza building and would be installed underground in trenches.

Construction of domestic water supply service for the site would originate from water lines installed within Pedrick Drive and Professional Drive and would include underground mains and shutoff valves. Sanitary sewer lines would also be installed within Pedrick Drive and Professional Drive. These lines would run throughout the entire project site and would tie into the project's sanitary sewer system. As part of the storm drain and sanitary sewer system, manholes would be installed at strategic locations throughout the project site and within Pedrick Road and Professional Drive. All water supply, sanitary sewer and storm drain lines would be marked with industry color piping and would be placed within street alignments using industry piping standards.

#### **3.5.1.2 Grading**

Earthwork for construction of the project would involve fine grading, as the site is relatively flat. Importing or exporting of soil would not be necessary. Finished grades on the site would be generally the same as the existing site grades. It is estimated that grading would take approximately two months to complete and would include the use of heavy equipment typically used for such projects (e.g., bulldozers and earth movers).

Consistent with the City's Grading Ordinance for erosion control measures, the City's National Pollutant Discharge System (NPDES), state, and federal environmental policies, all grading would be performed in a manner that minimizes the amount of wind-blown dust and soil entering the city's storm water system. Additionally, water trucks would be used to apply water to the grading soils to ensure proper compaction.

#### **3.5.1.3 Construction**

Construction of the Travel Plaza main building and fueling stations would take approximately 220 days and would use construction equipment typical for such commercial projects (e.g., forklifts and cement trucks). Construction of the building pad and fuels canopy area would occur first, followed with the construction of the building, fuel islands, and site work, all of which would occur simultaneously.

During the first 60 days of construction, the number of workers would gradually increase to approximately 50 workers and would remain at this level until construction of the facility is complete.

Construction hours would be limited to 7:00 AM to 7:00 PM, Monday through Saturday, as required by Mitigation Measure N-B of the NQSP EIR. Senior construction staff would be on site at all times during construction. In the absence of construction activities and during off-work hours, the construction area of the project site would be locked and secured with security fencing.

During a two-week period, approximately 17 acres of the site would be paved for the parking and roadway areas. Equipment for this work would include a grader, roller compactors, a paving machine, a backhoe, dump trucks, and a water truck.

### **3.6 DISCRETIONARY APPROVALS**

The project will be subject to review and approval according to the regulatory approval process in the City of Dixon.

#### **3.6.1 City of Dixon**

Current allowed uses on the site are Highway Commercial, designed to accommodate commercial goods and services needs of highway users. Project entitlements would include design approval by the City's Planning Commission, a conditional use permit to allow restaurants, including fast-food drive-in restaurants, convenience markets over 500 square feet, and a retail sales and multi-tenant freeway-oriented sign.

A variance would be needed to reduce parking lot shade requirement, allow multiple freestanding signs and to exceed the allowable sign area of 300 square feet.

#### **3.6.2 Responsible Agencies**

As defined by CEQA, "Responsible Agencies" are public agencies other than the Lead Agency that have discretionary approval over the project. This EIR has been prepared to serve as the primary source of environmental information for each Responsible Agency. The following agencies may be considered

“Responsible Agencies” and would have discretionary authority over approval of certain project elements:

- *Central Valley Regional Water Quality Control Board (RWQCB).* The project would require a National Pollutant Discharge Elimination System (NPDES) Permit and would need to comply with Section 401 of the Clean Water Act relating to construction erosion and runoff, and discharge of surface water from the site containing residential, commercial, and open space land uses.
- *Caltrans/ Solano County.* Encroachment Permits would be requested of Solano County and Caltrans to allow access within County and Caltrans rights-of-way, for the construction of various roadway/circulation and drainage improvements.
- *Dixon Regional Watershed Joint Powers Authority (JPA).* The project drainage would have to participate in the funding and construction of the Eastside Drainage Project or other drainage solution approved by the members of JPA.
- *Dixon-Solano Municipal Water Service.* The project would require provision of domestic water supply from DSMWS, which serves the area.
- *Solano Irrigation District.* The project would require modifications to be made to existing irrigation infrastructure in order to be provided with irrigation services.
- *Solano County Health Department.* All kitchen/restaurant facilities included in the project would need to be inspected and permitted to comply with health standards.
- *Yolo-Solano Air Quality Management District.* The fueling stations and truck emissions generated by the project would have to comply with local and state air quality standards and as a result, permits from the District would be required.

## 4.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

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### INTRODUCTION

This chapter contains an analysis of each issue that has been identified through preliminary environmental analysis and the public scoping process for the Flying J Travel Plaza. Each section describes the environmental setting of the project site as it relates to that specific issue, the impacts resulting from implementation of the project, mitigation measures that would reduce impacts of the project and cumulative impacts.

Under the California Environmental Quality Act (CEQA), a significant impact is defined as a substantial, or potentially substantial, adverse change to the environment. The *CEQA Guidelines* direct that this determination be based on scientific and factual data. Each impact and mitigation measure of this chapter is prefaced by a summary of criteria of significance. These criteria have been developed using Appendix G of the State *CEQA Guidelines* and applicable policies of the City of Dixon and County of Solano. Policies and regulations from various state, federal, and regional agencies are also used as appropriate.

According to CEQA (Section 21083), a project may have a significant impact on the environment requiring disclosure in an environmental impact report (EIR) if its possible effects are individually limited but “cumulatively considerable.” Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, other current projects and probable future projects. Evaluation of cumulative effects should reflect the severity of impacts, as well as the likelihood of their occurrence, although the level of detail need not be as great as that for evaluation of project specific impacts.

### FORMAT OF ENVIRONMENTAL TOPIC SECTIONS

Each environmental topic considered in **Chapter 4** is comprised of four primary sections: Environmental Setting, Regulatory Considerations, Impacts and Mitigation, and Cumulative Impacts. An overview of the general organization and the information provided in the two sections is provided below.

## Environmental Setting

The Setting section for each environmental topic generally provides a description of the applicable physical setting for the project site and its surroundings (i.e., existing land uses, existing soil conditions, existing traffic conditions).

## Regulatory Considerations

The overview of regulatory considerations for each environmental topic is organized by agency, including applicable federal, state, regional, and local (City) policies. The City of Dixon General Plan and Northeast Quadrant Specific Plan (NQSP) policies relevant to each environmental topic are detailed. The project's consistency with applicable regulations is also evaluated.

## Impacts and Mitigation

This subsection begins with a discussion of criteria of significance followed by a discussion of the impacts that would result from implementation of the Plan. Impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered. Impacts and mitigation measures are numbered consecutively within each topic. The significance after mitigation is identified for every significant impact. Impacts are categorized by type of impact as follows:

- Significant; or
- Less than Significant.

## Cumulative Impacts

The analysis of cumulative impacts for each environmental factor can employ one of two methods to establish the effects of other past, current, and probable future projects. A lead agency may select a list of projects, including those outside the control of the agency, or alternatively, a summary of projections. These projections may be from an adopted general plan or related planning document, or from a prior environmental document that has been adopted or certified, and that describe or evaluate regional or area wide conditions contributing to the cumulative impact.

For this EIR, the cumulative analysis is based on the City of Dixon General Plan and the NQSP EIR. Cumulative projects within the project site identified for the traffic study are also listed.

The cumulative impacts discussion describes the contribution of the project to cumulative impacts and determines whether the impacts of the project in combination with the impacts from buildout of the Northeast Quadrant Planning Area, as well as from other projects planned in the area would be cumulatively considerable.

Section 15130 of the State *CEQA Guidelines* provides direction regarding cumulative impact analysis as follows:

- An EIR should not discuss cumulative impacts that do not result in part from the proposed project;
- A lead agency may determine that an identified cumulative impact is less than significant, and shall briefly identify facts and analysis in the EIR supporting its determination;
- A lead agency may determine a project's incremental effect is not cumulatively considerable, and therefore, is not significant and shall briefly describe in the EIR the basis of its determination; and
- A lead agency may determine a project's cumulatively considerable contribution to a significant cumulative impact may be rendered less than cumulatively considerable, and therefore, residually not significant, if the project implements or funds its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

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### 4.1.1 Introduction

This section describes existing visual conditions, focusing on the visual character of the project site and views from surrounding public areas, and the potential for the project to affect those conditions. The analysis of visual impacts is also based on field observations of the project site and surroundings, review of the project plans, technical data, ground-level photographs of the project area, topographic data, and public planning documents.

Computer-generated visual simulations illustrating conceptual “before” and “after” visual conditions at the project site, as seen from three representative public vantage points, are presented as part of the analysis. Digitized photographs and computer modeling and rendering techniques were utilized to prepare the simulation images, which are based on the proposed design (height, setbacks, etc.) in the project plans.

### 4.1.2 Existing Conditions

#### 4.1.2.1 *Visual Character*

##### **Project Site**

The main visual elements of the project site are the non-native grasses and wildflowers, along with the open space and relatively flat topography. There is no flowing water on the project site. The majority of the site is grassland ranging in color from brown to green, depending on the season. No trees or structures are located on the site.

##### **Surrounding Area**

The area surrounding the project site is comprised of a mixture of urban and agricultural visual elements. The urban elements (buildings, roadways, freeway overpass, signage) are located west of the project site with the highly traveled Interstate 80 (I-80) running along the western and northwestern project boundary. Agriculture lands comprised of low-lying grasslands, outbuildings, and trees are east of the project site. A two-lane road (Pedrick Road) bounds the

eastern project boundary and currently undeveloped land<sup>1</sup> bounds the southern property boundary.

### **Public Viewpoints**

The project site is clearly visible to motorists traveling along I-80 and Pedrick Road because of the flat topography and absence of physical interruptions to the view. Three publicly accessible viewpoints were selected for analysis by the City of Dixon. These viewpoints were determined to provide representative views into the site from off-site locations. **Figure 4.1-1** depicts the locations of the selected viewpoints; **Figures 4.1-2** through **4.1-4** provide photographs of the project site from the selected viewpoints.

#### *Viewpoint 1: View from I-80 Traveling East*

As shown in **Figure 4.1-2**, drivers traveling east on I-80 have a short-duration view across the project site. The most prominent feature in the foreground of this view is two clustered mature overgrown evergreen shrubs located on the shoulder of I-80. An approximately 12-foot strip of disturbed grassy vegetation is located adjacent to the shoulder of the freeway and extends easterly onto the project site.

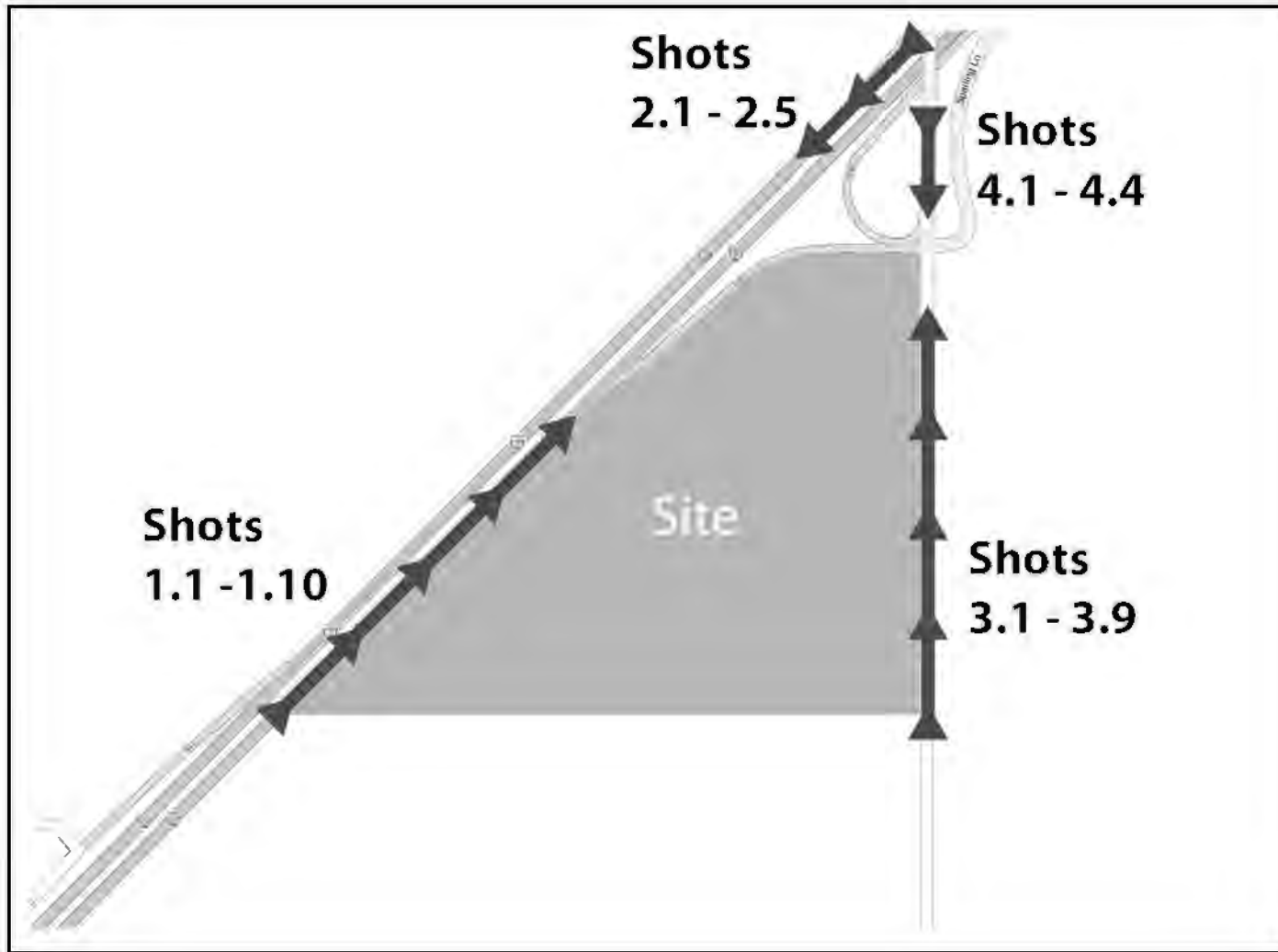
The expansive grassland of the project site is the most prominent aspect in the mid-ground; the relatively flat topography and low grassland allow generally unobstructed views across the site. The view's background is characterized by groups of mature evergreen trees with varying heights, vehicles traveling along Pedrick Road, and telephone poles. The evergreen trees in the background provide a contrast with the brown grasslands of the project site during the dry seasons of the year.

#### *Viewpoint 2: View from I-80 Traveling West*

Motorists traveling westbound along I-80 would have a short-duration mid-ground view of the project site. As shown in **Figure 4.1-3**, vehicles traveling east along I-80 dominate the foreground of the view. The overpass, with associated signage, can be seen to the left (north) of this view. A telephone pole and

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<sup>1</sup> The Dixon Downs project is proposed for development on this land.



SOURCE: Square One Productions – January 2006

FIGURE 4.1-1

Key to Viewpoint Locations

evergreen shrubs, varying in size between 2- to 8-feet tall, are located in the area between the freeway and the eastbound Pedrick Road off-ramp. Grassland covers most of the ground in the mid- and background view. Long silver rectangular buildings, south of the site, are seen in the background of this view.

*Viewpoint 3: View from Pedrick Road Traveling North*

Motorists traveling along Pedrick Road would have a moderate-duration foreground view of the project site looking west, extending across I-80 (mid-ground) to the urban structures on the other side of I-80 (background view). **Figure 4.1-4** shows the view toward the project site looking west from Pedrick Road. As shown, the foreground view is dominated by the large flat expanse of fairly short grass that covers the project site. Farther west, the mid-ground view changes to incorporate scattered groups of evergreen shrubs with varying heights, planted in a row along the shoulder of I-80 and vehicles traveling along I-80. Looking across I-80, about 0.5 mile north of the project site, the background views are comprised of mature trees and rectangular single-story buildings, parking areas housing a produce market and gas stations, and their associated signage.

**4.1.2.2 Existing Light and Glare**

There are no existing sources of light or glare on the project site. The major lighting source in the project area consists of cars, streetlights, and commercial land uses. The project site borders I-80 to the west and Pedrick Road to the east. The contribution of lighting by streetlights in the area is minimal; the street lamps along the eastern shoulder on I-80 at the I-80/Pedrick Road interchange are the only street lamps in the project vicinity. Sources of glare include daytime reflections off of vehicles traveling on Pedrick Road and I-80 and headlights on these same roadways at night.

Land uses in the project area that would illuminate night lighting include the Campbell's Company facility and a truck repair company located approximately 0.8 mile to the southeast; the produce market and two gas stations located 0.5 mile to the north; and a Caltrans maintenance yard and roof truss manufacturer located 0.5 mile to northeast. These areas generate relatively low levels of night lighting due to their fairly low density of development.



SOURCE: Square One Productions – January 2006

FIGURE **4.1-2**

Existing View from I-80 Traveling East

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SOURCE: Square One Productions – January 2006

FIGURE **4.1-3**

Existing View from I-80 Traveling West

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SOURCE: Square One Productions – January 2006

FIGURE 4.1-4

Existing View from Pedrick Road Traveling North

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### 4.1.3 Regulatory Considerations

The Dixon General Plan and the Northeast Quadrant Specific Plan (NQSP) contain policies and design guidelines that address the visual aspects of development along I-80.

#### 4.1.3.1 City of Dixon General Plan

The following goal and policies from the City of Dixon General Plan (General Plan) relate to aesthetics and visual resources:

**Goal:** To maintain Dixon's "small-town character"

##### Historic Preservation, Community Design, and Appearance Policies

Policy 20: The City shall require the undergrounding of utilities in all new developments when appropriate, and shall encourage the removal of overhead utility lines and poles throughout the City.

Policy 21: The City shall strictly regulate signs and billboards in order to minimize their impact on the visual environment.

Policy 22: The City shall ensure that all new development which may be built adjacent to Interstate 80 will either present an attractive appearance or not be visible from the freeway at all. To the greatest extent possible, visual separation between developed areas of Dixon and the freeway corridor will be maintained by vegetation, landscaping, berms, and devices other than standard acoustical walls.

#### 4.1.3.2 Northeast Quadrant Specific Plan (NQSP)

The NQSP defines specific development requirements to establish a scenic gateway to the community consistent with the goals and policies defined by the Dixon General Plan. The General Plan contains specific policies that would maintain Dixon's "small-town character," while enabling growth and the economy. The Specific Plan achieves these policies by implementing the following two land use designations: Employment Center (E) and Highway

Commercial (CH). Additionally, the NQSP provides general design guidelines in the Community Form and Design Element.

Section Three, Community Form and Design Element

The purpose of this element is to aid developers and decision makers in the design and review of individual developments within the Specific Plan area. The Community Form and Design Element establishes standards and general guidelines that provide consistent visual quality for various land uses while supporting design flexibility for new development in the City. This section of the EIR focuses on objectives and policies that are directly related to visual quality and the protection of visual resources in the project area. The following objectives are applicable to the project:

*Form and Design Objectives*

1. Provide for a blending of the built environment with landscaped open space to enhance work environments and enrich the overall image of the [Specific] Plan area.
2. Enable superior quality development that integrates architectural style, landscaping, public art, signage, lighting, circulation, street furniture to produce an environment that is aesthetically pleasing form, scale, texture, color, and variety.

#### **4.1.4 Consistency with Applicable Plans and Policies**

The proposed land use and character of development of the project are consistent with the land use designations in the NQSP and were addressed in the NQSP EIR. The NQSP designates urban development for the project site and surrounding area; therefore, urban development is anticipated on the site and on the lands adjacent to the site to the south and east. The NQSP EIR concluded that urban development within the Specific Plan Area would result in less-than-significant impacts to aesthetics.

The project will be required to comply with the City's General Plan, Zoning Ordinance, NQSP Design Guidelines and policies, and the project's plans as

approved by the City. Furthermore, the project would be required to undergo the City's design review process before obtaining building permits.

As described earlier in this chapter, implementation of the project would require the following project entitlements: design review, a conditional use permit to allow restaurants, including drive-in restaurants, convenience markets over 500 square feet of retail sales, and multi-tenant freeway-oriented sign. A variance would also be needed to reduce parking lot shade requirement, allow multiple freestanding signs, and to exceed the allowable sign area of 300 square feet.

#### 4.1.4.1 Significance Criteria

According to Appendix G of the *CEQA Guidelines* (Environmental Checklist Form), a project could have a significant effect on the environment if it would:

- Substantially degrade the existing visual character of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

The Initial Study prepared for the project concluded that the project would not impact any scenic highways or identified vistas in the project area. Furthermore, the Initial Study concluded less-than-significant impacts to scenic resources as a result of project development.

#### Visual Simulations

As part of the aesthetic impact evaluation of the project, visual simulations have been produced using computer modeling and rendering techniques. These panoramic photomontages simulate views of the project site after project development. These views show the design of the Travel Plaza, including height, signage, parking layout, and landscaping.

The visual simulations have been prepared to show the project site with and without landscaping. This provides a more realistic view of the site in the short term, as well as views of the site in the long term after vegetation and trees have matured. It is important to note that these photographs assume a high species survival rate and implementation of proper maintenance techniques.

The three viewpoints described above in 4.1.2.1 of this section and their locations are shown in **Figure 4.1-1**. Existing views from these locations have been presented in **Figure 4.1-2** through **Figure 4.1-4**. **Figures 4.1-5** and **4.1-6** provide simulations of the project from Viewpoint 1: View from I-80 Traveling East, **Figures 4.1-7** and **4.1-8** provide simulations of the project from Viewpoint 2: View from I-80 Traveling West, and **Figures 4.1-9** and **4.1-10** are simulations of the project from Viewpoint 3: View from Pedrick Road traveling north.

#### **4.1.4.2 Impacts and Mitigation Measures**

**Impact 4.1-1: Project implementation would introduce buildings, paved areas, bright-colored signage, and new vegetation onto 27 acres of undeveloped land, which would substantially change the visual character of the project site. This would be considered a significant impact.**

The proposed project would alter the existing visual character of the project site by introducing buildings, signage, paving, and new landscaping onto an undeveloped site. The changes in the visual character of the site, as shown in **Figures 4.1-5** through **4.1-10**, clearly show a change from a rural agricultural character to a developed commercial character. Visual impacts associated with the project would occur during site grading, building construction, and project operation, as discussed below.

##### Grading/Construction

Prior to construction, 27 acres of the site would be graded to create building pads. During construction of the project, utilities and the underground fuel storage tanks would be installed below ground, and the framework of the main structure would be raised and finished. Visual impacts would vary, depending on the work and equipment being used at the site. In general, during construction motorists would see construction equipment, piles of dirt, pipes, fencing, and structural materials, instead of the undeveloped grassland that was present before.



SOURCE: Square One Productions – January 2006

FIGURE **4.1-5**

Viewpoint 1: View from I-80 Traveling East (Without Landscaping)

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SOURCE: Square One Productions – January 2006

FIGURE **4.1-6**

Viewpoint 1: View from I-80 Traveling East (With Landscaping)

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SOURCE: Square One Productions – January 2006

FIGURE 4.1-7

Viewpoint 2: View from I-80 Traveling West (Without Landscaping)



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SOURCE: Square One Productions – January 2006

FIGURE **4.1-8**

Viewpoint 2: View from I-80 Traveling West (With Landscaping)



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SOURCE: Square One Productions – January 2006

FIGURE 4.1-9

Viewpoint 3: View from Pedrick Road Traveling North (Without Landscaping)



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SOURCE: Square One Productions – January 2006

FIGURE 4.1-10

Viewpoint 3: View from Pedrick Road Traveling North (With Landscaping)



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The visual effects of construction activities are temporary and would be similar in character to other similar types of development construction that could be occurring in the vicinity at the same time. Therefore, these activities would not represent a significant visual impact.

*Project Completion and Occupancy*

The long-term visual characteristics of the project site would be established upon completion of construction, including the final size and bulk of the main structure, landscaping, signage, and the project's compatibility with the surrounding land uses. The project plans and "Travel Plaza Sign Program," submitted with the Applicant's application, includes design features that define height of structure, building and sign materials, and landscaping. While the approximately 28-foot-high, single-story, 17,638-square-foot building would be the most prominent feature on the site, the planned 85-foot-high, freeway-oriented sign would be visible from distances farther away from the project site.

The following provides a brief discussion of how the project would alter the existing views of the site and its surroundings, followed by a discussion of how this would impact the existing visual character of the area.

*View from I-80 Traveling East*

The project would change the views of the site along I-80 from the current open space character to views of a commercial building, parking lot, and vehicles and trucks using the site. Project development would also change the visual character of the area by incorporating structures and signage with bright colors (orange, yellow, green).

**Figures 4.1-5** and **4.1-6** represent views of the project site from eastbound I-80 with and without landscaping. As shown in the **Figures**, the most prominent feature in this viewpoint is the 85-foot-high, freeway-oriented Flying J sign. Other visible project features include the earth mounds and evergreen trees that would be planted in an approximately 60-foot-wide landscaping buffer area between the western property boundary and the parking lot area (see **Figure 3.0-6, Landscaping Plan**). This buffer would significantly screen the main structure, the fueling canopy, and the trucks and autos using the site from motorists along I-80. The green rooftop of the main structure and the top of the

fueling canopies would be slightly visible above the line of planted trees in the western portion of the property.

*View from I-80 Traveling West*

As shown in **Figures 4.1-7** and **4.1-8**, development of the project site would be visible in the mid-ground of this view. Portions of the main structure and of the fueling canopies would be seen from this view. However, the project site is partially obstructed when vehicles and trucks are traveling east on I-80. Additionally, the planting of trees along the western property border would screen portions of the main structure, as well as the fueling canopies, leaving a small part of the main structure (the front façade of the restaurant) visible to travelers using I-80 westbound. However, the 85-foot-high, freeway-oriented Flying J Travel Plaza sign would be clearly visible from this viewpoint, with or without landscaping.

*View from Pedrick Road Traveling North*

The main structure, the fueling canopy, and a 26-foot-high fuel price sign would be the most prominent features available to motorists traveling north along Pedrick Road (see **Figure 4.1-9**). Implementing the landscaping plan would soften the view of the site from the viewpoint as shown in **Figure 4.1-10**.

Conclusion

The proposed landscaping would screen the visibility of the building and other structures on the site from motorists traveling both eastbound and westbound on I-80. The greenery associated with the landscaping plan and the small-scale structures proposed on site would blend into the existing character of the surrounding area. The 26-foot-high monument sign, the main building, and fueling canopies would be visible to motorists traveling north on Pedrick Road. However, from this viewpoint, the proposed features of the site would blend with the scale and massing of the surrounding areas and would be generally compatible with existing conditions.

Signage associated with the project would introduce bright colors to the project area creating a contrast with the existing natural terrain and neutral colors of the roadways and overpass. Additionally, the proposed 85-foot-high

freeway-oriented sign would be visible along I-80 from both directions. However, it should be noted that there are other tall freeway-oriented signs, which occur along I-80. Consequently, while the sign would be 85 feet in height, it would not be out of character with similar signage in the vicinity.

Mitigation Measure 4.1-1: Per subsection 12.20.06 E.A of the Dixon Zoning Ordinance (ZO) and the NQSP, only one freestanding sign measuring more than six feet in height is permitted. To minimize visual impacts associated with project signage, the following measures shall be implemented.

- The Applicant shall prepare a sightline study to justify the height of the proposed 85-foot freeway oriented sign;
- The Applicant shall obtain a Conditional Use Permit for all freestanding signs, which must be approved by the Planning Commission;
- The Applicant shall avoid the use of animated signs, such as electronic reader/message boards;
- The Applicant shall ensure that all proposed freestanding signs incorporate architectural design features in order to enhance their appearance; and
- The Applicant shall prepare and submit a master sign program to the City for approval, which is required for all multi-tenant complexes.

**Significance After Mitigation.** Implementing the above-mentioned mitigation measures would create a compatible relationship between the size of project signage and the existing scale of features in the project area, which would reduce impacts to a less-than-significant level.

**Impact 4.1-2: Constructing buildings and lighted parking areas would introduce new sources of light and glare on the project site. Lighting guidelines required by the NQSP would reduce impacts to less-than-significant.**

Project development would create new sources of substantial light and glare from the reflective surfaces associated with the new structures, fueling canopies, signs, and windows. This would be most visible to traveling motorists along I-80 and Pedrick Road. New lighting would be provided in the parking lots, fueling canopies and around the main structure. This new lighting would be visible from other surrounding areas in the vicinity of I-80 and Pedrick Road. Additionally, the project would introduce new lighting in an area that has not previously contained light sources. Given the lack of lighting sources in the area, the project impact on lighting spillover and night-sky illumination could be substantial.

The NQSP EIR considered light and glare impacts associated with project development in the Specific Plan Area. The project site is located within the Plan Area and was, therefore, analyzed in the NQSP EIR. The NQSP includes mitigation measures and a set of lighting guidelines that are intended to provide safety and security as well as mitigate for light and glare impacts.

The project would be required to comply with the lighting guidelines set forth in the NQSP as well as the project's plans as approved by the City. Additionally, the following mitigation measures listed in the NQSP would be incorporated as a condition of project approval prior to the issuance of a building permit.

- [VR-A] Bare metallic surfaces, such as pipes, vents, gutters, and flashings, shall be painted or concealed from view in a manner harmonious to the structure. All flashing and sheet metal must be treated to match the adjacent materials.
- [VR-B] Primary roofing materials shall be non-reflective.
- [VR-C] Monolithic glass structure shall not be allowed unless used as a portion of a building to highlight an entry.
- [VR-D] Building mass colors shall be varied hues that minimize glare with bright colors limited to use around doors, trims, awnings, and other pedestrian-oriented features.

**Mitigation Measure 4.1-2:** In addition to the mitigation measures listed in the NQSP, the Applicant shall prepare a photometric analysis demonstrating compliance with subsection 12.24.09 of the Dixon Zoning Ordinance.

**Significance After Mitigation.** Implementation of the above mitigation measures, as well as compliance with the lighting standards included in the

NQSP, impacts related to light and glare would be reduced to a less-than-significant level.

#### **4.1.5 Cumulative Impacts**

Development in the area and within the City of Dixon would contribute to the conversion of undeveloped land into urban uses, substantially changing the visual character of the land. New structures, impervious surfaces, and landscaping would change the existing scale and mass of the undeveloped areas in the City. Although these developments would be subject to the policies and mitigation measures in the NQSP EIR and the General Plan, the change in visual character is considered a cumulative impact. Implementation of the project in combination with other development in the area, including the proposed Dixon Downs project and the Milk Farm site, would contribute to the cumulative impacts identified for future development in the project area and in the City.

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## 4.2 AGRICULTURAL RESOURCES

### 4.2.1 Introduction

This section describes the existing agricultural resources on the Flying J Travel Plaza project site. Regulations and policies affecting agricultural resources are described, potential impacts are presented and mitigation measures are recommended. Information presented in this section was obtained from the City of Dixon General Plan (City of Dixon 1993); the City of Dixon Northeast Quadrant Specific Plan (NQSP); NQSP EIR (City of Dixon 1995); Solano County Annual Crop Report (2004); the State Department of Conservation Farmland Conservation Report (2004); and the State Important Farmlands Map.

### 4.2.2 Existing Conditions

#### 4.2.2.1 *Federal and State Farmland Classifications*

There are two systems used by the United States Soil Conservation Service (SCS) to determine a soil's agricultural productivity. The two systems are the Soil Capability Classification and the Storie Index Rating System. In general, the prime soil classifications of both systems indicate the absence of soil limitations, which, if present, would require the application of management techniques (e.g., drainage, leveling, special fertilizing practices) to enhance production.

#### **Soil Capability Classification**

The Soil Capability Classification System takes into consideration soil limitations and the way in which soils respond to treatment. Capability classes range from Class I soils, which have few limitations for agriculture, to Class VIII soils, which are unsuitable for agriculture. Class I soils give top yields with a minimum of management skills, while yields of Class II land can equal those of Class I with implementation of minor management practices. Generally, as the ratings of the capability classification system increase, crop yields, and profits are more difficult to obtain.

#### **Storie Index Rating System**

The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating), which have few or

no limitations for agricultural production to Grade 6 soils (less than 10), which are not suitable for agriculture. Under this system, soils deemed less than prime can operate as prime soils when limitations, such as poor drainage, slopes, or soil nutrient deficiencies, are partially or entirely removed.

**State of California Department of Conservation Classifications**

The California Department of Conservation (CDC) Farmland Mapping and Monitoring Program (FMMP) combines technical soil ratings and current land use information to create an inventory of Important Farmland. Information on soils is primarily taken from the U.S. Department of Agriculture soil surveys. As shown in **Table 4.2-1, FMMP Farmland Classifications**, the CDC divides land into seven general categories, with Important Farmland comprising four categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.

**Table 4.2-1  
FMMP Farmland Classifications**

Land Classification	Definition
Prime Farmland	Prime farmland is land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date of 1992 (or since 1988).
Farmland of Statewide Importance	Farmland of statewide importance is land similar to prime farmland, but with minor shortcomings, such as greater slopes or with less ability to hold and store moisture. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date (or since 1988).
Unique Farmland	Unique farmland is land of lesser quality soils used for the production of the State’s leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been cultivated at some time during the two update cycles prior to the mapping date (or since 1988).
Farmland of Local Importance	Farmland of local importance is land of importance to the local agricultural economy, as determined by each County’s Board of Supervisors and a local advisory committee. According to the <i>Farmland Conversion Report</i> , no farmland of local importance is located in Solano County.

Land Classification	Definition
Grazing Land	Grazing land is land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for this category is 40 acres.
Urban and Built-Up Land	Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.
Other Land	Land not included in other mapping category. For example, low-density rural development; brush, timber; wetlands and riparian areas not suitable for livestock grazing; confined livestock; poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Source: California Department of Conservation, *California Farmland Conversion Report 1998–2000*, p. 5.

#### 4.2.2.2 Contributions of Agriculture to the Solano County Economy

Solano County ranks 30<sup>th</sup> in agricultural production out of 58 counties in the state, with gross revenues from the sales of agricultural commodities of \$205,748,600 in 2004, a 3.9 percent decrease over 2003 values (County of Solano, 2004). The leading crops include nursery stock, cattle and calves, alfalfa, processing tomatoes, market milk, wine grapes, walnuts, field corn, and wheat. As shown in **Table 4.2-2, Agricultural Commodity Annual Revenue Comparison Summary**, the total value in constant dollars of Solano County's agricultural production has been increasing steadily until last year.

Agricultural uses also generate a substantial number of jobs ranging from crop production to processing, shipping, and other related industries. Approximately 3,030 (2.4 percent) of the 125,300 total jobs generated in the County in 2003 were related to agriculture (Employment Development Department, 2005).

**Table 4.2-2  
Agricultural Commodity Annual Revenue Comparison Summary**

Product	2000	2001	2002	2003	2004
Fruit & Nut Crops	\$29,801,800	\$26,634,100	\$25,974,800	\$26,518,000	\$23,804,600
Nursery Crops	\$35,044,700	\$37,668,100	\$38,781,200	\$42,373,400	\$43,645,000
Animal Production	\$34,265,500	\$35,181,700	\$43,933,000	\$60,295,600	\$45,207,100
Vegetable Crops	\$33,893,900	\$33,079,600	\$37,155,000	\$35,663,700	\$36,903,400
Seed Crops	\$5,075,100	\$4,897,700	\$5,739,700	\$5,326,600	\$7,114,600
Field Crops	\$47,493,400	\$48,209,300	\$47,901,800	\$43,945,500	\$49,073,900
TOTALS	\$185,574,400	\$185,670,500	\$199,485,500	\$214,122,800	\$205,748,600

Source: County of Solano, 2004.

#### 4.2.2.3 Farmland Conversion

Conversion of agricultural land to urban uses continues to be a public policy issue in California. According to the FMMP, between 2000–2002, approximately 828,445 acres (approximately 1.8 percent of California’s landmass) were converted to urban and built-up uses. Of the total acres converted, 397,097 were formerly cropland and 172,857 were formerly grazing land.

In the past decade, the pace of urbanization and agricultural land conversion in Solano County has increased overall. However, between 2002–2004, the conversion rates actually decreased from 3.5 percent (13,052 acres) in 2000–2002 to 1.8 percent (6,696 acres). Overall, Solano County has lost approximately 38,923 net acres of agricultural land since 1984, with 51 percent of that loss occurring from 2000 to 2004.

The most recent California Farmland Conversion Report (2002) inventoried 582,372 acres in Solano County. At that time, the County contained 143,211 acres of Prime Farmland, 7,584 acres of Farmland of Statewide Importance, and 13,735 acres of Unique Farmland, totaling 164,530 acres of Important Farmland. Solano County has not designated any Farmland of Local Importance. The survey also inventoried 201,338 acres of Grazing Land, 55,433 acres of Urban and Built-up Land, and 111,374 acres of Other Land.

#### 4.2.2.4 *Project Setting*

The project site is located in an area that is currently undergoing a transition from agricultural to commercial, associated with its proximity to Interstate 80 (I-80). Historically, the project site has been used for growing field and orchard crops. Other uses in the Northeast Quadrant have included a livestock auction facility, a Christmas tree farm, a trucking and maintenance operation, and an industrial fabrication and storage facility.

Surrounding properties continue to be cultivated with row crops, field crops, and orchards. Campbell Soup and Supply Company, LLC and Dixon Truck and Tractor southeast of the site are supported by these agricultural uses. Rural residential uses are located to the south. According to the NQSP, in 1995, there were lands under the Williamson Act contract immediately adjacent to the project site, to the northeast, across Pedrick Road. However, since completion of the NQSP, these lands have been petitioned for removal from under the Williamson Act and are slated to be released from the Williamson Act by mid-2007.

The project site is one of the areas in the NQSP designated for future commercial uses. The other area is the parcel immediately south of the project site that is under consideration for the other development included in the NQSP in the proposed Dixon Downs project. The proposed Milk Farm project site, located on the other side of I-80, within 1 mile of the project site, would include highway commercial office and research facilities.

#### 4.2.2.5 *On-Site Characteristics*

Historically, lands within the project site consisted primarily of row crops, including corn, tomatoes, and alfalfa, with the entire 60-acre project site classified as Prime Farmland. While crops were recently planted on the project site (one to two years ago), the site is currently fallow. The majority of the project site consists of Class II Capay-silty Loam soil with an index of 69. A small portion of the site is Class I Yolo Loam soil with an index of 100.

### 4.2.3 Regulatory Considerations

#### 4.2.3.1 *The Williamson Act*

The California Land Conservation Act, also known as the Williamson Act, was adopted in 1965 in order to encourage the preservation of the state's agricultural lands and to prevent its premature conversion to urban uses. In order to preserve these uses, this act established an agricultural preserve contract procedure by which any county or city within the state taxes landowners at a lower rate using a scale based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. In return, the owners guarantee that these properties would remain under agricultural production for a 10-year period. This contract is renewed automatically unless a notice of non-renewal is filed by the owner. In this manner, each agricultural preserve contract (at any given date) is always operable at least nine years into the future.

The owner of the property may file a Notice of Non-Renewal, which would cause the contract to expire in 10 years. After the contract has expired, a landowner may apply to remove that property from an agricultural preserve. The landowner also has the option of petitioning the Board of Supervisors for the cancellation of the contract. Cancellation of the contract involves payment of substantial cancellation fees.

Since 1998, another option within the Williamson Act Program is the rescission process to cancel a Williamson Act contract and simultaneously dedicate a permanent agricultural conservation easement on other land.

Pursuant to Government Code 51243, if a city annexes land under Williamson Act contract, a city must succeed to all rights, duties, and powers of the County under the contract. A Local Agency Formation Commission (LAFCO) must notify the Department of Conservation within 10 days of a city's proposal to annex land under contract. A LAFCO must not approve annexation of contracted land to a city unless conditionally approved. The proposed project site is not located within lands covered under the Williamson Act.

### 4.2.3.2 City of Dixon General Plan

The Urban Growth and Development chapter and the Natural Environment chapter of the Dixon General Plan contain goals and policies that seek to protect and preserve agricultural land. The following goals and policies are relevant to the project:

#### **Urban Growth and Development Chapter**

Policy 2: The City shall actively pursue a balanced community comprising industrial, commercial, and residential development.

Policy 3: The City shall ensure that urban development occurs only within the incorporated portion of the Planning Area, and that land proposed for such development would be annexed by the City before final development approval is given. In the unincorporated sections of the Planning Area, beyond the edge of proposed future urbanization, the existing rural character and agricultural uses shall be maintained and preserved at least until the year 2010. The County of Solano should prohibit urban development within the Dixon Planning Area outside of the Dixon city limits, unless it is specifically endorsed by the City of Dixon and fully consistent with the provisions of Solano County Proposition "A" and the Solano County General Plan.

Policy 9: The City shall identify agriculture as an acceptable interim use on land in the unincorporated portions of the Planning Area, which have been designated for ultimate development in residential, commercial, industrial, or institutional use.

Policy 10: The City shall encourage the maintenance of agricultural uses in all undeveloped areas designated for future urban use, especially in the areas designated for future industrial uses.

Policy 12: The City shall encourage agriculture and the preservation of open space between Dixon and Vacaville, and between Dixon and Davis, to maintain community integrity and urban form.

### Natural Environment Chapter

**Goal 1:** To protect agricultural land from premature development.

Policy 1: The City shall preserve agricultural lands and prevent their premature conversion to urban uses.

Policy 2: The City shall protect existing agriculturally related operations from potential land use conflicts.

## 4.2.4 Consistency with Applicable Plans and Policies

### City of Dixon General Plan

The Dixon General Plan allows for conversion of land from agricultural uses as long as the conversion does not involve agricultural lands covered under the Williamson Act. Because the project site is not located on lands covered by the Williamson Contract, the project would be consistent with the General Plan.

Implementation of the project would occur within an area that currently lies fallow and is within Dixon City limits. The project site is also located within an area that, while once used for agriculture, is currently identified for commercial and light industrial growth (NQSP). As a result, the project would be consistent with the Dixon General Plan.

Under the Natural Environment Chapter of the General Plan, active agricultural lands are to be protected from premature urban development. The proposed project site is located in an area that is no longer used for agricultural purposes and is not covered under the Williamson Act. As a result, the project would not conflict with the policies set forth in the General Plan and would be consistent with present land use goals.

## 4.2.5 Impacts and Mitigation

The applicable thresholds of significance are listed below, followed by analysis of the significance of any potential impacts. Mitigation measures are also identified that would reduce or avoid significant impacts.



#### 4.2.5.1 Significance Criteria

In accordance with the *CEQA Guidelines* Appendix G and the City of Dixon General Plan, agricultural impacts are considered significant if the project would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract; and/or
- Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of farmland to non-agricultural use.

#### 4.2.5.2 Issues Not Discussed Further

**Conflicts with Zoning or Williamson Act Contracts.** The project site is not under Williamson Act contract. The existing zoning for the site is CH. The project would, therefore, not conflict with zoning or Williamson Act contracts, and these issues are not discussed further.

#### 4.2.5.3 Impacts and Mitigation Measures

**Impact 4.2-1: Implementation of the project would convert 27 acres of Prime Farmland to non-agricultural use. This would be considered a significant impact.**

Prime Farmland in California is a finite resource. It surrounds the City of Dixon, such that the City has little choice but to convert farmland if it is to grow to meet population and housing demand. There are a number of policies and programs in place that attempt to limit the loss of farmland. The policies of the General Plans of Solano County and Dixon strongly encourage new development to occur only within areas that are within the City's urbanizing area and discourage the conversion of agricultural lands to urban uses where urban services are not available.

The City of Dixon has required acquisition of conservation easements on agricultural land when major development would lead to conversions. Additionally, the cities of Davis and Dixon have a partnership whereby

agricultural conservation easements are being purchased from willing agricultural landowners. However, while these activities would help conserve those lands, they cannot avoid the continued conversion of agricultural lands adjoining the cities as these cities grow.

**Mitigation Measure 4.2-1:** The development agreement to be entered into by the City and developer shall require that the developer either provide for a 1:1 conservation of agricultural land within the Dixon area or pay the appropriate fee to participate in the City's master agricultural conversion program. If feasible, this may be coupled with land for Swainson's hawk or burrowing owl mitigation, when agreeable to the California Department of Fish and Game.

**Impact after Mitigation:** Significant.

**Impact 4.2-2: Implementation of the project close to nearby agricultural operations would not significantly impact the continued application of agricultural practices.**

The proposed project would place a Travel Plaza in close proximity to agricultural lands. Due to the transient nature of Travel Plaza users, trespass by users is not expected to be a significant issue. The project may require the County Agricultural Commissioner to impose setback restrictions if spraying of pesticides is to be undertaken on agricultural lands. Although this may require adjoining farmers to modify their agricultural practices, continued agricultural use of the adjoining lands would not be substantially affected. Therefore, implementation of the project would result in less-than-significant impacts to agricultural resources.

**Mitigation Measure 4.2-2:** None required.

#### 4.2.6 Cumulative Impacts

The project would be located on agricultural lands within the boundaries set for the City of Dixon's expansion. There are approximately 1,000 acres within the City of Dixon sphere of influence that are currently being used for agricultural purposes. Most of this land is slated for development as residential, commercial, or industrial uses in the Dixon General Plan. Development of these agricultural

lands would have a cumulative impact on the amount of farmland, including Prime Farmland, available for use in Solano County.

This project, in combination with other development within the City of Dixon, would convert hundreds of acres from agricultural uses to non-agricultural uses. However, the number of acres converted as part of the proposed project would only total 27 acres, making the project's contribution to cumulative impacts associated with the conversion of agricultural lands less than significant.

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### 4.3.1 Introduction

This section describes the impacts of the proposed Flying J Travel Plaza on the local and regional air quality. Provided below is a description of the current, local, and regional air quality and the environmental factors that affect air quality. A description of the local, state, and federal agencies that have regulatory authority in the area are included as well. Plans, policies, and regulations applicable to the regional air quality and proposed project are also included. Finally, this section evaluates the potential air quality impacts associated with the implementation of the project and identifies mitigation measures to reduce potential impacts.

Construction-related emissions associated with the project would be generated as a result of on-site stationary sources, heavy-duty construction vehicles, and construction worker vehicles. Operational-related emissions would include diesel exhaust, oxides of nitrogen (NO<sub>x</sub>), reactive organic gases (ROG), and carbon monoxide (CO) from incoming vehicles and on-site sources. Sources utilized in this discussion include the Yolo-Solano Air Quality Management District (YSAQMD) *Air Quality Handbook* and air quality data from the California Air Resources Board (ARB) and the US Environmental Protection Agency (US EPA). In addition, a Health Risk Assessment (HRA) was prepared to assess the health impacts from diesel particulate matter in the project area. Results of this HRA are discussed in this section and the completed report is included in **Appendix 4.3**.

### 4.3.2 Existing Conditions

#### 4.3.2.1 *Regional Climate and Meteorology*

The project site is located in Solano County, which is in the southwest region of the Sacramento Valley. The City of Dixon is 60 feet above sea level on average and approximately 6.6 square miles. The geographical features that make up the Sacramento Valley dictate the climate in Dixon. The Sierra Nevada binds the Valley to the east, and coastal ranges impede winds from the west. The City is less than 25 miles from the Sacramento metropolitan area. The lack of barriers and flat valley floor allow pollutants to readily disperse throughout the Valley.

The air quality of both Solano and Yolo County is impacted by pollution generated from other regions, primarily Sacramento, the upper Sacramento Valley, and the San Francisco Bay area. Moist marine breezes originating from the south (through the Carquinez Strait) help diffuse and dilute pollutants during the summertime (EIP Associated 2005). In the winter, sea breezes weaken from the south due to smaller temperature and pressure gradients. During this season, the Pacific High Pressure Cell migrates south. Dry winds from the north become more frequent, although winter storms can still bring strong southerly winds (EIP Associates 2005). The region is categorized as a Mediterranean climate with warm and dry summers along with cool winters during which most of the annual precipitation occurs. The absence of the Pacific High Pressure Cell in the winter allows storms that are normally deflected away by the cell to reach inland and subsequently drop their precipitation. The City's inland position can create large diurnal fluxes in temperature. In the summer, the average high temperature is 93°F and average low temperature is 56°F. In the winter, the average high temperature is 53°F and average low is 36°F. The rainy season occurs between mid-October to early April with an annual precipitation of 18 to 21 inches.

The phenomenon of temperature inversions can drastically change the overall air quality in Dixon. Typical winter inversions are formed when the sun heats the upper layers of air, trapping air below that has been cooled by contact with the cooler earth surface during the night. Between late spring and early fall, an inversion layer forms when warm air from the Valley is forced above the cool air (due to its density) from the Sacramento-San Joaquin Delta and San Francisco Bay. In either case, the warm air forms a ceiling that prevents vertical diffusion of the air column. Both types of inversion layers make dispersion and dilution of pollutants more difficult. Inversion layers can be critical in influencing ambient air pollutant concentrations. The warm upper layer forms a trap that stagnates the air below, allowing large concentrations of carbon monoxide and particulate matter to accumulate in the profile. Ozone can also be generated in these inversion layers as ozone precursors build up and react in the inversion profile (with the presence of sunlight).

Another phenomenon that contributes to the poor air quality in the Sacramento Valley is called the "Schultz Eddy". Predominate southwesterly winds generally

move pollutants out of the Valley to the north. However, during the summer and early fall, the Schultz Eddy essentially reverses this trend and causes pollutants to be blown south back into the Sacramento area. The phenomenon usually dissipates by noon with the arrival of Delta sea breezes. As in the case with inversion layers, this phenomenon can significantly affect ambient air pollutant concentrations.

#### 4.3.2.2 Regional Air Quality

In order to gauge the healthfulness of a region's air quality, the US EPA and ARB have established threshold concentrations for air contaminants in the ambient air. Ambient air samples are analyzed and compared to levels set by the governing agency. Both California and the federal government have established their own health-based ambient air quality standards for the following criteria pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter less than 10 microns (PM<sub>10</sub>), particulate matter less than 2.5 microns (PM<sub>2.5</sub>), and lead (Pb). These standards are in place to protect sensitive receptors with an adequate margin of safety from adverse health effects. The California ambient air quality standards (CAAQS) are more stringent than the national standards (NAAQS), and for PM<sub>10</sub> and SO<sub>2</sub>, much more stringent. California has also established standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. The state and national ambient air quality standards for each of the criteria pollutants are summarized in **Table 4.3-1, Ambient Air Quality Standards**. The relevant health effects associated with the major criteria pollutants are described in **Table 4.3-2, Health Effects Summary of the Major Criteria Pollutants**.

Currently, the Sacramento Valley Air Basin in the vicinity of the project is designated as nonattainment for the federal 8-hour ozone standard, the state 1-hour ozone standard, and the state PM<sub>10</sub> standards. A considerable amount of the ozone that is monitored in this area results from pollutants that have been transported from the Sacramento metropolitan area. Due to the lack of physical barriers and coastal winds blowing inland, air pollution generated in the metropolitan Bay Area is also easily spread to surrounding regions such as the Sacramento Valley.

**Table 4.3-1  
Ambient Air Quality Standards<sup>1</sup>**

Air Pollutant	Concentration/Averaging Time	
	State Standard	Federal Primary Standard
Ozone	0.09 ppm, 1-hr. avg. 0.07 ppm, 8-hr. avg.	0.12 ppm, 1-hr avg. (Revoked 6/15/05) 0.08 ppm, 8-hr avg. (3-year average of annual 4th-highest daily maximum) 9 ppm, 8-hr avg.
Carbon Monoxide	9.0 ppm, 8-hr avg. 20 ppm, 1-hr avg.	35 ppm, 1-hr avg.
Nitrogen Dioxide	0.25 ppm, 1-hr avg.	0.053 ppm, annual arithmetic mean
Sulfur Dioxide	0.04 ppm, 24-hr avg. 0.25 ppm, 1-hr. avg.	0.030 ppm, annual arithmetic mean 0.14 ppm, 24-hr avg.
Suspended Particulate Matter (PM <sub>10</sub> )	20 µg/m <sup>3</sup> , annual arithmetic mean 50 µg/m <sup>3</sup> , 24-hr avg.	50 µg/m <sup>3</sup> , annual arithmetic mean 150 µg/m <sup>3</sup> , 24-hr avg.
Suspended Particulate Matter (PM <sub>2.5</sub> )	12 µg/m <sup>3</sup> , annual arithmetic mean	15 µg/m <sup>3</sup> , annual arithmetic mean (3-year average) 65 µg/m <sup>3</sup> , 24-hr avg. (3-year average of 98th percentile)
Sulfates	25 µg/m <sup>3</sup> , 24-hr avg.	None
Lead*	1.5 µg/m <sup>3</sup> , 30-day avg.	1.5 µg/m <sup>3</sup> , calendar quarterly average
Visibility-Reducing Particles	In sufficient amount to produce extinction of 0.23 per kilometer due to particles when relative humidity is less than 70%, 8-hour average (10 AM – 6 PM)	None
Hydrogen Sulfide	0.03 ppm, 1-hr avg.	None
Vinyl Chloride*	0.01 ppm, 24-hr avg.	None

*Source:*

<sup>1</sup> California Air Resources Board. "Air Quality Standards)." [Online] [May 15, 2003]. <<http://www.arb.ca.gov/aqs/aqs.htm>>.

µg/m<sup>3</sup> = microgram per cubic meter.

ppm = parts per million by volume.

\* The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.



**Table 4.3-2  
Health Effects Summary of the Major Criteria Pollutants**

Air Pollutant	Adverse Effects
Ozone	Eye irritation
Carbon Monoxide	Respiratory function impairment
	Impairment of oxygen transport in the blood stream
	Aggravation of cardiovascular disease
	Impairment of central nervous system function
Particulate Matter (PM <sub>10</sub> and PM <sub>2.5</sub> )	Fatigue, headache, confusion, dizziness
	Can be fatal in the case of very high concentrations in enclosed places
	May be inhaled and lodge in and irritate the lungs
	Increased risk of chronic respiratory disease with long exposure
Nitrogen Dioxide	Altered lung function in children
	May produce acute illness with sulfur dioxide
Sulfur Dioxide	Increased risk of acute and chronic respiratory disease
	Irritation of lung tissue
	Increased risk of acute and chronic respiratory disease

*Source: Monterey Bay Unified Air Pollutant Control District, CEQA Air Quality Guidelines, 1995, revised 2004, pages 3-1 to 3-5.*

The PM<sub>10</sub> emissions in the project area arise from agricultural processes that dominate the region around Dixon. The presence of inversion layers can augment the ambient air concentrations of pollutants such as CO, ozone, and PM<sub>10</sub>. Directly emitted pollutants have the ability to stay in an inversion profile without mixing or diluting, causing an increase in pollutant concentration. Measures are being taken to reduce PM<sub>10</sub> emissions from agricultural processes such as regulating agricultural burning, required field wetting, and experiments involving till versus no till treatments.

#### **4.3.2.3 Local Air Quality**

The project area is governed by the Yolo-Solano Air Quality Management District (YSAQMD or District). It is the duty of the YSAQMD to adopt and enforce air quality related rules and regulations. The primary goal of the District is to ensure clean and healthful air for the public. The District is also responsible for bringing the area into attainment with both national and California ambient air quality standards (NAAQS and CAAQS, respectively). Progress towards attainment is measured at local air quality monitoring stations. The closest air

monitoring station to the proposed project is in Davis. The monitoring station is located on the UC Davis campus where all of the primary criteria pollutants are monitored with the exceptions of sulfur dioxide (SO<sub>2</sub>), sulfates, and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>).

**Table 4.3-3, Ambient Pollutant Concentrations Registered at UC Davis Monitoring Station**, shows the ambient pollutant concentrations monitored for the past five years. The table also includes the state and federal standards for each criteria pollutant as well as the number of recorded violations of these standards. This station has shown a declining number of ozone violations in the past two years. Recently, there have been very few violations of any standard in the project area with the exception of ozone and PM<sub>10</sub>. Since 2000, PM<sub>10</sub> has been rising in the number of exceedances (excluding a drop in 2003), with largest number of violations occurring in 2004. Concentrations of CO, NO<sub>2</sub>, and SO<sub>x</sub> have not exceeded any air quality standards within the area for the past several years.

#### 4.3.2.4 Sensitive Receptors

An individual whose immune system has not yet developed completely or has diminished a significant amount is labeled as “sensitive receptor”. These populations are more susceptible to respiratory infections and other air quality related health problems. Sensitive receptors in a project’s vicinity are given special attention to prevent exposing children, the elderly, and the ill to toxic air contaminants (TACs). These sensitive populations are more prone to health problems associated with TAC exposure. Certain land uses are regarded as

**Table 4.3-3  
Ambient Pollutant Concentrations Registered at UC Davis**

Pollutant	Standards <sup>1</sup>	Year				
		2000	2001	2002	2003	2004
<b>OZONE (O<sub>3</sub>)</b>						
Maximum 1-hr concentration (ppm)		0.103	0.100	0.121	0.098	0.092
Maximum 8-hr concentration (ppm)		0.089	0.093	0.088	0.082	0.075
Number of days exceeding federal 1-hour standard <sup>2</sup>	0.12 ppm	0	0	0	0	0
Number of days exceeding state 1-hr standard	0.09 ppm	5	5	3	2	0
Number of days exceeding federal 8-hr standard	0.08 ppm	2	2	2	0	0
<b>CARBON MONOXIDE (CO)</b>						

Pollutant	Standards <sup>1</sup>	Year				
		2000	2001	2002	2003	2004
Maximum 1-hr concentration (ppm)		2.5	15.1	1.9	3.3	1.6
Maximum 8-hr concentration (ppm)		1.28	2.50	1.44	0.83	0.98
Number of days exceeding federal 8-hr standard	9 ppm	0	0	0	0	0
Number of days exceeding state 8-hr standard	9.0 ppm	0	0	0	0	0
<b>NITROGEN DIOXIDE (NO<sub>2</sub>)</b>						
Maximum 1-hr concentration (ppm)		0.053	0.172	0.059	0.060	0.057
Annual arithmetic mean concentration (ppm)	0.053 ppm	0.011	0.010	0.012	0.011	0.009
Number of days exceeding state 1-hr standard	0.25 ppm	0	0	0	0	0
<b>SULFUR DIOXIDE (SO<sub>2</sub>)<sup>3</sup></b>						
Maximum 1-hr concentration (ppm)		0.023	0.031	0.013	0.013	0.008
Maximum 24-hr concentration (ppm)		0.008	0.017	0.005	0.003	0.003
Annual arithmetic mean concentration (ppm)	0.03 ppm	0.005	0.002	0.001	0.001	0.001
Number of days exceeding state 1-hr standard	0.25 ppm	0	0	0	0	0
Number of days exceeding state 24-hr standard	0.04 ppm	0	0	0	0	0
Number of days exceeding federal 24-hr standard	0.14 ppm	0	0	0	0	0
<b>PARTICULATE MATTER (PM<sub>10</sub>)<sup>4</sup></b>						
Maximum 24-hr concentration (µg/m <sup>3</sup> ) (using state methods for sampling)		62.0	70.0	86.0	55.0	171.0*
Maximum 24-hr concentration (µg/m <sup>3</sup> ) (using federal methods for sampling)		63.0	67.0	82.0	55.0	169.0*
Annual arithmetic mean concentration (µg/m <sup>3</sup> ) (using federal methods for sampling)		23.2	23.8	26.8	20.7	34.5*
Number of samples exceeding federal 24-hr std.	150 µg/m <sup>3</sup>	0	0	0	0	1
Number of samples exceeding state 24-hr std.	50 µg/m <sup>3</sup>	2	3	6	2	13
<b>PARTICULATE MATTER (PM<sub>2.5</sub>)<sup>4</sup></b>						
Maximum 24-hr concentration (µg/m <sup>3</sup> )		46.0	57.0	69.0	31.0	36.0
Annual arithmetic mean concentration (µg/m <sup>3</sup> )	15 µg/m <sup>3</sup>	10.3	na	10.7	8.4	10.4
Number of samples exceeding federal 24-hr std.	65 µg/m <sup>3</sup>	0	0	1	0	0

## Sources:

- (i) California Air Resources Board Air Quality Database <http://www.arb.ca.gov/adam/welcome.html>.  
(ii) U.S. Environmental Protection Agency Air Quality Database <http://www.epa.gov/air/data/>.

<sup>1</sup> Parts per million of air by volume (ppm), micrograms per cubic meter of air (µg/m<sup>3</sup>), or annual arithmetic mean (aam).

<sup>2</sup> The federal 1-hour ozone standard was revoked on June 15, 2005. The data are shown for informational purposes.

<sup>3</sup> Pollutant is monitored at Sacramento-Del Paso Manor 2701 Avalon Drive in Sacramento County, which is the nearest monitoring station that monitors the particular pollutant.

<sup>4</sup> Pollutant is monitored at Woodland-Gibson Road in Yolo County, which is the nearest monitoring station that monitors the particular pollutant.

\* = Values were monitored while construction activities were occurring nearby, according to David Smith, YSAQMD.

na = not available

- All pollutants are monitored at UC Davis Campus unless mentioned otherwise.
- No data are included for lead; this pollutant is not monitored in the vicinity of the project site.

NOTES: Sulfates are not monitored anywhere in the Sacramento Valley Air Basin. Sulfates have not exceeded the state standard of 25 µg/m<sup>3</sup> for more than 20 years.

sensitive receptors due to the types of people that occupy them. Some of these land uses include: elementary and secondary schools, hospitals, childcare

centers, and retirement homes. Residential areas are also considered sensitive receptors due to the presence of children and the elderly who may live there.

The area surrounding the proposed project is composed of unoccupied and undeveloped land, a freeway, and agricultural fields. There are currently no sensitive receptors such as hospitals, elementary schools, childcare centers, or retirement homes in the vicinity within the City. Though there are residential homes on Vaughn Road south of the project site and on Hess Lane southwest of the project site across Interstate 80, the proposed project would not be contiguous to any existing residential neighborhoods. A proposed development project, the Milk Farm project, has been approved north of Interstate 80 and east of Currey Road; however, it does not include residential development.

