

APPENDIX A- EXISTING TRAFFIC COUNTS

APPENDIX B- EXISTING LOS RESULTS

APPENDIX C- EXISTING PLUS APPROVED LOS RESULTS

APPENDIX D- MODEL DOCUMENTATION

APPENDIX E- CUMULATIVE LOS RESULTS

4.8

BIOLOGICAL RESOURCES

INTRODUCTION

This section of the Environmental Impact Report (EIR) evaluates potential biological resource impacts associated with the implementation of the Proposed Suisun Gentry Project and includes a discussion of the mitigation measures necessary to reduce impacts to a less-than-significant level where possible. The information contained in this analysis is primarily based upon the *Biological Assessment, Gentry-Suisun Project, City of Suisun City, Solano County, California* prepared by The Huffman-Broadway Group (2006) and the *Wetland Delineation and Special-Status Species Survey Report* prepared by Vollmar Consulting (2003). Additional details on plant and wildlife species presence are based upon field surveys performed by Foothill Associates' biologists. This report describes the habitat types, jurisdictional waters, and presence/absence of special-status plants and animals at the Proposed Project area and provides a review of existing literature, maps, and aerial photography pertaining to the biological resources of the area. It also evaluates potential impacts of the proposed Project in relation to CEQA and other environmental laws, and provides mitigation recommendations.

Foothill Associates has prepared this Section of the EIR for the proposed Suisun Gentry Project (Project) in central Solano County, California. The Proposed Project includes the following components:

- Subdivision and development of a mixed-use Project on 88.44 acres of the Annexation Properties (i.e., the "Project Site" or the "Mixed Use Site," see Section 2.2.2).
- Annexation of 172.36 acres from Solano County into the City of Suisun City (i.e., the "Annexation Properties")

The Proposed Project will occur within the "Project Area," which comprises 493.36 acres south of State Highway 12, west of the City of Suisun City, as shown on **Figure 4.8-1**. **Figure 4.8-1** also shows the Project Area overlain on a portion of the Fairfield South 7.5-minute United States Geological Survey (USGS) topographic map.

Five Planning Areas have been defined within the Project Area; **Figure 4.8-1** shows the designated Planning Areas. The Mixed Use Site (a.k.a. the "Project Site") will be developed on Planning Areas 1, 2 and 3. Wetlands preservation and creation areas are anticipated to be developed on Planning Areas 4 and 5.

Figure 4.8-2 shows the parcels and names of the properties that comprise the Project Area, including both the "Project Site" and the "Annexation Properties," the five Planning Areas; **Table 4.8-1** lists parcel numbers, acreages, and owners within the Project Area. Because previous wetland delineations and special-status species studies that are incorporated into this Biological Assessment refer to the "Gentry," "Tooby," and "Barnfield" properties, this naming

convention is used herein to facilitate reference to the previous studies, although the Tooby and Barnfield properties – as well as the Gentry property – are now owned by Tom Gentry California Company.

- The “Gentry” property refers to Planning Area 1 (part of APN 0032-010-390) and part of Planning Area 2 (i.e., APN 0032-190-260 only).
- The “Tooby” property refers to Planning Area 3 (part of APN 0032-020-100) and Planning Area 4 (part of APNs 0032-020-100, 0032-020-140, and 0032-020-160).
- The “Barnfield” property refers to Planning Area 5.

Figure 4.8-2 also shows the “Annexation Properties” to be annexed by the City of Suisun City (**Table 4.8-2**). The Annexation Properties comprise 172.36 acres, which includes the 88.44-acre Project Site (**Table 4.8-2**). These include the Gilbert parcel, the Ardave parcel, the Sheldon Oil parcel, and the Union Pacific Railroad (UPRR), Cordelia Road, and Pennsylvania Avenue rights of way.

METHODS

The Tooby, Gentry, and Barnfield properties have been the subject of detailed wetland delineations conducted by Vollmar Consulting and verified by the U.S. Army Corps of Engineers (“Corps”) on February 20, 2003. The Gilbert parcel, Sheldon Oil parcel, Ardave parcel and the various rights of way included in the Project Area were the subject of a preliminary wetlands assessment conducted by Terry Huffman, Ph.D. of Huffman-Broadway Group (HBG) in July 2005, but these parcels have not been the subject of detailed wetland delineation. A general biological survey of the Gilbert parcel, Sheldon Oil parcel, Ardave parcel and the various rights of way included in the Project Area as well as Planning Area 2 were conducted by Foothill Associates’ biologist Thomas Ryan on February 6, 2006.

Mr. John Vollmar and Mr. Vir McCoy of Vollmar Consulting conducted special-status plant surveys on the Gentry and Tooby properties during spring and summer 2000. Mr. Vollmar conducted an additional special-status plant survey during late April and early May 2001 and 2002. Gentry and Tooby property spring field surveys were conducted May 3 and 4, 2000, with an additional summer survey conducted on August 15, 2000. The second spring survey was conducted on April 26, 2001.

Plant surveys during 2000 – 2002 were part of a broader biological survey and wetland delineation. During all surveys, each of the three properties was walked, with the survey effort focused on specialized habitats with high potential to support special-status plant species. All plant species observed were identified and recorded. Those specimens that could not be readily identified in the field were collected and identified later. Locations of special-status plants were mapped onto enlarged (1:3,600) aerial photo base maps of the three properties obtained from WAC Corporation in Eugene, Oregon (WAC Corporation 1999). The aerial photos were taken in spring 1999. Spring surveys conducted between 2000 and 2002 on all three properties targeted special-status plant species associated with vernal pool, annual grassland, and seasonally saturated grassland habitats. Spring surveys were timed to coincide with peak blooms of spring

periods, which typically occur during mid-spring. The summer surveys of 2000 targeted special-status plant species associated with alkali seasonal marsh and perennial marsh habitats. The summer surveys were timed to coincide with the peak summer bloom period, which typically occurs during mid-summer.

Ms. Gretchen Vos, Mr. Vir McCoy, Ms. Shannon Hickey, and Ms. Wendy Renz conducted special-status plant surveys on the Gentry, Tooby, and Barnfield properties on April 6, 7, 8, 11, 12, 13, and 15, and August 8, 2005. The surveys targeted special-status plant species associated with vernal pool, annual grassland, alkaline seasonal marsh, and seasonally saturated grassland habitats. The April surveys were timed to coincide with peak spring bloom. The August surveys focused on the alkali seasonal marsh and perennial brackish marsh habitats associated with the upper Suisun Marsh and were timed, to coincide with the peak summer bloom period.

Surveys during 2005 focused on special-status plant species only. The surveys included complete coverage of each of the Gentry, Tooby, and Barnfield properties with special focus on specialized habitats with high potential to support special-status plant species. During these surveys, any new species were identified and recorded. Locations of special-status plants were mapped using a GPS unit with sub-meter accuracy (Trimble GeoXT). At each occurrence of a special-status plant, the number and density of plants, the associated species, and basic habitat information were recorded. The number of plants was determined by visual estimate. **Attachment 1: Table 1**, includes a list of all plant species identified on the three properties. Scientific plant names used correspond to Hickman (1993). Common plant names are from Hickman (1993) and Reed (1988).

The results of the 2000, 2001 and 2002 special status plant surveys are reported in *Special-Status Species Survey and Wetland Delineation Report for the Barnfield Property, Suisun, Solano County, California* (Vollmar Consulting, November 11, 2003), and *Wetland Delineation and Special Status Species Survey Report for the Gentry and Tooby Properties, Suisun, Solano County, California* (Vollmar Consulting, January 27, 2003). These reports are available under separate cover and are summarized below. The results of the spring 2005 surveys and summaries of the earlier findings are reported in *Gentry, Tooby and Barnfield Properties-Special-Status Plant Survey Report 2000 – 2002 and 2005 Field Seasons* (Vollmar Consulting, June 23, 2005).

Protocol level wet-season surveys for federally-listed vernal pool large branchiopods (fairy and tadpole shrimp) were conducted during the winter/spring of 1999/2000 by May Consulting Services. These surveys also served to check for the presence of California tiger salamanders (*Ambystoma californiense*), Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), and curved-foot hygrotus diving beetle (*Hygrotis curvipes*). Protocol level dry-season sampling for listed large branchiopods was conducted in summer 2002 by Helm Biological Consulting and in the fall of 2005 by Area West Environmental.

HBG's analysis included reviewing the following, as well as conducting Project Area reconnaissance visits from February through July 2005:

- The California Natural Diversity Data Base (CNDDDB) 9-Quad Search for the Fairfield South, Fairfield North, Mt. George, Elmira, Cordelia, Denverton, Benicia, Vine Hill, and Honker Bay 7.5-minute USGS quadrangles to determine if populations of endangered, threatened, or rare species have occurred historically or are known to exist currently in the Project vicinity (CNDDDB 2006).
- United States Fish and Wildlife Service (USFWS) list of species that occur or may be affected by projects in the Solano County and the Fairfield South USGS 7.5-minute quadrangles (USFWS 2006).
- Biological Assessment, Gentry-Suisun Project, City of Suisun, Solano County, California by The Huffman-Broadway Group, Inc. (HBG 2006)
- Special status plant and animal survey reports prepared by Vollmar Consulting (Vollmar Consulting 2003) and Corps-verified wetland delineations conducted by Vollmar Consulting (Vollmar Consulting 2003); these have been incorporated into this study.
- Vollmar Consulting. 2005. Gentry, Tooby and Barnfield Properties: Special-Status Plant Survey Report 2000-2002, & 2005 Field Seasons.
- Results of wet- and dry-season sampling of large branchiopods and other listed special status animal species.
- Solano County Planning Department. 1980. Solano County General Plan (as amended through July 1995).
- LSA Associates 2005. Solano Multispecies Habitat Conservation Plan and Natural Community Conservation Plan, Working Draft 2.1. LSA Project No. SCD930. Pt. Richmond, California.
- Foothill Associates' biologists conducted field surveys on the site on April 6, 2004. The field surveys included general plant and wildlife surveys and a focused special-status plant survey. Special attention was given to those areas on the site with the potential to support special-status plant and wildlife species and sensitive habitats, including wetlands. Recent aerial photography (WAC Corporation 1999) was examined to identify biological resources and map biological communities in conjunction with field surveys.

Table 4.8-1. Assessor’s Parcels Comprising the Project Area

PA #	Assessors Parcel Number	Owner	Gross Acreage
PA 1	0032-010-390 (part) ¹	Gentry	71.338
PA 2	0032-190-260	Gentry	12.713
	0032-190-160	Sheldon Oil ²	0.393
PA 3	0032-020-100 (part)	Gentry (“Tooby”)	4.000
PA 4	0032-020-100 (part)	Gentry (“Tooby”)	48.443
	0032-020-140 (part)	Gentry (“Tooby”)	20.808
	0032-020-160 (part)	Gentry (“Tooby”)	0.233
N/A	0032-020-040	GF Gilbert	5.000
N/A	0032-190-020	R&CS Ardave	0.579
N/A	UPRR Right of Way (formerly Southern Pacific Railroad) ³	N/A	2.661
N/A	Cordelia Road Right of Way	N/A	4.082
N/A	Pennsylvania Avenue Right of Way	N/A	2.108
Subtotal – Area To Be Annexed Into Suisun City “Annexation Properties”			172.358
PA 5	Various	Gentry (“Barnfield”)	321.000
Subtotal – Area To Remain Outside Of Suisun City			321.000
TOTAL GROSS ACREAGE WITHIN PROJECT AREA:			493.358

¹ Note that two portions of this parcel are not part of the Project Site: the portion that comprises the west side of Pennsylvania Avenue to the north of Highway 12 (0.452 acre) and the portion that comprises the west side of Pennsylvania Avenue immediately north of the railroad right of way (0.129 acre).

² This parcel is under contract to be sold to Gentry.

³ The Southern Pacific was taken over by the Union Pacific Railroad in 1996; the merged company retains the name "Union Pacific" for all railroad operations.

Table 4.8-2. Annexation Properties

Description	Gross Acreage
A site on which a mixed-use project would be developed. Referred to as the "Mixed Use Site" or "Project Site."	88.444
The parcels that comprise Planning Area 4 (as shown in Table 4.8-1, above).	69.484
The parcel owned by R& CS Ardave (APN 0032-190-020). Referred to as the "Ardave parcel."	0.579
The parcel owned by GF Gilbert (APN 0032-020-040). Referred to as the "Gilbert parcel."	5.000
Various rights of way including portions of Pennsylvania Avenue, Cordelia Road, State Route 12, and UPRR track. Collectively referred to as the "Rights of Way."	8.851
TOTAL:	172.358

ENVIRONMENTAL SETTING

The following sections describe the regional and local setting of the Project area as well as the biological resources occurring in the Suisun Gentry Proposed Project area (site).

Regional Setting

The Project Area is located within the Bay-Delta region, in the southern portion of the Sacramento Valley, and within Solano County. The Central Valley lies to the east, coastal mountain ranges lie to the west and north, and a large bay and estuary system are found to the south and west. Dominant geographic features in the region include coast range uplands, foothill terraces, Montezuma Hills, Potrero Hills, alluvial fans, terraces, basins, Delta marshlands, and Suisun Bay Marshlands. Many areas of native habitat have been impacted from agricultural practices and population and industrial growth (LSA Associates 2005). These impacts have resulted in the spread of non-native plant species; however, native habitats can still be found. Native habitats found in Solano County include upland seasonal wet grasslands, vernal pools, fresh and salt water marshes, riparian forests and scrub, oak woodland, chaparral, and open water (LSA Associates 2005). Non-native plant communities mixed within these native habitats include non-native annual grasslands, agricultural areas, and developed lands (LSA Associates 2005).

The Suisun Marsh is the largest contiguous brackish water marsh remaining on the west coast of North America. It is a critical migratory stop for birds using the Pacific Flyway and a critical part of the San Francisco Bay-Delta estuary ecosystem. Encompassing 116,000 acres, the Suisun Marsh includes vernal pools, managed wetlands, upland grasslands, tidal wetlands and bays and sloughs. It is home to public and private waterfowl hunting areas, is important to the state's commercial salmon fishery by providing important tidal rearing areas for juvenile fish, and provides important habitat for many rare plant and animal species indigenous to California. Additionally, the Marsh has 230 miles of levees that provide critical protection of the drinking water for 22 million people by preventing saltwater intrusion into the Delta.

Local Setting

The site is located immediately west of the City of Suisun and immediately south of the City of Fairfield, in southern Solano County within an unnumbered section of Township 5 north, Range 2 west, of the USGS 7.5-minute series *Fairfield South, California* quadrangle (**Figure 4.8-1**).

Pennsylvania Avenue travels in a nearly north-south direction bisecting the site. The site is bounded by, but does not include, Cordelia Road to the south, State Route (SR) 12 to the north, Ledgewood Creek to the west, and the Southern Pacific Railroad to the east. The Union Pacific Railroad is located along the southern border of the eastern portion of the site and bisects the southern tip of the western portion of the site (**Figure 4.8-1**).

INSERT: Figure 4.8-1: Suisun Gentry Study Area

INSERT: Figure 4.8-2: Properties, Planning Areas and Proposed Project Site within the Project Area.

The site exhibits minimal topographic relief and has been modified from the original natural topography due to agricultural activity. Topography on the site ranges from 5 to 10 feet above MSL. The ±152.19-acre site primarily consists of nearly level, grazed field dominated by introduced annual grassland. Within the annual grasslands there are several seasonal wetlands, many of which appear to be man-made or enhanced due to the presence of road berms, buried utility line berms, and ditches. A small remnant slough channel is located in the southern portion of the site, which supports willows (*Salix* spp.) and other riparian vegetation. Areas of significant habitat value on the Project site include seasonal and perennial marshes, vernal pools, seasonally saturated annual grasslands, riparian wetlands, and drainage channels. Additionally, the majority of the Project site consists of grazed pastureland, providing limited biological resources for wildlife. Land uses surrounding the Project site are primarily urban and residential development and agriculture.

The Gentry Property is west of Pennsylvania Avenue, south of Highway 12, east of Ledgewood Creek and north of Cordelia Road (**Figure 4.8-2**). The Union Pacific Railroad (UPRR) bisects the property east-west, creating a larger northern unit and a smaller southern unit. The Tooby Property is east of Pennsylvania Avenue, south of Highway 12, west of the Union Pacific Railroad (UPRR), and north of Cordelia Road (**Figure 4.8-2**). The Barnfield Property is south of the Gentry and Tooby properties and south of Cordelia Road, and is bordered on the west by Orehr Road, on the east by the UPRR, and on the south by the upper Suisun Marsh (**Figure 4.8-2**). The UPRR tracks along the eastern boundary of the Barnfield property separate the Barnfield property from the Peytonia Slough Ecological Reserve, a California Department of Fish and Game (CDFG) ecological reserve.

