

BIOLOGICAL RESOURCES ASSESSMENT
FOR THE
**±34-ACRE NAPA COMMERCE CENTER STUDY
AREA**

NAPA COUNTY, CALIFORNIA



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BIOLOGICAL RESOURCES ASSESSMENT FOR THE ±34-ACRE NAPA COMMERCE CENTER STUDY AREA

INTRODUCTION

Project Location

North Fork Associates conducted a biological resources assessment for an approximately 34-acre study area in Napa County, California. The study area is located southwest of the corner of Highway 29 and Airport Boulevard south of the City of Napa. The location corresponds to Section 1 of Township 4 North and Range 4 West on the 7.5 minute Cuttings Wharf USGS (United States Geological Survey) quadrangle (Figure 1). The latitude and longitude of the approximate center of the study area are 38.22132° north and 122.25983° west. The Assessor Parcel Number (APN) is 057-210-056.

Setting

The study area is located at an elevation between approximately 45 and 80 feet. The study area is bounded by Airport Boulevard and commercial developments to the north, undeveloped land to the west and south, and Highway 29 to the east. Surrounding land uses include a county airport used by large overseas carriers for training, a Napa County Sheriff Department Office, salt ponds, business and industrial development, agricultural activities, a golf course, and patches of undeveloped open areas (Figure 2).

Objectives of Biological Resources Assessment

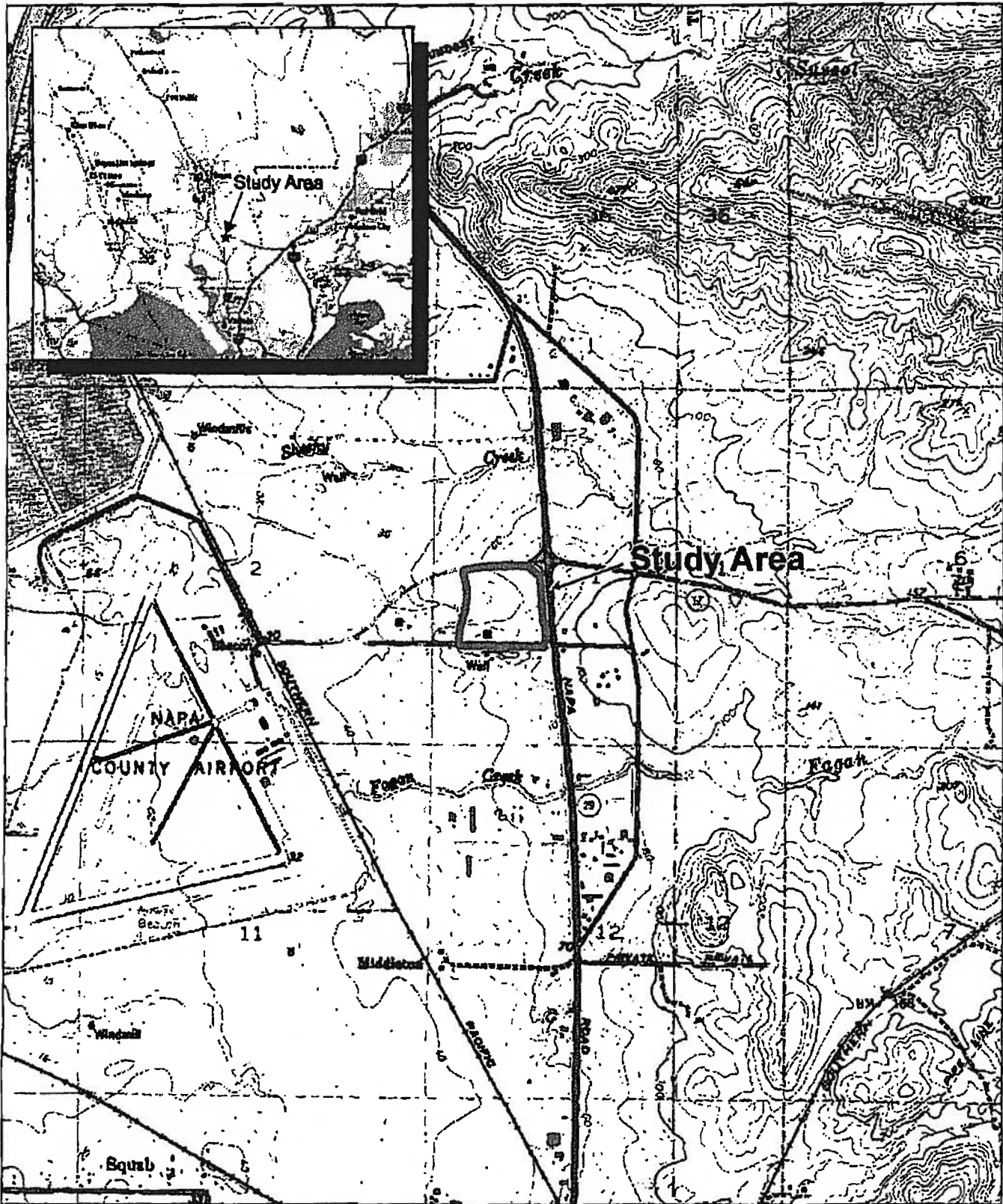
- Identify and describe the biological communities present in the study area.
- Record plant and animal species observed in the study area.
- Evaluate and identify sensitive resources and special-status plant and animal species that could be affected by project activities.
- Provide conclusions and recommendations.

METHODS

Literature Review

A variety of resources were used in this assessment. An aerial photo was obtained from 2007 (taken in July, 2007), and TLA Engineering and Planning Inc. supplied the digital base files, including a topographic map of the site. Geological information was taken from the Geologic Map of California, Santa Rosa Sheet (California Department of Conservation 1963). Information on soils was taken from the Soil Survey Geographic (SSURGO) Database for Napa County, California (USDA, NRCS 2006).

Several publications were reviewed to provide information on life history, habitat requirements, distribution, and conservation status of regionally occurring animal



NOTES
Base map, Calings Vihari, CA, USGS
7.5 minute topographic quadrangle
Section 1
Township 04N
Range 04W

Figure 1

Site & Vicinity
Napa Commerce Center
Napa County, California



Study Area



NOTES:
Aerial Photo Date, July 2007

Figure 2

Aerial Photo Map
Napa Commerce Center
Napa County, California

Species	Status*			Habitat	Potential for Occurrence**
	Federal	State	Other		
Showy Indian clover <i>Trifolium amoenum</i>	FE	-	CNPS List 1B.1	Valley and foothill grasslands.	Possible. Marginal habitat is present onsite, and the species is known historically from Napa Junction. Disturbance may preclude this species.
Invertebrates					
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	FT	-	-	Vernal pools.	Unlikely. Limited suitable habitat present. No individuals observed during field surveys.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	-	-	Vernal pools.	Unlikely. Limited suitable habitat present. No individuals observed during field surveys.
Amphibians					
California red-legged frog <i>Rana aurora draytonii</i>	FT	CSC	-	Lowlands and foothills in ponds, deeper pools, and slow moving streams, usually with emergent vegetation.	None. No habitat onsite for breeding or dispersal.
Birds					
White-tailed kite <i>Elanus leucurus</i>	-	CFP	-	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near grasslands.	Observed. Foraging habitat occurs onsite, and potential nesting habitat is nearby.
Burrowing owl <i>Athene cunicularia</i>	-	CSC	-	Nests in annual and perennial grasslands in burrows created by small mammals.	Possible. Marginal habitat is present, although burrows are not common. Not likely to use the site when dense vegetation is present.

Species	Status*			Habitat	Potential for Occurrence**
	Federal	State	Other		
Swainson's hawk <i>Buteo swainsoni</i>	-	CT	-	Nests in trees located adjacent to large open areas, such as grasslands and agricultural fields.	Possible. Marginal foraging habitat is present when vegetation is removed to reduce the fire hazard. Known nesting location approximately 1.25 miles to the north.

*Status Codes:

Federal

FE Federal Endangered
 FT Federal Threatened
 FP Federal Proposed Species

State

CE California Endangered
 CT California Threatened
 CR California Rare (plants only)
 CSC California Species of Concern
 CFP California Fully Protected

CNPS

List 1B Rare, Threatened, or Endangered in California
 List 2 R, T, or E in California, more common elsewhere
 1-Seriously threatened in California
 2-Fairly threatened in California
 3-Not very threatened in California

**Definitions for the Potential to Occur:

- None. Habitat does not occur.
- Unlikely. Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.
- Possible. Marginal to suitable habitat occurs, and the study area occurs within the range of the species.
- Likely. Good habitat occurs, but the species was not observed during surveys.
- Occurs: Species was observed during surveys.

Plants

The potential for occurrence for species in Appendix C and Table 2 were evaluated before the March and May 2008 surveys and again prior to the April 2009 survey. Based on the results of those surveys, these lists were revised. The high level of past and present disturbance, and the presence of very tall, dense vegetation, probably precludes the presence of species that may have had suitable habitat historically.

Big-scale balsam-root (*Balsamorhiza macrolepis* var. *macrolepis*) is an herbaceous perennial member of the sunflower family (Asteraceae). It has no state or federal status, but it is on the CNPS List 1B. This species has large yellow flowering heads and leaves that arise from the ground. It differs, in part, from other balsam-roots by having coarsely serrate leaves. Big-scale balsam-root grows in open woodlands and grasslands at widely scattered locations in northern California, and will tolerate serpentine soil. It blooms from March to June.

Historically, the study area may have provided some habitat for this species, and the Jepson Herbarium has a specimen from the hills near American Canyon (although this was on serpentine soil). The high levels of disturbance and the thick cover of non-native species may preclude the presence of big-scale balsam-root in the study area. No

members of the genus *Balsamorhiza* or the similar genus *Wyethia* were found during surveys. Big-scale balsam-root has distinctive leaves that would have been evident in the March or May 2008 surveys or in the April 2009 survey, even without blooms. This species is presumed to be absent from the study area.

Pappose tarplant (*Centromadia parryi* subsp. *parryi*) is an annual member of the sunflower family (Asteraceae). It has no state or federal status, but is on the CNPS List 1B. It differs from related species and subspecies by having dark anthers and glandular herbage. Pappose tarplant grows in a variety of wetlands that are often saline or alkaline from Butte and Glenn Counties south to Monterey County. It blooms between May and November.

Very marginal habitat for the pappose tarplant is present. However, all specimens in the Consortium of California Herbaria for Napa County are near Calistoga. Specimens from Solano County are from the area around Suisun Bay near Cordelia. The wetlands in the study area provide habitat, and this species, if present, it would have been identifiable in May 2008. This species is presumed to be absent from the study area.

Contra Costa goldfields (*Lasthenia conjugens*) is an annual member of the sunflower family (Asteraceae). It is a federal endangered species with CNPS List 1B status. It differs from other goldfields by having phyllaries fused less than ½ their length and with mostly pinnately cut leaves. Contra Costa goldfields occurs in mesic grasslands and vernal pools in a number of Bay Area counties. It blooms from March to June.

The wetlands in the study area provide marginal habitat for this species, and it apparently tolerates some level of disturbance. It is known to occur on Suscol Ridge northeast of the study area. As a genus, *Lasthenia* is recognizable without flowers, and no members of the genus were observed in the March or May 2008 surveys or in the April 2009 survey. This species is presumed to be absent from the study area.

Dwarf downingia (*Downingia pusilla*) is a small annual member of the bellflower family (Campanulaceae). It has no state or federal status. The CNPS places the dwarf downingia on their List 2, meaning that, although it is rare in California, it is more widespread elsewhere. Dwarf downingia also occurs in Chile where the type specimen was collected. Dwarf downingia is distinguished from other members of the genus by having very small flowers that are not upside down at blooming time. The species is an obligate wetland plant that occurs primarily in vernal pools. It blooms from March to May, depending on the amount and distribution of winter rains.

Marginal habitat for dwarf downingia occurs in the wetlands of the study area, and the species is known to occur at several locations near Napa. No members of the genus *Downingia* were observed during March or May 2008 surveys or in the April 2009 survey. This species is presumed to be absent from the study area.

Hayfield tarweed (*Hemizonia congesta* supsp. *congesta*) is an annual member of the sunflower family (Asteraceae). It has no state or federal status and is on the CNPS List 1B.1. The taxonomy of *Hemizonia* is confused, and the treatment in The Jepson Manual (Hickman 1993) is substantially different than the treatment in the Flora of North

America (FNA) by Baldwin and Strother (2006). The authors for the FNA treatment of *Hemizonia* are the same as for The Jepson Manual (second edition, unpublished), so there is reason to believe that the FNA treatment will be followed.

Marginal habitat for hayfields tarweed occurs in the open ruderal grassland areas for the study area. No members of the genus *Hemizonia* were observed during the March or May 2008 surveys or in the April 2009 survey. This species is presumed to be absent from the study area.

Sebastopol meadowfoam (*Limnanthes vinculans*) is an annual member of the meadowfoam family (Limnanthaceae). It has state and federal endangered status and is on the CNPS List 1B.1. Sebastopol meadowfoam has white flowers and entire leaves. It grows in vernal pools and other wet habitats in Napa and Sonoma Counties. Sebastopol meadowfoam blooms in April and May.

Marginal habitat for Sebastopol meadowfoam occurs in the wetland in the study area. No members of the genus *Limnanthes* were observed during the March and May 2008 surveys or in the April 2009 survey. This species is presumed to be absent from the study area.

Showy Indian clover (*Trifolium amoenum*) is a robust, annual member of the pea family (Fabaceae) that is listed as endangered by the USFWS. It has no state status, but it is on the CNPS List 1B. Showy Indian clover was thought to be extinct, but has recently been found in the North Bay. It is similar to the widespread *T. albopurpureum*, but it has much larger flowers. Showy Indian clover grows in moist grasslands, ditches, and other disturbed areas. It blooms from April to June.

Showy Indian clover grows in heavy, disturbed soils. Whether it tolerates long-term disturbance, such as that in the study area is unknown. Consequently, the study area may provide marginal habitat, and is known historically from Napa Junction. No unknown species of *Trifolium* were found during the March or May 2008 surveys or in the April 2009 survey. This species is presumed to be absent from the study area.

Wildlife

Numerous state and federally listed species are known to occur in the region surrounding the study area, including the California freshwater shrimp (*Syncaris pacifica*), California tiger salamander (*Ambystoma californiense*), California clapper rail (*Rallus longirostris obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), western snowy plover (*Charadrius alexandrinus nivosus*), and the saltmarsh harvest mouse (*Reithrodontomys raviventris*). Each of these species occurs in specific habitats in the Napa region and is known to occur in the region surrounding the study area. Collectively, these species occur within a range of specific environmental conditions that include vegetation characteristics, water depth, inundation duration, and water quality. None of the specific habitats for these species occur onsite and they are, therefore, not discussed further in this document.

Conservancy fairy shrimp (*Branchinecta conservatio*), a federally endangered species, is a small crustacean in the Branchinectidae family. This species inhabits somewhat large,

cool water vernal pools with moderately turbid water (USFWS 2005a). Similar to other vernal pool crustaceans, the life cycle of Conservancy fairy shrimp is closely tied to the ephemeral conditions of the pool in which they live. Vernal pools that support Conservancy fairy shrimp generally persist until June. The average age of maturity is 49 days, and individuals may live up to 154 days. The female fairy shrimp carries its eggs in a brood sac. Eggs then either drop to the bottom of the pool or remain in the brood sac until the mother dies and sinks to the pool bottom. The eggs subsequently dry out as the pool dries at the end of the rainy season. The resting eggs, known as cysts, remain in the dry pool bed until rain stimulates hatching in the following season. Hatching of the eggs can begin within the same week that the pool starts to fill with rainwater.

A site assessment and surveys for vernal pool crustaceans by Monk & Associates determined that the study area may provide suitable habitat for this species. Wet season surveys conducted in 2009 determined negative findings for this species. Final survey reports are pending.

Vernal pool fairy shrimp (*Branchinecta lynchi*), a federally-listed threatened species, resides and breeds in vernal pools from Mt. Shasta south to Riverside County. The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. The ephemeral life span of the fairy shrimp reduces the limiting factors on their population. They are unlikely to be heavily preyed upon by other vernal pool inhabitants because they use the pool before the majority of carnivorous insects have colonized the pool. Vernal pool fairy shrimp have been collected from early December to early May. Resting fairy shrimp eggs are known as cysts and are capable of withstanding heat, cold, and prolonged desiccation. When the pools refill in springtime some of the cysts may hatch, other cysts may remain in the soil. Average time to maturity is between 18 and 41 days depending on the temperature of the pool.

A site assessment and surveys for vernal pool crustaceans by Monk & Associates determined that the study area may provide suitable habitat for this species. Wet season surveys conducted in 2009 determined negative findings for this species. Final survey reports are pending.