#### 4.3.2.6 Toxic Air Contaminants

##### **Federal**

Regulation of toxic air contaminants (TACs), termed Hazardous Air Pollutants (HAPs) under federal regulations, is achieved through federal and state controls on individual sources. Federal law defines HAPs as non-criteria air pollutants with short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects. The 1990 federal Clean Air Act (CAA) Amendments instituted a comprehensive plan for achieving significant reductions in both mobile and stationary source emissions of HAPs. Under the 1990 CAA Amendments, a total of 189 chemicals or chemical families were designated as HAPs because of their adverse human health effects. Title III of the 1990 federal CAA Amendments amended Section 112 of the CAA to replace the former program with an entirely new technology-based program. Under Title III, the US EPA must establish maximum achievable control technology emission standards for all new and existing “major” stationary sources. Major stationary sources of HAPs are required to obtain an operating permit from the YSAQMD pursuant to Title V of the 1990 CAA Amendments.

##### **State**

California law defines TACs as air pollutants having carcinogenic or other health effects. Assembly Bill (AB) 1807 (the Tanner Bill, passed in 1983) established the State Air Toxics Program and the methods for designating certain chemicals as

TACs. A total of 244 substances have been designated TACs under California law. They include the (federal) HAPs adopted as TACs in accordance with AB 2728. After a chemical has been identified as a TAC, the ARB develops Airborne Toxic Control Measure(s) to reduce its emissions and associated health impacts. Currently, the ARB is implementing and proposing control measures to limit the emissions from heavy-heavy-duty trucks and other diesel engines (which are discussed below). Because the project would result in emissions of diesel particulates, sources associated with the project would be subject to some of these ATCMs.

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; AB 2588 does not regulate air toxic emissions directly. Under AB 2588, sources emitting more than 10 tons per year of any criteria air pollutant must estimate and report their toxic air emissions to the local air districts. The local air districts then prioritize facilities on the basis of emissions and “high priority” facilities are required to submit a health-risk assessment and communicate the results to the affected public. Depending on the risk levels, emitting facilities are required to implement varying levels of risk reduction measures. The YSAQMD is responsible for implementing AB 2588 in the Yolo and northeastern Solano County.

### 4.3.3 Regulatory Considerations

#### 4.3.3.1 US Environmental Protection Agency

The US EPA is responsible for enforcing the CAA and the national ambient air quality standards (NAAQS) that it establishes. These standards identify levels of air quality for seven “criteria” pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), respirable particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), and lead. The thresholds are considered to be the maximum levels of ambient (background) air pollutants determined safe (within an adequate margin of safety) to protect the public health and welfare.

The US EPA designates air basins as being in “attainment” or “nonattainment” of NAAQS for each of the seven “criteria” pollutants. Nonattainment air basins are ranked (marginal, moderate, serious, severe, or extreme) according to the degree

of nonattainment levels. The air basin is then required to submit a State Implementation Plan (SIP) that describes how the state will achieve the federal standards by specified dates. The extent of a given SIP depends on the severity of the air quality in the specific air basin. The Sacramento metropolitan area, which includes Yolo County and the portion of Solano County with the YSAQMD, is classified by the US EPA as a serious nonattainment area with respect to the 8-hour O<sub>3</sub> standard. The Sacramento metropolitan area has until June 15, 2013 at the latest to meet the 8-hour O<sub>3</sub> standard. The *1994 Sacramento Area Regional Ozone Attainment Plan* (discussed below in Section 4.3.3.3) contains measures that were intended to achieve the 1-hour standard, which was revoked on June 15, 2005. On November 8, 2005, the US EPA issued a final rule outlining the requirements for a new plan to achieve the 8-hour standard. The plan must be submitted to the US EPA by June 15, 2007 (three years after the attainment designation). The air districts in the Sacramento regional nonattainment area issued a draft *8-hour Ozone Rate-of-Progress Plan* (ROP Plan) as a step in the development of the 8-hour ozone attainment plan. The ROP Plan was approved by the YSAQMD Board of Directors on February 8, 2006. The ROP Plan is discussed below in Section 4.3.3.3.

The status of the Solano County portion of the SVAB with respect to attainment with the NAAQS is summarized in **Table 4.3-4, National Ambient Air Quality Standards and Status – Sacramento Valley Air Basin (Solano County)**.

The 1990 CAA Amendments were enacted in order to better protect the public's health and utilize more efficient methods of reducing pollution emissions. The major areas of improvement from the amendments include: air basin designations, automobile/heavy-duty engine emissions, and toxic air pollutants. In response to the rapid population growth and the associated rise in motor vehicle operations, the 1990 CAA Amendments addressed tailpipe emissions from automobiles, heavy-duty engines, and diesel-fueled engines. The 1990 Amendments established more stringent standards for hydrocarbons, NO<sub>x</sub>, and CO emissions in order to reduce ozone and carbon monoxide levels in heavily populated areas. Fuels became more strictly regulated by requiring new fuels to be less volatile, contain less sulfur (regarding diesel fuels), and have higher levels of oxygenates (oxygen-containing substances to improve fuel combustion). The US EPA also has regulatory and enforcement jurisdiction over emission sources

beyond state waters (outer continental shelf), and those that are under the exclusive authority of the federal government, such as aircraft, locomotives, and interstate trucking.

**Table 4.3-4  
National Ambient Air Quality Standards and Status  
Sacramento Valley Air Basin (Solano County)**

Pollutant	Averaging Time	Designation/Classification
Ozone (O <sub>3</sub> )	8 Hour	Nonattainment/Serious
	1 Hour <sup>1</sup>	Nonattainment/Severe 15
Carbon Monoxide (CO)	8 Hour	Attainment/Unclassifiable
	1 Hour	Attainment/Unclassifiable
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	Attainment/Unclassifiable
Sulfur Dioxide (SO <sub>2</sub> )	Annual Arithmetic Mean	Attainment/Unclassifiable
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	Attainment/Unclassifiable
	Annual Arithmetic Mean	Attainment/Unclassifiable
Fine Particulate Matter (PM <sub>2.5</sub> )	24 Hour	Attainment/Unclassifiable
	Annual Arithmetic Mean	Attainment/Unclassifiable
Lead (Pb)	24 Hour	Attainment/Unclassifiable
	Calendar Quarter	Attainment

Source: Environmental Protection Agency. "Region 9: Air Programs, Air Quality Maps." [Online] [July 14, 2005].  
[http://www.epa.gov/region9/air/maps/maps\\_top.html](http://www.epa.gov/region9/air/maps/maps_top.html)

<sup>1</sup> The national 1-hour ozone standard was revoked on June 15, 2005. The previous attainment designation/classification is shown for informational purposes.

#### 4.3.3.2 California Air Resource Board

The ARB, a branch of the California Environmental Protection Agency (CalEPA), oversees air quality control and planning throughout California. It is primarily responsible for ensuring the implementation of the California Clean Air Act (CCAA), responding to the federal CAA requirements, and regulating motor vehicle emissions and consumer products within the state. In addition, the California ARB sets health-based air quality standards (CAAQS) and control measures for toxic air contaminants (TAC). However, the focus of most of its research goes toward motor vehicle emissions since they are the largest concern regarding air pollution in California. The ARB establishes new standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications in order to further reduce vehicular emissions.

The CCAA established a legal mandate for air basins to achieve the California ambient air quality standards by the earliest practical date. These standards apply to the same seven criteria pollutants as the federal CAA and also include sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. State standards are more stringent than the federal standards, and in the case PM<sub>10</sub> and SO<sub>2</sub>, far more stringent. The CCAA requires that nonattainment area develop an attainment plan to bring the district within attainment. In the case of nonattainment for ozone, as is the case in the YSAQMD, the plan is required to produce a five percent annual reduction in ozone precursor emissions.

The ARB supervises and supports the regulatory activities of local air quality districts as well as monitors air quality itself. Health and Safety Code Section 39607(e) requires the ARB to establish and annually review area designation criteria. These designation criteria provide the basis for the ARB to designate areas of the state as “attainment,” “nonattainment,” or “unclassified” according to state standards. Finally, Health and Safety Code Section 39608 authorizes the ARB to use the designation criteria to designate areas of California and to annually review those area designations. The ARB makes area designations for 10 criteria pollutants: O<sub>3</sub>, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, sulfates, lead, hydrogen sulfide, and visibility-reducing particles. The status of the Solano County portion of the SVAB with respect to attainment with the CAAQS is summarized in **Table 4.3-5, California Ambient Air Quality Standards and Status – Sacramento Valley Air Basin (Solano County)**.

#### **Airborne Toxic Control Measures to Limit Commercial Truck Idling**

In July 2004, the ARB adopted an Airborne Toxic Control Measure (ATCM) to limit motor vehicle idling within California. The control measure was adopted as part of a program to reduce public exposure to diesel engine particulate matter (DPM). Diesel particulate matter has been listed as a human carcinogen on the ARB’s toxic air contaminants (TAC) list. The measure applies to all diesel-fueled vehicles over 10,000 pounds, regardless of the state in which they are registered. Effective as of February 1, 2005, the ATCM restricts idling of commercial trucks for more than five minutes at any location. It contains several exemptions, including a primary engine that is used to power a heater,



**Table 4.3-5  
California Ambient Air Quality Standards and Status  
Sacramento Valley Air Basin (Solano County)**

<b>Pollutant</b>	<b>Averaging Time</b>	<b>Designation/Classification</b>
Ozone (O <sub>3</sub> )	1 Hour	Nonattainment/Serious
Carbon Monoxide (CO)	8 Hour	Attainment/Unclassified
	1 Hour	Attainment/Unclassified
Nitrogen Dioxide (NO <sub>2</sub> )	1 Hour	Attainment
Sulfur Dioxide (SO <sub>2</sub> )	24 Hour	Attainment
	1 Hour	Attainment
Respirable Particulate Matter (PM <sub>10</sub> )	Annual Arithmetic Mean	Nonattainment
	24 Hour	Nonattainment
Fine Particulate Matter (PM <sub>2.5</sub> )	Annual Arithmetic Mean	Unclassified
Lead (Pb) <sup>1</sup>	30 Day Average	Attainment
Sulfates (SO <sub>4</sub> )	24 Hour	Attainment
Hydrogen Sulfide (H <sub>2</sub> S)	1 Hour	Unclassified
Vinyl Chloride <sup>1</sup>	24 Hour	Unclassified
Visibility Reducing Particles	8 Hour (10 AM – 6 PM)	Unclassified

Source: California Air Resources Board. "Area Designations (Activities and Maps)." [Online] [July 21, 2005].  
<<http://www.arb.ca.gov/desig/desig.htm>>

<sup>1</sup> The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined.

air conditioner, or any ancillary equipment during sleeping or resting in a sleeper cab. Other exceptions are made for school buses, transport vehicles that must idle to keep their products intact, weather restrictions, and emergency or health emergency vehicles. Idling is not permitted in school areas or 100 feet from a restricted area for more than five minutes unless the vehicle is engaged in working activities.

In a continuing effort to reduce DPM emissions as well as other vehicle exhaust pollutants, the ARB has adopted an ATCM to further limit diesel-fueled commercial motor vehicle idling time.<sup>1</sup> In 2004, a new diesel engine NO<sub>x</sub> emission standard reduced emission rates by 50 percent compared to 1998 engines. Emissions of NO<sub>x</sub> and PM<sub>10</sub> are expected to be further reduced in 2007 when a more stringent emission standard for heavy-duty diesel trucks will be implemented. The current ATCM would apply to diesel-fueled vehicles with a gross vehicle weight rating (GVWR) over 10,000. Implementation would occur in two phases, each focusing on a different aspect of truck idling reduction.

<sup>1</sup> The ARB adopted this ATCM on October 20, 2005, but it is still subject to approval by the Office of Administrative Law before it becomes effective.

The first phase focuses on eliminating unnecessary idling from commercial trucks. Vehicles would be required to shutdown their main engine if idling for more than five minutes when not involved in operational activities. The use of idling to provide cab comfort in sleeper berths is currently exempt from in-use idling ATCM; however, starting in 2008, trucks with California or out of state registered sleeper berths would also be required to shutdown their engines after five minutes. While an exception would be made for vehicles that meet the stringent NO<sub>x</sub> idling emission standard of 30 grams per hour, technologies to achieve these standards would not likely be available until 2010. Starting in 2008, post-2008 model year trucks with a GVWR over 14,000 will be required to be equipped with non-programmable automatic shutdown systems that will shutoff the main engine after five minutes of continuous idling. Because enforcement may be difficult, programs to educate truck drivers on the benefits of reducing idling time will be an essential component of the control measure.

The second phase of the ATCM involves the regulation and implementation of idling alternatives. Currently, the most feasible alternatives to truck idling for comfort are: auxiliary powered systems (APS), fuel-fired heaters, and on- or off-board electrification. Fuel-fired heaters have limited capability due to its inability to provide air conditioning or a power source for accessories. Electrification (on- or off-board) can provide truck drivers with air conditioning, heating, and a power source using electricity instead of fuel. Because electrification is still a new technology, most truck stops and trucking companies would not find the current costs of installation and maintenance economically feasible. Both on- and off-board electrification would require investments from both the truck stops and truck owners; in the case of off-board electrification, much more from the truck stop. An APS would use diesel fuel like the main engine; however, fuel consumption rates for APS would vary from 0.08 to 0.3 gallons per hour versus the fuel consumption rate for truck engine idling of 1 gallon per hour (California Air Resources Board (a) 2006). APS would also be able to provide 12-volt DC electrical power to charge the main battery, as well as 120-volt AC electrical power for accessories such as computers and televisions.

The ARB is currently developing APS emission performance standards to ensure APS emissions would not exceed truck idling emissions. Current APS models emit less PM<sub>10</sub> than pre-2007 engines, however, they would emit more NO<sub>x</sub> and

PM<sub>10</sub> than the post-2007 engines that meet the new stringent NO<sub>x</sub> and PM<sub>10</sub> emission standards. Post-2007 model year APS would be required to control PM<sub>10</sub> emissions by routing the APS exhaust through the truck engine's PM trap or retrofitting the APS with other verified Level 3 in-use PM control strategies that achieve an 85-percent PM reduction. Fuel-fired heaters installed in post-2007 trucks will be required to meet the ultra-low- emission vehicle standards in the Low Emission Vehicle Program. Phase II of the ATCM regarding control measures and the emission standards for fuel-fired heaters and APS will begin to be enforced starting January 2009. The proposed ATCM is currently awaiting submittal to the OAL for final approval.

As proposed by the Applicant, vehicles would not be allowed to idle over five minutes at the proposed project. This restriction would keep the Flying J Travel Plaza consistent with the intent of the proposed ATCM. Truck drivers would be informed prior to entering the proposed project about the facility rule. Educating truck drivers on the benefits of reducing idling such as less fuel consumption, less damage on the engine, reduced emissions, and lowering health risk to the public, is a major element in the early stages of implementation. During construction of the proposed project, resources would be created for potential electrification infrastructure. Future operations would include on-board electrification capabilities for properly equipped heavy-heavy-duty diesel trucks.

#### **Airborne Toxic Control Measure for In-Use Diesel-Fueled TRU and TRU Generator Sets**

The ATCM for in-use diesel-fueled TRU and TRU generator sets was adopted by the ARB in February 2004, and became effective in December 2004. The measure targets transport refrigeration units (TRUs) used on trailers to keep perishable goods such as produce, meats, and prescription drugs at proper conditions. Transport refrigeration units are trailer-mounted units powered by small diesel-fueled engines. The measure regulates particulate matter emission rates from TRUs powered by diesel internal combustion engines that range from 9 to 36 horsepower. The proposed project is a truck stop for long-haul trucks; therefore, various TRUs would be in operation on the site. According to the regulation, facilities with over 20 loading dock doors must submit a detailed report specifying the types of models and quantities of TRUs that will occur on site.

Given that the proposed project would not have loading docks, this ATCM would not apply directly to the proposed project. The ATCM would however apply to operators and owners of the TRUs whether registered out-of-state or in California.

The chief control measure is a gradual phase-in of low- and ultra-low emission TRUs. The first phase—performance standards for low-emission TRUs—requires all TRUs under 25 horsepower to have an emission rate of 0.3 grams per horsepower-hour (g/hp-hr) of PM<sub>10</sub> or less (Level 2), and TRUs 25 horsepower or more to have an emission rate of 0.22 g/hp-hr PM<sub>10</sub> or less. All models 2001 and older must be in compliance with the low-emission standard by December 31, 2008, and 2002 and later models must be in compliance by December 31, 2009. The ultra-low performance standard for in-use TRUs will apply to all future models. Compliance with the ultra-low standard will require engines with 25 horsepower or more to have emission rates of 0.02 g/hp-hr PM<sub>10</sub> or less (Level 3). At the present time, the ultra-low-emission standard for models with 25 horsepower or less has not yet been developed. Model years 2001 and older must comply with the ultra-low-emission standard by December 2015, while 2002 models must comply by December 2016, and 2003 models must comply by 2010. All subsequent models after 2003 will be given seven years from the model year to comply with the ultra-low in-use performance standards.

Manufacturers and operators can meet these standards by producing and using engines that have been tested and certified by the ARB. TRU operators can also comply by equipping TRU engines with the required level of Verified Diesel Emission Control Strategies (VDECS). In addition to producing and purchasing cleaner TRU engines, the measure also encourages the use of alternative technologies to diesel-fueled TRUs, such as electric standby power, cryogenic temperature control systems (or a hybrid), alternative-fuel engines, fuel cell-powered temperature control systems, and more.

#### **4.3.3.3 Yolo-Solano Air Quality Management District**

The YSAQMD is the primary agency responsible for meeting state and federal ambient air quality standards for all criteria pollutants in the project area. The District not only regulates the criteria pollutants, but also takes actions to minimize TACs and nuisance odors in its jurisdiction. In order to accomplish

these goals, the District uses its authority to regulate, permit, and inspect local point sources. Though the state is responsible for mobile sources, the District has the authority to implement transportation control measures. Automotive vehicle exhaust contains criteria pollutants such as NO<sub>x</sub> and VOC, both of which are precursors to ozone. The District's jurisdiction covers the northeastern region of Solano County as well as the entire Yolo County. The YSAQMD works together with other Sacramento area districts to maintain the area's portion of the State Implementation Plan (SIP).

### **Sacramento Region Federal Attainment Plans**

Air pollution control districts are required to develop a State Implementation Plan (SIP) when the region is designated as being nonattainment with an NAAQS. A SIP consists of control measures, regulations, emission inventories, and contingency measures. The 1994 Sacramento Area Regional Ozone Attainment Plan was prepared to demonstrate that a combined strategy controlling emissions of VOCs and NO<sub>x</sub> could achieve attainment of the federal 1-hour ozone standard by 2005. Commitments were made to develop and implement new regional, state, and federal control measures to reduce emission levels below the modeled carrying capacities. Updates to the Attainment Plan were prepared in 1999 and 2002. The federal 1-hour ozone standard was subsequently revoked on June 15, 2005.

The Sacramento metropolitan area is in serious nonattainment with respect to the new federal 8-hour ozone standard. Even though the region will be held to the same control measures and regulations set forth to meet the previous 1-hour standard, changes must be made in the plan to achieve the more stringent 8-hour standard. The air districts in the Sacramento regional nonattainment area issued a *8-hour Ozone Rate-of-Progress Plan* (ROP Plan). The ROP Plan was approved by the YSAQMD Board of Directors on February 8, 2006. The Plan sets specific milestones and guidelines that the districts must comply with, as required by the CAA, to achieve attainment with the new ozone standard. The ROP plan must demonstrate an 18-percent emission reduction in VOC and/or NO<sub>x</sub> over the first six years (beginning from the 2002 baseline year). In the case that reasonable further progress (RFP) milestones or attainment deadlines are not met, contingency measures must be implemented without any further state or federal actions. The next step in the 8-hour ozone planning process is to complete the

photochemical grid modeling and prepare an ozone attainment demonstration plan for submittal to the US EPA by June 2007.

### **2003 Triennial Assessment and Plan Update**

When an area is out of attainment in respect to a CAAQS, the CCAA requires the air district to develop an air quality plan to bring the district within attainment. In 1992, the YSAQMD developed an Air Quality Attainment Plan (AQAP) that was updated for the fourth time in 2003. The CCAA requires that air quality strategies adopted in an air quality plan produce a five percent annual reduction in ozone precursor emissions. If these conditions are not met, the air district is required to adopt every feasible emission control measure with an expeditious schedule, as is the case in the 2003 Plan Update. The YSAQMD is seeing a trend of decreasing NO<sub>x</sub> and ROG emission inventories; however, the rate at which these inventories are falling is not sufficient to meet the requirements set by the CCAA.

Incentive programs play a large role in helping overall emission reductions in an area. These programs help businesses turn over their vehicle fleets more rapidly to keep the lowest emitting engines and vehicles on the road. Without incentive programs, the district would have to achieve emission reductions by further regulating industrial sources and other stationary sources, methods that are not always cost effective. In the past, many regulations have been directed at industrial coatings and solvents, both of which are now well controlled. Recently, regulations have begun to shift toward controlling area sources such as consumer products. As the population grows, emissions from vehicles, industry, and consumer products must decline in order to balance the emissions inventory and maintain healthful air. As part of the update, the YSAQMD has identified measures to lower VOC content in sealants, printing operations, and surface preparation. Areas of potential NO<sub>x</sub> reduction occur in boilers, steam generators, and stationary internal combustion engines. These control measures along with many others have been or will be adopted or amended in 2005 and 2006.

### **Incentive Programs**

The addition of incentive programs has allowed individuals, businesses, and public agencies to retrofit their vehicle fleet with cleaner burning engines. Programs such as the Sacramento Emergency Clean Air Transportation Program

(SECAT), Clean Air Funds (CAF) program, and the Carl Moyer Program have greatly aided in the reduction of pollutants from heavy-duty vehicles. SECAT was created as a result of the air quality problems in the region. This program focuses on reducing NO<sub>x</sub> from on-road heavy-duty trucks. Reducing NO<sub>x</sub> emissions will help the regional goal of reducing its ozone precursors and ultimately reduce ozone formation. The Carl Moyer Program targets both on- and off-road heavy-duty vehicles. Unlike SECAT, the Carl Moyer Program seeks to reduce diesel particulate matter as well as NO<sub>x</sub>. The program has provided funding to purchase new vehicles that use alternate fuels, retrofit engines with ARB-approved control devices, and repower engines. The Clean Air Funds program has reduced emissions from motor vehicles by promoting clean air technology, developing alternative modes of transportation, and educating the public on air pollution reduction strategies. Collectively, these programs offer the public and private sector a beneficial opportunity to minimize their impact on local air quality.

#### **YSAQMD Rules**

The YSAQMD is responsible for limiting the amount of emissions that can be generated throughout the basin by various stationary and area sources. Specific rules and regulations have been adopted by the YSAQMD Board of Directors to limit the emissions generated by various uses/activities. In addition, each rule provides specific pollution reduction control measures that must be implemented in association with each use and activity. The YSAQMD enforces these rules and regulations through permit programs and compliance inspections. The YSAQMD rules that may apply to the proposed project are summarized below:

##### *Rule 2.5 – Nuisance*

Prohibits a person from discharging from any source whatsoever, such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, safety of any such person of the public or which cause or have a natural tendency to cause injury or damage to business or property. Rule 2.5 may apply to any source of air pollutants regardless of whether it is a stationary or mobile source.

*Rule 2.11 – Particulate Matter*

Prohibits the discharge or release into the atmosphere, from any source, particulate matter in excess of 0.3 grains per cubic foot of exhaust volume as calculated standard conditions, unless permitted by law. This rule would apply to stationary sources associated with the project.

*Rule 2.14 – Architectural Coatings*

Limits the quantity of volatile organic compounds (VOC) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the YSAQMD. Applies during initial construction and repainting of the project facilities.

*Rule 2.22 – Gasoline Dispensing Facilities*

Requires that any transfer of gasoline from a transport vessel to storage tank, or from storage tank to motor vehicle fuel tank to have a proper operational certified ARB Phase I and II vapor recovery systems. These systems are required to be inspected and maintained daily for proper operating conditions of all components of the fuel recovery systems. As well, every 12 months an inspection is required to verify compliance with all applicable District rules and regulations as well as all permit conditions. These conditions and standards would apply to the gasoline storage tanks and dispensers located on the project site.

*Rule 2.28 – Cutback and Emulsified Asphalts*

Limits the emissions of organic compounds from the use of cutback and emulsified asphalts in paving materials, paving, and maintenance operations by prohibiting the use of rapid and medium cure asphalts and restricting the petroleum solvent content of slow cure and emulsified asphalts.

*Rule 3.1 – General Permit Requirements*

Requires written authorization to build, erect, install, alter or replace any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce or control the issuance of air contaminants. Requires written authorization to operate any equipment, the use of which may



cause the issuance of air contaminants, or the use of which may reduce or control the issuance of air contaminants. With respect to the proposed project, this rule would apply to any stationary equipment that is not otherwise exempt from this rule as an insignificant source of air pollutants (see Rule 3.2).

#### *Rule 3.2 – Exemptions*

Specifies stationary sources that the YSAQMD considers to be insignificant sources of air pollutants that are exempt from Rule 3.1. With respect to the proposed project, the following sources would be exempt from permit requirements:

- Air conditioning, refrigeration, ventilating or vacuum cleaning systems not designed to remove air contaminants generated by equipment which would require a permit under the YSAQMD rules and regulations;
- Any combustion equipment that has a maximum heat input of less than 1,000,000 British Thermal Units (BTU) per hour and is equipped to be fired exclusively with natural gas, liquefied petroleum gas or any combination thereof, the ratings of all combustion equipment used in this process shall be accumulated to determine whether this exemption applies; and
- Used in eating establishments for the purpose of preparing food for human consumption.

#### *Rule 3.4 – New Source Review*

Provides for the review of new and modified stationary air pollution sources and provides mechanisms, including emission offsets, by which authorities to construct such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.

#### **4.3.3.4 Northeast Quadrant Specific Plan**

The NQSP does not contain any goals or policies that address air quality. However, the NQSP EIR contains mitigation measures to reduce the severity of significant impacts identified. Applicable mitigation measures from that EIR are included below.

- AQ-A The project construction site shall be watered at least two times per day. Emphasis shall be placed on the watering of unpaved roadways during periods of high vehicle movement.
- AQ-B Tarpaulins or other effective covers shall be used on haul trucks when transferring earth materials.

- AQ-C Where feasible, all inactive portions of the project construction site shall be seeded and watered until vegetation is grown.
- AQ-D All disturbed soil areas not subject to re-vegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the YSAQMD.
- AQ-E Soils shall not be exposed nor grading occur during periods where wind speeds are greater than 20 mph averaged over one hour.
- AQ-F Vehicle speed shall not exceed a maximum of 15 mph on all unpaved roads.
- AQ-G All roadways, driveways, and sidewalks shall be paved as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- AQ-H Proper maintenance of equipment and engines shall be maintained at all times.
- AQ-I Vehicle idling shall be kept to an absolute minimum. As a general rule idling shall be kept below 10 minutes.
- AQ-J During smog season (April through October), the construction period shall be lengthened so as to minimize the number of vehicles and equipment operating at the same time.
- AQ-K Construction activities should utilize new technologies to control ozone precursor emissions as they become available and feasible.
- AQ-M Convenient access, such as shuttle services, to public transit systems shall be provided to encourage shoppers, employees and visitors to use mass transit, thereby reducing vehicle emissions.
- AQ-N Information shall be provided at various locations within the project site about carpool, vanpool, or transit use facilities. Incentives, such as parking stalls for carpool and vanpool vehicles shall also be exercised.
- AQ-O Employee trip reduction and other applicable transportation control measures shall be developed. An annual report shall be prepared to document and demonstrate employee trip reduction.<sup>2</sup>
- AQ-R Parking lots, drive-through facilities, and egress/ingress areas shall be designed to reduce vehicle idling. Slow-moving or idling vehicles produce more emissions.
- AQ-S Secure, convenient indoor or outdoor bike storage racks shall be provided at commercial centers, office buildings, and other places of employment.

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<sup>2</sup> This mitigation measure was voided by Health and Safety Code Section 40717.9, which prohibits air districts, congestion management agencies, or other public agencies from requiring an employer to implement a trip reduction program except under specific circumstances.

AQ-U PM<sub>10</sub> emissions shall be reduced by curtailing fugitive dust through effective landscaping, and paving all vehicle roads and parking lots.

#### 4.3.4 Impacts and Mitigation

Development of the proposed project would generate air emissions from a variety of stationary, area, and mobile sources. Construction activities would generate fugitive dust emissions from grading operations as well as vehicle exhaust emissions from construction equipment. Air emissions would also be generated from construction finishing activities such as architectural coatings and asphalt paving. Following full buildout of the proposed project, mobile source emissions (including diesel particulate matter) would be generated by visiting trucks and cars. A discussion of the recommended significance criteria and an assessment of construction and operational emissions are presented below based on the methodologies recommended in the YSAQMD's *Air Quality Handbook*.

Additionally, a Health Risk Assessment (HRA) was prepared to assess the health impacts associated with the project related to diesel particulate matter. A summary of this assessment and potential impacts is included in this section. The complete HRA is included in **Appendix 4.3**.

##### 4.3.4.1 Significance Criteria

###### Significance Criteria for Construction

The YSAQMD recommends that the significance criteria shown in **Table 4.3-6, Significance Criteria for Construction** be applied to the emissions during (1) Phase I construction (grading operations) and (2) Phase II construction (roads, facilities and structures).

**Table 4.3-6  
Significance Criteria for Construction**

Pollutant	Pounds per Day
Reactive Organic Gases (ROG)	82
Oxides of Nitrogen (NO <sub>x</sub> )	82
Carbon Monoxide (CO)	550
Particulate Matter (PM <sub>10</sub> )	150

Source: Yolo-Solano AQMD, *Air Quality Handbook*, 2002.

### Significance Criteria for Operation

The long-term operational significance thresholds recommended by the YSAQMD are shown in **Table 4.3-7, Significance Criteria for Long-Term Operation**, which are applied to the emissions associated with direct (e.g., on-site stationary equipment) and indirect emissions (e.g., motor vehicles). The thresholds are intended as a guide rather than strict, absolute values. When preliminary analysis of a project indicates estimated emissions are near the threshold values, the project should be viewed as potentially significant. Closer scrutiny will refine the emissions analysis, explore any mitigating characteristics of the project or site, and identify feasible mitigation measures.

**Table 4.3-7  
Significance Criteria for Long-Term Operation**

Pollutant	Pounds per Day
Reactive Organic Gases (ROG)	82
Oxides of Nitrogen (NO <sub>x</sub> )	82
Carbon Monoxide (CO)	550
Particulate Matter (PM <sub>10</sub> )	150

Source: Yolo-Solano AQMD, *Air Quality Handbook*, 2002.

### Qualitative Long-Term (Operational) Emission Thresholds

Additional indicators of potential secondary air quality impacts are recommended in the *Air Quality Handbook*. Qualitative emission thresholds should be used as screening criteria to indicate the need for further analysis with respect to air quality. These include:

- Potential to create or be near an objectionable odor (e.g., agriculture, wastewater treatment, food processing, chemical plants, composting, landfills, dairies, rendering, etc.).
- Potential for accidental release of air toxic emissions or acutely hazardous materials.
- Potential to emit an air toxic contaminant regulated by the District or on a federal or state air toxic list.
- Burning of hazardous, medical, or municipal waste as waste-to-energy facilities.

- Potential to produce a substantial amount of wastewater or potential for toxic discharge (e.g., aluminum forming, battery manufacture, chemical manufacture, dye casting, electroplating, food manufacture, reclamation plants, metal finishing, metal molding and casting, pharmaceutical, petroleum/fuel refining, photography, pulp and paper manufacture, etc.).
- Sensitive receptors (e.g., schools, households, etc.) located within a quarter mile of air toxic emissions or near CO hot spots.
- Carcinogenic or air toxic contaminant emissions that exceed or contribute to an exceedance of the District's action level for cancer (ten in one million, per Yolo/Solano Air District), chronic (one) and acute (one) risks.

The proposed project would not use hazardous materials that could result in an accidental release of air toxic emissions or acutely hazardous materials. It would not involve the burning of hazardous, medical, or municipal waste and it would not produce a substantial amount of wastewater or a toxic discharge. Therefore, these significance thresholds will not be evaluated further in this air quality assessment.

#### **Significance Criteria for Cumulative Impacts**

As indicated in the *Air Quality Handbook*, development projects are considered cumulatively significant if:

1. The project requires a change in the existing land use designation (i.e., general plan amendment, rezone); and
2. Projected emissions (ROG, NO<sub>x</sub> or PM<sub>10</sub>) of the proposed project are greater than the emissions anticipated for the site if developed under the existing land use designation.

In addition to these thresholds, the Initial Study for the project indicated the air quality impacts would be potentially significant if the project would:

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

#### **4.3.4.2 Impacts and Mitigation Measures**

**Impact 4.3-1: The earthmoving and construction activities during construction of the proposed development would generate**

**criteria pollutant emissions. This would be considered a significant impact.**

During construction of the proposed project, construction-related emissions would occur from on-site stationary sources, heavy-duty construction equipment, construction worker vehicles, grading operations, architectural coating operations, and asphalt paving. The project site is currently undeveloped; therefore, no demolition activities are necessary to clear the site. Development of the project site would, however, require grading operations as well as a cut-and-fill operation to create a detention pond and building pads. The final phase of the project would include application of architectural coatings and asphalt paving, both of which would generate ROG emissions. Construction emissions would only occur for the period that the project is being built; therefore, construction emissions would not contribute to the long-term degradation of air quality.

In order to determine the extent and significance of the project's impact on air quality, the project's construction emissions were compared to the YSAQMD's established thresholds of significance for construction. In accordance to the YSAQMD's *Air Quality Handbook*, air emissions from Phase I grading and Phase II construction are evaluated individually with respect to the thresholds of significance. The YSAQMD recommends that projects with grading- or construction-related emissions exceeding any of the thresholds of significance (as shown in **Table 4.3-6**) should be considered to have a potentially significant impact on air quality.

The URBEMIS2002 computer model was used to quantify air emissions generated during each phase (grading and construction) of the project development. URBEMIS2002 is a land use and transportation based computer model designed to estimate regional air emissions from new development projects. The model accounts for specific meteorological conditions that characterize each specific air basin in California, in this scenario, the Lower Sacramento Valley. Emission factors for construction equipment, embedded in the URBEMIS2002 model, are obtained from the ARB vehicle emission inventory.

### Site Grading (Phase I)

The Applicant and its civil engineering consultant provided the following information regarding the schedule of grading activities, number and types of equipment, and the predicted area of land disturbed or paved per day. Grading operations are scheduled to last two months from the beginning of December 2006 to February 2007. A detention pond, requiring 54,000 cubic yards of cut and fill, would be excavated on the east side of Pedrick Road. A total of 101,600 cubic yards would be moved on site during the two-month grading phase. Grading would not involve the import or export of soil from the project site. Daily operations would include the site grading of 0.40 acres, as well as the on-site cut/fill of 2,309 cubic yards. Air emissions generated during Phase I grading would occur from site grading, cut/fill operations, grading equipment, and construction worker vehicles. The modeling assumes the use of standard construction practices such as those recommended in the *Air Quality Handbook* to minimize fugitive. In accordance with the *Air Quality Handbook* to assess grading and construction phases separately, **Table 4.3-8, Estimated Unmitigated Phase I Grading Emissions**, shows the estimated air emissions associated with unmitigated grading operations.

**Table 4.3-8**  
**Estimated Unmitigated Phase I Grading Emissions**

Grading Year	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Grading Year 2006	22.79	154.39	186.73	0.00	178.33
Grading Year 2007	22.86	148.80	190.73	0.00	177.61
Maximum Emissions in Any Year	22.86	154.39	190.73	0.00	178.33
YSAQMD Thresholds	82	82	550	—	150
Exceeds Thresholds?	NO	YES	NO	NO	YES

Source: Impact Sciences, Inc. 2006. Calculations can be found in **Appendix 4.3**.

Note: Assumes watering exposed surfaces twice daily.

As shown in **Table 4.3-8**, the emissions from grading operations would exceed YSAQMD's recommended threshold of significance for NO<sub>x</sub> and PM<sub>10</sub> in both grading years. Therefore, the project is considered to have a significant impact on air quality during Phase I construction.

**Mitigation Measure 4.3-1a:** The Applicant shall implement the following NQSP mitigation measures:

- AQ-B Tarpaulins or other effective covers shall be used on haul trucks when transferring earth materials.
- AQ-C Where feasible, all inactive portions of the project construction site shall be seeded and watered until vegetation is grown.
- AQ-D All disturbed soil areas not subject to re-vegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the YSAQMD.
- AQ-E Soils shall not be exposed nor grading occur during periods where wind speeds are greater than 20 mph averaged over one hour.
- AQ-F Vehicle speed shall not exceed a maximum of 15 mph on all unpaved roads.
- AQ-G All roadways, driveways, and sidewalks shall be paved as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- AQ-H Proper maintenance of equipment and engines shall be maintained at all times.
- AQ-J During smog season (April through October), the construction period shall be lengthened so as to minimize the number of vehicles and equipment operating at the same time.
- AQ-K Construction activities should utilize new technologies to control ozone precursor emissions as they become available and feasible.

**Mitigation Measure 4.3-1b:** The Applicant shall water all disturbed surfaces at least three times per day.

**Table 4.3-9, Estimated Mitigated Phase I Grading Emissions,** shows the mitigated emissions from grading operations. When fugitive dust mitigation is applied, emissions from the grading phase would not exceed the PM<sub>10</sub> threshold of significance. However, emissions would still exceed the NO<sub>x</sub> threshold of significance, therefore, the project would still be considered to have a significant impact on air quality.



**Table 4.3-9  
Estimated Mitigated Phase I Grading Emissions**

Emissions Source/Construction Year	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Grading Year 2006	21.66	146.70	186.73	0.00	142.57
Grading Year 2007	21.73	141.39	190.73	0.00	141.89
Maximum Emissions in Any Year	21.73	146.70	190.73	0.00	142.57
YSAQMD Thresholds	82	82	550	—	150
Exceeds Thresholds?	NO	YES	NO	NO	NO

Source: Impact Sciences, Inc. 2006. Calculations can be found in **Appendix 4.3**.

Note: Mitigated emission estimates assume watering exposed surfaces three times daily (additional 35 percent reduction in PM<sub>10</sub> from fugitive dust) and use of properly tuned equipment (5 percent reduction in PM<sub>10</sub> and NO<sub>x</sub> from construction equipment).

**Impact After Mitigation:** Significant.

### **Building Construction (Phase II)**

The Applicant provided the following information regarding the schedule of the construction phases, number and types of equipment to be used, acres of asphalt paving, and area of buildings to be constructed. Construction of the proposed project is scheduled to start from December 2006 and last until July 2007. The seven-month construction phase would include construction of the proposed buildings, an architectural coatings sub-phase anticipated to last a month, and an asphalt paving sub-phase scheduled to last half a month. The Applicant proposes to construct a 17,638 square foot building structure that would consist of a 24-hour convenience store, sit-down restaurant, fast food court, driver lounge, and laundry and shower facilities. Air emissions during the construction phase would result from construction equipment, architectural coating operations, asphalt paving, asphalt paving equipment, and construction worker vehicles. Using the information provided by the Applicant, construction and asphalt paving related emissions were estimated using the URBEMIS2002 model.

The reactive organic gas (ROG) emissions resulting from architectural coating operations were manually calculated using the construction architectural coatings equation from *Software Users' Guide: URBEMIS2002 for Windows with Enhanced Construction Module* (April 2005). The architectural coating calculations are shown in **Appendix 4.3**.

**Table 4.3-10, Estimated Unmitigated Phase II Construction Emissions,** identifies daily emissions associated with the two years of construction based on the information provided by the Applicant and on other information provided in the URBEMIS2002 program (Jones and Stokes (b) 2005). The results are also based on the assumption that all of the construction equipment in each phase would operate continuously over an 8-hour period. In reality, this would not occur, as most equipment would only operate for a fraction of each workday. The YSAQMD established significance thresholds are also included in the **Table 4.3-10.**

**Table 4.3-10**  
**Estimated Unmitigated Phase II Construction Emissions**

Emissions Source/Construction Year	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Construction Year 2006	2.26	13.75	19.72	0.00	0.52
Construction Year 2007	15.74	79.88	95.51	0.02	2.87
Architectural Coating 2007	29.66	—	—	—	—
Total Emissions 2007	45.40	79.88	95.51	0.02	2.87
Maximum Emissions in Any Year	45.40	79.88	95.51	0.02	2.87
YSAQMD Thresholds	82	82	550	—	150
Exceeds Thresholds?	NO	NO	NO	NO	NO

Source: Impact Sciences, Inc. 2006. Calculations can be found in *Appendix 4.3.*

As shown above, construction emissions would not exceed the construction thresholds of significance for any of the criteria pollutants in either construction year. Therefore, the construction emissions associated with Phase II of the proposed project would not be considered to have a significant impact on air quality, and no further mitigation measures are required.

**Mitigation Measure 4.3-2:** None required.

**Impact 4.3-2:** The development envisioned by the project would generate criteria pollutant emissions from motor vehicles associated with motor vehicle trips, idling, and point and stationary and area sources (e.g., gasoline storage and dispensing, natural gas combustion, consumer products). This would be considered a significant impact.

Following full buildout of the proposed project, stationary, area, and mobile source emissions would be generated from the daily operations of the Travel Plaza. Typical day-to-day activities would include heavy-duty diesel trucks, automobiles/light-duty trucks, and medium-duty/light-heavy-duty trucks exiting Interstate 80 to use the proposed project's facilities. Diesel particulate matter, as well as other constituents of diesel and gasoline fuel combustion, would be emitted in the project's vicinity due to these trips. Residents of Dixon and adjacent towns would also visit the project to eat at the restaurant or fast food court, purchase fuel, or shop at the gift store. An estimated 89 persons would be employed at the Travel Plaza. They are assumed to travel from Dixon and nearby towns in automobiles/light-duty trucks.

In addition to mobile source emissions, the proposed project would also generate stationary source emissions from the operation of two gasoline storage tanks and dispensing equipment. Area source emissions would be generated from natural gas combustion for shower and laundry facilities, space heating, and restaurant operations. Periodic repainting and landscape maintenance would generate area source emissions. Operational emissions resulting from the day-to-day activities of the proposed project are discussed below with respect to the YSAQMD's operational thresholds of significance.

#### **Stationary and Area Sources**

The project would operate gasoline and diesel dispensing stations on site that would generate stationary source ROG emissions. ROG emissions would be generated due to spillage during vehicle refueling operations and from venting and working losses from the storage tanks. The installed gasoline tanks and dispensing equipment must comply with YSAQMD's Rule 2.22: Gasoline

Dispensing Facilities, which requires installation of both Phase I and Phase II vapor recovery systems. The ROG emissions resulting from the gasoline dispensing stations were calculated using emission factors from the ARB's Area Source Methodology for gasoline dispensing facilities (California Air Resources Board 2004). Vehicle refueling losses from diesel fuel dispensing were not included in the calculation of ROG emissions. Diesel fuel dispensing would generate a negligible amount of ROG emissions due to its low volatility. As provided by the Applicant, the proposed project would use an annual throughput of 3,139,656 gallons of unleaded and premium gasoline per year based on throughput from other Flying J facilities. Calculations were performed as follows:

$$\text{Throughput (gallons/year)} \times \text{Emission Factors (lbs ROG/1000 gallons)} \div 365 \text{ days/yr} = \text{Total Emissions (lbs ROG/day)}$$

Emissions resulting from diesel fuel storage were estimated using the US EPA's TANKS model, Version 4.0d. Total organic compound (TOC) emissions from one 20,000-gallon storage tank (the facility would have three diesel fuel tanks) were estimated using the chemical and physical characteristics for No. 2 diesel fuel and the estimated turnovers for one storage tank (e.g., based on one-third of the estimated diesel fuel throughput of 22,806,300 gallons per year). The highest monthly emission rate (July) was converted to a daily rate by dividing the result by 31 days. The TOC values were tripled because the Travel Plaza would have three diesel tanks. The TOC emissions were assumed to be equivalent to ROG emissions.

The proposed project would also include a restaurant, fast food court, laundry and shower facilities, and a 24-hour convenience store. These services would consume natural gas for space heating, water heaters, and food preparation equipment. The natural gas usage rate provided by the Applicant was used to manually calculate emissions from natural gas consumption using methods provided in *Software Users' Guide: URBEMIS2002 for Windows with Enhanced Construction Module* (April 2005). The usage rate provided by the Applicant represents the maximum natural gas capacity of all natural gas-fueled equipment at the Travel Plaza. Thus, a load factor of 0.114 was generated from an annual

natural gas usage inventory of a similar Flying J facility.<sup>3</sup> Detailed calculations of the natural gas emissions are provided in **Appendix 4.3**.

Additional area source emissions would occur from landscape maintenance and the periodic repainting of buildings. URBEMIS2002 assumes that 10 percent of the total building area is required to be repainted each year. Emissions from repainting (architectural coatings) operations were calculated using the methods provided in *Software Users' Guide: URBEMIS2002 for Windows with Enhanced Construction Module* (April 2005). For landscape maintenance, facilities are assumed to use commercial lawn and garden equipment to maintain the project's surrounding landscape. URBEMIS2002 assumes landscape maintenance emissions are directly correlated to the number of land uses on site. For this analysis, four land uses were identified: a fast food restaurant without a drive-thru window, a high turnover restaurant, a gift shop, and a 24-hour convenience store. **Table 4.3-11, Stationary and Area Source Operational Emissions**, summarizes emissions from area sources associated with the proposed project's operation.

**Table 4.3-11**  
**Stationary and Area Source Operational Emissions**

Emissions Source	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Natural Gas Combustion	0.13	1.86	0.74	0.00	0.00
Landscape Maintenance	0.21	0.02	1.60	0.00	0.00
Architectural Coatings (Repainting)	0.16	—	—	—	—
Gasoline Storage and Dispensing	9.63	—	—	—	—
Diesel Fuel Storage and Dispensing	0.38	—	—	—	—
<b>Total Emissions</b>	<b>10.51</b>	<b>1.88</b>	<b>2.34</b>	<b>0.00</b>	<b>0.01</b>

Source: Impact Sciences, Inc. 2006. Calculations can be found in **Appendix 4.3**.

### Mobile Sources

Mobile source emissions would represent the largest portion of the proposed project's operational emissions. The traffic report prepared by Crane Transportation Group details the average daily trips for a range of vehicle classes (see **Appendix 4.10**). Vehicles visiting the proposed project were split into three

<sup>3</sup> The load factor was based on actual natural gas billings for a Flying J facility that has similar natural gas-fired equipment ratings.

different EMFAC2002 vehicle classes.<sup>4</sup> Heavy-heavy-duty diesel trucks were represented in EMFAC2002 as heavy-heavy-duty trucks (HHDT). Automobiles/light-duty trucks and medium-duty/light-heavy-duty trucks would also come from the freeway, the City, and other local communities to the proposed project site. Automobiles/light-duty trucks were represented in EMFAC2002 as a combination of light-duty automobile (LDA) and light-duty truck (LDT). Medium-duty/light-heavy-duty trucks were modeled as a combination of light-heavy-duty truck (LHDT) and medium-duty vehicle (MDV) classes in EMFAC2002.

Mobile operational emissions would primarily be generated from heavy-heavy-duty diesel trucks and their associated TRUs coming to, and operating on site. However, as proposed by the Applicant, vehicles would be limited to five minutes of idling on site. This restriction is consistent with the intent of the pending ARB regulation that would prohibit heavy-duty diesel trucks from idling for more than five minutes when not engaged in operational activities. The Applicant has indicated that 35 percent of the heavy-heavy-duty diesel trucks that visit the proposed project would pull trailers equipped with TRUs. Regardless of the truck engine's activity, TRUs run continuously (at variable loads) to maintain the proper storage conditions for cargo loads. Because TRUs are also diesel powered, they represent a constant source of DPM and other diesel exhaust constituents. Vehicular mobile source emissions were categorized as traveling emissions to the project site, traveling emissions on site, and idling emissions on site. All vehicle emission factors were calculated using the ARB motor vehicle inventory model, EMFAC2002.

#### **Traveling Emissions (Off Site)**

Heavy-duty diesel trucks visiting the project site would exit I-80 and proceed to the project's designated diesel truck entrance (Access 3) off Professional Drive. This entrance is located approximately 0.35 miles from the freeway exit. Automobiles visiting the site would travel approximately .20 miles from the I-80

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<sup>4</sup> Crane Transportation Group, the traffic consultant for the Environmental Impact Report, estimated trips to and from the Travel Plaza by (a) automobiles, pickups, and recreational vehicles, (b) trucks with three or four axles, and (c) trucks with more than four axles. For the purpose of this analysis, these groups of vehicles were assumed to consist of the following vehicle classes as designated by the California Air Resources Board in EMFAC2002: (a) automobiles (LDA) and light-duty trucks (LDT), (b) medium-duty vehicles (MDV) and light-heavy-duty trucks (LHDT), and (c) heavy-heavy-duty trucks (HHDT), respectively.

exit to the first entrance point (Access 1). Light-duty trucks and medium-duty/light-heavy-duty visiting from Interstate 80 would enter the project site from an alternate entrance, located between Access 1 and Access 3, off of Professional Drive. For all vehicle classes, 50 percent were assumed to come from I-80 West and 50 percent from I-80 East.

Local trips from Dixon or nearby towns by customers were assumed to be an average distance of 6.6 miles. This distance was obtained from the commercial-based customer trip length for rural areas in URBEMIS2002. Trips by employees were assumed to be an average distance of 16.8 miles, the home-to-work trip length for rural areas in URBEMIS2002. Local and off-freeway trips are all assumed to travel at an average speed of 25 miles per hour. EMFAC2002 was used to generate emission factors for all vehicle classes traveling 25 miles per hour in Yolo County for the project buildout year, 2007. EMFAC2002 can produce total vehicle miles traveled (VMT) within a region for a given speed. The model also produces a daily emissions inventory for each criteria pollutant per vehicle class.

The total emissions for a particular pollutant were divided by the total VMT to generate an emission factor expressed in grams per mile. Mobile operational emissions were then calculated by adding the daily trips from the traffic report for a given vehicle class, the corresponding trip lengths, and multiplying by the emission factor to obtain grams of pollutant per day, which were converted to pounds per day. **Table 4.3-12, Off-Site Traveling Emissions to Flying J Travel Plaza**, summarizes the emissions associated with off-freeway or local trips to the Travel Plaza.

**Table 4.3-12**  
**Off-Site Traveling Emissions to Flying J Travel Plaza**

Emissions Source	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Freeway Heavy-Heavy-Duty Diesel Trucks	1.11	13.94	5.93	0.02	0.36
Freeway Autos/Light-Duty Trucks	0.46	0.78	8.91	0.01	0.03
Freeway Medium-Duty/Light-Heavy-Duty Trucks	0.03	0.09	0.48	0.00	0.00
Town Autos/Light-Duty Trucks	0.60	1.01	11.58	0.01	0.04
Employee Autos/Light-Duty Trucks	<b>1.99</b>	<b>3.37</b>	<b>38.58</b>	<b>0.03</b>	<b>0.14</b>
<b>Total Emissions</b>	<b>4.19</b>	<b>19.19</b>	<b>65.48</b>	<b>0.07</b>	<b>0.57</b>

Source: Impact Sciences, Inc. 2006. Calculations can be found in **Appendix 4.3**.

### Traveling Emissions (On-Site)

The proposed project would have designated parking areas where each vehicle class would be allowed to park. Therefore, each vehicle class would travel a different distance to reach their appointed parking location. Heavy-heavy-duty trucks would enter the proposed project from Professional Drive and travel an average of 0.17 miles to reach a parking spot. Automobiles/light-duty trucks and medium-duty/light-heavy-duty trucks would enter the project site from a separate entrance on Pedrick Road. Automobiles/light-duty trucks are assumed to travel an average of 0.055 miles to reach a parking location, and medium-duty/light-heavy-duty trucks, an average distance of 0.063 miles. The distance traveled on site was multiplied by two to represent a round trip to and from the proposed project.

Different emission factors were generated to represent vehicles traveling on site. Once entering the proposed project, vehicles were assumed to travel at an average speed of 10 miles per hour. Emission factors were generated using the same method described above for off-site traveling; however, a traveling speed of 10 miles per hour was assumed. **Table 4.3-13, On-Site Traveling Emissions at Flying J Travel Plaza**, summarizes the emissions associated with vehicles traveling on the Flying J Travel Plaza site.

**Table 4.3-13**  
**On-Site Traveling Emissions at Flying J Travel Plaza**

Emissions Source	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Heavy-Heavy-Duty Trucks	0.84	8.32	5.22	0.01	0.27
Automobiles/Light-Duty Trucks	0.18	0.21	2.49	0.00	0.01
Medium-Duty/Light-Heavy-Duty Trucks	0.01	0.03	0.15	0.00	0.00
Local Automobile/Light-Duty Trucks	0.01	0.01	0.13	0.00	0.00
<b>Total Emissions</b>	<b>1.04</b>	<b>8.57</b>	<b>7.99</b>	<b>0.01</b>	<b>0.28</b>

Source: Impact Sciences, Inc. 2006. Calculations can be found in *Appendix 4.3*.



### Non-Mobile Operating Engine Sources

Because some trucks would be stopping at the project site for a considerable amount of time (two or 10 hours), idling emissions associated with heavy-heavy-duty diesel trucks, TRUs, and APUs would contribute a substantial amount of air emissions. As provided by the Applicant, 20 percent of the TRU equipped heavy-heavy-duty trucks stopping at the site would do so for the driver's rest period. At other truck stops, drivers may idle their main engines to provide the necessary heating or cooling for comfortable resting conditions. The Applicant has proposed that the truck stop would be a "no idle" facility, meaning vehicles would not be allowed to idle for more than five minutes while on site. Nonetheless, 35 percent of the total heavy-heavy-duty trucks would pull trailers equipped with a TRU that idles continuously throughout the stay at the proposed project (Electronic Mail Darnell 2005). Of the heavy-heavy-duty trucks that would stop to allow the driver to rest, 40 percent of these trucks would rest for two hours and the other 60 percent would rest for 8 to 10 hours (Electronic Mail Kearney 2006).

For the purposes of this analysis, the 60 percent of trucks that would rest for 8 to 10 hours were all assumed to rest for the maximum ten hours. Flying J has instituted a program to supply APUs to trucks,<sup>5</sup> and APUs would be available for aftermarket installation by other vendors. The Applicant estimates that 50 percent of the heavy-heavy-duty trucks would operate an APU, if they stayed for the driver to rest. APUs are diesel fueled engines that supply power, without truck engine idling, for comfort features such as air conditioning and heating. The balance of the trucks would either use an electrical hookup, with the Travel Plaza supplying the electricity, or weather conditions would be moderate enough that heating or air conditioning would not be necessary.

### Heavy-Heavy-Duty Truck Idling

Heavy-heavy-duty truck idling emissions were estimated using the ARB motor vehicle inventory model EMFAC2002. Idling emission factors for heavy-heavy-duty trucks were generated by setting all vehicle speeds for Yolo County in 2007 to zero miles per hour. EMFAC2002 generates emission factors for the criteria pollutants expressed in grams per hour. The total truck idling

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<sup>5</sup> A description of the APU available from Flying J may be found at <http://www.fjesolutions.com/>

time per day was then added together and multiplied by the emission factor to calculate the total emissions from truck engine idling in grams. For the purpose of this analysis, all heavy-heavy-duty trucks were assumed to idle for the maximum allowable time of five minutes. In reality, not all of the trucks would idle for the fully allowable five minutes; however, assuming a full five minutes provides a conservative estimate of potential idling emissions. **Table 4.3-15, Running Emissions from Truck Engine, TRU, and APU**, summarizes the emissions associated with truck idling, TRUs, and APUs.

#### **On-Site TRU Stationary Emissions**

TRU emission factors were generated using the ARB Revisions to the Diesel Transport Refrigeration Units Inventory (California Air Resources Board 2002). Emission factors, expressed in grams per horsepower-hour for ROG, NO<sub>x</sub>, PM<sub>10</sub>, and CO were interpolated using Appendix D Attachment A. Sulfur dioxide emissions were estimated assuming compliance with the ultra-low fuel sulfur content of 15 parts per million. Emission factors from Appendix D Attachment A were interpolated for model year 2000 and 35 horsepower TRUs, the average model year and horsepower for TRUs operating in the proposed project's buildout year, 2007 (Personal Communication Impact Sciences 2005). Total TRU idling time per day was estimated using the following information provided by the Applicant:

- 189 total TRU-equipped trailers per day;
- 23 TRU-equipped trailers stay for 10-hour resting period;
- 15 TRU-equipped trailers stay for a two-hour resting period; and
- 151 TRU-equipped trailers stay for one hour while driver uses facilities.

Total TRU running emissions were calculated by multiplying the emission factor (grams per horsepower-hour) by the average horsepower and total operating time. TRUs are built to maintain the proper temperature inside the cargo haul. Once the temperature has been achieved, the TRU would no longer operate at full capacity, but just enough to maintain the proper temperature. Some TRUs are also time activated and only operate in user-designated intervals. A load factor of 0.53, taking into account the fluctuating TRU operating load, was included in the emission calculation to represent average TRU activity (Personal

Communication Impact Sciences 2006. As well, TRUs are programmed to cycle between on and off to avoid using unnecessary fuel when proper conditions have been achieved. The on/off cycle in TRUs can fluctuate from 30 to 80 percent, however, for the purpose of this analysis, a conservative value of 50 percent was used as the on/off cycle factor (Personal Communication Impact Sciences 2006. **Table 4.3-15, Running Emissions from Truck Engine, TRU, and APU**, summarizes the emissions associated with TRUs idling on site while drivers either rest or use the Travel Plaza facilities.

#### **On- and Off-Site TRU Traveling Emissions**

Air emissions from TRUs would also be generated as heavy-heavy-duty trucks drive from Interstate 80 to the Flying J Travel Plaza and then to their designated parking location. The same TRU emission factors, load factor, and on/off cycle factor used to calculate the on-site stationary TRU emissions factors were used to calculate the TRU traveling emissions. The distance traveled by heavy-heavy-duty trucks from I-80 East and I-80 West to the proposed project entrance was divided by the traveling speed (25 mph) to calculate off-site TRU operating time for each respective route. The time traveled for each route was then multiplied by the emission factors, load factor, and on/off cycle factor to calculate emissions in grams per day. Emissions were then converted to pounds per day.

On-site TRU traveling emissions were calculated using a similar method. The average distance a heavy-heavy-duty truck would travel to reach its designated parking location from the proposed project entrance was divided by the assumed traveling distance (10 mph). The total traveling time was then multiplied by the same emission factors, load factor, and on/off cycle factor to calculate emissions in grams per day, which were then converted to pounds per day. The emissions associated with on- and off-site TRU traveling emissions are shown in **Table 4.3-15, Running Emissions from Truck Engine, TRU, and APU**.

#### **On-Site APU Operational Emissions**

As proposed by the Applicant, vehicles would not be allowed to idle for over five minutes. To provide cab comfort during driver resting periods, a portion of the heavy-heavy-duty diesel trucks would be equipped with APUs. Truck

drivers would only use their APU to provide comfortable resting conditions when the weather conditions would necessitate heating or cooling, or to provide an electrical supply (e.g., to operate a computer). A total of 108 heavy-heavy-duty trucks would stop at the proposed project for resting period per day. The Applicant assumes that approximately 50 percent (54 trucks) of the heavy-heavy-duty diesel trucks would be operated with an APU for cab comfort, and the balance would operate neither the main engine nor an APU for cab comfort.

As in the case with TRUs, 60 percent (32 trucks) of the resting trucks would stop for 10 hours, and 40 percent (22 trucks) would stop for two hours. APU emission factors were obtained from the Initial Statement of Reasons (ISOR) for the ARB's *Requirements to Reduce Idling Emissions from New and In-Use Trucks* (California Air Resources Board 2005). Emissions factors were presented in grams of pollutant per hour. The non-methane hydrocarbon plus oxides of nitrogen (NMHC+NO<sub>x</sub>) factor was split into an ROG and NO<sub>x</sub> factor by subtracting 1.0 gram per hour (representing the ROG) from the NMHC+NO<sub>x</sub> emission factor; the remaining value represents the NO<sub>x</sub> emission factor. Emissions were calculated using the following equation:

$$\text{Emission factor (grams/hr)} \times \text{Total Resting Time per day (hr/day)} \div 453.6 \text{ g/lb} = \text{Pounds/day}$$

**Table 4.3-14, Running Emissions From Truck Engine, TRU, and APU**, summarizes the emissions generated from APUs while driver fulfill their resting period.

**Table 4.3-14**  
**Running Emissions From Truck Engine, TRU, and APU**

Emissions Source	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Truck Engine	0.50	7.22	3.00	0.00	0.13
On-Site Stationary TRUs	9.83	55.13	38.15	0.17	4.96
On-Site Traveling TRUs	0.15	0.86	0.60	0.00	0.08
Off-Site Traveling TRUs	0.20	1.13	0.78	0.00	0.11
APUs	0.80	11.31	4.98	0.00	0.70
<b>Total Emissions</b>	<b>11.48</b>	<b>75.65</b>	<b>47.51</b>	<b>0.17</b>	<b>5.98</b>

Source: Impact Sciences, Inc. 2006. Calculations can be found in Appendix 4.3.

**Table 4.3-15, Total Daily Operational Emissions for Flying J Travel Plaza**, summarizes the emissions from all stationary, area, and mobile sources associated with the proposed project and compares the daily emissions to the YSAQMD thresholds of significance.