Gentry Property

The Gentry Property consists of nearly level grazed annual grasslands, seasonally saturated annual grasslands, alkali seasonal marsh, seasonal wetlands, riparian wetlands, and vernal pools. The annual grasslands and seasonally saturated annual grasslands are dominated by introduced annual grass species. Within the seasonally saturated grassland habitat are several small seasonal wetlands and vernal pools that typically comprise less than a quarter acre. On the eastern edge of the property is a large shallow artificially created vernal pool that covers approximately 8.5 acres. Many of the pools appear to have formed or were enhanced due to the construction of berms, ditches, and partially blocked culverts. Elevation within the site ranges from 5 to 10 feet MSL.

A small remnant slough channel that supports willows (*Salix* sp.) and other riparian vegetation is present on the western boundary of the Gentry property south of the Union Pacific Railroad line and north of Cordelia Road. The surrounding area is best described as a ruderal pasture; it is currently not grazed and is dominated by introduced annual grasses.

Tooby Property

The Tooby Property is dominated by a mix of wetland and upland habitats. A drainage ditch runs north to south through the western portion of the site (see **Figure 4.8-3**). This ditch carries stormwater runoff from the City of Fairfield, and may also convey runoff from natural drainages north of Fairfield. It flows directly to a slough feeding into Suisun Bay and is subject to tidal

fluctuation. West of the ditch are several medium to large seasonal wetlands, including both vernal pools and alkali seasonal marshes. These are not tidally influenced but excess stormwater from this area drains into the ditch through a culvert. East of the ditch, most of the property supports perennial brackish marsh with dense stands of cattail (*Typha sp.*), California bulrush (*Scirpus californicus*), and pickleweed (*Salicornia virginica*). These wetlands receive tidal flow from the ditch, which is open to this portion of the site. The limited upland areas on the site support introduced annual grassland.

Barnfield Property

The Barnfield Property is located along the upper edge of Suisun Marsh; a large estuarine marsh formed along the northern shore of Grizzly Bay and the larger Suisun Bay near the confluence of the Sacramento and San Joaquin rivers. The property consists of nearly level terrain with a gentle slope trending south-southeast toward Suisun Marsh. Elevation ranges from approximately 10 feet MSL to sea level. The higher areas in the northern and northwestern portions of the property support introduced nearly level, grazed, upland annual grasslands with interspersed seasonal wetlands including vernal pools, seasonal alkali marsh, and seasonally saturated annual grasslands. Lower areas in the south and southeast are dominated by perennial brackish marsh associated with Suisun Marsh.

Peytonia Slough and several smaller unnamed sloughs cut through the perennial marsh habitat. These sloughs are subject to tidal fluctuations and are hydrologically connected to Grizzly Bay via Suisun Slough. A few freshwater drainages flow across the property from the northwest and drain into Peytonia Slough. Ledgewood Creek, which originates in the Gordon Valley several miles to the northwest, traverses through the center of the property. There are two drainage ditches on the property. One traverses the eastern portion of the property; this ditch carries stormwater runoff from the City of Fairfield, and may also convey runoff from natural drainages north of Fairfield. The second ditch is adjacent to and confluent with Ledgewood Creek. This ditch may be a remnant of Ledgewood Creek before it was straightened and diked by the Army Corps of Engineers. Ledgewood Creek on the Barnfield and Gentry properties is not part of the Project Site. Ledgewood Creek and the two ditches are subject to tidal fluctuations and support bankside stands of perennial brackish marsh vegetation. The eastern ditch has a flapgate a few hundred yards south of Cordelia Road that is intended to prevent tidal backflow. In addition to these drainages, there are two smaller excavated ditches, one that joins the eastern ditch, and one that traverses the western portion of the property. These ditches appear to convey local stormwater runoff. These ditches do not appear to be subject to tidal flow except for the lower half of the western ditch.

Gilbert Property

The Gilbert parcel is an approximately 5-acre parcel on the western edge of the Tooby property (**Figure 4.8-2**). It is primarily disturbed and ruderal and has been used as a dumpsite for construction debris, such as broken concrete and excavated soil. There is an asphalt road to the top and hardscape in the middle portion of the property. The preliminary wetland assessment identified approximately 0.01 acre of seasonally saturated annual grassland on this site.

Ardave Property

The approximately 0.58-acre Ardave parcel is in the northeast corner of the southern portion of the Gentry parcel south of the UPRR right of way (ROW) (**Figure 4.8-2**). It currently is occupied by urban uses. No wetlands were found on this parcel during the preliminary wetland assessment conducted by HBG in July 2005.

Sheldon Oil Parcel

The approximately 0.39-acre triangular shaped Sheldon Oil Parcel is in the northwest corner of Planning Area 2, adjacent to Ledgewood Creek (**Figure 4.8-2**). Annual grassland habitat is present. No wetlands were found on this parcel during the preliminary wetland assessment conducted by HBG in July 2005. Gentry is under contract to purchase the Sheldon Oil parcel.

Pennsylvania Avenue Right of Way

The Pennsylvania Avenue ROW is approximately 2.1 acres and has urban uses. Approximately 0.73 acre of seasonally saturated annual grassland was identified in this right of way during the preliminary wetland assessment (**Figure 4.8-2**).

Cordelia Road Right of Way

The approximately 4.1-acre Cordelia Road ROW comprises grassland areas, ruderal areas and urban uses. Alkali seasonal marsh (0.94 acre) and a small area of perennial brackish marsh (0.03 acre) were identified in this right of way during the preliminary wetland assessment (**Figure 4.8-2**).

UPRR Right of Way

The UPRR ROW is approximately 2.66 acres and comprises ruderal and urban areas and approximately 0.002 acre of seasonally saturated annual grassland (**Figure 4.8-2**).

Vegetation Communities and Wildlife Habitat

Plant communities occurring on the site are described below. The descriptions of plant community types at the site follow the nomenclature used in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). The discussion includes the common and special-status plant species observed, or expected to occur, in these communities. Plant communities on the Project site include upland annual grassland and riparian. Within these plant communities are “Waters of the U.S.” under Corps jurisdiction; they include vernal pools, alkali seasonal marsh, seasonally saturated annual grasslands, perennial brackish marsh, and riparian wetland (**Figure 4.8-3**). These features are also described below.

Biologists from Vollmar Consulting conducted botanical field surveys of the Gentry, Tooby and Barnfield properties during the spring and summer of 2000, and the spring of 2001, 2002 and 2005. These surveys included an analysis of habitat types on the Gentry, Tooby and Barnfield properties and surveys for special status plant species. A complete list of plant species observed

on the Gentry, Tooby and Barnfield properties by Vollmar Consulting is included in **Attachment 1: Table 1**. Vollmar Consulting also conducted delineations of areas potentially under the jurisdiction of the United States Army corps of Engineers (Corps) as wetlands or other waters of the United States in the summer of 2000 and the spring of 2003 (Vollmar Consulting, January 2003, November 2003). These delineations were subsequently verified by the Corps. Qualitative information on the composition and distribution of plant species on the site was obtained during these site visits. In addition, site reconnaissance visits were conducted by HBG biologists during February – July 2005 on the Gentry, Tooby and Barnfield properties. An assessment of habitat types and a preliminary wetlands assessment were conducted by HBG for the additional parcels to be annexed, as part of the Project, in July 2005. A Foothill Associates biologist surveyed the additional Annexation Properties on February 6, 2006.

The following habitat types were identified in the Project Area:

- Upland Annual Grassland
- Vernal Pools
- Alkali Seasonal Marsh
- Seasonally Saturated Annual Grasslands
- Perennial Brackish Marsh
- Riparian Wetland

These habitats are described below and shown on **Figure 4.8-3** and **Table 4.8-3**. Areas determined to be Corps Jurisdictional areas are shown in **Table 4.8-4** and **Table 4.8-5**. Each habitat type and its associated vegetation are described below. Wildlife species expected to use the habitat types here are listed in **Attachment 1, Table 2**.

INSERT Figure 4.8-3: Plant Communities Including “Waters of the U.S.”

Table 4.8-3. Plant Communities

Wetland Habitat Type	Total Acreage	Corps-Verified Jurisdictional
<i>Alkali Seasonal Marsh</i>	63.77	63.77
<i>Brackish Marsh</i>	161.36	161.36
<i>Seasonally Saturated Annual Grassland</i>	86.09	81.40
<i>Vernal Pool</i>	23.01	23.01
<i>Riparian</i>	0.33	0.03
<i>Annual Grassland</i>	156.54	0
Property Totals	491.1	329.57

Table 4.8-4. Corps-Verified Jurisdictional Waters of the U.S.

Wetland Habitat Type	Barnfield Property (ac)	Gentry Property (ac)	Tooby Property (ac)	Totals (ac)
<i>Alkali Seasonal Marsh</i>	54.99	5.62	2.22	62.83
<i>Brackish Marsh</i>	105.75	0.00	48.36	154.11
<i>Seasonally Saturated Annual Grassland</i>	61.32	19.08	0.00	80.40
<i>Vernal Pool</i>	6.03	9.06	7.92	23.01
<i>Riparian</i>	0.00	0.03	0.00	0.03
Property Totals	228.09	33.79	58.50	320.38

Source: Huffman-Broadway Group (2006).

Table 4.8-5. Preliminary Wetland Assessment of Areas Not Part of Verified Wetland Delineation

Wetland Habitat Type	Sheldon Oil Property (ac)	Barnfield Property (ac)	Gentry Property (ac)	GF Gilbert (ac)	R&CS Ardave (ac)	UPRR Right of Way (ac)	Cordelia Rd. Right of Way (ac)	Pennsylvania Ave. Right of Way (ac)	Totals (ac)
<i>Alkali Seasonal Marsh</i>	0	0	0	0	0.0	0	0.943	0	0.94
<i>Brackish Marsh</i>	0	7.223	0	0.0	0	0	0.027	0	7.25
<i>Seasonally Saturated Annual Grassland</i>	0	0.088	0.172	0.012	0	0.002	0	0.727	1.00
<i>Vernal Pool</i>	0	0	0	0	0	0	0	0	0
<i>Riparian</i>	0	0	0	0	0	0	0	0	0
Property Totals	0	7.31	0.17	0.01	0	0.002	0.97	0.73	9.19

Source: Huffman-Broadway Group (2006)

Vegetation Communities

Annual Grassland

The majority of the site consists of grazed, annual grassland (**Figure 4.8-3**). Typically, annual grassland habitats are open grasslands primarily composed of annual plant species. Grazing patterns and weather largely influence the structure of this habitat type. Non-native plant species are common in annual grasslands. This habitat is dominated by several species of introduced annual grasses such as wild oat (*Avena fatua*), riggut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail fescue (*Festuca megalura*), and barley (*Hordeum murinum*). A variety of native and non-native herbs, such as butter-and-eggs (*Triphysaria eriantha* spp. *eriantha*), valley tassles (*Castilleja attenuata*), miniature lupine (*Lupinus bicolor*), bur-clover (*Medicago polymorpha*), and filaree (*Erodium botry*), also dominate the site. In low-lying areas and areas bordering wetlands, species composition shifts to include some marginal wetland indicator species such as Italian ryegrass (*Lolium multiflorum*) and Mediterranean barley (*Hordeum marinum* var. *gussoneanum*). In general, there is a very low occurrence of noxious weeds within the grasslands such as yellow star-thistle (*Centaurea solstitialis*) and medusa head (*Taeniatherum caput-medusae*). Upland portions of the Cordelia ROW and the Sheldon Oil parcel also support introduced annual grassland. Large stands of Fennel (*Foeniculum vulgare*) were present on Planning Area 2 of the Gentry Property adjacent to the UPRR ROW and Ardane Property, as well as within the Sheldon Oil Property and the GF Gilbert Property.

A number of wildlife species use annual grasslands for foraging, nesting and cover. Reptiles that may occur include common garter snake (*Thamnophis sirtalis*), gopher snake (*Pitouphis melanoleucus*), and western fence lizard (*Sceloporus occidentalis*). Bird species observed within the annual grassland community (including seasonally saturated areas) include turkey vulture (*Cathartes aura*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferus*), burrowing owl (*Athene cunicularia*), rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), barn swallow (*Hirundo rustica*), European starling (*Sturnus vulgaris*), northern mockingbird (*Mimus polyglottos*), loggerhead shrike (*Lanius ludovicianus*), American crow (*Corvus brachyrhynchos*), savannah sparrow (*Passerculus sandwichensis*), white crowned sparrow (*Zonotrichia leucophrys*), song sparrow (*Melospiza melodia*), western meadowlark (*Sturnella neglecta*), Brewer's blackbird (*Euphagus cyanocephalus*), red-winged blackbird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*). Several species will likely nest in the annual grassland including Western meadowlark and killdeer. Small mammals that may occur within the annual grasslands on the site include California vole (*Microtus californicus*), pocket gopher (*Thomomys bottae*), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*) and western harvest mouse (*Reithrodontomys megalotis*). Other observations by Foothill Associates within the site include coyote scat (*Canis latrans*), raccoon (*Procyon lotor*) tracks, and mammal burrows ranging from less than one inch to greater than three inches in diameter.

Riparian Wetland

There is a small section of riparian wetland in an inactive channel in the southern portion of the Gentry Property within Planning Area 2, adjacent to the Sheldon Oil Parcel (**Figure 4.8-3**). It is likely a remnant cut-off oxbow of the original channel of Ledgewood Creek before it was straightened and diked. Dominant tree species include arroyo willow (*Salix lasiolepis*) and Goodding's black willow (*Salix gooddingii*). California blackberry (*Rubus ursinus*) and mugwort (*Artemisia douglasiana*) are the understory dominant species. It appears to be fed by a metal culvert within a concrete structure adjacent to the UPRR ROW. Additionally, Ledgewood Creek is adjacent to the western border of the Gentry property, but it is not part of the Project Site. The creek transitions to perennial marsh habitat that bisects a portion of the Barnfield property, but the parcel containing Ledgewood Creek is not part of the Barnfield property parcels.

Riparian habitats are unique and ecologically important habitats that provide an important source of food, water, and protection for wildlife, as well as breeding and nesting habitat for both resident and migratory bird species. Patches of riparian habitat at the site could support northern flicker (*Colaptes auratus*), California towhee (*Pipilo crissalis*), and lesser goldfinch (*Carduelis psaltria*), and wintering species such as ruby-crowned kinglet (*Regulus calendula*), yellow-rumped warbler (*Dendroica coronata*), Lincoln's sparrow (*Melospiza lincolnii*), and golden-crowned sparrow (*Zonotrichia atricapilla*). Trees found in the small channel in Planning Area 2 may support nesting birds raptors observed here during surveys including white-tailed kite, Cooper's hawk (*Accipiter cooperii*), and loggerhead shrike. Other resident wildlife expected to forage in these areas include striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), California ground squirrel, and California vole, as well as resident aquatic reptiles, amphibians, and invertebrate species (Mayer and Laudenslayer 1988). Pacific tree frog (*Hyla regilla*) larvae were observed in many of the wetland areas during site surveys.

Vernal Pools

Vernal pools are seasonally flooded basins underlain by a restrictive soil layer (i.e., claypan, hardpan, or bedrock) that prevents downward percolation of rainwater. Vernal pools are inundated throughout the winter and gradually dry during the spring and summer, remaining dry and desiccated through the fall until the next rainy season. Vernal pools support unique plants and animals, including many rare species, which are specifically adapted to the unique hydrologic regime and soil chemistry. Vernal pools are distinguished from other seasonal wetlands by having a predominance of plant species considered to be vernal pool indicator species.

The vernal pools on the properties are concentrated in the center and eastern portions of the Gentry Property, in the western portion of the Tooby Property, and in the northern and northwestern portions of the Barnfield Property (**Figure 4.8-3**). Many of the pools appear to have formed or were enhanced due to the construction of berms and ditches and partially blocked culverts on the site. The partially blocked culverts and berms and ditches may collect and block the flow of water across the landscape. This is especially true in the Gentry and Tooby properties. The largest, deepest vernal pool occurs on the Gentry Property and may be the result

of, or enhanced by, the adjacent berm that runs parallel to Pennsylvania Avenue and a blocked culvert at the southernmost end of the vernal pool.

Dominant species within the pools on the three properties include a mix of classic vernal pool indicator species such as Vasey's coyote-thistle (*Eryngium vaseyi*), California semaphore grass (*Pleuropogon californica*), flat-faced downingia (*Downingia pulchella*), smooth goldfields (*Lasthenia glaberrima*), hyssop-leaved loosestrife (*Lythrum hyssopifolia*), and stipitate popcornflower (*Plagiobothrys stipitatus* var. *micranthus*), as well as a low cover of some alkali-tolerant species (halophytes) such as alkali heath (*Frankenia salina*), pickleweed (*Salicornia virginica*), and alkali weed (*Cressa truxillensis*).