California red-legged frog (*Rana aurora draytonii*), a federally-listed threatened species and a California Species of Special Concern, breeds in permanent and semi-permanent aquatic habitats, such as cold-water ponds, slow-moving streams, and deep pools in intermittent streams. Inhabited waters typically are at least two feet deep and contain emergent and shoreline vegetation that provides cover from predators and depositional sites for eggs. This species is associated most frequently with arroyo willow (*Salix lasiolepis*), cattail (*Typha* spp.), and bulrush (*Schoenoplectus* spp.). During dry periods, California red-legged frog will aestivate in ground-squirrel burrows, earthen cracks, and under boulders and logs. Aestivation habitat can occur up to 300 feet from aquatic habitats.

The wetland swale on site is ephemeral and does not provide suitable breeding habitat. Monk & Associates conducted a site assessment in accordance with current USFWS protocols (USFWS 1996). This assessment determined that the study area has no

breeding or dispersal habitat, and that development on the site would not affect the CRLF. The assessment report has not yet been completed, but will be submitted to the USFWS for review and concurrence upon completion.

White-tailed kite (*Elanus leucurus*), a California fully protected species, is an uncommon to locally fairly common resident and is typically found in grassy foothill slopes interspersed with oaks (including interior live oak, agricultural areas, and marshy bottomlands). They generally forage in undisturbed open grasslands, farmlands, meadows, and emergent wetlands, in areas with a high prey base. Nest trees range from single isolated trees to trees within larger stands. Nests of white-tailed kite are constructed near the top of oaks, willows, or other tall trees from 20 to 100 feet above ground. Breeding takes place from February to October, with peak activity from May to August. Incubation lasts between 28 and 30 days, and young usually fledge by October.

Burrowing owl (*Athene cunicularia*) is a California species of special concern. This species is primarily associated with open, dry grasslands, deserts, agricultural areas, and rangeland. They often occur where numerous burrowing mammals are present and frequently occupy California ground squirrel burrows (Zeiner et al. 1990). Burrowing owls may also use man-made structures such as debris piles, culverts, and cement piles for cover. Distinctive burrow characteristics for burrowing owl are not known. However, given the size of this owl, burrow entrances are expected to be at least seven centimeters in diameter. Circumstantial evidence of burrowing owl occurrence within an area typically consists of the presence of molted feathers, cast pellets, prey remains, or excrement near a burrow entrance. Breeding of burrowing owl occurs from March to late August and incubation lasts between 28 to 30 days. Young are fledged at about 44 days but remain near the burrow and join the adults to forage at dusk. Young burrowing owls often establish nest sites the following year near their natal sites.

No burrowing owls and little evidence of suitable nesting habitat was observed during field surveys. Vegetation on much of the study area was three to four feet high during the March plant surveys, and burrowing owls generally avoid tall vegetation. During the spring or summer, vegetation is often removed, and this activity may provide better nesting and denning habitat.

Swainson's hawk (*Buteo swainsoni*) is a state listed threatened species pursuant to the California Endangered Species Act. Although it has no special federal status, it is protected from direct take under the Federal Migratory Bird Treaty Act. Swainson's hawks, their nests, eggs, and young are also protected under provisions of the California Fish and Game Code.

The Swainson's hawk is generally a summer visitor to California. During the fall, most Swainson's hawks migrate to South America before returning to the United States to breed once again in the late spring. The nesting population of Swainson's hawks in California has declined greatly due primarily to habitat loss. This raptor inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands. It nests almost exclusively in trees and will nest in almost any tree species that is at least 10 feet tall. Nests are constructed in isolated trees that are dead or alive along drainages and in wetlands, or in windbreaks in fields and around farmsteads.

Foraging habitats include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry-land and irrigated pasture. The Swainson's hawk generally forages in open habitats with short vegetation containing small mammals, reptiles, birds, and insects. Its primary prey in the Central Valley is California meadow vole. Agricultural and other disturbed areas are often preferred over more natural grassland habitats because these activities tend to allow more access to prey species. During the nesting season Swainson's hawks usually forage within two miles of the nest.

A known nesting location occurs approximately 1.25 miles north of the study area. The eucalyptus trees on the adjacent site may provide nesting habitat. During portions of the year the study area supports a dense growth of mustard and grasses that is not suitable foraging habitat. However, vegetation is often removed in the spring or summer by disking to reduce the fire hazard, and this activity may result in more suitable foraging habitat.

POTENTIAL IMPACTS FROM DEVELOPMENT

Special-status plant surveys are complete and it seems unlikely that development of the site would adversely affect any special-status species (plant or animal). The main community on the site is ruderal grassland, and this is not a habitat warranting protection. The wetland swale is highly degraded and the water source is largely from developments upstream of the site. Nevertheless, the Corps of Engineers would consider the loss of waters of the United States to be significant if left unmitigated. The use of an in-lieu fund or mitigation bank is probably the most environmentally viable method of mitigating these losses.

RECOMMENDATIONS

Waters of the United States

1. The study area has areas considered waters of the United States. Activities that affect these areas would require a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act. The project would also need to obtain a water quality certification from the Regional Water Quality Control Board pursuant to Section 401 of the federal Clean Water Act. The Corps and the Regional Board would add conditions to the permits that would stipulate the appropriate mitigation, which could include one or more of the following: onsite creation, offsite creation, purchase of credits in a mitigation bank, or payments to an in-lieu fund. The precise mitigation and monitoring requirements would depend on the extent of impacts.

Streams and Riparian Habitat

1. The applicant intends to submit a 1602 application to CDFG to the extent that future development would impact the swale.

Other Trees

1. The site does not support oak woodland habitat, but does have several coast live oaks located along the southern study area boundary.

Special-Status Plants

1. Several special-status plants have at least some potential to occur in the study area. Rare plant surveys were conducted in March and May 2008 and in April 2009. These surveys were floristic and conducted according to guidelines issued by the CDFG and the USFWS. No rare plant species were observed during surveys and no further surveys are recommended.

Special-Status Wildlife

1. Protocol level survey reports for vernal pool crustaceans have not yet been completed. Final survey results will be submitted to the USFWS for review and concurrence.
2. A site assessment for the CRLF was completed and determined that there were no occurrences of this species in the study area, nor does the site provide suitable habitat for this species. The assessment report has not yet been completed, but will be submitted to the USFWS for review and concurrence upon completion.
3. The study area provides suitable nesting habitat for raptors (including white-tailed kite and red-tailed hawk), in the coast live oak trees onsite. If construction occurs during the typical breeding season (approximately March 1 through August 31), and is within 500 feet of the trees, potential disturbance of nesting activities could occur. Take of any active raptor nest is prohibited under Fish and Game Code Section 3503.5. To avoid take of active raptor nests, pre-construction surveys should be conducted by a qualified biologist no more than 30 days prior to initiation of proposed development activities. Survey results should then be submitted to CDFG. If active raptor nests are found on or immediately adjacent to the site, consultation should be initiated with CDFG to determine appropriate avoidance measures. If no nests are found, tree removal could proceed without further surveys.
4. Dense vegetation in the study area during the late winter and early spring may prevent burrowing owls from nesting there. In addition, the study area may lack the small mammal burrows used for nesting. A nesting survey should be conducted for western burrowing owl 30 days prior to construction of the project. Burrowing owl surveys shall be conducted according to the methodologies prescribed by CDFG in their 1995 *Staff Report on Burrowing Owl Mitigation* (CDFG 1995). If burrowing owls are found during surveys, CDFG should be contacted for the appropriate avoidance and mitigation measures.
5. The coast live oaks trees in the study area are unlikely to support nesting Swainson's hawks because of nearby human activities. Nevertheless, portions of the study area may provide foraging habitat. A nest is known to occur within 1.25 miles of the study area, and CDFG considers all suitable areas within a 10-mile radius of a nest to be foraging habitat. CDFG has produced a report titled *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG

1994) that describes potential mitigation for foraging habitat. The applicant should consult with CDFG to determine what, if any, mitigation might be required.

6. The study area provides suitable nesting habitat for a number of common and special status bird species. These birds, although not listed as threatened or endangered by either FESA or CESA, are protected under the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3513. Both the federal act and state code prohibit the intentional take of nests of any migratory bird species. Standard recommendations include removal of vegetation outside of the typical nesting season (April through August). If nesting habitat is to be removed during the nesting season, it is recommended that consultation should be initiated with CDFG to determine appropriate avoidance measures. If no nests are found, vegetation removal could proceed without further surveys.



Attachment D

OmniMeans Engineering and Planning,

*Napa Commerce Center Light-Industrial Project Traffic Impact
Analysis - Final Report,*

February 2010

(sans appendices)



Napa Commerce Center Light-Industrial Project Traffic Impact Analysis

Final Report

Prepared For:
The County of Napa

At the Request of:
Napa 34 Holdings, LLC

February, 2010

Prepared By:



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**NAPA CO. CONSERVATION
DEVELOPMENT & PLANNING DEPT.**

**NAPA COMMERCE CENTER LIGHT-INDUSTRIAL PROJECT
TRAFFIC IMPACT ANALYSIS**

FINAL REPORT

**PREPARED FOR:
THE COUNTY OF NAPA**

**AT THE REQUEST OF:
NAPA 34 HOLDINGS, LLC**

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INTRODUCTION

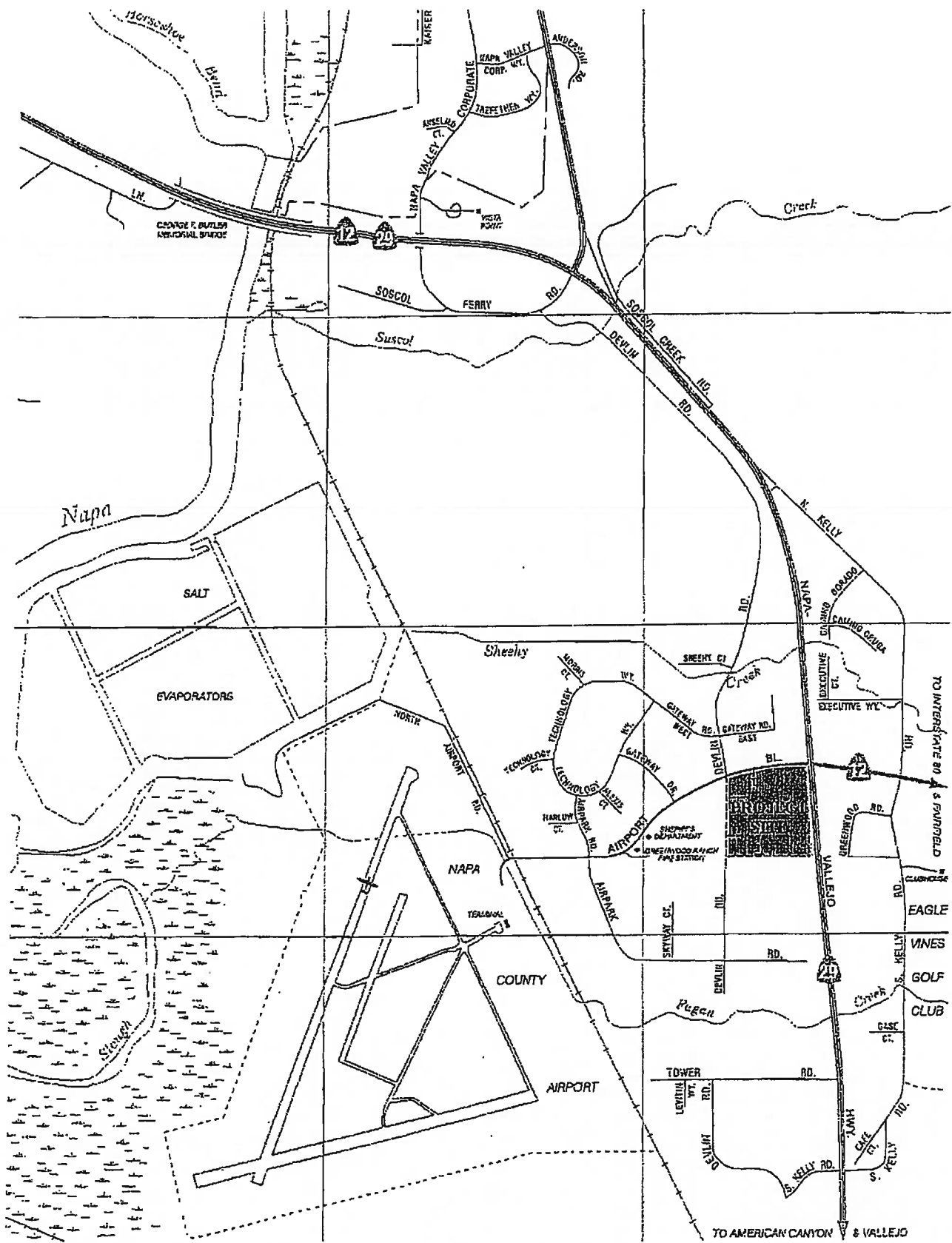
This report presents the results of a traffic impact analysis performed by OMNI-MEANS for the proposed Napa Commerce Center project in the Napa Airport Industrial Area (NAIA). The proposed project would consist of 490,503 square feet of light-industrial uses and would be located on the southeast quadrant of the Airport Boulevard/Devlin Road intersection just west of State Route 29 (SR-29). Figure 1 illustrates the Project Location and Vicinity Map. Based on discussions with County Transportation Engineering staff, the traffic issues for this development relate to operations at key intersections along Airport Boulevard, Devlin Road, and proposed project access. Some of the key issues evaluated in this study include the following:

- Peak hour traffic operations along SR-29 and internal intersections within the NAIA;
- Vehicle queuing and storage capacity at key study intersections;
- Project driveways on Airport Boulevard and Devlin Road and their relationship to other nearby intersections and driveways;
- Existing plus project traffic operations;
- Consistency with the ongoing NAIA TIF Update transportation analysis (pending availability of that analysis).

Based on discussions with County Engineering staff, both Existing traffic conditions and Existing plus Proposed Project traffic conditions have been analyzed as part of a comprehensive transportation and circulation analysis. It is noted that short-term development volumes from the adjacent Greenwood Business Park project (to be located immediately west of the project site off Devlin Road [extension]) have been included in Existing plus Proposed Project traffic conditions. Both the Greenwood Business Park and Proposed Project would share common access intersections on Devlin Road and both projects would be adding traffic volumes at outlying study intersections on Soscol Ferry Road, Airport Boulevard, SR-29, and SR-12.

For the purposes of this study the following scenarios were analyzed:

- Existing Traffic Conditions: Represents existing traffic flow conditions collected through new field counts and/or previous traffic counts for the five existing study intersections. Points of congestion and vehicle delays are noted for both the AM and PM peak commute hours;
- Existing plus Project Traffic Conditions: Proposed project trips and approved Greenwood Business Park project trips added to existing traffic volumes to determine overall project impacts.



omni-means

Project Location and Vicinity Map



figure 1

EXISTING CONDITIONS

Existing conditions describe the existing transportation facilities serving the project site.

EXISTING ROADWAYS

Roadways that provide primary circulation in the vicinity of the project site are as follows:

Airport Boulevard is a major east-west arterial street that extends in a westerly direction from SR-29/SR-12 (Jamison Canyon Road) and provides primary vehicle access to/from the NAIA. From SR-29, Airport Boulevard has four travel lanes with raised landscaped median and left-turn pockets at major intersections within the NAIA. At North Airport Road (west of Railroad Tracks), the roadway narrows to two travel lanes. Providing access to light-industrial /warehouse uses, Airport Boulevard also provides access to the Napa County Airport located in the far western portion of the NAIA. Airport Boulevard would provide direct access to the proposed project via a limited access driveway (right-turns-only inbound/outbound).

Devlin Road extends in a north-south direction between Soscol Ferry Road and Airport Boulevard. This roadway parallels SR-29 on its west side providing access to commercial and light/industrial areas. For most of its length Devlin Road is a wide, two-lane street. Prior to its connection with Airport Boulevard, Devlin Road widens to four travel lanes with painted and raised medians. In this last 1,800 feet, Devlin Road provides access to both light-industrial and office areas. Devlin Road would provide direct access to the project site via an extension south of Airport Boulevard to the southern project boundary. Currently, Devlin Road does not extend south of Airport Boulevard. However, from the proposed project's southerly boundary there is a connection to a part-width segment of Devlin Road which continues south to Airpark Road.

Aviation Way extends in a southeast direction from Airport Boulevard a relatively short-distance (400 feet) and terminates in a cul-de-sac just east of the existing fire station. This roadway has been improved and is a wide two-lane segment adjacent to the Greenwood Ranch Fire Station (with access to both Airport Boulevard and Aviation Way).

Airpark Road extends both north and south of Airport Boulevard. South of Airport Boulevard, Airpark Road is a wide, two-lane street that provides access to warehouse/office development within the NAIA. This southern segment of Airpark Road eventually extends east-west (south of the project site) to provide access to Skyway Court and Devlin Road. North of Airport Boulevard, Airpark Road extends to Technology Way and has two travel lanes.