**Table 4.3-15  
Total Daily Operational Emissions for Flying J Travel Plaza**

Emissions Source	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Stationary and Area Source Emissions	10.51	1.88	2.34	0.00	0.01
Off-Site Traveling Emissions	4.40	20.32	66.26	0.07	0.67
On-Site Traveling Emissions	1.20	9.44	8.59	0.01	0.37
Engine Running Emissions	11.14	73.67	46.13	0.33	5.78
Total Emissions	27.25	105.31	123.32	0.41	6.83
YSAQMD Thresholds	82	82	550	—	150
Exceeds Thresholds?	NO	YES	NO	NO	NO

Source: Impact Sciences, Inc. 2006. Calculations can be found in *Appendix 4.3*.

As shown in **Table 4.3-15**, the operational emissions would exceed the YSAQMD's established operational threshold of significance for NO<sub>x</sub>. The proposed project would therefore have a significant impact on air quality.

It should be noted that the operational emissions were calculated using conservative values based on current and near-term emission standards for mobile sources. In 2008, an ATCM that requires TRUs to comply with a low emission performance standard for PM<sub>10</sub> will go into effect; the near-term effectiveness of this ATCM has been considered in this assessment. PM<sub>10</sub> emissions will be further reduced in 2015, however, when the ultra-low emission performance standard is implemented. Moreover, newly-built APUs will also begin to be more stringently regulated in 2007. According to a pending regulation, APUs will be required to route their exhaust through the truck engine's PM filter or retrofit the APU with other verified Level 3 in-use PM control strategies that achieve an 85 percent PM reduction. As well, the Applicant has stated that infrastructure for electrification would be incorporated into construction of the proposed project.

Electrification would replace the need for APUs by using electrical power to operate comfort equipment rather than diesel engines. The effectiveness of electrification depends on the availability of trucks that can take advantage of this capability. Starting in 2007 through 2010, new state and federal emission standards for heavy-duty trucks will reduce NO<sub>x</sub> and PM<sub>10</sub> emissions by approximately 90 percent compared to 2004 standards. The effect of these standards will be realized as older trucks are replaced with newer, low-emission trucks. In summary, as the proposed project continues to operate over time, emissions associated with each mobile operational source (heavy-duty trucks, TRUs, and APUs) will decrease.

**Mitigation Measure 4.3-3a:** The Applicant shall implement the following NQSP mitigation measures:

- AQ-M Convenient access, such as shuttle services, to public transit systems shall be provided to encourage shoppers, employees and visitors to use mass transit, thereby reducing vehicle emissions.
- AQ-N Information shall be provided at various locations within the project site about carpool, vanpool, or transit use facilities. Incentives, such as parking stalls for carpool and vanpool vehicles shall also be exercised.
- AQ-R Parking lots, drive-through facilities, and egress/ingress areas shall be designed to reduce vehicle idling.
- AQ-S Secure, convenient indoor or outdoor bike storage racks shall be provided at commercial centers, office buildings, and other places of employment.

**Mitigation Measure 4.3-3b:** The site development shall include the planting of trees for shading in all parking areas in accordance with the requirements of the City of Dixon. The tree design plan shall be submitted along with building plans and be subject to approval by city staff.

**Mitigation Measure 4.3-3c:** TRU Emission Reduction

Several alternatives and/or emission controls may be available to reduce emissions from the TRUs, which account for 54 percent of the project's NO<sub>x</sub> emissions. These measures would also comply with future ultra-low emission performance standards of the ATCM for TRUs. They include:

- Electric standby;
- Cryogenic temperature control systems or hybrid with diesel engine;

- Alternative-fueled engines (includes natural gas, propane, ethanol, and methanol);
- Exclusively fueled with alternative diesel fuel that has been verified by the ARB; and
- Fuel cells (California Air Resources Board (a) 2004).

Installation of alternative technologies for TRUs, such as fuel cells or electric units, is the responsibility of the owner of the refrigerated trailer and is beyond the control of the Applicant. Similarly, Flying J would have little or no control over the fuels used in the TRUs, which could be purchased elsewhere. Accordingly, these potential mitigation measures are not feasible to reduce the project's NO<sub>x</sub> emissions.

#### **Mitigation Measure 4.3-3d: APU and Truck Emission Reduction**

Another potential mitigation measure is a so-called "off-board power infrastructure." Off-board power infrastructure would provide 110-volt electrical power for driver accessories such as heater, air conditioning, telephone, computers, and television. A console that would contain all connections and payment options would connect to the truck window using a template insert. Installation and use of such a system would require the modifications to heavy-duty trucks and offer a potential mitigation measure for truck and APU emissions. It would not provide a means to reduce the on-site traveling emissions or TRU emissions, which account for 78 percent of the on-site NO<sub>x</sub> emissions associated with the proposed project. Installation of off-board power infrastructure would cost \$12,000 to \$20,000 per parking space depending on the number of parking spaces installed (California Air Resources Board 2005). The infrastructure system would provide service to those trucks that would stay for an extended period (i.e., for two to 10 hours).

It has been estimated that up to 108 heavy-heavy-duty trucks would stay for more than one hour, although up to 50 percent would not rely on an APU to provide electricity, heating and cooling. Of the 108 heavy-heavy-duty trucks, 60 percent would stay for 10 hours (nighttime) and 40 percent would stay for two hours (daytime). Thus, it is assumed that up to 65 parking spaces (out of the total 221 proposed truck parking spaces) would be serviced by this system. Assuming an average cost of \$16,000 per parking space, installation would costs

of \$1,040,000 would be required to provide off-board electrification for all heavy-heavy-duty trucks staying for more than one hour.

**Impact After Mitigation:** Significant.

**Impact 4.3-3: Traffic generated by motor vehicle trips associated with the project could contribute to carbon monoxide concentrations in excess of state and federal ambient air quality standards at sensitive receptors. This would be considered a less than significant impact.**

The YSAQMD's *Air Quality Handbook* indicates that a project is considered to have a significant effect if:

- a. A sensitive receptor is located within a quarter mile of the violation, or
- b. The project's contribution exceeds five percent of the CAAQS, or exceeds 550 pounds per day of CO.

As shown in **Table 4.3-15**, the project's CO emissions are 123.12 pounds per day, which is well below the threshold. Furthermore, there are no sensitive receptors (e.g., residences, schools, hospitals) within a quarter mile of the project site or intersections that would be affected by the project traffic to a substantial degree. Accordingly, this impact would be less than significant.

**Mitigation Measure 4.3-3:** None required.

**Impact 4.3-4: The emission of diesel particulate matter associated with the project could expose sensitive receptors to toxic air contaminants in excess of acceptable levels. This would be considered a significant impact.**

A health risk assessment was performed to evaluate the health impacts due to DPM emitted by heavy-heavy-duty diesel trucks, diesel-powered transport refrigeration units, diesel-powered auxiliary power units, medium-duty/light-heavy-duty diesel trucks, and diesel automobiles/light-duty trucks associated with the operation of the Travel Plaza. The DPM emission calculations, description of dispersion modeling and health impact calculations, and other details of the health risk assessment are found in **Appendix 4.3**. It should be



noted that this assessment was based only on the projected number of new trips associated with the project and did not include any existing trip data for the area.

**Table 4.3-16, Summary of Maximum Modeled Cancer Risks of Diesel Exhaust Particulate Matter from the Travel Plaza Operations**, shows the maximum modeled cancer risk for each receptor type resulting from the project-related DPM emissions.

**Table 4.3-16**  
**Summary of Maximum Modeled**  
**Cancer Risks of Diesel Particulate Matter from the Travel Plaza Operations**

Receptor	Cancer Risk
Residential <sup>1</sup>	$3.0 \times 10^{-6}$
Workplace <sup>2</sup>	$38 \times 10^{-6}$

Source: Impact Sciences.

<sup>1</sup> Maximum impact occurred at a receptor located southwest of the project site across Interstate 80 on Hess Road.

<sup>2</sup> Maximum impact occurred at a receptor located northwest of the project site across Interstate 80, which is zoned as CH (Highway Commercial) but currently undeveloped.

**Figure 4.3-1, Modeled Impacts of Diesel Exhaust Particulates for Residential Receptors**, illustrates the potential risks for residential receptors due to DPM from the proposed operation of the Travel Plaza. **Figure 4.3-1** shows the isopleth (a line of constant modeled excess cancer risk) that represents an estimated cancer risk of 10 in one million for residential receptors. Note, however, that there are no residences in the area bounded by the 10-in-one-million isopleth. The nearest residence is located south of the Travel Plaza near Vaughn Road. Moreover, per Solano County General Plan and the City of Dixon Northeast Quadrant Specific Plan, the land parcels located on southern and southwestern sides of the Travel Plaza may be used for the light industrial and commercial purposes, and the land parcels located on the northwestern side (across Interstate 80) may be used for highway commercial uses. Therefore, these areas were not considered as potential residences (Solano County 1999; City of Dixon 1993).

**Figure 4.3-2, Modeled Impacts of Diesel Exhaust Particulates for Workplace Receptors**, illustrates the potential risks for workplace receptors due to DPM

from the proposed operation of the Travel Plaza. **Figure 4.3-2** shows the isopleth that represents an estimated cancer risk of 10 in one million for workplace receptors. While there are no known workplaces within the area bounded by the 10-in-one-million isopleth, these areas were considered as potential workplaces for this analysis per Solano County General Plan and the City of Dixon Northeast Quadrant Specific Plan.

In addition to the potential cancer risk, DPM has chronic (i.e., long-term) noncancer health impacts. The chronic noncancer inhalation hazard indices for the proposed project are calculated by dividing the modeled annual average concentrations of the DPM by the Reference Exposure Level (REL). The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) has recommended an ambient concentration of 5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) as the chronic inhalation REL for DPM. The REL is the concentration at or below which no adverse health effects are anticipated. No inhalation REL for acute (i.e., short-term) effects has been determined by the OEHHA.

The maximum chronic hazard indices at selected receptors are shown in **Table 4.3-17, Summary of Maximum Noncancer Health Impacts of Diesel Exhaust Particulate Matter from the Travel Plaza Operations**. The chronic hazard indices at the points of maximum impact are much less than the YSAQMD significance threshold of 1.0 for noncancer health impacts. The areas of maximum noncancer impact occurred in the same locations as those described above for the cancer risks.

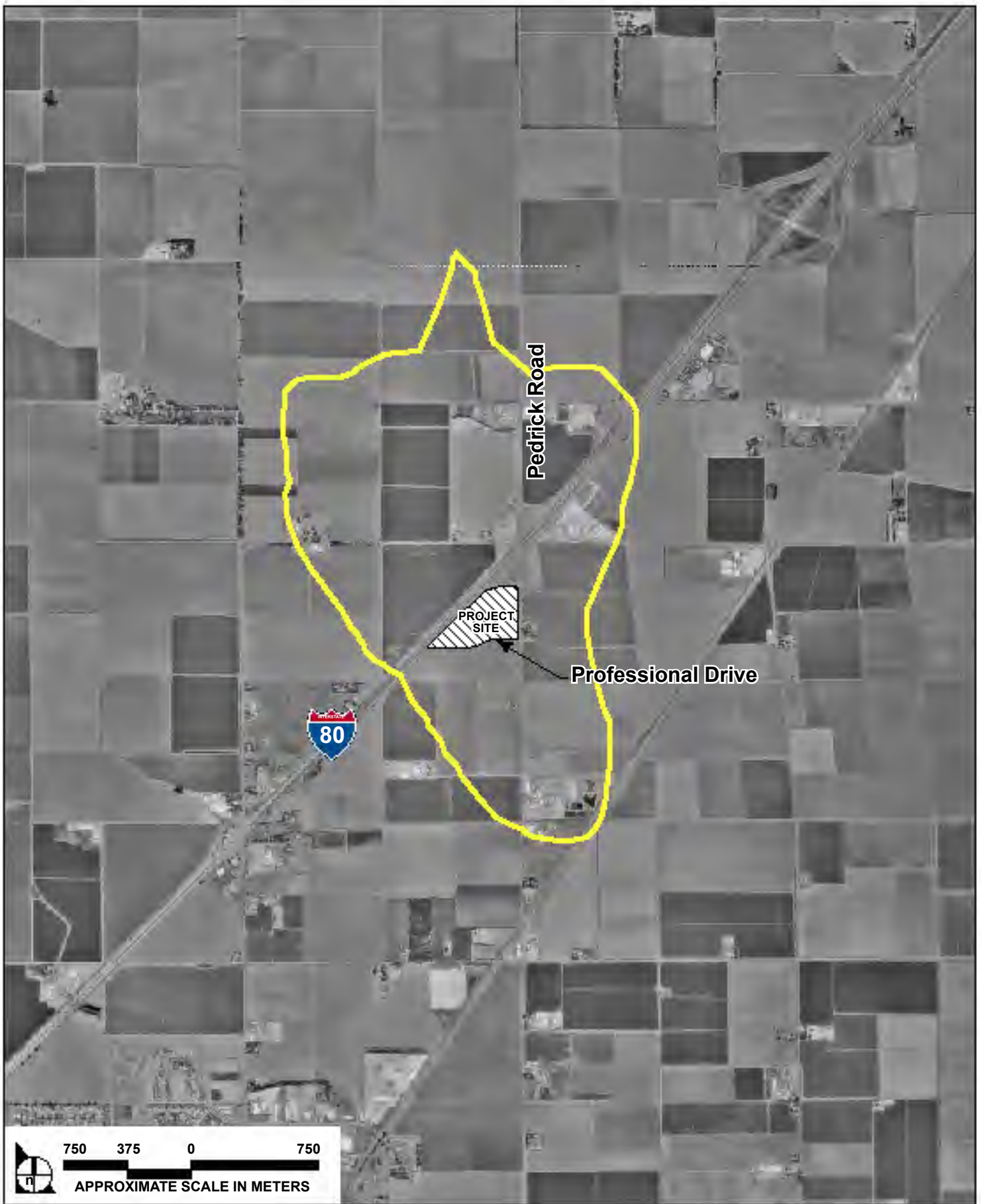
**Table 4.3-17**  
**Summary of Maximum Noncancer Health Impacts**  
**of Diesel Particulate Matter from the Travel Plaza Operations**

Receptor	Chronic Hazard Index
Residential <sup>1</sup>	0.0019
Workplace <sup>2</sup>	0.12

Source: Impact Sciences.

<sup>1</sup> Maximum impact occurred at a receptor located southwest of the project site across Interstate 80 on Hess Road.

<sup>2</sup> Maximum impact occurred at a receptor located northwest of the project site across Interstate 80, which is zoned as CH (Highway Commercial) but currently undeveloped.



SOURCE: Impact Sciences, Inc. – April 2006

FIGURE 4.3-1

# Modeled Impacts of Diesel Exhaust Particulates for Residential Receptors



SOURCE: Impact Sciences, Inc. – April 2006

FIGURE 4.3-2

# Modeled Impacts of Diesel Exhaust Particulates for Workplace Receptors

Using the YSAQMD's thresholds of significance, the health risk assessment found that the anticipated cancer risks associated with the project are 3.0 in one million at the maximally impacted residential receptor and 38 in one million at the maximally impacted workplace receptor. The assessment also found that the chronic hazard indices for noncancer health impacts are well below 1.0 at the maximally exposed receptors. The cancer risk associated with the project at workplaces is greater than the significance criteria, and therefore, this impact is significant.

**Mitigation Measure 4.3-4:** The mitigation measures for mobile source emissions discussed in **Impact 4.3-2** could also reduce DPM emissions. However, as discussed previously, these measures are not considered feasible for this project.

**Impact After Mitigation:** Significant.

**Impact 4.3-5:** **The project has the potential to create objectionable odors. This would result in a less than-significant-impact.**

Industries and/or facilities that are likely to omit objectionable odors include wastewater treatment plants, landfills, composting facilities, petroleum refineries, chemical and fiberglass manufacturers, etc. No industrial uses or other types of land uses involving routine atmospheric emissions of odorous substances are proposed as part of the project. The primary odors associated with the project would be generated by construction equipment. Odors that could occur following project completion would be typical of a gas station/restaurant type of uses. These uses would not omit odors that are considered objectionable. While diesel engine exhaust may produce odors, truck engine idling at the Travel Plaza would be restricted. Furthermore, there are no sensitive receptors in proximity to the project site nor would trucks drive through residential neighborhoods to and from the Travel Plaza. Thus, the project would result in less than significant impacts related odors.

**Mitigation Measure 4.3-6:** None required.

#### **4.3.4.3 Cumulative Impacts**

According to the *Air Quality Handbook*, a project would have significant cumulative air quality impacts, if it requires a change in the existing land use

designation (i.e., general plan amendment, rezone), and projected emissions (ROG, NO<sub>x</sub> or PM<sub>10</sub>) of the proposed project are greater than the emissions anticipated for the site if developed under the existing land use designation. The proposed project would not require a change in the existing land use designation under the City's General Plan or the Northeast Quadrant Specific Plan. The existing zoning is Highway Commercial, and the project would be consistent with this designation. Thus, the project would not have significant cumulative air quality impacts with respect to this criterion.

A second criterion for determining cumulative impacts is whether the project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard. The fact that the project's operational emissions exceed the YSAQMD thresholds indicates that emissions generated by traffic going to and from the project site when combined with emissions generated by other existing and future development within the SVAB to contribute to an air quality violation in the region. Also, the proposed project's exceedance of the thresholds by itself indicates that its contribution to such a violation would be considerable when compared to other projects in the region. Consequently, the project's emissions would be cumulatively considerable, resulting in a significant cumulative impact.

While the *Air Quality Handbook* does not recommend that the emissions from past, present, and probable future projects be listed, as stated in Section 15130((b)(1)(A) of the *State CEQA Guidelines*, there are several nearby projects that, if approved, would contribute significant emissions in the project vicinity. The emissions from the Milk Farm commercial/retail project and the Dixon Down Racetrack and Entertainment Center are listed along with the emissions associated with operation of the Flying J Travel Plaza in **Table 4.3-18, Flying J Travel Plaza and Other Local Project Emissions**.

**Table 4.3-18  
Flying J Travel Plaza and Other Local Project Emissions**

Emissions Source	Maximum Daily Emissions (lbs/day)				
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>
Milk Farm (winter mitigated) <sup>1</sup>	264	297	2,368	NR	171
Dixon Downs <sup>2</sup>	239.06	316.98	NR	NR	299.12
Dixon Downs (large event) <sup>2</sup>	304.91	408.59	NR	NR	390.98
Flying J Travel Plaza <sup>3</sup>	27.17	105.01	123.12	0.25	6.82

*Sources:*

<sup>1</sup> BASELINE Environmental Consulting, Milk Farm Project, Draft Environmental Impact Report, May 2005.

<sup>2</sup> EIP Associates, Dixon Downs Horse Racetrack and Entertainment Center Project, Draft Environmental Impact Report, September 2005.

<sup>3</sup> Impact Sciences, Table 4.3-15.

**Mitigation Measure 4.3-7:** Mitigation measures discussed in Impact 4.3-2 would also apply to the cumulative air quality impacts.

**Impact After Mitigation:** Significant.

As discussed in Impact 4.3-2, these mitigation measures would not reduce operational emissions of NO<sub>x</sub> to levels that are below the YSAQMD thresholds of significance. Consequently, because the project's own emissions would be significant, the proposed project's cumulative impact would also be considered cumulatively considerable and significant and unavoidable.

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## 4.4 BIOLOGICAL RESOURCES

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### 4.4.1 Introduction

Consistent with the requirements of the California Environmental Quality Act (CEQA), this section analyzes potential impacts to biological resources from construction and operation of the proposed Flying J Travel Plaza. This section includes discussions of the methods of study, the biological resources occurring on the project site, and identifies potential significant impacts to these resources based on identified CEQA Thresholds of Significance. Measures to mitigate significant impacts are also identified.

#### 4.4.1.1 *Methods of Study*

To evaluate the biological resources known to occur or potentially occurring on the project site, Impact Sciences conducted relevant literature and database reviews. Impact Sciences also conducted a field survey to characterize the biological resources occurring on the project site. A description of the literature review, database review, and field survey are provided below.

##### **Literature Review**

The following documents relevant to the biological resources occurring on the project site and surrounding area were reviewed:

- City of Dixon General Plan (City of Dixon 1993)
- City of Dixon Northeast Quadrant Specific Plan (2005)
- City of Dixon Northeast Quadrant Specific Plan EIR (1995)
- Dixon Downs Draft EIR (EIP Associates 2005)
- Swainson's Hawk Population and Habitat Use Assessment, Solano HCP/NCCP, LSA Associates, Inc., 2004

As appropriate, information from the above documents (which are on file and available for review at the City of Dixon) has been incorporated into this section. Additional literature sources specific to descriptions of the common plants and animals, plant communities, and special-status species occurring in the project area were also reviewed (see **Chapter 8.0, References**).

### **Database Review**

The most recent versions of the California Natural Diversity Database (CNDDDB) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants were reviewed for the USGS 7.5-minute quadrangle on which the project site is located (Dixon) and the eight surrounding quadrangles (Winters, Merritt, Saxon, Liberty Island, Davis, Allendale, Elmira, and Dozier). The database review served to identify special-status plant and wildlife species that have been documented in the project area.

### **Field Investigation**

Impact Sciences' biologists visited the project site on September 21, 2005. The purpose of the field visit was to characterize the biological resources occurring on the project site and to evaluate the potential of special-status plant and wildlife species, as well as other sensitive biological resources, to occur on the project site.

## **4.4.2 Existing Conditions**

### **4.4.2.1 Project Site Characteristics**

The 27-acre project site is characterized as a typical Central Valley agricultural field. There are small areas bordering the cultivated field that are dominated by ruderal (i.e., weedy) vegetation and non-native annual grasses. The project site is currently fallow but was previously managed for intensive agricultural production of irrigated grain and seed row crops. Past agricultural-related activities on the site included field leveling, plowing, and the application of herbicides.

### **4.4.2.2 Plant Communities**

Due to the project site's past use for intensive agricultural production, no native plant communities occur. At the time of the site visit, the agricultural field had been plowed and vegetation was sparse. The edges of the agricultural field contained a higher density of vegetation, characterized by ruderal plant species and non-native grasses. Plant species observed on the site, which are all characteristic of disturbed areas, include field bindweed (*Convolvulus arvensis*),

Johnson grass (*Sorghum halepense*), common wild geranium (*Geranium dissectum*), wild oat (*Avena fatua*), Russian thistle (*Salsola tragus*), and red-stemmed filaree (*Erodium cicutarium*).

#### 4.4.2.3 Common Wildlife

The row crops seasonally found on the project site provide shelter and foraging habitat for a variety of common wildlife species adapted to agricultural areas. Common species of wildlife discussed below were either observed during the field survey or have the potential to occur based on the quality and extent of available on-site habitat. Special-status wildlife species are discussed in **Section 4.4.2.4, Special-Status Resources**.

##### **Amphibians and Reptiles**

There are no perennial water sources or moist riparian habitats on the project site. Consequently, use of the site by amphibians is expected to be limited. Common reptile species presumed to occur on the site include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), and western terrestrial garter snake (*Thamnophis elegans terrestris*).

##### **Birds**

Numerous common bird species are known to forage and/or nest in irrigated grain and seed crop fields. These species include American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), yellow-billed magpie (*Pica nuttalli*), mourning dove (*Zenaidura macroura*), red-winged blackbird (*Agelaius phoeniceus*), western scrub-jay (*Aphelocoma californica*), house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*). Agricultural fields also provide foraging habitat for common raptor species, including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), and barn owl (*Tyto alba*).

##### **Mammals**

Agricultural fields provide suitable habitat for several mammal species. Common species observed (by site or sign) or presumed to occur include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), California ground squirrel

(*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatis*), and black-tailed jack rabbit (*Lepus californicus*).

#### 4.4.2.4 Special-Status Resources

For the purposes of this EIR, "special-status" refers to those resources that meet one or more of the following criteria:

- Plant and animal species listed by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG) as Threatened or Endangered, proposed for listing as Threatened or Endangered, or as a candidate for listing as Threatened or Endangered.
- Plant and animal species considered as "Endangered, Rare or Threatened" as defined by Section 15380 of the *CEQA Guidelines*. Section 15380(b) states that a species of animal or plant is "Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. A species is "Rare" when either "(A) although not presently threatened with extinction, the species is existing in such small numbers throughout all, or a significant portion, of its range that it may become Endangered if its environment worsens; or (B) the species is likely to become Endangered within the foreseeable future throughout all or a portion of its range and may be considered 'Threatened' as that term is used in the Federal Endangered Species Act" (ESA).
- Plants included on Lists 1 or 2 of the California Native Plant Society (CNPS). These species are included because the CNPS is an authority recognized by the CDFG on the status of Rare plant species in California, and because the criteria for placement on List 1 or List 2 are similar to criteria that CDFG and USFWS use for species considered as candidates for listing or that are already listed as Threatened or Endangered.
- Animal species designated as "Species of Special Concern" or "Fully Protected" by the CDFG. Although these species have no legal status under the California Endangered Species Act (CESA), the CDFG recommends their protection as their populations are generally declining, and they could be listed as Threatened or Endangered (under CESA) in the future.
- Birds designated by the USFWS as "Birds of Conservation Concern." Although these species have no legal status under the ESA, the USFWS recommends their protection as their populations are generally declining, and they could be listed as Threatened or Endangered under ESA in the future.
- Riparian habitat or other natural communities considered sensitive or that are regulated by the CDFG.
- Wetlands or other aquatic habitats under the jurisdiction of the Army Corps of Engineers (ACOE).

- Resident or migratory wildlife corridors identified by local planning documents or by County or state regulatory agencies.
- Trees, habitats, or other resources protected by local policies, ordinances, or otherwise considered of local concern.

### Special-Status Plant Species

Review of the CNDDDB (2005) and the CNPS database (2005) for the project quadrangle and the eight surrounding quadrangles identified 29 special-status plant species that have been documented in the project region. These species are identified in **Table 4.4-1, Special-Status Plant Species Known to Occur in the Project Region**, along with their regulatory status, habitat requirements, and an evaluation of their potential occurrence on the site. As discussed in **Table 4.4-1**, the project site does not contain suitable habitat for any of the special-status plant species known to occur in the project area. Therefore, no special-status plants are expected to occur on the site.

**Table 4.4-1  
Special-Status Plant Species Known to Occur in the Project Region**

Common and Scientific Name	Status			Habitat Requirements	Life Form/ Flowering Period	Occurrence On Site
	Federal	State	CNPS			
Suisun marsh aster <i>Aster lentus</i>	--	--	List 1B	Marshes and swamps (brackish and freshwater)	Perennial herb May-November	<i>Not Expected:</i> No suitable habitat present
Ferris's milk-vetch <i>Astragalus tener</i> var. <i>ferrisiae</i>	--	--	List 1B	Meadows and seeps (vernally mesic), valley and foothill grassland (subalkaline flats)	Annual herb April-May	<i>Not Expected:</i> No suitable habitat present
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	--	--	List 1B	Playas, valley and foothill grassland (adobe clay), vernal pools/alkaline	Annual herb March-June	<i>Not Expected:</i> No suitable habitat present
Heartscale <i>Atriplex cordulata</i>	--	--	List 1B	Chenopod scrub, meadows and seeps, valley and foothill grassland (sandy)/saline or alkaline	Annual herb April-October	<i>Not Expected:</i> No suitable habitat present
Brittlescale <i>Atriplex depressa</i>	--	--	List 1B	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools/alkaline, clay	Annual herb May-October	<i>Not Expected:</i> No suitable habitat present
San Joaquin spearscale <i>Atriplex joaquiniana</i>	--	--	List 1B	Chenopod scrub, meadows and seeps, valley and foothill grassland/alkaline	Annual herb April-October	<i>Not Expected:</i> No suitable habitat present

4.4 Biological Resources

Common and Scientific Name	Status			Habitat Requirements	Life Form/ Flowering Period	Occurrence On Site
	Federal	State	CNPS			
Vernal pool smallscale <i>Atriplex persistens</i>	--	--	List 1B	Vernal pools (alkaline)	Annual herb July-October	<i>Not Expected:</i> No suitable habitat present
Pappose tarplant <i>Centromadia parryi</i> <i>ssp. parryi</i>	--	--	List 1B	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland	Annual herb May-November	<i>Not Expected:</i> No suitable habitat present
Hispid bird's-beak <i>Cordylanthus mollis</i> <i>ssp. hispidus</i>	--	--	List 1B	Meadows, playas, valley and foothill grasslands; damp alkaline soils	Annual herb June-September	<i>Not Expected:</i> No suitable habitat present
Subalpine cryptantha <i>Cryptantha crymophila</i>			List 1B	Subalpine coniferous forest	Perennial herb July-August	<i>Not Expected:</i> No suitable habitat present
Recurved larkspur <i>Delphinium recurvatum</i>	--	--	List 1B	Chenopod scrub, cismontane woodland, valley and foothill grassland / alkaline	Perennial herb March-May	<i>Not Expected:</i> No suitable habitat present
Dwarf downingia <i>Downingia pusilla</i>	--	--	List 2	Valley and foothill grassland (mesic), vernal pools	Annual herb March-May	<i>Not Expected:</i> No suitable habitat present
Round-leaved filaree <i>Erodium macrophyllum</i>	--	--	List 1B	Cismontane woodland, valley and foothill grassland / clay	Annual herb March-May	<i>Not Expected:</i> No suitable habitat present
Fragrant fritillary <i>Fritillaria liliacea</i>	--	--	List 1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland / often serpentine	Bulbiferous herb February-April	<i>Not Expected:</i> No suitable habitat present
Adobe-lily <i>Fritillaria pluriflora</i>	--	--	List 1B	Chaparral, cismontane woodland, foothill grassland / clay and sometimes serpentine	Bulbiferous herb February-April	<i>Not Expected:</i> No suitable habitat present
Boggs lake hedge-hyssop <i>Gratiola heterosepala</i>	--	CE	List 1B	Marshes and swamps (lake margins), vernal pools / clay	Annual herb April-August	<i>Not Expected:</i> No suitable habitat present
Carquinez goldenbrush <i>Isocoma arguta</i>	--	--	List 1B	Valley and foothill grassland (alkaline)	Shrub August-Dec	<i>Not Expected:</i> No suitable habitat present
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE	--	List 1B	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools / mesic	Annual herb March-June	<i>Not Expected:</i> No suitable habitat present
Delta tule pea <i>Lathyrus jepsonii</i> <i>var. jepsonii</i>	--	--	List 1B	Marshes and swamps (freshwater and brackish)	Perennial herb May-September	<i>Not Expected:</i> No suitable habitat present
Legenere <i>Legenere limosa</i>	--	--	List 1B	Vernal pools	Annual herb April-June	<i>Not Expected:</i> No suitable habitat present
Heckard's pepper grass <i>Lepidium latipes</i> <i>var. heckardii</i>	--	--	List 1B	Valley and foothill grassland (alkaline flats)	Annual herb March-May	<i>Not Expected:</i> No suitable habitat present

Common and Scientific Name	Status			Habitat Requirements	Life Form/ Flowering Period	Occurrence On Site
	Federal	State	CNPS			
Mason's lilaepsis <i>Lilaepsis masonii</i>	--	CR	List 1B	Marshes and swamps (brackish or freshwater), riparian scrub	Perennial herb April-November	<i>Not Expected:</i> No suitable habitat present
Delta mudwort <i>Limosella subulata</i>	--	--	List 2	Marshes and swamps	Perennial herb May-August	<i>Not Expected:</i> No suitable habitat present
Baker's naverretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	--	--	List 1B	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools/mesic	Annual herb May-July	<i>Not Expected:</i> No suitable habitat present
Colusa grass <i>Neostapfia colusana</i>	FE	CE	List 1B	Vernal pools (adobe)	Annual herb May-August	<i>Not Expected:</i> No suitable habitat present
San Joaquin Valley orcutt grass <i>Orcuttia inaequalis</i>	FT	CE	List 1B	Vernal Pools	Annual herb April-September	<i>Not Expected:</i> No suitable habitat present
Showy Indian clover <i>Trifolium amoenum</i>	FE	--	List 1B	Valley and foothill grassland, coastal bluff scrub/sometimes serpentine	Annual herb April-June	<i>Not Expected:</i> No suitable habitat present
Saline clover <i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	--	--	List 1B	Marshes and swamps, valley and foothill grassland, vernal pools/alkaline	Annual herb April-June	<i>Not Expected:</i> No suitable habitat present
Crampton's tuctoria (Solano grass) <i>Tructoria mucronata</i>	--	--	List 1B	Valley and foothill grassland (mesic), vernal pools	Annual herb April-August	<i>Not Expected:</i> No suitable habitat present

Source: CNDDDB (2006); Impact Sciences 2006.

STATUS KEY:

State: CE = California Endangered  
CR = California Rare

Federal: FE = Federal Endangered  
FT = Federal Threatened

CNPS

List 1B: Plants Rare and Endangered in California and elsewhere

List 2: Plants Rare, Threatened or Endangered in California, but more common elsewhere

### Special-Status Wildlife Species

Review of the CNDDDB for the project quadrangle and the eight surrounding quadrangles identified 25 special-status wildlife species that have been documented in the project area. These species are identified in **Table 4.4-2, Special-Status Wildlife Species Known to Occur in the Project Region**, along with their regulatory status, habitat requirements, and an evaluation of their potential occurrence on the site.

For the reasons discussed in **Table 4.4-2**, the following 21 special-status species that are known to occur in the project area are not expected to occur on the

project site: *Andrena blennospermatis* (no common name), conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool fairy shrimp (*Branchinecta lynchi*), midvalley fairy shrimp (*Branchinecta mesovalensis*), vernal pool tadpole shrimp (*Lepidurus packardii*), California linderiella (*Linderiella occidentalis*), Sacramento Valley tiger beetle (*Cicindela hirticollis abrupta*), valley elderberry long-horn beetle (*Desmocerus californicus dimorphus*), delta green ground beetle (*Elaphrus viridis*), Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), Antioch multilid wasp (*Myrmosula pacifica*), California tiger salamander (*Ambystoma californiense*), northwestern pond turtle (*Clemmys marmorata marmorata*), giant garter snake (*Thamnophis gigas*), tricolored blackbird (*Agelaius tricolor*), golden eagle (*Aquila chrysaetos*), great egret (*Ardea alba*), western snowy plover (*Charadrius alexandrinus nivosus*), least bittern (*Ixobrychus exilis*), white-faced ibis (*Plegadis chihi*), and American badger (*Taxidea taxus*).

As discussed in **Table 4.4-2**, based on the presence of suitable habitat, the following five special-status wildlife species have some potential to utilize the project site:

**Western burrowing owl** (*Athene cunicularia*) is a California Species of Special Concern and a federal Bird of Conservation Concern. The project site provides suitable nesting habitat (i.e., ground squirrel burrows) and foraging habitat. Potential burrow sites were observed along the unplowed berms separating agricultural fields. The CNDDDB includes eight recorded occurrences for burrowing owl within a 5-mile radius of the project site. Given the presence of suitable habitat and known occurrences in the project area, this species could nest, winter, and/or forage on the project site.

**Swainson's hawk** (*Buteo swainsoni*) is State-listed as Threatened and is a federal Bird of Conservation Concern. The project site is located within the Solano County core Swainson's hawk habitat area (LSA Associates 2004). While no suitable nesting habitat is present, the entire project site provides suitable foraging habitat for the species. During the field survey conducted by Impact Sciences in 2005, a Swainson's hawk was observed foraging on the project site. The CNDDDB includes 57 nesting occurrences for Swainson's hawk within a 5-mile radius of the project site, including four nest sites within 1 mile of the site.



**White-tailed kite** (*Elanus leucurus*) is a California Fully Protected species. While no suitable nesting habitat is present, the project site provides suitable foraging habitat for the species. White-tailed kite has been observed foraging on the adjacent property (EIP 2005). The CNDDDB includes 10 nesting occurrences of white-tailed kite in the project area.

**California horned lark** (*Eremophila alpestris actia*) is a California Species of Special Concern. The project site provides suitable nesting and foraging habitat for the species. While no horned larks were observed on the project site, the species is known to nest and forage in similar agricultural fields throughout the Central Valley.

**Loggerhead shrike** (*Lanius ludovicianus*) is a California Species of Special Concern and a federal Bird of Conservation Concern. The project site provides suitable foraging habitat for loggerhead shrike and this species has been observed foraging on an adjacent property (EIP 2005). The scattered shrubs on and adjacent to the project site provide suitable nesting habitat.

**Table 4.4-2  
Special-Status Wildlife Species Known to Occur in the Project Region**

Common and Scientific Name	Status		Habitat Requirements	Occurrence On Site
	Federal	State		
<b>Invertebrates</b>				
<i>Andrena blennospermatis</i> (no common name)	--	*	This bee is oligolectic on vernal pool flowers, especially blennosperma; nest in uplands around vernal pools	<i>Not Expected:</i> Site lacks vernal pools and associated vegetation
Conservancy fairy shrimp <i>Branchinecta conservation</i>	FE	--	Vernal pools and other seasonal pools with sparse vegetation	<i>Not Expected:</i> Site lacks vernal pools and/or other suitable aquatic habitat
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	--		
Midvalley fairy shrimp <i>Branchinecta mesovalensis</i>	--	--		
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	--		
California linderiella <i>Linderiella occidentalis</i>	--	*		

#### 4.4 Biological Resources

Common and Scientific Name	Status		Habitat Requirements	Occurrence On Site
	Federal	State		
Sacramento Valley tiger beetle <i>Cicindela hirticollis abrupta</i>	--	*	Requires fine to medium sand, terraced floodplains, or low sandy water edge flats	<i>Not Expected:</i> No suitable habitat present
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	--	Deposits eggs within elderberry stems	<i>Not Expected:</i> No suitable habitat (i.e., elderberry shrubs) present
Delta green ground beetle <i>Elaphrus viridis</i>	FT	--	Prefers sandy mud substrate where slopes gently to water with low-growing vegetation; restricted to margins of vernal pools between Jepson prairie and Travis AFB	<i>Not Expected:</i> No suitable habitat present
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	--	*	Aquatic	<i>Not Expected:</i> No suitable habitat present
Antioch multilid wasp <i>Myrmosula pacifica</i>	--	*	Unavailable	<i>Not Expected:</i> Not associated with agricultural fields; last documented occurrence in 1945
<b>Amphibians</b>				
California tiger salamander <i>Ambystoma californiense</i>	FT	CSC	Grasslands and lowest foothill regions; breeds in long-lasting rain pools; aestivation sites (e.g., small mammal burrows) are necessary within 1 mile of breeding areas	<i>Not Expected:</i> No suitable aquatic or upland habitat present; agricultural practices (e.g. plowing) precludes use of the site as upland habitat; closest documented recent occurrence (1993) is approximately 5 miles from the project site (CNDDDB 2005)
<b>Reptiles</b>				
Northwestern pond turtle <i>Clemmys marmorata marmorata</i>	--	CSC	Aquatic habitats including ponds, streams, and irrigation ditches; requires basking sites, such as partially submerged logs, vegetation mats, or open mud banks	<i>Not Expected:</i> No suitable habitat present
Giant garter snake <i>Thamnophis gigas</i>	FT	CT	Aquatic habitats, including ditches, sloughs, and rice fields	<i>Not Expected:</i> No suitable habitat present
<b>Birds</b>				
Tricolored blackbird <i>Agelaius tricolor</i>	BCC	CSC	Nests in freshwater marshes and riparian scrub	<i>Not Expected:</i> No suitable nesting habitat present
Golden eagle <i>Aquila chrysaetos</i>	BCC	CSC CFP	Nests on cliffs and in large trees in a variety of open habitats; avoids populated areas	<i>Not Expected:</i> No suitable nesting habitat present
Great egret <i>Ardea alba</i>	--	*	Colonial nester in large trees located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes	<i>Not Expected:</i> Site lacks suitable foraging and nesting habitat

Common and Scientific Name	Status		Habitat Requirements	Occurrence On Site
	Federal	State		
Western burrowing owl <i>Athene cucularia</i>	BCC	CSC	Forages and nests in grasslands and open scrub with small mammal burrows	<i>Potential</i> : Suitable burrow habitat present; has been documented within 0.3 mile of the project site (CNDDDB 2005)
Swainson's hawk <i>Buteo swainsoni</i>	BCC	CT	Forages in agricultural areas; nests in large isolated oaks or other trees in agricultural areas	<i>Observed (foraging only)</i> : An individual Swainson's hawk was observed foraging on the project site by Impact Sciences in 2005; no suitable nesting habitat is present, but the site is located within 1 mile of four nest sites (CNDDDB 2005)
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT	CSC	Requires sandy, gravelly, or friable soils for nesting; sandy beaches, salt pond levees, shores of large alkaline lakes	<i>Not Expected</i> : Site lacks suitable foraging and nesting habitat
White-tailed kite <i>Elanus leucurus</i>	--	CFP	Usually nests in large bushes or trees, often in isolated stand, surrounded by open foraging habitat	<i>Potential (foraging only)</i> : No suitable nesting habitat is present; species observed foraging on adjacent property (EIP 2005) and likely forages on the project site
California horned lark <i>Eremophila alpestris actia</i>	--	CSC	Grasslands and other open habitats with low, sparse vegetation; nests on open ground	<i>Potential</i> : Site provides suitable nesting and foraging habitat
Least bittern <i>Ixobrychus exilis</i>	--	CSC	Nests and forages in emergent vegetation in or near shallow water	<i>Not Expected</i> : Site lacks suitable foraging and nesting habitat
Loggerhead shrike <i>Lanius ludovicianus</i>	BCC	CSC	Grasslands with scattered shrubs, trees, fences or other perches; nesting habitat includes coastal scrub	<i>Potential</i> : Individuals observed foraging on adjacent property (EIP 2005) and likely forages on the project site; suitable nesting habitat present
White-faced ibis <i>Plegadis chihi</i>	--	CSC	Feeds in shallow water, water surface, or deep mud; extensive marshes required for nesting	<i>Not Expected</i> : Site lacks suitable foraging and nesting habitat
<b>Mammals</b>				
American badger <i>Taxidea taxus</i>	--	CSC	Needs friable soils and open, uncultivated ground; preys on burrowing rodents; most abundant in drier open stages of most shrub, forest, and herbaceous habitats	<i>Not Expected</i> : No suitable habitat present

Source: CNDDDB 2006; Impact Sciences 2006.

STATUS KEY:

Federal

FE: Federally Endangered

FT: Federally Threatened

BCC: Bird of Conservation Concern

State

CT: California Threatened

CFP: California Fully Protected

CSC: California Special Concern

Other

\*: No state or federal status, but may be considered of special status pursuant to Section 15380 of the CEQA Guidelines

### **Jurisdictional Wetlands and Drainages**

Wetlands and permanent and intermittent drainages, creeks, and streams are generally subject to jurisdiction of the ACOE under Section 404 of the federal Clean Water Act and to the jurisdiction of the Regional Water Quality Control Board (RWQCB) under the Porter Cologne Act. Streambeds are also potentially subject to regulation by the CDFG under Section 1602 of the California Fish and Game Code.

The project site was surveyed to determine the presence of jurisdictional wetlands or drainages potentially under the jurisdiction of the ACOE, RWQCB, and/or CDFG. No jurisdictional resources were observed or are expected to occur on the property.

### **Sensitive Plant Communities**

The CDFG monitors the distribution, extent, and relative health of all of California's plant communities. The plant communities considered by the CDFG to be of limited distribution and of highest priority are tracked by the CNDDDB and are considered to be "sensitive" plant communities. No sensitive plant communities occur on the project site.

### **Wildlife Movement Corridors**

Wildlife corridors are described as pathways or habitat linkages that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or human induced factors such as urbanization. The fragmentation of natural habitat creates isolated "islands" of vegetation that may not provide sufficient area or resources to accommodate sustainable populations for a number of species and, thus, adversely affect both genetic and species diversity. Corridors often partially or largely mitigate the adverse effects of fragmentation by (1) allowing animals to move between remaining habitats to replenish depleted populations and increase the gene pool available; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fire or disease) will result in population or species extinction; and (3) serving as travel paths for individual animals moving throughout their home range in

search of food, water, mates, and other needs, or for dispersing juveniles in search of new home ranges.

Due to the location of the project site adjacent to Interstate 80 (I-80), the lack of vegetative cover, and the active use of the site for agricultural purposes, the project site is not expected to be part of an established wildlife movement corridor. Additionally, no regional or migratory wildlife corridors have been identified on the site by local planning documents (e.g., Northeast Quadrant Specific Plan) or County or State resource agencies.

### 4.4.3 Regulatory Considerations

The following policies and regulations apply to the biological resources on, or potentially on, the project site. Impacts that would conflict with these policies and regulations would be considered potentially significant under CEQA.

#### 4.4.3.1 Federal and State Regulations

##### **California Endangered Species Act**

Section 2080 of the CESA prohibits the “take” of State-listed Threatened and Endangered species. The CESA defines “take” as any action that would harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any Threatened or Endangered species. If a proposed project may result in “take” of a listed species, a permit pursuant to Section 2080 of CESA is required from the CDFG. Based on Section 15380 of the *CEQA Guidelines*, species protected by the California Endangered Species Act are considered to be of special-status.

##### **Migratory Bird Treaty Act and Fish and Game Code Sections 3503 and 3513**

The proposed project would be subject to the requirements of the Migratory Bird Treaty Act (MBTA) and Sections 3503 and 3513 of the California Fish and Game Code. Together, these regulations protect all native migratory birds and their active nests and make it unlawful to “take” (e.g., pursue, kill, harm, harass) any migratory bird and their active nests, eggs, or young. Based on Section 15380 of the *CEQA Guidelines*, protection by the MBTA and the California Fish and Game Code does not qualify a species as being of special status. However, the “take” of active nests of species protected by the MBTA and the California Fish and

Game Code would be considered a potentially significant impact only if it would “have a substantial adverse effect on a special-status species,” “threaten to eliminate a plant or animal community” or “cause a fish or wildlife population to drop below self-sustaining levels” (Appendix G of the *CEQA Guidelines*).

#### **Fish and Game Code Section 3511**

California Fish and Game Code Section 3511 designates certain bird species as “fully protected.” Fully protected species, or parts thereof, may not be taken or possessed at any time, and no provision of the California Fish and Game Code or any other law may be construed to authorize the issuance of permits or licenses to take any fully protected species. Based on Section 15380 of the *CEQA Guidelines*, “fully protected” species are considered to be of special status.

#### **4.4.3.2 Local Regulations**

##### **Solano County**

Solano County and other participating agencies are in the process of preparing a Habitat Conservation Plan (HCP) with the goal of protecting special-status plants, wildlife, and their habitats, while allowing for planned growth in the County. The Countywide HCP has not been completed or approved by the CDFG and USFWS. Therefore, the proposed project would not be subject to the requirements of this pending document.

##### **City of Dixon General Plan**

The Dixon General Plan contains goals and policies related to the protection and maintenance of wildlife habitat. Applicable goals and policies are listed below.

##### Goals and Policies:

**Goal 3:** To conserve natural resources.

**Goal 4:** To protect the environment within the Dixon Planning Area.

Policy 13: The City shall require the proponents of new development projects to submit a study identifying the presence or absence of special-status species at proposed development sites.

If special-status species are determined by the City to utilize a development site, appropriate mitigation measures must be incorporated as part of the proposed development prior to final approval.

#### **Northeast Quadrant Specific Plan (NQSP)**

The NQSP adds detail to the City of Dixon General Plan policies, as well as establishes policies applicable only to the plan area. The following NQSP Resource Management Policies are applicable to sensitive species (Section 5.9.2 of the NQSP).

Policy 1: Proponents of development applications within the specific plan area shall consult with CDFG regarding the take of an Endangered species or its habitat pursuant to the California Endangered Species Act (CESA) and CDFG codes.

Policy 2: A breeding season survey should be conducted between April and July, prior to construction, to determine if the species nest onsite, if further impacts are a possibility, and to develop appropriate mitigation strategies.

Policy 3: The Dixon Community Development Director in consultation with CDFG shall define a set of conditions for approval on any development within the plan area consistent with the County Habitat Conservation Plan, if such a plan is in effect at that time. Such conditions shall be applied by the Planning Commission and City Council in the City review and entitlement process. Such conditions shall be enforced by the Community Development Department and the Engineering Department, during the review and approval of any land use or improvement plans pursuant to the land use entitlement.

The NQSP EIR includes mitigation measures to reduce impacts to biological resources. **Mitigation Measures B–D** and **B–E** are listed below:

A breeding season survey shall be conducted between April and July in order to:

- Determine if the species nests on the project site.
- To develop appropriated mitigation measures, which may include a 1:1 replacement ratio of impacted foraging habitat. This replacement habitat should include alfalfa and row crops such as tomatoes, oats, wheat, barley, and sugar beets.
- Future development shall participate in a Countywide Habitat Management Plan.

#### 4.4.4 Consistency with Applicable Plans and Policies

Consistent with the requirements of the City of Dixon General Plan and the Northeast Quadrant Specific Plan, mitigation measures are included to address potential impacts to special-status wildlife species, including preconstruction nesting bird surveys and the 1:1 replacement of Swainson’s hawk foraging habitat. As the Solano County HCP has not been completed or approved by the CDFG and USFWS, the proposed project would not be subject to the requirements of the pending document. The project would, therefore, be consistent with adopted local policies and ordinances addressing biological resources.

#### 4.4.5 Impacts and Mitigation

##### 4.4.5.1 Significance Criteria

Criteria used to evaluate the significance of impacts to biological resources are derived from the legal requirements to protect sensitive species and sensitive habitats, as well as the thresholds of significance from Appendix G and Section 15065 of the *CEQA Guidelines*. The project would have a significant biological impact if it would:

- Either directly or through habitat modifications, substantially affect any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
- Substantially adversely affect any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;



- Substantially adversely affect federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan;
- Substantially reduce the habitat of a fish or wildlife species;
- Cause a fish or wildlife population to drop below self-sustaining levels;
- Threaten to eliminate a plant or animal community; or
- Reduce the number or restrict the range of an Endangered, Rare, or Threatened species.

#### 4.4.5.2 *Impact Analysis Approach*

Direct impacts typically represent the physical alteration (i.e., habitat degradation or loss) of biological conditions that occur on site as a result of project implementation. Indirect impacts are those reasonably foreseeable effects on remaining or adjacent biological resources that are caused by the project subsequent to project implementation. However, the physical alteration of habitat is not, in itself, a “significant” impact under CEQA. Significance is measured when the physical alteration of habitat is compared against each of the significance threshold criterion defined above. For example, should the alteration of habitat result in the direct or indirect loss or in an otherwise substantial adverse effect on a species identified as a “candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFG or USFWS”, impacts would be considered significant assuming appropriate compensatory or other mitigation is not available or feasible.

An evaluation of whether an impact on biological resources would be “substantial,” and, therefore, a significant impact, must consider both the resource itself and the significance threshold criterion being evaluated. For example, because of the dependence of most plant and animal species on native

habitats to satisfy various life-cycle requirements, a habitat-based approach that addresses the overall biological value of a particular vegetation community or habitat area is appropriate when determining whether or not alteration of that habitat will “substantially” effect special-status species, sensitive habitats, wetlands, or movement corridors. The relative biological value of a particular habitat area (its functions and values) can be determined by such factors as disturbance history, biological diversity, its importance to particular plant and wildlife species, its uniqueness or sensitivity status, the surrounding environment, and the presence or absence of special-status resources.

However, direct impacts with respect to specific plant and wildlife resources (e.g., active nests and individual plants and animals) are also evaluated and discussed when impacts on these resources, in and of themselves, could be considered significant or conflict with local, state, and federal statutes or regulations. The significance of impacts with respect to direct impacts on individuals or populations of plant and animal species takes into consideration the number of individual plants or animals potentially affected, how common or uncommon the species is both on the project site and from a regional perspective, and the sensitivity status if the species is considered of special status by resource agencies. These factors are evaluated based on the results of on-site biological surveys and studies, results of literature and database reviews, discussions with biological experts, and established and recognized ecological and biodiversity theory and assumptions.

#### **4.4.5.3 Biological Issues Not Discussed Further**

**Special-Status Plant Species.** No special-status plant species are expected to occur on the project site due to the absence of suitable habitat (see **Section 4.4.2.4** and **Table 4.4-1**). Therefore, because the proposed project would not impact special-status plant species, no further discussion is necessary.

**Jurisdictional Wetlands and Drainages.** No jurisdictional wetlands, drainages, or other aquatic resources were observed on the project site (see **Section 4.4.2.4**). Therefore, because the proposed project would not impact resources under the jurisdiction of the CDFG or ACOE, no further discussion is necessary.

**Sensitive Plant Communities.** No sensitive plant communities occur on the project site. Therefore, because the proposed project would not impact sensitive plant communities, no further discussion is necessary.

**Wildlife Movement Corridor.** The project site is not part of an expected wildlife movement corridor (see **Section 4.4.2.4**). Therefore, because the proposed project would not substantially interfere with the movement of wildlife, no further discussion is necessary.

#### 4.4.5.4 *Impacts and Mitigation Measures*

**Impact 4.4-1: Project construction could result in the loss of active nests of special-status bird species. This would be considered a significant impact.**

Project construction could result in the direct loss of active bird nests or the abandonment of active nests by adult birds. Depending on the number and extent of nests on the site that may be destroyed or removed, the loss of active nests of special-status bird species, including **burrowing owl**, **horned lark**, and **loggerhead shrike**, would be considered a significant impact. Project construction could also result in the direct loss of individual burrowing owls occupying the site during the non-breeding season. Additionally, the loss of any active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code would violate federal and/or state regulations protecting active bird nests.

**Mitigation Measure 4.4-1a:** Within 30 days of ground disturbance activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August in the project region), the Applicant shall have surveys conducted by a qualified biologist (e.g., experienced with the nesting behavior of bird species of the region). The intent of the surveys would be to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the construction zone or within 300 feet (500 feet for raptors) of the construction zone. The surveys shall be timed such that the last survey is concluded no more than one week prior to initiation of clearance/construction work. If ground disturbance activities are delayed, then additional pre-

construction surveys will be conducted such that no more than one week will have elapsed between the last survey and the commencement of ground disturbance activities.

If active nests are found, clearing and construction within 300 feet of the nest (500 feet for raptors) shall be postponed or halted until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barrier, and construction personnel shall be instructed on the sensitivity of nest areas. The biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts on these nests will occur. The results of the survey, and any avoidance measures taken, shall be submitted to the City of Dixon within 30 days of completion of the pre-construction surveys and/or construction monitoring to document compliance with applicable state and federal laws pertaining to the protection of native birds.

**Mitigation Measure 4.4-1b:** The Applicant shall retain a qualified biologist to conduct winter burrowing owl surveys prior to construction or site preparation activities occurring during the non-nesting season of burrowing owl (typically September through January). The survey shall be conducted no more than 14 days prior to commencement of construction activities. If burrowing owls are observed using burrows during the non-breeding season, or after young have fledged following the conclusion of the breeding season, owls shall be excluded from all active burrows through the use of exclusion devices placed in occupied burrows in accordance with CDFG protocols.<sup>1</sup> Specifically, exclusion devices utilizing one-way doors shall be installed in the entrance of all active burrows. The devices shall be left in the burrows for at least 48 hours to ensure that all owls have been excluded from the burrows. Each of the burrows shall then be excavated by hand and refilled to prevent reoccupation. Exclusion shall continue until the owls have been successfully excluded from the site, as determined by a qualified biologist.

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<sup>1</sup> California Department of Fish and Game. 1995. Staff Report on Burrowing Owl Mitigation.

**Impact After Mitigation:** Less than significant. Implementation of **Mitigation Measure 4.4-1a** would also serve to ensure compliance with state and federal regulations protecting active nests of common, native bird species.

**Impact 4.4-2: Project construction would result in the loss of foraging habitat for Swainson's hawk. This would be considered a significant impact.**

Project construction would convert 27 acres of agricultural land to a developed condition, resulting in the loss of foraging habitat potentially used by numerous bird species. While the project would remove foraging habitat used by common bird species, because common bird species forage over large areas, and because of the common and adaptive nature of these species, the project-related reduction in foraging habitat is not expected to cause a population of a common bird species to drop below a self sustaining level. Additionally, given the occurrence of agricultural-related activities on the site (e.g., plowing), the project site is not considered to be high-value **burrowing owl** habitat. In regards to **white-tailed kite**, **California horned lark**, and **loggerhead shrike**, given the mobility of these special-status bird species, and the abundance of agricultural lands in the project area (which provide suitable foraging habitat for these species), the project-related reduction in foraging habitat would not be expected to have a substantial adverse effect on these species.

However, **Swainson's hawk** is highly dependent on suitable foraging habitat near nesting locations. Swainson's hawk has been observed foraging on the site and the CNDDDB includes 57 nesting occurrences for Swainson's hawk within a 5-mile radius of the project site; four of these nest sites are within 1 mile of the project site and have been used in one or more of the past five years. The CDFG has developed policies to protect suitable Swainson's hawk foraging habitat within a 10-mile radius of an active nest (i.e., a nest used during one or more of the last 5 years).<sup>2</sup> Therefore, impacts related to the loss of Swainson's hawk foraging habitat would be significant.

**Mitigation Measure 4.4-2:** Pursuant to CDFG Guidelines, the Applicant shall preserve an equal acreage of raptor foraging habitat as is proposed for development (i.e., a 1:1 ratio). The preserved habitat shall be suitable Swainson's

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<sup>2</sup> California Department of Fish and Game. 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (*Buteo swainsoni*) in the Central Valley of California.

hawk foraging habitat and shall be at a location approved by the CDFG.<sup>3</sup> Preservation may occur through either:

- Payment of a mitigation fee to an established mitigation bank, or similar habitat development and management company, or the City of Dixon through a negotiated agreement (subject to approval by CDFG) between the City and the Applicant. The monies shall be held in a trust fund, and used to purchase mitigation credits to offset the loss of suitable foraging habitat for Swainson's hawk. The credits would become incorporated into the mitigation bank, owned and operated by the habitat development and management company, and protected in perpetuity (consistent with CDFG guidelines); or
- Purchase of conservation easements or fee title of lands with suitable Swainson's hawk foraging habitat (consistent with CDFG guidelines).

If mitigation lands or a conservation easement have not been acquired prior to issuance of the building permit, the City shall hold the Applicant's contribution in a separate, interest-bearing account until the appropriate lands are identified (through consultation with CDFG and City) and acquired by the City or preserved through other methods acceptable to the CDFG. These funds must be used compensate for the loss of Swainson's hawk foraging habitat.

**Impact After Mitigation:** Less than significant.

#### 4.4.6 Cumulative Impacts

In general, the agricultural lands of the Central Valley are low in plant and wildlife diversity (this low diversity can be attributed to the planting of monocultures and the use of pesticides and herbicides). However, the project site does support common plant and wildlife species and does provide valuable foraging habitat for raptors. This foraging habitat is of particular importance to Swainson's hawks that nest in the project area. The project site, and greater Solano County, is within the core breeding area of Swainson's hawks in California.

The primary impact of the proposed project would be the loss of 27 acres of agricultural land that provides foraging habitat for Swainson's hawk. This loss of habitat, when considered with development projected by the adopted City of Dixon General Plan and development proposed on adjacent land would

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<sup>3</sup> Suitable Swainson's hawk foraging habitat includes alfalfa fields, fallow fields, beet, tomato, and other low-growing field crops, dry land and irrigated pasture, rice land (when not flooded), cereal grain crops including corn after harvest (CDFG 1994).

substantially reduce the foraging habitat available to Swainson's hawks nesting in the area. This cumulative loss of foraging habitat could reduce the nesting success of Swainson's hawks in the project area. Therefore, the project would have a significant contribution toward the regional loss of Swainson's hawk foraging habitat. This loss of regional habitat would be a cumulatively considerable impact.

The project's contribution towards the loss of Swainson's hawk foraging habitat would be reduced to below a level of significance through implementation of **Mitigation Measure 4.4-2**. The finding that cumulative impacts to Swainson's hawk can be adequately addressed through the preservation of land at a 1:1 ratio is consistent with the findings of the approved NQSP EIR.

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## 4.5 HAZARDS AND HAZARDOUS MATERIALS

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### 4.5.1 Introduction

This section describes the existing hazardous conditions and materials related to the Flying J Travel Plaza project site and potential impacts during construction and occupancy of the project. Regulations and policies affecting hazardous conditions and materials are described, potential impacts are presented, and mitigation measures are recommended. Information presented in this section was obtained from the following sources:

- Phase I Environmental Site Assessment (ESA);
- 1993 City of Dixon General Plan;
- 1994 City of Dixon Northeast Quadrant Specific Plan EIR; and
- 1995 City of Dixon Northeast Quadrant Specific Plan.

A number of properties may cause a substance to be considered hazardous, including toxicity, ignitability, corrosivity, or reactivity. According to the State of California, hazardous material is defined as “a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either: 1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating irreversible illness; or 2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed” (California Code of Regulations § 66084).

### 4.5.2 Environmental Setting

#### 4.5.2.1 Existing Conditions

It should be noted that for the purpose of this hazards discussion, as well as the impact analysis portion of this chapter, much of the information pertains to the larger NQSP area, rather than the 27-acre Flying J project site. A Phase I was not prepared specifically for either the Flying J project site itself, or the 60-acre Flying J parcel. As a result, this chapter is based on information provided in the 1993 Phase I that was conducted for the entire NQSP area and included the proposed

Flying J project site, as well as subsequent reports conducted as part of the proposed Dixon Downs project.

The NQSP area is generally dominated by agricultural uses with scattered vacant lands and commercial and industrial uses including the Campbell Soup and Supply Company, LLC and a truck repair and parts company 0.8 mile to the southeast, a produce market and two gas stations within 0.5 mile to the north, a Caltrans maintenance yard and a roof truss manufacturer within 0.5 mile to the northeast, and a Wal-Mart located 1.5 miles to the southwest.