Vernal pools support many of the same wildlife species as annual grasslands. They are known to support a variety of endemic species that specialize in this habitat type including various types of fairy shrimp, Pacific treefrog (*Hyla regilla*), western toad (*Bufo boreas*), and California tiger salamander (*Ambystoma tigrinum californiense*). When they are full, these areas of open water also provide suitable foraging habitat for waterfowl, herons, and shorebirds. Both black-necked stilt (*Himantopus mexicanus*) and American avocet (*Recurvirostra americana*) may nest within shallow ponds that are wet through their nesting season (March to July). Many species of insectivorous birds (i.e., swallow, swifts, and flycatchers) hunt their prey over open water. Species observed in the pools include mallard (*Anas platyrhynchos*), snowy egret (*Egretta thula*), belted kingfisher (*Ceryle alcyon*), and red-winged blackbird (*Agelaius phoeniceus*).

Seasonally Saturated Annual Grasslands

The site contains broad transitional wetland areas between the low-lying seasonal wetlands (vernal pools and alkali seasonal marsh) and the surrounding upland annual grasslands (**Figure 4.8-3**). These transitional areas have prolonged periods of surface and subsurface saturation, but are rarely inundated. The dominant plants include a mix of facultative wetland species associated with both the annual grasslands and alkali seasonal marsh. Common species include Italian ryegrass, Mediterranean barley, alkali weed, and alkali heath (*Frankenia salina*)... A substantial decrease in the historical seasonally saturated annual grassland habitat of the Suisun Marsh region has been documented (Goals Project, 1999). Small areas of seasonally saturated annual grassland were also noted on the Gilbert parcel and the UPRR, and Pennsylvania Avenue rights of way during the July 2005 preliminary wetlands assessment.

Wildlife found here are similar to those found in both annual grasslands and the seasonally wet vernal pool habitats described above.

Alkali Seasonal Marsh

The alkali seasonal marshes form in low-lying basins and clay flats. They become seasonally inundated or saturated during the rainy season and gradually dry through the spring and early summer. The salinity comes from residual salts concentrated in a buried silty clay loam soil horizon within the predominant soil type (Sycamore silty clay, saline).

Alkali seasonal marshes on the Gentry, Tooby and Barnfield properties are located in the northeastern portion of the Gentry Property, the southwestern portion of the Tooby Property, and

the northern and northwestern portions of the Barnfield Property (**Figure 4.8-3**). Alkali seasonal marsh is also present in the Cordelia Road ROW. Dominant plant species within these wetlands include several halophytes (salt-loving plants) including sickle grass (*Parapholis incurva*), alkali weed, and alkali heath. Slightly lower areas within the wetlands are dominated by pickleweed (*Salicornia virginica*). The alkali seasonal marsh generally lacks vernal pool indicator species.

Wildlife found in alkali seasonal marsh include California vole, herons, mallard, killdeer, black-necked stilt, American avocet, greater yellowlegs (*Tringa melanoleuca*), and Wilson's snipe (*Gallinago delicata*).

Perennial Brackish Marsh

Perennial brackish marsh occurs throughout the southern and southeastern portions of the Barnfield Property and dominates the eastern portion of the Tooby Property (**Figure 4.8-3**). During the preliminary wetlands assessment, a small area of brackish marsh was also mapped in the Cordelia Road ROW in the drainage ditch that traverses the Barnfield and Tooby properties as it crosses the Cordelia Road ROW. This habitat occurs in estuarine environments where there is a mixing of fresh and salt waters such as occurs in the Delta region. The soils are perennially inundated or saturated and are generally subject to some level of tidal fluctuation. The perennial brackish marsh habitat at the Project Site is subject to tidal fluctuations that extend from Suisun Bay, up tidal sloughs, and into drainage ditches that traverses the properties. The ditch on the Tooby site has one branch that extends northeast and provides water to the marsh habitat. In addition, water levels become elevated during the rainy season and gradually lower through the spring through evaporation, transpiration, and drainage. This is especially true for the northern portion of the marsh. The majority of alkalinity within the marsh habitat comes from residual salts in the silty clay soils in addition to salts carried through tidal fluctuations.

Within the Tooby Property, the deepest areas within the marsh (concentrated along the eastern portion of this property) are dominated by a mix of dense, tall-growing perennial marsh species including tule (*Scirpus acutus* var. *occidentalis*), Olney's bulrush (*Scirpus americanus*), California bulrush (*Scirpus californicus*), saltmarsh bulrush (*Scirpus maritimus*), broad-leaved cattail (*Typha latifolia*), and narrow-leaved cattail (*Typha angustifolia*). Slightly higher areas are dominated by low-growing species, especially pickleweed (*Salicornia virginica*) and brass buttons (*Cotula coronopifolia*). The upper perimeter of the marsh includes additional low-growing species such as saltgrass (*Distichlis spicata*), saltmarsh sand-spurrey (*Spergularia marina*), sicklegrass, and annual beard grass.

Dominant plant species within perennial brackish marsh on the Barnfield Property include a broad range of perennial emergent monocots and herbaceous and woody dicots often occurring in a mosaic dependent on local soil condition, hydrologic regime, and micro-elevation. Low-lying areas and the lower banks of sloughs are dominated by tall, dense emergent monocots including tule, Olney's bulrush, California bulrush, saltmarsh bulrush, broad-leaved cattail, and narrow-leaved cattail. Upper slough banks are dominated by a mix of woody dicots such as annual saltmarsh aster (*Aster subulatus* var. *ligulatus*), Douglas' false-willow (*Baccharis douglasii*), western goldenrod (*Euthamnia occidentalis*), and mugwort (*Artemisia douglasiana*). The special-status plants delta tule pea and Suisun Marsh aster occur in scattered locations along

the upper slough banks (see “Special Status Species” section). Open areas along some of the smaller slough channels support some interesting native herbs such as water-parsley (*Oenanthe sarmentosa*) and whorled pennywort (*Hydrocotyl verticillata*). There are also dense stands of pickleweed and saltgrass in some low-lying areas away from the slough channels

Perennial marsh provides shelter and foraging habitat for several species of wildlife on the site, including resident and migratory bird species, amphibians, reptiles, aquatic invertebrates, and foraging mammals. Wildlife expected to occur in the perennial marsh habitat on the site include bullfrog (*Rana catesbiana*), Pacific tree frog, great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), great egret (*Ardea alba*), American bittern (*Botaurus lentiginosus*), Virginia rail (*Rallus limicola*), sora (*Porzana carolina*), killdeer, American avocet, and black-necked stilt, long-billed curlew (*Numenius americanus*), black phoebe (*Sayornis nigricans*), marsh wren (*Cistothorus palustris*), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), Suisun song sparrow (*Melospiza melodia maxillaries*), and red-winged blackbird. The bittern and stilt may nest in the area in the northeastern portion, but the long-billed curlew is a designated Species of Special Concern that is not known to nest in the Project Area.

Wildlife Corridors

Many areas serve as habitat for several species of wildlife and as such provide shelter, food, water and other resources for wildlife. However, the concept of corridors for wildlife movement is often misunderstood. It is generally assumed that discussions of wildlife dispersal are primarily important for mammals, because birds can fly between habitat patches. In fact, even non-migratory birds limited to very specific habitat types have been found via banding studies to travel several miles, over large areas of non-habitat including roadways and residential developments, between habitat patches. Most amphibians travel within watercourses, and most insects can fly; thus, this discussion focuses on the movement of mammal and reptile species.

Wildlife species make use of travel routes within a given patch of habitat to find food, water, mates, and shelter or den sites. Species may also use wildlife crossings, which are generally small, narrow areas allowing wildlife to pass through an obstacle or barrier such as a roadway to reach another patch of habitat. Wildlife crossings are manmade and include culverts, drainage pipes, underpasses, tunnels, and, more recently, crossings created specifically for wildlife movement over or under highways. For example, the culverts under Cordelia Road and the UPRR railroad would be considered wildlife crossings.

A wildlife corridor, also called a habitat linkage or landscape linkage, is a large patch of habitat connecting two or more larger areas of habitat that would otherwise be isolated from one another. They are typically bordered on two sides by urban areas or other types of human development. A functioning wildlife corridor allows for ease of movement between habitat patches. Canyon bottoms with a well-developed tree canopy often serve as wildlife corridors and offer food, shelter, and water, as well as ease of movement, depending upon the density of the understory. Corridors function to prevent habitat fragmentation that would result in the loss of species that require large contiguous expanses of unbroken habitat and/or that occur in low densities. Habitat fragmentation can result in increases in the number of non-native species and may allow inbreeding to occur in species whose populations are small because they have become

confined to smaller areas. This, in turn, reduces the rate of reproductive success. Fragmentation also reduces functioning ecosystems to small pockets, decreasing biodiversity and the interactive processes required for healthy ecosystem functioning. Corridors promote gene flow, allow re-colonization of areas following catastrophic events such as fire, prevent the loss of large animals by linking suitable habitat areas, and help to ensure the survival of native species that cannot compete with more aggressive non-native species in fragmented habitats.

The Project site is immediately south of State Highway 12 and residential areas of the City of Fairfield. It is bisected east-west by both the UPRR railway and Cordelia Road, and north-south by Pennsylvania Avenue. The site is not within an area designated as a key corridor by the HCP (LSA Associates 2005). Both Ledgewood Creek and the smaller slough channels provide wildlife crossings of these impediments through culverts. However, the site as a whole serves little value as a wildlife corridor due to the large amount of development and barriers that surround it. While the Barnfield and Tooby Parcels do provide large areas of habitat for several sensitive salt marsh species, they are at the northern extend of these species range in the immediate area and do not represent corridors between two large populations. The project is not anticipated to impact Ledgewood Creek which may serve a limited function as a wildlife corridor for species inhabiting the brackish and freshwater emergent vegetation within its channel.

Special-Status Species

Special-status species are defined as plants and wildlife that may meet one or more of the following:

1. Legally protected under the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA) or under other regulations;
2. Considered sufficiently rare by the scientific community to qualify for such listing; or
3. Considered sensitive because they are unique, declining regionally or locally, or at the extent of their natural range.

Special-status plant species may meet one or more of the following:

- Plants listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.12 for listed plants and various notices in the Federal Register for Proposed species);
- Plants that are candidates for possible future listing as threatened or endangered under the FESA (64 FR 205, October 25, 1999; 57533-57547);
- Plants that meet the definitions of rare or endangered species under the California Environmental Quality Act (CEQA) (CEQA Guidelines, Section 15380);
- Plants considered by the California Native Plant Society (CNPS) to be “rare, threatened, or endangered” in California (Lists 1B and 2 species in CNPS [2001]);
- Locally important occurrences of plants listed by CNPS as plants for which more information is needed and plants of limited distribution (Lists 3 and 4, respectively, species in CNPS [2001]);
- Plants listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 CCR 670.5);

- Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 et seq.). Plants considered sensitive by other federal agencies (i.e., U.S. Forest Service, Bureau of Land Management) or state and local agencies or jurisdictions; or
- Plants considered sensitive or unique by the scientific community or occurring at the limits of its natural range (CEQA Guidelines, Appendix G).

Special-status wildlife species may meet one or more of the following:

- Wildlife listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.11 for listed wildlife and various notices in the Federal Register for Proposed species);
- Wildlife that are candidates for possible future listing as threatened or endangered under the FESA (54 CFR 554);
- Wildlife that meet the definitions of rare or endangered species under the CEQA (CEQA Guidelines, Section 15380);
- Wildlife listed or proposed for listing by the State of California as threatened and endangered under the CESA (14 CCR 670.5);
- Wildlife Species of Special Concern to the CDFG (Remsen [1978] for birds; Williams [1986] for mammals); or
- Wildlife species that are fully protected in California (California Fish and Game Code, Section 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

INSERT Figure 4.8-4: CNDDDB Search Results

INSERT Figure 4.8-5: Biological Constraints at the Project Site.

The following tables (**Table 4.8-6** and **Table 4.8-7**) identify listed and special-status species identified on the USFWS species lists for the Solano County and the *Fairfield South, California* 7.5-minute USGS quadrangle, all of which have occurred at least once in the vicinity of the site (USFWS 2006). Species recorded in the California Natural Diversity Database (CNDDDB) within five miles of the site are also included in **Table 4.8-6** and **Table 4.8-7** below and shown in **Figure 4.8-4**. We also include species named in the Solano County HCP (LSA Associates 2005). “No local records,” means that none were detected in the 9-quad search or in the literature. Definitions of species potential for occurrence on the site are as follows:

- **Present:** Species is known to occur within the Project Area, based on CNDDDB records, and/or was observed onsite during the field survey(s).
- **May occur:** Species is known to occur on or near the Project Area (based on CNDDDB or other records within 5 miles, and/or based on professional expertise specific to the site or species), and there is suitable habitat onsite.
- **Not likely to occur:** Species is known to occur in the vicinity of the Project Area; however, there is poor quality or marginal habitat in the Project Area. Alternatively, there is suitable habitat in the Project Area, however, there are no records, or only historic records within a 5-mile radius and the species was not observed during surveys. If these species were to occur at the site, they would likely be migrants, may occasionally use the site for foraging, and are not likely to be resident or reproduce at the site due to a lack of suitable habitat, or the site being outside of their known breeding range.
- **Absent:** Species is not known to occur on or in the vicinity of the Project Area and there is no suitable habitat for the species in the Project Area -OR- Species was surveyed for during the appropriate season with negative results for species occurrence.

Only those species that are known to be present or that have a high or low potential for occurrence will be discussed further following the species table below.

Special-Status Plant Species

Five special-status plant species were observed on either the Gentry, Tooby or Barnfield properties: Suisun Marsh aster (*Aster lentus*), alkali milk-vetch (*Astragalus tener* var. *tener*), Contra Costa goldfields (*Lasthenia conjugens*), Delta tule pea (*Lathyrus jepsonii* ssp. *jepsonii*), saline clover (*Trifolium depauperatum* var. *hydrophilum*), and. Contra Costa goldfields is a federally listed endangered species and is on the CNPS List 1B (plants rare, threatened or endangered over the entire range). Saline clover is also a CNPS List 1B species and alkali milk-vetch, delta tule pea and Suisun Marsh aster are all federal species of concern as well as being on the CNPS List 1B. Each of these species and its occurrence onsite is discussed below. The location of each of these species on the Project Area is shown on **Figure 4.8-4**.