Gateway Drive is located west of the project site and extends north of Airport Boulevard to Technology Way and provides access to office and light-industrial areas. Gateway Drive is a wide, two-lane roadway with a two-way-left-turn lane.

Soscol Ferry Road is located in the northern portion of the NAIA. A two-lane roadway, Soscol Ferry Road extends from SR-29 in a westerly direction and provides access to light-industrial and storage areas. The roadway provides a key connection between SR-29 and Devlin Road.

Kelly Road (North and South) extends in a north-south direction and parallels SR-29 on its east side. North Kelly Road extends between SR-12 and SR-29 with two travel lanes and left-turn lanes at Camino Dorado and Executive Way. In this section, N. Kelly Road provides access to commercial and manufacturing areas. S. Kelly Road extends between SR-12 and SR-29 with two travel lanes and provides access to commercial areas east of SR-29.

Regional access to the project site is primarily provided by *State Route 29 and State Route 12*. A four-lane facility, SR-29 extends north through Napa County and south to American Canyon and Vallejo. State Route 12 (Janison Canyon Road) extends east from SR-29 at Airport Boulevard to Interstate 80 and beyond to Cordelia, Fairfield, and Rio Vista. In the study area, SR-12 has two eastbound travel lanes and one westbound travel lane.

EXISTING INTERSECTIONS

Intersection operation (as compared to roadway segments) is usually considered the major factor in determining the traffic handling capacity of a local circulation system. The following list of study intersections have been chosen by County Transportation staff for both existing and proposed project operating conditions.¹ To assess vehicle traffic flows on key streets in the project study vicinity, both AM and PM peak period (7:00-9:00 a.m. and 4:00-6:00 p.m.) intersection turning movement counts were obtained for the following five intersections within the project study area as follows:²

1. Soscol Ferry Road/SR-29/SR-12	Signalized
2. Soscol Ferry Road/Devlin Road	Unsignalized (Stop control for Devlin Rd.)
3. Airport Boulevard/Devlin Road	Signalized
4. Airport Boulevard/SR-12/SR-29	Signalized
5. Kelly Road/SR-12	Signalized

Existing study intersections' AM and PM peak hour traffic volumes are shown on Figure 2.

INTERSECTION LEVEL-OF-SERVICE (LOS) CONCEPT/OPERATION

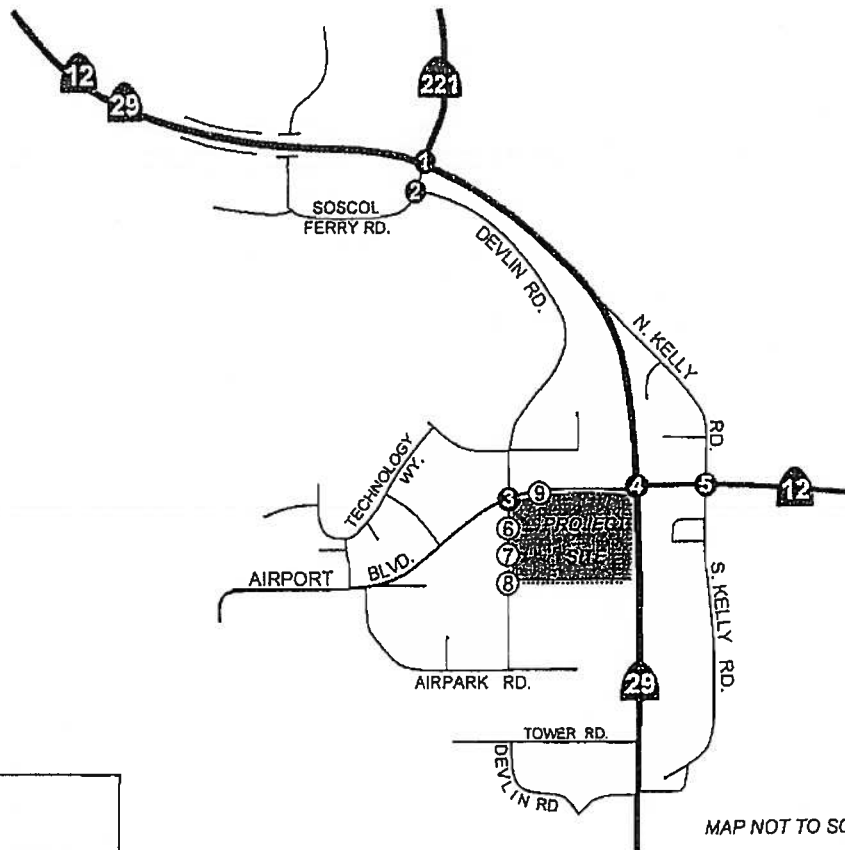
Intersection LOS provides the most accurate measure of operational performance with a scale ranging from LOS A-F (see Table 1—LOS Definition Criteria). These ratings correspond to an average vehicle delay expressed in seconds. LOS A represents relatively free-flow conditions with little delay at intersections. LOS E represents unstable or unbalanced flow conditions with volumes at or near design capacity. LOS F represents a significantly congested condition where traffic flows can exceed design capacities resulting in long vehicle queues and delays from the minor-street driveway.

Signalized AM and PM peak hour intersection LOS calculations have been calculated based on the *Highway Capacity Manual 2000, Fourth Edition*, using HCM operations methodology and Synchro/Simtraffic modeling software. Unsignalized intersections have also been calculated using *HCM 2000* methodology. For stop-sign controlled intersections, intersection LOS typically refers to the minor street (stop-sign controlled approach) and yields a vehicle delay in seconds.

This traffic impact analysis provides a "planning level" evaluation of traffic condition, which is considered sufficient for CEQA/NEPA clearance purposes. The "planning level" evaluation incorporates appropriate heavy vehicle adjustment factors, peak hour factors, and signal lost-time factors. LOS operations have been analyzed using HCM-2000 methodologies for determining intersection delay, incorporating the aforementioned factors.

¹ Mr. Rick Marshal, Traffic Engineer, County of Napa, Personal communication, September 7, 2009.

² Napa County, AM and PM (7:00-9:00 a.m. & 4:00-6:00 p.m.) peak period intersection counts at Airport Boulevards, June 2-4, 2009.



1	
30 (166)	1,782 (1,076)
81 (37)	1,686 (1,432)
792 (1,270)	13 (6)
(28) 52	(278) 26
(1,567) 1,500	(93) 13
(59) 360	(279) 19

2	
245 (50)	40 (216)
209 (52)	24 (20)
(384) 38	(176) 26

3	
152 (26)	116 (39)
36 (264)	360 (60)
(81) 13	(383) 101

4	
140 (33)	424 (458)
1,130 (1,760)	125 (25)
1,038 (1,247)	78 (38)
(185) 32	(45) 114
(171) 29	(1,338) 1,796
(302) 22	(41) 22

5	
10 (9)	937 (497)
25 (51)	617 (445)
12 (45)	58 (17)
(43) 77	(9) 8
(1,420) 914	(68) 268
(26) 55	(130) 44



Existing Volumes
A.M. and (P.M.) Peak Hour



TABLE 1
LEVEL-OF-SERVICE CRITERIA FOR INTERSECTIONS

LEVEL OF SERVICE	TYPE OF FLOW	DELAY	MANEUVERABILITY	CONTROL DELAY (SECONDS/VEHICLE)		
				SIGNALIZED	UNSIGNALIZED	ALL-WAY STOP
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made; and nearly all drivers find freedom of operation.	≤ 10.0 secs. ≤ 0.60 v/c	≤ 10.0	≤ 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	> 10 and ≤ 20.0 secs.	> 10 and ≤ 15.0	> 10 and ≤ 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	0.61 – 0.70 v/c > 20 and ≤ 35.0 secs.	> 15 and ≤ 25.0	> 15 and ≤ 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles of stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	0.71 – 0.80 v/c > 35 and ≤ 55.0 secs.	> 25 and ≤ 35.0	> 25 and ≤ 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	> 55 and ≤ 80.0 secs. 0.91 – 1.00 v/c	> 35 and ≤ 50.0	> 35 and ≤ 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0 secs. > 1.00 v/c	> 50.0	> 50.0

References: 1. Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000, Contra Costa Transportation Authority (CCTA), Technical Procedures Update, Final, July 9, 2006. For the purposes of this study, CCTA intersection methodology has been used for signalized intersections yielding an LOS and v/c ratio.

A standard peak hour factor (PHF) of 0.92 is typically applied to all analysis scenarios in this study (the PHF refers to progression of approach traffic through the signal). A minimum traffic signal cycle length of 90 seconds will be used at signalized intersection locations (except where field measurements differ), with 4 seconds of "lost time" per critical signal phase. Study intersection LOS calculations results/inputs have been based on the ongoing NALA TIF Update supplied by Napa County Transportation staff.

Field observations indicate traffic volumes in the study area tend to be directional in nature reflecting an inbound flow (south to north) to the Napa Valley in the morning commute period and an outbound flow (north to south) during the evening commute period. The same conditions are true for the NALA, with a predominantly inbound flow during the AM commute period and outbound flow during the PM commute period. Significant vehicle queuing occurs at both study intersections located along SR-29 at Soscol Ferry Road and at Airport Boulevard and SR-12. During the AM peak hour, most of these vehicle queues clear the intersection within the allotted green time for each turning movement. However, during the PM peak hour this does not always occur with some turning movements taking 2-3 cycle lengths to clear the intersections.

As shown in Table 2, the Soscol Ferry Road/SR-29 intersection is currently operating at unacceptable conditions (LOS E-F) during the AM and PM peak hours. As noted, this intersection experiences congestion and vehicle queuing during the peak commute periods. All remaining project study intersections are operating at acceptable levels (LOS D or better) during the peak hours.

TABLE 2
EXISTING CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (secs.)	LOS	V/C Ratio	LOS
1	Soscol Ferry Rd./SR-29	Signal	61.1	E	> 80.0	F
2	Soscol Ferry Rd./Devlin Road	Stop	17.6	C	15.8	C
3	Airport Boulevard/Devlin Blvd.	Signal	11.3	B	10.4	B
4	Airport Boulevard/SR-29/SR-12	Signal	41.4	D	35.1	D
5	Kelly Road/SR-12	Signal	52.5	D	26.7	D

Signalized intersection calculations based on HCM 2000 operations methodology which yields an intersection LOS and vehicle delay in seconds.

TRAFFIC SIGNAL WARRANT ANALYSIS

A supplemental traffic signal warrant analysis has been completed to determine whether the Soscol Ferry Road/Devlin Road study intersection may require or benefit from the installation of a traffic signal. The term "signal warrant" refers to any of the eight established methods used by Caltrans to quantify the need for a traffic signal at an unsignalized intersection. The eight signal warrant methods are described in the latest edition of the California Manual on Uniform Traffic Control Devices (MUTCD).

The California MUTCD indicates that the installation of a traffic signal should be considered only if one or more of the eight signal warrants are met. This traffic analysis has performed the peak hour volume-based Warrant #3 on this intersection. The peak hour volume warrant refers to a combination of minor street volume (100 vehicle minimum) and major street volumes (400-1,400 vehicles) that would qualify an intersection for a signal during the peak commute hour. The results of the signal warrant analyses may indicate that a traffic signal could be beneficial to the operations of an intersection. The final decision to install a traffic signal should, however, be based upon further studies utilizing additional warrants as presented in the California MUTCD.

At this time, the Soscol Ferry Road/Devlin Road unsignalized intersection would not qualify for signalization

under MUTCD warrant #3 peak hour volume criteria due to minor street (and major street) volumes being too low.

EXISTING VEHICLE QUEUING ANALYSIS

Vehicle queuing operations have also been quantified as part of this analysis. Vehicular queuing projections have been estimated utilizing *SimTraffic* micro-simulation software developed by *TrafficWare*. The queuing analysis has focused on intersection operation along Airport Boulevard and Devlin Road under existing and proposed project conditions. However (as noted previously), there is significant vehicle queuing on SR-29 in both the north-south directions during the AM and PM commute periods. Vehicle queuing projections are provided in terms of the 95th percentile queue lengths. The design queue is taken as the 95th percentile queue length.

The results of the Existing conditions queuing analysis are presented in Table 3. The available storage lengths are based on measurements from aerial photographs and field measurements. As calculated, vehicle queuing problems occur at the following intersections:

- Soscol Ferry Road/SR-29: The analysis indicates that the northbound approach of Soscol Ferry Road/SR-29 intersection experiences queuing problems during the PM peak hour. This would include both the northbound left-turn lane (280-foot queue) and the shared through/right-turn lane (621-foot queue). However, overall intersection operation during this time period is LOS F (>80.0 seconds). Typically, calculated vehicle queues are not accurate once an intersection's LOS exceeds F. Existing LOS notwithstanding, long vehicle queues (500 + feet) were observed at all four intersection approaches during the PM peak hour.
- Airport Boulevard/SR-29/SR-12: The analysis indicates that the westbound approach of Airport Boulevard/SR-29/SR-12 intersection experiences queuing problems during the PM peak hour. Specifically, the westbound through-lane approach on SR-12 has a 219-foot queue with approximately 175-feet of storage capacity. However, these vehicle queues just extend back (east) onto SR-12 in the existing through-lane towards Kelly Road.

All other study intersection approaches within the NALA have adequate vehicle storage. Vehicle queuing on SR-29 is extensive during the AM and PM commute periods. At times, north-south vehicle queues on SR-29 are extensive enough to prevent motorists from accessing other turning movement lanes at the Soscol Ferry Road/SR-29 and Airport Boulevard/SR-29/SR-12 intersections.

SIGNIFICANCE CRITERIA

The County of Napa's significance criteria has been based on a review of the Napa County Transportation and Planning Agency and Napa County General Plan documentation on roadway and intersection operations. Specifically, the Circulation Element of the County's General Plan outlines the following significance criteria specific to intersection operation:

Intersections

- The County shall seek to maintain a Level of Service D or better at all intersections, except where the level of service already exceeds this standard (i.e. Level of Service E or F) and where increased intersection capacity is not feasible without substantial additional right-of-way.
- No single level of service standard is appropriate for un-signalized intersections, which shall be

TABLE 3
EXISTING CONDITIONS: PM PEAK HOUR VEHICLE QUEUES

Intersection	Movement	Available Storage (ft.)	95th Percent Queue Length (ft.)
Soscal Ferry / SR-29	EBL	500	306
	EBT	n.a.	
	EBR	520	331
	WBL	350	78
	WBT	n.a.	
	NBL	200	280
	NBT/NBR	220	621
	SBL	500	330
Soscal Ferry / Devlin Road	SBT/SBR	500	333
	WBL/WBT	150	44
Airport Blvd. / Devlin Road	NBL/NBT	100	42
	EBL	320	73
	EBT	n.a.	
	WBT	n.a.	
	WBT/WBR	n.a.	
	SBL	220	68
Airport Blvd. / SR-29 / SR-12	SBR	220	35
	EBL	300	164
	EBL/EBT	300	184
	WBL	175	89
	WBT	175	219
	NBL	350	208
	NBT	n.a.	
	NBR	240	161
Kelly Road / SR-12	SBL	1000	471
	SBT	n.a.	
	EBL	210	96
	EBT	n.a.	
	EBR	250	111
	WBL	250	31
	WBT	n.a.	
	WBR	470	102
	NBL	190	27
	NBT	n.a.	
	NBR	170	74
	SBL	230	69
	SBT/SBR	215	56

Notes: 1) Queuing Projections are based upon Synchro/SimTraffic software;
2) The queue lengths reported above are presented on a per lane basis;
3) Available storage for through-lanes is to the nearest major intersections—unless otherwise noted there is adequate storage for through-traffic at all studied intersections. n.a. = Not Applicable
4) BOLD = 95th percentile volume exceeds storage, queue may be longer.
5) 25 feet equals one car length

evaluated on a case-by-case basis to determine if signal warrants are met.

Further significance criteria are based on County and CEQA guidelines and apply mainly to intersection operation, access, and parking. A significant impact occurs if project traffic would result in the following:

- Cause an increase in traffic which is substantial in relation to existing traffic load and capacity of the street system (i.e. result in a substantial increase in either the number of vehicle trips, the volume capacity ratio on roads, or congestion at intersections);
- Exceed either individually or cumulatively, an LOS standard established by the county congestion management agency for designated roads or highways;
- Result in a change of traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);
- Result in inadequate emergency vehicle access;
- Project site or internal circulation on the site is not adequate to accommodate pedestrians and bicycles;
- The project provides inadequate parking or on-site circulation.