Agricultural land uses are associated with hazardous materials use and storage because of the use of pesticides, herbicides, fungicides, fertilizers, petroleum-related compounds, and other chemicals in farming. The following pesticides may have been used in crop production on or near the NQSP area (Northeast Quadrant Specific Plan (NQSP) EIR):

- *Dry Grains and Wheat*: 2, 4-D, MCPA, Banville, Disyston
- *Tomatoes*: Sevin, Diazinon, Lannate, Disyston, Parathion, Methly Parathion, Other General Organophosphates, Other General Carbamates
- *Sugar Beets*: Disyston. Lannate, Monitor, Phosdrin, Parathion, Methyl Parathion, Sevin, Metasystox, Other General Organophosphates, Other General Carbamates
- *Alfalfa*: Furadan, 2, 4-D, Gromoxyn, Paraquat
- *Corn*: Lasso, 2, 4-D, Banville, Parathion Methyl Parathion
- *Almonds*: Benolate Copper, Captan, Diazinon, Parathion, 2, 4-D, Princep, Karmax
- *Walnuts*: Benolate Copper, Captan, Diazinon, Parathion, 2, 4-D, Princep, Karmax, Lorsban
- *Insect Control at Auction Yard*: Malathion, Coopertex

Phase I Environmental Site Assessments (ESAs) are used to assess whether potentially hazardous materials are located on a property. A Phase I ESA generally includes the following information: site description, including a title search and historical information on the site; a records review, including both federal and state records; a site reconnaissance; interviews; and a findings, opinion, and conclusion.

Standards for Phase I ESAs have been developed by the American Society for Testing and Materials (ASTM) and are used routinely to determine the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products, onto the surface or into the ground, groundwater, or surface water of the property. If a Phase I ESA finds that hazardous materials found on the property may have been released, then a Phase II ESA is usually recommended.

A Phase II investigation typically includes collection and analysis of soil and water samples. Based on the results, the Phase II ESA may recommend additional testing, remediation, and/or other controls to address contamination.

#### **4.5.2.2 NQSP Environmental Site Assessments**

A Phase I ESA was performed by Anderson Consulting Group on July 12, 1993. This Phase I ESA included all land contained within the NQSP area, including the 27-acres Flying J project site. At the time this report (referred to herein as the "1993 ESA") was completed, uses in the NQSP area included agriculture, a trucking business, and two residences. Groundwater within the NQSP area was measured at a depth between 20 to 35 feet below ground surface and flowing in a southeast direction. The 1993 ESA noted that the area included evidence of chemicals and hazardous materials related to agricultural and trucking uses on the site, as summarized below.

The northwestern edge of the NQSP area housed a trucking facility and farmland, known as the Mistler Trucking/Mistler Farm property. Located on this 128-acre parcel, were two partially enclosed barn structures, a house on stilts, an enclosed barn, a small shed, a residence, two mobile homes, farm machinery, inoperative trucks, and two pesticide trailers used to store and apply herbicides. An 8,000- to 10,000-gallon aboveground storage tank (AST) containing diesel fuel was located on the property. Evidence of soil staining was present near the dispenser lines connected to the AST. Three additional ASTs, labeled as containing "motor oil," "tractor hydraulic fluid," and "regular," were located near the diesel tank. Nine empty 55-gallon drums were located near these tanks. Some of these unlabeled drums were stained with oil and staining was present on the soil beneath the drums.

A trench along the Mistler Farm property contained a large amount of garbage. The 1993 ESA suggested if hazardous materials were located in that trench (pesticide or motor oil containers), soil or groundwater contamination could have occurred. An area near the barn contained motor oil-stained soil. Nearby, were water hoses and an air compressor, suggesting that the area was used to steam clean or pressure wash engines. If steam cleaning or pressure washing had been done, automotive fluids could have infiltrated the soil in this area, resulting in soil or possibly groundwater contamination (Anderson 1993).

The 1993 ESA noted that agricultural fields in the NQSP area had been used for a variety of crops, including tomatoes, grains, orchards, and other row crops. As mentioned previously, a variety of pesticides may have been used on these crops. Specific details regarding application rates, locations, and period of pesticide use were not readily available to the 1993 ESA preparers.

A public records search included in the 1993 ESA found no documentation of leaking underground storage tanks (USTs), or sites of known contamination existing within the property at the time the ESA report was prepared (Anderson 1993).

In 2001, as part of the proposed Dixon Downs project, two additional Phase I ESAs were completed for the area immediately south of the proposed Dixon Downs project site. This site had historical uses similar to those on the Dixon Downs project site. One Phase I ESA covered the Mistler and Vaughan parcels, and the other investigated a 32-acre parcel in the northeast part of the project site (referred to as the "Jackson" parcel in that ESA). The Phase I ESA for the Mistler property identified three potential areas of concern related to possible soil contamination at the following locations: (1) a former 10,000-gallon diesel AST; (2) a group of six former ASTs; and (3) a small landfill that contained primarily construction debris and household-type wastes. These three locations are close to each other near the western project boundary.

In March 2005, the recommended testing contained in the 2001 Phase I ESA for the Mistler property was completed (referred to herein as the 2005 Phase II ESA). Testing consisted of excavating test pits at the three potential areas of concern and collecting soil samples where soil staining was apparent. No soil staining

was observed at the location of the six former ASTs, and no soil samples were collected.

The 2005 Phase II ESA concluded that no further investigation of the group of six ASTs locations was warranted. Stained soil was observed in subsurface soils at the former diesel AST location. Laboratory analysis of soils collected from test trenches at the former AST location indicated the presence of diesel at concentrations of 15,000 milligrams per kilogram (mg/kg) at 10.5 feet depth and 7,100 mg/kg at 5 feet. These levels exceeded Regional Water Quality Control Board (RWQCB) screening levels and the 2005 Phase II ESA-recommended additional soil investigation to delineate the horizontal and vertical extent of soil contamination and limited groundwater testing to determine water quality impacts and direction of groundwater movement.

An investigation in May 2005 defined an area of approximately 600 square feet where diesel concentrations exceeded the remedial limit for soils in California of 100 mg/kg. In addition, immediately under the area where the release occurred, the groundwater table was also affected. However, upon further investigation, the extent of groundwater contamination was found to be limited.

Although the 1993 Phase I ESA suggested the potential that routine pesticide use on agricultural crops could have affected soils, neither the subsequent 2001 Phase I ESAs prepared for the Dixon Downs project site, nor the 2005 Phase II ESA noted this as a concern. Based on this recent information and the lack of affected soils in the NQSP area, a subsequent Phase II ESA was not prepared for the proposed project site.

### **4.5.3 Regulatory Considerations**

#### **4.5.3.1 Hazardous Materials Regulatory Framework**

##### **Federal Regulations**

The U.S. EPA is the main federal agency responsible for enforcing regulations relating to hazardous materials and wastes, including evaluation and remediation of contamination and hazardous wastes. The U.S. EPA works collaboratively with other agencies to enforce materials handling and storage regulations and site cleanup requirements. The Occupational Safety and Health

Administration (OSHA) and the Department of Transportation (DOT) are authorized to regulate safe transport of hazardous materials.

Federal regulations which regulate the handling (including transportation), storage, work-place safety, and disposal of hazardous materials and wastes are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR), specifically the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Responsibility, Compensation, and Liability Act of 1980 (CERCLA). RCRA includes procedures and requirements for reporting releases of hazardous materials and for cleanup of such releases. RCRA also includes procedures and requirements for handling hazardous wastes or soil or groundwater contaminated with hazardous wastes. CERCLA delineates the liability for contamination between current property owners and others. The Hazardous Materials Transportation Act is administered by the DOT via its issuance of inspections, training, and transportation requirements and information; the Federal Government delegates enforcement authority to the states.

#### **State Regulations**

State agencies that regulate the use of hazardous materials include the California Environmental Protection Agency (Cal/EPA), the Office of Emergency Services (OES), the Department of Health Services (DHS), the Department of Toxic Substances Control (DTSC), and the RWQCB. The DTSC administers EPA's standards regarding public health effects of soil contamination, while the RWQCB administers state water quality standards for surface and groundwater. Lead responsibility for remediation depends on the proposed use of a parcel, the character of waste contaminants, and the need for site monitoring.

The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the enforcement agencies for hazardous materials transportation regulations. State regulations applicable to hazardous materials are contained in Titles 8, 22, and 26 of the California Code of Regulations (CCR) and include the State Water Code, Underground Storage Tank Code, Cortese Act (listing of hazardous waste and substances sites), and Proposition 65 (safe drinking water and toxics enforcement). The State of California also has statutes and regulations that address design and construction requirements of new USTs.

Construction requirements for USTs are defined in Title 23, Division 3 of the CCR and in the Health and Safety Code, Chapter 6.7. In 1996, Cal/EPA implemented the “Unified Hazardous Waste and Hazardous Materials Management Regulatory Program” which regulates hazardous waste generators and hazardous waste on-site treatment, USTs, aboveground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. This program is implemented at the local level by a Certified Unified Program Agency (CUPA).

### **Local Regulations**

The Solano County Department of Environmental Management (SCDEM) is the CUPA for all cities and unincorporated areas within Solano County, which includes this project. The SCDEM issues permits to and conducts inspections of businesses that use, store, or handle quantities of hazardous materials and/or waste greater than or equal to 55 gallons, 500 pounds, or 200 cubic feet of a compressed gas at any time. The SCDEM also implements the Hazardous Material Management Plans (Business Plans) that include an inventory of hazardous materials used, handled, or stored at any business in the County. The SCDEM also issues permits to and inspects businesses that handle acutely hazardous materials, such as those used in Research & Development (R&D) facilities and help local fire departments respond to emergencies involving hazardous materials.

Furthermore, regulated activities (e.g., businesses using hazardous materials) are managed by the SCDEM in accordance with applicable regulations such as Hazardous Materials Release Response Plans and Inventories (Business Plans), the California Accidental Release Prevention (CalARP) Program, and the California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements.

The City of Dixon regulates hazardous materials in coordination with other State and local agencies (e.g., DTSC and SCDEM). The City enforces Title 26, Division 6, of the California Code of Regulations (CCR) to reduce impacts associated with accidental release from transportation of hazardous materials on roads in the City and the potential for an increased demand for incident emergency response.

In addition, pursuant to Title 8 of the CCR, the Dixon Fire Department (DFD), in coordination with the SCDEM, enforces workplace regulations applicable to businesses and public facilities addressing the use, storage, and disposal of flammable and hazardous materials.

In the City of Dixon, the Solano County Department of Resource Management enforces UST leak-prevention measures as a result of their contract with the State Water Resources Control Board. Because the project site is located within Solano County, the project would be subject to Solano County Code Chapter 13.5, Underground Storage of Hazardous Substances.

#### **City of Dixon General Plan**

The following policy from the City of Dixon General Plan Public Services and Facilities Element addresses emergency access. There are no General Plan goals or policies specifically related to the use of hazardous materials.

Policy 28: The City shall ensure new development incorporates street layouts, which provide adequate emergency access, distinct street names, and visible address markings.

#### **Northeast Quadrant Specific Plan**

The following NQSP Public Facilities and Services Element is applicable to emergency access:

Policy 6.11.6: All development projects in the plan area should be reviewed by the City of Dixon Fire Department for the inclusion of fire prevention measures and access requirements. Coordination with the fire department early in the project design stage is encouraged.

Although, there are no NQSP goals or policies specifically related to use of hazardous materials, the NQSP EIR included two mitigation measures to address potential impacts related to the disturbance of soil that may contain hazardous substances from previous uses. These mitigation measures are included below:

PH-B: Perform soil sampling in areas identified in the Preliminary Site Assessment completed by Anderson Consulting Group. These



areas include locations where pesticides were stored, mixed, and applied.

PH-C: The entire site occupied by Mistler Trucking/Mistler Farm operations shall be excavated and surveyed for contaminants. A Level One Toxics Analysis shall be prepared by a qualified geotechnical engineer to define the level of contamination and any required remediation techniques. This analysis shall be performed prior to grading or construction activities to reduce potential exposure of construction workers and the general public to hazardous materials.

#### **4.5.4 Consistency with Applicable Plans and Policies**

As a matter of law, during both the construction phase and operation, the project must be consistent with all federal and State regulations controlling the management of hazardous materials and contaminated soils.

As future site development would result numerous access points of varying size, the project would be consistent with the Dixon General Plan Policy 28 and NQSP Policy 6.11.6m, providing adequate access to the site for emergency vehicles of all sizes.

The Mistler Property, mentioned in the NQSP mitigation measure PH-C, is not located on the proposed project site and requirements related to it are, therefore, not applicable to the project. However, the project would be inconsistent with the NQSP EIR mitigation measure PH-B, which requires that soil sampling be performed in areas where pesticides were stored, mixed, and applied.

#### **4.5.5 Impacts and Mitigation**

The applicable thresholds of significance are listed below, followed by analysis of the significance of any potential impacts. Mitigation measures are also identified that would reduce or avoid significant impacts.

#### 4.5.5.1 Significance Criteria

In accordance with Appendix G of the *CEQA Guidelines* and the City of Dixon General Plan, hazards and hazardous material impacts are considered significant if the project would:

- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- Result in a safety hazard for people residing or working in the project area, for projects located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport;
- Result in a safety hazard for people residing or working in the project area, for projects within the vicinity of a private airstrip;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands;
- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; or
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

#### 4.5.5.2 Issues Not Discussed Further

**Hazards to Schools.** The project site is not located within one-quarter mile of a school. The nearest school is located more than one mile south of the project site. Therefore, no impact would occur, and no further discussion of this issue is required.

**Hazardous Material Sites.** A review of the California Department of Substance Control Hazardous Waste and Substances Site List (a.k.a. Cortese List) indicates the project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, no impact would occur, and no further discussion of this issue is required.

**Public Airport Hazards.** Based on a review of various maps, the project site is located approximately four miles southwest of the University Airport, on the UC Davis campus south of Russell Road. There are no other public airport facilities in the area. Therefore, no impact would occur, and no further discussion of this issue is required.

**Private Airstrip Hazards.** Because there are no private airstrips in the area, no impact would occur, and no further discussion of this issue is required.

**Emergency Access.** Future site development would result in access from an existing road (Pedrick Road) and the I-80 / Pedrick Road interchange, which would provide adequate off-site emergency access. Three points, one designed to accommodate large trucks, would provide adequate access to the site for emergency vehicles of all sizes. Therefore, no impact would occur, and no further discussion of this issue is required.

**Wildland Fires.** The Dixon General Plan and NQSP does not identify the site or surrounding area as a high fire risk area. Furthermore, the project area consists primarily of undeveloped agricultural lands. Given this, fire is not expected to be a significant issue as the project site, and nearby lands are cultivated throughout the year and are absent of any grasses, stands of trees, and other vegetative material that is considered fuel-igniting elements. Therefore, no impact would occur, and no further discussion of this issue is required.

#### 4.5.5.3 *Impacts and Mitigation Measures*

**Impact 4.5-1: Implementation of the project would involve the regular use of diesel and gasoline fuel and other hazardous substances, which under reasonably foreseeable upset and accident conditions could result in the release of hazardous materials into the environment. This would be considered a less-than-significant impact.**

The primary function of the Travel Plaza is to provide fueling services to both diesel and gasoline vehicles. This would be accomplished through the use of 12 diesel fuel pumps and five gasoline fuel pumps. It is estimated that 4-to five USTs (approximately 20,000 gallons each) would be needed to provide fuel for the project. Operation of the project would involve hundreds of trucks and

vehicles refueling at the pumps on a daily basis. Each time a pump is used, fuel would be withdrawn from the USTs and distributed to the vehicle. This usage would require the USTs to be refilled regularly. Refilling a storage tank would involve fueling trucks transporting large amounts of both diesel and gasoline fuels to the project site. Activities such as these create a reasonable risk of a release of fuel into the environment from fueling truck accidents or spills.

As discussed previously, hazardous materials regulations, which are codified in Titles 8, 22, and 26 of the CCR, and their enabling legislation set forth in Chapter 6.95 of the California Health and Safety Code, were established at the State level to ensure compliance with federal regulations and to reduce the risk to human health and the environment from the routine use of hazardous substances.

Protection against accidental spills and releases provided by this legislation include:

- Physical and mechanical controls of fueling operations including automatic shutoff valves;
- Requirements that fueling operations are contained on impervious surface areas;
- Oil/ water separators or physical barriers in catch basins or storm drains;
- Vapor emissions controls;
- Leak detection systems; and
- Regular testing and inspection of fueling stations.

These regulations must be implemented by fueling stations and are monitored by the State (e.g., Cal OSHA in the workplace or DTSC for hazardous waste) and/or local jurisdictions (e.g., the Dixon Fire Department or Solano County CUPA). Because the project would be required by State law to follow these procedures, impacts would be reduced to a less-than-significant level.

**Mitigation Measure 4.5-1:** None required.

**Impact 4.5-2:** Construction of the project could involve disturbance of soil-containing hazardous substances from previous uses, thereby creating a hazard to the public or the environment. This would be considered a significant impact.

The 60-acre project parcel has historically been used for agricultural purposes, a trucking shop, rural residences, and barns. Based on the 1993 Phase I ESA, when there were still buildings and structures immediately adjacent to the parcel, the NQSP EIR concluded there was the potential that soil in the this area could have been contaminated by past uses, including the storage of fuels, the ongoing application of pesticides, herbicides and other agricultural chemicals, or illicit debris disposal. The NQSP EIR identified Mitigation Measures PH-B and PH-C to address the potential for contaminated soil to be present at the site. Mitigation Measure PH-B required soil sampling in locations where pesticides were stored, mixed, and applied. Mitigation Measure PH-C required excavation and analysis of soils in the Mistler Trucking/Mistler Farm area.

The 60-acre project parcel was subsequently evaluated for hazardous materials contamination in 2001 and 2005, as described in the Environmental Setting, and is currently vacant (all structures had been removed by 2001). In 2005, a Phase II ESA, completed as recommended in the 2001 Phase I ESA for the Mistler property, determined that soil in the area of a former 10,000-gallon AST had been contaminated by a diesel leak. The contaminated soil area is approximately 20 feet across and at least 10.5 feet deep. Shallow groundwater contamination may also have occurred, but groundwater testing has not been performed to date.

The 2005 Phase II ESA recommended additional soil and groundwater investigation. In the area of the six former ASTs, the Phase II ESA concluded there was no evidence of contamination requiring further investigation. Concentrations of metals in landfill soils exceeded regulatory standards for waste disposal but were not considered to pose a threat to groundwater, according to the Phase II ESA. However, the Phase II ESA noted that results should be compared to federal human health risk-based standards to determine whether the levels pose a health risk. Based on the information presented in the Phase I and Phase II ESAs, these are the only locations within the project area that are known to be contaminated. There is no evidence that former pesticide use on agricultural land within the project area has resulted in any contamination.

For those areas where contamination has been identified, soil containing elevated levels of contaminants, left unmanaged, could pose a health risk to area workers and occupants if contaminated soil is disturbed. However, the project would not

perform any construction or operational activities in the identified contaminated areas. Even though the project would not disturb known contaminated soil and all other reasonable efforts have been made to determine the likelihood of contaminant sources, it is possible that not all septic tanks, wells, or other underground storage devices or conveyance systems have been identified, because these could have been installed prior to permitting requirements.

Soil or groundwater contaminated with hazardous substances from these unknown items could be present and may not be readily apparent until grading or construction. If such materials or wastes were discovered during grading or construction and not properly managed, there could be an accidental or inadvertent release of hazardous materials that could result in spread of contamination or affect site workers. Discovery of previously unidentified hazardous debris or contamination could result in upset and accident conditions involving the release of hazardous materials into the environment. This would be considered a significant impact.

**Mitigation Measure 4.5-2:** The Applicant shall ensure that all construction personnel are aware of the potential for encountering previously unidentified contamination on the project site. Should evidence of hazardous materials contamination be observed or suspected (i.e., stained or odorous soil, or oily or discolored water) during site preparation and construction activities, beyond that identified in the Phase I and Phase II ESAs, construction activities shall cease, and an environmental professional shall assess the situation.

The environmental professional shall determine whether additional investigation is needed and specify control measures for the affected site to reduce the potential for exposing construction personnel to hazards. If the investigator determines soil samples should be collected, results of the investigation and a plan to manage the hazard to minimize risks to construction personnel shall be submitted to the Solano County Environmental Management Department if the release is subject to reporting.

**Impact After Mitigation:** Implementation of this measure would ensure that the potential for soil or groundwater contamination is managed according to established protocols under regulatory oversight. This would also provide a mechanism to safely manage previously unidentified contamination that could

be encountered during site work, which would reduce the risk to construction workers and future site users. This would reduce the impacts of soil and groundwater contamination to a less-than-significant level.

**Impact 4.5-3: Implementation of the project could result in workers (construction and operations) being exposed to hazardous materials such as cleaning agents, solvents, and the regular use of diesel and gasoline fuel and other hazardous substances. This would be considered a less-than-significant impact.**

People may be exposed to hazardous substances during the operation and construction of the Travel Plaza. Exposure of construction workers or Travel Plaza personnel and the environment to hazardous materials could occur via any of the following:

- Improper handling or use of hazardous materials or hazardous wastes during construction or operation of the project, particularly by untrained personnel;
- Transportation accidents; or
- Environmentally unsound disposal methods; or emergency situations including fires or explosions.

Workplace regulations addressing the use, storage, and disposal of hazardous materials in Title 8 of the CCR would apply to operations occurring at the project site. These regulations protect workers by requiring a hazardous materials management plan that details storage requirements and inventory of hazardous materials in the workplace, as well as emergency response procedures in case of accidental release. All hazardous waste must be disposed of by a licensed contractor and brought to a designated hazardous waste disposal site. In addition, to prevent explosions, gas stations must post no-smoking signs, and require that vehicles stop their engines during refueling. Compliance with these regulations would be monitored, in part, by Solano County when it performs hazardous materials inspections.

Other mechanisms in place to enforce the Title 8 regulations include compliance audits and reporting to local and State agencies. Implementation of these workplace regulations would further reduce the potential for hazardous materials exposure during construction to a less-than-significant level.

**Mitigation Measure 4.5-3:** None required.

**Impact 4.5-4: Implementation of the project would involve storage and routine transport of diesel and gasoline fuel, which, under reasonably foreseeable upset and accident conditions, could result in the release of fuel into the environment. This would be considered a less-than-significant impact.**

As mentioned previously, the storage of hazardous substances in USTs, such as diesel and gasoline fuels, is regulated at both the state and local level. Requirements for new USTs are designed to minimize the potential hazards in the event of leaks or explosions, as explained below. The installation of USTs, as proposed for the project for the storage of diesel and gasoline fuels, would require a permit from the Solano County Department of Environmental Management. As specified in the CCR Title 23, Division 3, Chapter 16, the proposed USTs would:

- Contain a primary containment system that meets specified requirements;
- Include a secondary containment system in case of an emergency leak;
- Contain a leak-monitoring program that would consist of either an audible and visual alarm system or a daily visual monitoring program as approved by Solano County; and
- Be contingent upon a response plan in the event of an unauthorized release that has been approved by Solano County.

Title 49, Parts 171–180, of the CFR establishes standards by which hazardous materials would be transported, within and adjacent to the project site. Compliance with these standards is required by law and includes the following protections against fuel releases from accidents involving fuel trucks:

- All fuel truck drivers must be licensed haulers and complete hazardous materials handling training;
- Fuel haulers must establish emergency plans outlining procedures in the event of leaks or collisions; and
- Fuel haulers must undergo regular inspections of fuel trucks by Caltrans to ensure that all trucks meet safety requirements.

Implementation of these regulations would reduce any impacts associated with the potential for accidental release during construction or operations of the



project, by transporters delivering hazardous materials to the project site and/or picking up hazardous waste.

Collectively, implementation of existing regulations pertaining to these hazardous substances would reduce impacts associated with the routine use, storage, and transportation of diesel and gasoline fuels and the potential for its accidental release to a less-than-significant level.

**Mitigation Measure 4.5-4:** None required.

**Impact 4.5-5: Implementation of the project would increase traffic congestion and require additional emergency services in the project vicinity, thereby potentially interfering with an adopted emergency response plan or emergency evacuation plan by limiting access/egress or overwhelming existing emergency response services. This would be considered a less-than-significant impact.**

As described previously in this chapter, future site development would result in access from an existing road (Pedrick Road) and the I-80 /Pedrick Road interchange. These improvements, along with three planned access points to the project site, one of which would be designed to accommodate large trucks, would provide adequate emergency access in the project area. As discussed in **Chapter 4.9, Public Services**, the project would be required to comply with mitigation measures PS-L and PS-M of the NQSP EIR for additional law enforcement services. Additionally, the project also would be required to comply with mitigation measures PS-I, PS-J and PS-K of the NQSP EIR, which would ensure additional fire department services and staffing. With the implementation of these measures, impacts to emergency response.

**Mitigation Measure 4.5-5:** None required.

## 4.5.6 Cumulative Impacts

Development elsewhere in the NQSP and the City of Dixon would likely include some industrial uses, which could involve the use of greater quantities and variety of hazardous products. Commercial, office, retail, and residential development in Dixon, along with the proposed project, would increase the use

of household-type hazardous materials within the area. Hazardous materials use, storage, disposal, and transport would result in a foreseeable number of spills and accidents.

Potential impacts associated with the project would be largely confined to fuel-related activities. Such incidents would typically be localized and would involve accidental spills or inadvertent releases of fuel or small amounts of chemicals or products that would be contained on site. Associated health and safety risks of fuel and chemical spills would generally be limited to those individuals using the materials or to persons in the immediate vicinity of the materials and would not combine with similar effects elsewhere within the City. Therefore, hazardous materials impacts would not be cumulatively considerable.

For any projects in the NQSP and the City of Dixon that would involve development or redevelopment of an existing site in which soil or groundwater contamination may have occurred, the potential exists for release of hazardous materials during construction and/or remediation of those sites. For individuals not involved in construction activities, the greatest potential source of exposure to contaminants would be airborne emissions, primarily through construction-generated dust (see **Section 4.3, Air Quality**). Other potential pathways, such as direct contact with contaminated soils or groundwater, would not pose as great a risk to the public because such exposure scenarios would typically be confined to the construction zones. As a result, the project's contribution to exposure to unidentified contaminants in soil or ground water, in combination with other remediation projects in Dixon, would not be cumulatively considerable.

This conclusion is based on implementation of site-specific risk management controls and compliance with applicable laws and regulations pertaining to site cleanup and hazardous materials management at the other locations. Moreover, an individual who is directly outside the construction zone of one source would be unlikely to be exposed to maximum levels from another source. Such exposure would typically be site specific and would involve accidental or inadvertent releases of soil or groundwater. Associated health and safety risks would generally be limited to those individuals working with soil or groundwater or to persons in the project area and would not combine with similar effects elsewhere in the City's General Plan boundaries. This would be a less-than-significant cumulative impact.

## 4.6 HYDROLOGY AND WATER QUALITY

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### 4.6.1 Introduction

This section describes the existing and planned hydrology, drainage, and water quality conditions in the area of the proposed Flying J Travel Plaza. Conditions analyzed in this section include site and area drainage patterns, flooding conditions, and water quality impacts.

Primary information in this section was obtained from the City of Dixon Northeast Quadrant Specific Plan (1995), Preliminary Drainage Report, Flying J Travel Plaza (Morton & Pitalo, Inc., December 19, 2005, updated May 29, 2005), Dixon California Engineering Design Standards and Construction Specifications (City of Dixon Engineering Department, 2004), The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region Fourth Edition and the Sacramento River Basin and The San Joaquin River Basin (1998), Dixon Municipal Code (June 22, 2004), Preliminary Grading and Drainage Plan, prepared by Morton and Pitalo, Inc. (July 15, 2004); and documents for the neighboring Dixon Downs Environmental Impact Report found online through [www.thecityofdixon.com](http://www.thecityofdixon.com). Additional information was obtained through communication with the City of Dixon and Dixon Resources Conservation District.

### 4.6.2 Existing Conditions

#### 4.6.2.1 *Climate*

The project site is located approximately 15 miles north of the Sacramento River Delta, halfway between Fairfield and Sacramento. The local climate is characterized by hot dry summers and cool wet winters. The summer climate in California is very stable due to the presence of a dominating high-pressure system over the Eastern Pacific. The East Pacific high blocks nearly all rain producing northerly and westerly storms from penetrating the area during the summer dry season, although occasional monsoonal moisture and convective storms may penetrate from the south and east. Consequently, the region's rainy season typically extends from November through April; at least 80 percent of precipitation occurs during these months. The nearest station with long-term meteorological data in Davis, approximately 9 miles from the site, averages 17

inches of precipitation per year. Average maximum temperatures range from a low of 54 degrees Fahrenheit in December and January to the highest average maximum temperature of 94 degrees Fahrenheit in July (Western Regional Climate Center, 2005). Each year there are approximately 82 days when the temperature exceeds 90 degrees Fahrenheit (including several days above 100) and about 28 days when the temperature at night drops below freezing. Snowfall is extremely rare.

#### **4.6.2.2 *Geology and Site Soils***

The project site is considered part of the “Great Valley Geomorphic Province” of California. This includes most of the Sacramento and San Joaquin valleys, also known as the central valley. The central valley of California is a trough in which sediments have been deposited since the Jurassic era (160 million years ago).

A recent geologic map of the area published by the United States Geological Survey (USGS, 2002) indicates the site is underlain by alluvial fan deposits of Holocene age (less than 11,000 years old), except for a linear segment of artificial fill upon which Interstate 80 (I-80) was constructed along the northwest corner of the property. Deposits as thick as 100 feet likely formed from ancestral Putah Creek and tributaries washing sediment off nearby Rocky Ridge. Underlying these alluvial fan deposits are likely to be rocks of the Great Valley Sequence, such as nearby Pliocene Age rocks from the Vacaville Assemblage of the Tehama Formation. There are no rock outcrops on the project site.

Soils mapped across the property are derived from the alluvial fan deposits. These deposits have chemically and physically weathered over time to create the soil assemblages and horizons present today. According to the Soil Conservation Service Soil Survey for Solano County, there are two soil types mapped on the project site. Eighty percent of the site is mapped as Capay Silty Clay Loam (Ca), while about 20 percent of the site adjacent to the southeast corner is mapped as Yolo Silty Clay Loam.

The permeability and texture of these on-site soils directly influence drainage patterns. Soil permeability is the rate at which water is absorbed under saturated conditions and is related to the hydraulic conductivity (constant determining flow rate through soil or rock) of the soil. A list of on-site soil types and their

relevant hydrologic characteristics are shown in **Table 4.6-1, Site Soils – Hydrologic Characteristics**. The two soil types are both fine-grained soils with slow to very slow runoff and slight erosion hazard. The Ca contains more expansive clay minerals and is more likely to swell and shrink when wetted and dried, an important geotechnical consideration for any proposed foundations. Since both soils have only slow to moderate permeability, increased runoff following paving with an impervious surface would be relatively low.

**Table 4.6-1  
Site Soils – Hydrologic Characteristics**

Name	Symbol	Permeability	Runoff	Shrink-Swell Potential
Capay silty clay loam	Ca	Slow	Very Slow	High
Yolo silty clay loam	Ys	Moderately Slow	Slow	Moderate

Source: USDA, 1977. *Soil Survey of Solano County*.

#### 4.6.2.3 Regional Hydrology and Topography

Regional drainage in the area is controlled by the gradual southeasterly slope of alluvial fans and alluvium built from sedimentary deposits eroded from the Mayacamas and Vaca Mountains. Creeks from these mountains flow in a southeasterly direction toward the Sacramento River. The Sacramento River drains most of the California interior north of the Sacramento River Delta and flows through Suisun and San Pablo Bays before emptying into San Francisco Bay and eventually the Pacific Ocean. Historical drainage from the area likely flowed into Putah Creek, while existing drainage is channeled through a series of drainage ditches that eventually enter into the Sacramento River. **Figure 4.6-1, FEMA Flood Map** shows the site location relative to the Sacramento River and Delta to which the region drains. The historic drainage pattern has been altered through agricultural and highway and railroad engineering, which have diverted runoff through a series of culverts, ditches, and canals.

The project site is within the Putah Creek watershed known as the City of Dixon Watershed D, Lower Putah Creek. This watershed is cataloged by the USGS as watershed number 511.20, USGS Hydrologic Unit Code (HUC) 18020109. This area drains into the Dixon Resource Conservation District's Tremont 3 Drain, which discharges into the Reclamation District (RD) 2068 Main Canal and Lateral Number 5, and then into the V-Drain. The V-Drain discharges into Hass Slough

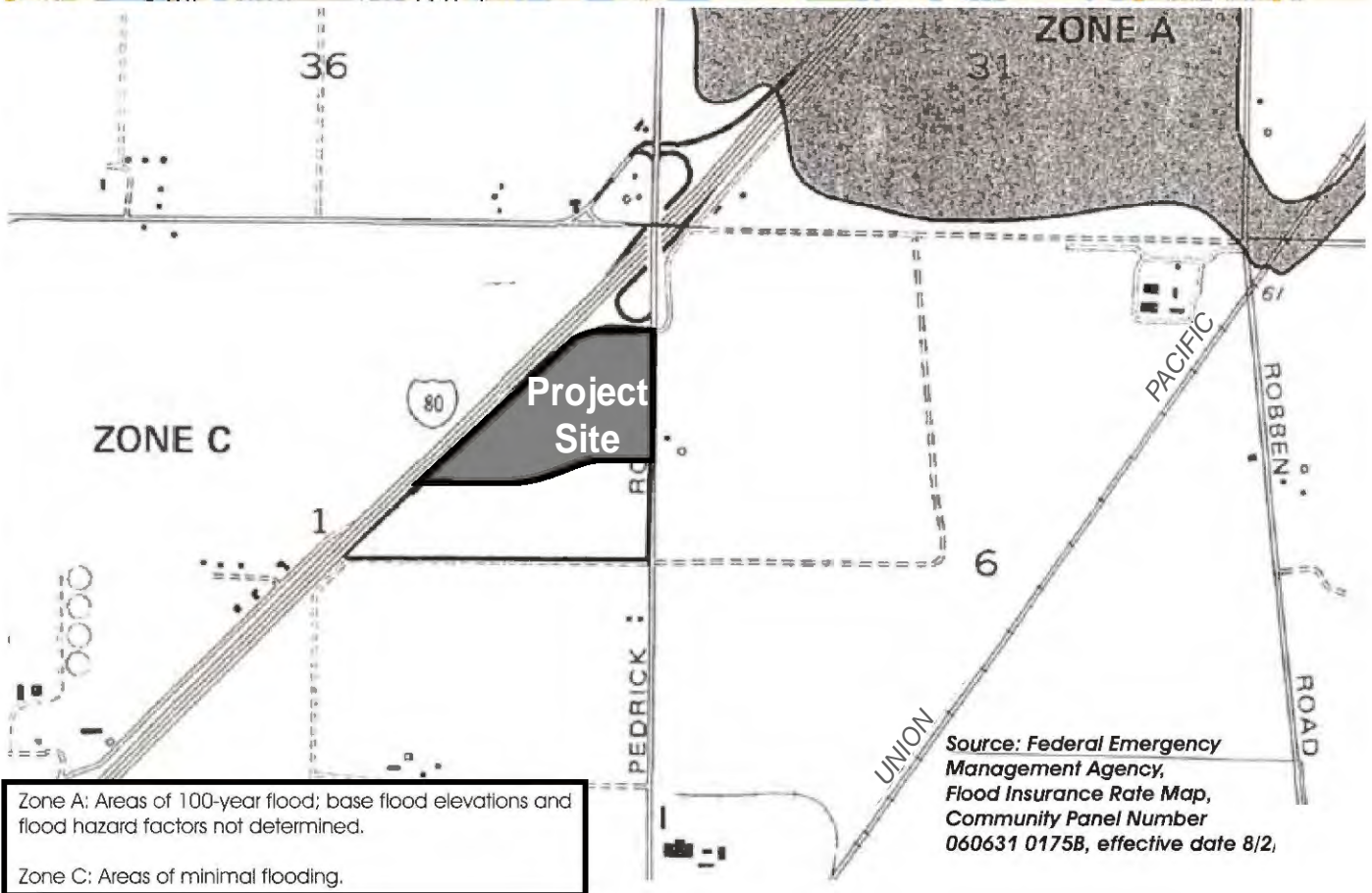
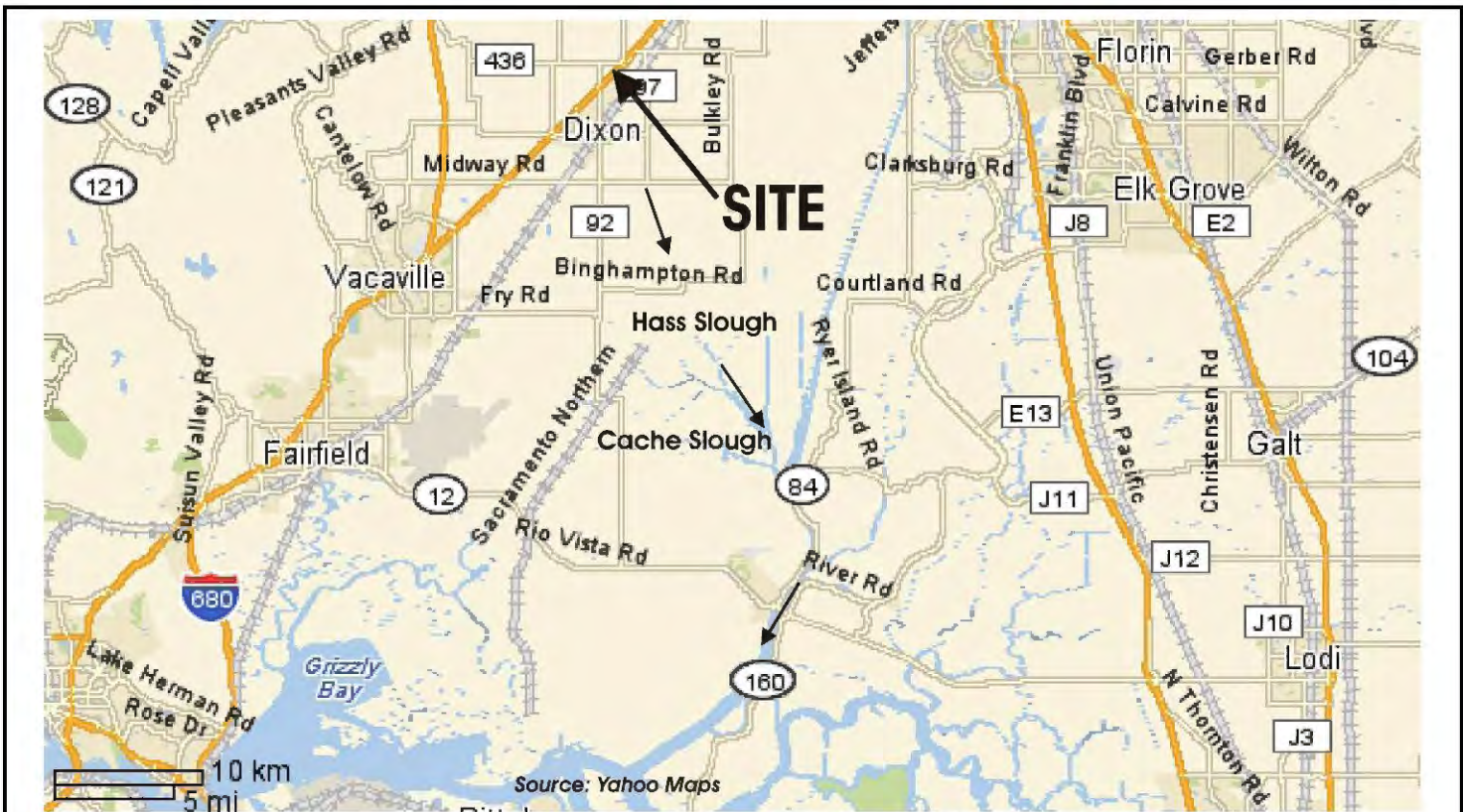
and Cache Slough, which outfalls into the Sacramento River near Mile 19 of the Sacramento River.

According to the Dixon Resource Conservation District (DRCD), management of drainage ways has been an ongoing problem, especially since many culverts and ditches, especially those on private lands, have not been maintained and have become plugged with mud and debris. The Tremont 3 drainage was originally designed to accommodate agricultural drainage, agricultural practices, and development within the watershed. These activities have increased runoff, soil erosion, and siltation and periodic flooding in often unpredictable ways that were not foreseen. As a result the DRCD, Reclamation District 2068, Main Prairie Water District (MPWD), and City of Dixon are working together with landowners to establish a long-term plan for handling existing and future drainage.

#### **4.6.2.4 Site Hydrology**

The preliminary drainage report indicates the site is within Basin D of the Dixon Northeast Quadrant Specific Plan (NQSP) but also must insure that water from Basin G can be conveyed through the site. The site is relatively flat with a 0.1 percent slope toward the east-southeast and site elevations range between 60.5 and 63.5 feet North American Vertical Datum (NAVD). The steepest slopes in the vicinity are up to 15 percent along the embankment for the Pedrick Road bridge over I-80.

In the Dixon area, a series of privately maintained culverts and ditches drain approximately 2,700 acres of agricultural land north of I-80. Because I-80 was constructed above the surrounding ground by a few feet, the flow of floodwater to the southeast is often impeded, causing frequent flooding to the northwest of I-80. The project site lies at the downstream end of a 360-acre watershed that is bisected by I-80, with the larger portion consisting of 300 acres northwest of the freeway. Most of this drainage area consists of fields that drain southeast through four 24-inch by 36-inch culverts under I-80 and onto the project site. The culverts then discharge runoff near the Pedrick Road offramp, approximately 600 feet east of the Pedrick Road intersection. A majority of existing flow in the drainage ditch on the property is due to offsite flow from this 300-acre area,



SOURCE: Questa Engineering Corporation – February 2006

FIGURE 4.6-1

FEMA Flood Map

equivalent to 86 percent of the total drainage area. The watershed slopes very gently, and significant ponding and slow runoff are normal.

Questa Engineering Corporation (Questa) staff observed site drainage on the subject property during a site visit on December 28, 2005. A majority of drainage on the project site occurs through a shallow, 18-inch-deep roadside drainage ditch along the west side of Pedrick Road. Questa staff observed this drainage ditch from the four 24-inch by 36-inch culverts located under I-80 for approximately 2,900 feet and then to a 36-inch by 24-inch culvert that crosses under Pedrick Road south of the Campbell Soup property. Runoff from the project site flows under Pedrick Road and into a drainage canal along the south edge of the Campbell Soup property. This privately maintained drainage canal is presently clogged by silt or mud. This canal joins another canal alongside the railroad tracks that flows northeasterly toward the Tremont 3 drainage canal. According to the Preliminary Drainage Report, there is another 24-inch-diameter culvert underneath Pedrick Road that is immediately south of the Pedrick Road offramp. The clog in the canal along the Campbell Soup property has created a backup of standing water in this culvert. This culvert could not be observed due to standing water, but Questa staff observed the sump and borrow pit to which this culvert would flow under normal conditions.

The Preliminary Drainage Report indicates Pedrick Road is overtopped by floods that head easterly toward the Tremont 3 drain approximately once every 2 to 3 years. No flooding was observed on December 28, 2005, but standing water was observed along the offramp, within the onramp circle, and locally within the ditch alongside Pedrick Road. Flow in the drainage ditch was negligible. FEMA maps indicate that no part of the project area is within the 100-year flood zone.

Existing flooding in the project area is due to a combination of factors, including nearly flat terrain below a large watershed, clayey soils with low to moderate permeability, and an undersized drainage system. Flooding occurs in areas where water is unable to percolate through the saturated or impervious soil and the water depth increases as a result of upstream drainage and rainfall.



#### 4.6.2.5 Groundwater

The project site is located within the Solano Groundwater Basin, a sub-basin of the larger Sacramento Groundwater Basin that supplies about 2.5 million acre-feet of water annually to municipal, industrial, and agricultural users. The Solano Basin is bounded by Putah Creek on the north, the Sacramento River to the east, the North Mokelumne River to the southeast, the San Joaquin River to the south, and the English and Montezuma Hills to the west.

Groundwater levels in the area have fluctuated in response to rainfall and groundwater pumping. Until approximately 1959, pumping of groundwater resulted in significant localized drawdown and a depressed water table. This trend began to reverse during the 1960s when groundwater levels rose in response to the Solano project, which reduced pumping due to the creation of alternative water sources from dam impoundments and drainage improvements. The groundwater table has remained fairly stable since the 1990s, with seasonal and annual fluctuations reflecting typical patterns associated with summer and winter water use.

Groundwater data for nearby monitoring wells was checked through the State Water Resource Control Board (SWRCB) "Geotracker" Database. Two nearby monitoring wells within 1-mile of the site reported groundwater at depths of between 14 and 34 feet below the ground surface. Both wells are at approximately the same elevation as the project site and indicate the depth to shallow groundwater is similar on the proposed project site. While the depth to static groundwater on the site is likely to exceed 10 feet, there may be small areas of locally perched groundwater near the surface.

#### 4.6.2.6 Flooding

Flood insurance rate maps (FIRMs) produced by the Federal Emergency Management Agency (FEMA) show the project site is in Zone C, which is designated as an area of minimal flooding. Zone C refers to an area outside of both the 100-year and 500-year flood hazard zones (FEMA, 1982). However, the Preliminary Drainage Report for the project site indicates that the accumulation of both on-site drainage from the proposed Flying J parcel and contributing flow from Basin G north of I-80 frequently overtops Pedrick Road due to inadequate

culvert volume and conveyance underneath the road. The model developed for the site also predicts major ponding upstream of these culverts. While, the model did not predict that I-80 would be flooded by a 100-year storm, it does predict that the minimal flooding depicted by FEMA maps, while local, may be frequent. **Figure 4.6-1** shows predicted flooding according to FEMA.

#### 4.6.2.7 Water Quality

The regional watershed drains to the Sacramento River and Delta, which is listed by the SWRCB as having impaired water quality due to contamination from mercury and the pesticide diazinon. Water quality for the project site has not been assessed. However, regular monitoring of runoff and groundwater is performed in the area. This includes sampling and analysis of runoff for the Central Valley Regional Water Quality Control Board (RWQCB) agricultural water quality program. Samples from Willow Slough at Road 99 have been reported to contain trace concentrations of pesticides.

The composition of groundwater is often considerably different from that of surface water, especially since percolation of groundwater through soil and rock may concentrate certain dissolved minerals, and would tend to absorb any soil contamination. According to the Department of Water Resources (DWR), groundwater quality in Solano County is generally suitable for most urban and agricultural uses.

Testing of groundwater sampled from 123 public water supply wells in the Solano Groundwater Basin found approximately 6 to 7 percent have contaminant levels exceeding the state maximum allowable contaminant levels (MCLs) for drinking water, mostly for total dissolved solids (TDS), nitrate, boron, chloride and organic compounds. The most common contaminants were nitrates and pesticides, while volatile and semi-volatile organics and inorganic contaminants such as metals were less common. Arsenic levels are significant, as values are typically below the current MCL of 0.050 mg/L, but would exceed the proposed MCL of 0.01 mg/L in many wells.

The Phase 1 Environmental Site Assessment (ESA) completed for the entire Northeast Quadrant Specific Plan Area in 1993 addressed groundwater contamination. This assessment identified contamination along the northwestern

edge of the quadrant, where a trucking facility and farmland on the Mistler property had several aboveground storage tanks and a trench landfill used for garbage. Test pits excavated in March 2005, at the location of a former diesel tank were sampled for soil, and total petroleum hydrocarbons (TPH) occurring as diesel fuel were found at a concentration of 15,000 milligrams per kilogram (mg/kg) at 10.5 feet below the ground surface (BGS) and 7,100 mg/kg at 5 feet BGS, levels exceeding the RWQCB screening levels for future commercial and residential development.

Further soils testing completed in May 2005 defined an area of 600 square feet where diesel concentrations in soil were found to exceed the environmental screening level (ESL) of 100 mg/kg. Groundwater testing revealed a diesel concentration of 150 micrograms per liter (ug/L) underneath the contaminated area, but testing 20 feet away revealed no detectable contamination. Soils testing in the landfill area revealed metal concentrations exceeding the RWQCB ESLs, but the consultant concluded soil contaminants were unlikely to migrate into groundwater. Results of limited groundwater testing suggest contamination is local.

According to the state underground storage tank database, the nearest collection of monitoring wells to the site is located across I-80 at 8665 Pedrick Road. These monitoring wells were installed in response to a leaking underground fuel tank in 2000 or 2001. MTBE and nitrates were reported to be the major impact from the leak. Sampling of water from the well continued throughout 2005, and the latest report obtained online indicated that MTBE, gasoline, and other tested contaminants were not detected. According to the state underground storage tank database, other nearby monitoring wells about 1 mile southwest of the site near I-80 and along Milk Farm Road were reported to show MTBE leaks into groundwater associated with former gas stations. Reports available online at <http://geotracker.swrcb.ca.gov/> indicate little or no remaining contamination from the most commonly tested petroleum hydrocarbons.

Sampling and analysis of both groundwater and surface water in the project area indicate the most common causes of contamination are leaking underground fuel tanks; runoff, including high levels of pesticide and nitrates; and general runoff from roadways that may contribute minor quantities of oil, grease, and other contaminants. No formal sampling and analysis of either surface water or

groundwater has been completed on the parcel proposed for development by the Flying J Travel Plaza.

### 4.6.3 Policy and Regulatory Considerations

The SWRCB and the nine RWQCBs have the authority to protect and enhance water quality in California, both through their designation as the lead agencies in implementing the Section 319 non-point source program of the Federal Clean Water Act, and from the state's primary water-pollution control legislation, the Porter-Cologne Act. The RWQCB Region 5 office guides and regulates water quality in streams and aquifers of the Solano County area through designation of beneficial uses, establishment of water-quality objectives, administration of the National Pollutant Discharge Elimination System (NPDES) permit program for storm water and construction site runoff, and Section 401 water-quality certification where development results in fill of jurisdictional wetlands or "waters of the U.S." under Section 404 of the Clean Water Act.

#### 4.6.3.1 Central Valley Region Water Quality Control Plan ('Basin Plan')

The RWQCB regulates water quality in the Sacramento-San Joaquin River Delta in accordance with the Water Quality Control Plan or 'Basin Plan'. The Basin Plan presents the beneficial uses that the Regional Board has designated for local aquifers, streams, marshes, and rivers, as well as the water-quality objectives and criteria that must be met to protect these uses. Existing beneficial uses for the Sacramento-San Joaquin River Delta include municipal, agricultural, and industrial supply; contact and non-contact aquatic recreation; cold and warm freshwater habitat, migration of aquatic organisms; fish spawning (warm water only); wildlife habitat and navigation.

Aquatic habitat in the Sacramento River and its tributaries is the beneficial use most sensitive to potential impacts from development of the project site. Pollution from driveways, roads, and parking lots could contribute petroleum products and heavy metals to storm runoff and degrade water quality downstream. Litter in storm runoff could potentially affect aquatic and terrestrial wildlife species. Pesticides and fertilizers applied to commercial landscaping could also be mobilized by rainfall and be transported to nearby

waterways and the Sacramento River, potentially affecting aquatic and terrestrial wildlife species in the river or the adjacent riparian zone.

#### **4.6.3.2 NPDES Municipal Storm Water Permit**

The 1987 amendments to the Clean Water Act [Section 402(p)] provided for U.S. Environmental Protection Agency (EPA) regulation of several new categories of non-point pollution sources within the existing NPDES. In Phase 1, NPDES permits were issued for urban runoff discharges from municipalities of over 100,000 people, from plants in industries recognized by the U.S. EPA as being likely sources of storm water pollutants, and from construction activities that disturb more than 5 acres. The EPA has delegated management of California's NPDES Municipal Storm Water Permit program to the State and Regional Boards. Phase 2 implementation, effective March 10, 2003, extended NPDES urban runoff discharge permitting to cities of 50,000 to 100,000 people, and to construction sites that disturb between 1 and 5 acres.

Control of storm water runoff is a major current focus of the Central Valley RWQCB. In Phase 2, urbanized counties and cities that implement a comprehensive control program for urban runoff management meeting Regional Board standards can apply to the RWQCB for a joint City-County NPDES permit. Upon acceptance, the authority to regulate storm runoff discharges from municipal storm drain systems is transferred to the permit holders, allowing them to more effectively integrate the storm-water control program with other non point source control programs. At present, the Regional Board continues to administer the NPDES program in Solano County under the state's NPDES General Permit for Storm Water Discharges. The NPDES permits must be consistent with the Basin Plans. Under the program, the Applicant would be required to comply with two NPDES permit requirements.

#### **NPDES General Permit for Discharges of Storm Water Associated with Construction Activity**

Since the proposed project would disturb more than one acre of land, the Applicant would be required to submit a Notice of Intent to the state board and apply for coverage under the NPDES Construction General Permit. Administration of these permits has not been delegated to cities, counties, or

Regional Boards but remains with the state board. Enforcement of permit conditions, however, is the responsibility of Regional Board staff, assisted by local municipal or County staff.

The NPDES General Construction Permit Requirements apply to clearing, grading, and disturbances to the ground such as excavation. The Applicant is required to submit a Notice of Intent (NOI) with the SWRCB Division of Water Quality. The NOI includes general information on the types of construction activities that would occur on the site. The Applicant would also be required to submit a site-specific plan called the Stormwater Pollution Prevention Plan (SWPPP) for construction activities. The SWPPP must include a description of Best Management Practices (BMPs) to minimize the discharge of pollutants from the site during construction. It is the responsibility of the property owner to obtain coverage under the permit prior to site construction.

#### **NPDES General Industrial Permit**

The NPDES General Industrial Permit Requirements apply to the discharge of storm water associated with industrial sites. The permit requires the implementation of management measures that will achieve the performance standard of best available technology (BAT) economically achievable and best conventional pollutant control technology (BCT). Under the statute, operators of new facilities must implement industrial BMPs in the project SWPPP and perform monitoring of storm water discharges and unauthorized non-storm water discharges. An annual report must be submitted to the RWQCB each July 1. Operators of new facilities must file an NOI at least 14 days prior to the beginning of operations.

#### **4.6.3.3 Floodplain Development Regulations**

FEMA is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers (ACOE) and other studies. These studies are used to create FIRMs that identify areas within different flood hazard designations, such as the 100-year floodplain predicted to flood once every 100 years.

While FEMA allows non-residential development within certain floodplains, other areas are considered too hazardous or expensive to develop. Federal

regulations governing floodplain development are set forth in Title 44, Part 60 of the Code of Federal Regulations (CFR).

#### 4.6.3.4 *Northeast Quadrant Specific Plan (NQSP)*

The NQSP set guidelines for detention of storm water runoff and to mitigate for increased runoff, risk of flash flooding, and potentially rapid spread of surface pollutants through incorporation of appropriately designed storm water detention facilities around new and existing developments. The NQSP reiterates and expands on the drainage and water quality policies from the Natural Environment Chapter of Dixon General Plan.

According to the NQSP, new development projects within the City are required to submit a detailed drainage improvement plan that shall either provide for on-site detention to store flows exceeding baseline conditions or provide a master drainage plan. The City reviews the proposed improvements to ensure that all new development meets the City's requirements as well as the Regional drainage requirements. The City of Dixon reserves the right to evaluate the environmental effects of the drainage improvements at the time of submittal as a condition of approval.

Pertinent NQSP policies regarding hydrology and water quality are summarized below, including those designed to protect water quality and prevent soil erosion:

Policy 5.9.4:     **Soil Protection and Grading.** All development plans shall provide an erosion and sediment control plan, including seeding of graded areas and watering during grading to reduce wind erosion.

Prior to development, a master conceptual grading plan should be submitted which identifies the overall grading concept for the plan area.

Drainage problems resulting from poor soil permeability should be reduced through development of gravel sub-drains and the creation of swales and channels to convey runoff.

Policy 5.9.5: **Water Quality.** Paved parking areas should be designed to minimize paving, while still meeting parking requirements. Permeable paving materials should be considered where feasible.

BMPs such as sediment traps, evaporation basins, flow reduction devices, and other methods to treat pollutants draining from parking areas and streets shall be installed in the storm drain system for individual projects within the plan area in accordance with City and other applicable engineering standards.

Detention ponds shall incorporate similar BMP devices and methods in accordance with City and other applicable engineering standards.

Design of storm detention facilities should be consistent with City design standards. Standards include a maximum depth of 10 feet, with freeboard of at least 1 foot, and highest water elevation set by the lowest catch basin elevation. If a maximum 4-foot depth can be maintained at the perimeter, no enclosure fencing will be required.

Pertinent NQSP policies regarding master drainage for the City include:

Policy 6.11.4: **Drainage.** Urban runoff shall be directed to the proposed Citywide drainage conveyances and shall meet standards for peak flows. Each planned unit development (PUD) pursuant to this Specific Plan will be required to demonstrate the capacity to retain all on-site storm water in a 100-year event unless a comprehensive storm drainage system is available to serve the proposed project.

The Dixon Public Works Department shall review all drainage facilities prior to improvement and approval of individual project plans.



Required retention/detention basins should be developed in coordination with facilities requiring additional on-site storm water storage.

Overall storm water volumes generated from the plan area will be mitigated through plan area participation in a regional drainage project, funded, in part through the Dixon North First Street Assessment District and supplemented by other methods as determined by the City.

#### 4.6.3.5 Dixon Engineering Design and Construction Standards

The City of Dixon Engineering Design Standards and Construction Specifications provide minimum storm drainage design standards for all new development, including the Flying J Travel Plaza. Storm drainage calculations for culvert sizing and other parameters, as well as structural elevations, are based on 10-year and 100-year design storms. Standards for new development minimize the use of open drainage channels and set design and performance requirements for detention basins. Key standards include the following:

- Storm Drains must be large enough (sized) to carry flow from the 10-year storm with the hydraulic grade line at least 1 foot below the gutter flow line.
- The 100-year hydraulic grade line may exceed the gutter flow line and flood streets, parking lots and other areas where structures would not be permanently damaged, but remain 1 foot below building pad elevations and lie below the level that would cause damage to or flood businesses or residences.
- Open channels shall only be allowed upon written approval of the City Engineer. Where allowed they shall be designed to convey the 100-year storm, have a minimum freeboard of at least 1 foot if the design water level is below the surrounding ground and 3 feet if the design water level is above the surrounding ground surface. The maximum velocity is 3 feet per second unless additional erosion protection is provided. The side slopes shall be no steeper than four horizontal to one vertical. Additional requirements, per City Standards, include maintenance roads, erosion control, and perimeter fencing.
- Detention ponds must be sized for the critical 100-year four-day storm. The minimum freeboard shall be 1 foot if the design water level is below the surrounding ground surface and shall be 3 feet if the water design level is above the surrounding ground surface. The side slopes shall be no steeper than four horizontal to one vertical, and side slopes within public access areas (e.g. parks or green belts) shall be no steeper than six horizontal to one vertical. The detention basin discharge shall be determined on a case-by-case basis and is subject to review and approval by the City Engineer.

#### **4.6.3.6 Dixon Stormwater Management Plan**

The City of Dixon Stormwater Management Plan includes six required programs: (1) Public Education and Outreach Program, (2) Public Involvement and Participation Program, (3) Illicit Discharge Detection and Elimination Program, (4) Construction Site Stormwater Runoff Control, (5) Post Construction Stormwater Management Program, and (6) Pollution Prevention and Good Housekeeping for Municipal Operations.

Program goals include establishing BMPs to prevent polluted site runoff during and after construction, development of structural and non-structural strategies for pollutant removal, and education to reduce water pollution. Goals are in accordance with those regulated by the Statewide NPDES Stormwater Program and Construction General Permit.

#### **4.6.3.7 Dixon Ordinances**

City of Dixon ordinances related to management of storm water runoff pollution and drainage hydrology include the Grading Control Ordinance (Chapter 16.04, Title 16 of the Dixon Municipal Code) and the Storm Water Control Ordinance (Chapter 16.06, Title 16 of the Dixon Municipal Code). These ordinances establish grading controls and stormwater controls that meet the intent of the programs described above and that are enforceable by law and through required permit conditions.

#### **4.6.3.8 Dixon Resources Conservation District**

Requirements for overall storm drainage are not included in a specific ordinance, but are part of the NQSP. Enforcement is through the DRCD, which owns, maintains, and operates the Tremont 3 Drain. This is the main drainage canal for runoff from the Northeast Quadrant Specific Plan area. An encroachment permit is required from the DRCD to add or modify culverts or pipes contributing drainage to the Tremont 3 Drain. The primary requirements for obtaining the encroachment permit are to ensure that any new or modified drainage does not result in an increase of flows into the Tremont 3 Drain and that the new or modified drainage serves areas that are within the Tremont 3 service area.

Encroachment permits issued by the DRCD, for areas outside of the Tremont 3 service, would only be permitted if the proposed drainage complies with the mandates in Section 4.6.3.8 of the Dixon Regional Watershed Joint Powers Authority (Currey 2006).

#### **4.6.3.9 Dixon Regional Watershed Joint Powers Authority**

The City of Dixon, DRCD, RD 2068, and the Maine Prairie Water District (MPWD) recently formed a Joint Powers Authority (JPA) to cooperatively manage storm water issues and related flooding from the Dixon Regional Watersheds, including the northeast quadrant proposed project area. A summary of JPA mandates include the following:

- Within the City of Dixon Northeast Quadrant Specific Plan area, the City is entitled to drain into the DRCD drainage system, without concentration or acceleration of the present natural runoff;
- Baseline present storm flows from the Northeast Quadrant shall be set at 23.1 cubic feet per second (cfs) for a 5-year storm, 27.2 cfs for a 10-year storm, and 37.2 cfs for a 100-year storm measured at the 30-inch corrugated metal pipe (CMP) in the railroad embankment as set forth in a letter from West Yost & Associates to the City dated June 16, 2004; and
- Development projects in the Northeast Quadrant Specific Plan area that generate flows exceeding the baseline will mitigate for increases in runoff volume, and may be required to pay, through development fees, .... for downstream improvements needed to convey the baseline storm flows from the Northeast Quadrant to Haas Slough without increasing downstream flooding.