Table 4.8-6. Listed and Special-Status Plant Species Potentially Occurring on the Project Site or in the Vicinity.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	POTENTIAL FOR OCCURRENCE
Suisun Marsh aster (<i>Aster lentus</i>)	FSC/-- CNPS 1B	Inhabits banks of sloughs and bays in the Suisun Bay and the mid Central Valley basin.	Present. There are several CNDDDB records east and south of the property along sloughs draining to Suisun Bay and CNPS has records in the Fairfield South quad. Special status plant surveys indicated this species is present on the Barnfield property in several locations on the eastern portion of the property and on the Barnfield and Tooby properties adjacent to a perennial brackish marsh ditch (Vollmar Consulting, 2005).
Ferris' milk-vetch (<i>Astragalus tener</i> var. <i>ferrisiae</i>)	FSC/-- CNPS 1B	Inhabits subalkaline vernal pools and grassland clay flats in the Delta and north Central Valley basin; extirpated from Solano Co.	Not likely to occur. There is a historic CNPS record several miles to the east of the property (Dozier quad). Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Alkali milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	FSC/-- CNPS 1B	Inhabits subalkaline vernal pools and clay flats in grasslands; known from scattered locations in the Delta, Central Valley, and north SF Bay.	Present. There are CNDDDB records north and east of the property and CNPS records in Fairfield South quad. Special status plant surveys indicated this species is present in central areas of the Gentry parcel north of the Union Pacific Railroad and on the Gentry Parcel near Cordelia Road, as well as on the Barnfield Parcel.
Heartscale (<i>Atriplex cordulata</i>)	FSC/-- CNPS 1B	Inhabits alkali flats with sandy soils in the Delta and Central Valley basin.	May occur. There is a historic CNDDDB record several miles north of the property and several CNPS records several miles north and east of the property. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Brittlescale (<i>Atriplex depressa</i>)	FSC/-- CNPS 1B	Inhabits alkali scrub, clay soils in mesic grasslands in the Delta, Central Valley basin.	May occur. There is a recorded CNDDDB occurrence 5 miles east of the property near Potrero Hills Landfill (Denverton quad). Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
San Joaquin spearscale (<i>Atriplex joaquiniana</i>)	FSC/-- CNPS 1B	Inhabits alkali scrub and mesic grasslands in the Delta and Central Valley basin.	May occur. There are CNDDDB records at Travis AFB, and Potrero Hills Landfill and CNPS occurrence in Fairfield South quad. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	POTENTIAL FOR OCCURRENCE
Persistent-fruited [vernal pool] saltscale (<i>Atriplex persistens</i>)	--/-- CNPS 1B	Inhabits alkali vernal pools, flats, and swales; known from scattered locations in the Delta and Central Valley basin.	Not likely to occur. No CNDDDB records in immediate vicinity of the property. CNPS records in Dozier quad several miles to the east. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Big-scale (California) balsamroot (<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>)	SLC/--/ CNPS 1B	Chaparral, cismontane woodland, valley and foothill grassland/sometimes serpentinite; elevation 90-1400 meters.	Not likely to occur. No suitable habitat present on the site. CNDDDB records from west of Fairfield and American Canyon, none within 5 mi. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Mt. Diablo fairy-lantern	--/-- CNPS 1B	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. On wooded and brushy slopes. 200-800m.	Not likely to occur. No suitable habitat present on the site. CNDDDB records from Carquinez Strait Shoreline Park and Green Valley. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Salt marsh owl's clover (Johnny-nip) (<i>Castilleja ambigua</i> ssp. <i>ambigua</i>)	SLC/--/--	Coastal salt marsh, coastal scrub.	Not likely to occur. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No CNDDDB records within 5 miles.
Holly-leaved ceanothus (<i>Ceanothus purpureus</i>)	SLC/--/--	Coastal salt marsh, coastal scrub.	Not likely to occur. No suitable habitat present on the site. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No CNDDDB records within 5 miles.
Pappose tarplant (<i>Centromadia parryi</i> ssp. <i>parryi</i>)	SLC/--/ CNPS 1B	Chaparral, cismontane woodland/volcanic rocky; elevation 120-640 meters.	Not likely to occur. No suitable habitat present on the Project Site. Local record adjacent to the property. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Suisun thistle (<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>)	FE/--/ CNPS 1B	Inhabits the edges of brackish sloughs; only two known locations (Grizzly Island and lower Peytonia Slough), both in Solano, County.	May occur. Excellent potential habitat near southern tip of the Barnfield property along Peytonia Slough. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	POTENTIAL FOR OCCURRENCE
Hispid bird's-beak (<i>Cordylanthus mollis</i> ssp. <i>hispidus</i>)	FSC/--/ CNPS 1B	Inhabits alkali vernal mesic grasslands; known from scattered locations in the Delta, southern Central Valley basin.	Not likely to occur. There is a CNDDDB record 5 miles east northeast of the property at Dozier vernal pools (Denverton quadrangle). Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Soft bird's-beak (<i>Cordylanthus mollis</i> ssp. <i>mollis</i>)	FE/CR CNPS 1B	Inhabits brackish tidal marsh and seasonal alkali marsh; known from fewer than 20 populations in Contra Costa, Napa, and Solano Counties.	May occur. CNDDDB records along Suisun Slough and Hwy 12 (5 miles east of the property). CNPS records in Fairfield South quad on the property. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Recurved larkspur (<i>Delphinium recurvatum</i>)	FSC/--/ CNPS 1B	Inhabits alkali scrub and vernal mesic grasslands in the Delta and southern Central Valley basin.	Not likely to occur. There is historic CNDDDB record (1902) near Vacaville. No CNPS records near the property. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Dwarf downingia (<i>Downingia pusilla</i>)	--/--/CNPS 2	Inhabits vernal pools in the Delta and Central Valley.	Not likely to occur. No CNDDDB records within 5 mi. of the property. CNPS occurrence in Denverton quad. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Mt. Diablo [Contra Costa] buckwheat (<i>Eriogonum truncatum</i>)	FSC/--/ CNPS 1A	Chaparral, coastal scrub, valley and foothill grasslands in dry exposed clay or sandy substrates at 100-600 meters elevation.	Not likely to occur. No suitable habitat present on the site. One historic record (1888) from Suisun City. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Fragrant fritillary (<i>Fritillaria liliaceas</i>)	FSC/--/ CNPS 1B	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland/often serpentinite; elevation 3-410 meters.	Not likely to occur. No suitable habitat present on the site. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No local records.
Adobe-lily (<i>Fritillaria pluriflora</i>)	FSC/--/-- CNPS 1B	Inhabits adobe soils in grasslands and chaparral; occurs in the Delta, north Central Valley, and North SF Bay.	Not likely to occur. There is a historic CNPS record northeast of the property (Elmira quad). No CNDDDB records in vicinity. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	POTENTIAL FOR OCCURRENCE
Bogg's Lake hedge hyssop (<i>Gratiola heterosepala</i>)	--/CE/ CNPS 1B	Inhabits vernal pools and margins of vernal lakes; known from scattered locations in the Delta, Central Valley, and north SF Bay.	Not likely to occur. There are CNPS records several miles east of the property; no CNDDDB records in the vicinity. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Brewer's western flax (<i>Hesperolinon breweri</i>)	FSC/--/ CNPS 1B	Chaparral, cismontane woodland, valley and foothill grassland; often found in rocky serpentine soil in serpentine chaparral and serpentine grassland at 30-885 meters.	Not likely to occur. No suitable habitat present. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No records within 5 mi.
Carquinez goldenbush (<i>Isocoma arguta</i>)	FSC/--/ CNPS 1B	Inhabits alkaline flats, low benches and sides of mounds in swale areas; restricted to Solano and Contra Costa Counties.	Not likely to occur. There are three CNDDDB records several miles east of the property (Denverton quad: Dozier vernal pools, near Creed Road, near Highway 12). Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Contra Costa goldfields (<i>Lasthenia conjugens</i>)	FE/--/ CNPS 1B	Inhabits vernal pools and vernal mesic grasslands; most remaining occurrences restricted to the Fairfield region.	Present. Observed onsite in special status species surveys conducted by Vollmar consulting in 2000, 2001, 2002 and 2005.
Delta tule pea (<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>)	FSC/--/ CNPS 1B	Inhabits the banks of sloughs and bays in the Suisun Bay and Delta.	Present. Observed onsite on the Barnfield property during Vollmar Consulting special status plant surveys conducted in 2000. This species was not located on the Gentry or Tooby properties during this survey. It is not expected to occur on the Gentry property due to a lack of perennial brackish marsh habitat. The occurrence on the Barnfield property is located at the far southern tip along the eastern bank of Peytonia Slough, and is estimated to include 400 plants. This area is outside the Project development footprint. Also, there are numerous known occurrences south of the property on Suisun Slough, Peytonia Slough, and Suisun Marsh.
Legenere (<i>Legenere limosa</i>)	FSC/--/ CNPS 1B	Inhabits vernal pools; known from scattered occurrences in the Delta, north Central Valley, and north SF Bay.	May occur. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. However there is a moderate potential for this species to occur. CNDDDB records occurrences east of the property. CNPS records in Denverton and Elmira quads.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	POTENTIAL FOR OCCURRENCE
Heckard's pepper-grass (<i>Lepidium latipes</i> var. <i>heckardii</i>)	SLC/--/ CNPS 1B	Valley and foothill grassland (alkaline flats); elevation 10-200 meters.	Not likely to occur. This species was not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No local records.
Mason's lilaepsis (<i>Lilaeopsis masonii</i>)	FSC/CR/ CNPS 1B	Inhabits the edges of mudflats in brackish marsh and riparian scrub in the Delta.	May occur. There are CNDDDB records southeast of the property along Montezuma Slough, Grizzly Island and CNPS records in Fairfield South quad. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Delta Mudwort (<i>Limosella subulata</i>)	--/--/ CNPS 2	Inhabits the edges of mudflats in brackish marsh and riparian scrub in the Delta.	Not likely to occur. There are CNDDDB records southeast of the property along Montezuma Slough. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Little mousetail (<i>Myosurus minimus</i> ssp. <i>apus</i>)	FSC/--/ CNPS 3	Inhabits alkaline vernal pools in the Delta, Central Valley, and South Coast.	Not likely to occur. CNPS records occurrences several miles east of the property; no CNDDDB occurrences in Project vicinity. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Baker's navarretia (<i>Navarretia leucocephala</i> <i>ssp. bakeri</i>)	FSC/--/ CNPS 1B	Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Vernal pools and swales; adobe or alkaline soils at 5- 950 meters elevation.	Not likely to occur. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No records within 5 mi.
Colusa grass (<i>Neostapfia colusana</i>)	FT/CE/ CNPS 1B	Inhabits large vernal pools and vernal lakes, occasionally stock ponds; known from fewer than 50 occurrences in the Delta, and southern Central Valley.	Not likely to occur. No suitable habitat present. Known population in Olcott Lake (Jepson Prairie). Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No local records.
San Joaquin Valley orcutt (<i>Orcuttia inaequalis</i>)	FT/CE/ CNPS 1B	Vernal pools 30-755 meters elevation.	Not likely to occur. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No records within 5 mi.
Gairdner's yampah (<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>)	FSC--/-- CNPS 4	Broadleaved upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools/mesic; elevation 0-365 meters.	Not likely to occur. Suitable habitat not present. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No local records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	POTENTIAL FOR OCCURRENCE
Bearded popcorn flower (<i>Plagiobothrys hystriculus</i>)	--/--/ CNPS 1A	Vernal pools, valley and foothill grassland in wet sites at elevation 10-50 meters.	Not likely to occur. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No records within 5 mi.
Marin knotweed (<i>Polygonum marinense</i>)	SLC/--/ CNPS List 3	Marshes and swamps; elevation 0-10 meters.	Not likely to occur. No suitable habitat present; found in salt marshes. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No local records.
Rayless Ragwort (<i>Senecio aphanactis</i>)	--/--/ CNPS 2	Generally associated with alkaline soils and seasonal wetland.	Not likely to occur. Suitable habitat at the Project Site, no records within 5 mi, nearest from Mare Is. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Pacific cordgrass (<i>Spartina foliosa</i>)	SLC/--/--	Coastal salt marshes along the coast of California and Mexico.	Not likely to occur. No suitable habitat present. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting. No local records.
Showy Indian clover (<i>Trifolium amoenum</i>)	FE/--/ CNPS 1B	Inhabits moist clay grassland soils; known from one extant occurrence in Marin County.	Not likely to occur. Historic records in Solano County (type locality), 4 miles northeast of the property. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.
Saline [water sack] clover (<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>)	--/--/CNPS 1B	Inhabits subalkaline vernal mesic grasslands and edges of vernal pools; restricted to the Delta and Central Coast.	Present. A total of 49 occurrences of saline clover were located on the three properties during the 2005 surveys. Fourteen occurrences were located on the Gentry property, three occurrences were located on the Tooby Property, and 32 occurrences were located on the Barnfield Property.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	POTENTIAL FOR OCCURRENCE
Crampton's [Solano] tuctoria (<i>Tuctoria mucronata</i>)	FE/CE/ CNPS 1B	Inhabits large vernal pools and vernal lakes; known from only three occurrences in Solano and Yolo Counties.	Not likely to occur. There are two populations in and adjacent to Jepson Prairie. Not likely to occur on the property due to a lack of suitable habitat. Not observed during special status plant surveys conducted in 2000, 2001, 2002 and 2005 by Vollmar Consulting.

¹ Sources of information included California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (Skinner and Pavlik 1994; electronic update 1999), CDFG's California Natural Diversity Data Base for the Fairfield North, Fairfield South, Denverton and Elmira USGS 7 ½ minute quadrangles (CNDDDB 2006), special-status species lists and technical reports prepared by Vollmar Consulting for other projects in the vicinity, and United States Fish and Wildlife Service (USFWS) lists of federal endangered and threatened species that occur in or may be affected by projects in Solano County or the Fairfield South USGS 7.5 minute quadrangle.

²Status Codes:

FE	Federally Endangered	CR	California Rare
FT	Federally Threatened	CSC	California Species of Special Concern
FPE	Federally Proposed Endangered	CNPS 1A	Plants Presumed Extinct in California
FPT	Federally Proposed Threatened	CNPS 1B	Plants Rare, Threatened or Endangered in California or elsewhere
FCS	Federal Candidate Species	CNPS LIST 2	Plants Rare, Threatened or Endangered in California, but more common elsewhere
FSC	Federal Species of Concern (most are former C2 Candidates and some former C1)	SLC	Species of Local Concern – other species of concern to the Sacramento Fish and Wildlife Office
CE	California Endangered	CNPS LIST 3	Plants about which more information is needed prior to assigning to a list
CT	California Threatened	CNPS LIST 4	Plants of limited distribution – a watch list

Based on known CNDDDB occurrence records and direct observation in the field, special-status plant species present on site include Suisun marsh aster, alkali milk vetch, Contra Costa goldfields, Delta tule pea, and saline clover. While not detected during surveys heartscale, brittlescale, San Joaquin spearscale [saltbush], Suisun thistle, Soft bird's-beak, Legenere, and Mason's lilaeopsis, may occur on-site according to an examination of the USFWS threatened and endangered species list of the area, CNDDDB occurrence records on or near the site (CNDDDB 2006), CNPS literature (CNPS 2001, 2006), and other documents pertaining to the biological resources of the site. Based on field observations and a search of CNDDDB occurrence records heartscale, Suisun thistle, soft bird's beak, and Mason's lilaeopsis are not likely to occur. A description of each species follows.

Plant Species Detected During Surveys

Suisun Marsh Aster

Suisun marsh aster is a three to four foot tall lavender-flowered perennial in the sunflower family (Asteraceae). It is a federal Species of Concern and a CNPS List 1B species. It occurs along the margins of bays and the banks of slough channels with tidal brackish waters. Its range is restricted to the upper San Francisco Bay and Delta regions of California.

Suisun marsh aster was observed in scattered locations along the southern portion of the drainage channel that traverses the eastern portion of the site. This channel is subject to daily tidal fluctuations of mildly brackish waters. Total population size is consisted of a couple hundred plants. Additional occurrences have been reported within five miles of the site (CNDDDB 2006). The locations of Suisun Marsh aster on the Project Area are shown on **Figure 4.8-5**.

Gentry Property. Suisun Marsh aster was not observed in the Gentry property during the 2000 – 2002 and the 2005 surveys. It is not expected to occur in this area due to a lack of suitable habitat.

Tooby Property. Suisun Marsh aster was observed in scattered locations along the southern portion of the drainage ditch that traverses the Tooby property during the previous late-season survey conducted August 15, 2000. During the August 8, 2005, late-season survey, all occurrences of Suisun Marsh aster were relocated and found to have similar sizes and distribution as observed during the August 15, 2000, survey. The ditch is subject to daily tidal fluctuations of mildly brackish waters. Total population size was estimated at 200 plants.

Barnfield Property. Suisun Marsh aster was observed in several scattered colonies along slough banks in the southern and southeastern portions of the property during the previous late-season survey conducted August 15, 2000. During the August 8, 2005, late-season survey, all occurrences of Suisun Marsh aster were relocated and found to have similar sizes and distribution as observed during the August 15, 2000, survey. Dense colonies were also observed along the two ditches on the property. Total population size of all colonies was estimated at 4,000 plants.

Alkali Milk-vetch

Alkali milk-vetch is a CNPS List 1B species and a federal Species of Concern. Alkali milk-vetch is a delicate, 1.57 to 11.81 inches (4 to 30 cm) tall. The leaves are pinnately compound, 0.79 to 3.54 inches (2 to 9 cm) long, with 7 to 17 well separated leaflets. The inflorescence is dense, consisting of 3 to 12 pink-purple, pea-like flowers. It is a small, purple-flowered annual in the pea family (Fabaceae). It is associated with seasonally saturated grasslands with alkaline soils as well as the upper margins of alkaline vernal pools.

Its historical range included the Central Coast, San Francisco Bay, Delta and mid Central Valley regions. However, due to habitat loss, it has been extirpated from the Central Coast and Bay regions and most areas in the Central Valley. It is still found in Alameda, Merced, Napa, Solano, and Yolo counties (Tibor 2001). Alkali milk-vetch grows in alkaline/saline soils in vernal wet playas, flats, and valley and foothill grassland, and flowers (February) March through June (Tibor 2001). Alkali milk-vetch is threatened primarily by loss of habitat through agricultural conversion. **Figure 4.8-5** shows the occurrences of the alkali milk-vetch for the Gentry, Barnfield and Tooby properties.

Gentry Property. In the surveys conducted between 2000 and 2002, alkali milk-vetch was observed in one location in seasonally saturated annual grassland near the western end of the Gentry property. This location consisted of approximately 20 plants in a 1-meter square area. The 2000 occurrence of alkali milk-vetch was also located during 2005. It was one of seven occurrences located on the Gentry property during the 2005 surveys. The occurrence, located in 2000 as 20 plants, was relocated in 2005 as a single plant. This species is known to bloom sporadically and the change in number of plants from year to year is expected. Of the remaining six occurrences, three occurrences of alkali milk-vetch were located north of the Union Pacific Railroad and three were located south of the railroad. The northern occurrences included a single plant in the seasonally saturated grassland in the west, and two occurrences in the middle of the property, each consisting of two plants also located in the seasonally saturated grassland habitat. The southern occurrences include a single plant, an occurrence of two plants and an occurrence of three plants, all in weedy (ruderal pasture) annual grassland habitat. As this species is known to bloom sporadically from season to season, it is likely that the additional occurrences of alkali milk-vetch found in 2005 are to be expected during favorable years.