PROPOSED PROJECT IMPACTS

PROJECT DESCRIPTION

The proposed Napa Commerce Center project would consist of 490,503 square feet of "Industrial Park" uses. The project site would be located immediately west of SR-29 and south of Airport Boulevard. As part of overall project circulation improvements, Devlin Road would be extended south of Airport Boulevard to serve project driveways and adjacent development immediately to the west (see Figure 4-- Project Site Plan). From Airport Boulevard south on Devlin Road (extension), there would be three (full-access) driveways. In addition, there would be a limited access driveway (right-turns-only in/out) off Airport Boulevard east of Devlin Road. Based on the topography and natural drainage of the site, the project parcel would be divided into two development areas. The northern development area would serve primarily office-type uses and the southern development areas would serve primarily warehouse uses.

PROJECT TRIP GENERATION

Daily and peak hour vehicle trip generation for the proposed project has been based on accepted rates found in the Institute of Transportation Engineers (ITE) trip research manual for "industrial park" uses.³

Vehicle trip generation for the proposed project is broken down by daily vehicle trips and "peak hour" vehicle trips. Daily trips are the total vehicle trips generated by the project over a 24-hour period. The peak hour trips are typically generated during the highest hour of the morning (7:00-9:00 a.m.) and evening (4:00-6:00 p.m.) commute periods when weekday traffic is significant. The peak hour rates reflect the amount of traffic that would be generated by the proposed project during the "peak hour of adjacent street traffic." However, it is possible the proposed project could generate a higher amount of trips during some other period during the day. Regardless, the combination of peak hour project trips combined with the peak hour of adjacent street traffic commonly yields a "worst case" scenario for measuring project impacts and vehicle congestion. Typically, the PM peak hour period yields the greatest combination of project trip generation and vehicle congestion.

Daily and peak hour proposed project trip generation has been shown in Table 4. As calculated, the proposed

³ *Institute of Transportation Engineers (ITE), Trip Generation, 8th Edition, Industrial Park (land use #130), 2008.*

TABLE 4
PROJECT TRIP GENERATION: DAILY AND PEAK HOUR

Land Use	Daily Trips	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
490,503 sq. ft. Industrial Park							
Daily & Peak Hour Trip Rates (per ksf)	6.96	0.69	0.15	0.84	0.18	0.68	0.86
Daily & Peak Hour Trip Generation	3,414	338	74	412	89	333	422
Net New Trips	3,414	338	74	412	89	333	422

Source: Institute of Transportation Engineers (ITE), Trip Generation, 8th Edition, Industrial Park (land use #130), 2008.
Based on 490,503 square feet of Industrial Park uses.

project is expected to generate 3,414 daily trips with 412 new AM peak hour trips and 422 new PM peak hour trips. It is noted that the proposed project would have a greater portion of "office" uses in the northern half of its development area and greater proportion of "warehouse" uses in the southern half of its development area. As such, calculated light industrial park trip generation for the proposed project was "weighted" to account for slightly more office use in the northern development area and more warehouse uses in the southern portion of the site. This was accomplished by comparing "industrial park" and "general office" trip generation rates and the amount of overall project square footage in the northern and southern development areas of the site. This analysis provided a more accurate representation of total vehicle trips accessing proposed project driveways.

Based on discussions with Napa County Transportation staff, this traffic analysis is evaluating Existing plus Proposed Project traffic conditions. No interim development projects have been added to existing conditions for short-term analysis. However, it was necessary to include vehicle trips from a development parcel located immediately west of the proposed project site off of Airport Boulevard and Devlin Road (southern extension). Specifically, the Greenwood Business Park project would consist of 378,891 square feet of Industrial Park uses. This project would share access driveways with the proposed Napa Commerce Center on the southerly extension of Devlin Road as well as adding vehicle trips to all project study intersections on Airport Boulevard, Devlin Road, SR-29, and SR-12. Based on a previous study conducted for the Greenwood Business Park, the project is expected to generate 318 AM peak hour trips and 326 PM peak hour trips.⁴ These vehicle trips have been added to existing traffic volumes (along with proposed project trips) to accurately quantify overall project driveway operation on Devlin Road and study intersection operation in the greater NAIA.

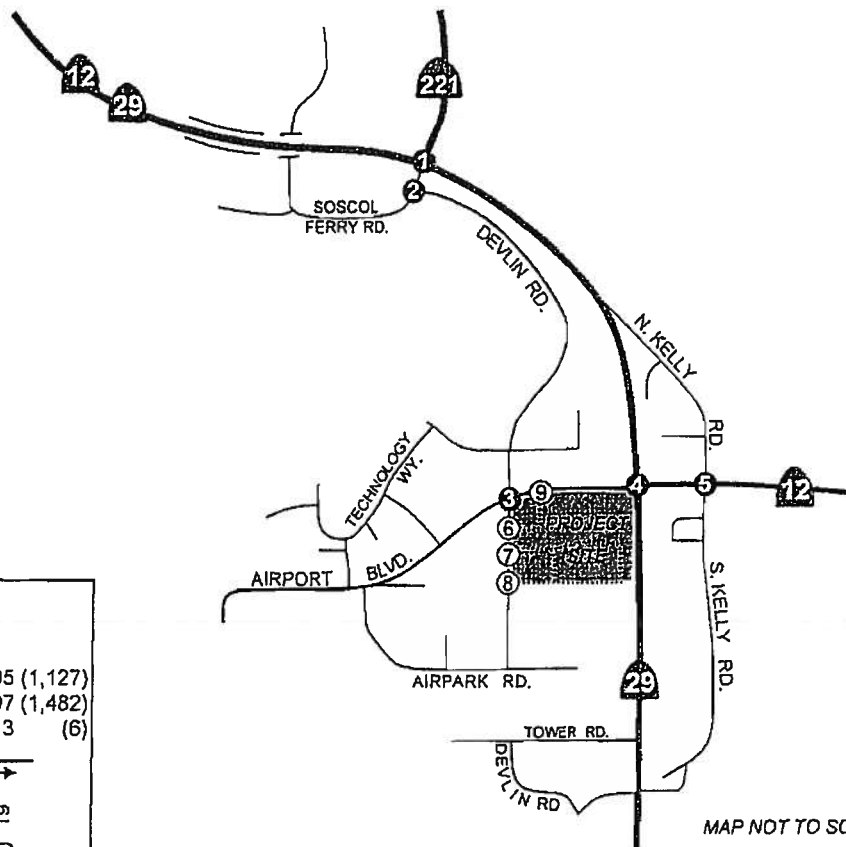
PROJECT TRIP ASSIGNMENT

AM and PM peak hour project trips were distributed onto the street network based on a previous transportation study performed for the Greenwood Business Park on the project site (reviewed by County Engineering staff prior to inclusion in this study). Consideration was also given to freeway access and project driveway location (in/out on Devlin Road). Based on these factors, proposed project trip assignment would be as follows:

- SR-29 to/from the north: 17%
- SR-29 to/from the south: 41%
- SR-12 to/from the east: 23%
- Devlin Road to/from the north: 19%
- Total: 100%

AM and PM peak hour proposed project trips have been added to existing traffic volumes (with the Greenwood Business Park project) and are shown in Figure 3. Figure 3 also provides projected peak hour volumes at all

⁴ George W. Nickelson, P.E. Traffic Analysis for the Proposed Greenwood Business Park Project in the Napa Airport Industrial Area (NAIA) of Napa County, Mr. Kris Pigman, Pigman Companies, July 8, 2008.



1			
	32 (166)	↑	1,795 (1,127)
	137 (55)	↑	1,697 (1,482)
	843 (1,284)	↑	13 (6)
	↓	↓	↓
(28)	52	↑	↑
(1,579)	1,549	↑	↑
(73)	415	↓	↓
		↓	↓
		(284)	39
		(149)	27
		(279)	19

2

Diagram illustrating a vertical line with arrows pointing to and from it, and numbers in parentheses next to the arrows.

Left side (Arrows pointing to the line):

- 245 (50)
- 320 (82)

Right side (Arrows pointing to the line):

- 67 (323)
- 24 (25)

Below the line (Arrows pointing away from the line):

- (384) 38
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5			
10 (9)	↑	937 (497)	
25 (51)	↑	753 (482)	
12 (45)	↑	58 (17)	
↓	↓	↓	
(43) 77	↑	↑	↑
(1,556) 946	↑	↑	↑
(26) 55	↓	↓	↓
	↓	↓	↓
	(9) 8	↑	
	(68) 268	↑	
	(130) 44	↑	

6			
	33 (8)		12 (49)
	351 (85)		0 (0)
	75 (21)		0 (0)
	↑	↑	↑
	↓	↓	↓
(32)	9	↑	↑
(0)	0	↑	↑
(0)	0	↓	↓
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	(0)	0	↑
	(359)	73	↑
	(0)	0	↑

7	
60 (17)	↑
139 (27)	↑
152 (41)	↑
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(63) 16	↑
(0) 0	↑
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	(0) 0
	(141) 24
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8		
89 (13)	↑	11 (52)
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Existing Plus Project Volumes
A.M. and (P.M.) Peak Hour



TABLE 5
EXISTING AND EXISTING PLUS PROJECT CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type	AM Peak Hour LOS/Delay		PM Peak Hour LOS/Delay	
			Existing	Exist + Project	Existing	Exist + Project
1	Soscol Ferry Rd./SR-29	Signal	E 61.1	E 67.1	F > 80.0	F > 80.0
2	Soscol Ferry Rd./Devlin Road	Stop	C 17.6	D 25.3	C 15.8	C 21.5
3	Airport Boulevard/Devlin Blvd.	Signal	B 11.3	C 22.9	B 10.4	C 25.1
4	Airport Boulevard/SR-29/SR-12	Signal	D 41.4	D 53.6	D 35.1	D 44.6
5	Kelly Road/SR-12	Signal	C 33.6	C 34.1	C 26.7	C 28.3
6	Project Drive #1/Devlin Road	Stop	----	C 15.4	----	B 12.7
7	Project Drive #2/Devlin Road	Stop	----	C 15.4	----	B 14.4
8	Project Drive #3/Devlin Road	Stop	----	A 8.4	----	A 9.0
9	Project Drive #4/Airport Boulevard	Stop	----	A 9.1	----	B 12.8

Signalized intersection calculations based on HCM 2000 operations methodology which yields an intersection LOS and vehicle delay in seconds..

proposed project driveway access intersections.

EXISTING PLUS PROJECT INTERSECTION OPERATIONS

With AM and PM peak hour project trips added to existing traffic volumes, study intersection LOS have been calculated and are shown in Table 5. With proposed project traffic, intersection LOS would change at two of the study locations; the stop-sign controlled Soscol Ferry Road/Devlin Road intersection and the signalized Airport Boulevard/Devlin Road intersection. During the AM peak hour, the Soscol Ferry Road/Devlin Road intersection would change from LOS C (17.6 seconds) to LOS D (25.3 seconds). This change in intersection LOS would apply to the northbound left and right-turn movements from Devlin Road onto Soscol Ferry Road. During the same AM peak hour, the Airport Boulevard/Devlin Road intersection would change from LOS B (11.3 seconds) to LOS C (22.9 seconds). During the PM peak hour, the same intersection would change from LOS B (10.4 seconds) to LOS C (25.2 seconds). All other project study intersections would remain unchanged from existing LOS conditions but would experience increases in overall seconds of vehicle delay due to increases from proposed project and adjacent development traffic volumes.

The unsignalized intersection of Soscol Ferry Road/Devlin Road was evaluated for peak hour (MUTCD #3) signal warrant satisfaction. With Existing plus Project traffic volumes, the intersection would just exceed the minimum volumes for signal installation during the PM peak hour.

With proposed project development, overall vehicle circulation within the NALA would change due to planned project circulation improvements. Specifically, Devlin Road would be extended south approximately 1,100 feet south to provide access to proposed project driveways and adjacent development. These circulation changes would affect existing intersection operation at the Airport Boulevard/Devlin Road intersection as well as overall vehicle circulation on Devlin Road from other areas in the NALA. Proposed project circulation improvements and their affects on vehicle circulation are discussed in detail in the following Proposed Project Access and Circulation and Proposed Project Vehicle Queuing Analysis sections.

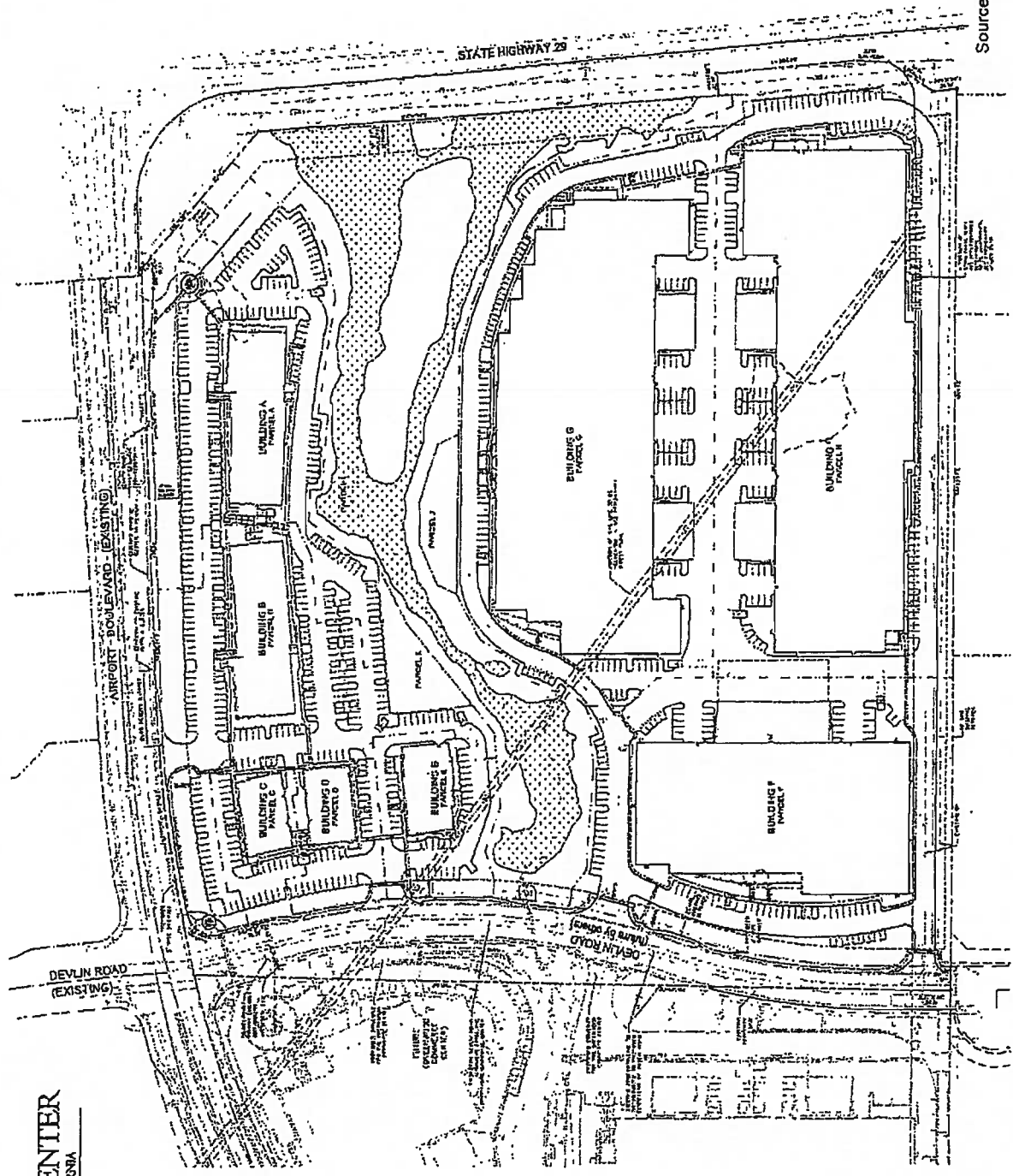
PROJECT ACCESS AND CIRCULATION

Site Access/Internal Circulation

Vehicle access to the proposed project site would be gained directly from a southerly extension of Devlin Road (at Airport Boulevard) and existing Airport Boulevard east of Devlin Road. There would be three (3) full-

**NAPA
COMMERCE CENTER**
NAPA COUNTY, CALIFORNIA
USE PERMIT

JULY 2009
SHEET 1 OF 4



Source: **RTA**
ENGINEERING & PLANNING
UNIVERSITY OF CALIFORNIA



omni-means

Project Site Plan



figure 4

access driveways off of the Devlin Road southern extension and one (1) limited access driveway off of Airport Boulevard (see Figure 4—Project Site Plan). As noted above, Devlin Road would be extended south 1,100 feet (approximately) to provide access to proposed full-access project driveways and adjacent development. The first project driveway would be located approximately 280-300 feet south of Airport Boulevard and would serve both the proposed project and Greenwood Business Park development. The second project driveway would be located approximately 640 feet south of Airport Boulevard and would also serve both the proposed project and Greenwood Business Park development with full vehicle access. Finally, the third project driveway would be located approximately 1,110 feet south of Airport Boulevard on the Devlin Road extension and serve proposed project access. A limited access driveway (right-turns-only inbound/outbound) would be located on Airport Boulevard approximately 260 feet east of Devlin Road.