#### **4.6.4 Consistency with Applicable Plans and Policies**

The NQSP requires that development plans include measures to ensure erosion and sediment control, submission of a master conceptual grading plan, and creation of drainage swales and channels. The Applicant would be required to comply with these requirements as part of the project conditions of approval. With regard to these requirements, the project would be generally consistent with the NQSP.

Water quality requirements include minimization of paved parking areas, use of BMPs, and design of stormwater detention facilities consistent with City design standards. Project parking is consistent with the proposed use of the site and meets City requirements. The Applicant would be required to comply with BMP

requirements as part of the project conditions of approval. With regard to these requirements, the project would be generally consistent with the NQSP.

As discussed in the **Impacts and Mitigation Measures** subsection below, the project drainage plan has not demonstrated that proposed stormwater detention facilities would meet City design standards or be consistent with the JPA mandates. Additional drainage analysis and possible design modifications would be required as part of the project conditions of approval and as mitigation for impacts identified in this EIR. Compliance with these requirements would be needed to make the project consistent with the NQSP.

## 4.6.5 Impacts and Mitigation Measures

### 4.6.5.1 Significance Criteria

According to the *CEQA Guidelines*, the proposed project would have a significant environmental impact if it would:

- Violate any water quality standard or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site (i.e., within a watershed);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff (e.g., due to increased impervious surfaces) in a manner which would result in flooding on or off site;
- Create or contribute runoff water which would exceed the capacity of the existing or planned storm water drainage systems due to changes in runoff flow rates or volumes;
- Otherwise degrade water quality;
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- [Cause] inundation by seiche, tsunami, or mudflow.

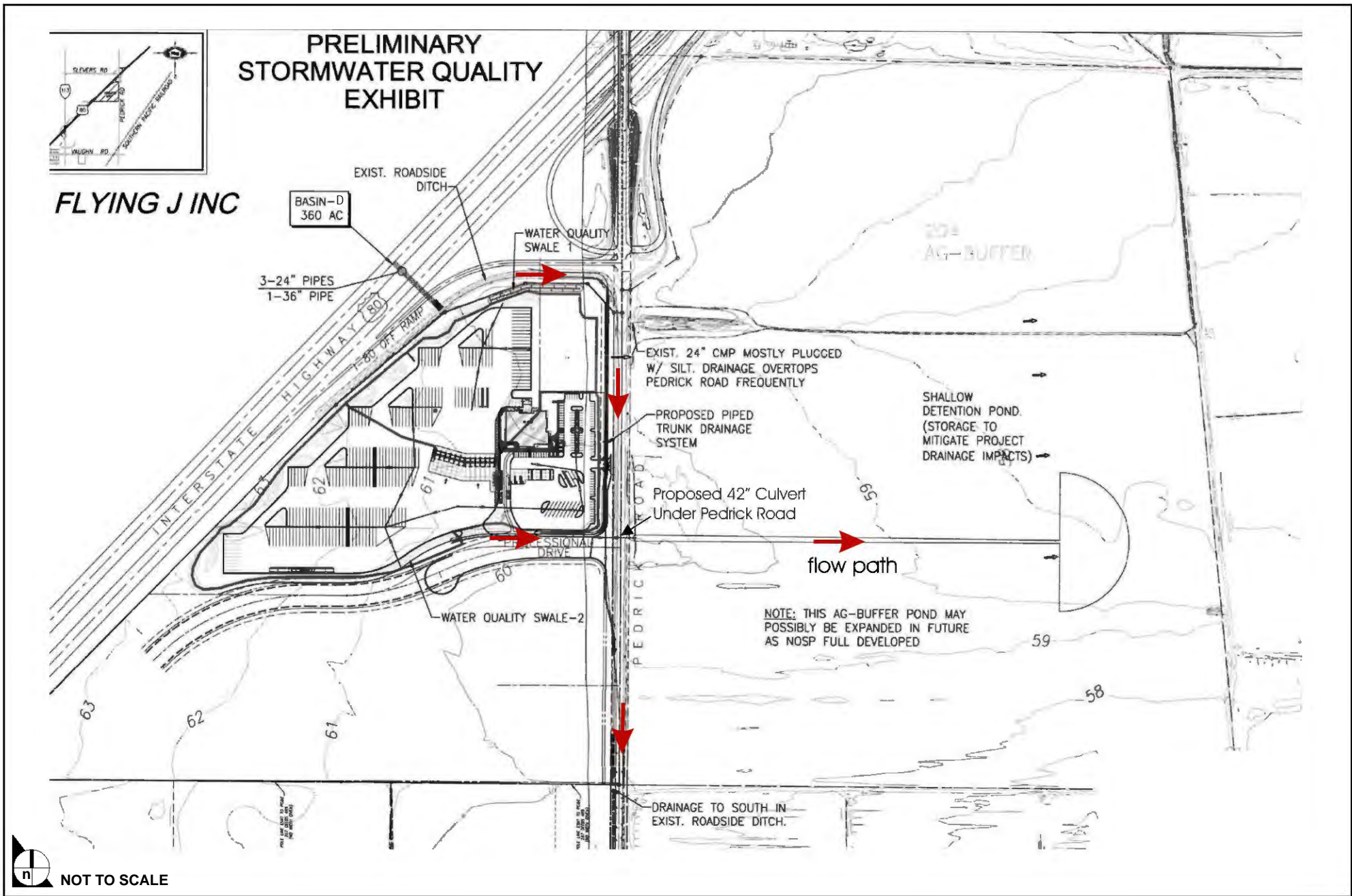
#### 4.6.5.2 Proposed Project Hydrology and Hydraulics

The proposed development includes a 17,683-square-foot Travel Plaza with gas station, convenience store, restaurant, and restroom/shower facilities. Most of the remainder of the site would be used for parking. The Preliminary Grading and Drainage Plan indicates no more than 1 to 2 feet of filling would be needed to create a nearly level pad with slight slopes to storm drains.

The project would convert fallow agricultural land into impervious surface and increase storm water runoff significantly. In addition to this increased site runoff, the development parcel would continue to convey drainage from 360 acres of agricultural lands northwest of I-80 through the four existing culverts underneath I-80. The installation of new drainage infrastructure would cause a shift in the both the amount and the quality of runoff leaving the site.

In order to accommodate the increase in runoff, the Applicant has proposed to eliminate the existing ditch along the west side of Pedrick Road and construct a subterranean drainage system, as shown on **Figure 4.6-2, Project Drainage Plan**. This system would collect runoff from drain inlets constructed across the site and convey it eastward underneath the road through a 40-inch-diameter culvert. Drainage would collect within a detention basin to be constructed in the field bordering the development to the east of Pedrick Road. The proposed shallow detention basin would then gravity drain to the east through a proposed 12-inch pipe into the existing agricultural drainage ditch that flows to the Tremont 3 drainage canal. Detention would allow for gradual release into the downstream drainage system managed by the DRCD.

Prior to release, drainage would flow through a combination of mechanical and non-mechanical water quality treatment systems, including a Continuous Deflective Separation (CDS) or Vortex interceptor to remove heavier solids and vegetated swales to remove dissolved particles and contaminants. The Preliminary Storm Water Management Plan shows a water quality swale located



SOURCE: Questa Engineering Corporation – February 2006

FIGURE 4.6-2

Project Drainage Plan

at the northeast corner of the site to intercept drainage from the culvert underneath I-80 and parking areas along the northern portion of the development, while a water quality swale south of the project area would intercept runoff from the remaining impervious surface area.

According to the Preliminary Drainage Report, the piped storm drain system was modeled to fit into the NQSP drainage system for pipe profiles and inverts. The detention basin (pond) is proposed as mitigation to allow for increased runoff to be detained and gradually released into the downstream drainage in accordance with the long-term drainage plan that is being determined by the JPA. However, the drainage report did not determine future peak flows or the adequacy of drainage infrastructure in accordance with long-term drainage design goals.

#### 4.6.5.3 *Issues Not Discussed Further*

**Placement Within a 100-Year Flood Hazard Area.** The proposed project site is not located within a 100-year flood zone and is not located near a dam or levee. Thus, the project would not expose people or structures to a significant risk of loss, injury, or death involving flooding based on these conditions. No further discussion is necessary. Flooding risks related to other conditions are discussed below.

**Inundation by Seiche, Tsunami, or Mudflow.** Seiches are waves in an enclosed body of water. A review of area maps shows that the project area is not adjacent to any large enclosed bodies of water. In the event of a tsunami, the project site would not be affected, given the site's distance from the Pacific Ocean. Further, the project site is not located near any major slopes and, as such, would not be subject to mudflows. Thus, the project would not expose people or structures to inundation by seiche, tsunami, or mudflow. No further discussion is necessary.

#### 4.6.5.4 *Impacts and Mitigation Measures*

**Impact 4.6-1: Implementation of the project would increase stormwater runoff and could create or contribute runoff water that would exceed the capacity of the existing or planned storm water drainage systems. This would be considered a significant impact.**

The proposed project would create a wide area of impervious surface that would increase runoff to neighboring drainages. Site soils that currently allow for rainwater to infiltrate into the ground, collect and evaporate from the surface, or run off gradually into drainage ditches would be replaced with impervious asphalt concrete and roofs. This could cause as much as 95 percent of rainfall within the developed area to become runoff. Both the volume and the rate of runoff would increase for the developed area. The potential increase in peak discharge as a result of project development is shown in **Table 4.6-2, Potential Increase in Peak Discharge Without Detention**. This includes an analysis of the development area, on-site drainage, and total drainage including off-site drainage from the 360 acre Basin G located north of I-80.

**Table 4.6-2  
Potential Increase in Peak Discharge Without Detention**

Location	Conditions	Area (Acres)	Peak Flow (cfs)	
			10-yr	100-yr
On site	Pre-Development	27	13	21
On site	Post-Development	27	31	46
Total	Pre-Development	387	95	160
Total	Post-Development	387	113	185

Source: City of Dixon Engineering Design Standards, Section 4-Drainage Design (2004); cfs=cubic feet per second. Note that these are design calculations and are approximate only.

This estimate projects that proposed site development would increase peak flows by 19 percent for the 10-year storm and 16 percent for the 100-year storm, assuming no change within Basin G. Morton and Pitalo also modeled piped drainage from the 10-year and 100-year storms and estimated peak flows analytically for two links from the site that would total 54 cfs for the 10-year storm and 93 cfs for the 100-year storm. Preliminary drainage improvements show use of water quality swales along the north and south sides of the proposed development, and use of a shallow detention pond east of the site. These facilities may hold peak runoff and allow for gradual release into the storm drain network, thereby reducing downstream flooding, but the adequacy of these detention and retention facilities has not been specifically analyzed for projected peak flows. Maintenance or conveyance of drainage infrastructure also has not been adequately addressed.



**Mitigation Measure 4.6-1a:** Implementation of on-site detention for increased peak runoff in accordance with the NQSP, City of Dixon, and JPA Requirements.

The Applicant shall complete a design-level analysis of increased peak runoff from the project site per City of Dixon Standards. All proposed infrastructure improvements shall comply with City of Dixon, NQSP, and JPA requirements. Proposed infrastructure shall include proposed detention and water quality treatment features and establish adequate culvert conveyance underneath Pedrick Road, including handling runoff from Basin G. **Figure 4.6-3, Post Project Drainage** shows the drainage patterns for the project site following development of the project.

The program shall include an inspection and maintenance program for drainage infrastructure, with a schedule to remove sediment that could clog the system.

**Mitigation Measure 4.6-1b:** The project applicant shall pay a storm drainage fee pursuant to facilities impact fees for the City of Dixon. The amount of the drainage fee shall be issued by the City of Dixon.

**Impact after Mitigation:** Less than significant.

**Impact 4.6-2: Increased runoff following development would increase the volume and concentration of non-point source pollutants. This would be a considered significant impact.**

Non-point source (NPS) pollutants are washed or discharged from various sources and concentrated into runoff. They commonly include petrochemicals, pesticides, fertilizer, paint, tar, litter, sediment, and debris washed by rainwater from roofs, landscape areas, streets, and parking areas into the drainage network. Development of the proposed project is likely to contribute to higher levels of urban NPS pollutants, such as oil and grease, heavy metals, petroleum hydrocarbons, and litter entering downstream waters. The Tremont 3 Drainage Canal, Hass Slough, and the Sacramento River would be the ultimate recipients of these pollutants.

An increase in NPS pollutants could have adverse effects on wildlife, vegetation, and human health. NPS pollutants could also infiltrate into groundwater and degrade the quality of potential groundwater drinking sources. While NPS

pollutants from the site likely already exist due to road and agricultural runoff, including sediment and trace amounts of pesticides and herbicides, any concentrated development is likely to increase potential pollutants due to greatly increased vehicle use.

Under the NPDES storm water permit, the proposed project is required to provide permanent treatment for site runoff. To meet this requirement, the Applicant has proposed to install a combination of mechanical and non-mechanical treatment systems, such as CDS units and vortex interceptors, as well as vegetated swales, to treat runoff. These treatments are designed to intercept and collect pollutants before the runoff reaches its final destination. In order to meet the storm water detention requirements of the NQSP, the Applicant has also proposed to construct a shallow detention facility in the agricultural buffer area east of the area to be developed. However, the adequacy of storm water treatment and detention has not yet been evaluated in terms of final design and compliance with the regulatory standards discussed above. The Preliminary Drainage Report for the project site did not evaluate the suitability or adequacy of proposed water treatment features.

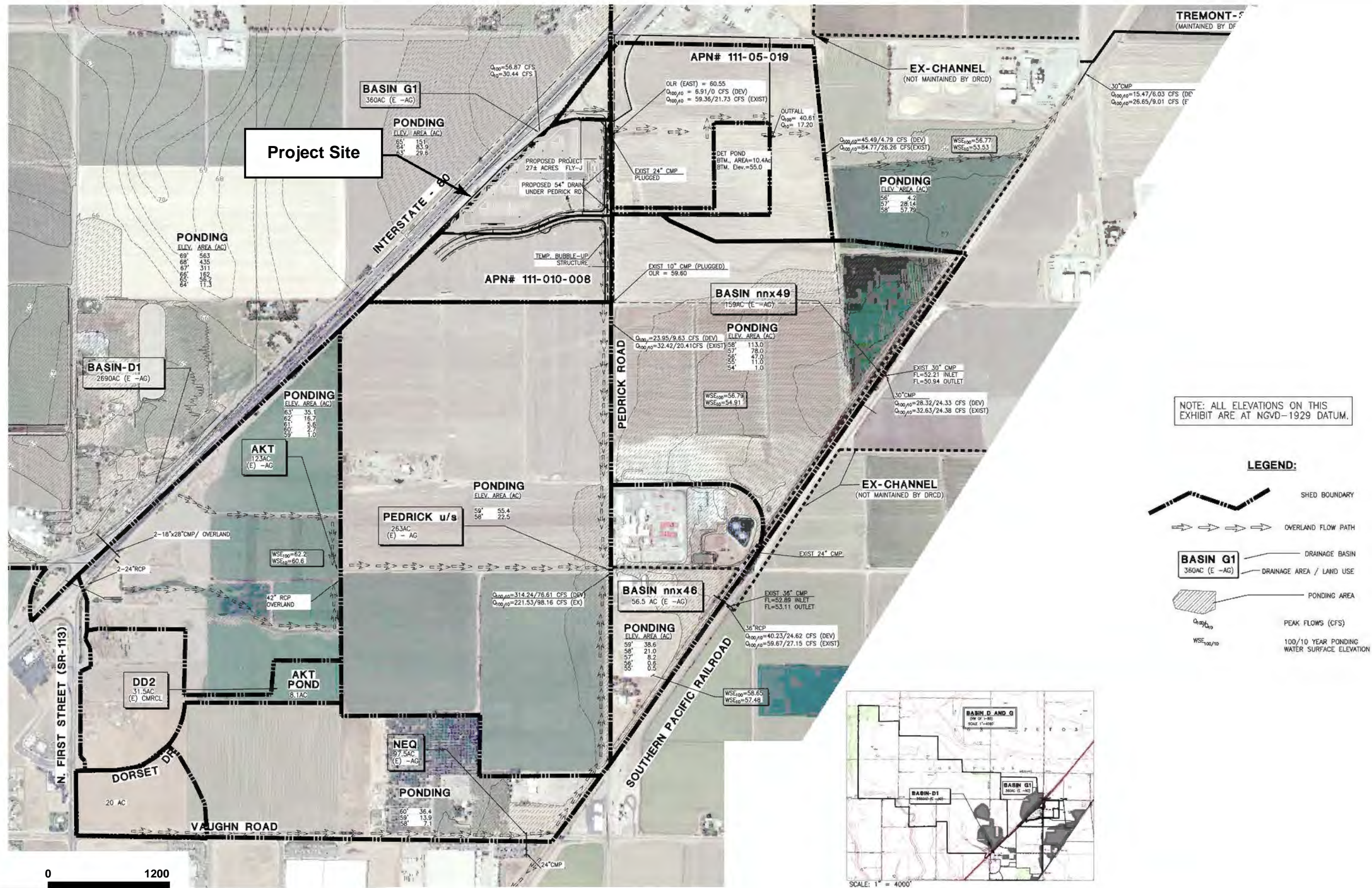
**Mitigation Measure 4.6-2:** Review and approval of onsite storm water treatment measures for conformance with the NQSP and Dixon Stormwater Management Program.

Details of the proposed water quality swales 1 and 2 shall be provided to the City of Dixon for approval in accordance with the NQSP and all applicable stormwater regulations.

Site runoff shall be tested for water quality at discharge points in accordance with NPDES requirements. Each proposed water quality system shall undergo regular water quality analysis that includes calculations of residence times for all non-structural (vegetative) water quality systems and a long-term management and maintenance plan that provides details on performance criteria and maintenance thresholds. The plan shall be approved by the City of Dixon and RWQCB.

**Impact after Mitigation:** Less than significant.





SOURCE: Morton & Pitalo, Inc - August 2006

FIGURE 4.6.3

Post Project Drainage



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**Impact 4.6-3:** Alterations in drainage patterns and grading during the construction period could result in construction-related erosion and turbid runoff. This would be considered a significant impact.

Construction for the proposed project would require mass grading to create individual building pads, parking areas, and on-site roadways. The site would receive an average of 1 to 2 feet of fill. There would also be major excavation and backfilling for the installation of utilities, foundation keyways, and other facilities. This would involve stripping, clearing and grubbing, with removal of vegetation and large-scale movement of earth that could result in increased erosion, rutting, and tracking of dirt onto pavement next to the site that could result in sediment laden or turbid runoff. Muddy or silty waters would reduce water quality for aquatic organisms with high levels of nitrogen, phosphorus, and trace metals. These turbid waters would likely deposit sediment downstream and could clog culverts, reducing drainage capacity. There is also a risk from a spill of construction materials or from a spill of equipment fuel that could pollute runoff.

**Mitigation Measure 4.6-3:** Preparation, implementation, and approval of a project SWPPP in accordance with terms of the General Construction Permit. Pursuant to NPDES requirements and the City of Dixon Stormwater Management Program, the Applicant shall develop a SWPPP to protect water quality during and after construction. The project SWPPP shall include, but is not limited, to the following mitigation measures for the construction period:

- Grading and earthwork shall be prohibited during the wet season (October 15 through April 15), and such work shall be stopped before pending storm events.
- Erosion control/soil stabilization techniques such as straw mulching, erosion control blankets, erosion control matting, and hydro-seeding shall be used in accordance with the regulations outlined in the California Storm Water Best Management Practices Handbooks, California Department of Transportation (Caltrans) Storm Water Quality Handbook, or other approved manuals. Silt fences shall be installed down slope of all graded slopes, and drain inlet protection such as hay bales or straw wattles shall be installed along the flow paths of graded areas receiving concentrated flows.
- Erosion control and sediment filtration measures shall be used during dewatering operations.

- The Applicant shall verify that any imported fill is “clean” and meets minimum RWQCB standards for shallow soils within commercial and residential developments, such as the ESLs.
- The Applicant shall apply non-stormwater BMPs to prevent the discharge of construction-related NPDES pollutants besides other than sediment (e.g., paint, concrete, asphalt coatings, etc.) to downstream waters.
- After construction is completed, all drainage facilities shall be inspected for accumulated sediment and cleared of debris and sediment.
- Long-term mitigation measures to be included in the project SWPPP shall include, but are not limited to, the following:
  - Potential sources of erosion and sediment at the project site shall be identified and industrial activities and significant materials and chemicals that could be used at the proposed project site shall be described. This will include a thorough assessment of existing and potential pollutant sources.
  - The SWPPP shall identify BMPs to be implemented at the project site based on identified industrial activities and potential pollutant sources. Emphasis shall be placed on source-control BMPs, with treatment controls used as needed.
  - The Applicant shall develop a monitoring and implementation plan. Maintenance requirements and frequency shall be carefully described and shall include vector control, clearing of clogged or obstructed inlet or outlet structures, vegetation/landscape maintenance, replacement of media filters, regular sweeping of parking lots and other paved areas, etc. Wastes removed during performance of BMPs may be hazardous; therefore, maintenance costs should be budgeted to include disposal at a proper site.
  - The monitoring and maintenance program shall be conducted at the frequency agreed upon by the RWQCB and/or City of Dixon. Monitoring and maintenance shall be recorded and submitted annually to the SWRCB. The SWPPP shall be adjusted, as necessary, to address any inadequacies of the BMPs.
  - The Applicant shall prepare informational literature and guidance on industrial and commercial BMPs to minimize pollutant contributions from the proposed development. This information shall be distributed to all employees at the project site. At a minimum, the information shall cover: (a) proper disposal of commercial cleaning chemicals; (b) proper use of landscaping chemicals; (c) clean-up and appropriate disposal of hazardous materials and chemicals; and (d) prohibition of any washing and dumping of materials and chemicals into storm drains.

**Impact after Mitigation:** Less than significant.

**Impact 4.6-4:** The proposed project would create a potential for contamination of local groundwater related to on-site fuel storage and pumping operations and other point sources. This would be considered a significant impact.

The proposed project would include installation of four to five underground storage tanks, each with a capacity of approximately 20,000 gallons each to store diesel and gasoline fuels, and would require maintenance and operation of pumps serving hundreds of vehicles every day. As a result, there would be a significant risk of groundwater contamination from a leak or spill of petroleum hydrocarbons. The potential for groundwater contamination from infiltration of contaminated runoff is greatest in areas where the depth to groundwater from unlined detention basins, treatment swales, and unpaved ground is relatively shallow. Potential contamination due to a spill or leak of sewage from the proposed sanitary sewer could also adversely impact groundwater quality. A spill or leak from any of this proposed infrastructure, especially underground infrastructure, could impair the quality of local groundwater sources. This would be considered a significant impact.

The impact and mitigation for reasonably foreseeable upset and accident conditions that could result in the release of fuel into the environment is also discussed in **Section 4.5, Hazards and Hazardous Materials**, of this EIR.

Off-site point source pollutants in the area include petroleum hydrocarbons from leaking aboveground and underground storage tanks. Nearby point sources that were identified from which contamination could spread onto the property proposed for development include the Mistler property and the property at 8665 Pedrick Road. Limited groundwater sampling at these sites suggests that contamination is localized and probably has not spread onto the project site. Based on this information, impacts related to contamination from off-site sources would be less than significant.

**Mitigation Measure 4.6-4a:** Utility design and approval in accordance with The City of Dixon Engineering Design Standards and Construction Specifications. All utilities, including the sanitary sewer and underground tanks, shall be designed, constructed, and backfilled in accordance with City of Dixon Standards and Standards. Conditions to be met include the following:

- Tracer wire or other approved method shall be used to permanently locate lines. All road crossings shall be marked at the surface, as well as at locations where pipes are buried on top of each other. Minimum separation shall be maintained between wastewater and domestic and storm water lines.
- Project design shall include adequate backflow prevention and use of approved corrosion resistant and durable materials only.
- The site operator shall establish a sufficient cleanout and maintenance schedule for all pipelines, as required by the Fire Department and Solano County Environmental Health Division.
- Final pressure testing of all utility lines shall be performed in accordance with applicable standards.

**Mitigation Measure 4.6-4b:** Storage tank design and approval in accordance with Fire Department, Solano County Environmental Health Division, and City of Dixon requirements. This shall included registration and permitting through the hazardous materials business and waste plan programs, as well as all other programs for tank users and owners.

**Impact after Mitigation:** Less than significant.

**Impact 4.6-5:** The proposed project could cause increased erosion or siltation to receiving waters. This would be considered a significant impact.

The project would create drainage pathways in an area where water is currently allowed to pond or flow alongside roadway ditches and eventually through culverts underneath Pedrick Road. Proposed drains would not significantly alter the direction or pattern of runoff, but would concentrate runoff more efficiently due to increased impervious surface area and installation of a system of drain inlets. Concentrated runoff may increase soil erosion in and around the outlets of these facilities and effectively increase sedimentation downstream.

**Mitigation Measure 4.6-5.** Implementation of **Mitigation Measures 4.6-1, 4.6-2,** and **4.6-3** described above would reduce this impact to a less-than-significant level.

**Impact after Mitigation:** Less than significant.



**Impact 4.6-6: The proposed project could increase risks related to flooding. This would be considered a significant impact.**

While the area is shown to have minimal flooding, the drainage report for the site indicates that certain areas, such as Pedrick Road, are occasionally flooded. The depth of these floodwaters has not been specifically calculated. Even local and minor flooding can soon cause vehicles to lose traction causing accidents, and localized flooding may cause damage to structures. Drainage improvements would not preclude the risk from minor flooding.

**Mitigation Measure 4.6-6a:** Review of Preliminary Drainage Design to Ensure Compliance with the NQSP and City of Dixon Engineering Design and Construction Standards, including the following standards:

- Storm drains must be sized adequately to carry flow from the 10-year storm with the hydraulic grade line at least 1 foot below the gutter flow line.
- The 100-year hydraulic grade line may exceed the gutter flow line and flood streets, parking lots and other areas where structures would not be permanently damaged, but must be at least one foot below the building pad elevations and be demonstrated to not cause damage to or flood businesses or residences.
- Open channels shall only be allowed upon written approval of the City Engineer. Where allowed, they shall be designed to convey the 100-year storm, with a minimum freeboard of at least 1 foot if the design water level is below the surrounding ground and 3 feet if the design water level is above the surrounding ground surface. Channels shall be designed to allow a maximum velocity of 3 feet per second unless additional erosion protection is provided. The side slopes shall be no steeper than four horizontal to one vertical. Additional requirements, per City Standards, include maintenance roads, erosion control, and perimeter fencing.
- Detention ponds must be sized for the critical 100-year four-day storm. The minimum freeboard shall be 1 foot if the design water level is below the surrounding ground surface and three feet if the water design level is above the surrounding ground surface. The side slopes shall be no steeper than four horizontal to one vertical, and side slopes within public access areas (e.g., parks or green belts) shall be no steeper than six horizontal to one vertical. The detention basin discharge design and flow rate shall be determined on a case-by-case basis and shall be subject to review and approval by the City Engineer.
- Final drainage design shall be developed and subject to approval based on City recommendations and requirements.

**Mitigation Measure 4.6-6b:** Applicant shall develop an emergency plan, including evacuation or shelter procedures in the event of an emergency. The

plan shall include conditions for site closure when roadways are flooded and shall be approved by the City of Dixon.

**Impact after Mitigation:** Less than significant.

**Impact 4.6-7:** The proposed project could cause a decrease in groundwater recharge. This would be considered a less-than-significant impact.

Development of the project site would result in a net increased impervious surface area of 27 acres, corresponding to approximately 45 percent of the 60-acre parcel. A net increase in impervious surface area would result in a decrease in groundwater recharge. However, the 425,000-acre surface area of the Solano Groundwater Basin is more than 10,000 times the area to be developed with impervious surface. Should increased runoff be allowed to infiltrate into underlying aquifers through on-site detention, as proposed, the proportional loss of recharge would be further reduced. Furthermore, since site soils are clayey, existing recharge is relatively low and may be exceeded by evaporation.

Water would be supplied by the Dixon-Solano Municipal Water Service (DSMWS) or the California Water Service Company through an existing 12-inch water main line located south of the project site at Vaughn Road and would not require pumping from an on-site well. For these reasons the project impact on groundwater recharge is considered less than significant.

**Mitigation Measure 4.6-7:** None required.

#### **4.6.5.5 Cumulative Impacts**

As discussed previously, the proposed project would not result in significant hydrology or water quality impacts. As described in the NQSP EIR, cumulative development within the entire NQSP area, including the proposed project, would result in the alteration of existing topography. This alteration would increase the potential for higher runoff volumes and flow rates, as well as contribute to alteration of top soils in the area. However, these impacts would not be considered significant because the issues associated with increased development in the area (soil erosion and water quality) would be mitigated through grading, drainage and revegetation features outlined in the NWSP.

Given the efficiency of these drainage and water quality control features, no significant cumulative impacts to hydrology or water quality would be expected.

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## 4.7 LAND USE AND PLANNING

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### 4.7.1 Introduction

This section describes the existing and surrounding land uses at the project site. Regulations and policies affecting land use development are described, and the consistency of the proposed project is evaluated in accordance with *California Environmental Quality Act (CEQA) Guidelines* Section 15125(b). Impacts to land use that could occur from the project are evaluated, focusing on physical changes associated with the project and recommended mitigation measures to reduce significant impacts. Existing land use information was obtained from an on-site reconnaissance, a review of applicable plans and policies, and telephone conversations with City planning staff.

### 4.7.2 Existing Conditions

#### 4.7.2.1 *Regional Land Uses*

The project site is part of the City of Dixon's 643-acre Northeast Quadrant Specific Plan (NQSP) area. Dixon is a community that has historically been central to the surrounding agricultural economy but that has in recent years seen development of residential subdivisions as the primary urban land use (City of Dixon 1995).

#### 4.7.2.2 *Surrounding Land Uses*

Highway Interstate 80 (I-80) borders the site along the northern and western edge, while Pedrick Road borders it to the east. Lands to the east and across I-80 to the west of the Project site are designated Agricultural under the Dixon General Plan. To the east, north, and south of the project site are agricultural uses including row, field crops, and orchards. Rural residential uses are located to the south of the project site.

Other land uses in the project area include the Campbell Soup and Supply Company, LLC and a truck repair and parts company, 0.8 mile to the southeast, a produce market and two gas stations approximately 0.5 mile to the north, and a Caltrans maintenance yard and a roof truss manufacturer approximately 0.5 mile to the northeast. The proposed Milk Farm project site, which would include

various highway commercial facilities, is located across I-80 southwest of the project site.

#### 4.7.2.3 *On-Site Land Uses*

The site is presently vacant. It is no longer used for agriculture, and no structures occur on the site.

### 4.7.3 **Regulatory Setting**

#### 4.7.3.1 *Dixon General Plan (1993) and General Plan Land Use Map (revised 1995)*

The pattern of future land development in Dixon is defined and regulated by the 1993 General Plan and the General Plan Land Use Map. The General Plan is designated to accommodate additional population and employment growth within the Dixon Planning Area through the year 2010. The General Plan contains specific goals, policies, and implementation recommendations toward the main objective to “provide residents with a wide range of housing, employment, recreation, shopping and cultural opportunities.” The plan further states that it will be necessary to “provide a healthy economic base by encouraging clean commercial and industrial development compatible with a residential community.”

The following goals, policies, and implementation actions are relevant to the proposed project:<sup>1</sup>

*Economic Development Goals:*

**Goal:** To promote an expanding and increasingly diversified local economy, which will more effectively meet the employment needs of local residents and strengthen the local tax base.

*Economic Development Policies:*

Policy 13: The City shall designate sufficient appropriate commercial land or provide for the conversion of industrial land (when

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<sup>1</sup> Land use goals, policies, and implementing actions related to agriculture are addressed in **Section 4.2, Agriculture**.

appropriate) to meet the needs of the City's and regional area's projected future population.

Policy 15: The City shall ensure that proposed commercial uses are clustered at focal points along major arterials.

To achieve these goals and policies, the General Plan designates areas for future industrial and commercial development in the City, as shown in the General Plan Land Use Map. According to the Land Use Map, the portion of the City that includes the project site carries the Highway Commercial (CH) land use designation. According the General Plan:

- **Highway Commercial (HC)** – Land uses within this designation cater primarily to the traffic passing Dixon on I-80. Examples of establishments which provide services to tourists and travelers include motels, fast food and other restaurants, and gas stations. The areas indicated for CH uses lie in proximity to (and primarily on the east side of) I-80 and its access ramps, where they are easily accessible by car and highly visible from the roadway.

#### **City of Dixon Zoning Ordinance**

The City of Dixon Zoning Ordinance regulates the development of land in the City in accordance with the General Plan. The project site is zoned as a Planned Unit Development (PUD) district. According to the Zoning Ordinance (Section 12.17.01),

*The purpose of planned unit development approval is to allow diversification in the relationship of various buildings, structures and open spaces in planned building groups and the allowable heights of such buildings and structures, while insuring substantial compliance with the regulations and provisions of this Chapter, in order that the intent of the Zoning Ordinance in requiring adequate standards related to the public health, safety and general welfare shall be observed without unduly inhibiting the advantages of modern large-scale planning for residential, commercial or industrial purposes. Provisions for a more desirable living environment than would be possible through the strict application of the requirements of the Zoning Ordinance are encouraged. Developers are encouraged to use more creative approaches in the development of land, to encourage more efficient, aesthetic and desirable use of open areas and open land and to encourage variety in the physical development pattern of the City.*

The Zoning Ordinance specifies that allowable land uses and the design guidelines in a PD district should be set forth by conditions in a PUD Development Plan exclusively applicable to the site. A PUD Development Plan

may consist of a detailed development plan prepared in accordance with the standards contained in Section 12.17 of the Zoning Ordinance. In regards to this project, the land use controls on the site would be regulated by conditions established in the NQSP and site development designs provided in the Flying J development application.

#### **Northeast Quadrant Specific Plan Land Use Element**

The project site is located within the City's NQSP area. The City adopted the NQSP in 1995 to work in conjunction with the General Plan and Zoning Ordinance to establish land use and development protocols within the NQSP area. According to the NQSP, "The Dixon Northeast Quadrant Specific Plan policies add detail to the City of Dixon General Plan policies or establish policies applicable only to the plan area."

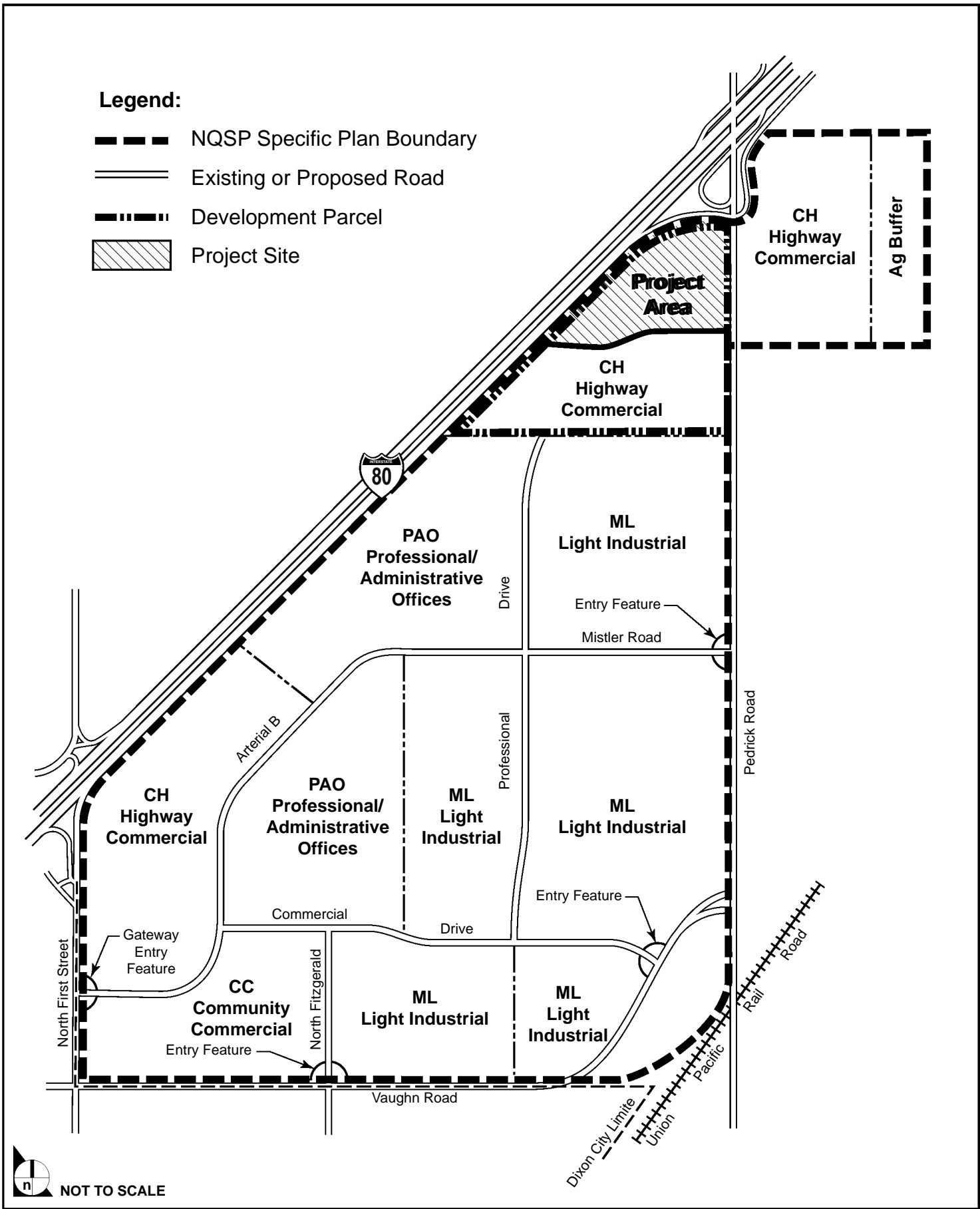
Section 2, Land Use Element, of the NQSP provides the following land use goals that relate to the proposed project:

- Goal 1:** Provide the City of Dixon with a major employment center; and
- Goal 2:** Provide shopping services for City residents, employees in the plan area and travelers on I-80.

The NQSP Land Use Element indicates that the area that includes the development parcel site features "High Visibility," "Good Access," and that it is "Suitable for Highway Commercial." The Land Use Element also provides the land use classifications for the parcels in the plan area. As shown in **Figure 4.7-1, NQSP Land Use Classifications**, the following land use classification applies to the development parcel:

- **Highway Commercial (CH)** – CH uses accommodate commercial goods and services in places conveniently and safely accessible from the freeway, while discouraging those uses that are unrelated to the needs of freeway users. Permitted uses would be consistent with provisions and requirements described in the Highway Commercial (HC) District section of the Dixon Zoning Ordinance (Section 12.10). Permitted uses typically include, but are not limited to, auto sales and services, gasoline service stations, auto and trailer sales, service and supply stores, restaurants, hotels, and motels.





SOURCE: Impact Sciences, Inc. – June 2006

FIGURE 4.7-1

Existing NQSP Land Use Classifications

Also, as shown in **Figure 4.7-1**, land use classifications surrounding the development parcel within other areas of the NQSP include vacant land designated as Light Industrial (ML) and Professional/Administrative/Office (PAO). Immediately to the south is proposed as the future home of the Dixon Downs project. CH lies immediately east of the project site, across Pedrick Road. Northwest of the development parcel, across I-80, the land is unincorporated Solano County and is being used for agricultural production.

#### **Northeast Quadrant Specific Plan Community Form and Design Element**

Section 3 of the NQSP is the Community Form and Design Element, which provides additional standards and guidelines to “ensure consistent quality while supporting design flexibility for all development projects which require design review by the City.” The project’s consistency with the Community Form and Design Elements, and with specific guidelines for the I-80 and Pedrick Road areas, will be considered by the Design Control Board as part of the development application.

#### **4.7.4 Consistency with Applicable Plans and Policies**

The project is consistent with the intent of the General Plan and NQSP to create a highway commercial area that makes use of the proximity to I-80 and provides local employment opportunities. The project is consistent with the goals of the General Plan land use map designation of E and the CH land use classification for the site established in the NQSP.

Consistent with the General Plan Economic Development Goals and Policies, the project does provide some employment opportunities for residents of Dixon, provides a commercial land use not currently found in the City, and clusters this development along a major arterial. However, while this project does provide some shopping for residents and travelers along I-80 and will provide sales tax revenue for the City, it could not be considered a “major employment center” and would not provide substantial shopping or services. Therefore, while the project is somewhat consistent with the goals of the NQSP, the project does not fulfill these goals to the level presented in the NQSP. When this project is taken in combination with other development proposed in the NQSP (e.g., Dixon Downs), the NQSP area may provide substantial employment and services.

While the majority of the project uses would be consistent with the current land use designations, some of the proposed structures and related project signage would require project entitlements and/or variances to accommodate certain aspects of the project. These would include:

- Design review for the proposed project;
- A master sign program;
- Conditional use permit for all freestanding signs, including a multi-tenant freeway-oriented sign;
- A sight line study to justify height of 85-foot freeway-oriented sign;
- Incorporation of architectural design features to enhance signage appearance;
- Conditional use permit to allow restaurants, including drive-in restaurants;
- Conditional use permit for convenience markets over 500 square feet;
- A variance to reduce parking lot shade requirement; and
- A variance to allow multiple freestanding signs and to exceed the allowable sign area of 300 square feet.

While the project would require numerous variances because of conflicts with existing zoning for the plan area, the project would be consistent with the overall intent of the applicable goals and policies set forth in the NQSP and the City's General Plan. Ultimately, it is up to the City's discretion to determine if a proposed project is consistent or inconsistent with any adopted City goals or policies. However, in light of the existing NQSP and the proposed amendments and variances on behalf of the proposed project, it is anticipated that the project would not conflict with any of the City's applicable plans or policies.

## 4.7.5 Impact Analysis

### 4.7.5.1 Significance Thresholds

The *CEQA Guidelines* (Appendix G) identify several areas whereby land use impacts could occur. For the purposes of this EIR, impacts related to land use would be considered significant if the proposed project would:

- Physically divide an established community;

- Conflict with City of Dixon General Plan, Zoning Ordinance, NQSP and/or other applicable plan policies or ordinances that are intended to protect the environment; and/or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

#### 4.7.5.2 *Impacts Not Discussed Further*

**Physically Divide an Established Community.** The project site is not adjacent to urbanized residential development; thus, it would not divide an established community. The project would, therefore, not impact an established community, and this issue is not discussed further.

**Conflict with Applicable Plans and Policies.** Project consistency with applicable planning documents and land use controls was presented previously in **Section 4.7.4, Consistency with Applicable Plans and Policies.** The analysis found the project to be largely consistent with the policies and goals of all applicable plans and policies. The project would, therefore, not conflict with plans protecting the environment, and this issue is not discussed further.

**Conflict with Applicable Habitat or Natural Community Conservation Plan.** The project site is not subject to any habitat conservation plans or natural community conservation plans and would, therefore, not conflict with any such plans. Additional information relating to biological resources on the site can be found in **Section 4.4, Biological Resources.**

#### 4.7.6 **Cumulative Impacts**

Development of the project, in combination with other planned and/or proposed development projects (e.g., Dixon Downs), would result in a change in the intensity of development in the Northeast Quadrant Planning Area. Cumulative development in this area would also result in changes to the ratios of space designated for agricultural and non-agricultural land use. A major portion of the future development identified in the City's General Plan and the NQSP is commercial in nature and generally of low to medium density. This portion of the City is largely rural in nature and, as a result, is one of the few areas within the City that can support the level of commercial development desired by the City and proposed in the NQSP.

Under the General Plan and the NQSP, the City increased the amount of commercial land previously in agricultural use. Because the project would be consistent with the applicable goals and policies set forth in the General Plan and NQSP, the project's contribution to cumulative land use impacts would be less-than-significant.

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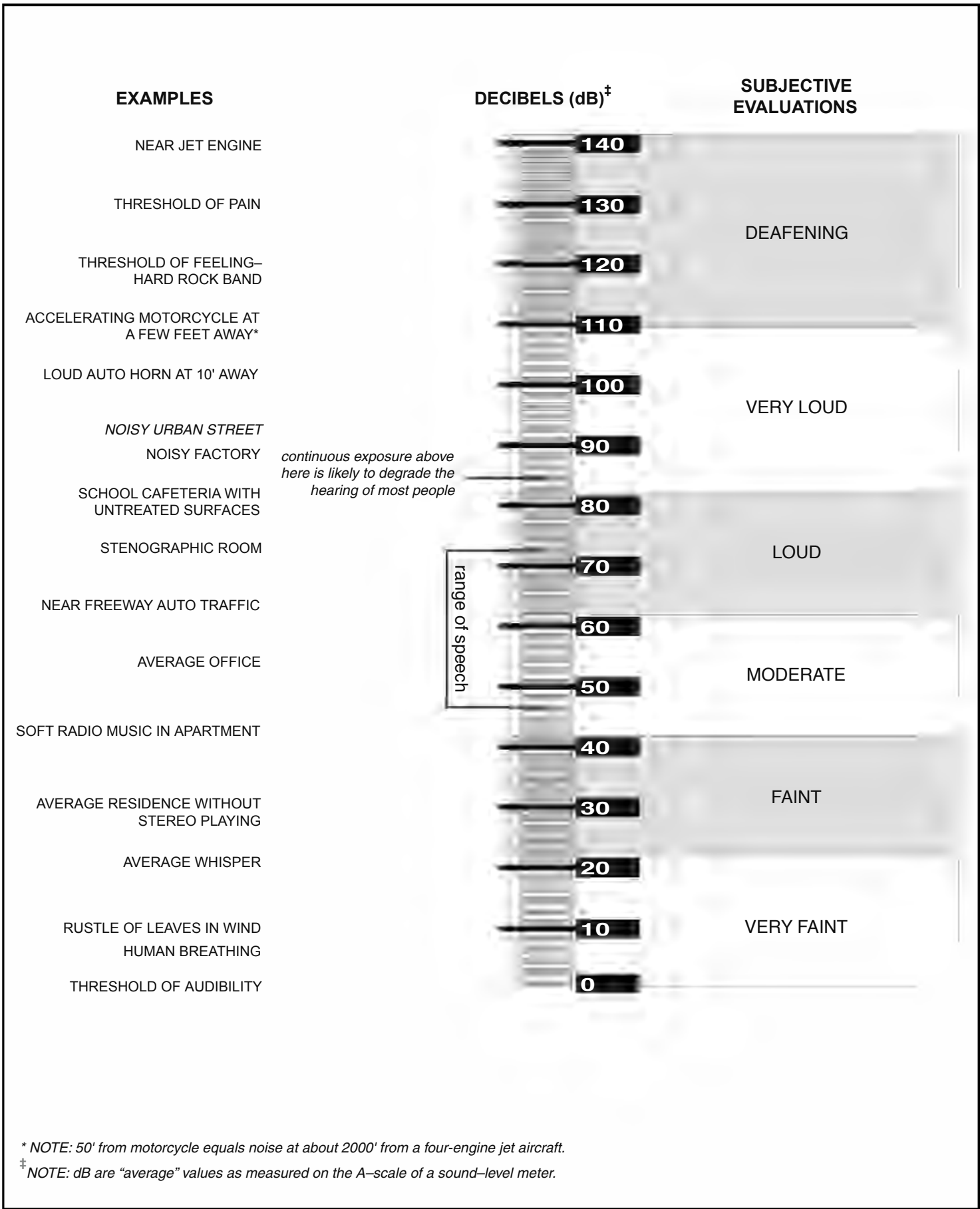
### **4.8.1 Introduction**

This section describes the existing noise conditions on the Flying J Travel Plaza project site and potential noise impacts during construction and occupancy of the project. Regulations and policies affecting the noise environment are described, potential impacts are presented and mitigation measures are recommended for any identified significant impacts. Information presented in this section was obtained from recent noise measurements and traffic counts, the Dixon General Plan (City of Dixon 1993), the Dixon Northeast Quadrant Specific Plan (NQSP), and NQSP EIR (City of Dixon 1995).

#### **4.8.1.1 Characteristics of Noise**

Noise is usually defined as unwanted sound and is an undesirable by-product of society's normal day-to-day activities. Sound becomes unwanted when it interferes with normal activities, causes actual physical harm, or has an adverse effect on health. The definition of noise as unwanted sound implies that it has an adverse effect on people and their environment.

Noise is measured on a logarithmic scale of sound pressure levels that is known as a decibel (dB). Because dBs are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces a sound pressure level of 70.0 dB when it passes an observer, two cars passing simultaneously would not produce 140.0 dB; they would, in fact, combine to produce 73.0 dB. When two sounds of equal sound pressure levels are combined, they will produce a combined sound pressure level that is 3.0 dB greater than the original sound pressure level. In other words, sound energy must be doubled to produce a 3.0 dB increase. If two sound levels differ by 10.0 dB or more, the combined sound pressure level is equal to the higher sound pressure level. In other words, the lower sound level does not increase the higher sound level, but it is "masked" by it. Common noise levels associated with certain activities are shown on **Figure 4.8-1, Typical Noise Levels**. Sound pressure level alone is not a reliable indicator of loudness because the human ear does not respond uniformly to sounds at all frequencies.



\* NOTE: 50' from motorcycle equals noise at about 2000' from a four-engine jet aircraft.

<sup>‡</sup> NOTE: dB are "average" values as measured on the A-scale of a sound-level meter.

FIGURE 4.8-1

Typical Noise Levels



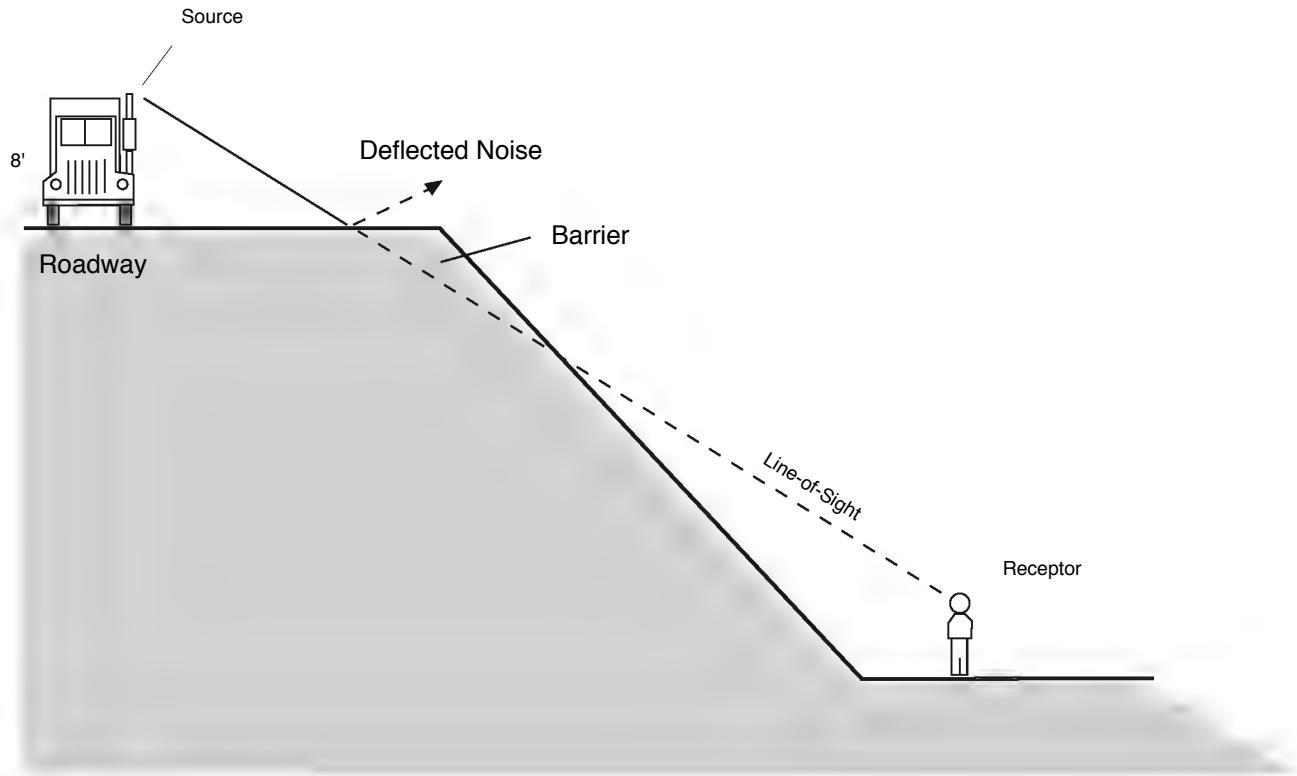
For example, it is less sensitive to low and high frequencies than to medium frequencies that more closely correspond with human speech. In response to the human ear sensitivity, or lack thereof to different frequencies, the A-weighted noise level, referenced in units of dB(A), was developed to better correspond with people's subjective judgment of sound levels. In general, changes in a community noise level of less than 3.0 dB(A) are not typically noticed by the human ear. (U.S. DOT 81) Changes from 3.0 to 5.0 dB(A) may be noticed by some individuals who are extremely sensitive to changes in noise. An increase of greater than 5.0 dB(A) is readily noticeable, while the human ear perceives a 10.0 dB(A) increase in sound level to be a doubling of sound. As discussed above, a doubling of sound energy results in a 3.0 dB(A) increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level.

Noise sources occur in two forms: (1) point sources, such as stationary equipment or individual motor vehicles; and (2) line sources, such as a roadway with a large number of point sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6.0 dB(A) for each doubling of distance from the source to the receptor at acoustically "hard" sites, and it attenuates at a rate of 7.5 dB (A) at acoustically "soft" sites.<sup>1</sup> For example, a 60.0 dB(A) noise level measured at 50 feet from a point source at an acoustically hard site would be 54.0 dB(A) at 100 feet from the source, and it would be 48 dB(A) at 200 feet from the source. Sound generated by a line source typically attenuates (i.e., becomes less) at a rate of 3.0 dB(A) and 4.5 dB(A) per doubling of distance from the source to the receptor for hard and soft sites, respectively. (U.S. DOT 97) Man-made or natural barriers can also attenuate sound levels, as illustrated in **Figure 4.8-2, Noise Attenuation Barriers**.

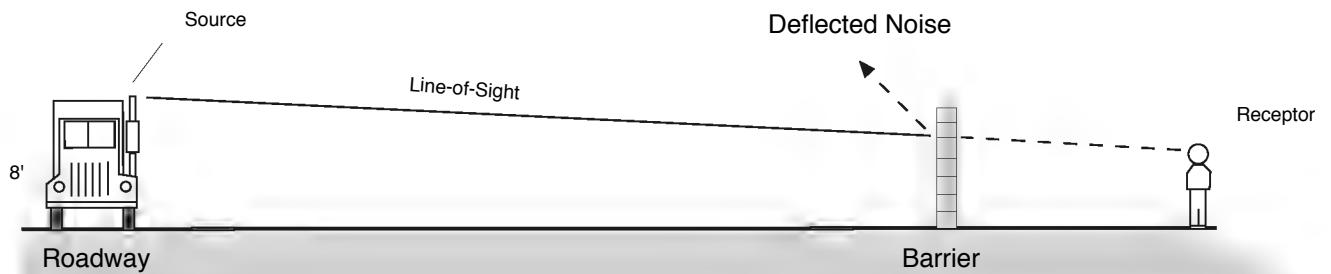
Solid walls and berms may reduce noise levels by 5.0 to 10.0 dB(A). (U.S. DOT 18) The minimum attenuation of exterior to interior noise provided by typical structures in California is provided in **Table 4.8-1, Outside to Inside Noise Attenuation in dB(A)**.

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<sup>1</sup> Federal Highway Administration, U.S. Department of Transportation. 1980. Highway Noise Fundamentals, Springfield, Virginia. September. p. 97. A "hard" or reflective site does not provide any excess ground-effect attenuation and is characteristic of asphalt, concrete, and very hard packed soils. An acoustically "soft" or absorptive site is characteristic of normal earth and most ground with vegetation.



"Barrier Effect" Resulting from Differences in Elevation.



"Barrier Effect" Resulting from Typical Soundwall.

SOURCE: Impact Sciences, Inc. – January 2006

FIGURE 4.8-2

Noise Attenuation Barriers



**Table 4.8-1**  
**Outside to Inside Noise Attenuation in dB(A)**

<b>Building Type</b>	<b>Open Windows</b>	<b>Closed Windows<sup>1</sup></b>
Residences	17.0	25.0
Schools	17.0	25.0
Churches	20.0	30.0
Hospitals/Convalescent	17.0	25.0
Homes	17.0	25.0
Offices	20.0	30.0
Theaters	17.0	25.0

Source: Transportation Research Board, National Research Council, Highway Noise: A Design Guide for Highway Engineers, National Cooperative Highway Research Program Report 117.

<sup>1</sup> As shown, structures with closed windows can attenuate exterior noise by a minimum of 8.0 dB(A).

When assessing community reaction to noise, there is an obvious need for a scale that averages sound pressure levels over time and quantifies the result in terms of a single numerical descriptor. Several scales have been developed that address community noise levels. Those that are applicable to this analysis are the Equivalent Noise Level ( $L_{eq}$ ) and the Community Noise Equivalent Level (CNEL).  $L_{eq}$  is the average A-weighted sound level measured over a given time interval.  $L_{eq}$  can be measured over any time period but is typically measured for 1-minute, 15-minute, 1-hour, or 24-hour periods. CNEL is another average A-weighted sound level measured over a 24-hour period; however, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. A CNEL noise measurement is obtained after adding 5.0 dBs to sound levels occurring during the evening from 7:00 PM to 10:00 PM and 10.0 dBs to sound levels occurring during the nighttime from 10:00 PM to 7:00 AM. The 5.0 and 10.0 dB "penalties" are applied to account for people's increased noise sensitivity during the evening and nighttime hours. The logarithmic effect of adding these penalties to the 1-hour  $L_{eq}$  measurements typically results in a CNEL measurement that is within approximately 3.0 dB(A) of the peak hour  $L_{eq}$  (CA DOT N51).

#### 4.8.1.2 Characteristics of Vibration

Groundborne vibration is a unique form of noise in that its energy is radiated through structures and the earth, creating a rumbling sound that can be heard.

This phenomenon is related to the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. The ground motion caused by vibration is generally measured as vibration dBs (VdB). Groundborne vibration is perceptible to humans at approximately 65 VdB. The background VdB level in residential and educational areas is usually around 50 VdB. Vibration at 100 VdB is generally the threshold where minor damage can occur in fragile buildings.

Perceptible indoor vibration can be caused by things such as the movement of people, the slamming of doors, operation of mechanical or construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. The effect of vibration on structures and individuals varies, depending on soil type, ground strata, and receptor location.

#### **4.8.1.3 Analysis Methodology**

Analysis of the existing and future noise environments presented in this EIR section is based on technical reports, noise monitoring, and noise prediction modeling. Existing stationary noise data are identified based on reviews of available technical reports and noise monitoring. Noise level monitoring was conducted by Impact Sciences, Inc., using a Larson Davis Model 720 Sound Level Meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Future noise levels for stationary activities and equipment were estimated based on available technical reports and literature cited in this EIR section. Noise modeling procedures involved the calculation of existing and future vehicular noise levels along individual roadway segments in the vicinity of the Plan area. This was accomplished using the Federal Highway Administration Highway Noise Prediction Model. This model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site conditions. Average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (“Caltrans”). (Hendriks 1987) Caltrans data show that California automobile noise is 0.8 to 1.0

dB(A) louder than national levels and that medium and heavy truck noise is 0.3 to 3.0 dB(A) quieter than national levels. (Hendriks 1987) Traffic volumes utilized as data inputs to the noise prediction model were calculated based on information provided by Crane Transportation Group, the project traffic engineer, and are consistent with the analysis provided in **Section 4.10, Transportation**, of this EIR.

#### 4.8.2 Existing Conditions

The project is located in a rural/agricultural environment adjacent to the intersection of Interstate 80 (I-80) and Pedrick Road. The site is currently vacant with no significant sound barriers of any kind. There are no roadways running through the site. Noise generated by I-80 and Pedrick Road represents the largest source of noise on the project site. There are no existing or proposed nearby “sensitive receptors” such as single- and multi-family residences, hospitals, churches, libraries, schools, and retirement homes. The closest sensitive receptors to the project site are three single-family residences located over one mile to the south along Vaughn Road. Industrial and big-box commercial land uses exist nearby, including the Campbell Soup and Supply Company, LLC and Dixon Truck and Tractor to the southeast and a Wal-Mart to the southwest. The nearest airport to the project site with carrier operations is Travis Air Force Base, located approximately 16 miles to the southwest. There are several small public use airports nearby, one 6 miles away in Davis, one 9 miles away in Woodland, and one 11 miles away in Vacaville.

The most prominent source of existing groundborne vibration at a project site is roadway truck and bus traffic. Trucks and buses typically generate groundborne vibration levels of approximately 63 to 72 VdB. Loaded trucks can create even higher VdB levels up to 86 VdB at 25 feet. Vibration from truck traffic would diminish rapidly as distance from the road increases and would be 80 VdB at 50 feet and 74 VdB at 100 feet from Pedrick Road. The Union Pacific Railroad line to the east of the project site is only expected to produce noticeable vibration levels 100 feet from the track, which would not affect the project site.