Tooby Property. No occurrences of alkali milk-vetch were observed on the Tooby property during the 2000 – 2002 or 2005 surveys. While habitat for alkali milk-vetch does occur on the Tooby Property, the species is unlikely to occur on the Tooby property given that this species was not seen during the special status plant surveys.

Barnfield Property. Alkali milk-vetch was observed in one location near the northwest corner of the Barnfield property in the 2000 – 2002 surveys. This occurrence consisted of several hundred plants. This population was observed in 2000 and 2002 but not in 2001.

The 2000 occurrence of alkali milk-vetch in the northwestern region of the Barnfield property was also observed during the 2005 surveys. The 2005 occurrence is consistent with the 2000 survey. Approximately 200 plants were located in a 175-square-foot area. An additional new

occurrence was located during 2005. The second occurrence, also located in the northwestern region of the property, consisted of approximately 50 plants scattered in a 141-square-foot area.

Contra Costa Goldfields

Contra Costa goldfields is a federally listed Endangered species and is a CNPS List 1B species. It is a small, yellow-flowered annual in the sunflower family (Asteraceae). It is federally listed as endangered and is considered rare and endangered (List 1B) by CNPS. It is associated with vernal pools and seasonally saturated flats and depressions in annual grasslands. Approximately 15 populations of the species have been documented, all of which are in California's Delta and coastal regions, and a large majority of which are in the immediate vicinity of Fairfield, Solano County. **Figure 4.8-5** shows the occurrences of the Contra Costa goldfields on the Gentry, Barnfield and Tooby properties. The project site is within Vernal Pool Critical Habitat Unit 5B, Contra Costa Goldfields (USFWS 2006), see **Critical Habitat**, below.

Gentry Property. During surveys conducted in 2000 – 2002, one occurrence of Contra Costa goldfields was observed on the Gentry Property near the northeast corner. Twenty to 30 plants were observed in a small depression within the seasonally saturated annual grasslands.

The single past occurrence of Contra Costa goldfields on the Gentry property was also located during the 2005 surveys. This occurrence consisted of approximately 20 plants in approximately the same location as the 2000 survey. One additional occurrence was located in the northeast region of the Gentry Property and three additional occurrences were located in the southwest region of the property. The occurrence of Contra Costa goldfields in the northeast region consisted of 9 plants in a small depression within seasonally saturated grassland habitat. Of the three occurrences in the southwest region, two were single plant occurrences located on the edge of seasonally saturated grassland habitat. The third occurrence consisted of approximately 50 plants scattered in a 583-square-foot area within the seasonally saturated grassland habitat adjacent to a man-made ditch.

Tooby Property. During surveys conducted in 2000 – 2002, four occurrences of Contra Costa goldfields were observed on the Tooby property. Two occurrences, each consisting of a single plant, were located in two vernal pools in the northwest region of the property. According to Dr. Robert Ornduff, a *Lasthenia* expert from U.C. Berkeley (recently deceased), these pools used to support larger goldfields populations, but the lack of grazing over the past several years has probably stifled their growth (Ornduff pers. comm. to J. Vollmar). Two additional occurrences were located in a larger vernal pool located in the southwest region of the property. These two occurrences each consisted of 10 to 20 plants near the upper edge of the pool basin.

Ten occurrences of Contra Costa goldfields were located on the Tooby property during the 2005 surveys; four occurrences were originally located in 2000 and six occurrences were new. The two single occurrences of the 2000 survey were relocated in the two small vernal pools in the northern region of the property. The two moderate sized occurrences of the 2000 surveys were relocated in 2005 as single plant occurrences in the larger vernal pool in the south end of the property. Of the remaining six occurrences, one new occurrence was located in the large vernal pool in the south, and consisted of a dense patch of approximately 100 plants in a 100-square-

foot area. Five additional occurrences were located in the north-central region of the property along the west edge of the brackish marsh habitat, including an occurrence of 20 plants in a 100-square-foot area; an occurrence of 15 plants in a 100-square-foot area; an occurrence of 100 plants in a 536-square-foot area; an occurrence of 30 plants scattered in a 728-square-foot area; and an occurrence of 100 plants scattered in a 13,027-square-foot (0.3 acre) area.

Barnfield Property. During surveys conducted in 2000 – 2002 on the Barnfield property, Contra Costa goldfields were observed in several scattered colonies in the northwestern portion of the property that can be grouped into four primary areas. A few thousand plants were observed in five small, shallow vernal pools just south of Cordelia Road and west of Ledgewood Creek. Several thousand plants were observed along a low-gradient, seasonally saturated grassland slope near the northwestern corner of the property. This slope is just above a low-lying area that supports seasonal alkali marsh. It appears that the goldfields occupy an intermediate area along the slope gradient, which provides sufficient prolonged soil saturation without excessive soil salinity. In addition to these occurrences, a few thousand plants were observed across a broad area in the far western portion of the site. This area consists of a terrace surrounding a small hill. The terrace has undulating mound/basin topography. The basins are generally small, less than 5 feet in diameter. Contra Costa goldfields occurred as individuals and small clusters within some of these basins.

The four previously mapped large scattered colonies of Contra Costa goldfields were located again during the 2005 surveys. The four colonies are more accurately mapped as 3 large polygons, 14 smaller polygons, and 1 single plant occurrence. The general locations of the 2005 occurrences are similar to the year 2000 surveys. The relocated occurrences are still within the northwest region of the Barnfield property, south of Cordelia Road and east of Orehr Road. The three large occurrences included an occurrence of roughly 7.7 million plants in a 5.2-acre area; an occurrence of 10,000 plants in a 3.5-acre area; and an occurrence of 3,000 plants scattered in an 8.5-acre area. The 14 smaller polygons vary from as few as 5 plants scattered in a 150 square-foot area to a dense patch of 10,000 plants in a 0.25-acre area.

Although the occurrences of Contra Costa goldfields within the Barnfield property are within the same general area of the property, significant changes in the extent and density of both the large and small polygons were noted. In previous years, the Contra Costa goldfields populations were typically limited to the ecotone of the lower edges of the seasonally saturated annual grassland habitat and the alkaline seasonal marsh habitat. In 2005 the Contra Costa goldfields extended west and up beyond this ecotone into the seasonally saturated annual grasslands and uplands where annual grasslands dominate. Although Contra Costa goldfields did occur in previous years in the more upland sites, the occurrences were limited to small scattered patches within micro depressions. During the high rainfall year of 2005, the plants in the two largest occurrences were scattered more or less continuously throughout the entire mapped polygons on a density gradient from high to low in an east to west direction, i.e., more dense in the east adjacent to the alkali seasonal marsh habitat, and more lightly scattered in the upper annual grassland habitat.

In addition to the increase in density, total extent and habitat location of the larger occurrences, the smaller occurrences of Contra Costa goldfields in 2005 also showed changes from previous

years in density of plants per area and habitat. Many of the smaller polygons located in 2005 include a large number of plants in a relatively small total area. These smaller occurrences were often so dense as to obscure the ground. In addition, like the larger occurrences, the small occurrences extended to outside of the seasonal alkali marsh edge and into the seasonally saturated annual grassland.

Delta tule pea

Delta tule pea is a federal Species of Concern and a CNPS List 1B species. Delta tule pea is a perennial, climbing herb in the legume family (Fabaceae). It has robust, winged stems and pinnately compound leaves that end in a tendril. It bears 6 to 15 pink-purple flowers, 15 to 20 mm long, in an unbranched inflorescence (raceme) at the end of the stems. The fruits (legumes) are glabrous (without hairs) (Hickman 1993; CNPS 2006). Delta tule pea occurs in the Sacramento-San Joaquin river delta, from Tule Island in Middle River and Snodgrass Slough to the Carquinez Strait (Southampton Marsh), as well as in Napa River marshes (CNDDDB 2006). Delta tule pea currently occurs in Alameda, Contra Costa, Napa, Sacramento, San Joaquin and Solano counties. Delta tule pea grows in tidally influenced freshwater and brackish marshes, commonly on slough edges and levees. It has been observed co-occurring with, or near other rare plants, such as soft bird's-beak, Mason's lilaepsis, Suisun Marsh aster, and delta mudwort (*Limosella subulata*). It blooms May through September (Hickman 1993; CNDDDB 2006; CNPS 2006).

The Project site contains marginal habitat for Delta tule pea; this species does occur along the slough channels south of the site. There are numerous CNDDDB occurrences of this species within a five-mile radius of the site (CNDDDB 2006). However, because the site contains only marginal habitat, Delta tule pea has a low potential to occur. The occurrences are mapped on **Figure 4.8-5**.

Gentry and Tooby Properties. Delta tule pea was not located on the Gentry and Tooby properties in the 2000 – 2002 or 2005 surveys. It is not expected to occur since the species was not found and the property does not have any natural slough channels connected to the Suisun Marsh.

Barnfield Property. During the 2000 survey, delta tule pea was observed in one localized area on the Barnfield Property, at the far southern tip along the eastern bank of Peytonia Slough. This occurrence was estimated to include 400 plants. Delta tule pea was not surveyed for in 2005 since the habitat for this species is well outside the area of Project influence.

Saline Clover

Saline clover is a small, pink-flowered annual in the clover genus (*Trifolium*) of the pea family (Fabaceae). Saline clover is considered a CNPS List 1B species. It occurs in mesic grasslands and around vernal pools, typically in areas with subalkaline soils. Saline clover occurs in scattered locations throughout the Delta, San Francisco Bay, and Central Coast regions of California. Although saline clover does not have federal status, prior to the surveys on the Gentry property, saline clover was known from only three sites in Solano County. Additional sites in the San Francisco Bay area include one site in Yolo County, four sites in Sonoma

County, and two sites in Napa County. Saline clover is threatened by the loss of seasonally saturated annual grassland and vernal pool habitat. The locations of saline clover on the Project Area are shown on **Figure 4.8-5**.

Gentry Property. During surveys in 2000 – 2002, one large occurrence of saline clover was observed around the upper margins of the large vernal pool on the Gentry property. The population was estimated at several hundred plants. Sixteen occurrences of saline clover were located during 2005 surveys. The original occurrence located in 2000 was located again during the 2005 surveys. This occurrence is now mapped as seven individual occurrences surrounding the large vernal pool in the eastern region of the Gentry Property. Together these seven mapped points and polygons consisted of approximately 200 plants scattered in a total area of 15,292 square feet, or approximately 0.35 acre. Seven additional occurrences are located in or on the edge of the seasonally saturated grassland habitat in the northwest region of the property. These seven occurrences consist of three occurrences each with a single plant; a small polygon of 15 plants scattered in a 100-square-foot area; 20 plants scattered in a 971-square-foot area; 40 plants scattered in a 1,241-square-foot area; and 100 plants scattered in a 0.69 acre area. Two additional occurrences were located south of the Union Pacific Railroad line in the southern region of the Gentry Property within a weedy (ruderal pasture) annual grassland habitat. One occurrence consisted of 15 plants scattered in a 0.17-acre area and another consisted of 50 plants scattered in a 0.12-acre area. The seven occurrences outside of the large vernal pool and the two occurrences south of the railroad are new occurrences since the 2000 surveys. Saline clover is known to bloom sporadically from year to year based on weather conditions, and is often not present in the same location each year. The increase in number of plants from 2000 to 2005 is therefore to be expected.

Tooby Property. Saline clover was not located in the Tooby property during the 2000 – 2002 surveys. Habitat does exist for this species in the seasonally saturated grasslands and seasonal alkali marsh in this property. A total of three occurrences of saline clover were located in the Tooby Property during 2005 surveys. One occurrence of 15 plants in a 100-square-foot area was located in the large vernal pool in the southern region of the property. Two additional occurrences were located in the small vernal pools in the northern region of the property. These include 30 plants in a 231-square-foot area and 5 plants in a 100-square-foot area.

Barnfield Property. Saline clover was not located in the Barnfield property during the 2000 – 2002 surveys.

In 2005, a total of 40 occurrences of saline clover were located throughout the Barnfield property. Most of the occurrences are located in seasonally saturated annual grasslands in the western region of the property, with minor amounts in nearby upland annual grasslands and a few occurrences were located in the shallow vernal pools in the far northeast region of the property. Together the 40 occurrences total approximately 6,300 plants in a total combined area of 19.04 acres.

Where saline clover is more heavily grazed, the flowers are often less visible and the plants are smaller and take on a more prostrate growth habit. The lack of saline clover occurrences located in the 2000 – 2002 surveys is likely related to the effects of grazing pressure as well as the

sporadic nature of its blooming cycle. As described above, saline clover is known to bloom sporadically from year to year based on weather conditions, and is often not present in the same location each year. More importantly, the 2000 – 2002 surveys were focused more heavily on the two properties proposed for development, the Gentry and Tooby Properties, and less so on the Barnfield Property.

Plant Species Not Detected During Surveys That May Occur

Brittlescale

Brittlescale is a federal Species of Concern and a CNPS List 1B species. Brittlescale is a grayish annual herb up to 7.87 inches tall in the goosefoot family (Chenopodiaceae), with stems that are prostrate to decumbent. Unlike many *Atriplex* species, the densely white-scaly leaves, 0.16 to 0.31 inches (4 to 8 mm) long and ovate to heart-shaped, can be opposite each other. The flowers are inconspicuous. Species of *Atriplex* are most easily identified when the plants are bearing fruit (Hickman 1993). The range of brittlescale extends from Kern County in the south to Butte and Glenn Counties in the north, and from Alameda County in the west to Madera and Tulare Counties in the east. Brittlescale has been extirpated from Stanislaus County and has not been reported in Sacramento or San Joaquin Counties (Tibor 2001). Brittlescale grows in relatively barren areas with alkaline clay soils within chenopod scrub, meadows, playas, vernal pools, and valley and foothill grassland. Occasionally, it is found in riparian marshes. *Atriplex* species are somewhat tolerant of disturbance. Brittlescale blooms from May through October, depending on local environmental conditions (Tibor 2001). Habitat destruction due to development, along with cattle grazing and the invasion of exotic species, has probably been the greatest threat to brittlescale in the recent past and present. The management of marshland to increase waterfowl forage is also a threat to the persistence of brittlescale populations (Tibor 2001).

While the site contains habitat capable of supporting this species, none were found on site. There is one CNDDDB occurrence within a five-mile radius of the site near Potrero Hills Landfill (CNDDDB 2006). Based on the known occurrence and the presence of alkaline clay soils, vernal pools, annual grasslands, and riparian marshes at the site, brittlescale has a high potential to occur at the site.

San Joaquin Spearscale [Saltbush]

San Joaquin spearscale [saltbush] (*Atriplex joaquiniana*) is a Federal Species of Concern and a CNPS List 1B species. This species is an erect, 4 to 40 inch tall annual herb in the goosefoot family (Chenopodiaceae), with ovate to triangular leaves 0.39 to 2.76 inches (1 to 7 cm) long. The flowers are congested on the ends of the main stem and branches, resembling little “sausages.” San Joaquin saltbush has been historically found in grasslands from Tulare County in the south to Glenn County in the north, and from Monterey County in the west to Tulare County in the east, but is currently believed to be extirpated from Santa Clara, San Joaquin, and Tulare Counties (Tibor 2001).

The species grows in seasonal alkali wetlands and alkali sinks in chenopod scrub, meadows, playas, and valley and foothill grassland, with Mediterranean barley (*Hordeum marinum ssp. gussoneanum*), alkali mallow (*Malvella leprosa*), and other alkali-associated plants. San Joaquin

saltbush has been found growing with rare plants such as Contra Costa goldfields (*Lasthenia conjugens*), alkali milkvetch (*Astragalus tener* var. *tener*), and crownscale (*Atriplex coronata*). San Joaquin saltbush blooms April through October, depending on environmental conditions (Tibor 2001). Threats to San Joaquin saltbush include grazing, agricultural land conversion, and development (Tibor 2001).

The site contains habitat capable of supporting this species; however, none were found on site during surveys. There are three CNDDDB occurrences located within five miles of the site (CNDDDB 2006). Based on the known occurrences and the presence of seasonal alkali wetlands and annual grasslands at the site, San Joaquin saltbush has a high potential to occur at the site.