Again, based on the topography and natural drainage of the site, the project parcel would be divided into two development areas. The northern development area would serve primarily office-type uses and the southern development areas would serve primarily warehouse uses. The northern development area of the site would be served by the limited access driveway off Airport Boulevard and the first full-access driveway off the southerly extension of Devlin Road. The southern development area of the project site would be served by the two remaining full-access driveways off the southerly extension of Devlin Road.

Internal vehicle circulation within the proposed project would be adequate. The northern development area of the site would be served by a long east-west parking/drive aisle extending along the entire Airport Boulevard frontage would be accessed primarily through the limited access driveway. Another east-west parking/drive aisle would extend east from the first project driveway off Devlin Road serving the smaller development buildings and a parking field located towards the rear of the site. A north-south parking/drive aisle would extend from the limited access driveway off Airport Boulevard and link the two access drive aisles.

The southern half of the project site would be served by the second and third remaining full-access project driveways off of the Devlin Road extension. The second full-access driveway would provide access to an east-west internal drive aisle that would essentially form a circular roadway and “loop” around the entire warehouse set of buildings. This circular drive aisle would provide access to vehicle parking along the roadway and eventually form the southern-most drive aisle connecting to the Devlin Road extension at the third and final project access driveway. Between the two main project warehouse buildings, there would be a limited parking field and this would be accessed by a north-south drive aisle connecting the circular roadway. It is noted that there are specific parking spaces situated on the curves of the internal drive aisles around project buildings F and H at the following locations of the proposed project site:

- Five (5) vehicle parking spaces at the northeast corner of Building F on the entrance curve;
- Two (2) vehicle parking spaces at the southeast corner of Building F on the exit curve;
- Five (5) vehicle parking spaces at the northwest corner of Building H on the entrance curve;
- Three (3) vehicle parking spaces at the southeast corner of Building H on the inside curve.

Since these parking spaces are located internal to the site and would not affect external driveway operation or off-site street traffic on Devlin Road, they would not need to be removed. However, it is recommended that these parking spaces be reserved for “employees only” to ensure a low turnover rate. Project volumes on the internal drive aisle and vehicle speeds would be low and by limiting these specific parking spaces for employees only there would be limited in/out maneuvers.

Devlin Road Extension

The southern extension of Devlin Road between Airport Boulevard and the southerly boundary of the project site is shown as 48-foot curb-to-curb with a 68-foot right-of-way (ROW) in project improvement plans.⁵

⁵ TLA Engineering and Planning, Napa Commerce Center Use Permit, Sheet 1 of 4, July 2009.

Previous discussions with Napa County Transportation staff had indicated that the roadway would likely have to accommodate two (2) travel lanes and a two-way-left-turn-lane (TWLTL) in this area. The new connection of Devlin Road between Airport Boulevard and southern boundary of the project site would also attract existing traffic currently using Airpark Road to access to/from Airport Boulevard. With the new Devlin Road extension, existing vehicle and/or truck trips would not have to travel (west) to the Airport Boulevard/Airpark Road intersection but would merely travel north up the new Devlin Road extension (via the part-width segment) to access Airport Boulevard. Based on previous traffic analyses conducted for the Greenwood Business Park project, the extension of Devlin Road would likely attract 102 existing vehicle trips from the southern Airpark Road area.⁶ This would equate to 89 trips inbound and 13 trips outbound during the AM peak hour and the exact opposite during the PM peak hour (13 in, 89 out). These diverted existing trips were accounted for under Existing plus Project conditions and would only affect the four project study intersections on the Devlin Road extension between the project's southern boundary and Airport Boulevard.

Airport Boulevard/Devlin Road Intersection

With development of the proposed project site (and adjacent Greenwood Business Center) and extension of Devlin Road to the south, the Airport Boulevard/Devlin Road intersection would become a four-way intersection. Vehicle queuing analyses have been conducted for all intersections with Existing plus Project AM and PM peak hour volumes to ensure adequate storage lengths and vehicle queuing (see Proposed Project Vehicle Queuing Analysis section). However, based on the projected vehicle trips through the intersection (with proposed project development) there would be a need for dual (2) westbound left-turn lanes from Airport Boulevard onto the Devlin Road extension with a storage capacity of 225 feet. This need is based on a total of 421 westbound left-turn vehicles from Airport Boulevard onto Devlin Road during the AM peak hour. This circulation improvement would require two (2) receiving lanes on the Devlin Road extension in the southbound direction. Based on measurements from aerial photographs and field measurements, Airport Boulevard at Devlin Road has an approximate curb-to-curb width of 72 feet. This includes Class II bike lanes (5 feet each), two westbound through-lanes (24-feet), one westbound left-turn lane (12-feet), two eastbound through-lanes (24-feet), and a two-foot raised median. With the installation of dual westbound left-turn lanes on Airport Boulevard at Devlin Road, Airport Boulevard would need to be widened by 12-feet to an 86-foot curb- to-curb width to include the additional westbound left-turn lane and existing Class II bike lanes.

Based on the proposed project site plan, the new extension of Devlin Road immediately south of Airport Boulevard has an approximate 72-foot curb-to-curb width. In the southbound direction, this could accommodate a one (1) 12-foot bus turn-out and two (2) 11-foot travel lanes. In the northbound direction (at Airport Boulevard) there could be one (1) 12-foot left-turn lane, one (1) 12-foot through-lane, and one (1) 14-foot right-turn lane. It is not recommended that a new northbound bus turnout be installed on the Devlin Road extension immediately south of Airport Boulevard. In this area, there would be a high-volume right-turn movement (342 vehicles) from northbound Devlin Road onto eastbound Airport Boulevard. A new bus turnout on Devlin Road (southeast corner of the Airport Blvd./Devlin Rd. intersection) would interfere with right-turn volumes and buses would have a difficult time merging back out into through-traffic to travel in a northbound direction. It is recommended that transit users/bus riders use the existing bus turnout located immediately north of the Airport Blvd./Devlin Rd. intersection on Devlin Road. This bus turnout is located a mere 50-feet north of Airport Boulevard on Devlin Road. Transit users could easily walk across Airport Boulevard from the proposed project site (or Greenwood Business Park) to access this bus stop. Further south of Airport Boulevard, the extension of Devlin Road is shown having an approximate 48-foot curb-to-curb width which could readily accommodate two (2) travel lanes, a two-way-left-turn lane, and Class II bike lanes.

Proposed Project Driveway Access

All proposed project driveways off of Devlin Road have been assumed as stop-sign controlled for the minor

⁶ George W. Nickelson, P.E.,.....Ibid

street (driveway) operation. Project driveway intersection LOS calculations have assumed a separate southbound (inbound) left-turn lane, and a separate westbound (outbound) right-turn lane and shared through/left-turn lane. Based on the proposed project site plan, the outbound driveway lanes on Devlin Road are approximately 21-22 feet wide. At a minimum, it is recommended that the outbound driveway widths be 24-feet to allow for two standard turn lanes. It would be preferable to allow for a 25-foot outbound driveway width to allow for a 13-foot right-turn lane to accommodate large trucks (particularly at proposed project driveway #'s 2 and 3).

The limited access driveway intersection (Project Drive #4/Airport Boulevard) off of Airport Boulevard is projected to operate at acceptable levels. However, during the PM peak hour there would be a heavy (342 vehicles) northbound right-turn movement from Devlin Road onto eastbound Airport Boulevard. With an additional 1,000+ eastbound through-vehicles on Airport Boulevard there would be some minor (on-site) vehicle queuing for outbound driveway traffic. The intersection would not meet the minimum right-turn volumes for inbound traffic to warrant a separate right-turn deceleration lane.⁷ However, during both the AM and PM peak hours the driveway would meet the minimum volumes required for a taper. This finding is based on minimum right turn volumes of 61 (AM) and 13 (PM) and through-volumes of 185 (AM) and 1,039 (PM) on Airport Boulevard during the AM and PM peak hours, respectively (please refer to Appendices for traffic volume guidelines for design of right-turn lanes).

PROJECT VEHICLE QUEUING ANALYSIS

The results of the Existing plus Project conditions queuing analysis are presented in Table 6. The available storage lengths for existing intersections are based on measurements from aerial photographs and field measurements. For future intersection analyses, vehicle storage requirements have been based on project driveway turning movement volumes combined with the vehicle queuing analysis. Vehicle queuing analyses have been conducted for both the AM and PM peak hour to ensure adequate vehicle storage with proposed project traffic. As calculated, vehicle queuing problems would occur at the following locations:

- Socal Ferry Road/SR-29: The analysis indicates that the northbound approach of Socal Ferry Road/SR-29 intersection would continue to experience queuing problems during the PM peak hour. This would include both the northbound left-turn lane (273-foot queue) and the shared through/right-turn lane (608-foot queue). As with existing conditions, overall intersection operation during this time period is LOS F (>80.0 seconds). Calculated vehicle queues are not meaningful once an intersection's LOS exceeds F. Therefore, long vehicle queues (500 + feet) would continue to be experienced at all four intersection approaches during the PM peak hour with existing plus project traffic volumes.
- Socal Ferry Road/Devlin Road: Vehicle queuing indicated for the northbound right-turn movement from Devlin Road onto eastbound/northbound Socal Ferry Road is a function overall poor operations (LOS F) at the Socal Ferry Road/SR-29 intersection. The northbound queue on Socal Ferry Road (at SR-29) is causing northbound motorists on Devlin Road to be delayed resulting in vehicle queuing. However, calculated vehicle queues for the Socal Ferry Road/SR-29 and Socal Ferry Road/Devlin Road intersection are somewhat tenuous given an overall operation of LOS F at the Socal Ferry Road/SR-29 intersection. Until operations improve at this SR-29 intersection, vehicle queuing on northbound Socal Ferry Road will continue to occur during the PM peak hour.
- Airport Boulevard/SR-29/SR-12: The analysis indicates that the westbound approach of Airport

⁷ Transportation Research Board (TRB), *Intersection Channelization Design Guideline #279, Chapter 4, Design of Right-Turn Lanes, Figure 4.23, November 1985.*

**TABLE 6
EXISTING PLUS PROJECT CONDITIONS: AM AND PM PEAK HOUR VEHICLE QUEUES**

Intersection	Movement	Available Storage (ft)	95th Percent Queue Length (ft.) AM/PM
Soscal Ferry / SR-29	EBL	500	224/125
	EBT	n.a.	
	EBR	520	366/225
	WBL	350	86/36
	WBT	n.a.	
	NBL	200	66/273
	NBT/NBR	220	72/608
	SBL	500	338/335
Soscal Ferry / Devlin Road	SBT/SBR	500	157/333
	WBL/WBT	150	87/95
Airport Blvd. / Devlin Road	NBL/NBR	100	46/1089
	EBL	320	43/96
	EBT/EBR	n.a.	64/87
	WBL	225	134/94
	WBT/WBR	n.a.	119/54
	SBL	220	60/212
	SBR	220	71/36
	NBL	75	50/50
Airport Blvd. / SR-29 / SR-12	NBR	220	48/130
	EBL	300	60/339
	EBL/EBT	300	76/569
	WBL	175	131/76
	WBT	175	369/202
	NBL	350	429/299
	NBT	n.a.	
	NBR	240	101/190
Kelly Road / SR-12	SBL	1000	543/488
	SBT	n.a.	
	EBL	210	163/67
	EBT	n.a.	
	EBR	250	127/85
	WBL	250	82/34
	WBT	n.a.	
	WBR	470	212/82
	NBL	190	30/26
	NBT	n.a.	
	NBR	170	97/73
	SBL	230	31/60
Project Driveway #1/Devlin Road	SBT/SBR	215	33/55
	EBL	50	31/44
	WBT/WBR	50	33/50
Project Driveway #2/Devlin Road	SBL	150	29/32
	EBL	150	33/46
	WBT/WBR	120	47/65
Project Driveway #3/Devlin Road	SBL	150	20/21
	WBT/WBR	60	35/49
Project Driveway #4/Devlin Road	SBL	150	33/45
	EBT/EBR	250	30/50
	NBR	50	33/62

Notes: 1) Queuing Projections are based upon Synchro/SimTraffic software;
2) The queue lengths reported above are presented on a per lane basis;
3) Available storage for through-lanes is to the nearest major intersections—unless otherwise noted there is adequate storage for through-traffic at all studied intersections; n.a. = not applicable.
4) BOLD = 95th percentile volume exceeds storage, queue may be longer.
5) 25 feet equals one car length

Boulevard/SR-29/SR-12 intersection experiences queuing problems during the AM peak hour. Specifically, the westbound through-lane approach on SR-12 has a 369-foot queue with approximately 175-feet of storage capacity. However, these vehicle queues just extend back (east) onto SR-12 in the existing through-lane towards Kelly Road. In addition, analysis indicates that the eastbound through and left-turn movements on Airport Boulevard at SR-29/SR-12 would experience a vehicle queue of 569 feet during the PM peak hour with an overall storage length of 300 feet. Again, there is ample capacity on Airport Boulevard to store these vehicles since both the eastbound through and left-turn lanes extend back (west) into the two eastbound through-lanes. Finally, the SR-29 northbound left-turn movement onto Airport Boulevard would experience a vehicle queue of 429 feet with an overall storage capacity of 350 feet. This would exceed overall vehicle capacity for the northbound left-turn movement by three vehicle lengths on to SR-29 and would not be considered significant in nature.

All other study intersection approaches located internal to SR-29 on Airport Boulevard and Devlin Road have adequate vehicle storage. As with existing conditions, vehicle queuing on SR-29 is extensive during the AM and PM commute periods. At times, north-south through traffic vehicle queues on SR-29 are extensive enough to prevent motorists from accessing other turning movement lanes at the Soscol Ferry Road/SR-29 and Airport Boulevard/SR-29/SR-12 intersections. Vehicle queuing at the Airport Boulevard/Devlin Road intersection would be acceptable with recommended circulation improvements for westbound Airport Boulevard.

Based on the vehicle queuing analysis for Existing plus Project conditions and overall project vehicle trips in/out of the site, recommended lane geometrics and storage requirements for all project study intersections on Devlin Road and Airport Boulevard have been shown in Figure 5.

SUMMARY/FINDINGS

The proposed Napa Commerce Center project would add proportionately to overall traffic volumes on Devlin Road, Airport Boulevard, Soscol Ferry Road, SR-29, and SR-12. With existing plus proposed project traffic volumes, all project study intersections would generally operate at acceptable levels (LOS D or better) during the AM and PM peak hour. The Soscol Ferry Road/SR-29 would continue to operate at LOS E and F during the AM and PM peak hours, respectively.