#### 4.8.2.1 Existing Noise Levels

To characterize existing noise levels, on-site short-term ( $L_{eq}$ ) noise measurements were taken at three locations (see **Figure 4.8-3, Location of Noise Measurements**) throughout the perimeter of the project site. They were taken on September 30, 2005, between the hours of 1:00 PM and 2:00 PM, using a Larson Davis Model 720 sound level meter (SLM), fitted with precision microphones and windscreens. The Site 1 measurement was taken approximately 50 feet from I-80, two-thirds of the way up the western boundary of the project site. The Site 2 measurement was taken approximately 15 feet from Pedrick Road, three-quarters of the way up the eastern boundary of the project site.

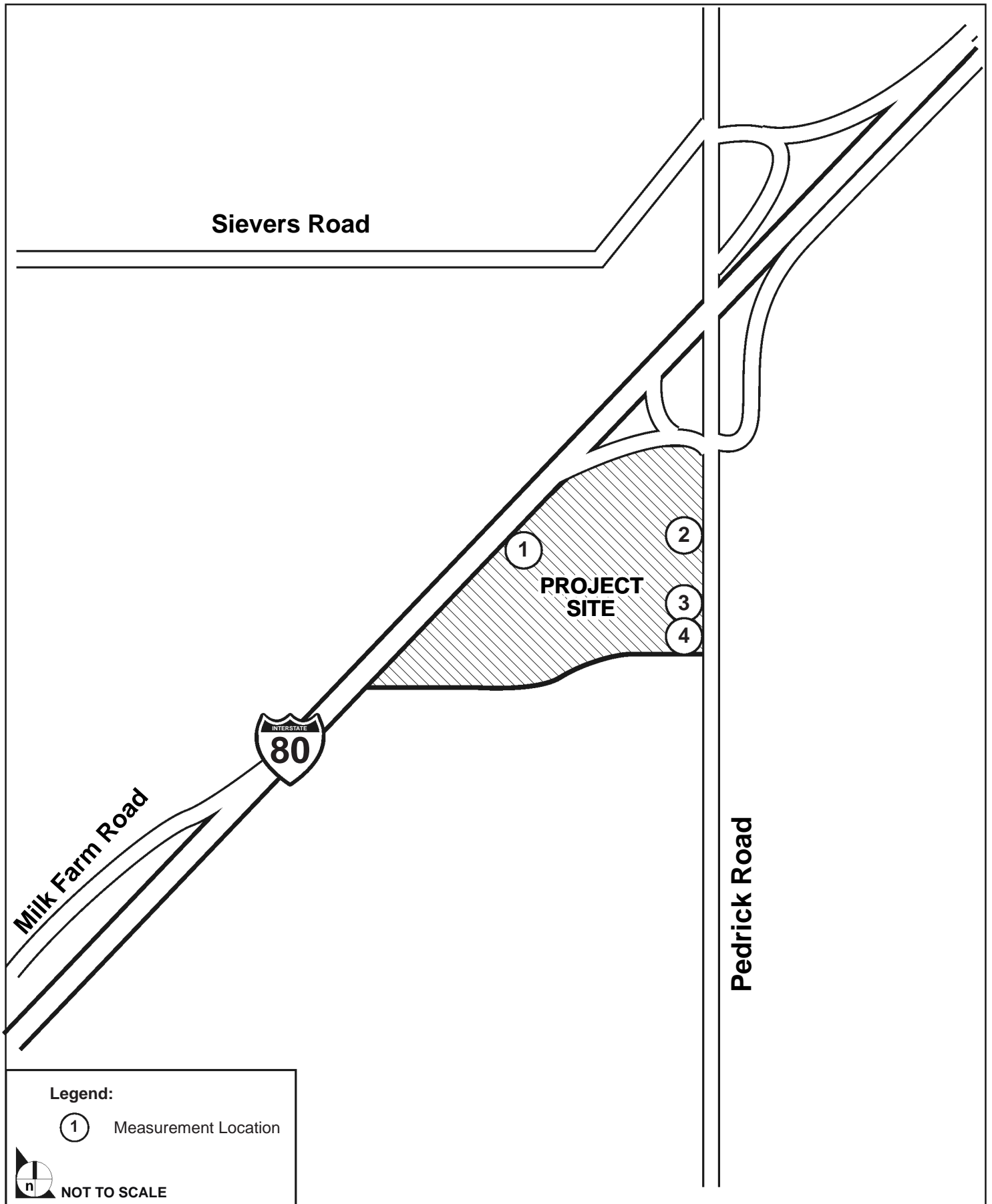
The Site 3 measurement was taken in the eastern portion of the project site near the corner of Pedrick Road and the proposed Professional Drive. A long-term (CNEL) noise measurement was taken (Site 4) in the eastern portion of the project site near the corner of Pedrick Road and the proposed Professional Drive. It was taken for a 24-hour period beginning on September 30, 2005, at 2:00 PM. Observed noise sources on the site included continuous roadway noise, various planes, and a passing train. **Table 4.8-2, Existing Noise Levels (Measured)**, shows the results of both the short-term and long-term noise measurements.

**Table 4.8-2  
Existing Noise Levels (Measured)**

Location	Measurement Type	dB(A), $L_{eq}$
1. Western boundary of project site	Short term	66.9
2. Eastern boundary of project site	Short term	64.0
3. Corner of Pedrick Road and Professional Drive	Short term	65.3
Location	Measurement Type	dB(A), CNEL
4. Corner of Pedrick Road and Professional Drive	Long term	68.9

Source: Impact Sciences, Inc. 2006.

Note: Short-term measurements were taken between the hours of 1:00 PM and 2:00 PM on a Friday. Locations of noise measurements are approximate.



SOURCE: Impact Sciences, Inc. – June 2006

FIGURE 4.8-3

Location of Noise Measurements

### Modeled Roadway Noise Levels

To characterize existing roadway noise levels, modeling of the noise levels generated by traffic on I-80 and Pedrick Road was conducted using the Federal Highway Administration Highway Noise Prediction Model, FHWA-RD-77-108. The modeling assumes a hard, flat surface, with no obstructions of the line-of-sight between the roadway and the observer on the project site. In reality, the elevation change, structures, and vegetation between the project site and the roadways will result in some noise attenuation.

The modeling also assumes speed limits on I-80 are 55 miles per hour (mph) and 25 mph on Pedrick Road at peak hours; that there is a traffic mix of 93 percent autos, 3 percent trucks (2 to 4 axles), and 4 percent heavy trucks (5+ axles). The median on I-80 is assumed to be 46 feet (Crane Engineering). The traffic volumes input into the noise prediction model are consistent with the analysis provided in **Section 4.10, Transportation**. As shown in **Table 4.8-3, Existing Noise Levels (Modeled)**, the modeled roadway noise from I-80 and Pedrick Road is within the “normally acceptable” level, 75 feet from the centerline of each roadway.

**Table 4.8-3  
Existing Noise Levels (Modeled)**

Roadway Segment	CNEL at 50 Feet	CNEL at 75 Feet	Distance to Contour
			70 CNEL
Pedrick Road	69.5	66.0	47'
Interstate 80	84.3	80.7	257'

Source: Impact Sciences, Inc. 2006. FHWA Highway Traffic Noise Prediction Model.

## 4.8.3 Regulatory Considerations

### 4.8.3.1 State Regulations

The State of California, Department of Health Services, Environmental Health Division has published recommended guidelines for mobile source noise and land use compatibility. Each jurisdiction is required to consider these guidelines when developing its general plan noise element and determining the acceptable noise levels within its community. The City of Dixon has considered these



guidelines when preparing the Natural Environment Chapter of the Dixon General Plan.

Title 24 of the California Code of Regulations establishes uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings. It specifically states that interior noise levels attributable to exterior sources shall not exceed 45 dB(A) CNEL in any habitable room. Dwellings are required to be designed so that interior noise levels will meet this standard for at least 10 years from the time of building permit application. Therefore, development of the project must comply with Title 24 separately from the California Environmental Quality Act (CEQA), and indoor noise issues will not be addressed further.

#### 4.8.3.2 Noise and Vibration Standards

In addition to the State regulations and policies, the City of Dixon General Plan provides noise compatibility guidelines for acceptable exterior noise levels. In addition to noise standards established in the General Plan, the City of Dixon Zoning Ordinance provides further noise and vibration standards. Dixon Zoning Ordinance 12.24.03 provides maximum permitted levels of stationary source noise for various zoning districts. The standards are shown in **Table 4.8-4, Noise Performance Standards**. Vibration performance standards are found in Dixon Zoning Ordinance 12.24.08 and state, "No use shall be operated in a manner, which produces vibrations discernible without instruments at any point on the property line of the lot on which the use is located."

**Table 4.8-4  
Noise Performance Standards**

Zoning District	Maximum Noise Level dB(A)
Residential and Medical Districts	55 dB(A)
Multi-Family Residential Districts	60 dB(A)
"C" Districts (Commercial)	70 dB(A)
"M" Districts (Industrial)	75 dB(A)

Source: City of Dixon Zoning Ordinance, page 161. Adopted April 13, 1982, Updated February 25, 1999.

### 4.8.3.3 *Applicable Plans and Policies*

#### **City of Dixon General Plan**

Chapter 3 Natural Environment, Section E of the General Plan, includes policies intended to reduce noise levels and protect sensitive receptors from the harmful effects of noise. The following policies are relevant to the project:

Policy 14: The City shall protect existing noise sources from future noise-sensitive development.

Policy 15: The City shall establish performance standards to limit noise generation.

Policy 16: The City shall establish physical development patterns compatible with the noise environment of Dixon.

Policy 17: The City shall, where feasible, mitigate traffic and other noise to the levels defined as "Acceptable Levels of Noise Exposure." Areas in which noise levels currently exceed, or as a result of future development will exceed these levels of noise exposure, are deemed inappropriate for the development in question.

Policy 18: The City shall develop buffering standards and procedures to protect residents from freeway/highway traffic and industrial noise. Acoustical design to reduce noise levels will be an important consideration in all projects and developments.

#### **Northeast Quadrant Specific Plan**

The NQSP does not include any policies that were not included in the General Plan. However, the NQSP Draft EIR includes four mitigation measures that apply to the project to reduce potential noise impacts from development of the NQSP. These mitigation measures are as follows:

N-A: All contractors shall comply with local, State, and federal noise regulations, including fitting all equipment with mufflers according to the manufacturer's specifications.

- N-B: Construction activities shall not take place between 7:00 PM and 7:00 AM on weekdays and Saturday, and shall not be permitted on Sunday or on federal holidays.
- N-C: Future development shall comply with the City of Dixon. Development criteria in the NQSP shall be required to demonstrate conformance with the City's noise standard or site-specific mitigation measures to ensure that noise thresholds are not exceeded.
- N-D: Commercial and office uses located within the proposed year 2010 70 CNEL noise contour and industrial uses proposed within the 75 CNEL noise contour shall be sited and designed to be sensitive to the adjacent I-80 noise source by incorporating appropriate building materials and design techniques to improve both the interior and exterior noise environment. In addition, the use of landscape barriers shall be explored to reduce noise levels adjacent to I-80.

#### **4.8.4 Consistency with Applicable Plans and Policies**

Development of the project would be consistent with the City of Dixon's policies and ordinances, as the project would not be considered a noise sensitive development. As identified in the General Plan, the City shall not permit noise sensitive development in areas in which noise levels currently exceed, or as a result of future development would exceed levels of noise exposure that would be deemed inappropriate for the development in question. Additionally, the project would comply with noise mitigation measures identified in the NQSP EIR that include specific construction hours, construction equipment noise compliance, and incorporation of measures to reduce noise impacts on the project, such as sound proofing materials.

#### **4.8.5 Impacts and Mitigation Measures**

The applicable thresholds of significance are listed below, followed by analysis of the significance of any potential impacts. Mitigation measures are also identified that would reduce or avoid significant impacts.

#### 4.8.5.1 *Significance Criteria*

In accordance with the *CEQA Guidelines* and the City of Dixon Noise Ordinance and General Plan, noise impacts are considered significant if the project would:

- Expose persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose persons to or generation of excessive groundborne vibration or groundborne noise levels;
- Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Create noise levels in excess of the City of Dixon's 70 dB(A) CNEL exterior noise standard.

#### 4.8.5.2 *Issues Not Discussed Further*

**Airport Noise.** Based on a review of the Dixon General Plan, the NQSP EIR, maps of the local area, and knowledge of the local area, the project site is not in the vicinity of a private airstrip. The northernmost portion of the project site is located approximately 4 miles from the University Airport in the Davis area and is outside of significant aircraft noise contours identified in the General Plan. Therefore, no impact would occur, and no further discussion of this topic is required.

#### 4.8.5.3 *Impacts and Mitigation Measures*

**Impact 4.8-1: Project construction activities could generate a temporary increase in groundborne vibration. This would be considered a less-than-significant impact.**

Use of the construction equipment could result in temporary groundborne vibration. Although there are no standards for vibration levels, impacts are generally discussed in terms of damage to structures. Ground vibrations from construction activities very rarely reach the levels that can damage structures, but they can achieve the audible and perceptible ranges in buildings very close to the site. **Table 4.8-5, Vibration Source Levels for Construction Equipment,**

identifies vibration velocity levels at various distances for some of the equipment that could operate during site construction activities.

**Table 4.8-5  
Vibration Source Levels for Construction Equipment**

Construction Equipment	Approximate VdB				
	25 Feet	50 Feet	60 Feet	75 Feet	100 Feet
Large Bulldozer	87	81	79	77	75
Loaded Trucks	86	80	78	76	74
Small Bulldozer	58	52	50	48	46

Source: Federal Railroad Administration, 1998; and Impact Sciences, 2005.

Since the nearest structure to the project site is several hundred feet away, groundborne vibration produced by temporary construction activities would not be expected to impact structures. The closest sensitive receptor is 0.5 mile from the project site and, thus, would not be impacted by noise associated with the production of groundborne vibration from construction activities. The most prominent source of existing groundborne vibration at the project site is roadway truck traffic. Trucks typically generate groundborne vibration levels of approximately 63 to 72 VdB. Loaded trucks can create even higher VdB levels up to 86 VdB at 25 feet. Vibration from truck traffic would diminish rapidly as distance from the road increases and would be 80 VdB at 50 feet and 74 VdB at 100 feet from the roadway. The main Travel Plaza structure would be constructed approximately 240 feet from Pedrick Road and approximately 780 feet from I-80. At this distance, groundborne vibration would be imperceptible and would not damage any the proposed structures. Therefore, impacts from groundborne vibration would be less-than-significant.

**Mitigation Measure 4.8-1:** None required.

**Impact 4.8-2:** Project construction activities could generate a temporary increase in ambient noise levels above levels existing without the project. This would be considered a less-than-significant impact.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise-generating characteristics of specific types of construction

equipment. As shown in **Table 4.8-6, Typical Noise Levels Generated by Construction Equipment**, noise levels generated by heavy equipment can range from approximately 68 dB(A) to noise levels in excess of 100 dB(A) when measured at 50 feet. These noise levels would attenuate from the construction site at a rate of approximately 6 dB(A) per doubling of distance.

Surrounding land uses are agricultural, commercial, and light industrial and are not considered sensitive receptors of noise. Therefore, they are not likely to be exposed to noise levels above accepted standards from project construction activities.

Development of the project, including grading and construction, would take approximately seven months. Complete grading of the site would take approximately two months, and construction of the Travel Plaza structure and installation of landscaping would take approximately five months.

**Table 4.8-6  
Typical Noise Levels Generated by Construction Equipment**

Equipment Type	Typical Equipment at 50 feet (dB[A])
Air Compressor	81
Backhoe	85
Concrete Pump	82
Truck Crane	88
Bulldozer	87
Generator	78
Loader	84
Paver	88
Pneumatic Tools	85
Water Pump	76
Power Hand Saw	78
Shovel	82
Trucks	88

*Source: U.S. EPA. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. 1971.*

During the first two months of construction, noise would be created mainly by preparation of the site. Preparing the project site for development would only involve minor grading, as the site is currently vacant and relatively flat. The soil on site is balanced, and no importing or exporting of soil is anticipated.

However, if it is needed, soil will be imported from or exported to the remainder of the site, south of professional drive. Equipment used in the grading process would include graders, a bulldozer, a backhoe, a compactor, a loader, a dump truck, an earthmover, and water trucks.

Noise levels produced by heavy-duty trucks, such as haul trucks, can reach up to 85 dB(A). However, noise levels of this magnitude created by the haul trucks would only be experienced on a short-term basis. Because there are no sensitive noise receptors near the project site, construction noise impacts related to haul trucks would be less than significant.

During the latter portion of construction (last five months), noise would be created mainly by work on the proposed Travel Plaza structure and by trucks delivering materials to the site. Noise during this latter construction period would not occur on an ongoing basis but would occur intermittently as the structure is built. Equipment used in the construction process would include a forklift, a three-man lift, a crane, cement trucks, a grader, roller compactors, a paver, a backhoe, dump trucks, and water trucks.

With this mix of equipment, the unattenuated noise levels in the project area during this construction period could exceed 90 dB(A) at times. However, noise levels of this magnitude would be expected to occur on an occasional basis and would be short term in nature. Therefore, project construction would not result in a significant, short-term noise impact.

**Mitigation Measure 4.8-2:** None required.

**Impact 4.8-3: Development of the project would generate an increase in ambient noise levels above the existing levels without the project. This would be a less-than-significant impact.**

According to the NQSP, the project site is in an area where existing noise levels measure from 60 to 80 dB(A) day/night average noise level (DNL). Implementation of the Flying J Travel Plaza would not introduce a substantial number of diesel trucks into the project area, as trucks already traveling the I-80 route would use the Travel Plaza.

**Mitigation Measure 4.8-3:** None required.

#### 4.8.6 Cumulative Impacts and Mitigation

The cumulative context for noise would be different for stationary, mobile, and construction noise. Stationary and construction noise created by the proposed project would be confined to project area and mobile sources would consist mainly of vehicles coming from the freeway. Given this, the cumulative context would be noise from existing and future noise sources in the vicinity of the project and future traffic volumes that would operate on the local roadways in the area.

Construction noise and vibration are temporary noise sources that are limited to the area in which the construction occurs. The Dixon Downs project, south of the project site, is planned for development in the future. Given this, there is a possibility that the Flying J project would be constructed simultaneously with the Dixon Downs project. However, construction activity with the Flying J project would occur farther away from the nearest sensitive receptor on Vaughn Road than the construction with the Dixon Downs project. Construction noise and vibration from the construction of the Flying J project would be imperceptible to sensitive receptors on Vaughn Road if the two projects were to undergo construction at the same time. Therefore, no cumulative analysis for construction noise is needed.

In order for the project's contribution to noise impacts during operation to be cumulatively considerable, the project would need to create a noise level increase of 3 dB(A)<sup>2</sup> or greater in the project area. If that contribution, when combined with the noise impacts of other land uses in the area, exceeds the City of Dixon's projected 2025 noise contours in the project area, a significant cumulative impact would result.

The volume of trucks using the on- and offramps at the Pedrick Road/I-80 interchange would increase by 1,090 per day due to the implementation of the project. The volume of trucks using Pedrick Road would also increase by 1,120 per day. As shown in **Table 4.8-7, Predicted Cumulative Roadway Noise Levels**, implementation of the project would cause an increase in the noise levels by approximately **3.1 dB(A)** at a distance of 50 feet from the edge of Pedrick Road. This contribution to the cumulative noise impacts exceeds the incremental

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<sup>2</sup> Three dB(A) is generally held to be level at which noise becomes audible to the human ear.



criteria of 3.0 dB(A), placing it in the cumulatively considerable category. Additionally, this contribution, when combined with the noise impacts of other land uses in the area, would exceed the 70 dB(A) commercial use noise contour and the 75 dB(A) industrial use noise contour projected for the year 2025.

**Table 4.8-7  
Predicted Cumulative Roadway Noise Levels**

Roadway Segment	CNEL at 50 Feet from Roadway Edge			
	Existing Conditions (2005) w/o Project	Existing Conditions (2005) w/Project	Future Conditions w/o Project (2025)	Future Conditions w/Project (2025)
Pedrick Road	68.4	71.5	80.8	81.0
Interstate 80	78.6	78.6	79.1	79.1

Source: Impact Sciences, Inc. 2006.

Consequently, the proposed project would be a significant contributor to 2025 daily traffic noise levels along Pedrick Road. There are no feasible mitigation measures available to reduce this cumulative impact from traffic noise. Consequently, the contribution to significant noise levels is likely to be a considerably significant cumulative impact.

### 4.9.1 Introduction

This section describes the existing fire and police services that serve the project. Regulations and policies affecting public services are described. Impacts to public services that could occur from development of the project are evaluated by focusing on projected increases in demand. Mitigation measures are provided to reduce any significant impacts. Information presented in this section was collected through consultation with the Dixon Police and Fire Departments, and review of the Northeast Quadrant Specific Plan (NQSP), NQSP EIR, City of Dixon Police Department 2004 Annual Report, 2004 Annual Report on Fire Department Activities, and other relevant documents.

### 4.9.2 Existing Conditions

#### 4.9.2.1 *Police Services*

Police protection services for the City of Dixon are provided by the Dixon Police Department, located at 201 West A Street. Twenty-five sworn officers and six additional personnel staff the department (Mort 2005). There is a minimum of one sergeant and one officer on duty at all times. The police station will be expanded and, upon completion, will accommodate up to 60 employees. Construction has been planned to begin in 2008–2009.

The City of Dixon does not have a target response time or a target officer-to-resident ratio for police services (Mort 2005). The current average response time for emergency service calls in the city is less than six minutes. The current officer-to-resident ratio is 1.47 officers for every 1,000 residents. Officers spend less than half of their time answering calls for service, making arrests, and writing reports. The other half of their time is spent on patrol, traffic control, officer-initiated activities, training, and administration.

The Dixon Police Department operates under the California Mutual Aid Agreement (City of Dixon 2005). If the Dixon Police Department requests assistance with a short-term emergency, various departments from outside the city may respond. These include the California Highway Patrol, the Solano

County Sheriff's Department, the Davis Police Department, and Vacaville Police Department.

Current police services are considered adequate for existing development in the City. According to the NQSP EIR, future development envisioned by the NQSP would require one additional officer per shift under full buildout of the Plan. This would require the hiring of four new officers and the purchase of associated equipment and vehicles (Mort 2005).

#### **4.9.2.2 Fire Protection Services**

The Dixon Fire Department (DFD) provides fire suppression; medical services, including advanced life support, confined space rescue, and vehicle extraction; fire prevention; and public education services to the City of Dixon (Dorris 2005a). The DFD is also responsible for providing fire protection services to the Dixon Fire Protection District (Dorris 2005b), which is comprised of approximately 313 square miles of rural area extending from Winters to Rio Vista in Solano County (City of Dixon 1995).

The DFD has one central station located at 205 Ford Way, which serves both the City and the Dixon Fire Protection District (Dorris 2005b). The existing station is equipped with four fire engines, one ladder truck, one rescue squad, and two water tenders (Dorris 2005a). Personnel currently includes one fire captain, two apparatus engineers, one firefighter, and two firefighters/paramedics. There are also two office staff and 35 to 40 volunteers (Dorris 2006).

The DFD has mutual and automatic aid agreements with fire departments of Vacaville, Davis, West Sacramento, Woodland, UC Davis, and Solano County (Dorris 2005b). Dixon is also a member of the County of Solano Fire and Rescue Operational Area Mutual Aid Agreement.

The target emergency response time for the DFD is to have the first unit on the scene within 5 minutes, 90 percent of the time from the time of dispatch, and to arrive within 8 minutes 100 percent of the time (Dorris 2005a).

Within City limits, response times currently average approximately 4 minutes. Within the entire service area, the fire department averages 10.8 minutes per call

(City of Dixon 2005). The average response time is, therefore, above target levels. The high response time is a result of DFD's large service area.

A new fire station is planned to provide additional service to the southwestern portion of the City (Dorris 2005a). Two of the current personnel and three pieces of apparatus would be relocated from the existing station to the new one. The existing station at 205 Ford Way would provide fire services to the project during construction and operation.

The DFD has indicated that current response times to the project site are approximately four minutes. However, if equipment were responding to a call in the southwestern portion of the City at the time of the call, response times to the project site would increase to eight minutes. The duration of this response time would decrease once the new station is operational.

### 4.9.3 Regulatory Considerations

#### 4.9.3.1 Dixon 1993 General Plan

In the section referred to as Public Services and Facilities, the 1993 Dixon General Plan incorporates goals and policies relating to police and fire services. The following General Plan policies are related to public services:

##### **Police and Fire Services**

Policy 25: The City shall strive to maintain police protection standards to ensure the citizens of Dixon a high level of police protection, based on a reasonable and realistic allocation of available City funds.

Policy 26: The City shall ensure that development within the Dixon Planning Area does not exceed the capability of the Dixon Police Department to provide an adequate level of police protection.

Policy 27: The City shall strive to maintain a police staffing level consistent with City needs.

Policy 28: The City shall ensure that new development incorporates street layouts, which provide adequate emergency access, distinct street names, and visible address markings.

Policy 29: The City shall ensure that development within the Dixon Planning Area does not exceed the capability of the Dixon Fire Department to provide an adequate level of fire protection.

Policy 30: The City shall ensure that the water system will provide flow adequate for fire suppression for the types of structures and uses anticipated prior to approving new development. New commercial and industrial structures will be limited to locations where water supply is adequate for fire suppression. Where water supply in existing, subdivided areas do not meet current standards for fire flow, improvement measures will be pursued.

Policy 32: The City shall require proponents of new development projects to contribute to the maintenance of an adequate level of public safety within the community, generally through the payment of the appropriate impact fees.

**Implementation J:** General Fund revenues may not be adequate to provide the level of police and fire protection desired by the community. Several funding options should be considered for maintaining adequate service standards in existing and newly developed areas, including, but not necessarily limited to, special taxes, benefit assessment districts, impact fees, and utility users taxes.

#### 4.9.3.2 *Northeast Quadrant Specific Plan*

The following policies from the NQSP address police and fire services in the project area.

##### **Police Services**

Policy 1: Police Department review of all development proposals will be required in the project review process. Coordination with the Police Department early in the project design stage is encouraged.

Policy 2: The Applicant shall install private security measures that include the following:

- Private on-site security;
- Use of video and surveillance equipment;
- 24/7 on-site management;
- Installation of an alarm system;
- Security lighting features; and
- Installation of door and window security features.

#### **Fire Protection Services**

Policy 1: All development projects in the plan area should be reviewed by the DFD for the inclusion of fire prevention measures and access requirements. Coordination with DFD early in the project design stage is encouraged.

Policy 2: Each project that includes an industrial use shall prepare detailed calculations to determine fire protection water needs as based on specific facility design requirements.

#### **4.9.4 Consistency with Applicable Plans and Policies**

The proposed project must comply with the DFD and Dixon Police Department requirements to ensure uses involving the storage of automobile fuels comply with state and local regulations. The Dixon Police and Fire Departments would need to approve final plans of the project prior to the issuance of building permits. Additionally, the Applicant would be responsible for paying fair share impact fees to help offset the incremental increase in the costs for expanded police and fire department resources.

#### **4.9.5 Impact Analysis**

The proposed project would require public services during project construction and operation. The applicable thresholds of significance in accordance with Appendix G of the *CEQA Guidelines* are listed below, followed by analysis of the

significance of any potential impacts. Mitigation measures are also identified that would reduce or avoid significant impacts.

#### **4.9.5.1 Significance Thresholds**

Implementation of the project would significantly impact public services if it would:

##### **Police Services**

- Result in degradation of police response times below that level acceptable to the City as based upon the Dixon General Plan; or
- Result in the construction or modification of law enforcement facilities in order to maintain acceptable service ratios, response times, or other performance objectives, the construction or modification of which could result in substantial adverse environmental effects.

##### **Fire Protection Services**

- Result in the degradation of fire response times below that level acceptable to the City, based upon the General Plan; or
- Result in the construction or modification of fire protection facilities in order to maintain acceptable service ratios, response times, or other performance objectives, the construction or modification of which could cause substantial adverse environmental impacts.

#### **4.9.5.2 Project Impacts and Mitigation Measures**

##### **Police Services**

**Impact 4.9-1: Operation of the project would not result in a substantial increase of calls for service by the Dixon Police Department. This would be considered a less-than-significant impact.**

Operation of the project would result in new calls for police service on the project site. The Police Department expects most of these calls for service to be related to noise complaints, disturbance of the peace, loitering, vandalism, vehicle burglaries, auto thefts, and traffic-related issues (Mort 2005). The Police Department does not expect such calls for service to significantly reduce response times.

The increase in calls for service from the project would not require the expansion of law enforcement facilities. As mentioned previously, upon completion of construction, the expanded police station would have the ability to accommodate almost twice as many officers as it currently has. Because capacity of the police station is currently being increased, the need to meet performance objectives would not require modification or construction of new law enforcement facilities.

Additionally, the proposed project would be required to adhere to the following mitigation measures identified in the NQSP EIR:

**Mitigation Measure PS-L:** Prior to final map approval or issuance of a building permit, the Applicant shall request the City to commit to increase funding for necessary police services and required equipment. The City shall also verify that funding can be increased during buildout of the proposed project, through either a combination of impact fees imposed on new development and/or an increase in general fund allocations. In any event, the project proponent shall be responsible for paying its fair share for additional staff and equipment to serve the project site. This shall be established prior to occupancy of any structure occupying the project site.

**Mitigation Measure PS-M:** The project proponent shall be responsible for providing an on-site private security staff to adequately serve the proposed project. This staff would be responsible for securing future structures and providing security in parking lots during and after normal business hours.

Given the above, implementing the project would not result in significant impacts to police services in the area.

**Mitigation Measure 4.9-1:** With implementation of the NQSP mitigation measures, no additional mitigation would be required.

#### **Fire Protection Services**

**Impact 4.9-2: Operation of the project would not result in a substantial increase in calls for service at DFD. This would be considered a less-than-significant impact.**



The project would be subject to state and local fire codes. Development of the Travel Plaza would create a greater risk of fire over existing conditions due to the additional hazardous materials required for operation of the project facility.<sup>1</sup> The increased amount of truck traffic would also potentially increase DFD calls for service related to truck accidents. DFD anticipates the project would create five to 10 additional calls for service per month, with the most common calls for service expected to be for emergency medical service, vehicle accidents, and vehicle fires.

The current average response time for the DFD to the project site is four minutes.<sup>2</sup> This response time would not significantly increase as a result of the project.<sup>3</sup> However, if due to another call, DFD equipment were located in the southwestern area of the City, response times to the project site could reach eight minutes. However, the higher response time would decrease once a new station in the southwestern portion of the City is operational, because fire service vehicles would not be required to travel from the opposite end of the City.

Additionally, the proposed project would be required to adhere to the following mitigation measures identified in the NQSP EIR:

**Mitigation Measure PS-I:** Prior to recordation of a final map or issuance of a grading permit, the project proponent shall either dedicate land for a fire station and provide financial contributions toward equipment and/or personnel or shall participate in establishment of an assessment district in which all property owners in the area would dedicate funds toward establishment of adequate fire protection facilities, or shall make financial contributions to operation of fire protection services.

**Mitigation Measure PS-J:** Prior to the issuance of building permits, the project proponent shall design and submit a plan to the Dixon Fire Department showing all required fire hydrant locations, detailed calculations to determine fire flow based on future structural design requirements, and access to all developed areas in accordance with city standards.

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1 Dorris 2005a.

2 Ibid.

3 Dorris 2006.

**Mitigation Measure PS-K:** Prior to the issuance of building permits, the project proponent shall prepare and submit a plan for emergency response, including details of each proposed facility and the business conducted, an inventory of hazardous materials handled or stored on-site and a training program for employees.

Given the above, implementing the project would not result in significant impacts to police services in the area.

**Mitigation Measure 4.9-2:** With implementation of the NQSP mitigation measures, no additional mitigation would be required.

#### 4.9.6 Cumulative Impacts

This project, combined with approved and proposed future projects in the area, would increase the demand for fire protection and police protection. As of January 2005, the Department of Finance (DOF) estimated that the City of Dixon's population was 17,179. According to the City of Dixon's General Plan, the City will increase to a population of 20,325 by 2010. The City's growth will create a cumulative, increased demand for fire and police protection. As mentioned in the relevant settings sections above, the police and fire departments have already responded to this growth by either planning for or actively implementing expansion of facilities and/or staffing levels.

As discussed previously in this section, the project would create an increase in calls for service at the fire departments but would not significantly reduce response times or call for any modifications of existing facilities. However, additional staff would eventually be necessary to maintain acceptable levels of service and to serve cumulative population growth.<sup>4</sup> As with this project, other development projects would be required to pay impact fees to mitigate impacts on department facilities, equipment, and staffing levels. The payment of these fees would mitigate the project's cumulative impact to fire services and, subsequently, would not result in a cumulatively considerable impact on fire services.

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<sup>4</sup> Dorris 2006.

The Police Department has also indicated that the project is not expected to create a need for additional service. The police station was built with a planned addition to accommodate General Plan buildout, including any new developments in the NQSP, and, as a result, no new law enforcement facilities in addition to those already planned would be necessary to accommodate cumulative growth. As with this project, other development projects would be required to pay impact fees to mitigate impacts on Police Department facilities, equipment, and staffing levels. The payment of these fees would mitigate the project's cumulative impact to police services, and subsequently would not result in a cumulatively considerable impact on police services.

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## 4.10 TRAFFIC AND CIRCULATION

### 4.10.1 INTRODUCTION

This section describes existing conditions, and near-term and long-term traffic impacts associated with the proposed Flying J Truck Plaza Project. Information from the project traffic impact analysis report prepared by Crane Transportation Group (April 2006), provided in **Appendix 4.10**, has been incorporated into this section. The traffic report evaluated the following conditions:

- Existing weekday AM and PM commute peak hours, as well as Saturday PM traffic peak hour (without Project) operating conditions at the Pedrick Road interchange with the I-80 freeway;
- Year 2025 Base Case (without project) weekday PM commute peak hour operating conditions along Pedrick Road at its interchange with the I-80 freeway;
- Project traffic impacts along Pedrick Road at its interchange with the I-80 freeway and at the Professional Drive/ Pedrick Road intersection for existing weekday AM, PM and Saturday PM peak hour conditions;
- Year 2025 Base Case (with project) weekday PM peak hour conditions at the I-80/Pedrick Road interchange;
- Adequacy of site access; and
- Required measures to mitigate any significant project traffic impacts, if measures are available.

The traffic report incorporated relevant information from the following recent EIR traffic studies that address the same roadways and intersections as those expected to be affected by the Flying J project: Dixon Downs Horse Racetrack and Entertainment Center Draft EIR (henceforth referenced in this section as the “Dixon Downs DEIR”), and Milk Farm Project Final EIR.

This section has been written to be consistent with both of these recent studies, one of which has been certified by the City of Dixon (Milk Farm FEIR). Additionally, both of these studies incorporate the planning policies and growth

assumptions set forth in the City of Dixon's Northeast Quadrant Specific Plan (NQSP).

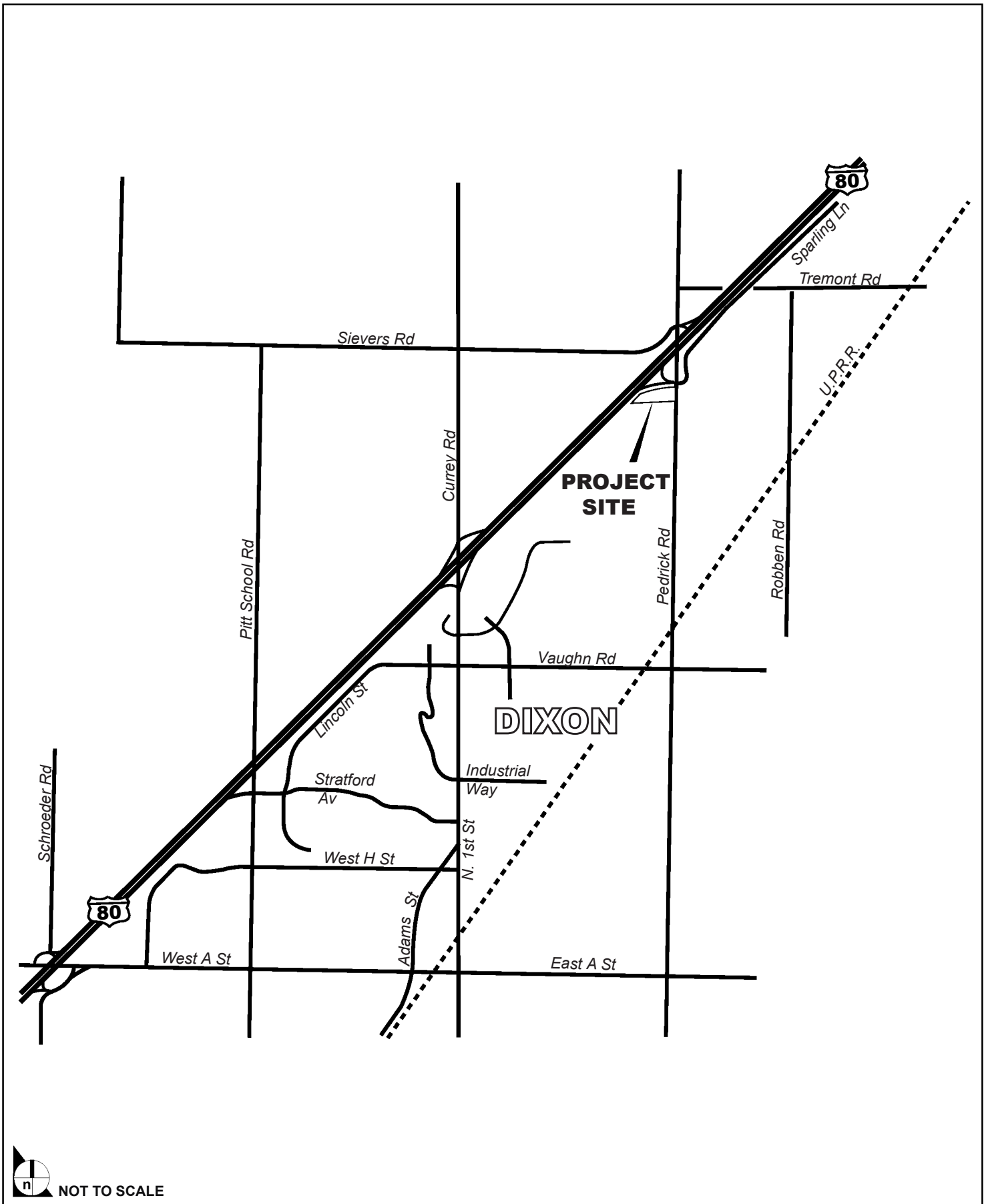
## 4.10.2 EXISTING CONDITIONS

### 4.10.2.1 Roadway System

As illustrated in **Figure 4.10-1, Project Location Map** the project site is located in the southwest quadrant of the Interstate 80 (I-80) freeway/Pedrick Road interchange. The project is bordered on the north and west by the freeway, on the east by Pedrick Road, and on the south by the planned route of Professional Drive, a future City of Dixon arterial roadway (not yet constructed). Project traffic would primarily impact Pedrick Road at its interchange with the I-80 freeway, as well as the future Professional Drive/Pedrick Road intersection. Each roadway is briefly described below and existing road configurations are shown in **Figure 4.10-2, Existing Lane Geometrics**.

**Interstate 80 (I-80)** is a six- to eight-lane freeway that extends in a generally east-west direction through Solano and Yolo Counties. In the Dixon area, I-80 has interchanges (listed in order east to west) at Kidwell Road, Pedrick Road, North First Street (State Route 113)/Currey Road, Pitt School Road, West A Street and Midway Road. The freeway has six lanes (three lanes in each direction) through the Dixon area, widening to eight lanes about ½-mile west of the Kidwell Road interchange. I-80 has a posted speed limit of 65 miles per hour (mph) through the Dixon area.

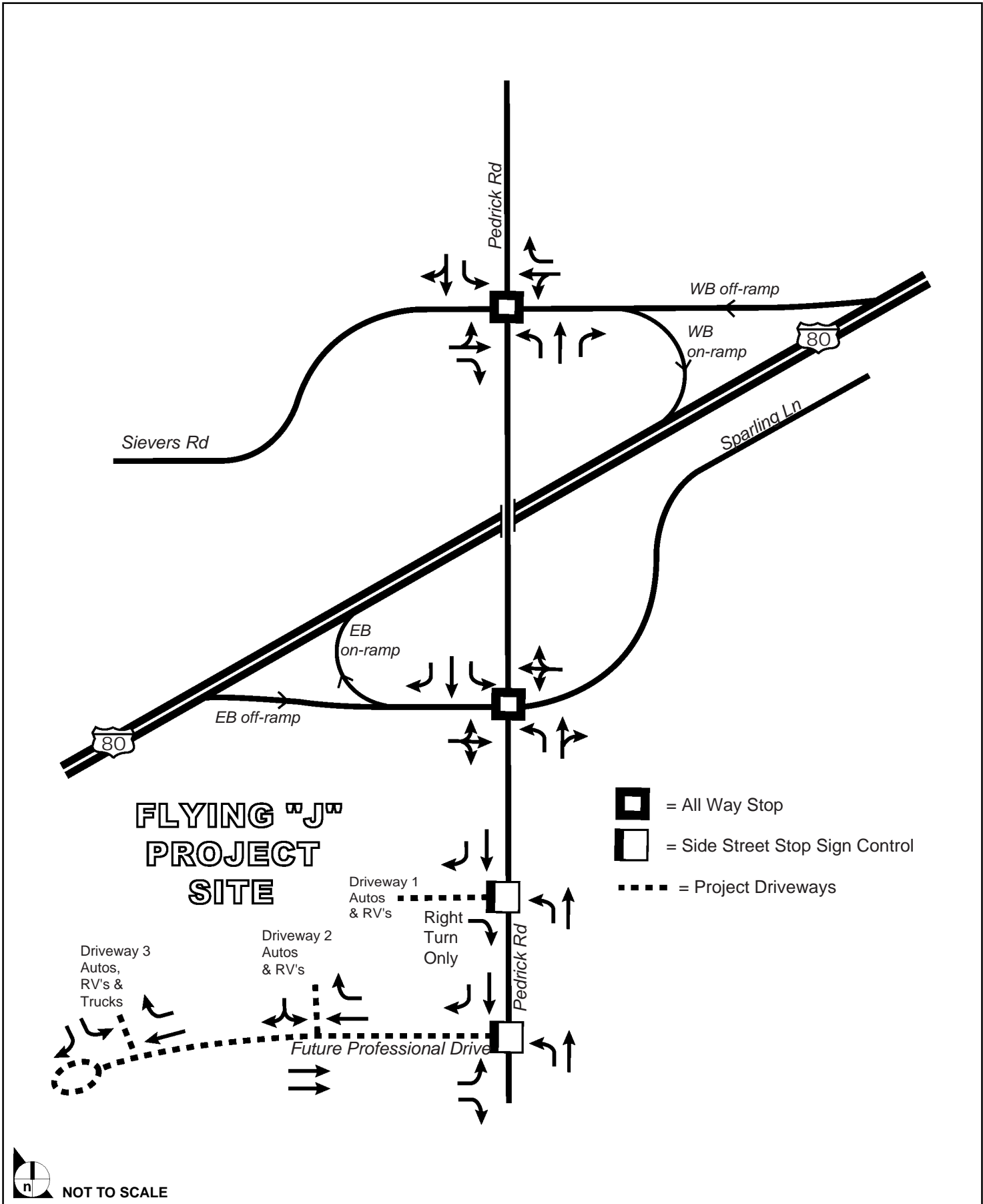
**Pedrick Road** is a two-lane, rural, minor arterial street that extends south from Yolo County (north of the I-80 freeway), past the eastern boundary of the project site, through intersections with Vaughn Road and East A Street in the City of Dixon, terminating at Main Prairie Road several miles south of Dixon. Pedrick Road provides access to numerous agricultural operations, including the Campbell's canning factory, located about ¼ -mile south of the project site. Pedrick Road has 12- to 13-foot wide travel lanes (one lane each direction, separated by painted, double yellow stripes with reflectors), and narrow or no shoulders. It has a posted speed limit of 55 mph in both directions. There is a two-lane overcrossing with loop on-ramps and slip (diagonal) off-ramps connecting to I-80 at the Pedrick Road/I-80 interchange.



SOURCE: Crane Transportation Group – April 2006

FIGURE 4.10-1

Project Location Map



SOURCE: Crane Transportation Group – August 2006

FIGURE 4.10-2

Existing Lane Geometrics

The I-80 Westbound Ramps/Pedrick Road intersection, located north of the freeway, has a fourth approach section at Sievers Road, while the I-80 Eastbound Ramps/Pedrick Road intersection, located south of the freeway, has a fourth approach leg at Sparling Lane. Both I-80 ramps intersections are all-way stop sign controlled. There are separate left turn lanes on the Pedrick Road intersection approaches, and there are separate right turn lanes on both off-ramp intersection approaches, as well as on the Sievers Road and Sparling Lane intersection approaches. Pedrick Road has a gated crossing of the Union Pacific Railroad tracks just north of its intersection with Vaughn Road. The pavement condition in the vicinity of the I-80 freeway interchange shows cracking and raveling, which is typical of roadways that support high volumes of large trucks on a daily and hourly basis.

**Sievers Road** is a two-lane roadway that extends west from Pedrick Road, past Pitt School Road and beyond. It serves agricultural land uses north of Dixon.

**Sparling Lane** is a two-lane frontage road paralleling the I-80 freeway. It extends northeast from Pedrick Road and terminates just northeast of the Kidwell Road interchange. The roadway serves agricultural and industrial land uses fronting the freeway northeast of Dixon.

**Professional Drive** (not yet built) is shown in the City of Dixon's Northeast Quadrant Specific Plan as a four-lane arterial roadway extending west from Pedrick Road and curving south to intersect Vaughn Road in the City of Dixon. In the Dixon Downs EIR this roadway is shown as Dixon Downs parkway, a four-lane arterial extending west from Pedrick Road and curving south to intersect Vaughn Road. Dorset Drive would form a four-way intersection with Dixon Downs Parkway at the main access to Dixon Downs.

#### 4.10.2.2 Traffic Operational Standards and Methodology

The City of Dixon considers LOS C to be the poorest acceptable operation at unsignalized and signalized City intersections. The City of Dixon's Engineering Design Standards for Traffic Impact Analysis supports the LOS threshold defined in the Caltrans Transportation Concept Report (TCR) for freeways, however, there is no current TCR for the I-80 freeway in Solano County. As described in the Dixon Downs DEIR, Caltrans staff was contacted to identify an



appropriate LOS standard for the I-80 freeway in the Dixon vicinity, and LOS D was selected as the operating standard for the segment of I-80 in Solano County because it is bracketed by STA's objective of achieving LOS E or better on roadways of countywide significance and the Caltrans' objective of maintaining a target LOS at the transition between C and D when such a target can be achieved (as described in the Guide for the Preparation of Traffic Impact Studies, Caltrans 2002).

The standard of significance selected to identify impacts on I-80 (i.e., a 2.5 percent or more increase in traffic for facilities operating at LOS D or E) is somewhat similar to the five-second delay standard used for intersections (i.e., a five-second increase in delay drops the LOS by about one-quarter of a grade). At the same time, this standard also considers the substantial effects a small increase in traffic can cause on a roadway already at capacity (Dixon Downs DEIR 2005).

#### ***Signalized Intersections***

Intersections, rather than roadway segments between intersections, are almost always the capacity controlling locations for any circulation system. Signalized intersection operation is evaluated based upon two different scales. The first scale employs a grading system called Level of Service (LOS) which ranges from Level A, indicating uncongested flow and minimum delay to drivers, down to Level F, indicating significant congestion and delay on most or all intersection approaches. The Level of Service scale is also associated with a control delay tabulation (year 2000 Transportation Research Board (TRB) Highway Capacity Manual (HCM) operations method) at each intersection. The control delay designation allows a more detailed examination of the impacts of a particular project. Greater detail regarding the LOS/control delay relationship is provided in **Appendix 4.10**.

#### ***Unsignalized Intersections***

Unsignalized intersection operation is also typically evaluated using the LOS A through F scale. LOS ratings for all-way stop intersections are determined using a methodology outlined in the year 2000 TRB Highway Capacity Manual. Under this methodology, all-way stop intersections receive one LOS designation reflecting operation of the entire intersection. Average control delay values are also calculated. Intersections with side streets only stop sign controlled

(two-way stop control) are also evaluated using the LOS and average control delay scales using a methodology outlined in the year 2000 TRB Highway Capacity Manual. However, unlike signalized or all-way stop analysis where the LOS and control delay designations only pertain to the entire intersection, in side street stop sign control analysis LOS and delay designations are computed for only the stop sign controlled approaches or individual turn and through movements. Appendix 4.10 provides greater detail about unsignalized analysis methodologies.

### ***Intersection Signalization Needs (Warrant Evaluation)***

Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times they are needed to offer side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. They do not, however, increase the capacity of an intersection (i.e., increase the overall intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

There are 8 possible tests for determining whether a traffic signal should be considered for installation at an intersection. These tests, called "warrants," consider criteria such as actual traffic volume, pedestrian volume, presence of school children, and accident history. Usually, two or more warrants must be met before a signal is installed. In this report, the test for Peak Hour Volumes (Warrant #3) has been applied. When Warrant 3 is met there is a strong indication that a detailed signal warrant analysis covering all possible warrants is appropriate. These rigorous analyses are described in the 2003 Manual on Uniform Traffic Control Devices by the Federal Highway Administration, while Warrant #3 is presented in the Appendix of this report.

## **4.10.2.3 Existing Freeway Operations**

### ***I-80 Mainline***

The existing weekday PM peak hour two-way volume in the study area consists of approximately 9,000 vehicles traveling along I-80 (source: Milk Farm FEIR,

with volumes adjusted to summer 2005 conditions). As reported in the Dixon Downs DEIR (Table 4.10-2), which employs level of service thresholds established in the Solano Comprehensive Transportation Plan (2002), the 6-lane I-80 freeway section serving the Dixon area can accommodate up to 8,900 vehicles per hour (vph - two-way capacity) and operate at LOS D; over 8,900 vph up to 10,500 (two-way) vph, the freeway operates unacceptably at LOS E. Any number of vehicles beyond this amount would result in the freeway section operating unacceptably at LOS F.

Operation of the I-80 freeway was analyzed using the peak hour traffic volume level of service thresholds established in the Solano Comprehensive Transportation Plan (2002). **Table 4.10-1, I-80 Freeway Operation Weekday PM Peak Hour Conditions**, provides the maximum peak hour traffic volume for each level of service category for freeways by number of lanes (see left column of table). The segment of the freeway between Midway Road to east of Pedrick Road currently operates at an acceptable Level of Service (LOS) D west of Pedrick Road, and an unacceptable LOS E east of Pedrick Road.

**Table 4.10-1  
I-80 Freeway Operation Weekday PM Peak Hour Conditions**

2-Way Capacity (In Vehicles Per Hour [vph]) And LOS Relationship <sup>(1)</sup>	I-80 Freeway Segment	Existing	
		2-Way Volume <sup>(2)</sup>	Level Of Service
≤ 3,000 vph = LOS A	East of Pedrick Rd.	9,350	LOS E
≤ 4,700 vph = LOS B			
≤ 7,000 vph = LOS C	West of Pedrick Rd.	8,670	LOS D
≤ 8,900 vph = LOS D			
≤ 10,500 vph = LOS E			
> 10,500 vph = LOS F			

Source: Crane Transportation Group 2006.

<sup>(1)</sup> Source: Dixon Down's DEIR Table 4.10-2 using level of service thresholds established in the Solano Comprehensive Transportation Plan (2002). The two-way volume shown is the maximum peak hour traffic volume for each level of service category.

<sup>(2)</sup> The two-way volume is derived from the Milk Farm FEIR with minor adjustments due to counts conducted at the I-80/Pedrick Road interchange, September 2005.

#### 4.10.2.4 Existing Intersection Operation

##### *Existing Volumes*

In late September 2005 weekday AM and PM peak period as well as Saturday PM peak period (12:00 PM - 1:00 PM) traffic classification counts were conducted by Crane Transportation Group at the two I-80 freeway interchange/Pedrick Road intersections. Existing peak hour turn movement volumes are presented in **Figures 4.10-3 through 4.10-5** for the weekday AM and PM peak hour conditions, as well as Saturday PM (12:00 PM - 1:00 PM) peak hour condition, respectively.

**Appendix 4.10**, Figures A, B and C provide the total truck volumes for each of the three time periods (Weekday AM, PM and Sat. PM). The volumes shown are slightly higher than those in the Dixon Downs and Milk Farm EIRs. This is due to the following reasons:

- The Dixon Downs and Milk Farm EIR traffic count data base was developed from counts conducted during the winter of 2001-2002, and volumes have likely increased between that time and fall, 2005; and
- Counts for Flying J were conducted in the early fall harvest season when trucking activity was at a peak for agricultural operations in the immediate area, notably, the Campbell Soup canning plant was at peak season operation.

Although counts included in the Dixon Downs and Milk Farm EIRs were factored to account for seasonal activity, the resultant 2005 volumes recorded for the Flying J project were slightly higher at most intersection approaches.

As presented previously, **Figure 4.10-2** provides a schematic presentation of approach lanes and control at the two I-80 freeway/ Pedrick Road interchange intersections. Turns at these locations experience some delay due to the high proportion of slow-moving trucks.

**Existing Intersection Level of Service**

**Weekday AM Peak Hour**

As shown in **Table 4.10-2, Intersection Level of Service**, the all way stop intersections are experiencing acceptable operation during the AM peak hour. The I-80 Westbound Ramps/Sievers Road/Pedrick Road intersection is operating at LOS B and the I-80 Eastbound Ramps/Sparling Lane/Pedrick Road intersection is operating at LOS A.

The truck percentage of existing total intersection approach volumes is shown in **Table 4.10-3, Truck percentage of Existing Total Intersection Approach Volumes**. Truck traffic using the I-80 freeway/Pedrick Road interchange intersections accounts for approximately 18 percent of traffic through these intersections.

**Weekday PM Peak Hour**

As shown in **Table 4.10-2** the all way stop intersections are experiencing acceptable levels of operation during the PM peak hour. Both the I-80 Westbound Ramps/Sievers Road/Pedrick Road intersection and the I-80 Eastbound Ramps/Sparling Lane/Pedrick Road intersection are operating at LOS B.

**Table 4.10-2  
Intersection Level of Service**

Intersection	Existing		
	Weekday		Sat.
	AM	PM	PM
I-80 EB Ramps/Pedrick Rd. (All-Way-Stop)	A-9.6 <sup>(1)</sup>	B-10.2 <sup>(1)</sup>	A-9.3
I-80 WB Ramps/Pedrick Rd. (All-Way-Stop)	B-10.7 <sup>(1)</sup>	B-11.2 <sup>(1)</sup>	B-11.2

Source: Crane Transportation Group 2006.

(1) All-way-stop level of service—average control delay in seconds.

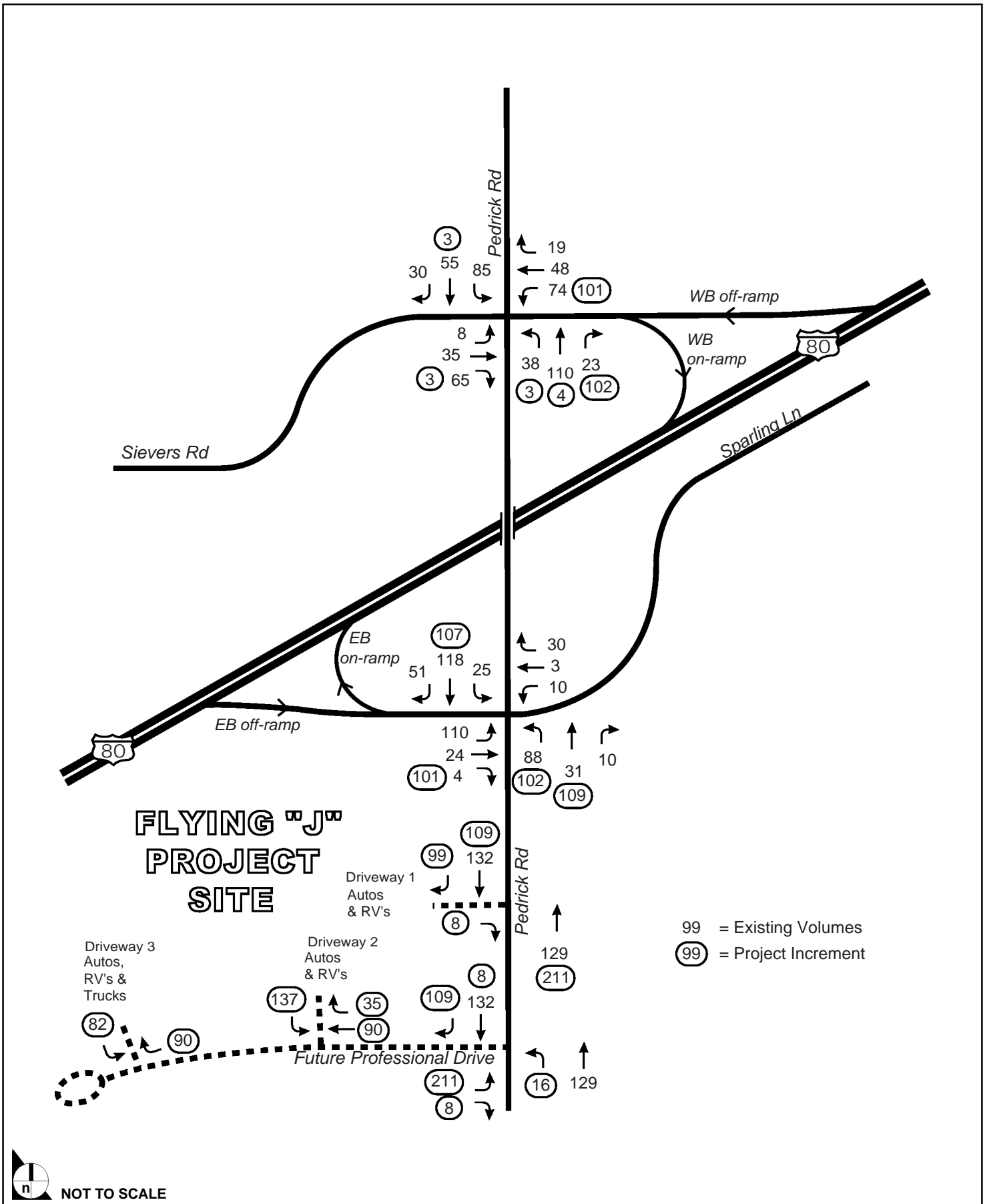
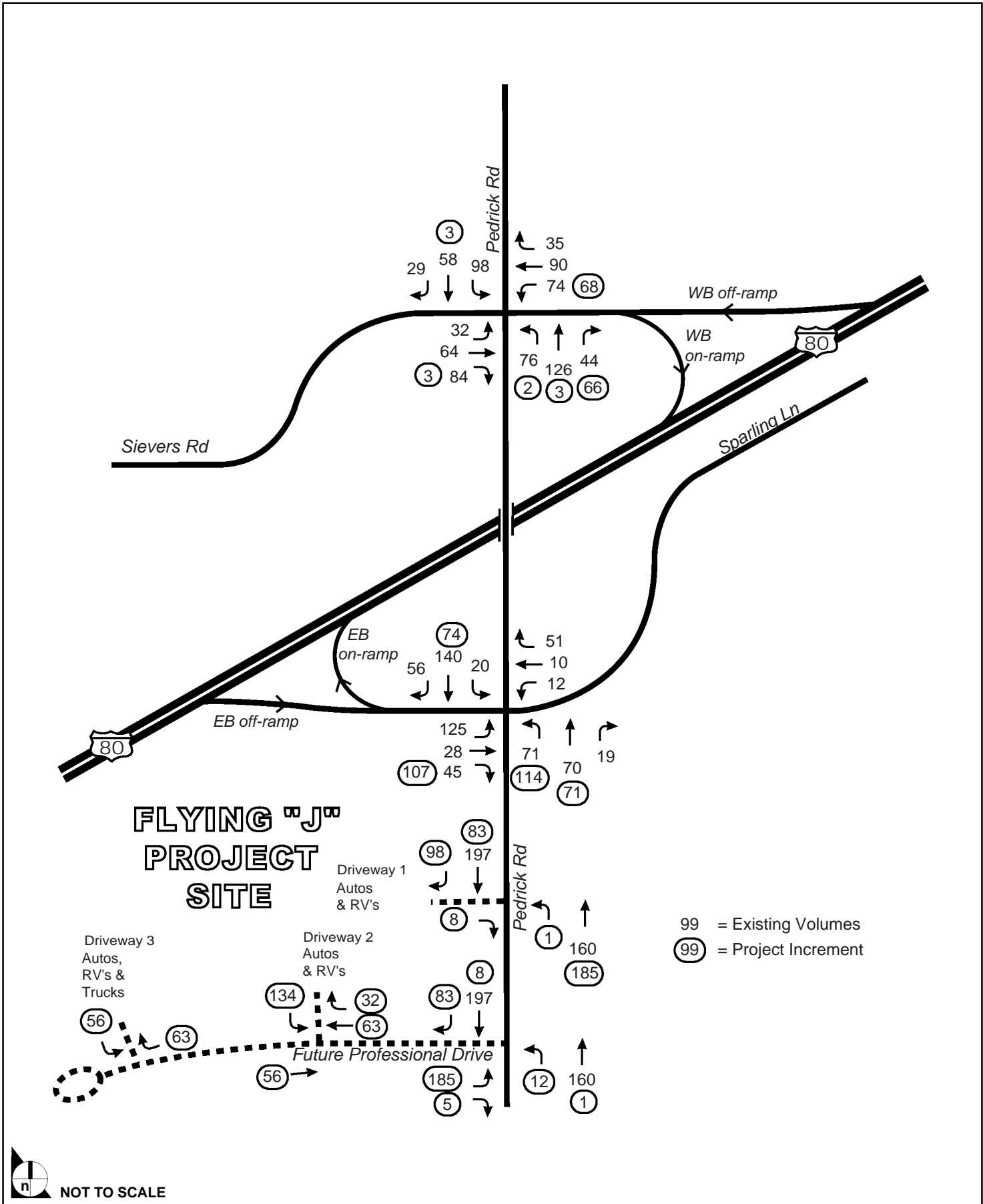


FIGURE 4.10-3

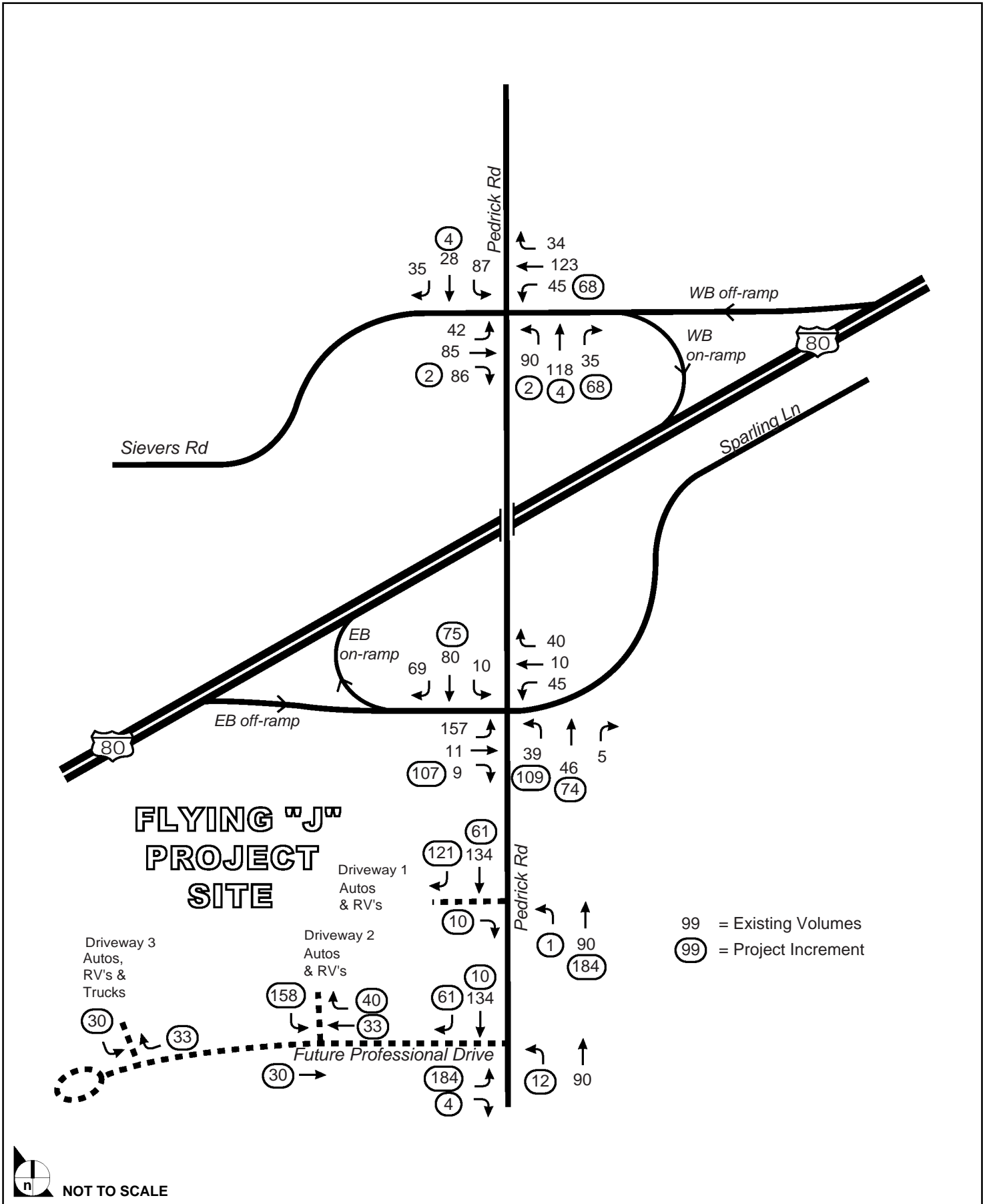
Existing AM Peak Hour Turn Movement Volumes



SOURCE: Crane Transportation Group – August 2006

FIGURE 4.10-4

Existing PM Peak Hour Turn Movement Volumes



SOURCE: Crane Transportation Group – August 2006

FIGURE 4.10-5

Existing Saturday PM Peak Hour Turn Movement Volumes



The truck percentage of existing total intersection approach volumes during the PM peak hour is shown in **Table 4.10-3**. Unlike the AM peak hour, the truck percentage at the I-80/Pedrick Road eastbound ramps is approximately twice that of the I-80/Pedrick Road westbound ramps, consisting of 10.0 percent and 5.5 percent respectively.