Suisun thistle

Suisun thistle is federally listed as Endangered and is considered a CNPS List 1B species. Suisun thistle is a perennial herb from the aster family (Asteraceae). It has slender, erect stems that are 3.0 to 4.5 feet tall and well branched above. The spiny leaves are deeply lobed and the lower leaves have ear-like basal lobes. The upper leaves are reduced to narrow strips with strongly spine-toothed margins. Pale lavender-rose flower heads, 1 inch long, grow singly or in loose groups. Flowers appear between July and September. Suisun thistle grows in the upper reaches of tidal marshes along the edges of brackish sloughs. There are two known locations in the vicinity; one at Grizzly Slough and the other at lower Peytonia Slough.

The Project site contains marginal habitat for Suisun thistle; this species does occur along the slough channels south of the site. There are four CNDDDB occurrences of this species within a five-mile radius of the site (CNDDDB 2006). However, because the site contains only marginal habitat, Suisun thistle is not likely to occur.

Soft bird's beak

Soft bird's beak is federally listed as Endangered, is listed rare in California, and is considered a CNPS List 1B species. Soft bird's-beak is an annual herb of the snapdragon family (Scrophulariaceae). It grows 10 to 16 inches tall, with oblong to lance-shaped leaves from 0.4 to 1.0 inch long; the lower leaves are entire and the upper ones have one to three pairs of leaf lobes. Foliage is grayish-green (often tinged a deep red) and hairy. The inflorescence consists of spikes, 2 to 6 inches long. A floral bract with two to three pairs of lobes occurs immediately below each white or yellowish-white flower. Flowers appear between July and September. The plant is distinguished by its two functional stamens and by its bracts with two or three pairs of lateral lobes. Soft bird's beak is widely scattered throughout coastal salt or brackish tidal marshes fringing San Pablo and Suisun Bays, in Contra Costa, Napa, and Solano counties. Generally, this species occurs in coastal salt marsh habitats. Soft bird's-beak is found predominantly in the upper reaches of salt grass/pickleweed marshes at or near the limits of tidal action.

The Project site contains marginal habitat for soft bird's beak; this species does occur along the slough channels south of the site. There are four CNDDDB occurrences of this species within a five-mile radius of the site (CNDDDB 2006). However, because the site contains only marginal habitat, soft bird's beak is not likely to occur.

Legenere

Legenere is a CNPS List 1B species. *Legenere* is an inconspicuous glabrous annual that grows to approximately 4 to 6 inches tall, but that can attain heights of up to 12 inches (Morin 1993). *Legenere* is found in vernal pools and swales, seasonal marshes, artificial ponds, floodplains of intermittent streams, and other seasonally inundated habitats (Holland 1986; CNDDDB 2006). Wetlands that support *legenere* are typically inundated for long periods and range in size from slightly more than 40 square feet to 100 acres (Holland 1986; CNDDDB 2004). Surrounding plant communities are usually grasslands. The flowering period for *legenere* is generally from April through June depending on the depth of the vernal pool or the duration of ponding (CNPS 2001).

The site contains habitat capable of supporting this species; however, *Legenere* was not found on site during surveys. There are two CNDDDB occurrences located within five miles of the site (CNDDDB 2006). Based on the known occurrences and the presence of vernal pools and seasonally saturated habitat at the site, *legenere* has a high potential to occur at the site.

Mason's lilaepsis

Mason's lilaepsis is a federal Species of Concern, is listed rare in California, and is a CNPS List 1B species. *Mason's lilaepsis* is a small perennial plant in the carrot family (Apiaceae). It spreads by rhizomes and produces narrow, jointed leaves. Generally, this perennial herb occupies fresh and brackish water marshes and riparian scrub habitats (Skinner and Pavlik 1994). This species is semi-aquatic and is usually found on saturated clay soils that are regularly inundated by waves and tidal action (Mayer and Laudenslayer 1988). The known distribution of this plant extends from the margins of the Napa River in Napa County, east to the channels and sloughs of the Sacramento-San Joaquin Delta in Contra Costa, Solano, Sacramento, Yolo, and San Joaquin counties.

The site contains marginal habitat for *Mason's lilaepsis*; this species does occur along the slough channels south of the site. There are two CNDDDB occurrences within a five-mile radius of the site (CNDDDB 2006). However, because the site contains only marginal habitat, *Mason's lilaepsis* not likely to occur.

Heartscale

Heartscale is a federal Species of Concern and a CNPS List 1B species. This species is a gray-scaly annual herb in the goosefoot family (Chenopodiaceae). *Heartscale* is 3.94 to 19.69 inches tall, with one to a few branches arising from its base. The species takes its name from the shape of the 0.24 to 0.59 inch (6 to 15 mm) long ovate leaves, the lower ones with round lobes at the base. The flowers are inconspicuous and the plant is most easily identified after flowering. *Heartscale* occurs in the Central Valley, from Kern County in the south to Butte and Glenn Counties in the north, and from Alameda County in the west to Madera and Tulare Counties in the east. *Heartscale* is believed to be extirpated from San Joaquin, Stanislaus, and Yolo Counties and has not been reported in Sacramento County (Tibor 2001). The species grows in sandy, saline or alkaline flats, alkaline depression seasonal wetland, in chenopod scrub, meadows, and valley and foothill grassland. *Heartscale* has been found growing with or near three other special-status species: dwarf downingia (*Downingia pusilla*), Carquinez goldenbush (*Isocoma arguta*),

and legenere (*Legenere limosa*). Heartscale blooms April through October, depending on local environmental conditions (Tibor 2001). Development and conversion to agriculture were the greatest threat to heartscale in the recent past. Presently, grazing is most often cited as a threat to the persistence of heartscale populations (Tibor 2001).

While the site contains habitat capable of supporting this species, none were found on site. There are no CNDDDB occurrences within a five-mile radius of the site (CNDDDB 2006). Because of the lack of known occurrence records in the nearby vicinity, heartscale is not likely to occur.

Other Special Status Plant Species

No other special-status plants were observed on the Project Area. The vernal pools provide potential habitat for several special-status plant species listed in **Table 4.8-6**, such as dwarf downingia (*Downingia pusilla*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), and legenere (*Legenere limosa*). Most known occurrences in the region of these species are several miles to the east. None of these species was observed during field surveys. Other vernal pool species listed in **Table 4.8-6**, including two Orcutt grasses, Colusa grass (*Neostapfia colusana*), and Crampton's tuctoria (*Tuctoria mucronata*), were considered target species during surveys. These two grasses typically occupy large and/or deep vernal pools that remain inundated into the summer during an average rain year. The large pool in the Gentry property can be considered possible habitat for Colusa grass and Crampton's tuctoria. However, the two Orcutt grasses were not observed in this habitat and are not likely to occupy this habitat or any of the three Gentry properties based on the three years of surveys and because this vernal pool is artificially created.

The alkali seasonal wetlands on the site provide potential habitat for several of the special-status species listed in **Table 4.8-6**, especially San Joaquin spearscale (*Atriplex joaquiniana*) and other species of saltbush (*Atriplex* spp.). San Joaquin spearscale is known from Travis Air Force Base (a few miles northeast of the property) in habitat similar to that observed on the property (personal observation of J. Vollmar). However, since none of these species was observed during field surveys, they are unlikely to occur on the property.

Several of the species in **Table 4.8-6** are associated with marsh habitat along brackish sloughs and bay margins including Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*), soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*), and Mason's lilaepsis (*Lilaeopsis masonii*). Suisun thistle is known from only two locations, including one along lower Peytonia Slough. There is potential habitat for this species along the slough channels in the southern portion of the Barnfield property. While this species was not observed during field surveys, Vollmar Consulting indicates that since this species can be cryptic and areas where it might grow were difficult to access, it is possible it is present, but was not observed. Mason's lilaepsis and soft bird's beak are more likely to occur south of the property closer to Grizzly Bay though there is low potential for them to occur along sloughs in the far southern portion of the Barnfield property. As with Suisun thistle, there is the possibility these species could be present but were not seen during field surveys due to the difficulty of accessing this area. However, it should be noted that this area is not proposed for development.

Wildflower Fields

It is noteworthy that the three large mapped occurrences of Contra Costa goldfields on the Barnfield property are included within significant wildflower fields that contain a high cover of wildflower species associated with seasonally saturated grasslands and vernal pools. The wildflower fields are also notable for their lack of introduced annual grasses. In addition to the high cover of Contra Costa goldfields, other common wildflower species include California goldfields, (*Lasthenia californica*), smooth goldfields (*Lasthenia glaberrima*), three varieties of cowbag clover (*Trifolium depauperatum* var. *hydrophilum*, *Trifolium depauperatum* var. *amplectens*, and *Trifolium depauperatum* var. *depauperatum*), variegated clover, (*Trifolium variegatum*), butter and eggs (*Triphysaria eriantha*), little owl's clover (*Triphysaria pusilla*), Valley tassels (*Castilleja attenuata*), Vasey's coyote-thistle (*Eryngium vaseyi*), flat-faced downingia (*Downingia pulchella*), brass buttons (*Cotula coronopifolia*), and stipitate popcorn flower (*Plagiobothrys stipitatus* var. *micranthus*). The native vernal pool grass, California semaphore grass (*Pleuropogon californicus*), is a common associate in the lower depressions within the wildflower fields. Wildflower fields are identified as "sensitive" plant communities by the State of California based on statewide rarity and continuing decline. Occurrences of these communities are included in the CDFG's Natural Diversity Data Base (CNDDDB 2005). The three large polygons mapped as Contra Costa goldfields occurrences are also the boundaries of three wildflower fields present on the Barnfield property.

Listed and Special-Status Wildlife

Based on a review of the USFWS lists, a records search of the CNDDDB, documents pertaining to the biological resources of the site, and field surveys, potential habitat for the following special-status wildlife species occurs on the site: These species are described further below.