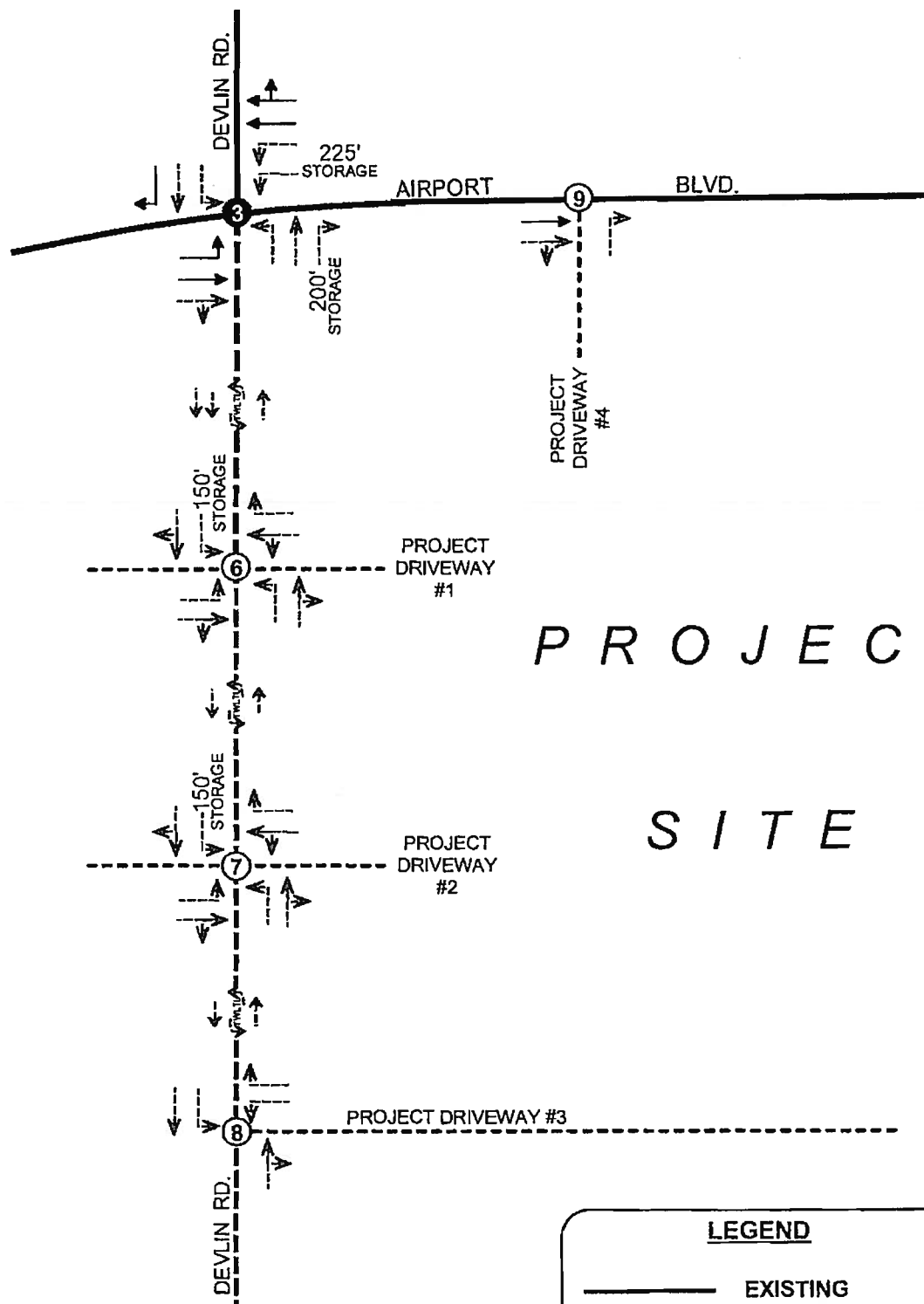
The overall Existing plus Project traffic analysis included peak hour project traffic from the adjacent Greenwood Business Center project located immediately west of the proposed project site off the planned southerly extension of Devlin Road. It was necessary to include this project to obtain accurate vehicle queuing and lane storage requirements as well as evaluating overall shared project driveway operation. Based on vehicle queuing analyses and overall proposed project trips, the following measures are recommended to ensure acceptable traffic flow throughout the NALA:

Existing Plus Project Conditions:

Internal Circulation:

In the southern portion of the project site, there are specific parking spaces situated on the curves of the internal drive aisles around project buildings F and H at the following locations:

- Five (5) vehicle parking spaces at the northeast corner of Building F on the entrance curve;
- Two (2) vehicle parking spaces at the southeast corner of Building F on the exit curve;
- Five (5) vehicle parking spaces at the northwest corner of Building H on the entrance curve;
- Three (3) vehicle parking spaces at the southeast corner of Building H on the inside curve.



MAP NOT TO SCALE



Existing and Recommended Intersection/Roadway Improvements



omni-means

figure 5

Since these parking spaces are located internal to the site and would not affect external driveway operation or off-site street traffic on Devlin Road, they would not need to be removed. However, it is recommended that these parking spaces be reserved for "employees only" to ensure a low turnover rate. Project volumes on the internal drive aisle and vehicle speeds would be low and by limiting these specific parking spaces for employees only there would be limited in/out maneuvers.

Airport Boulevard/Devlin Road Intersection:

Based on the proposed project vehicle trips through the Airport Boulevard/Devlin Road Intersection there would be a need for dual (2) westbound left-turn lanes from Airport Boulevard onto the southbound Devlin Road extension with a storage capacity of 225 feet. This is based on a total of 421 westbound left-turn vehicles from Airport Boulevard onto Devlin Road during the AM peak hour. This circulation improvement would require two (2) receiving lanes on the Devlin Road extension in the southbound direction. Based on measurements from aerial photographs and field measurements, Airport Boulevard at Devlin Road has an approximate curb-to-curb width of 72 feet. This includes Class II bike lanes (5 feet each), two westbound through-lanes (24-feet), one westbound left-turn lane (12-feet), two eastbound through-lanes (24-feet), and a two-foot raised median. With the installation of dual westbound left-turn lanes on Airport Boulevard at Devlin Road, Airport Boulevard would need to be widened by 12-feet to an 86-foot curb-to-curb width to include the additional westbound left-turn lane and existing Class II bike lanes.

With respect to the new southbound Devlin Road extension immediately south of Airport Boulevard, the proposed project site plan indicates an approximate 66-foot curb-to-curb width. In the southbound direction, this could accommodate one (1) 4-foot Class II bike lane, one (1) 11-foot travel lane (drop lane), and one (1) 12-foot travel lane. In the northbound direction (at Airport Boulevard), Devlin Road could be one (1) 11-foot left-turn lane, one (1) 12-foot through-lane, one (1) 12-foot right-turn lane, and one (1) 4-foot Class II bike lane. Continuing southbound travel on the Devlin Road extension, the outside through-lane could then transition or merge back down to one through-lane past the Greenwood Business Center's first driveway access. The Caltrans Highway Design Manual and the Manual on Uniform Traffic Control Devices (MUTCD) contains criteria for through-lane drops and taper transitions. The required distance for a southbound lane drop on Devlin Road is based on a distance equal to $L = WS$, where W equals the width of the lane to be dropped and S equals the design speed.⁸ The transition merge or taper distance formula is $L = WS^2 / 60$. Assuming an 11-foot travel lane and a speed limit of 30 mph in the immediate design area, the required distances have been calculated below:

Lane Drop Distance:	11-foot travel lane x 30 mph	= 330 feet
Taper Transition Distance:	11-foot travel lane x 30 ² mph / 60	= 165 feet

As calculated above, there would be a required distance of 330 feet to drop the right (outside) southbound through-lane on Devlin Road and a distance of 165 feet to transition back to one southbound travel lane. Based on these distances, the through-lane drop would extend to the first proposed project driveway on Devlin Road and then the transition taper would begin immediately south of this driveway. Further south of Airport Boulevard, the extension of Devlin Road is shown having an approximate 48-foot curb-to-curb width which could readily accommodate two (2) travel lanes, a two-way-left-turn lane, and Class II bike lanes.

Soscol Ferry Road/Devlin Road Intersection:

The unsignalized intersection of Soscol Ferry Road/Devlin Road was evaluated for peak hour (MUTCD #3) signal warrant satisfaction. With Existing plus Project traffic volumes, the intersection would just exceed the minimum volumes for signal installation during the PM peak hour. However, overall intersection operation is

⁸ Caltrans, *Highway Design Manual, Chapter 200—Geometric Design and Structure Standards, Section 206.3, Pavement Reductions, September 1, 2006.*

projected to be LOS D during the PM peak hour (most of the stop-sign controlled turning movements are northbound right-turns from Devlin Road onto Soscol Ferry Road). Should the County decide to signalize the intersection at some future date, a portion of the proposed project's traffic impact fees could contribute towards this improvement

Airport Boulevard:

Based on the existing plus project vehicle queuing analysis, the projected vehicle queue on eastbound Airport Boulevard at SR-29 would be 569 feet during the PM peak hour (combined through and left-turn movements). The distance between the Airport Boulevard/Devlin Road and Airport Boulevard/SR-29/SR-12 intersections is approximately 1,300 feet. Therefore, while eastbound vehicle queues on Airport Boulevard would extend back towards Devlin Road, these queues could be accommodated on Airport Boulevard in the existing eastbound through-lanes without significantly affecting traffic flows (or those motorists wishing to access the eastbound free right-turn lane). With the recommendation of dual westbound left-turn lanes on Airport Boulevard at Devlin Road and corresponding northbound right-turn lane on Devlin Road, it is recommended that a northbound right-turn overlap phase be included as part of the overall signal phasing operation. This overlap phase would help to facilitate the relatively heavy (342 peak hour vehicles) right-turn movement from Devlin Road onto eastbound Airport Boulevard and improve overall intersection operation. The proposed limited access project driveway (right-turns-only inbound/outbound) on Airport Boulevard would not interfere with overall operation at the Devlin Road/Airport Boulevard intersection. We would not characterize this driveway as 'mid-block' in that the limited access driveway would be located a safe distance from Devlin Road (260 feet) but still 1,000+ feet from SR-29. The driveway would not disrupt or delay vehicle turning movements from the Airport Boulevard/Devlin Road intersection (Devlin Road northbound right-turn movement or eastbound through-movements on Airport Boulevard). The eastbound right-turn lane on Airport Boulevard currently has 600+ feet of storage capacity. In addition, this is a "free" right-turn at SR-29 with its own merge lane on to southbound SR-29. Eastbound motorists on Airport Boulevard wishing to travel southbound on SR-29 are not required to stop at the intersection at SR-29 but merely have to merge into southbound traffic. With a 1,300-foot distance between the Airport Boulevard/Devlin Road and Airport Boulevard/SR-29/SR-12 intersections, it is not recommended that the existing eastbound free right-turn lane be extended back as a "weaving lane" to Devlin Road. This could actually create more weaving maneuvers on eastbound Airport Boulevard between Devlin Road and SR-29 and increase vehicle speeds. Based on existing plus project volumes, the free eastbound right-turn lane on Airport Boulevard with 600+ feet of storage capacity would be adequate for 544 right-turn vehicles during the PM peak hour. The vehicle queuing analysis for the PM peak hour indicates a vehicle queue of 332-feet for this free eastbound right-turn movement accounting for the southbound merge onto SR-29.

Driveway Access:

Based on the proposed project site plan, the driveway lane widths for outbound vehicle traffic onto Devlin Road are approximately 21-22 feet wide. At a minimum, it is recommended that the outbound driveway widths be 24-feet wide to allow for two standard turn lanes. It would be preferable to allow for a 25-foot outbound driveway width as this would allow for a 13-foot right-turn lane to accommodate large trucks (particularly at proposed project driveway #'s 2 and 3).

The limited access driveway intersection (Project Drive #4/Airport Boulevard) off of Airport Boulevard is projected to operate at acceptable levels. However, during the PM peak hour there would be a heavy northbound right-turn movement (342 vehicles) from Devlin Road onto eastbound Airport Boulevard. With an additional 1000+ eastbound through-vehicles on Airport Boulevard there would be some minor (on-site) vehicle queuing for vehicles exiting the driveway. The intersection would not meet the minimum right-turn volume for inbound traffic to warrant a separate right-turn deceleration lane. However, it would meet the warrant for installation of a taper for inbound traffic.

With regard to the proposed limited access project driveway (right-turns-only inbound/outbound) on Airport Boulevard, this driveway would be located approximately 260-feet east of Devlin Road. During the AM peak hour, inbound/outbound traffic volumes at this intersection would be relatively light with 61 vehicles inbound and 18 vehicles outbound. Eastbound through-traffic on Airport Boulevard would also be light with 185 vehicles. Overall intersection operation is projected to be LOS A. During the PM peak hour, inbound/outbound traffic volumes at the intersection would be reversed with 13 vehicles inbound and 77 vehicles outbound. Eastbound through-traffic on Airport Boulevard would increase to 1,039 vehicles. Overall intersection operation is projected to be LOS B. As a stop-sign controlled intersection, there would be very minor vehicle queuing during the PM peak hour but this would be limited to on-site (outbound) vehicles. The signalized intersection at the Airport Boulevard/Devlin Road intersection would help to provide additional "gaps" in eastbound through-traffic on Airport Boulevard for outbound traffic from the driveway. Outbound motorists wishing to access SR-29 north or SR-12 east would turn right from the driveway and either merge north one lane over or just stay in the eastbound through lane. There would not be significant weaving issues associated with this driveway. Even with projected vehicle queuing on eastbound Airport Boulevard during the PM peak hour (569 feet) there would still be approximately 330 feet remaining to access these turn lanes.

Based on the proposed project description, the majority building uses along the Airport Boulevard frontage are "office" uses rather than "light-industrial" or "warehouse" type uses. Office uses tend to have a very directional peak hour flow (inbound AM, outbound PM). It has been our experience that multiple driveway access tends to benefit office-type uses by dispersing peak hour traffic flows and not limiting access to one particular driveway in/out of the site. By not providing this driveway, all office-related project trips located in the northern half of the project site would be forced to use the first proposed project driveway on Devlin Road.

This would result in additional southbound left-turn movements and westbound right-turn movements at the project driveway. With respect to the southbound left-turn movement this would increase to 141 vehicles during the AM peak hour. We have assumed a storage length of 150 feet for the southbound left-turn lane at this driveway which is adequate. However, we have also assumed 125-feet of storage for the opposing northbound left-turn lane on Devlin Road at Airport Boulevard. We note this as we currently have no traffic demand for this movement based on existing plus project volumes. Should this northbound left-turn lane on Devlin Road require more storage capacity (based on future volume projections), this could affect the capacity of the southbound left-turn lane at the first project driveway on Devlin Road. Therefore, adding additional volumes to this turning movement (by eliminating the Airport Boulevard limited access driveway) could affect overall storage capacity at the Airport Boulevard/Devlin Road intersection. There would also be an increase in northbound right-turn movements at the Devlin Road intersection, particularly during the PM peak hour ($342 + 77 = 419$ right-turn vehicles). The 419 northbound right-turn movements from Devlin Road onto Airport Boulevard during the PM peak hour would comprise the major northbound movement from this roadway. The addition of an internal vehicular connection over the watercourse between the northern and southern portions of the project site would not significantly improve vehicle access or internal circulation to the project site. No significant internal circulation issues have been identified other than vehicle/parking conflicts and overall internal circulation would be adequate. However, if a bridge were installed over the watercourse it may encourage more project trips to use the northerly driveways to access the site rather than using the southerly Devlin Road driveways. This would likely increase project trips at the first project driveway on Devlin Road and the limited access project driveway on Airport Boulevard.

Traffic Impact Fees:

As part of the NAIA, the proposed project is subject to the "Airport Industrial Area Traffic Impact Fee," currently \$3,551.00 per PM peak hour trip. However, the proposed project would be constructing a portion of Devlin Road, a key component identified within the NAIA. Should the proposed project be approved, it would be appropriate for the project applicant to receive a fee credit as a result of this roadway construction.

Attachment E

Michael Throne, City of American Canyon Department of Public
Works,

Napa Commerce Center Water Supply Report,

October 2009

(sans appendices)





CITY OF AMERICAN CANYON
PUBLIC WORKS DEPARTMENT
4381 BROADWAY, SUITE 201
AMERICAN CANYON, CA 94503

WATER SUPPLY REPORT

Napa Commerce Center

Napa County Assessor's Parcel Number
057-210-056

Prepared by:

Michael Throne, P.E.



Approved

OCTOBER 14, 2009
Date

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WATER SERVICE REQUEST

DESCRIPTION OF PROJECT

Napa 34 Holdings, LLC is seeking a Use Permit for the construction of 8 buildings totaling 490,503 square feet on a 34 acre lot located west of SR 29, east of Devlin Road extension, south of Airport Boulevard and north of old Aviation Way right-of-way.

The property is located within the Napa County Airport Specific Plan Area. The anticipated use is industrial/warehouse (346,427 square feet) and office (144,076 square feet). The property zoning is Industrial Park/Airport Compatibility.

WATER SERVICE REQUEST

Average Daily Demand

Mr. Brian Kaufman of Napa 34 Holdings, LLC submitted a will-serve questionnaire on September 22, 2009. The questionnaire concluded the total average annual water demand will be 10,800 gallons per day.

Based on review of the calculations submitted by Mr. Kaufman this demand is a reasonable estimate.

Domestic demand: 10,800 gpd

Industrial demand: 0 gpd

Irrigation demand: 0 gpd

The total annual demand equals 10,800 gallons per day or 12 acre feet per year (AFY)

Peak Day Demand

Mr. Brian Kaufman of Napa 34 Holdings, LLC submitted a will-serve questionnaire on September 22, 2009. The questionnaire concluded the total maximum day demand will be 16,200 gallons per day.

Based on review of the calculations submitted by Mr. Kaufman this demand is a reasonable estimate.

Domestic demand: 16,200 gpd

Industrial demand: 0 gpd

Irrigation demand: 0 gpd

Conservation Measures Included in Project

The project includes water conservation measures, including:

- Educate employees on the importance of water conservation
- Minimize water usage and maximize water efficiency of operations

CONSISTENCY

URBAN WATER MANAGEMENT PLAN

The sites estimated total annual demand of 12 AFY, is consistent with the demands estimated in the Urban Water Management Plan. The Urban Water Management Plan estimated 25 AFY for the 34 acre site. The sites estimated average demand for water of 10,800 gallons per day, or 12 AFY, is consistent with the Urban Water Management Plan estimate.

RECYCLED WATER FACILITIES PLAN

The project site is within the Napa Sanitation District (NSD) recycle water service area. The City anticipates that NSD will require the applicant to construct a recycled water main in Devlin road along the project frontage.

WATER CONSERVATION IMPLEMENTATION GUIDELINES

The project has not yet been reviewed for consistency with the Water Conservation Guidelines adopted by the City Council on 10/23/07. This should be accomplished prior to issuance of a building permit.