**Table 4.10-3  
Truck percentage of Existing Total Intersection Approach Volumes**

Intersection	Existing		
	Weekday		Saturday
	AM	PM	PM
Eastbound I-80 Ramps/ Pedrick Rd.	18.5%	10.0%	10.0%
Westbound I-80 Ramps/ Pedrick Rd.	17.5%	5.5%	6.0%

Source: Crane Transportation Group 2006.

**Saturday PM (12:00 Noon – 1:00) Peak Hour –**

As shown in **Table 4.10-2** the all way stop intersections are experiencing acceptable operation during the Saturday PM peak hour (12:00 noon – 1:00). The I-80 Westbound Ramps/Sievers Road/Pedrick Road intersection is operating at LOS B, and the I-80 Eastbound Ramps/Sparling Lane/Pedrick Road intersection is operating at LOS A.

The truck percentage of existing total intersection approach volumes during the Saturday PM peak hour is shown in **Table 4.10-3**. As shown in this table, truck traffic percentages are similar to those counted for the weekday PM peak hour.

**Existing Signalization Needs**

**Table 4.10-4, Signal Warrant Evaluation-Do Volumes Meet Peak Hour Signal Warrant #3 (Rural Area) Criteria Levels**, shows that during the weekday AM and PM, as well as Saturday PM peak hours, the all-way stop controlled Pedrick Road/ I-80 interchange intersections do not have existing volumes meeting or exceeding Warrant #3 criteria levels. See **Appendix 4.10** for peak hour volume warrants.

**Table 4.10-4  
Signal Warrant Evaluation-Do Volumes Meet Peak Hour Signal  
Warrant #3 Criteria Levels**

Intersection	Existing		
	Weekday		Sat.
	AM Peak Hour	PM Peak Hour	PM Peak Hour
I-80 EB Ramps/Pedrick Rd.	No	No	No
I-80 WB Ramps/Pedrick Rd.	No	No	No

Source: Crane Transportation Group 2006.

#### 4.10.2.5 Existing Observed Safety Concerns

Trucks similar in size and configuration likely to use the Flying J Truck Stop are currently using the I-80/Pedrick Road interchange intersections. Observations of the movement of traffic through the stop sign controlled approaches to both study intersections revealed intermittent delays (beyond theoretical levels projected by LOS calculations) due to the significant amount of slow-moving, large trucks passing through the intersections (particularly when they are conducting turns). Trucks can also block sight lines, which results in auto drivers taking longer periods of time to make judgments regarding whether it is safe to turn.

### 4.10.3 REGULATORY SETTING

#### 4.10.3.1 Federal Regulations

There are no federal policies relating to transportation that are directly applicable to the project.

#### 4.10.3.2 State Regulations

Policies of the California Department of Transportation (Caltrans) that are applicable to the project have been incorporated as significance criteria are used to evaluate the significance of project impacts. Please refer to **Section 4.10.5.3** below.

### 4.10.3.3 Local Regulations

#### *Solano Transportation Authority (STA)*

The STA is the Congestion Management Agency of Solano County. It is responsible for countywide transportation planning, coordination, financing of priority projects, and programming of federal, state, and regional transportation funds. Its goals and objectives are to:

- Document transportation needs from both local and countywide perspectives;
- Provide safety and operational improvements;
- Preserve the transportation system;
- Reduce congestion and maintain mobility;
- Improve commute options to the Bay Area and Sacramento regions;
- Promote transit, including intercity bus, rail, and ferries;
- Promote alternative modes such as carpooling, vanpooling, and bicycling; and
- Encourage Transportation for Livable Communities projects.

One of the objectives in STA's Arterials, Highways, and Freeway Element (2002) is to encourage member jurisdictions and Caltrans to maintain LOS E or better conditions during the AM and PM peak hours on roadways of countywide significance.

#### *City of Dixon General Plan*

The City of Dixon General Plan was adopted by the City Council on December 14, 1993. The plan contains goals, objectives, and policies related to all aspects of new development. Key transportation policy statements from this document are presented below:

Policy VI.E.1: The City shall ensure that Dixon's existing and proposed street configuration and highway network maintains traffic operations

at Level of Service “C” or better, while acknowledging that this objective may be difficult to achieve in those locations where traffic currently operates at Levels of Service below “C” for limited periods of time. Achieving this policy will require a variety of traffic improvements, including:

- Improving existing arterials;
- Construction of arterials and collector streets in newly developing areas; and;
- Intersection improvements.

Policy VI.E.3: The City shall encourage the continued development and expansion of local public bus/van transit systems, if it can be demonstrated that the service can be financially supported. New development should be designed to maximize use of public transit where feasible.

Policy VI.E.6: The City shall pursue the relocation of State Highway 113 from First Street to Pedrick Road. In the short-term, the City shall encourage the designation of alternative routes for through truck traffic to avoid conflicts within the Downtown area.

Policy VI.E.7: The City shall pursue the construction of grade separated rail crossings within the Planning Area.

Policy VI.E.12. The City shall cooperate with Caltrans and other agencies to ensure that transportation facilities are constructed and maintained to appropriate standards.

Policy VI.E.13. The City shall provide adequate capacity on arterials and collectors to discourage diversion to local streets.

#### ***Northeast Quadrant Specific Plan (NQSP)***

The project is subject to following circulation policies from the Northeast Quadrant Specific Plan (Dixon, 1995). Relevant circulation policies include:

Policy 4.9.1.1: Right-of-way locations for landscape corridors and pathways for all arterial and collector roadways are as indicated on Typical Arterial and Typical Collector Street sections as shown in Figures 4-3, 4-4, and 4-5 [of the NQSP].

Policy 4.9.1.2: Landscape corridors should be granted as landscape elements over private property. All landscape corridors are to be landscaped consistent with the provisions of the Form and Design Section (Section 3) [of the NQSP].

Policy 4.9.1.3: Driveways along primary plan arterials should be limited and restricted to points approved by the City. Parking on all arterial streets should be prohibited by posting.

Policy 4.9.1.4: Intersections of collector streets with arterial streets should be kept to a minimum. Collector streets should not intersect with a major arterial street closer than 300 feet from another collector/arterial intersection.

Policy 4.9.1.5: Plan area roadways shall be designed as alternative routes for through truck traffic to avoid conflicts with downtown traffic.

Policy 4.9.2.1: Level of service at plan area roadways and intersections shall strive to maintain Level of Service C.

Policy 4.9.3.1: Bicycle and pedestrian circulation systems should be designed to minimize conflicts with the vehicular circulation system. Separation of the cyclist/pedestrian from the automobile should be provided to the extent feasible along the designated Class I bike paths.

Policy 4.9.3.3: All lighted intersections along arterial roadways should incorporate enhanced pedestrian crossing points. The crossings should include enhanced paving treatment, increased distance between the crosswalk and vehicle limit line, and where applicable, widened median rest areas.

Policy 4.9.4.3: The plan area shall participate in efforts to promote shuttle linkage with the Southern Pacific rail line as a transit facility.

Policy 4.9.5.3: Plan area employers shall provide ridesharing facilities to encourage alternatives to automobile commuting including vanpool and carpool parking.

Policy 4.9.6.2: Bike racks, storage facilities, lockers, and showers serving employee shall be provided by all plan land uses.

Policy 4.9.7.1: To ensure pedestrian safety, public pathways shall be well lit and located in areas of view from adjacent buildings and public spaces. Locations where pedestrian paths cross roadways shall be denoted with special accent materials to specifically denote a pedestrian crossing and to alert passing vehicular traffic. All pedestrian crossing shall be appropriately lit.

Policy 4.9.7.2: The main pedestrian paths should be constructed of concrete. However, smaller paths and jogging trails may utilize other materials such as asphalt or decomposed granite, providing there is a mechanism to ensure trail maintenance and upkeep.

#### **4.10.4 CONSISTENCY WITH APPLICABLE PLANS AND POLICIES**

The proposed project would not result in unacceptable levels of service or contribution to already unacceptable levels of services at existing intersections in the project area. However, the construction of the project, in addition to other planned projects in the area, including the Dixon Downs Racetrack and Milk Farm projects would worsen already unacceptable operations at the I-80 Eastbound Ramps/Sievers Road/Pedrick Road and I-80 Westbound Ramps/Sparling Lane/Pedrick Road intersections. However, as indicated in the Milk Farm EIR, the City shall consider amending the City's Capital Improvement Program (CIP) to include improvements at the I-80/Pedrick Road interchange. Improvements could include reconstruction and widening of the I-80 overcrossing, reconstruction of the on- and off-ramp junctions with I-80, installation of traffic signal control at the ramp-terminal intersections, and improvements to the adjacent intersections.

Additionally, the proposed project would pay all applicable City and regional traffic impact fees that would contribute toward the cost of future improvements at the I-80/Pedrick Road interchange through mitigation proposed in this EIR. EIR mitigation also includes that on-street parking along the project's Pedrick Road frontage (north of Access 1, on the west side of Pedrick Road) be prohibited to ensure sight/safety distances. The project would also pay for or contribute to financing for shoulder improvements whenever possible through the affected I-80/Pedrick Road interchange ramps and overcrossing to improve roadway dimensions and maximize space for large truck turn movements. Nonetheless, from a cumulative perspective, the project would not be consistent with the policies in the General Plan and NQSP related to acceptable levels of service.

The project proposes 8-foot wide concrete sidewalks along Pedrick Road (beginning at approximately 420 feet from the I-80/Pedrick Road offramp) and wrapping around the Pedrick Road/Professional Drive intersection and continuing down Professional Drive for about 360 feet. Landscaping would be planted on either side of the sidewalks, and a 14-foot landscape median is proposed for Pedrick Road. A bus stop would be located on Professional Drive, just west of the access point.

#### 4.10.5 PROJECT IMPACT ANALYSIS

##### 4.10.5.1 Impact Analysis Methodologies

###### *Project Trip Generation*

Project trips were determined from November 2005 traffic counts conducted by Crane Transportation Group at the Flying J truck stop in Ripon, California. This truck stop is similar in size and range of services as the proposed project. **Appendix 4.10** provides details of the Ripon Flying J Truck Stop traffic count for each time period analyzed (weekday AM and PM commute peak periods, and Saturday PM traffic peak period). Counts were collected and broken down by passenger vehicles (autos, pick-ups and RVs), trucks (3 and 4 axle) and large trucks (5 or more axles). Seasonal adjustments were made to the traffic counts taken in November at the Ripon site in order to account for seasonally higher agricultural trucking and passenger car (vacation travel) volumes that tend to

occur on State Route 99 in late September (the analysis time period for this study) versus mid-November.

The traffic counts were also adjusted to account for the differences in vehicle mix (percentage of autos versus trucks), which influence traffic volumes entering and leaving facilities such as Flying J Truck Stops. Data for the vehicle mix adjustment were available through a Caltrans' publication: *Annual Average Daily Truck Traffic on the California State Highway System*. Inbound versus outbound traffic volumes for each time period analyzed reflect the Ripon traffic count findings for each vehicle type.

**Table 4.10-5, Dixon Flying J Trip Generation**, shows that the project would be expected to generate 224 inbound and 227 outbound total trips during the weekday AM peak traffic hour, 194 inbound and 198 outbound total trips during the weekday PM peak traffic hour, and 195 inbound and 198 outbound total trips during the Saturday PM peak traffic hour. These trips would not be new to the freeway system, since approximately 80 percent of these trips would be diverted from the stream of traffic already on the freeway. **Table 4.10-6, Truck percentage of Existing Total Intersection Approach Volumes – With Project**, shows the percentage of total intersection approach volumes with the addition of project trucks.

**Table 4.10-5**  
**Dixon Flying J Trip Generation**  
*(Based Upon Ripon Flying J Traffic Counts)*

Use	Weekday AM Peak Hour Trips		Weekday PM Peak Hour Trips		Saturday PM Peak Hour Trips	
	Inbound Volume	Outbound Volume	Inbound Volume	Outbound Volume	Inbound Volume	Outbound Volume
Autos, Pickups, RVs	134	145	131	142	162	168
Trucks (3 and 4 axle)	13	16	5	6	5	5
Large Trucks (5+ axle)	77	66	58	50	28	25
<b>TOTAL</b>	<b>224</b>	<b>227</b>	<b>194</b>	<b>198</b>	<b>195</b>	<b>198</b>

Source: Crane Transportation Group 2006.

Trip Rate Source: Traffic counts conducted by Crane Transportation Group at the Ripon Flying J (the same type and size facility as proposed for Dixon), November 2005 – see **Appendix 4.10** for details of the Ripon Flying J traffic counts, seasonal adjustments for freeway volume on SR 99, serving the Ripon Flying J versus I-80, proposed to serve the Dixon Flying J.



**Table 4.10-6  
Truck percentage of Existing Total Intersection Approach Volumes – With Project**

Intersection	Existing			Existing + Project		
	Weekday		Saturday	Weekday		Saturday
	AM	PM	PM	AM	PM	PM
Eastbound I-80 Ramps/ Pedrick Rd.	18.5%	10.0%	10.0%	27.4%	17.5%	12.6%
Westbound I-80 Ramps/ Pedrick Rd.	17.5%	5.5%	6.0%	23.0%	9.5%	7.6%

Source: Crane Transportation Group 2006.

### *Project Trip Distribution*

Project traffic was distributed to the local roadway network based upon local area traffic flow patterns as well as surveyed distribution patterns at the Pedrick Road/I-80 interchange ramps. The increment of project traffic is shown distributed to the local roadway system for existing weekday AM and PM peak hour conditions and Saturday PM peak hour conditions in **Figures 4.10-3 through 4.10-5**.

**Table 10-4-7, Project Trip Distribution**, shows project trip distribution percentages by direction for each time period analyzed. As shown in this table, the distribution of incoming and outgoing traffic in the AM peak hour to and from I-80 is identical (45 percent). However, during the PM peak hour, incoming traffic from westbound I-80 would be higher than the incoming traffic from eastbound I-80 (55 percent from the west vs. 35 percent from the east). Saturday PM peak hour distribution is almost identical to that for the weekday PM peak hour.

**Table 4.10-7  
Project Trip Distribution**

Direction	Distribution Percentage					
	Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday PM Peak Hour	
	In	Out	In	Out	In	Out
I-80 to /from East	45%	45%	35%	57%	35%	55%
I-80 to /from West	45%	45%	55%	33%	55%	35%
Pedrick Rd. to /from South	7%	7%	7%	7%	7%	7%
Pedrick Rd. to /from North	3%	3%	3%	3%	3%	3%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Crane Transportation Group 2006.

#### 4.10.5.2 Significance Criteria

Based on standards established by the City of Dixon and the STA, a significant traffic impact would occur if implementation of the project:

- Causes the existing (or future year) level of service at a City of Dixon intersection to worsen from LOS C or better to LOS D or worse;
- Causes the average delay at a City of Dixon intersection that is already (or projected to be) operating at LOS D or worse to increase by more than five seconds;
- Causes the I-80 mainline segment to worsen from LOS D or better to LOS E or F;
- Adds more than a 2.5 percent increase in traffic to the I-80 mainline segment that is already (or projected to be) operating at LOS D, E or F;
- Increases volumes at an unsignalized intersection to meet peak hour signal warrant criteria levels (Warrant #3);
- Increases volumes at an unsignalized intersection already (or projected to be) meeting peak hour signal warrant criteria levels (Warrant #3);

- Causes a significant safety impact in the opinion of the registered traffic engineer evaluating the project;
- Significantly increases the rate of pavement degradation in the project area; and
- Disrupts or interferes with existing or planned bicycle or pedestrian facilities; and/or results in inadequate emergency access.

*Issues Not Discussed Further*

*Disrupts or interferes with existing or planned bicycle or pedestrian facilities.* Future site development would not disrupt or interfere with any existing or planned bicycle or pedestrian facilities as identified in the NQSP. While the NQSP proposes bike lanes within portions of the planning area, the proposed placement of these bike lanes would be in areas of no heavy truck or vehicle traffic.

*Results in inadequate emergency access.* Future site development would result in access from an existing road (Pedrick Road) and the I-80 /Pedrick Road interchange, which would provide adequate off-site emergency access. Three points, one designed to accommodate large trucks, would provide adequate access to the site for emergency vehicles of all sizes.

**4.10.5.3 Impacts and Mitigations – Existing + Project Conditions**

**Impact 4.10-1: Development of the project would not result in unacceptable levels of service at existing intersections in the vicinity of the project. This would be considered a less-than-significant impact.**

A four-lane (approximately 84-foot wide) segment of Professional Drive would be constructed as part of the project, creating a new intersection with Pedrick Road adjacent to the southeast corner of the site, which would be stop sign controlled on the Professional Drive approach to Pedrick Road. Pedrick Road would be widened to provide northbound and southbound deceleration lanes serving the access point intersecting Pedrick Road, as well as northbound and southbound deceleration lanes on the approaches to the (new) Professional Drive

intersection. It should be noted, that the Applicant would need to participate in the financing of such infrastructure improvements. Furthermore, the Applicant would be required to pay in advance, the cost of the proposed improvements if they were to be implemented prior to development planned by other major landowners.

**Table 4.10-8 Intersection Level of Service with Project**, shows that project traffic would result in changes to existing levels of service as follows:

**I-80 Eastbound Ramps/Sievers Road/Pedrick Road intersection**

- Weekday AM peak traffic hour operation would change from acceptable LOS A to acceptable LOS C;
- Weekday PM peak traffic hour operation would change from acceptable LOS B to an acceptable LOS C; and
- Saturday PM peak traffic hour operation would change from acceptable LOS A to acceptable LOS B.

**Table 4.10-8  
Intersection Level of Service with Project**

Intersection	Existing			Existing + Project		
	Weekday		Sat.	Weekday		Sat.
	AM	PM	PM	AM	PM	PM
I-80 EB Ramps/Pedrick Rd. (All-Way-Stop)	A-9.6 <sup>(1)</sup>	B-10.2 <sup>(1)</sup>	A-9.3	C-21.1 <sup>(1)</sup>	C-20.3	B-12.9
I-80 WB Ramps/Pedrick Rd. (All-Way-Stop)	B-10.7 <sup>(1)</sup>	B-11.2	B-11.2	C-18.5	B-14.7	B-13.9
Professional Dr./Pedrick Rd. (Side St. Stop Control)	N/A	N/A	N/A	C-20.0 <sup>(2)</sup>	C-19.7	B-12.1

Source: Crane Transportation Group 2006.

(1) All-way-stop level of service—average control delay in seconds.

(2) Unsignalized level of service—average control delay in seconds. Eastbound left turn.

**I-80 Westbound Ramps/Sparling Lane /Pedrick Road intersection:**

- Weekday AM peak traffic hour operation would change from acceptable LOS B to acceptable LOS C; and
- Other time periods (weekday PM and Saturday PM peak traffic hours) would not experience a change in acceptable level of service due to the project.

The Pedrick Road/ Professional Drive intersection would have acceptable LOS B or C operation for the three time periods analyzed. Because levels of service would remain within acceptable ranges with project traffic, these impacts would be less-than-significant.

**Mitigation 4.10-1:** None required.

**Impact 4.10-2:** Development of the project would generate the need for signalization at existing intersections in the vicinity of the project. This would be considered a significant impact.

Table 4.10-9, Signal Warrant Evaluation – Do Volumes Meet Peak Hour Signal Warrant #3 Criteria Levels, shows that the proposed project would increase volumes at both I-80 freeway/Pedrick Road interchange intersections to exceed peak hour signal warrant criteria levels. These impacts would be significant.

**Table 4.10-9  
Signal Warrant Evaluation-Do Volumes Meet Peak Hour Signal Warrant #3  
Criteria Levels**

Intersection	Existing			Existing + Project		
	Weekday		Sat.	Weekday		Sat.
	AM Peak Hour	PM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour
I-80 EB Ramps/Pedrick Rd.	No	No	No	Yes	Yes	Yes
I-80 WB Ramps/Pedrick Rd.	No	No	No	Yes	Yes	Yes

Source: Crane Transportation Group 2006.

**Mitigation 4.10-2:** The project shall contribute its fair share towards signalization of the I-80 Westbound Ramps/Pedrick Road and I-80 Eastbound Ramps/Pedrick Road intersections.

**Significance After Mitigation:** Less than significant.

**Impact 4.10-3:** Implementation of the project would result in an increase in traffic volumes to the existing I-80 freeway mainline. This increase would not exceed the 2.5 percent limit established by the City of Dixon and would therefore be considered a less-than-significant impact.

Although the existing LOS would not be affected, according to the City's significance standards (as applied in the recent Milk Farm EIR and Dixon Downs DEIR), project additions of more 2.5 percent of traffic to an I-80 mainline segment that is already operating at LOS D or E is considered a significant impact. The project would add traffic to the I-80 freeway mainline segments operating at LOS D (west of Pedrick Road) and LOS E (east of Pedrick Road). Specifically, it is estimated that an additional 57 vph would be added to the I-80 freeway segment east of Pedrick Road, and 56 vph to the I-80 freeway segment west of Pedrick Road. This would be less than a one percent increase over existing volumes and would therefore be a less than significant impact.

**Mitigation 4.10-3:** None required.

**Impact 4.10-4:** The project would construct three access points to the project site. Because these access areas would be used by both large trucks and passenger vehicles, safety in these areas would be affected due to turning movements by large trucks and reduced sightlines from on-street parking. This would be considered a significant safety impact.

Three access points would be constructed at the site as part of the project. Access 1 would connect from the east site boundary directly to Pedrick Road about 600 feet south of the I-80 freeway eastbound Ramps intersection, while Access points 2 and 3 would connect from the south site boundary to a newly constructed segment of Professional Drive.

Access points 2 and 3 would be designed to accommodate all turning movements, however, only Access 3 would be anticipated to serve large truck turning movements.

The site plan shows access points and on-site circulation designed for specific vehicle turning movements, as follows:

- 5-axle truck (large truck) with 15-foot long cab and 23-foot long trailer;
- 30-foot long travel trailer with 20-foot long boat trailer; and
- 30-foot long RV.

Sight lines at the Pedrick Road /Professional Drive intersection would be less than adequate if vehicles are parked along Pedrick Road in close proximity to the intersection. Parked vehicles could block sight lines for vehicles turning from Professional Drive.

Additionally, on-street parking along the north side of Access 1 could block sight lines for vehicles turning from the project site onto Pedrick Road. The minimum required sight line (equating to the stopping sight distance on a level road with wet pavement) for a design speed of 55 miles per hour is 495 feet. With on-street parking allowed along Pedrick Road in close proximity to either intersection, sight lines could be reduced to less than 100 feet. This would be a significant impact.

#### **Pedrick Road Access**

To increase safety at this access point, the Applicant proposes to widen Pedrick Road to provide northbound and southbound deceleration lanes serving Access 1, as well as northbound and southbound deceleration lanes on the approaches to the Professional Drive intersection. Access 1, would consist of a 30-foot wide driveway, which would accommodate inbound turns from both directions (northbound and southbound Pedrick Road), but would restrict outbound turns to right turns only, onto southbound Pedrick Road. Additionally, a raised median is proposed along Pedrick Road, extending from the I-80 Eastbound Ramps/Sparling Lane intersection to Access 1.

### Professional Drive Access

To increase safety at this second access point, the Applicant proposes to construct a four-lane (approximately 84-foot wide) segment of Professional Drive, which would create a new intersection with Pedrick Road adjacent to the southeast corner of the site. The new roadway segment would have curb cuts serving two Flying J access points:

- Access 2, a 39-foot wide driveway, would provide two-way access to the southeast portion of the site, providing direct access to parking spaces sized for RVs.
- Access 3, an 82-foot wide driveway, would provide two-way access to the south end of the site, providing direct access parking spaces sized for large trucks.

Creating a dedicated entrance for large trucks (Access 3) would help reduce the potential impacts between large trucks and the other vehicles entering and exiting the Travel Plaza facility (smaller trucks and automobiles), by decreasing the probability of a large truck colliding with a smaller vehicle because only large trucks would be permitted to use Access 3. However, because Access 2 is also located along Professional Drive, conflicts between large trucks and smaller vehicles could still occur because both would be using Professional Drive to access the Travel Plaza, thereby creating potential for collisions along Professional Drive.

**Mitigation Measure 4.10-4a:** Pay all applicable City and regional traffic impact fees, to include a fair share through the City's CIP toward the cost of future improvements at the Interstate 80/Pedrick Road interchange.

**Mitigation Measure 4.10-4b:** Prohibit on-street parking along the project's Pedrick Road frontage (west side of the street) between the I-80 freeway and Professional Way, and along the north side of Professional Drive (just west of Pedrick Road ). This would preserve sight lines for drivers turning at the project access areas.

**Mitigation Measure 4.10-4c:** Pay for or contribute to financing for shoulder improvements wherever possible through the affected I-80/ Pedrick Road



interchange ramps and overcrossing to improve roadway dimensions and maximize space for large truck turn movements.

**Significance After Mitigation:** Less than significant.

**Impact 4.10-5: The increased truck traffic volumes generated by the project would result in deterioration of roadway pavement in the vicinity of the project. This would be considered a significant impact.**

The project would add truck trips each hour of each day to Pedrick Road and the I-80 interchange overcrossing. The current volume of traffic on Pedrick Road has resulted in deteriorated pavement conditions. The project would add to the traffic load and further deteriorate the pavement, decreasing the design life of the roadway. This would be a significant impact.

**Mitigation Measure 4.10-5:** The City, Caltrans and Applicant shall agree on a program of ongoing pavement inspection starting before project construction to determine the extent of pavement degradation due to the project, or reconstruction of roads in the interchange area, activities. The Applicant shall pay reasonable fees for pavement repair, as determined by the City and Caltrans.

**Significance After Mitigation:** Less than significant.

## 4.10.6 CUMULATIVE (YEAR 2025) CONDITIONS

### 4.10.6.1 Planned Improvements

The City's Northeast Quadrant Specific Plan (NQSP) shows Professional Drive as a four-lane arterial roadway extending west from Pedrick Road and turning south to intersect Vaughn Road in the City of Dixon. In the Dixon Downs EIR, Professional Drive is labeled "Dixon Downs Parkway" and is planned to accommodate projected traffic from the racetrack, convention center and commercial uses associated with full buildout of the Dixon Downs project, as well as other growth in the planning area.

#### 4.10.6.2 Future Background Conditions (No Project)

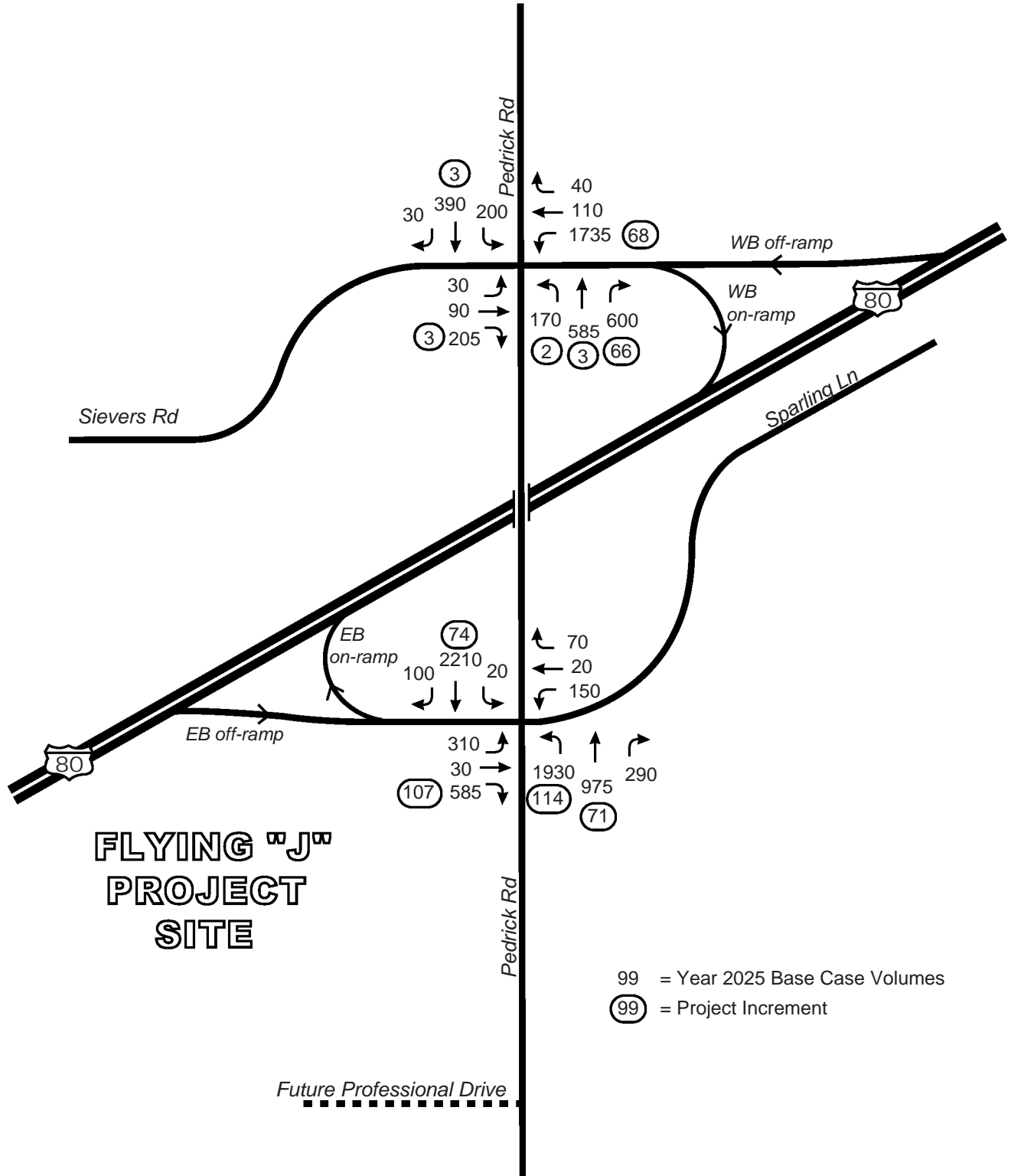
Future background conditions assume the 2025 Base Case volumes projected in the City's Northeast Quadrant Specific Plan, minus the land uses assumed for the Flying J parcel (Traffic Analysis Zone #100, with an assumed 528,000 square feet of highway commercial land uses).

Traffic volumes for the traffic zone within which the Flying J project is proposed were obtained by City staff from traffic model projections prepared for the Dixon Downs EIR. The traffic model included buildout of the Northeast Quadrant Specific Plan, as well as large projects such as Milk Farm (proposed to be located along Curry Road just north of the I-80 freeway) and Dixon Downs Raceway (located immediately south of the Flying J Truck Stop project site). The weekday PM peak hour time period is the only 2025 time period for which traffic projections were prepared for the study area, and the available data was limited to the I-80 Ramps/Pedrick Road interchange intersections. There were no available weekday PM peak hour 2025 projections for the Professional Way/Pedrick Road intersection.

Background Conditions Year 2025 Base Case (without development of the Flying J project) PM peak hour volumes are presented in **Figure 4.10-6, Year 2025 Base PM Peak Hour Volumes (No Project)**. Volumes are shown at the I-80 Westbound Ramps/Sievers Road/Pedrick Road and I-80 Eastbound Ramps/Sparling Lane/Pedrick Road intersections.

#### *Background Intersection Levels of Service*

**Table 4.10-10, Intersection Level of Service—2025 Base Case (Without Project) Conditions**, shows that during the weekday PM commute traffic peak hour, with existing geometrics and control (all-way stop), the I-80 Westbound Ramps/Sievers Road/Pedrick Road and I-80 Eastbound Ramps/Sparling Lane/Pedrick Road intersections would be experiencing unacceptable LOS F operation.



 NOT TO SCALE

SOURCE: Crane Transportation Group – August 2006

FIGURE 4.10-6

Year 2025 Base PM Peak Hour Volumes (No Project)

**Table 4.10-10**  
**Intersection Level of Service—2025 Base Case (Without Project) Conditions**

Intersection	Year 2025 Base Case		
	Weekday		Sat.
	AM	PM	PM
I-80 EB Ramps/Pedrick Rd. (All-Way-Stop)	NA	F-1523 <sup>(1)</sup>	NA
I-80 WB Ramps/Pedrick Rd. (All-Way-Stop)	NA	F-1087 <sup>(1)</sup>	NA

Source: Crane Transportation Group 2006.

<sup>(1)</sup> All-way-stop level of service—average control delay in seconds

According to City staff, the Flying J project would be subject to the same findings regarding the I-80 freeway/Pedrick Road interchange improvements as were determined for project impacts in the recently certified Milk Farm EIR. *In response to a letter from Caltrans regarding interchange improvements, the Milk Farm FEIR states:*

*The City shall consider amending the City's Capital Improvements Program (CIP) to include improvements at the Interstate 80/Pedrick Road interchange. Specific improvements have not been identified as part of this study. Additional improvements would be determined in consultation with Caltrans during the Project Study Report/Project Report ((PSR/PR) process. However, improvements would likely include reconstruction and widening of the Interstate 80 overcrossing, reconstruction of the on- and off-ramp junctions with Interstate 80, installation of traffic signal control at the ramp-terminal intersections, and improvements (i.e., signalization and the like) to adjacent intersections. If the City includes these improvements in the CIP, prior to the approval of any component of future site development, the [Milk Farm] Applicant shall pay a fair share through the City's CIP toward the cost of future improvements at the Interstate 80/Pedrick Road interchange.*

In the context of the Flying J project, the brackets in the above paragraph indicating *Milk Farm* would instead reference *Flying J* as the Applicant.

***Future Background Signalization Needs***

**Table 4.10-11, Signal Warrant Evaluation-Do Volumes Meet Peak Hour Signal Warrant #3 Criteria Levels**, shows that during the PM peak hour, both the I-80 Westbound Ramps/Sievers Road/Pedrick Road and I-80 Eastbound Ramps/Sparling Lane/Pedrick Road intersections would have Base Case volumes exceeding Warrant #3 criteria levels. Therefore, a signal would be required at this intersection.

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**Table 4.10-11  
Signal Warrant Evaluation-Do Volumes Meet Peak Hour Signal Warrant #3 Criteria Levels  
Year 2025 Base Case**

Intersection	Year 2025 Base Case		
	Weekday		Sat.
	AM Peak Hour	PM Peak Hour	PM Peak Hour
I-80 EB Ramps/Pedrick Road	Yes	Yes	Yes
I-80 WB Ramps/Pedrick Road	Yes	Yes	Yes

Source: Crane Transportation Group 2006.

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***Future Background Freeway Mainline***

According to the Milk Farm EIR, the data from the 1984 and 2003 editions of Traffic Volume on California State Highways (Caltrans, 1985, 2004), peak hour traffic on Interstate 80 directly east of Pedrick Road increased by an average of two percent per year over this 19-year period. If this compound growth rate were to continue through 2025, then the future year 2025 (cumulative) forecasts would be approximately 52 percent greater than current volumes.

The future year 2025 (cumulative) forecasts from the City of Dixon Travel Demand Model of Interstate 80 directly east of Pedrick Road reveal a higher growth rate of about 3.5 percent per year. This rate appears reasonable given the planned development of the Southwest Specific Plan, NQSP, and Dixon Downs,

all of which would add traffic to I-80. Buildout of the NQSP alone is estimated to generate nearly 10,000 external peak hour trips, according to the City of Dixon Northeast Quadrant Specific Plan Final EIR (Dixon 1995a).

If the less aggressive two percent per year growth rate is assumed, based on the historical growth rate between 1984 and 2003, then the segment of Interstate 80 east of Pedrick Road would carry approximately 7,030 vehicles in the westbound direction and 6,500 vehicles in the eastbound direction during the weekday PM peak hour in 2025. Due to the lack of identified funding to widen I-80, it is assumed to remain six lanes in 2025.

The Highway Capacity manual indicates that a mixed-use freeway lane has an ideal capacity of 2,200 to 2,400 passenger cars per hour per lane depending on the free flow speed. Assuming a practical capacity of 2,200 vehicles per hour per lane after accounting for adjustments (lateral clearance, heavy vehicles, driver population, etc.), each direction of Interstate 80 would have a capacity of 6,600 vehicles per hour. Thus, the westbound direction of Interstate 80 would be at overcapacity and the eastbound direction would be at capacity. Both directions would be over capacity if the higher growth estimates from the City of Dixon Travel Demand Model were used.

Since the mainline segments of Interstate 80 are expected to be at or over capacity (LOS F) by 2025, the interchange ramp merge and diverge area would also operate at LOS F during the weekday PM peak hour.

#### 4.10.6.2 Background + Project Conditions

**Impact 4.10-6: Development of the project would add to unacceptable level of service operations at existing intersections under future background conditions. This would be considered a significant impact.**

**Table 4.10-12, Intersection Level of Service – 2025,** shows that the project would add more than 5 seconds delay to already unacceptable weekday PM peak hour operation at the I-80 Eastbound Ramps/Sievers Road/Pedrick Road and I-80 Westbound Ramps/Sparling Lane/Pedrick Road intersections.

**Table 4.10-12  
Intersection Level of Service - 2025**

Intersection	Year 2025 Base Case			Year 2025 Base Case with Project			Change in Weekday PM Delay (seconds)
	Weekday		Sat.	Weekday		Sat.	
	AM	PM	PM	AM	PM	PM	
I-80 EB Ramps/Pedrick Rd. (All-Way-Stop)	N/A	F 1523	N/A	N/A	F 1564	N/A	+41
I-80 WB Ramps/Pedrick Rd. (All-Way-Stop)	N/A	F 1087	N/A	N/A	F 1185	N/A	+98
Professional Dr./Pedrick Rd. (Side St. Stop Control)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: Crane Transportation Group 2006.

- (1) All-way-stop level of service—average control delay in seconds.
- (2) Unsignalized level of service—average control delay in seconds. Eastbound left turn.

**Mitigation 4.10-6:** No mitigation measures have been identified for this unavoidable, significant impact.

**Impact 4.10-7:** Development of the project would add traffic at intersections already exceeding signal warrant criteria levels under future background conditions. This would be considered a significant impact.

**Table 4.10-13, Signal Warrant Evaluation-Do Volumes Meet Peak Hour Signal Warrant #3 Criteria Levels – 2025,** shows that the project would add traffic to the I-80 Eastbound Ramps/Sievers Road/Pedrick Road and I-80 Westbound Ramps/Sparling Lane/Pedrick Road intersections which would have 2025 Base Case PM peak hour volumes exceeding signal warrant criteria levels. This would be a significant impact.

**Mitigation 4.10-7:** The project will be required to contribute it’s fair share towards signalization of the I-80 Westbound Ramps/Pedrick Road and I-80 Eastbound Ramps/Pedrick Road intersections as stated in **Mitigation 4.10-2.**

**Impact 4.10-8:** Development of the project would add traffic to the freeway mainline, which would already be operating unacceptably at

**LOS F under future background conditions. This would be considered a less-than-significant impact.**

It is projected that an additional 57 vph would be added to the I-80 freeway segment east of Pedrick Road, and 56 vph to the I-80 freeway segment west of Pedrick Road. This would be less than a one percent increase over future volumes. Therefore, this would be a less-than-significant impact.

**Mitigation 4.10-8:** None required.

**Table 4.10-13**  
**Signal Warrant Evaluation-Do Volumes Meet Peak Hour Signal Warrant #3**  
**Criteria Levels - 2025**

Intersection	Year 2025 Base Case			Year 2025 Base Case + Project		
	Weekday		Sat.	Weekday		Sat.
	AM Peak Hour	PM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour
I-80 EB Ramps/Pedrick Rd.	Yes	Yes	Yes	Yes	Yes	Yes
I-80 WB Ramps/Pedrick Rd.	Yes	Yes	Yes	Yes	Yes	Yes

Source: Crane Transportation Group 2006.



## 4.11 UTILITIES AND SERVICE SYSTEMS

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### 4.11.1 Introduction

The following section describes the existing water supply and distribution system, wastewater services, and solid waste services for the project site. Information on the existing systems and conditions is incorporated from the following documents:

- City of Dixon General Plan (1993);
- Dixon Northeast Quadrant Specific Plan (NQSP) (1993);
- Dixon NQSP Environmental Impact Report (EIR) (1994);
- DSMWS Water Supply Assessment (WSA) for the Northeast Quadrant (2003);
- Master Plan for the Water Supply and Delivery System Through Buildout (Master Water Plan), Dixon-Solano Municipal Water Service (2000);
- North Central Solano County Groundwater Resources Report, Solano Water Authority (May 16, 1995); and
- California's Groundwater, Bulletin #118, DWR (2003).

### 4.11.2 Water Supply and Distribution

#### 4.11.2.1 *Regional Water Supply*

##### **Sacramento Valley Groundwater Basin**

The project site is located within the Solano Sub-basin, which is part of the 27,200-square-mile Sacramento Valley Groundwater Basin. Fresh groundwater in the Sacramento Valley Groundwater Basin is contained in unconsolidated deposits of the older alluvium (Quaternary), Pliocene, Eocene deposits, and the Tehama Formation. The Sacramento Valley Groundwater Basin supplies an average 2.5 million acre-feet (ac-ft) of water annually to municipal, industrial, and agricultural users. On average, well yields in the Sacramento Valley Groundwater Basin range from approximately 100 to several thousand gallons per minute (gpm).

### **Solano Sub-basin Groundwater**

The Solano Sub-basin is located in southernmost portion of the Sacramento Valley Groundwater Basin. It is bounded to the north by Putah Creek, to the east by Sacramento River, to the southeast by the North Mokelumne River, to the south by the San Joaquin River, and to the west by the English and Montezuma Hills. There is subsurface groundwater inflow from the Yolo Sub-basin to the north, into the Solano Sub-basin. Due to deep subsurface permeable geohydrologic conditions, outflow occurs into the South American River Sub-basin to the east. The Solano Sub-basin contains fresh-water bearing formations including the Tehama Formation. Additional groundwater in the basin is contained in the Putah Creek Fan. This hydrogeologic formation is located northeast of a channel ridge of Putah Creek known as the Dixon Ridge. The Putah Creek Fan is characterized by permeable and productive aquifers within a 60- to 130-foot-thick layer of older alluvium.

#### **4.12.1.2 Regional Groundwater Yields**

Groundwater levels in the Solano Sub-basin located within a 2-mile radius from the center of Dixon have generally been stable with typical seasonal and inter-annual fluctuations due to usage. According to the WSA, the Master Water Plan, and the North Central Solano County Groundwater Resources Report, the Solano Sub-basin is in a state of equilibrium, where groundwater levels are stable and at levels that preceded overdraft of the basin from the intense agricultural use of groundwater in the 1930s. The data presented in these reports, and additional data published by DWR, show that the Solano Sub-basin is not permanently impacted by multiple dry or wet years and is not in a state of overdraft. In other words, the Solano Sub-basin level changes slightly over short periods of time in response to climatic conditions, and over the past 20 years, the basin has showed an average level of stability despite the increased level of growth and water demands.

The Solano Sub-basin is not adjudicated, meaning there is no appointed “water master” to resolve groundwater pumping issues, and there are no established limits on the amounts of groundwater that can be extracted by individuals or agencies within this basin.

The Solano Irrigation District (SID) currently pumps about 6,000 ac-ft of groundwater annually but could extract an additional 20,000 ac-ft per year (yr) on average from the Putah Creek Fan.<sup>1</sup> The WSA reports that the Putah Creek Fan has an excess amount of water storage that may need to be pumped to prevent soils in the area from becoming water logged.

#### 4.11.2.3 Local Water Distribution

##### Surface Water Distribution

Water supply within the Solano Sub-basin is used for both agricultural and urban uses. Most of the agricultural demand is met by surface water diversions supplied by a variety of public and private water providers. The largest water purveyor in the Solano Sub-basin is the Solano County Water Agency (SCWA). The SCWA provides wholesale, untreated water to agencies within the County from the U.S. Bureau of Reclamation's Solano Project. This water is primarily used for agriculture and drinking water. The SID currently receives up to 141,400 ac-ft/yr from the Solano Project. The City of Dixon will receive up to 300 ac-ft/yr starting in 2016 and increase to a maximum of 1,500 ac-ft/yr by 2020 from the State Water Project (SWP). Until the SWP contract starts in 2016, the City of Dixon will rely entirely on groundwater from a series of local wells.

##### Ground Water Distribution

The City of Dixon is supplied with domestic water by the California Water Service Company (CWSC) and the Dixon-Solano Municipal Water Service (DSMWS). **Figure 4.11-1, DSMWS and CWSC Service Areas**, illustrates the service boundaries for each water purveyor. CWSC generally serves the interior of the City, while the DSMWS serves non-agricultural uses in developing areas around the edges of the City.

Currently, the City of Dixon receives groundwater from twelve wells, which are drawn from the deep aquifer in the Tehama Formation. CWSC owns and operates eight of the wells, and the remaining four are owned and operated by DSMWS. CWSC's current groundwater production averages approximately

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<sup>1</sup> The safe annual groundwater yield for the Putah Creek Fan was estimated by the United States Geological Survey (USGS Water Supply Paper 1464) to be approximately 40,000 acre-feet per year.

1,700 ac-ft/yr. The current amount of groundwater produced in the Dixon area, DSMWS and CWSC combined, is approximately 3,550 ac-ft/yr.

The SID also owns and operates nine wells drawing from the same aquifer. SID’s average demand from these wells is approximately 6,000 ac-ft/yr but has historically been as much as 14,000 ac-ft/yr.

**4.11.2.4 Dixon-Solano Municipal Water Service**

The project site is located within the DSMWS service area and, as a result, any future development in the site would be provided with water from DSMWS. The DSMWS delivers water to municipal and industrial users within the common boundaries of the City of Dixon and the Solano Irrigation District. The DSMWS currently delivers water supplied only from local groundwater resources. To meet drinking water quality standards, the developed water supplies are chlorinated prior to conveyance to customers. In addition, groundwater from some wells produce water with levels of nitrates that exceed drinking water standards. To reduce the levels of nitrates prior to delivery, these wells have specific treatment and monitoring programs.

The DSMWS service area water supply is currently served entirely from groundwater from the Solano Sub-basin that is pumped from four groundwater wells. These four wells provide a maximum cumulative pumping capacity of approximately 9,340 ac-ft/yr. Historic DSMWS groundwater production is summarized in **Table 4.11-1, Historical DSMWS Annual Groundwater Production.**

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**Table 4.11-1  
Historical DSMWS Annual Groundwater Production**

Year	Supply (ac-ft/yr)	Year	Supply (ac-ft/yr)
1987	448	1995	1,009
1988	470	1996	1,155
1989	500	1997	1,395
1990	667	1998	1,329
1991	676	1999	1,662
1992	767	2000	1,702
1993	814	2001	1,801
1994	928	2002	1,844

Source: DSMWS NQSP Water Assessment 2003.

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Groundwater is pumped from the wells through a series of interconnected pipelines and booster stations for either distribution to customers or directly into two storage tanks (see **Figure 4.11-2, Water Distribution System**). The storage tanks are used to meet pressure requirements and ensure backup supplies during pump maintenance or failure. DSMWS requires redundant water supply facilities as backup in the event of mechanical failures and for maintenance down time.

In 2003, DSMWS prepared a WSA for the NQSP, which is within the service area of DSMWS. The WSA concluded that in order to provide sufficient production and delivery capacity to development within the NQSP area, DSMWS would need to expand the current service system. The WSA proposed two, 1,500 gpm groundwater deepwell facilities; a 1 million-gallon water storage tank; and a 2,000-gpm booster pump station in the NQSP. These new facilities would connect the NQSP area to the rest of the DSMWS service system.

### 4.11.3 Wastewater Services

#### 4.11.3.1 Wastewater Treatment Plant

The City of Dixon provides wastewater collection and treatment services within the City limits, including to the NQSP area and the project site. Wastewater is conveyed to the City's Wastewater Treatment Plant (WWTP) on Pedrick Road, approximately 5 miles south of the project site.

The WWTP is a "secondary equivalent" pond treatment system using total land containment for percolation and evaporation disposal. This system produces no discharge of treated effluent into surface waters. The WWTP has a permitted average dry weather flow capacity of approximately 1.82 million gallons per day (mgd), and is currently treating approximately 1.5 mgd on average (82 percent of capacity).

Operation of the WWTP is regulated by the Central Valley Regional Water Quality Control Board (CVRWQCB), which has developed waste discharge requirements for operation and monitoring of the WWTP.

#### 4.11.3.2 Wastewater Treatment Capacity

The CVRWQCB required an expansion of the WWTP in 1997 (CVRWQCB 2005), as it was determined that it did not have enough capacity to serve city growth through 2002. However, the expansion was not completed, and, in 2005, the CVRWQCB required the WWTP to construct facilities by 2009 that would prevent further degradation of groundwater and would serve all City growth through 2014 (CVRWQCB 2005). To comply with CVRWQCB requirements, a two- phased improvement and expansion program is currently planned to increase the capacity of the facility from 1.8 mgd to approximately 2.5 mgd.

Phase 1 is planned to begin construction in summer of 2006 and completed in 2008. Phase I includes improvement of the WWTP's headworks to accommodate a 42-inch transmission line, lining of the treatment ponds, creating more capacity with aerators, and modifying the disposal areas. Additionally, for the near-term, the City has proposed an approximately 0.2-mgd expansion to create an "interim" facility at the WWTP site to address salinity issues and accommodate projected City growth through about 2010.

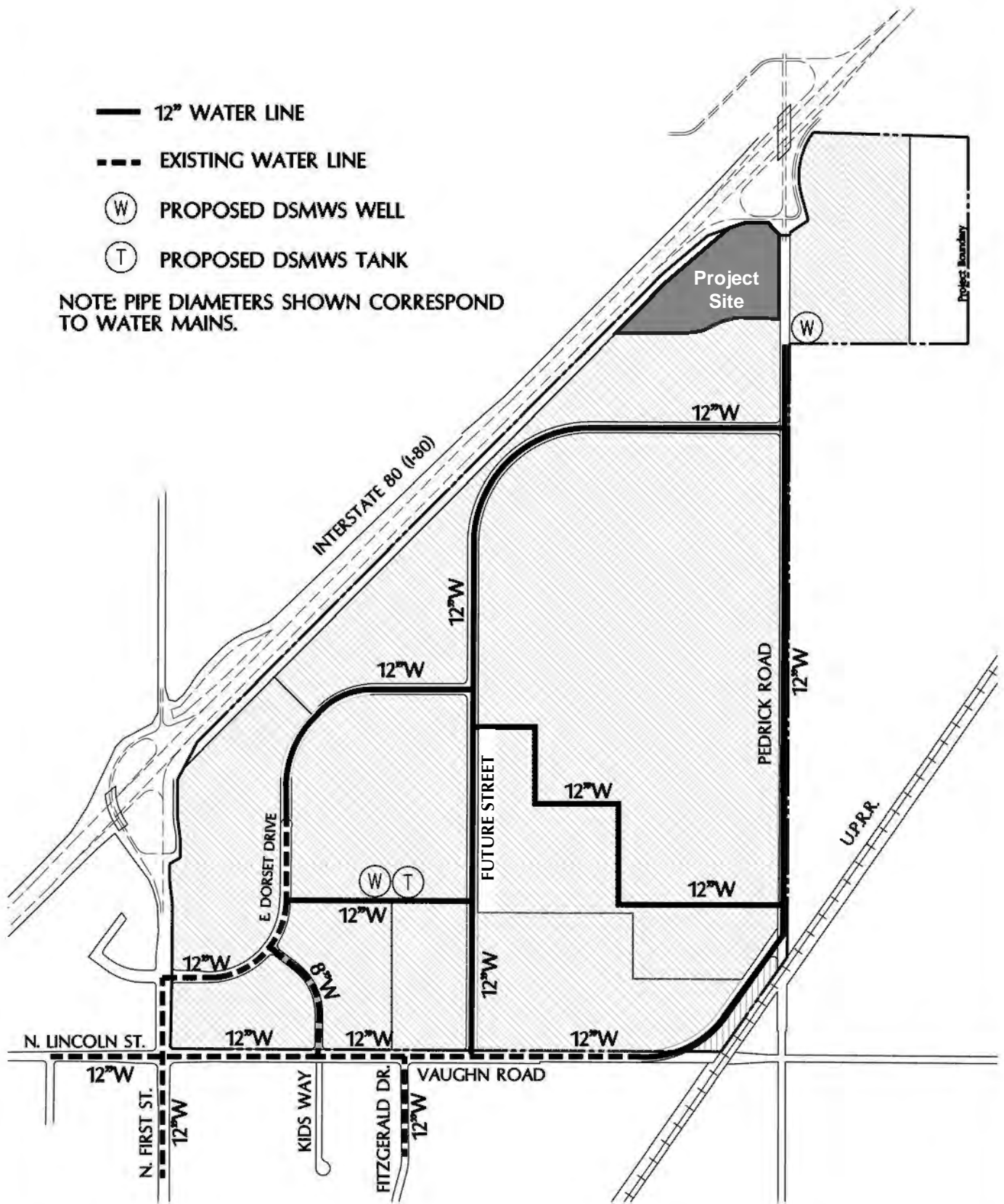
Phase II is expected to occur between **2007 and 2009** and would complete the planned capacity expansion of the WWTP to 2.5 mgd. This expansion would accommodate projected growth in the City through 2014.

#### 4.11.3.3 Collection and Conveyance

Wastewater in the City is collected at sources by sewer lines ranging from 6 to 15 inches in diameter. These lines connect to a 27-inch trunk line that conveys wastewater to the WWTP. The trunk line runs through the city south along State Route 113 to Midway Road, it then turns southeast and runs for approximately three-quarters of a mile to the WWTP. City of Dixon engineering standards state that wastewater pipes must (1) not be more than 70 percent full under peak flow conditions, and (2) must be sloped enough to maintain velocities sufficient to hold wastewater solids in suspension. However, the trunk line was operating near capacity during peak periods, and a new 42-inch trunk line has been constructed to accommodate the additional flow. This larger line, which was put into service in 2005, is designed to serve projected growth in the City, including

- 12" WATER LINE
- - - EXISTING WATER LINE
- (W) PROPOSED DSMWS WELL
- (T) PROPOSED DSMWS TANK

NOTE: PIPE DIAMETERS SHOWN CORRESPOND TO WATER MAINS.



NOT TO SCALE

SOURCE: City of Dixon Northeast Quadrant Specific Plan

FIGURE 4.11-2

Water Distribution System



development in the NQSP, the southwest Dixon area, and the Southpark (Valley Glen) area.

Wastewater from the NQSP area would be conveyed in an existing 15-inch line in Vaughn Road that connects to a 21-inch pipe along N. Fitzgerald Street on the south side of Vaughn Road. Flows into the 21-inch line would then be conveyed to wastewater mains, and ultimately to the new 42-inch trunk line, as shown in **Figure 4.11-3, Wastewater Collection System.**

#### **4.11.4 Solid Waste Disposal**

##### ***4.11.4.1 Local Setting***

The Dixon Sanitary Service (DSS), a private waste disposal company, provides solid waste disposal services in the City of Dixon. Depending on the types of land use it is serving, the DSS collects waste one to three times per week. The solid waste is then transported to the Hay Road Landfill, located approximately 8 miles south of the City of Dixon.