Table 4.8-7. Listed and Special-Status Wildlife Species Potentially Occurring on the Project Site or in the Vicinity.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Invertebrates			
Conservancy Fairy Shrimp (<i>Branchinecta conservatio</i>)	FE/--	Inhabits large vernal pools, often with turbid water; known from fewer than 15 occurrences in the Delta (Jepson Prairie) and Central Valley.	May occur. Nearest known occurrence several miles to the east (Jepson Prairie). Not likely to occur on the Barnfield property due to a lack of suitable habitat. There was a low potential to occur in larger vernal pools on the Gentry or Tooby properties. Protocol level wet season (2000) and dry season (2002 and 2005) sampling for vernal pool large Branchiopods was conducted by May Consulting Services and Helm Biological Consulting, respectively. Results were negative, but do not fulfill USFWS requirements. The site is within an area identified by the HCP as a, "High Value Conservation area." The site has been designated as Vernal Pool Critical Habitat.
Longhorn Fairy Shrimp (<i>Branchinecta longiantenna</i>)	FE/--	Inhabits vernal pools; known from fewer than 15 occurrences along western edge of the mid Central Valley (including Contra Costa, Alameda Counties)	Not likely to occur. Nearest known occurrence approximately 50 miles to the south (west of Tracy) in pools on sandstone outcrops. Unlikely to occur on the study site. Protocol level wet season (2000) and dry season (2002 and 2005) sampling for vernal pool large Branchiopods was conducted by May Consulting Services and Helm Biological Consulting, respectively. Results were negative, but do not fulfill USFWS requirements. No local records. The site is within an area identified by the HCP as a, "High Value Conservation area." The site has been designated as Vernal Pool Critical Habitat.
Vernal Pool Fairy Shrimp (<i>Branchinecta lynchi</i>)	FT/--	Inhabits vernal pools; occurs throughout the Delta and Central Valley.	May occur. Known from sites a couple of miles north and east of the property. Protocol level wet season (2000) and dry season (2002 and 2005) sampling was conducted by May Consulting Services and Helm Biological Consulting, respectively, due to a moderate potential for this species to occur on the property. Results were negative, but do not fulfill USFWS requirements. The site is within an area identified by the HCP as a, "High Value Conservation area." The site has been designated as Vernal Pool Critical Habitat.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Invertebrates			
Midvalley Fairy Shrimp (<i>Branchinecta mesovallensis</i>)	FSC/--	Vernal pools, swales, and ephemeral freshwater habitat.	Not likely to occur: Protocol level wet season (2000) and dry season (2002 and 2005) sampling for vernal pool large Branchiopods was conducted by May Consulting Services and Helm Biological Consulting, respectively. Results were negative, but do not fulfill USFWS requirements. No records within 5 mi. The site is within an area identified by the HCP as a, "High Value Conservation area." The site has been designated as Vernal Pool Critical Habitat.
Vernal Pool Tadpole Shrimp (<i>Lepidurus packardi</i>)	FE/--	Inhabits vernal pools; known from scattered locations in the Delta and Central Valley.	May occur. Known CNDDDB records a couple miles east of the study site at Potrero Hill landfill and along Highway 12. Protocol level wet season (2000) and dry season (2002 and 2005) sampling was conducted by May Consulting Services and Helm Biological Consulting, respectively, due to a moderate potential for this species to occur on the property. Results were negative, but do not fulfill USFWS requirements. The site is within an area identified by the HCP as a, "High Value Conservation area." The site has been designated as Vernal Pool Critical Habitat.
California Linderiella (<i>Linderiella occidentalis</i>)	FSC/--	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.	May occur. Protocol level wet season (2000) and dry season (2002 and 2005) sampling for vernal pool large Branchiopods was conducted by May Consulting Services and Helm Biological Consulting, respectively. Results were negative, but do not fulfill USFWS requirements. It is likely this species, if present, would have been detected during this sampling program. Nearby recent records from Laurel Creek, N. of Suisun City, Denverton, and near Travis AFB. The site is within an area identified by the HCP as a, "High Value Conservation area." The site has been designated as Vernal Pool Critical Habitat.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Invertebrates			
California Freshwater Shrimp (<i>Syncaris pacifica</i>)	FE/CE	Found in low-elevation (less than 53-foot) and low gradient (generally less than 1%) streams. Ideal habitat conditions include streams of 12-36" in depth with exposed live roots of trees such as alder and willow, undercut banks greater than 6" with overhanging woody debris or stream vegetation and vines such as stinging nettles, grasses, and mint.	Not likely to occur. No suitable habitat present at the site. The portion of Ledgewood Creek traversing the Barnfield property is characterized as perennial brackish marsh. Brackish waters are not considered suitable habitat for California freshwater shrimp. No local records.
San Francisco Lacewing (<i>Nothochrysa californica</i>)	FSC/--	Found in grassland habitat. Larvae are plant dwelling and feed primarily on aphid and scale insects.	Not likely to occur. Suitable annual grassland habitat is present. One historic (1950) record from Green Valley, no records within 5 mi. Surveys were not conducted for this species.
Sacramento Anthicid Beetle (<i>Anthicus sacramento</i>)	FSC/--	Prefers well-developed riparian habitat.	Not likely to occur. Well-developed riparian habitat is not present. No records within 5-mi
Antioch Dunes Anthicid Beetle (<i>Anthicus antiochensis</i>)	FSC/--	Sandy beach habitat within a few hundred yards of water.	Not likely to occur. No suitable habitat present. No records within 5-mi
San Joaquin Dune Beetle (<i>Coelus gracilis</i>)	FSC/--	Inhabits fossil dunes and sites with other sandy substrates along the western edge of the San Joaquin Valley.	Not likely to occur. No suitable habitat present. No records within 5-mi
Valley Elderberry Longhorn Beetle (<i>Desmocerus californicus dimorphus</i>)	FT/--	Inhabits blue elderberry bushes (host plant); restricted to the Central Valley and adjacent foothills.	Not likely to occur. Dependent on blue elderberry as its exclusive host plant. CNDDDB records of elderberry bushes with exit holes along creeks northwest of Fairfield. However, no blue elderberry bushes were observed on the site, therefore no potential habitat exists for this species onsite.
Delta Green Ground Beetle (<i>Elaphrus viridis</i>)	FT/--	Inhabits the drying edges of large vernal pools; presently only known from Jepson Prairie area. They prefer barren areas with an abundance of their favored prey, springtails.	Not likely to occur. CNDDDB records at Jepson Prairie. Unlikely to occur on the study site due to a lack of suitable habitat. Project Area boundary is not within designated critical habitat.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Invertebrates			
Ricksecker's Water Scavenger Beetle (<i>Hydrochara rickseckeri</i>)	FSC/--	Aquatic beetle that lives in weedy shallow, open water associated freshwater seeps, springs, farm ponds, vernal pools (playa type pools) and slow-moving stream habitats. Occurs in Jepson Prairie preserve in Solano County.	Absent. May Consulting Services conducted dip-net surveys for this species concurrently with surveys for large branchiopods. Survey results were negative. No records within 5 mi of site.
Curved-Foot Hygrotus Diving Beetle (<i>Hygrotus curvipes</i>)	FSC/--	Inhabits small seasonal water bodies, mostly alkaline.	Absent. No CNDDDB records in the vicinity. May Consulting Services conducted dip-net surveys for this species concurrently with surveys for large branchiopods. Survey results were negative.
Monarch Butterfly (<i>Danaus plexippus</i>) (wintering sites)		Winter roost sites located in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	Not likely to occur. No suitable habitat for winter roosting sites, none detected during winter surveys. Local records nearby, may occur as transient.
Callippe Silverspot Butterfly (<i>Speyeria callippe callippe</i>)	FE/--	Habitat for this species is grassland, often with a significant component of native grasses and characterized by shallow rocky soils and numerous rock outcrops. Suitable grassland habitat may also include ridgelines and hilltops. For grasslands to be considered habitat, the larvae host plant, wild violet (<i>Viola pedunculata</i>) needs to be present in sufficient density to support a population of butterflies.	Not likely to occur. No suitable habitat or host plants present. The site is not within Draft HCP Conservation Area. No local records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Fish			
River Lamprey (<i>Lampetra ayresii</i>)	FSC/--	Spawn in gravel bottomed streams, at the upstream end of riffle habitat, typically above suitable ammocoete habitat. Associated with large river systems such as the Klamath, Eel, and Sacramento Rivers. Beamish (1980) and others noted that production appears concentrated in lower reaches of particular large rivers.	Not likely to occur. No suitable habitat present. Ledgewood Creek is not characteristic of the large river systems River Lampreys are associated with. No local records.
Pacific Lamprey (<i>Lampetra tridentata</i>)	FSC/--	Spawning takes place in low gradient sections of water, with gravel and sandy bottoms. Historically or recently documented in streams of SF Bay, including: Sonoma Creeks, and the Napa River. This species also occurs in the Sacramento River and tributaries, lower San Joaquin River and many tributaries.	Not likely to occur. No suitable habitat present. No local records.
Green Sturgeon (<i>Acipenser medirostris</i>)	FPT/CSC	Green Sturgeon relies on streams, rivers, and estuarine habitat as well as marine waters during their lifecycle. They prefer to spawn in lower reaches of large rivers with swift currents and large cobble. They are found spawning in the Sacramento, Klamath and Rogue Rivers.	Not likely to occur. No suitable habitat present. Ledgewood Creek is not characteristic of the large river systems Green Sturgeon are associated with. No local records.
Coho Salmon-Central California Coast ESU (<i>Oncorhynchus kisutch</i>)	CE ³ /FE ⁴	Coho Salmon spawn in streams that are narrow, shallow, clear, and cold with a strong upwelling of water through the gravel. This ESU encompasses the area from Punta Gorda in northern California south to and including tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin river system.	Not likely to occur. This ESU is not known to occur east of Carquinez Strait. No local records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Fish			
Steelhead-Central California Coastal ESU (<i>Oncorhynchus mykiss</i>)	FT ⁵ /--	Steelhead spawn in streams that are shallow, clear, and cold with a strong upwelling of water through the gravel. The ESU encompasses the San Pablo Bay/Napa River watersheds.	May occur. There is the potential for this species to occur within Ledge wood Creek on the Barnfield property. If present, this species will not be directly impacted by the proposed Project development. Ledge wood Creek is not currently known to support breeding/rearing habitat for this ESU. However, it is accessible from Suisun Slough and Steelhead could migrate upstream in search of suitable breeding habitat. No local records.
Steelhead-Central Valley ESU (<i>Oncorhynchus mykiss</i>).	FT ⁶ /--	Steelhead spawn in streams that are shallow, clear, and cold with a strong upwelling of water through the gravel. The ESU encompasses the Suisun Bay/Sacramento River Delta watersheds. Waterways currently known to support breeding/rearing habitat for steelhead in Solano County include Green Valley, Suisun Valley and American Canyon Creeks.	May occur. There is the potential for this species to occur within Ledge wood Creek on the Barnfield property. If present, this species would not be directly impacted by the proposed Project development. Ledge wood Creek is not currently known to support breeding/rearing habitat for this ESU. However, it is accessible from Suisun Slough and steelhead could migrate upstream in search of suitable breeding habitat. No local records.
Chinook Salmon-Central Valley fall/late fall-run (<i>Oncorhynchus tshawytscha</i>)	FCS/CSC ⁷	Chinook Salmon spawn in streams that are shallow, clear, and cold with a strong upwelling of water through the gravel. The ESU includes all naturally spawned populations of fall-run Chinook salmon in the Sacramento and San Joaquin River Basins and their tributaries, east of Carquinez Strait.	May occur. There is the potential for this species to occur within Ledge wood Creek on the Barnfield property. If present it would not be directly impacted by the proposed Project development. Ledge wood Creek is not currently known to support breeding/rearing habitat for this ESU. However, it is accessible from Suisun slough and Chinook salmon could migrate upstream in search of suitable breeding habitat. No local records.
Chinook Salmon Central Valley spring-run (<i>Oncorhynchus tshawytscha</i>).	FT ⁸ /CT	Chinook salmon choose to spawn in streams that are shallow, clear, and cold with a strong upwelling of water through the gravel. The ESU encompasses the Sacramento River and its tributaries.	May occur. There is the potential for this species to occur within Ledge wood Creek on the Barnfield property. If present, this species will not be impacted by the proposed Project development. Ledge wood Creek is not currently known to support breeding/rearing habitat for this ESU. However, it is accessible from Suisun slough and Chinook salmon could migrate upstream in search of suitable breeding habitat. No local records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Fish			
Chinook Salmon Winter-Run Sacramento River (<i>Oncorhynchus tshawytscha</i>)	FE/CE	Chinook Salmon spawn in streams that are shallow, clear, and cold with a strong upwelling of water through the gravel. The ESU includes populations of winter-run Chinook Salmon in the Sacramento River and its tributaries.	May occur. There is the potential for this species to occur within Ledgewood Creek on the Barnfield property. If present, it would not be directly impacted by the proposed Project development. Ledgewood Creek is not currently known to support breeding/rearing habitat for this ESU. However, it is accessible from Suisun slough and Chinook Salmon could migrate upstream in search of suitable breeding habitat. No local records.
Delta Smelt (<i>Hypomesus transpacificus</i>)	FT/CT	During spawning they migrate upstream into shallow fresh or slightly brackish tidally-influenced backwater sloughs and ditch edges. In Solano County, Delta Smelt are found in Suisun Bay/Suisun Marsh sloughs and spawn in the Sacramento R. and in Barker, Lindsey, and Cache Sloughs, Montezuma and Suisun Sloughs and their tributaries.	May occur. There is the potential for this species to occur on the Barnfield and Tooby property. If present, it would not be directly impacted by the proposed Project development. The lower reach of Ledgewood Creek on the Barnfield property and a slough that runs through the Barnfield and Tooby property are hydrologically connected to Suisun slough and may provide suitable spawning habitat. No local records.
Longfin Smelt (<i>Spirinchus thaleichthys</i>)	FSC/--	Commonly collected from San Francisco Bay, Eel River, Humboldt Bay and Klamath River. As they mature in the fall, adults found throughout San Francisco Bay migrate to brackish or freshwater in Suisun Bay, Montezuma Slough, and the lower reaches of the Sacramento and San Joaquin Rivers. Spawning probably takes place in freshwater.	May occur. There is the potential for this species to occur on the Barnfield and Tooby property. If present, it would not be directly impacted by the proposed Project development. The lower reach of Ledgewood Creek on the Barnfield property and a slough that runs through the Barnfield and Tooby property are hydrologically connected to Suisun slough and may provide suitable spawning habitat. No local records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Fish			
Sacramento Splittail (<i>Pogonichthys macrolepidotus</i>)	FSC/CSC	Adults migrate upstream from brackish areas to spawn in freshwater areas subject to flooding, such as lower reaches of rivers, dead end sloughs, and in larger sloughs such as Montezuma Slough. Within Solano County, splittail are year-round residents of Suisun Marsh, concentrating in the dead-end sloughs with small streams feeding into them.	May occur. There is the potential for this species to occur on the Barnfield and Tooby property. If present, it would not be directly impacted by the proposed Project development. The lower reach of Ledgewood Creek on the Barnfield property and Peytonia slough on the Barnfield and Tooby property are hydrologically connected to Suisun slough and may provide suitable spawning habitat. No records within 5 mi, known from Spring Branch, Goodyear Slough, Denverton Slough and near Ryer Island.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Amphibians			
California Tiger Salamander (<i>Ambystoma californiense</i>)	FT/CSC	Breeds in vernal pools/seasonal stock ponds; occurs in the Central Coast, Delta, and mid Central Valley.	May occur. Records to the northeast at Jepson Prairie. Suitable breeding habitat as well as grassland with multiple burrows occur at this site. May Consulting Services conducted dip-net surveys concurrently with surveys for large branchiopods. Dip-net surveys included checking for larvae and egg masses. Surveys corresponded with the rainy period when breeding CTS are most likely observed migrating to breeding sites. Survey results were negative. In addition, none of the pools on the Barnfield property appeared to provide high potential habitat as pools were fairly shallow, with no murky water favored by this species. However, these surveys were not conducted according to USFWS protocol.
Western Spadefoot Toad (<i>Spea (=Scaphiopus) hammondi</i>)	FSC/CSC	Breeds in vernal pools/seasonal stock ponds in the Central Valley and southern coast.	Not likely to occur. No CNDDDB records in vicinity of the property. Nearest recorded occurrences more than twenty miles to the east and south. In addition, May Consulting Services conducted dip-net surveys for this species concurrently with surveys for large branchiopods. Dip-net surveys included checking for larvae and egg masses. Dip-net surveys also corresponded with the rainy period when breeding toads are most likely to be observed migrating to breeding sites. Survey results were negative.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Amphibians			
California Red-legged Frog <i>(Rana aurora draytonii)</i>	FT/CSC	Inhabits freshwater creeks and ponds in the scattered areas along the Coast Ranges from northern California down to northern Baja.	Not likely to occur. There are known occurrences several miles to the northwest near the hills west of Green Valley and near Lake Berryessa. Between the Project Site and their known range there is extensive development and freeways would prevent them from moving west to east. Therefore, the study site is considered to be outside of the current range of this species. Additionally, non-tidal wetlands are seasonal and do not provide the perennial waters typically required for California Red-legged Frog. However, they are known to occur in brackish channels. The site is not within Draft HCP Conservation Area
Foothill Yellow-legged Frog <i>(Rana boylei)</i>	FSC/CSC	Partly shaded shallow streams with riffles, with a rocky substrate in a variety of habitats; needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Frogs are usually found on stream banks, especially near riffles. They do not leave the immediate vicinity of their stream or pool.	Not likely to occur. No suitable habitat. Known from tributaries of Ledgewood Creek upstream of the site. Extensive development and alteration of channels prevents likely dispersal to the site. The portion of Ledgewood Creek traversing the Barnfield property is characterized as perennial brackish marsh. Brackish marsh habitat is not considered suitable habitat for Foothill Yellow-legged Frog.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Reptiles			
Western Pond Turtle <i>Emys (=Clemmys) marmorata</i>	FSC/CSC	Inhabits freshwater ponds and sluggish streams; occurs from WA to Baja, mostly west of the Sierra crest.	May occur. Known from the vicinity by CNDDDB records closer to Suisun Marsh within 3 mi downstream of the site. Unlikely to occur due to a lack of perennial freshwater. May occur in brackish channels.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Reptiles			
California Horned Lizard <i>(Phrynosoma coronatum frontale)</i>	FSC/CSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as pine-cypress, juniper and annual grass habitats. Basks on low boulders or rocks. Periods of inactivity and hibernation spent burrowed in soil under logs or rocks, in mammal burrows or in crevices.	Not likely to occur. No suitable habitat present. The portion of Ledgewood Creek traversing the Barnfield property is characterized as perennial brackish marsh. Brackish marsh habitat is not considered suitable habitat for California horned lizard. No local records.
Silvery Legless Lizard <i>(Anniella pulchra pulchra)</i>	FSC/CSC	Found primarily in areas with sandy or loose organic soils or where there is extensive leaf litter.	Not likely to occur. Suitable habitat of sandy or loose organic soil with leaf litter is not present. No local records.
Alameda Whipsnake <i>(Masticophis lateralis euryxanthus)</i>	FT/CT	Typically found in chaparral. Home ranges of this species are centered on shrub communities, but they venture up to 500 feet into adjacent habitats, including grassland, oak savanna, and occasionally oak-bay woodland. Rock outcrops are an important feature of habitat because they provide retreat opportunities for whipsnakes and promote lizard populations, an important prey item.	Not likely to occur. Chaparral habitat is not present. Outside known range. No records within 5 mi, known from Benecia Quad (location information suppressed).
Giant Garter Snake <i>(Thamnophis gigas)</i>	FT/CT	Uses marshes, sloughs, small lakes, low gradient streams, ponds, agricultural wetlands (irrigation and drainage channels) and adjacent uplands.	Not likely to occur. Not known to occur in Project Area. Outside known range. The site is not within Draft HCP Conservation Area. No local records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
California Brown Pelican (<i>Pelecanus occidentalis californicus</i>) (nesting colony and communal roosts)	FE/CE (CFP)	Found in estuarine, marine, subtidal, and marine pelagic waters along California coast. Nest is a small mound of sticks or debris on rocky or low brushy slopes of undisturbed islands, usually on ground, less often bushes.	Absent. No suitable habitat for a nesting colony or communal roost, or foraging habitat. No local records.
Great Egret (rookery site) (<i>Ardea alba</i>)	--/CSC	Forms rookeries in large tree stands; occurs throughout California and elsewhere.	Not likely to occur (Nesting). Rookeries unlikely on the study site due to low numbers of suitable trees, none observed or known from brackish channels. Likely forages at the site.
Great Blue Heron (rookery site) (<i>Ardea herodias</i>)	--/CSC	Forms rookeries in large tree stands; occurs throughout California and elsewhere.	Not likely to occur (Nesting). Rookeries unlikely on the study site due to low numbers of suitable trees, none observed or known from brackish channels or on power towers. Likely forages at the site.
American Bittern (<i>Botaurus lentiginosus</i>)	FSC/--	Usually hides, nests and roosts solitarily amidst tall, dense, emergent vegetation on ground or near ground on log or stump. Feeds in tall, fresh or saline emergent wetlands; less often in adjacent shallow water of lakes, backwaters of rivers or estuaries, and occasionally along adjacent shores.	Present. American Bittern was observed in the northeast portion of the site during the nesting season. This portion of the site provides potentially suitable nesting habitat.
White-faced Ibis (<i>Plegadis chihi</i>) (rookery site)	FSC/CSC	Does not breed regularly in California. Winters mainly in San Joaquin Valley and Imperial Valley, but recorded widely as transient. Feeds in fresh emergent wetlands, shallow lacustrine waters and muddy ground of wet meadows or flooded pastures.	Not likely to occur (Nesting). Rookeries unlikely on the study site due to low numbers of suitable trees, none observed or known from brackish channels. Likely forages at the site.
Cooper's Hawk (<i>Accipiter cooperii</i>) (nesting)	CSC	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms, on river floodplains; also nests in oaks.	Present. An adult detected by Foothill Associates on February 6, 2006. Limited potential nesting area at the Project Site, mainly in small riparian area in Planning Area 2.
Sharp-shinned Hawk (<i>Accipiter striatus</i>) (nesting)	CSC	Forages in wooded areas, including suburban areas and riparian woodland.	Not likely to occur (Nesting). Suitable habitat for foraging and roosting in winter, site is not within known nesting range.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
Ferruginous Hawk (<i>Buteo reglais</i>) (wintering)	FSC/CSC	Inhabits open country. Winters in small numbers along California coast and inland valleys.	May occur. The species may occasionally use the site as a winter foraging habitat.
Swainson's Hawk (nesting) (<i>Buteo swainsoni</i>)	--/CT	Nests in trees and riparian stands; summer migrant to Central Valley.	Not likely to occur (Nesting). CNDDDB nest records primarily indicate this species nests several miles north and northeast of the study site. One nest record occurs 3.4 miles west/southwest of the Project Area. Nests unlikely on the property due to a lack of suitable trees. Use of the site for foraging is possible. The site is not within Draft HCP Conservation Area
Northern Harrier (<i>Circus cyaneus</i>) (nesting)	--/CSC	Forages and nests in grasslands, marshes, and agricultural fields; occurs throughout California, concentrated in the Central Valley and coastal valleys.	Present (Nesting possible). Observed onsite during the nesting season by HBG. Vollmar Consulting and Foothill Associates also observed individuals foraging over the perennial marsh and grassland habitats on the Barnfield and Gentry, and Tooby sites. High potential for nest sites on the Barnfield property; moderate potential on the Tooby property in perennial marsh habitat.
White-tailed Kite (<i>Elanus leucurus</i>) (nesting)	FSC/ (CFP)	Nests in dense oaks, willows, other trees; occurs in the Central Valley and adjacent low foothills.	Present (Nesting). Observed during surveys. Limited suitable nesting habitat at the site.
Bald Eagle (<i>Haliaeetus leucocephalus</i>) (nesting and wintering)	FT/CE CFP (FPD)	In winter, maybe be found throughout most of California at lakes, reservoirs, rivers and some rangelands and coastal wetlands. California's breeding habitats are mainly located in mountains and foothill forests near permanent water sources.	Not likely to occur. No suitable habitat present, no local records. Transients possible.
American Peregrine Falcon (<i>Falco peregrinus anatum</i>)	FD, CE, CFP	Nests on cliffs, but will use ledges on human-made structures such as buildings and bridges. Resident nesting population augmented in winter by migratory population. Forages in areas of high bird concentrations in open fields and marshes.	Not likely to occur. Suitable foraging habitat and prey species. No suitable nesting site on or adjacent to the Project Site.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
California Black Rail (<i>Laterallus jamaicensis coturniculus</i>)	FSC/CT (CFP)	Inhabits tidal salt and brackish marsh bordering sloughs and large bays.	May occur. Moderate potential on Tooby property in perennial marsh. Likely on Barnfield property. CNDDDB records for sloughs along edge of Suisun Bay. The perennial marsh habitat on the eastern portion of the Tooby property provides low to medium quality foraging and nesting habitat for the species. On the Barnfield property, limited vocalization surveys were conducted in March, June and July 2000 by Vollmar Consulting. Surveys were conducted within perennial brackish marsh along larger slough channels in the southern portion of the property. Though not detected during informal surveys, the species is likely to occur along slough channels with dense perennial marsh habitat in the southern portion of the property. May use limited suitable habitat on elsewhere on the property as high tide refuge and occasional foraging habitat.
California Clapper Rail (<i>Rallus longirostris obsoletus</i>)	FE/CE (CFP)	Inhabits tidal salt marsh along larger sloughs and bays in the SF Bay and lower Delta.	May occur. CNDDDB records from within 2 mi south and east of the property in perennial marsh along the edge of Suisun Bay. Generally occurs closer to edge of Suisun Bay. May occur in suitable habitat on the Barnfield property. May use limited suitable habitat on elsewhere on the property as high tide refuge.
Greater Sandhill Crane (<i>Grus axillarie tabida</i>) (nesting and wintering)	--/CT (CFP)	Breeds in NE California. In summer, occurs in or near wet meadow, shallow lacustrine and fresh emergent wetland habitats. Winters primarily in the Sacramento and San Joaquin valleys from Tehama County south to Kern County, where it frequents grassland habitats, moist croplands, with rice or corn stubble, and open, emergent wetlands.	Not likely to occur. No suitable habitat present. No local records