CONSISTENCY WITH ORDINANCE 2000-08

Ordinance 2000-08 states that all projects within the City of American Canyon conforming to City zoning as Industrial and all projects within the unincorporated area of Napa County, for which the city provides water connections pursuant to Municipal Code Section 13.10.040 are subject to a limit of 650 gallons per acre per day average annual water demand. The projects water demand is 318 gallons per acre per day for the 34 acre site. Thus, it is consistent with the ordinance.

WATER FOOTPRINT

ZERO WATER FOOTPRINT DEFINITION

On October 23, 2007, the City Council of the City of American Canyon adopted the following definition of Zero Water Footprint (ZWF).

No loss in water service reliability or increase in water rates to the City of American Canyon's existing customers due to the requested increased demand for water in the City's water service area.

Appendix A provides the process for water service requests considered by the City Council as part of their policy decision on Zero Water Footprint.

The important ZWF policy decision followed shortly after the Napa County Local Agency Formation Commission (LAFCO) adopted Policy Resolution 07-27 on October

15, 2007, which established that water service requests outside the City of American Canyon city limits but within the Airport Industrial Area are not subject to LAFCO review. Because the City of American Canyon lacks land use jurisdiction in this area, it became necessary to implement a policy and process that protects the reliability and financial viability of the City's water enterprise while providing a predictable outcome for those seeking new or increased water service.

It is the City of American Canyon's policy that the ZWF policy and process apply equally both within the City limits and within the approved extrajurisdictional service area.

PROJECT'S IMPACT ON RELIABILITY

The Urban Water Management Plan finds that, as of 2005, the City of American Canyon would experience a shortfall in water supplies in multiple-dry-years of up to 427 acre feet and single-dry-years of up to 897 acre feet. Due to increased demand, the shortfall would worsen even as additional supplies are obtained. By the year 2015, the City of American Canyon would experience a shortfall in multiple-dry-years of up to 1,037 acre feet and in single-dry-years of up to 1,557 acre feet. By contributing to the shortfall, the project would reduce the reliability of American Canyon water service.

PROJECT'S IMPACT ON RATES

The project would not have an impact on rates.

PROJECT'S WATER FOOTPRINT

The project **does not have a zero water footprint**. Staff has determined that it will result in a loss in water service reliability. Therefore in accordance with Chapter 13.10 of the City Municipal Code the applicant shall pay to the City a monthly service charge in the amount of \$4.25/100 cubic feet. This represents the project's costs associated with City supplying water through the City's connection to the City of Vallejo.

PROJECT'S CONTRIBUTION

CAPACITY FEE

Based on the Water and Wastewater Rate and Fee Study prepared by Bartle Wells and Associates for the City of American Canyon and the December 18, 2007 approval of the Water Capacity Fee Ordinance, the project would generate water capacity fees of **\$296,946** based on the increased peak day demand of 16,200 gpd times \$18.33 per gallon.

REIMBURSEABLE IMPROVEMENTS

None.

CAPITAL PROGRAM STATUS

SUMMARY

The City of American Canyon's Water Capital Program will address the supply shortfalls identified in the 2005 Urban Water Management Plan and will meet the treatment, storage, and distribution needs as the City implements its General Plan. Appendix B describes the program in detail.

SYSTEM PLANNING STATUS

The City of American Canyon is currently preparing an Integrated Water Management Plan, which will address all water resources – drinking water, recycled water, wastewater, groundwater, creeks and wetlands in a comprehensive way. The study was initiated in December 2006 and Phase I is complete. The work products within Phase I include a technical review of the water treatment plant, goal setting and performance criteria, a water loss audit, an analysis of existing conditions, a report on threatened and endangered species constraints, a feasibility study of a well in the Newell Open Space Preserve, a funding assistance survey, an investigation into corrosion problems in portions of the water system, a unified hydrology analysis, and a Strengths, Weaknesses, Opportunities and Threats report.

Phase II of the Integrated Water Management Plan has been initiated. Phase II will include an estimate of anticipated resource demands, feasibility study of a high capacity well field, a wastewater source identification and local limits study, a facilities plan for wastewater improvements, and an analysis of the alternative water resource solutions, a water conservation feasibility study, assessment of a possible well at the American Canyon High School property, Geographical Information Systems (GIS) Data Entry, and pilot testing of Water Treatment Plant modifications.

A water and wastewater rate and capacity fee report was prepared. It proposed substantial increases in water and wastewater rates and in capacity fees. It was endorsed by the City's Blue Ribbon Committee on Water Resources and was approved by the City Council at a public hearing on December 18, 2007.

The Blue Ribbon Committee on Water Resources was formed in March 2007 to serve as a sounding board on all water related issues. The committee includes elected and appointed City leaders, long-term residents, newer residents, developers with interests inside and outside the City limits, vineyard owners, business owners, agency representatives, a County Supervisor and retired water professional. Water, Wastewater, Recycled Water, Finance and Creeks/Wetlands Subcommittees have been formed. The full committee has met monthly, and the subcommittees have met numerous additional times. The Blue Ribbon Committee is expected to remain active for the next two years as the Integrated Water Management Plan is completed and initial projects are implemented.

WATER SUPPLY

WATER SUPPLY IMPLEMENTATION STATUS

The status of the water supply projects in the Final Water and Wastewater Rate and Fee Study is as follows:

- Water rights - Purchase of 1,560 annual acre feet of water rights from Sacramento Valley agricultural interests. The City of American Canyon, the City of Napa and the Napa County Flood Control and Water Conservation District have met with one interested seller, who provided a letter summarizing the availability and possible terms for the water supply. They indicated that the requested amount would be available to the City of American Canyon for long-term transfer. During cutbacks north of the Delta of the Central Valley Project, the transfer would be subject to a reduction of 25%. The long-term transfer of appropriative rights would require approval by the State Water Resources Control Board. The City of American Canyon and the City of Napa are currently seeking a proposal from a water transfer consultant to assist with this purchase. About three years would be needed to complete the long-term transfer. Short-term transfers are also available on a year-to-year basis.

Water Code Section 109 contains a declaration of state policy favoring voluntary water transfers, and directs the Department of Water Resources, the State Water Resources Control Board and all other state agencies to encourage voluntary water transfers. Water Code section 475 contains legislative findings and declarations favoring voluntary water transfers.

The Sacramento Valley Integrated Water Management Plan promotes water transfers, both within the Sacramento Valley and outside of it, as one of its key water management strategies.

On May 20, 2008, the City Council approved a consulting contract to evaluate three potential sellers. After the City selects a preferred seller, the consultant will describe the next steps needed to complete a transfer. The schedule for the consulting contract calls for completion in 2008 Phase 1, evaluation of three sellers is completed. Phase 2, selection of a preferred seller and other steps, to be completed in 2009.

- North Bay Aqueduct expansion - Project to expand the ability of the North Bay Aqueduct to deliver more water. An increase of 5.5 cubic feet per second (cfs) in conveyance capacity would allow the City of American Canyon to treat an additional 3.5 million gallons per day during peak months of the year. It would provide conveyance capacity for approximately 3,300 acre feet per year.

The Department of Water Resources completed a study in 2005 which confirmed the feasibility of expanding the conveyance capacity of Reach 3a of the North Bay Aqueduct from 46 to 65 cfs. The project would replace the four existing pumps and motors, furnish and install a new air

chamber, furnish and install new check valves, furnish and install required electrical equipment, and furnish and install a parallel 36-inch steel pipeline from the surge tank to the terminal tank(s).

Currently, the County of Napa and the California Department of Transportation (Caltrans) are performing environmental review on a project to widen Jameson Canyon Road (SR 12). When it is constructed, about half of the length of the North Bay Aqueduct will need to be relocated out of the roadway at the expense of the highway project. This would be an appropriate time to expand the North Bay Aqueduct. The agenda for the November 2007 meeting of the Napa County Water Technical Advisory Committee included a discussion of this opportunity.

Solano and Napa County water agencies have contracted with CDM to evaluate future water demands and NBA capacity. Their consulting services are in progress.

- North Bay Aqueduct terminal tank replacement - Project to replace and expand the seismically deficient water tank at the end of the North Bay Aqueduct. One 7 million-gallon open air tank is being replaced with two 5-million gallon enclosed tanks. This project is under construction. The first two million-gallon tank is complete and the 7-million gallon tank is being demolished.
- Vallejo water rights purchase - Exercise remaining potable water contract options from city of Vallejo for use in times of drought. The 1996 contract between the City of American Canyon and the City of Vallejo currently provides the City of American Canyon with treated water in the following amounts:
 - A maximum of 2.15 million gallons per day on a peak day or
 - A maximum of 1.3 million gallons per day for a peak month or
 - A maximum of 1,351 acre feet per year

The contract also provides for 500 acre feet of raw water, available through Vallejo's riparian permit. It also provides for an additional 500 acre feet of raw water per year during emergency conditions.

The contract provides options for the City of American Canyon to purchase additional capacity in the following periods:

- 2007-2011, 1.15 million gallons per day on a peak day
- 2012-2016, 0.9 million gallons per day on a peak day
- 2017-2021, 0.9 million gallons per day on a peak day

The total water supply available under the remaining options is 1,854 AFY.

The Integrated Water Management Plan will guide the City's decision on whether to execute the remaining potable water contract options with Vallejo or to use the capacity fees for more cost-effective supply sources.

On June 16, 2008, the City of American Canyon received an offer from the City of Napa to evaluate purchasing water from the City of Napa as an alternative to the 2007-2011 Vallejo Water Supply option.

- Emergency groundwater bank - American Canyon's share of project to "bank" groundwater for times of emergency. The feasibility of this project

is currently being investigated as part of the Integrated Water Management Plan. It is conceived as a high-yield well field which serve as a regional facility for municipalities in Napa County. Based on initial hydrogeology investigation, Soscol Creek would be one probable location for such a high-yield well field. In 2007, the City of Napa denied a request to install a commercial well on Anselmo Court, which would have tapped this resource. The reports provided to the City of Napa indicated that wells in this vicinity have been found to produce high-quality water at rates of 1,000 to 2,000 gpm. A feasibility report on high-capacity wells at this location was approved by the Blue Ribbon Committee at their May 2008 meeting.

- Water conservation program implementation - Project to fully implement the City-approved Water Conservation Guidelines. The City's current water conservation program includes rebates for low-flow toilets, public education, leak detection, and a master irrigation controller for City parks. A Water Conservation Implementation Plan has been drafted to fully implement the Best Management Practices of the California Urban Water Conservation Council, of which the City of American Canyon is a member. It sets forth guidelines for new development and provides an implementation plan for new programs such as conservation pricing, a water conservation ordinance, enhancement of the leak detection programs, enhancements to the public awareness program, and enhancements to the rebate programs. It estimates that 744 AFY will ultimately be supplied through water conservation. Startup costs for several of these programs are included in the capacity fee, and several startups are already in progress.

On January 1, 2008, the City initiated a clothes washer rebate program in partnership with other Bay Area water agencies and PG&E. The rebate program is partly funded through a State of California Proposition 50 grant. It provides rebates ranging from \$125 - \$200 depending on the washing machine efficiency.

- Recycled water Implementation - Project to implement the Recycled Water Facilities Plan approved by the City Council in 2003. Currently, the City of American Canyon recycles 100 AFY of wastewater to a vineyard directly adjacent to the Wastewater Treatment Plant. The permit for recycled water distribution was issued in 2005. Further expansion of the system will require completion of one remaining segment of pipeline and a storage tank. The 1.0 million gallon storage tank, Recycled Water Tank #1, has been designed and has received environmental approval and all necessary permits. It will be completed concurrently with East Tank #1 by December 31, 2009. The pipeline will be completed with prior to improvements to American Canyon Road West. A consulting contract has been awarded for the pipeline design. It will be completed by December 31, 2009. The City has received a \$2.5 million Proposition 50 grant for constructing the recycled water distribution system, which requires that the system be completed by 2010 and achieve 1,000 AFY of distribution by 2011.

Additionally, the Napa Sanitation District is implementing a recycled water system in the City's extraterritorial service area, which includes the Airport Industrial Area. Landscape irrigation within significant portions of the Napa Valley Gateway Business Park have been converted to recycled water. Based on analysis of the water use since this conversion has taken place, potable water use has been reduced by approximately 50% for the properties served by recycled water. The Napa Sanitation District has adopted a Recycled Water Strategic Plan which calls for converting all of the landscape irrigation in the Airport Industrial Area to recycled water. Additionally, several industrial users are committed to using recycled water for their process demands. The Urban Water Management Plan estimated the ultimate yield from this source of supply to be 226 acre feet per year, which represents less than 20% of the ultimate Airport Industrial Area demand and appears to be conservative (low). The scope of the Integrated Water Management Plan includes a more comprehensive estimate of ultimate recycled water demand in this area.

The Napa Sanitation District is also pursuing a recycled water Aquifer Storage and Recovery (ASR) project. They have completed a hydrogeological investigation of five alternate sites, which concluded that two locations in Jameson Canyon were feasible. They are now performing detailed investigation of the preferred site, which is located in lower Jameson Canyon. The ASR project would benefit American Canyon's water supply by improving the reliability of the NSD recycled water supply. It could also serve as a supplemental source to the City of American Canyon during peak summer irrigation periods when the wastewater treatment plant does not generate sufficient supply.

In summary, the City's long term water supply and demand situation is as follows:

Table 1

LONG TERM WATER SUPPLY AND DEMAND			
Source	Normal Year	Multiple-Dry-Year	Single-Dry-Year
State Water Project	3,640	1,976	1,508
Current Vallejo Potable Water Contract	1,351	1,216	1,216
Current Vallejo Contract for Raw Permit Water	500	450	450
Current Vallejo Contract for Raw Water during Emergencies		450	450
Subtotal, Current Supplies	5,491	4,091	3,623
City of American Canyon Recycled Water	1,000	900	900
Napa Sanitation District Recycled Water	228	203	203
Water Conservation	744	744	744
Water Transfer from Sacramento Valley	1,560	1,170	1,170
Remaining Vallejo Potable Water Contract Options	1,854	1,668	1,668
Subtotal, Additional Supplies	5,384	4,685	4,685
Total Long Term Water Supply	10,875	8,776	8,308
(Demand)	(7,026)	(7,026)	(7,026)
Surplus/(Shortfall)	3,849	1,750	1,282

The City of American Canyon has developed a capacity fee program which, when implemented, will ensure an adequate supply of potable and recycled water to meet demands under normal years, multiple-dry-years and single-dry-years

WATER SUPPLY ALTERNATIVES

The Blue Ribbon Committee is currently evaluating alternative water supplies. One of the most promising would be to harvest the rain that currently falls on American Canyon by tapping into groundwater supplies. If groundwater wells yielding 4.5 mgd could be developed, it would not be necessary to purchase additional Vallejo options or to expand the North Bay Aqueduct. Bulletin 118 from the California Department of

Water Resources states that wells up to 300 gallons per minute are found in American Canyon's groundwater subbasin, the Napa-Sonoma Lowlands. A well reportedly yielding 400 gallons per minute is located on the American Canyon High School property. 11 wells yielding 300 gallons per minute would be required to meet the peak demand. Groundwater research was recommended by the Urban Water Management Plan and is being completed through the Integrated Water Management Plan. A 72-hour test was performed on the High School well in Summer 2008. Although the well did produce a large volume it was not sustained and upstream wells stopped producing during the test. This well water was also tested for water quality and was determined to be very high in Boron which is not desirable for drinking water. The City of American Canyon and the Napa Valley Unified School District have entered into an Memorandum of Understanding (MOU) regarding the high school project; one provision of this MOU is an agreement to cooperate on development of the well.

During 2008, the City of American Canyon experienced a 65% cutback in the State Water Project allocation. This would have resulted in a shortfall of 2,300 AFY. However, a number of alternate sources were developed, and implementation of the Water Shortage A Contingency Plan has not been necessary as of May 23, 2008. These sources include previous year carryover, Article 21 Water, Yuba Accord Dry Year Purchase Program and Turn Back Pool A & B Water from the State Water Project. :

Table A Previous Year Carryover. The City is able to carry its unused Table A water over from the previous year to the current year. This additional water is treated as if it were additional Table A water, except it is lost as soon as State Water Project (SWP) storage at the San Luis Reservoir fills and spills due to pumping from the Banks Pumping Plant.

- Other Cities in Napa County Carryover Water. When available, the City can purchase carryover SWP water from the previous year from other cities in Napa County. This additional carryover water has the same conditions as our carryover water; that is, it is treated as if it were additional Table A water, except it is lost once the San Luis Reservoir "fills and spills" because of pumping at the Banks Plant.
- Article 21 Water. Article 21 water is available after the City uses its SWP scheduled monthly allotment when unbalanced conditions exist in the Delta. The Delta is considered to be in an unbalanced condition when rain and snowmelt water is flowing out under the Golden Gate Bridge into the Pacific Ocean.
- SWP Dry-Year Program. It is possible to purchase additional water through the SWP during dry years, when Sacramento Valley farmers willingly let their land lie fallow and make their water available to State Water Contractors. In addition, there are occasional reservoir re-operation activities that some water agencies can do that make water available for sale to buyers. Approvals from DWR and/or SWRCB are often required to allow transfer and conveyance of the water from seller to buyer.