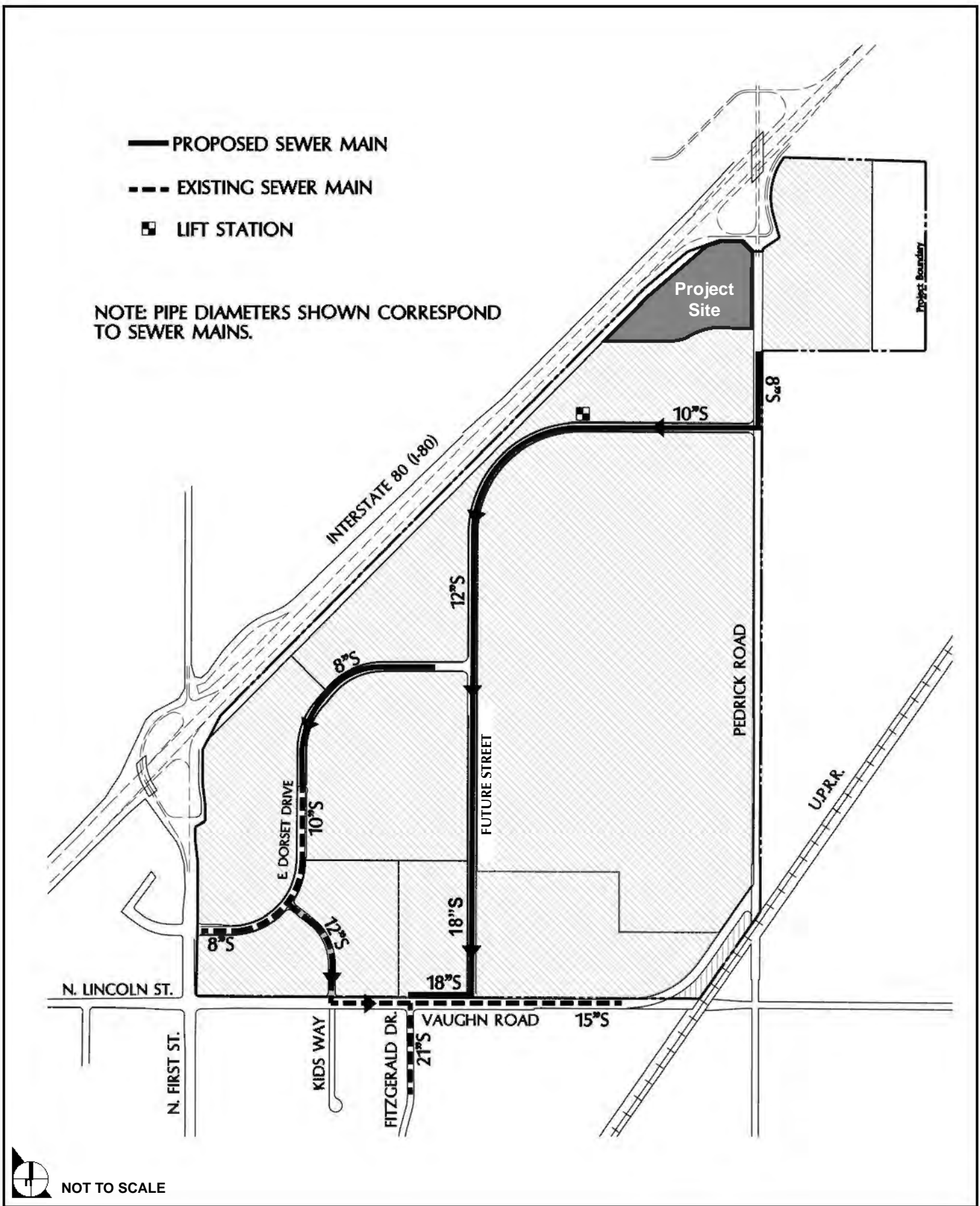
##### ***4.11.4.2 Hay Road Landfill***

The Hay Road Landfill operates under a Class II, III Permit, allowing for the disposal of municipal waste. Its permitted capacity is 28,240,000 cubic yards. Currently it has 22,815,505 cubic yards (80 percent) of capacity remaining. The Hay Road Landfill is permitted to accept a maximum disposal of 2,400 tons per day and is anticipated to have capacity through the year 2070 (California Integrated Waste Management Board (CIWMB) 2005a). In 2004, the City of Dixon generated 26,583.67 tons of solid waste, 68 percent of which was diverted the landfill, primarily through recycling.

#### **4.11.5 Regulatory Considerations**

##### ***4.11.5.1 Urban Water Management Planning Act***

California Water Code Section 10610 (et seq.) requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 ac-ft/yr, must prepare an Urban Water Management Plan (UWMP). Because DSMWS does not meet these criteria, it is not currently required to prepare an UWMP.



SOURCE: City of Dixon Northeast Quadrant Specific Plan

FIGURE 4.11-3

Wastewater Collection System

#### **4.11.5.2 Senate Bill (SB) 610**

A key provision in SB 610 states that any project subject to the California Environmental Quality Act (CEQA) supplied with water from a public water system is required to prepare a specified WSA, except as specified in the law. These WSAs must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912[a]) subject to CEQA. A WSA was completed for the NQSP area as part of the environmental analysis related to the proposed Dixon Downs DEIR.

#### **4.11.5.3 National Pollution Discharge Elimination System (NPDES) Permit**

The Regional Water Quality Control Board (RWQCB) issues an NPDES Permit and Section 401 of the Clean Water Act Compliance. These permits allow discharges of water into “waters of the U.S.” and are required to ensure that during and after construction, on-site water flows do not result in substantial erosion, siltation, or degradation of surface or subsurface water quality.

#### **4.11.5.4 California Integrated Waste Management Act of 1989**

The CIWMA of 1989 requires each county and city in California to prepare a Source Reduction and Recycling Element (SRRE). The purpose of the SRRE is to demonstrate how the county or city will meet state solid waste diversion requirements of at least 50 percent by the year 2000 and every year after. As discussed previously, at this time the City of Dixon does not meet its solid waste diversion goals.

#### **4.11.5.5 Dixon General Plan (1993)**

The primary goal of the Public Services and Facilities Chapter is to provide an adequate level of public services and facilities to ensure continued health, education, welfare, and safety of all local residents. The Public Services and Facilities Chapter of the General Plan includes policies intended to reach that goal. The following policies are relevant to the project:

Policy 6: The City shall ensure that the significant increases in sewage treatment and disposal capacity requirements generated by new development will be provided in a timely, cost-effective, and

environmentally sound manner. Achieving this policy would require a variety of improvements, including:

- Installing major new conveyances;
- Expansion of existing sewage treatment capacity; and
- Expansion of existing effluent disposal facilities.

Policy 7: The City shall ensure that development does not exceed the capacity of the local wastewater treatment facilities.

Policy 8: The City shall direct development to those areas which can be efficiently served either by existing wastewater treatment facilities or by one or more satellite plants (to serve areas that the existing WWTP cannot readily serve).

Policy 9: The City shall ensure that the significant increase in water demand generated by new development will be met in a timely, cost-effective, and environmentally sound manner. Achieving this policy would require a variety of improvements, including:

- Installing new water mains; and
- Increasing storage and treatment capacity.

Policy 10: The City shall coordinate development activity with the water purveyors to ensure that adequate domestic, commercial and industrial, and fire flow requirements are met.

Policy 11: The City shall ensure that water improvements and service will continue to be financed with impact fees and service charges.

Policy 12: The City shall ensure that development does not exceed the capacity of local water supply systems.

Policy 13: The City shall encourage development that incorporates water conservation features in structures and landscaping.

Policy 14: The City shall link growth to the current and projected water supply.

#### 4.11.5.6 Northeast Quadrant Specific Plan (1995)

The Public Services and Facilities Element of the NQSP includes policies intended to support and serve the needs of specific plan employees and uses. The following policies are relevant to the project:

Policy 6.11.2: Efficient plumbing fixtures, irrigation systems, drought-tolerant landscape materials, and other methods should be utilized to reduce overall water consumption.

Policy 6.11.5: (1) Recycling collection is permitted in all plan area uses in accordance with the City Zoning Ordinance. Property owners within the plan area may participate in any recycling program adopted on a citywide basis by the City of Dixon.

(2) Waste generated by plan area facilities should be suitable for Class III disposal. Generated wastes other than the Class III category must be approved by appropriate city agencies or representatives.

#### 4.11.5.7 NQSP EIR

**Measure PS-E:** The project proponent shall be responsible for contributing to the appropriate hook-up fees to help offset the costs of necessary sewage conveyance, storage, treatment, and disposal sewage treatment facility expansions. In addition, the project proponent shall be responsible for the construction of sewer lift stations, sewer mains and any other facility improvements deemed necessary to serve the project.

**Measure PS-C:** Prior to the issuance of a building permit, evidence that the City's WWTP has capacity to accommodate the project shall be submitted to the City of Dixon.

-OR-

Prior to issuance of an occupancy permit, the City shall determine that the permitted WWTP capacity is sufficient to serve the project. Site development (grading, installation of infrastructure, and building construction) shall be allowed, but any use shall be prohibited until the above determination is made.

#### 4.11.5.8 *City of Dixon Municipal Code*

Chapter 17 of the City Code contains requirements pertaining to general sewer use, pretreatment of wastewater prior to sewer discharge, and wastewater discharge permits for non-residential development within the City of Dixon. The City's Sewer Ordinance (adopted as Ordinance No. 9410) would apply to wastewater discharges from the project.

The purpose of the Sewer Ordinance is to prevent the introduction of pollutants into the WWTP that would interfere with its operation or result in inadequately treated effluent that would be land disposed (and, as a result, degrade groundwater quality), to protect WWTP workers, and to provide a fee basis for cost apportionment, among other requirements.

#### 4.11.6 **Consistency with Applicable Plans and Policies**

Because the project is located within the adopted NQSP, necessary capacity expansions of sewer and water infrastructure are either in progress or are planned. As discussed previously, a WSA was prepared for the NQSP that outlined the water infrastructure necessary to provide water to new development in this area of the City. As part of a development application, the Applicant is required to submit for approval to the City complete schematic plans for the on-site water and wastewater systems. Consistent with General Plan and NQSP policies, the project would be required to pay impact fees for its share of any necessary capacity expansions to the City's water provision and wastewater treatment infrastructure. Additionally, the project would not be given building permits until water and wastewater infrastructure systems to serve the project have been approved by the City. As a matter of law, the project would be required to comply with the NPDES permit in effect for the area and with the City's sewer ordinance. Consistent with NQSP policy 6.11.3, the project would be required to comply with the state building code (Title 24 of the Government Code), which requires the use of low-flow fixtures in new construction.

The waste generated by the project would include paper products, food scraps and containers and general household type cleaning supplies, all of which would qualify with NSQP Policy 6.11.5(b). The project would provide an area for the

collection of recyclable materials collected on site, and it is projected that approximately 40 percent of the project's total solid waste would be recycled. Because the City does not currently meet its solid waste diversion goals, neither the City nor the project would be consistent with the provisions of the CIWMA.

#### 4.11.7 Project Impacts and Mitigation Measures

The applicable thresholds of significance are listed, followed by the analysis of the significance of any potential impacts. Mitigation measures are identified that would reduce or avoid potential significant impacts.

##### 4.11.7.1 Water Supply and Distribution

The analysis in this section focuses on the nature and magnitude of the change in levels of water use compared with existing and projected water use within the project, the NQSP, and the DSMWS service areas. To determine potential impacts, water demands were estimated for the project, the existing land use, and other proposed projects. Total water demands were then compared to existing and planned water supplies.

##### Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, the project could result in significant impacts to water supply and distribution if it would:

- Require or result in the construction of new water supply facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Require new or expanded water supply entitlements and resources.

**Impact 4.11-1: Implementation of the project would require the construction of new water supply facilities in the NQSP area. This would be considered a significant impact.**

Water supply and delivery capacity required for buildout of the NQSP was determined through the preparation of a WSA, as described above in **Section 4.11.2.4**. The WSA identified the need to construct infrastructure improvements in the NQSP area, including the construction of two groundwater deep-well facilities, a water storage tank, and booster pump station to accommodate future

growth. Future development within the NQSP area can only proceed after these supply improvements are implemented.

The WSA prepared by the DSMWS for the NQSP calculated the future water demands in the NQSP based on land use zoning and assumed growth rates for development of those land uses. For the total developed CH uses in the NQSP, the demand rate used was 4,800 gallons per day per acre, or 5.38 ac-ft/year per acre. The majority of the land designated as CH by the NQSP is currently undeveloped. The proposed project would develop 27 of the 142 acres (approximately 19 percent) designated as CH in the NQSP. However, regardless of the water demand associated with the project, the DSMWS does not have sufficient water supplies or an adequate distribution system for any future growth in the NQSP area without the implementation and expansion of existing water facilities. Therefore, the project would have significant impact to water supply and water distribution, prior to mitigation.

**Mitigation Measure 4.11-1:** The project applicant shall fund construction of a new water supply facility. The fee amount and type of improvement shall be determined by the City of Dixon and the DSMWS. All water improvement plans, including water distribution pipelines and individual services would be constructed pursuant to DSMWS standards and approved by DSMWS prior to implementation.

**Level of Significance After Mitigation:** Adequate water supply and infrastructure would be provided with the implementation of **Mitigation Measure 4.11-1**, based on the water demand analysis in the 2003 WSA prepared for DSMWS. This would reduce significant impacts to a less-than-significant level.

**Mitigation Measure 4.11-1:** None required.

#### 4.11.7.2 Wastewater Service

##### Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, the project could result in significant impacts to wastewater service if it would:

- Exceed wastewater treatment requirements of the applicable RWQCB;



- Require or result in the construction of a new wastewater treatment facility or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

**Impact 4.11-2: Implementation of the project would generate constituents into the WWTP that could exceed the treatment abilities of the plant and/or the standards of the Central Valley Regional Water Quality Control Board. This would be considered a significant impact.**

The project would generate wastewater from both interior and exterior sources. Interior wastewater sources include restrooms, showers, and kitchen facilities. Exterior sources would include any surface drains in the parking lots and fueling areas that would be diverted into the wastewater sewer system. Constituents of concern could include grease, oils, detergents and salts, as well as some pesticides and herbicides associated with landscaping of the site.

Wastewater from these sources would flow through pretreatment devices such as screens, grit traps, and grease traps installed in the on-site sewer system, as required by the City's Sewer Ordinance. As such, wastewater constituents from these areas would not adversely affect the quality of wastewater leaving the site and entering the City's WWTP. Therefore, impacts related to treatment abilities of the plant and/or the standards of the CVRWQCB would be less than significant.

**Mitigation Measure 4.11-2:** The City shall require a wastewater flow measuring and sampling facility so that flows can be monitored (limited) and quality samples be taken to insure petroleum products, salts, pesticides, herbicides and chemicals from recreational vehicle tanks are not discharged into the sewer. Provisions shall be made to ensure the surface flows do not overwhelm the sewers during large storms. Storage treatment facilities may be needed to meter the flow into the sewer.

**Impact After Mitigation:** Less-than-significant.

**Impact 4.11-3: Implementation of the project would exceed the capacity of the existing WRP and would require immediate expansion of existing wastewater conveyance and treatment facilities. This would be considered a significant impact.**

The project site is not currently served by existing sewer infrastructure. Implementation of the project would generate wastewater flows that would require new sewer infrastructure on and off site. Wastewater flows would be discharged into the City's sewer system, and would connect to the new 42-inch trunk main and eventually to the WWTP. The project is estimated to generate an average daily flow of 0.05 mgd of wastewater. Peak flow from the project is estimated to be 0.14 mgd.

The Applicant has proposed a 10- to 15-inch sewer line that would run from the north end of the site along Pedrick Road, south to the proposed Professional Drive, and then would follow Professional Drive to connect to the existing 15-inch-diameter lines in Vaughn Road. Based on the engineering analysis (Morton & Pitalo, Inc. 2004) for the project, use of the proposed 10- to 15-inch-diameter line in the project site, as well as the existing 15-inch-diameter pipeline in Vaughn Road, would result in flows that are less than 70 percent full. This would be in compliance with the City's engineering standard and would not result in a significant impact.

The environmental impacts associated with these on-site improvements would be within the scope of construction-related effects discussed in other technical sections in this EIR (e.g., construction-related air emissions, noise, biological resources, etc.). Therefore, expansion of conveyance facilities would have a less-than-significant impact.

Current WWTP-permitted capacity is 1.82 mgd, and average flows to the facility are nearing 1.5 mgd (82 percent of capacity). As noted previously, at the present time, the City's WWTP neither has the capacity to manage peak flows nor to serve City growth for the next five years. As documented previously, these improvements would expand the plant's treatment capacity to 2.0-mgd and are expected to be operational sometime in 2007. The interim WWTP improvements would occur at the existing facility and would be primarily a construction activity. Environmental effects resulting from the interim WWTP project would

be evaluated as part of that project and independent of the Flying J project. However, until these improvements are completed, the plant may not have sufficient capacity to treat project-generated wastewater flows.

**Mitigation 4.11-3:** A final certificate of occupancy for commercial development for the project shall not be issued for the project until the interim Phase 1 improvements to the WWTP are completed. With implementation of this mitigation measure, there would be adequate capacity in both the existing and proposed sewer lines, as well as the WWTP to accommodate the project's wastewater flows prior to project occupancy.

**Impact After Mitigation:** Less than significant.

#### 4.11.7.3 Solid Waste Disposal

##### Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, the project could result in significant impacts to solid waste disposal if it would:

- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Fail to comply with federal, state, and local statutes and regulations related to solid waste.

**Impact 4.11-4: Implementation of the project would generate an increase in the amount of solid waste entering local landfills but would not exceed landfill capacity. This would be considered a less-than-significant impact.**

As discussed previously, the DSS would provide solid waste disposal services to the project. Solid waste generated by the project would be disposed of at the Hay Road Landfill, which operates under a Class II and III Permit, allowing for the disposal of municipal waste. The landfill, which is permitted to accept 2,400 tons of solid waste per day, has approximately 80 percent remaining capacity and is anticipated to have capacity through the year 2070. The restaurant, 24-hour convenience store, food court, and other associated uses of the project are anticipated to generate approximately 35 cubic yards of solid waste per week, or an estimated 1.7 tons per day (based on a conservative estimate of 3 cubic yards

per ton) (CIWMB 2006). This would represent less than 0.1 percent of the landfill's daily permitted capacity. Therefore, the project-generated solid waste would not exceed the landfill's capacity.

If the diversion rate for waste from the project were the same as the diversion rate for the City as a whole, 68 percent of this waste would be diverted (approximately 0.3 tons per day or 102 tons per year), reducing the amount entering the Hay Road Landfill. However, because of the nature of the waste generated by the project (fast-food wrappers, convenience-food packing, restaurant waste, auto and truck maintenance items), it is not anticipated that the project would be able to divert a substantial portion of its own waste for recycling.

**Mitigation Measure 4.11.4:** None required.

**Impact 4.11-5:** **The City does not presently meet its solid waste diversion targets. The project would contribute solid waste to the local waste stream, a large portion of which would likely not be diverted, thereby increasing the amount of waste needing to be diverted. This would be considered a significant impact.**

The project would contribute waste to the City's waste stream. As documented previously, the City does not currently meet the 50 percent target diversion rate required by the CIWMA.

**Mitigation Measure 4.11.5:** In an attempt to divert the maximum amount of solid waste possible, the project shall provide clearly marked bins for the collection of recyclable materials and shall separate these materials for collection by the waste services provider. Implementation of this mitigation measure would help to ensure that the project contributes positively toward the City achieving its CIWMA requirements. However, because of the nature of the waste that would be generated by the project, it is not anticipated that the project would be able to divert 50 percent of its own waste for recycling. The contribution of the project to the City's failure to comply with State diversion requirements would be a significant and unavoidable impact.

**Impact after Mitigation:** Significant.

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## 5.0 OTHER CEQA REQUIRED DISCUSSIONS

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### 5.1 INTRODUCTION

This chapter is provided to meet the requirements of Section 21100 of the *California Environmental Quality Act (CEQA) Guidelines* that an EIR include in a separate section or sections the following discussions: (1) Growth Inducement; (2) Significant Irreversible and Irretrievable Effects, including a discussion regarding irretrievable commitments of nonrenewable resources; (3) Unavoidable Significant Effects; (4) Effects Found to be not Significant; and (5) the Relationship Between Short-Term and Long-Term Productivity. These topics are explained and analyzed in this chapter.

### 5.2 GROWTH INDUCEMENT

Section 15126.2(d) of the *CEQA Guidelines* requires that an EIR include a discussion of the potential for a proposed project to foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The *CEQA Guidelines* also state that it must not be assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment. This section of the EIR provides an analysis of such potential growth-inducing impacts, based on criteria suggested in the *CEQA Guidelines*.

In general terms, a project may foster spatial, economic, or population growth in a geographic area if the project meets any one of the criteria that are identified below:

- The project removes an impediment to growth through the establishment of an essential public service, the provision of new access to an area, or a change in a restrictive zoning or general plan land use designation;
- Economic expansion and population growth through changes in revenue base, employment expansion, etc.;
- Establishment of a precedent-setting action, an innovation removal of a restrictive zoning requirement, or general plan amendment approval; or
- Development or encroachment in an isolated or adjacent area of open space.

For the purposes of this discussion, the project is considered growth inducing if it results in any of the actions identified in the criteria above. An evaluation of

the Flying J Travel Plaza project related to these growth-inducing criteria is provided below.

The *CEQA Guidelines* also require that consideration be given to potential impacts on community services facilities resulting from increases in population. **Section 4.9, Public Services**, and **Section 4.11, Utilities and Service Systems**, address potential impacts on public services and utilities such as police, fire, water, wastewater, etc., resulting from the projected increase in population that would result from the project. It must be emphasized that the *CEQA Guidelines* require that an EIR to “discuss the ways” a project could be growth-inducing and to “discuss the characteristics of some projects that may encourage...activities that could significantly affect the environment.” However, the *CEQA Guidelines* do not require that an EIR predict or speculate specifically where such growth would occur, in what form it would occur, or when it would occur.

## 5.2.1 Removal of an Impediment to Growth

Growth in an area may result from the removal of physical impediments or restrictions to growth, as well as the removal of planning impediments resulting from land use plans and policies. In this context, physical growth impediments may include non-existent or inadequate access to an area or the lack of essential public services (e.g., water services), and planning impediments may include restrictive zoning and/or general plan designations.

### 5.2.1.1 *Extension of Utilities, Public Services, and Roads*

Currently, there is no established utility infrastructure in the immediate project area. However, because of existing land uses in the vicinity of the project area, there are sufficient sources with which a complete utility infrastructure for potable water, wastewater, natural gas, electricity, and communications could be built as part of the project. This infrastructure would meet the demands of the project and would be consistent with the development allowed by the Northeast Quadrant Specific Plan (NQSP).

As part of the project, a piped drainage system would be constructed to convey the 10-year storm runoff and to control the hydraulic grade lines to 1 foot below the gutter flow line. This system would be constructed in accordance with the City of Dixon improvement standards for the on-site improvements along

Pedrick Road and Professional Drive. To offset post-development flows leaving the project site, a shallow, off-site detention facility would be constructed. This detention facility would be constructed within the designated Agriculture Buffer zone, located within the NQSP, and would include an open channel that extends from Pedrick Road to the detention basin facility.

Prior to NQSP area build-out, a well, two tanks, and a booster facility would be constructed in the NQSP area to provide domestic water service. A second high-volume deep well facility also is planned for the area and may need to be constructed prior to project implementation. An existing 12-inch water main line is located south of the site at Vaughn Road. Currently, this line would be extended as part the Dixon Downs project, with new water main lines installed to the north within Pedrick Road and Professional Drive. Moreover, two future wells would be drilled in the NQSP area as part of the City's Master Water Plan.

The water and wastewater systems, as proposed, are planned and sized to serve the immediate project area and would not have the capacity to serve other growth in the area. No additional fire or police services would be required for the project due to the existing staffing levels in these departments.

Access to the project site is currently provided from the existing Pedrick Road Exit off of Interstate 80 (I-80). As part of the project, Pedrick Road would be improved with new curbs and gutters and widened to accommodate traffic generated by the project development. A new roadway to be called Professional Drive would be constructed approximately 150 feet south of the project entrance on Pedrick Road. Professional Drive would be constructed to provide adequate truck turning lanes at the Professional Drive and Pedrick Road intersection.

### ***5.2.1.2 Zoning and Land Use Designation Changes***

The proposed project would not require a General Plan Amendment because the project is consistent with the existing zoning set forth in the NQSP (Highway Commercial). As described in Section 3.0, the Flying J Travel Plaza project would require project entitlements, including design review, a conditional use permit to allow restaurants, including drive-in restaurants, convenience markets over 500-square-foot retail sales, development agreement, and multi-tenant freeway-oriented sign. Additionally, a variance would be needed to reduce parking lot

shade requirement, allow multiple freestanding signs and to exceed the allowable sign area of 300 square feet. These changes would not be considered growth inducing.

## 5.2.2 Economic Growth

### 5.2.2.1 Construction

Construction of the proposed project would result in a temporary increase in construction-related job opportunities within the local area. However, due to the existing land uses in the vicinity of the project area (agricultural and light industrial), the project would not likely result in household relocation by construction workers to the vicinity of the project site. The construction industry differs from most other industry sectors in several ways, including the following:

- Construction employment has no regular place of business. Rather, construction workers commute to job sites that may change several times a year;
- Many construction workers are highly specialized (e.g., crane operators, steel workers, masons) and move from job site to job site as dictated by the demand for their skills; and
- The work requirements of most construction projects are also highly specialized, and workers are employed on a job site only as long as their skills are needed to complete a particular phase of the construction process.

Additionally, construction workers would likely be drawn from the construction employment labor force already present in nearby communities, such as Vacaville, Davis, and Sacramento. It is not likely that construction workers would permanently relocate their place of residency as a consequence of working on the proposed project.

### 5.2.2.2 Project Operation

Due to the commercial nature of the project area, the Flying J Travel Plaza would not contribute to any population growth on the project site or in the immediate vicinity. The project is expected to generate approximately 89 jobs and, in relation to the overall workforce in the area, the increase in jobs created by the project would be considered small.



### 5.2.3 Precedent-Setting Action

The approval of the requested discretionary actions and development of the uses and supporting facilities that would be part of the proposed project would not be considered precedent-setting actions. The project site is presently designated primarily Light Industrial and Highway Commercial uses. Because the project site is included in the larger NQSP area and the project is consistent with the land uses set forth in that plan, the project would not constitute a precedent-setting action.

### 5.2.4 Development of Open Space

The project site has been historically used for row crops and is not designated as open space. Although the site is presently designated for Highway Commercial development (per the NQSP), at present, the site is completely undeveloped and is characterized by inactive crop land. Other agriculture and light industrial uses surround the site, resulting in a landscape that is largely open space. While the project would develop some of this area and, for this reason, could be considered growth inducing, the project site is part of the City of Dixon's larger Northeast Quadrant, which has been zoned for highway commercial development since the mid-1990s. Because the project would result in retail/commercial development and not residential development, the project would not be considered growth inducing.

### 5.2.5 Conclusion

As discussed above, the proposed project would not be growth inducing and would not be expected to result in economic expansion and population growth. Additionally, the project would not involve a precedent-setting action and, as a result, would be consistent with the prescribed land uses in the NQSP.

## 5.3 SIGNIFICANT IRREVERSIBLE AND IRRETRIEVABLE ENVIRONMENTAL EFFECTS

Uses of nonrenewable resources during the initial and continued phases of a proposed project may be irreversible if a large commitment of these resources makes their restoration thereafter unlikely. According to Section 15126.2(c) of the *CEQA Guidelines*, irretrievable commitments of such resources are to be

evaluated to ensure that their consumption by a proposed project is justified. In addition, this section must also identify any irreversible damage that can result from environmental accidents associated with the proposed project.

Development of the proposed project would represent a long-term commitment to a more intensive land use than currently occurs on the project site (agricultural vs. highway commercial). The proposed project would, therefore, involve an irreversible commitment to the use of non-renewable resources during the construction and operation phases in the form of refined petroleum-based fuels, natural gas for space and water heating, and mineral resources used in construction materials. Once transformed into fuel or other energy forms, or into construction materials, these resources cannot be recovered. Some reuse of construction materials after the useful life of this project may be possible. It is anticipated that these resources would likely be committed to other projects, if not used for this one.

Irreversible long-term environmental changes would accompany the proposed conversion of an agricultural site to a commercial, retail development. These changes would include the loss of agricultural land; a change in the visual character of the site associated with locating small-scale buildings; an increase in local traffic with associated air pollutant emissions and noise-level increases; an increase in the volumes of solid waste and wastewater generated in the area; and an increase in water consumption.

The project would not involve the need for additional school space or the need for a variety of recreational opportunities. In the past, the project site has been used for agricultural purposes and contains open land that currently is not used for agricultural production. It is not likely that the existing environment could be restored to its current condition subsequent to project development; however, mitigation measures are proposed throughout **Section 4.0** of this EIR to minimize the effects of the development impacts.

The *CEQA Guidelines* also require a discussion of the potential for environmental damage caused by an accident associated with the project. The following discussion identifies the characteristics of the site and proposed future uses, which could be sources of potential accidents.

### 5.3.1 Introduction of New Hazards and Hazardous Materials

As described in **Section 3.0, Project Description** and **4.5, Hazards and Hazardous Materials**, the primary function of the Flying J Travel Plaza would be to provide fueling services to both diesel and gasoline vehicles. Operation of the project would involve hundreds of trucks and vehicles refueling at the pumps on a daily basis. Each time a pump is used, fuel would be withdrawn from the underground storage tanks and distributed to the vehicle. This usage would require the underground tanks to be refilled regularly and would involve fueling trucks transporting large amounts of both diesel and gasoline fuels to the project site. Activities such as these create a reasonable risk of a release of fuel into the environment from fueling truck accidents or spills.

In addition, products such as cleaning agents, paints, and solvents may contain hazardous materials that would be used in varying amounts during construction and operation of the project. However, given the multitude of federal, State, and local regulations governing the use of such substances, project development is not expected to involve activities that would damage the environment or pose a risk to public health.

Conformance with the regulatory provisions of the Uniform Building Code (UBC) pertaining to construction standards would minimize, to the extent feasible, damage and injuries in the event of an accident during construction of the Flying J Travel Plaza. Geotechnical hazards can be mitigated by compliance with standard engineering and geotechnical practices, and no significant impacts on the site would be expected.

Within the project area, no Proposition 65 pesticides, such as insecticides, herbicides, and fungicides, would be used in the common and public areas. Humans would not be subject to either acute overexposure or chronic exposure to these substances if used and handled according to State and federal regulations.

### 5.3.2 Existing Hazards and Hazardous Materials

The project area has historically been used for agricultural purposes, a truck shop, rural residences, and barns. Based on a Phase I ESA prepared in 1993, when there were still buildings and structures immediately adjacent to the site,

the NQSP EIR concluded there was the potential that soil in the project area could have been contaminated by past uses, including the storage of fuels, the ongoing application of pesticides, herbicides and other agricultural chemicals, or illicit debris disposal. For those areas where contamination has been identified, soil containing elevated levels of contaminants, left unmanaged, could pose a health risk to area workers and occupants if contaminated soil is disturbed.

However, the proposed project would not perform any construction or operational activities in the identified contaminated areas. Even though the project would not disturb known contaminated soil, and all other reasonable efforts have been made to determine the likelihood of contaminant sources, it is possible that not all septic tanks, wells, or other underground storage devices or conveyance systems have been identified because these could have been installed prior to permitting requirements. Mitigation measures have been included in this EIR to minimize any impacts related to workers encountering previously unidentified contamination. The inclusion of these measures would reduce any potentially significant impact to a less-than-significant level.

## 5.4 UNAVOIDABLE SIGNIFICANT EFFECTS

As required by the Section 15126.2(b) of the *CEQA Guidelines*, an EIR must describe any significant impacts that cannot be avoided, including those that can be mitigated but not reduced to a level of insignificance. **Chapter 4** of this EIR provides a description of the potential environmental impacts of the project and recommends mitigation measures to reduce impacts to the extent feasible. After implementation of the recommended mitigation measures, most of the impacts associated with the project would be reduced to a less-than-significant level.

The following significant effects may not be able to be mitigated to a less-than-significant level of insignificance and, therefore, could be considered unavoidable.

### 5.4.1 Agricultural Resources

Implementation of the project would convert 27 acres of Prime Farmland to non-agricultural use. There are a number of policies and programs in place that attempt to limit the loss of farmland. For example, the policies of the General Plans of Solano County and Dixon strongly encourage new development to

occur only within areas that are within the City's urbanizing area and discourage the conversion of agricultural lands to urban uses where urban services are not available. While the development agreement to be entered into by the City and developer shall require that the developer either provide for a 1:1 conservation of agricultural land within the Dixon area or pay the appropriate fee to participate in the City's master agricultural conversion program, impacts would still be considered significant and unavoidable.

## 5.4.2 Air Quality

### *Construction-Related Impacts*

During construction of the proposed project, construction-related emissions would occur from on-site stationary sources, heavy-duty construction equipment, construction worker vehicles, grading operations, architectural coating operations, and asphalt paving. Additionally, development of the project site would require grading operations as well as a cut-and-fill operation to create a detention pond and building pads. The final phase of the project would require application of architectural coatings and asphalt paving, both of which would generate ROG emissions. As a result, construction emissions would not contribute to the long-term degradation of air quality. However, while mitigation measures have been identified to minimize air quality impacts associated with construction activities, short-term impacts would still be significant and unavoidable.

### *Operational Impacts*

Upon full buildout Travel Plaza, operation of the project would generate criteria pollutant emissions from motor vehicles associated with motor vehicle trips, idling, and point and stationary and area sources (e.g., gasoline storage and dispensing, natural gas combustion, consumer products). Specifically, stationary, area, and mobile source emissions would be generated from the daily operations of the Travel Plaza.

Typical day-to-day activities would include heavy-duty diesel trucks, automobiles/light-duty trucks, and medium-duty/light-heavy-duty trucks exiting Interstate 80 to use the proposed project's facilities. Diesel particulate

matter, as well as other constituents of diesel and gasoline fuel combustion, would be emitted in the project's vicinity due to these trips.

In addition to mobile source emissions, the proposed project would also generate stationary source emissions from the operation of two gasoline storage tanks and dispensing equipment. Area source emissions would be generated from natural gas combustion for shower and laundry facilities, space heating, and restaurant operations. Periodic repainting and landscape maintenance would generate area source emissions.

While mitigation measures have been identified to minimize air quality impacts associated with operation of the Travel Plaza, long-term air quality impacts would be significant and unavoidable.

## 5.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 15128 of the *CEQA Guidelines* requires an EIR to contain a statement briefly indicating the reasons that various possible significant effects of a project were determined to be not significant and are not discussed in detail in the EIR. The following topics were determined to result in less-than-significant impacts as a result of project implementation.

- **Public Services – Schools.** This project would not result in direct population growth in the City of Dixon since it is not a residential project. The Travel Plaza would employ approximately 89 people, with the majority of the employees expected to be from Dixon or the surrounding area. However, a percentage of these new employees and their families could potentially move into the Dixon Unified School District (DUSD) and thereby result in an increase to the student population. Since Dixon schools are currently operating beyond capacity, any additional enrollment could not be accommodated by the district, which would be a significant impact. The General Plan authorizes the DUSD to levy fees on all development projects within the City of Dixon. According to the district's *School Facility Needs Analysis* of 2004, the DUSD requires fees at the maximum level allowed of \$0.36 per square foot for commercial and industrial projects. Per Senate Bill 50 (SB 50), payment of such fees would be considered to be full and complete mitigation for impacts related to the increased enrollment at DUSD schools.
- **Public Service – Parks.** Because the project is commercial and not residential, it would not directly add residents to the area who would use the City's park facilities. Therefore, impacts to parks are considered less than significant.

Additionally, the City of Dixon completed an Initial Study for the proposed project, as described in Section 15060 of the *CEQA Guidelines*, and determined that an EIR should be prepared to analyze the potential environmental effects of this proposed project.

The Initial Study conducted for this project found the following impacts not to be significant, and as a result, they are not evaluated in the EIR.

- **Cultural Resources** – According to recent literature reviews performed by the California Historical Resources Information System (CHRIS) (September 2005), there was no evidence of any intact archaeological, historical, or paleontological deposits on the project site. A records search was conducted for the project by reviewing pertinent Northwest Information Center (NWIC) data maps, historic-period maps, and literature pertaining to Solano County on file at the CHRIS office. Review of the information indicated that the project area contains no recorded Native American or historic-period archaeological resources. Additionally, the CHRIS office had no record of any archaeological studies of the project area, and State and federal inventories listed no historic properties within the project area. Construction of the Flying J Travel Plaza would require compliance with State and local policies aimed at protecting these resources in the event finds are made during construction.
- **Geological Resources** – According to the NQSP EIR, the City of Dixon is located in a region prone to seismic occurrences, generally associated with the San Andreas Fault system located approximately 60 miles to the west. However, no known fault lines fall within the NQSP area that includes the project site. Additionally, new structures must be designed by law to UBC standards to substantially reduce seismic risk associated with liquefaction and ground failure. These standards include mitigation of liquefiable deposits beneath structures or designing the structures for the anticipated settlement resulting from liquefaction. The project would be required to comply with the most current UBC standards.
- **Mineral Resources** – The project site does not contain any identified mineral resources that would be of value to the region and the residents of the State or result in the loss of availability of a locally important mineral resource recovery site as delineated City of Dixon General Plan.
- **Population and Housing** – Creation of approximately 89 new employment opportunities would not be considered an amount that could induce major population growth in the project area. While the project would result in the extension of existing utility services, including water and wastewater infrastructure to the site, and the improvement to local roads to facilitate access to the project, these improvements would not result in major population growth within the project area.

As a result of the above-supporting information, these issues are not addressed in this EIR.

## 5.6 THE RELATIONSHIP BETWEEN SHORT-TERM AND LONG-TERM PRODUCTIVITY

CEQA requires discussion of the relationship between local short-term uses of the environment and maintenance and enhancement of long-term productivity. The proposed project's commitment of land supply for future growth would have the effect of narrowing the range of other potential beneficial uses on the same lands in the future. The investment in retail and commercial structures and infrastructure would preclude neutral or beneficial uses such as agriculture or open space in this portion of the NQSP.

Nearly all significant short-term impacts during construction would be reduced to less than significant by mitigation, including air quality (fugitive dust generation during grading); water resources (degradation of water quality due to erosion); aesthetics (incompatible heavy construction equipment and materials working in a natural setting); noise (construction equipment noise affecting the occupants of adjacent commercial and industrial areas); transportation (construction equipment trips); public services (emergency response); and hazardous materials (release of contaminants in excavated soil).

In summary, development of the Flying J Travel Plaza would eliminate the option of using the site for another purpose in the future or retaining that particular area of the site in an undeveloped state. Implementation of the project would also result in a long-term commitment of energy resources to build, operate, and maintain the proposed facilities.



### 6.1 INTRODUCTION

*California Environmental Quality Act (CEQA) Guidelines* Section 15126.6(a) specifies that the range of reasonable alternatives to be included in an Environmental Impact Report (EIR) must consist of alternatives that “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.” The project objectives are stated in **Section 3.0, Project Description**, of this EIR.

Alternatives are evaluated in an EIR to provide information on whether or not a variation of a proposed project would reduce or eliminate significant project-induced impacts within the basic framework of the objectives. *CEQA Guidelines* Section 15126.6(f) specifies that the range of alternatives is governed by the “rule of reason,” requiring the evaluation of only those alternatives “...necessary to permit a reasoned choice.” Further, an EIR “...need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.”

The Flying J Travel Plaza project has been described and evaluated in **Chapter 3** and **Chapter 4** of this EIR, with an emphasis on potentially significant impacts and recommended mitigation measures to avoid these impacts. The alternatives selected for analysis in this chapter were identified based on the ability of these alternatives to avoid or lessen the significant environmental impacts identified in **Chapter 4**, while attempting to meet the basic objectives of the project. The project would result in significant impacts (before mitigation) in the following resource areas: aesthetics, agricultural resources, air quality, biological resources, hazards and hazardous materials, hydrology and water quality, noise, public services, transportation, and utilities and service systems.

### 6.2 ALTERNATIVES SELECTED FOR EVALUATION

Section 15126.6(e) of the *CEQA Guidelines* requires the analysis of a “No Project Alternative.” The purpose of describing and analyzing a No Project Alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The *CEQA*

*Guidelines* state that the No Project Alternative is the circumstance under which the project would not proceed. This could include buildout of a site under existing plans or the preservation of existing conditions. In both cases, the consequences of not approving the project must be discussed.

In addition to the No Project Alternative, two additional alternatives were identified for analysis in this EIR: the Alternative Location (Milk Farm site) Alternative and the Reduced Intensity Alternative. These alternatives could avoid or significantly lessen some of the significant impacts of the project while meeting the basic objectives of the project.

The following discussion describes each alternative and compares the impacts of the alternatives to project impacts.

## **6.2.1 Alternative 1: No Project/Existing Specific Plan Alternative**

### **6.2.1.1 Description**

The No Project/Existing Specific Plan Alternative considers development of the site with Highway Commercial (CH) land use classification, as allowed by the Northeast Quadrant Specific Plan (NQSP). The 60-acre development parcel would be developed with approximately 49 acres of CH uses, which could include auto sales and services, gasoline service stations, auto and trailer sales, service and supply stores, restaurant, hotels, motels, and 11 total acres of roadways. As with the proposed project, under this alternative, Professional Drive would be constructed from Pedrick Road and extended to the southern boundary of the development parcel.

**Alternative 1** represents a more intense use of the development parcel and would differ than the proposed project in that it would develop 22 additional acres of the parcel with highway-oriented commercial land uses. This additional development would include a greater diversity of businesses and may offer more employment opportunities but would provide fewer services and less overnight parking for commercial truckers.

### 6.2.1.2 *Alternative 1, Comparative Analysis of Impacts*

#### **Aesthetics**

The NQSP EIR identifies less-than-significant impacts as a result of development in the Specific Plan Area in relation to visual compatibility and light and glare impacts. The NQSP EIR identifies mitigation measures, policies, and design guidelines to minimize visual impacts. The policies provided in the NQSP “will ensure the protection on visual open space and will enhance the scenic quality of the area” (City of Dixon [NQSP EIR] 1994). Development under **Alternative 1** would be required to adhere to these policies and mitigation measures and, thus, impacts to visual quality are considered less than significant under this alternative. Given this, implementation of this alternative would lessen the significant project impact identified for the proposed project. However, similar to the proposed project, development of this project in combination with future projects would contribute to cumulative impacts to the visual environment.

#### **Agricultural Resources**

The NQSP EIR identifies significant and unavoidable impacts to agricultural resources. As is true with the proposed project, development under this scenario would not conflict with current zoning or Williamson Act contracts and would not be anticipated to significantly impact the continued application of nearby agricultural practices. However, development under **Alternative 1** would convert 22 additional acres of Prime Farmland into highway-oriented commercial land, thereby increasing the significant unavoidable impact from the loss of this finite resource than that from the proposed project.

#### **Air Quality**

Both the proposed project and this alternative, as discussed in the NQSP EIR, would have significant and unavoidable air quality impacts. Development under **Alternative 1** would result in a more intensive use of the land for commercial purposes, which would increase criteria pollutant emissions from earthmoving and construction activities, motor vehicle emissions, stationary sources, and area sources. Under both **Alternative 1** and the project, gasoline service stations would be allowed that would generate stationary source reactive organic gas (ROG) emissions. However, **Alternative 1** would allow

development of additional commercial buildings, including restaurants and hotels, which would increase emissions from landscape maintenance, periodic repainting of the buildings, the consumption of natural gas for space heating, water heaters, and food preparation equipment relative to the proposed project.

Additional commercial services offered under **Alternative 1** would attract a greater number of employees and visitors to the area, who would travel to and from the project area. These additional vehicle trips would result in an increase in automobile emissions of criteria pollutants and carbon monoxide. Conversely, **Alternative 1** would provide fewer services for commercial trucks than the proposed project, which would result in lower diesel emissions including particulate matter that would result from both truck idling and truck travel to and from the project area. Because of more intense uses under **Alternative 1**, this alternative would be expected to result in decreased air quality, compared to the project alternative.

### **Biological Resources**

Impacts to biological resources from both **Alternative 1** and the proposed project would be less than significant after mitigation. **Alternative 1** allows for the conversion of 22 additional acres of suitable land for active nests of special-status birds and Swainson's hawk than the proposed project. However, the NQSP EIR identifies mitigation measures to reduce these biological impacts. Development of **Alternative 1** would be required to adhere to these mitigation measures and, thus, impacts to biological resources would be considered less than significant under this alternative. Given this, implementation of this alternative would create an impact to biological resources similar in significance as that of the proposed project.

### **Hazards and Hazardous Materials**

Development of **Alternative 1** would allow for many of the same uses as the proposed project, including fueling facilities. Many of the impacts of the proposed project pertaining to hazardous materials involve the use, transportation, and storage of diesel fuel and gasoline. Therefore, impacts from the use, transportation and storage of hazardous materials, such as fuel, would remain similar. Yet, since the development footprint of **Alternative 1** is 22 acres

larger than the proposed project, construction of this alternative would involve a greater disturbance of soil, which would have the potential to contain hazardous substances. The NQSP EIR identifies policies and mitigation measures to reduce these impacts. Development of **Alternative 1** would be required to adhere to these policies and mitigation measures and, thus, impacts from hazardous substances would be considered less than significant under this alternative. Given this, implementation of this alternative would create an impact from hazards similar in significance as that of the proposed project.

### **Hydrology and Water Quality**

Impacts to water resources from both **Alternative 1** and the proposed project would be less than significant after mitigation. **Alternative 1** would allow for the conversion of 22 additional acres of to commercial uses that would consist mostly of impervious surfaces. The construction of additional commercial buildings allowed under this alternative would increase construction related erosion and turbid runoff. The increase in impervious surface area would increase stormwater runoff, the concentration of non-point source pollutants, erosion or siltation to receiving waters, risks related to flooding, and decrease groundwater. However, the NQSP EIR identifies mitigation measures to reduce these potential impacts. Development of **Alternative 1** would require adherence to these mitigation measures and, thus, impacts to water resources would be considered less than significant under this alternative. Given this, implementation of this alternative would create impacts to hydrologic resources equal in significance as those of the proposed project.

### **Land Use and Planning**

By definition, **Alternative 1**, which would develop site with Highway Commercial (CH), as allowed by the Northeast Quadrant Specific Plan (NQSP), would be consistent with the NQSP and the General Plan. The NQSP EIR identified no applicable significant impacts regarding land use and planning, or applicable mitigation measures. Thus, impacts under land use and planning would be considered less than significant under **Alternative 1**. Given this, both the proposed project and the alternative would have a less than significant impact under land use and planning thresholds.

### **Noise**

Construction of **Alternative 1** would create noise impacts above those of the proposed project. This alternative would develop additional area in the project site for commercial use, which would involve the construction of additional buildings and associated facilities. Therefore, this alternative would necessitate more construction in the project area, resulting in an increase in associated groundborne vibration and ambient noise impacts. Ambient noise levels under operation of the proposed project would also increase. However, the NQSP EIR identifies mitigation measures to reduce these noise impacts. Development of **Alternative 1** would be required to adhere to these mitigation measures and, thus, impacts from noise would be considered less than significant under this alternative. Given this, implementation of this alternative would create noise impacts equal in significance as those of the proposed project.

### **Public Services**

This alternative would result in a more intensive use of land than the proposed project, which would create a greater need for police services, fire services, and educational facilities. However, the NQSP EIR identifies mitigation measures to reduce these impacts. Development of **Alternative 1** would be required to adhere to these mitigation measures and, thus, impacts from the increased need for public services would be considered less than significant under this alternative. Given this, implementation of this alternative would create impacts to the provision of public services equal in significance as those of the proposed project.

### **Traffic and Circulation**

When compared to the proposed project, this alternative would result in a greater number of buildings and services, which would decrease the Level of Service (LOS) and increase cumulative impacts to transportation facilities in the area. The NQSP EIR identifies facility improvements and other mitigation measures to reduce traffic impacts and as a result, development of **Alternative 1** would be required to adhere to these mitigation measures. However, because this alternative would result in more intensive land uses, impacts related to transportation and circulation would likely become significant over the long-

term. Given this, implementation of this alternative would create transportation impacts greater in significance as those of the proposed project.

### **Utilities**

This alternative would result in a more intensive use of land than the proposed project, which would require a larger utility infrastructure to support water supply systems, wastewater systems, and solid waste collection. However, the NQSP EIR identifies mitigation measures to reduce utility impacts. Development of **Alternative 1** would be required to adhere to these mitigation measures and, thus, impacts from the increased need for utilities would be considered less than significant under this alternative. Given this, implementation of this alternative would create impacts to utilities that are equal in significance as those of the proposed project.

## **6.2.2 Alternative 2: Alternative Location (Milk Farm Site) Alternative**

### **6.2.2.1 Description**

**Alternative 2** would develop a similar travel plaza on approximately 27 acres of the 60-acre Milk Farm site, located across Interstate 80 (I-80) from the project site, at the Currey Road interchange. The site recently approved by the City for annexation, has 30 acres of CH-classified land and 30 acres of land classified for agricultural uses.

Similar to the proposed project, **Alternative 2** would develop a 17,638 square-foot Travel Plaza with associated parking areas, landscaping, and roadways. Development would occur in the southern portion of the parcel in the area designated CH. The “truck idle reduction program” would also be implemented as part of **Alternative 2**. The 85-foot-high, freeway-oriented Flying J Travel Plaza sign, described in **Section 4.0** of this EIR as part of the project, would be placed along the site’s eastern project boundary fronting I-80. Freeway access to the site would be provided via the I-80 North First Street/Currey Road interchange or Milk Farm Road exit.

The site is mostly vacant, except for two rural residences located along the western boundary of the property. Remnants from the former Milk Farm restaurant, which operated on the site between the 1940s and the 1980s, can be

found in the southwestern portion of the site. Two former service station sites occupy the northwestern portion of the site.

This property is under active oversight by the Solano County Department of Environmental Health for investigation and remediation of soil and groundwater contamination. Surrounding land uses include agricultural uses (orchard, field, and row crops) northwest of the site and developing areas of the City, including industrial, commercial, and residential uses south and west of the freeway.

### 6.2.2.2 *Alternative 2, Comparative Analysis of Impacts*

#### **Aesthetics**

Under this alternative, the project site would be visible for a short-duration of time to motorists traveling eastbound and westbound on I-80, North First Street, and Currey Road. Similar to the proposed project, extensive landscaping proposed as part of the project would substantially screen the main building and other features on the site. The historic Milk Farm restaurant sign, which has been restored to include the “cow jumping over the moon” at the top of the sign, is located near the junction of Milk Farm and Currey roads. Additionally, an 80-foot-high, freeway-oriented sign, which displays advertisement for the Wal-Mart shopping center, is located on the south side of I-80. Given this, implementing the proposed 85-foot-high, freeway-oriented Flying J sign would be compatible with the scale and massing of the existing signage in the area. Therefore, significant impacts to the visual environment would be avoided under this alternative.

#### **Agricultural Resources**

**Alternative 2** would not directly convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use since the project would be located on land that was previously developed. Soil and groundwater contamination also prevents the site from being considered an agricultural resource. As with the proposed project, development of this alternative would not conflict with current zoning or Williamson Act contracts and would not be anticipated to significantly impact the continued application of nearby agricultural practices. Since this alternative would not convert farmland to a



non-agricultural use, development of **Alternative 2** would avoid the significant impact that the proposed project would have on agricultural resources.

### **Air Quality**

Development of this alternative would have an impact of equal significance to air quality as the proposed project. The development of a similar travel plaza, in a different location, similar in distance to I-80, would generate similar emissions from the number and type of associated vehicles, construction, and travel plaza uses. While mitigation measures for this alternative would be similar to those proposed for the proposed project, both alternatives would result in significant and unavoidable impacts to air quality. The “truck idle reduction program” to reduce diesel emissions would be included in both the proposed project and **Alternative 2**.

### **Biological Resources**

Impacts to biological resources from both **Alternative 2** and the proposed project would be similar. **Alternative 2** would allow for the conversion of an equal amount of suitable land for active nests of special-status birds and Swainson’s hawk as the proposed project. Similar mitigation measures would be required and, thus, impacts to biological resources would be considered less than significant under this alternative. Given this, implementation of **Alternative 2** would create an impact to biological resources equal in significance as that of the proposed project.

### **Hazards and Hazardous Materials**

**Alternative 2** would develop the same uses as the proposed project, including fueling facilities. Many impacts of the proposed project pertaining to hazardous materials would involve the use, transportation, and storage of diesel fuel and gasoline. Therefore, impacts from the use, transportation and storage of hazardous materials, such as fuel, would remain similar under this alternative. However, since **Alternative 2** is located in an area under active oversight by the Solano County Department of Environmental Health for investigation and remediation of soil and groundwater contamination, construction would involve the disturbance of soil known to contain a greater amount of hazardous substances. Given this, development of this alternative would result in increased

impacts related to hazards and hazardous materials over those of the proposed project.

### **Hydrology and Water Quality**

**Alternative 2** would allow for the development of a travel plaza identical to the proposed project. Since construction under this alternative and the project would be similar, effects from construction related erosion and turbid runoff would also be similar. Since both scenarios would develop 27 acres of land with similar travel plazas, impacts regarding stormwater runoff, the concentration of non-point source pollutants, erosion or siltation to receiving waters, risks related to flooding, and the decrease in groundwater would be similar. Given this, implementation of **Alternative 2** would create impacts to hydrology and water resources similar in significance to those of the proposed project.

### **Land Use and Planning**

Development under **Alternative 2** would occur in the southern portion of the parcel in the area designated CH, which is the same designation as the proposed project site. The City has recently approved the site for annexation. Consistency with applicable plans and policies would therefore be similar to that of the proposed project. **Alternative 2** would not divide an established community since established industrial, commercial, and residential uses occur on the other side of the freeway. Due to the similarities in land use designation, location within the City and distance from existing residential developments, both the proposed project and this alternative would have similar less than significant impacts under land use and planning thresholds.

### **Noise**

Construction of **Alternative 2** would create noise impacts similar to those of the proposed project. This alternative would develop an identical travel plaza on a different site. Therefore, construction methods and the associated groundborne vibration and ambient noise impacts would be similar to those in the proposed project. Ambient noise levels under project operation would also be similar to those associated with this alternative.

### **Public Services**

**Alternative 2** would develop a travel plaza identical to the proposed project and would therefore, be anticipated to generate a similar need for police and fire services. Given this, impacts to the City's ability to provide public services would be similar under **Alternative 2** and the proposed project.

### **Traffic and Circulation**

Development of a travel plaza, in a different location, similar in distance to I-80, would generate similar amounts of traffic, make a similar contribution to cumulative traffic impacts, and would be likely to require roadway improvements similar to those identified for the proposed project. Therefore, traffic impacts under **Alternative 2** would be similar in significance to those of the proposed project.

### **Utilities**

**Alternative 2** would develop a travel plaza very similar to the proposed project and would therefore be anticipated to generate similar needs for water, wastewater, and solid waste disposal facilities. Because the project site for this alternative has been previously built upon, some degree of utility infrastructure is likely to exist. However, given the fact that part of the infrastructure was constructed in the 1940's, much of it would need to be replaced. Given this, impacts to utilities would be similar under **Alternative 2** and the proposed project.

## **6.2.3 Alternative 3: Reduced Intensity Alternative**

### **6.2.3.1 Description**

**Alternative 3** would develop a smaller version of the Travel Plaza within the same portion of the project site. **Alternative 3** would result in the construction of a travel plaza building but would eliminate many of the services provided under the proposed project. These services include the restaurant, driver lounge, and laundry and shower facilities. The 85-foot-high, freeway-oriented Flying J Travel Plaza sign, proposed as part of the project, would be reduced to 65 feet in height. Similar to the project, this alternative would develop approximately 25 acres of

the 60-acre parcel and would feature similar roadway access as the proposed project.

### 6.2.3.2 *Alternative 3, Comparative Analysis of Impacts*

#### **Aesthetics**

Similar to the proposed project, implementing **Alternative 3** would result in a substantial change of character to the project site and surrounding areas. However, the extensive landscaping and landscape buffer proposed along the western portion of the site would substantially screen the Travel Plaza building and other features on the site. Additionally, the freeway-oriented Flying J sign would be constructed at 65-feet, creating a more compatible relationship with the existing visual character of the area. Given this, significant project impacts to visual character would be avoided under this alternative. However, similar to the proposed project, development of this project in combination with future projects would contribute to cumulative impacts to the visual environment.

#### **Agricultural Resources**

**Alternative 3** would have a similar impact to agricultural resources as the proposed project since both projects would convert between 25 and 27 acres of Prime Farmland into a non-agricultural use. As with the proposed project, development under this scenario would not conflict with current zoning or Williamson Act contracts and would not be anticipated to significantly impact the continued application of nearby agricultural practices.

#### **Air Quality**

**Alternative 3** would develop less commercial services than the proposed project, which would result in a slight decrease in criteria pollutant emissions from earthmoving and construction activities, motor vehicle emissions, stationary sources, and area sources. Under both **Alternative 3** and the proposed project, similar fueling facilities would be allowed, which would generate similar stationary source reactive organic gas (ROG) emissions. **Alternative 3** would result in development of fewer commercial services, which would decrease emissions through the lessened amount of the consumption of natural gas for space heating, water heaters, and food preparation equipment. The decreased

number of commercial services offered under **Alternative 3** would require fewer employees and attract fewer visitors. Reduction in travel to the project area would in turn result in decreased emissions of criteria pollutants and carbon monoxide. **Alternative 3** would also result in fewer services for commercial trucks than the proposed project, which would reduce diesel emissions in the project area, including particulate matter that would result from truck idling and travel to and from the project area. Consequently, this alternative would be expected to result in slightly fewer significant impacts to air quality, as opposed to the proposed project.

### **Biological Resources**

Impacts to biological resources under **Alternative 3** and the proposed project would both be less than significant after mitigation. **Alternative 3** would allow for the conversion of suitable land for active nests of special-status birds and Swainson's hawk on the same parcel as the proposed project. Similar mitigation measures would be required and, thus, impacts to biological resources would be considered less than significant under this alternative. Given this, implementation of **Alternative 3** would create an impact to biological resources equal in significance as that of the proposed project.

### **Hazards and Hazardous Materials**

Both **Alternative 3** and the proposed project would develop fueling facilities that would cause similar impacts from the use, transportation and storage of hazardous materials, such as fuel. Additionally, **Alternative 3** would develop a similar-sized facility in the same location as the proposed project, which would involve a similar disturbance of soil that could contain hazardous substances. Given this, **Alternative 3** would have impacts related to hazards and hazardous materials equal in significance as those of the proposed project.

### **Hydrology and Water Quality**

While **Alternative 3** would develop buildings on a smaller scale, effects from construction-related erosion and turbid runoff would be similar to that of the proposed project because the project acreage would be similar (25 acres vs. 27 acres). Additionally, impacts under this alternative regarding stormwater runoff, the concentration of non-point source pollutants, erosion or siltation to

receiving waters, and risks related to flooding would be similar to those under the proposed project, this due to the levels of proposed impervious surfaces. Given this, **Alternative 3** would have impacts related to hydrology and water quality equal in significance as those of the proposed project.

#### **Land Use and Planning**

Implementation of **Alternative 3** would result in a similar, but less intensive version of the proposed Travel Plaza, in the same portion of the project site. This alternative and the proposed project would allow for the development of a Travel Plaza on the same parcel of land and would support similar fueling facilities. While **Alternative 3** would result in fewer travel-related amenities, it would have an impact of similar significance under land use and planning criteria.

#### **Noise**

Implementing **Alternative 3** would create noise impacts slightly lower in significance to those of the proposed project. While this alternative would develop a smaller Travel Plaza on the same site as the proposed project, many of the construction related groundborne vibration and ambient noise impacts would be the same (e.g., grading, trenching, etc.). However, it would be expected that ambient noise levels under project operation would be decreased since this alternative would offer less commercial services (e.g. restaurant) and would likely generate less traffic and operational noise.

#### **Public Services**

Since it is smaller in scale and would have fewer visitors and employees, **Alternative 3** would likely create fewer calls for service and therefore have less of a need for police and fire services than the proposed project. Given this, **Alternative 3** would have less of an impact to the City's ability to provide public services than the proposed project.

#### **Traffic and Circulation**

**Alternative 3** would reduce the commercial element of the proposed project, thus decreasing the amount of traffic traveling to and from the project site. This

reduction in traffic would likely result in an improvement of the LOS in the area. This reduction also would be expected to decrease impacts to nearby transportation facilities, especially under the cumulative conditions, when compared with the proposed project. Therefore, **Alternative 3** would have less of an impact to transportation facilities than the proposed project.

#### **Utilities**

**Alternative 3** would eliminate the restaurant, driver lounge and laundry facilities from the proposed project. Because these facilities would require water use and produce wastewater and solid waste, the absence of these services would lead to a decreased demand for project area utility systems. As a result, implementation of this alternative would have less of an impact to utilities than the proposed project.

### **6.3 SUMMARY OF COMPARATIVE IMPACTS**

This section summarizes the comparative impacts of each of the alternatives when compared to the project. **Table 6.0-1, Summary of Comparative Impacts**, lists the level of significance of the impacts of the project to each environmental area analyzed in **Chapter 4** and shows whether the impacts anticipated under each alternative would be equal, lesser, or greater than those of the project.

### **6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

The *CEQA Guidelines* require that an environmentally superior alternative to the proposed project be identified in an EIR. The *CEQA Guidelines* also require that “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(e)(2)). In general, the environmentally superior alternative minimizes adverse impacts to the environment, while still achieving the basic project objectives.

**Table 6.0-1  
Summary of Comparative Impacts**

Environmental Impact	Level of Significance			
	Project	Alt. 1 No Project/ Specific Plan	Alt. 2 Milk Farm Site	Alt. 3 Reduced Intensity
Aesthetics	LTS	=	-/	-/
Agricultural Resources	S	=	-/	=
Air Quality	S	+/	=	-/
Biological Resources	LTS/m	=	=	=
Hazards and Hazardous Materials	LTS/m	=	+/	=
Hydrology and Water Quality		=	=	=
Land Use and Planning	LTS	=	=	=
Noise		=	=	-/
Public Services	LTS	=	=	-/
Transportation	LTS/m	+/	=	-/
Utilities	LTS/m	=	=	-/

**KEY**

<b>S</b>	Significant impact
<b>LTS</b>	Less-than-significant impact
<b>LTS/m</b>	Less-than-significant impact with mitigation
<b>=</b>	Impact similar to Project
<b>-/</b>	Impact less than Project
<b>+/</b>	Impact greater than Project

Source: *Impact Sciences, 2006.*

In order to determine the environmentally superior alternative among the alternatives examined in this section, environmental impacts were compared using analyses from the project impact sections of the resource areas analyzed in the subsections of **Chapter 4.0**. There are similar potential environmental impacts with both the proposed project and the project alternatives assessed in this chapter of the EIR. Based on the magnitude of the impacts associated with the proposed project and the alternatives examined, Alternative 3 would be the environmentally superior alternative.

While the actual area of development would be similar to the proposed project, Alternative 3, which would result in the elimination of the restaurant, driver lounge, and laundry and shower facilities, would lessen impacts to the greatest degree. This alternative would not meet one of the basic objectives of the project, which is to provide full-service travel support facilities adjacent to I-80. This alternative would essentially result in the development of a large gas station, without any of the supporting services desired for the area.



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