- **Pool A and B Water.** State Water Contractors that decide not to draw all or a portion of their entitlements in any given year may place their unused water into a pool for resale by DWR to other State Water Contractors.
- **Yuba River Accord.** This agreement between the Yuba County Water Agency, the Department of Fish and Game, and several other regulatory agencies and environmental groups would revise the operation to provide higher flows in the lower Yuba River and allow the Department of Water Resources to purchase and transfer this water to State Water Project and Central Valley Project contractors in dry years.
- **Vallejo Water Service Addendum No. 1** This addendum would allow American Canyon to receive up to 500 acre feet per year of raw water when the City's entitlement is reduced due to environmental or other constraints.

WATER TREATMENT

WATER TREATMENT IMPLEMENTATION STATUS

The City has two water treatment facilities, side-by-side on the same site at 205 Kirkland Ranch Road: a 2.5 million gallon per day (mgd) conventional treatment plant completed in 1976, and a 3.0 mgd advanced technology treatment plant completed in 2004. The advanced technology treatment plant uses membranes manufactured by Zenon Corporation, as does the wastewater treatment plant.

Additional treatment capacity is needed to achieve the General Plan EIR peak day demand estimate of 10.0 mgd. The membrane plant was designed to accommodate an additional 3.0 mgd expansion within the existing structure. This is included in the capacity fee capital program. Expansion to the North Bay Aqueduct (NBA), as discussed above, would be needed to meet the peak day flow requirements for this additional treatment. Under this approach, the total treatment plant capacity would be 8.5 mgd. The remaining 1.5 mgd of peak treated water capacity could come from the City of Vallejo through the water supply contract discussed above. The Vallejo contract currently provides up to 1.3 mgd of peak day capacity during a peak month, which would be more than adequate to meet the treatment gap. If all of the remaining options were executed, the Vallejo contract would provide up to 3.1 mgd of peak day capacity during a peak month. An additional metering station would be needed to deliver this water to the City of American Canyon distribution system; this metering station is included in the capacity fee capital program.

WATER TREATMENT ALTERNATIVES

The City of American Canyon also enjoys a physical connection to the City of Napa's treated water supply. Currently, the City of Napa treated water is provided on an informal basis in the absence of an agreement. On June 17, 2008, the City Council approved a one-year agreement with the City of Napa to treat and wheel water on behalf of the City of American Canyon. The City of American Canyon and the City of Napa have recently agreed to extend the agreement for another year. The agreement provides up to 1 mgd of treatment capacity in normal circumstances and up to 2.25 mgd when the North Bay Aqueduct is out of service.

WATER STORAGE, TRANSMISSION, AND DISTRIBUTION STATUS

Two additional storage tanks for treated water are needed to support anticipated fire flows and daily demands for the cumulative condition. East Tank #1, a 2.5 million gallon potable water tank, has been designed for a site to the east of Newell Drive. The base of the tank will be set at elevation 195 to match the existing Oat Hill #1 tank. The two tanks together will serve the main pressure zone in the City of American Canyon. Negotiation is underway for the site for East Tank #1. A mitigated negative declaration has been completed, the plans and specifications are 95% complete, and regulatory permits have been obtained. The land has been acquired and construction is to be completed by Summer 2010.

A variety of projects are included in the capacity fee capital program to expand the water distribution system, to repair existing deficiencies, or a combination of the two. Recently, Flow Control Valve (FCV) #9, which overly restricted water flow from the treatment plant to the distribution system was removed. The backbone of the distribution system is a 14" diameter transmission main which runs down SR 29; it was built in the 1950s, is badly corroded and is being replaced in segments as part of a biennial water main replacement program and by new development. As it is replaced, additional capacity will be added and water loss will be reduced. As demands grow, there is a need for additional connections across SR 29; project is planned to complete three connections. Similarly, development on the east side of SR 29 will require closing gaps in the existing water main. Ultimately, increased flows from the water plant will require transmission improvements, either a pump station or another pipeline, on the east side of SR 29.

WATER CAPITAL PROGRAM FINANCIAL STATUS

The Water Capital Program is primarily funded by capacity fees, supplemented by capital funds from the Water Operations Fund. The City of American Canyon has adopted a fiscal policy which requires new development to fully fund improvements needed to serve that development. Accordingly, the City's Blue Ribbon Committee on Water Resources recommended that the City Council approve a significant increase in the water capacity fee. The capacity fee for a single-family residence has been increased from the prior rate of \$11,634 to a new rate of \$12,462. The fees were approved at a public hearing on July 21, 2009.

VINEYARDS ANALYSIS

VINEYARDS DECISION

The California Supreme Court decision "Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova and Sunrise Douglas Property Owners Association et. al" sets forth guidelines for evaluating the water supply of a project under the California Environmental Quality Act (CEQA). It requires that water supplies not be illusory or intangible, that water supply over the entire length of the project be evaluated, and that environmental impacts of likely future water sources, as well as alternate sources, be summarized.

FACTS WITH RESPECT TO SOLUTIONS TO WATER SUPPLY PROBLEMS

The City of American Canyon has developed a capacity fee capital program which, when implemented, will ensure an adequate supply of potable water and recycled water to meet demands under normal years, multiple-dry-years, and single-dry-years.

WATER SUPPLY OVER THE LIFE OF THE PROJECT

The project is a single phase. Accordingly, an analysis of water supply for later phases is not required.

IMPACTS OF LIKELY FUTURE WATER SOURCES

Potential environmental impacts of purchasing a permanent transfer of 1,560 acre feet per year of water rights from Sacramento Valley agricultural interests have not yet been evaluated. However, because the water would be used to make up shortfalls in the State Water Project supplies and would be conveyed using existing State Water Project facilities, the transfer would not require the construction of any new facilities. Also, such an intra-regional transfer would be consistent with the Sacramento Valley Integrated Regional Water Management Plan, which has been subject to significant public input and environmental review. Lastly, several of the potential sellers of water rights have completed environmental review of similar permanent transfers.

The environmental review of North Bay Aqueduct expansion has not been initiated. However, the area of disturbance of the pipeline would largely be included within the area impacted by the Jameson Canyon (SR 12) widening project, which is currently being evaluated by Caltrans through a mitigated negative declaration.

No environmental review has been performed for a potential emergency groundwater bank. However, such a groundwater bank is intended to improve the reliability of water supplies and is not to serve as a primary water source. Also, it should be noted that wells in the vicinity of Soscol Creek historically served the American Canyon area as well as portions of Solano and Contra Costa counties with potable water supply. The wells have been inactive since the mid-20th century.

No additional environmental review would be needed to execute the remaining options for treated water supply from the City of Vallejo because these options are included within the 1996 contract.

Water conservation would result in no negative impacts to the physical environment.

A mitigated negative declaration was prepared for the recycled water distribution system when the Recycled Water Facilities Plan was adopted by the City Council in November 2003. Impacts were minimal because the pipelines were to be located in existing public rights of way.

POSSIBLE REPLACEMENT SOURCES AND THEIR IMPACTS

Development of groundwater as an alternative municipal supply is currently under study as part of the Integrated Water Management Plan. Potential environmental impacts have not yet been evaluated. However, 41 existing wells are included in the Department of Water Resources records for the City of American Canyon area. The average flow rate for these wells varies from approximately 5 to 20 gpm, with the total between all wells of approximately 500 gpm. This does not include the well on the high

school property. Most, if not all, of these wells will eventually go out of service as City of American water service is supplied. Thus, a minimum of 500 gpm, which would equate to 807 AFY, would be available without increasing the rate of withdrawal of groundwater.

RECOMMENDED MITIGATIONS

LONG TERM WATER MITIGATIONS

The potable water impacts of the Napa Commerce Center project will be fully mitigated by the financial contribution it will make to the water capacity fee program.

SHORT TERM WATER MITIGATIONS

The project is occupied therefore it represents 100% of the demand for the 2009/2010 water year. It is assumed that 100% of the project is occupied for the 2010/2011 and 2011/12 water years.

The additional source of supply from acquiring a permanent transfer of water rights from Sacramento Valley agricultural interests will not be available until the 2011/12 water year, based on three years from the anticipated completion of the evaluation of potential sellers, which is currently underway.

The recycled water system will not be fully implemented until 2010/11 water year, based on completion of Recycled Water Tank #1 by December 21, 2009 and the remaining pipeline by December 31, 2010.

A decision will not be made as to executing the 2007-2011 option under the Vallejo water contract until after the Integrated Water Management Plan is completed in 2009. If an alternate supply is chosen, it would require a minimum of two years to implement.

Thus the project would result in potential reliability impacts during multiple-dry-year and single-dry-year conditions during the 2009/10 and 2010/11 water years. This impact can feasibly be mitigated, however, by providing funds to the City of American Canyon to purchase dry-year water, if necessary. Dry-year water is available either through the State Water Project Contractor's Association or from individual sellers. The cost of dry-year water (2008/09) is currently on the order of \$275 per AF per year, and no environmental review is required on a one-year transfer. Acquisition of one-year water transfers for the 2009/10 and 2010/11 water years will mitigate short term impacts, as follows:

Table 2

SHORT TERM MITIGATION					
Water Year	Percent occupied	Annual demand (AF)	Water needed (AF)	Estimated cost/AF	Short-term mitigation
2009-10	100%	12	0	\$302	\$0
2010-11	100%	12	6	\$330	\$1,980
2011-12	100%	12	12	\$357	\$4,284
Total					\$8,264

The project will contribute the above amounts as non-refundable payments to the water operations fund to allow the City to acquire dry-year water, if necessary. If the long-term mitigations are not in place prior to the 2011-12 water year, the project will continue to make annual non-refundable payments until the short-term impacts are mitigated by completion of long-term improvements.

OPPORTUNITIES TO REDUCE PROJECT'S WATER FOOTPRINT

On-site Conservation opportunities

The project will be reviewed for additional on-site conservation opportunities during the building permit plan review process.

OFF-SITE CONSERVATION OPPORTUNITIES

The project could reduce its water footprint by including one or more of the following off-site water conservation opportunities:

- Conversion of existing toilets to high-efficiency toilets
- Conversion of existing washing machines to high-efficiency, front-loading washing machines
- Conversion of existing urinals to waterless urinals
- Conversion of existing irrigation demands from potable water to recycled water
- Conversion of existing industrial demands from potable water to recycled water
- Completion of a landscape conversion project

Attachment F

*Richard Drury, RE: Mitigated Negative Declaration for Napa 34
Commerce Center Use Permit and Variation to Development Standards
Application No. P09-00329-UP and TPM and LLA Application No.
P09-00330-TPM; SCH Number 2010032066,*

May 23, 2010

(including Brohard {Traffic}, Nickelson {Traffic}, and Hagemann
{Air Quality, Hydrology} appendices.)

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** Admitted in Hawaii
*** Also admitted in Nevada
**** Also admitted in Illinois

May 23, 2010

BY ELECTRONIC MAIL and US MAIL

Honorable Members of the Planning Commission
County of Napa
c/o John McDowell
Deputy Planning Director
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RECEIVED
MAY 25 2010
NAPA CO. CONSERVATION
DEVELOPMENT & PLANNING DEPT.

RE: Mitigated Negative Declaration for Napa 34 Holdings Commerce Center Use
Permit and Variation to Development Standards Application No P09-00329-UP
and TPM and LLA Application No P09-00330-TPM;
SCH Number: 2010032066

Honorable Members of the Planning Commission and Mr. Cahill:

This letter supplements my letters dated May 12 and May 19, 2010 in which I explained that Napa 34 Holdings, LLC ("Napa 34") had voluntarily agreed to adopt supplemental environmental projects ("SEPs") to address all of the issues raised by Carpenters Local 751, its members, and Mr. Dan Digardi (collectively, "Local 751") concerning the proposed Preliminary Mitigated Negative Declaration and its initial study and supporting documents ("IS/MND") for Napa 34 Holdings Commerce Center Use Permit and Variation to Development Standards Application No P09-00329-UP and TPM and LLA Application No P09-00330-TPM; SCH Number: 2010032066 ("Project" or "Napa 34 Project"). With this letter we submit additional supplemental analysis of Traffic Engineer Tom Brohard, PE.

In the attached letter (Exhibit A), Mr. Brohard, PE explains that he has reviewed the analysis of traffic engineer George Nickelson, PE of Omni-Means Engineers dated May 21, 2010

(Exhibit B). Based on the information and analysis provided by Mr. Nickelson, which has been independently verified by Mr. Brohard, Mr. Brohard has concluded that:

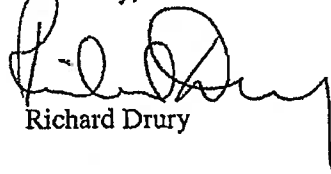
"my prior comments have been adequately addressed by Mr. Nickelson, the Traffic Study is appropriate, the mitigation measures in the MND are adequate, and *the Project has no unmitigated significant traffic impacts.*"

Mr. Brohard explains that Mr. Nickelson has provided information and analysis that demonstrates:

1. SR12/SR29/Airport Boulevard will operate at LOS "D" with Project traffic added, which is below the level of significance.
2. Driveway throat distances are adequate to accommodate 95th percentile queues.
3. The Napa 34 Holdings Commerce Center Project will pay its "fair share" of the regional roadway improvements needed to mitigate the cumulative traffic impacts of all projects in the area.

The analysis provided by traffic engineers George Nickelson and Tom Brohard, in addition to Mr. Brohard's analysis of May 17, 2010 (Exhibit C) clearly establishes that the Napa 34 Project' traffic impacts will be fully mitigated. We urge the Planning Commission to approve the Napa 34 Project with the traffic mitigation measures contained in the Initial Study/Mitigated Negative Declaration and the supplemental environmental projects that the developer has in good faith voluntarily agreed to implement. These SEPs will address all of the environmental issues raised by Local 751 and will result in a model "green" project with minimal environmental impacts, just as contemplated by CEQA. As such no environmental impact report ("EIR") and no recirculation of the mitigated negative declaration should be required. The developer should not be penalized for its good faith efforts to improve the Project with any further delays. We incorporate the legal analysis from our May 12, 2010 letter by reference (Exhibit D). Thank you for your consideration.

Sincerely,



Richard Drury

Attachments:

- Comment letter of Tom Brohard, PE (May 22, 2010) (Exhibit A)
- Comment letter of George Nickelson, PE (May 21, 2010) (Exhibit B)
- Comment letter of Tom Brohard, PE (May 22, 2010) (Exhibit C)
- Letter of Richard Drury, with analysis of Matthew Hagemann, PG (May 12, 2010)

Comments of Local 751

Napa 34 Holdings Commerce Center MND SCH Number: 2010032066

May 23, 2010

Page 3

cc: Alicia Guerra, Counsel for Napa 34 Holdings, LLC

EXHIBIT A

Tom Brohard and Associates

May 22, 2010

Mr. Richard Drury, Attorney at Law
Lozeau/Drury LLP
1516 Oak Street, Suite 216
Alameda, California 94501

SUBJECT: Review of Response to Prior Comments Regarding Traffic Issues for the Napa 34 Holdings Commerce Center in the County of Napa

Dear Mr. Drury:

I have reviewed the May 21, 2010 letter from George Nickelson, Branch Manager at Omni-Means, providing further information in response to my prior comments.

Mr. Nickelson indicates traffic volumes have remained the same or decreased slightly over the last three years on SR12 and SR29 adjacent to the Project, and I have verified this on the Caltrans website. Further, I found that the County of Napa does not require factoring of traffic counts to represent conditions on Thursdays in August as does the City of Napa. After considering these items, I agree with the analysis in the Traffic Study that SR12/SR29/Airport Boulevard will operate at LOS "D" with Project traffic added.

In regard to on-site queuing, I had previously indicated the 95th percentile queues in the Traffic Study appeared to exceed the available distances that I had scaled from the reduced site plan. Mr. Nickelson has measured the distances from a scaled drawing of the site, and I agree that the distances provided are adequate.

My May 17, 2010 letter acknowledged the study of cumulative traffic conditions in the area (including Napa Pipe) was nearing completion, together with updating of the current traffic impact fee. Assuming that the County of Napa continues the Traffic Impact Fee Program, the Napa 34 Holdings Commerce Center Project will pay its "fair share" of the regional roadway improvements needed to mitigate the cumulative traffic impacts of all projects in the area.

In sum, my prior comments have been adequately addressed by Mr. Nickelson, the Traffic Study is appropriate, the mitigation measures in the MND are adequate, and the Project has no unmitigated significant traffic impacts.

Respectfully submitted,

Tom Brohard and Associates

Tom Brohard

Tom Brohard, PE
Principal



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