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
Western Snowy Plover (<i>Charadrius alexandrinus nivosus</i>) (nesting) (coastal population)	FT/CSC	In the San Francisco Estuary, salt pond levees and exposed salt pond beds (playa-like habitat), San Francisco Bay; rare in San Pablo Bay. Typical coastal habitat is on wide, sandy beaches with scattered debris.	Not likely to occur. Appropriate nesting habitat is not present on the study site. No local records.
Mountain Plover (<i>Charadrius montanus</i>) (wintering)	FSC/CSC	Winters in shortgrass plains, plowed fields, arid plains, alkali sink scrub, valley sink scrub, alkali playa, burned and annual grasslands, and open sagebrush areas that are barren or have sparse vegetation. Wintering plovers found in variable elevations but generally in valley bottoms below 300 meters.	Not likely to occur. Although Mountain Plovers winter in Solano County (e.g. area around Flannery and Robinson Roads) this species has not been reported as wintering in Project Area. Habitat conditions at the site are not likely to support wintering populations of Mountain Plover. Not reported from local area.
Marbled Godwit (<i>Limosa fedoa</i>)	FSC/--	A common to abundant migrant and winter visitor from mid-August to early May in estuarine habitats the length of the state. Small numbers of non-breeders remain on the coast through the summer. Occurs in estuarine mudflats, sandy beaches, open shores, saline emergent wetlands, and adjacent wet upland fields.	Not likely to occur. Site is outside of nesting range for the species. Wintering populations are more common coastally in the San Francisco Bay Region. May occur in migration and winter at wet and ponded areas.
Whimbrel (<i>Numenius phaeopus</i>)	FSC/--	Fairly common to abundant as a spring migrant. Less common, but still numerous in fall migration. Absent, or very rare, in winter on the northern California coast and in the interior part of the state. Small numbers of non-breeders occur through the summer. Forages in wet meadow and pasture habitats adjacent to the Coast.	Not likely to occur. Site is outside of nesting range for the species. Wintering populations are more common coastally in the San Francisco Bay Region. May occur in migration and winter at wet and ponded areas.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
Red Knot (<i>Calendris canutus</i>)	FSC/--	Does not breed in California. Uncommon to common during fall and spring migrations along coastal estuarine habitats. Prefers estuarine sand or mudflats. In winter, rare along California coast except at San Francisco and San Diego bays.	Not likely to occur. Site is outside of the breeding range for the species. Wintering populations are more common coastally in the San Francisco Bay Region. May occur in migration and winter at wet and ponded areas.
Long-billed Curlew (<i>Numenius americanus</i>) (nesting)	FSC/CSC	Breeds in northeastern California. Uncommon to locally very common as a winter visitant along most of the California coast and inland. Preferred winter habitats include large coastal estuaries, upland herbaceous areas, and croplands. Small numbers of nonbreeders remain on coast and in the Central Valley.	Present (no nesting). The Project Area is not within the nesting range of the species. Observed in February 2006 on Barnfield Property and by HBG on June 11, 2005. The latter individuals were likely non-breeders lingering through the summer months.
Black Skimmer (<i>Rynchops niger</i>) (nesting colony)	FSC/CSC	Few nesting records from central CA, most in south SF Bay. Nests primarily on gravel bars, low islets, and sandy beaches in unvegetated sites. Requires shallow, calm water for foraging, and sand bars, beaches or ditches for roosting and nesting.	Not likely to occur. No suitable for a nesting colony of this species. No local records of nesting.
California Least Tern (<i>Sterna antillarum browni</i>) (nesting colony)	FE/CE (CFP)	Nests on coastal, sandy, open areas usually around bays, estuaries, and creek and river mouths. Forages in shallow estuaries and lagoons, diving head first into the water after a wide variety of small fish.	Not likely to occur. No suitable for a nesting colony of this species. No local records of nesting. Nearest colonies in Pittsburg and Port Chicago Marsh.
Short-eared Owl (nest site) (<i>Asio flammeus</i>)	--/CSC	Forages and nests in perennial marsh and grassland habitat; occurs in the Central Valley, coast, and east Sierra regions.	May occur. Moderate potential to occur. CNDDDB nest site records at Grizzly Island Wildlife Area. This species was not observed at the site, however, the perennial brackish marsh on the eastern portion of the study area provides potential foraging and nesting habitat for the species. The annual grassland and wetland habitats on the rest of the site generally not considered suitable habitat.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
Western Burrowing Owl (<i>Athene cunicularia hypugea</i>) (burrow sites)	--/CSC	Nests in mammal burrows, rock cavities in grassland and scrub; occurs throughout much of mid and lower California.	Present. Two adults and an active burrow were detected by Foothill Associates on February 6, 2006 on the Gilbert Property. Numerous CNDDDB records in vicinity including one just southwest of the property next to the Cordelia Road. Many potential nesting burrows on the property along levee banks and other raised areas that do not become saturated during the winter and spring as are found adjacent to Planning Area 3 and elsewhere on site.
Vaux's Swift (<i>Chaetura vauxi</i>) (nesting)	FSC/CSC	A summer resident of northern California. Breeds fairly commonly in the Coast Ranges from Sonoma County, and very locally south to Santa Cruz County; in the Sierra Nevada; and possibly in the Cascade Range. Prefers redwood and Douglas-fir habitats with nest sites in large hollow trees and snags.	Not likely to occur (Nesting). Suitable nesting habitat is not present. Likely observed overhead as a transient during migration. No stopover roosting habitat.
Black Swift (<i>Cypseloides niger</i>) (nesting)	FSC/CSC	Nests in moist crevice or cave on sea cliff above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons. Forages widely over many habitats. In migration, rare and irregular outside the breeding range. Does not winter in California.	Not likely to occur (Nesting). Suitable nesting habitat is not present. In rare cases, may be observed overhead as a transient during migration. No stopover roosting habitat.
Rufous Hummingbird (<i>Selasphorus rufus</i>) (nesting)	FSC/--	A common migrant and uncommon summer resident in California. Found in a wide variety of habitats that provide nectar-producing flowers; uses valley foothill hardwood valley foothill hardwood conifer, riparian, and various chaparral habitats in both northward and southward migration; montane riparian, aspen and high mountain meadows used in southward migration.	Not likely to occur (Nesting). No suitable nesting habitat. May pass through the site on migration.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
Allen's Hummingbird <i>(Selasphorus sasin)</i> (nesting)	FSC/--	A common summer resident and migrant along most of the California coast. Breeders are most common in coastal scrub, valley foothill hardwood, and valley foothill riparian habitats, but also are common in closed-cone pine-cypress, urban, and redwood habitats. Occurs in a variety of woodland and scrub habitats as a migrant.	Not likely to occur (Nesting). Suitable nesting habitats for this species are not found at the site. May pass through the site on migration.
Lewis' Woodpecker <i>(Melanerpes lewis)</i> (nesting)	FSC/--	Requires open habitats with scattered trees and snags with cavities. Cover provided by cavities and foliage of trees and shrubs. Usually nests in Sycamore, Cottonwood, Oak or Conifer.	Not likely to occur (Nesting). No suitable nesting habitat. No local records.
Nuttall's Woodpecker <i>(Picoides nuttallii)</i>	SLC	A common permanent resident of low-elevation riparian deciduous and oak habitats. Nests located mostly in riparian habitat in dead (occasionally live) trunk or limb of willow, sycamore, cottonwood, or alder, rarely in oaks.	May occur. Suitable trees for nesting are not found at the site. The species likely nests in the general area and the species could use limited riparian habitats at the site for foraging.
Olive-sided Flycatcher <i>(Contopus cooperi)</i> (nesting)	FSC/--	Uncommon to common, summer resident in a wide variety of forest and woodland habitats below 2800 meters throughout California. Requires large, tall trees, usually conifers, for nesting and roosting sites.	Not likely to occur (Nesting). Appropriate nesting habitat is not present.
Little Willow Flycatcher <i>(Empidonax traillii brewsteri)</i> (nesting)	FSC	Nests in shrubby riparian vegetation with some surface water or saturated soil conditions.	Not likely to occur (Nesting). Appropriate nesting habitat is not present. No local breeding records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
Loggerhead Shrike <i>(Lanius ludovicianus)</i> (nesting)	FSC/CSC	Habitat includes open areas such as desert, grasslands, and savannah. Nests in thickly foliated trees or tall shrubs. Forages in open habitat which contains trees, fence posts, utility poles and other perches.	Present. Observed by HBG in June 2005. Biologists from Vollmar Consulting also observed a single loggerhead shrike perched on a fence line along the western edge of the Tooby property in May 2000. Shrikes probably use the site for foraging and perching. It is unlikely this species nests onsite due to a general lack of suitable habitat, but some nest sites are available in limited riparian habitat in Planning Area 2 and the Gilbert Property, as well as shrubs adjacent to the site.
Bank Swallow <i>(Riparia riparia)</i> (nesting)	--/ST	A migrant in riparian and other lowland habitats west of the deserts. Uncommon and local summer resident, most of the breeding population in California along banks of Central Valley streams. Feeds over open riparian areas, brushland, grassland and cropland.	Not likely to occur (Nesting). Appropriate nesting habitat is not present on the site.
Oak Titmouse <i>(Baeolophus inornatus)</i> (nesting)	FSC/SLC (nesting)	Oak and pine-oak woodland, chaparral and oak-riparian communities.	Not likely to occur (Nesting). Suitable nesting habitat is not present on the site.
California Thrasher <i>(Toxostoma redivivum)</i>	FSC/--	Common resident of foothills and lowlands in Cismontane California. Locally uses dense cover of chaparral or riparian thickets	Not likely to occur. No suitable habitat present.
Saltmarsh Common Yellowthroat <i>(Geothlypis trichas sinuosa)</i>	FSC/CSC	Forages and nests in dense fresh and saltwater marsh habitat in the San Francisco Bay and lower Delta.	Present. Observed in dense perennial brackish marsh on the Barnfield property by HBG in June 2005 Also observed in the same area by Vollmar Consulting. Observed in brackish channels by Foothill Associates in February 2006. Probably also occasionally present in dense perennial marsh habitat along the eastern edge of the Tooby property. May nest in suitable emergent wetland vegetation.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Birds			
Suisun Song Sparrow (<i>Melospiza melodia axillaries</i>)	FSC/CSC	Forages and nests in dense marsh and scrub habitat along the margins of Suisun Bay.	Present. Observed by HBG in June 2005 foraging in the dense perennial marsh habitat on the Tooby and Barnfield properties. CNDDDB records south of the property along edge of Suisun Bay. Suisun song sparrows were also observed by biologists from Vollmar Consulting in April/May 2000. May also use the site for nesting.
San Pablo Song Sparrow (<i>Melospiza melodia samuelis</i>)	FSC/CSC	Tidal, brackish or salt marshes, San Pablo Bay.	Not likely to occur. Site is outside the limited range of this species. Historic (1901) location in Selby.
Tricolored Blackbird (<i>Agelaius tricolor</i>) (nesting colony)	FSC/CSC	Nests in cattails, riparian scrub, and other dense marsh vegetation; occurs in SF Bay, Delta, and Central Valley basin.	May occur. Historic CNDDDB records several miles east of the study site. This species was not observed, however, there is a moderate potential to occur in dense perennial marsh on the property and forage with large blackbird flocks in grassland throughout the year, particularly in winter.
Lawrence's Goldfinch (<i>Carduelis lawrencei</i>) (nesting)	FSC/--	Breeds in open oak or other arid woodland and chaparral, near water.	Not likely to occur (Nesting). Suitable not present. No local records

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Mammals			
Suisun Shrew (<i>Sorex ornatus sinuosus</i>)	FSC/CSC	Inhabits tidal marshes along the northern shores of San Pablo and Suisun Bays.	May occur. CNDDDB record immediately east of the Barnfield property. Likely to occur within perennial marsh on Tooby and Barnfield properties.
Pacific Western Big-eared Bat (<i>Corynorhinus (=Plecotus) townsendii townsendii</i>)	FSC/CSC	Found in desert scrub and coniferous forests. Roost in caves or abandoned mines and occasionally are found to roost in buildings.	Not likely to occur. No suitable roost/maternity habitat. No local records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Mammals			
Small-footed Myotis Bat (<i>Myotis ciliolabrum</i>)	FSC/--	Occurs in a wide variety of habitats, primarily in relatively arid wooded and brushy uplands near water. Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges and under bark. Maternity colonies of females and young are found in buildings, caves and mines. Prefers open stands in forests and woodlands as well as brushy habitats.	Not likely to occur. No suitable roost/maternity habitat. No local records. May forage over site.
Long-Eared Myotis Bat (<i>Myotis evotis</i>)	FSC/--	Widespread in California, but uncommon in most of its range. This species has been found in nearly all brush, woodland and forest habitats, from sea level to at least 2700 meters, but coniferous woodlands and forests seem to be preferred. Roosts in buildings, crevices, spaces under bark and snags. Caves primarily used as night roosts. Nursery colonies found in buildings, crevices, snags and behind bark.	Not likely to occur. No suitable roost/maternity habitat. No local records.
Fringed Myotis Bat (<i>Myotis thysanodes</i>)	FSC/--	Occurs in a wide variety of habitats. Optimal habitats are pinyon-juniper, valley foothill hardwood, and hardwood conifer generally at 1300-2200m. Roosts in caves, mines, buildings and crevices. Maternity colonies of up to 200 individuals are located in caves, mines, buildings or crevices.	Not likely to occur. No suitable roost/maternity habitat. No local records.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Mammals			
Long-legged Myotis Bat (<i>Myotis volans</i>)	FSC/--	Most common in woodland and forest habitats above 1200m. Also forages in chaparral, Coastal scrub and in early successional slopes of woodlands and forests. Roosts in rock crevices, buildings, under tree bark, in snags, mines, and caves. Forms nursery colonies numbering hundreds of individuals, usually under bark or in hollow trees, but occasionally in crevices or buildings.	Not likely to occur. No suitable roost/maternity habitat. No local records.
Yuma Myotis Bat (<i>Myotis yumanensis</i>)	FSC/CSC	Closely associated with water; always found near lakes, creeks or ponds. Skims over water to forage for flying insects. By day, roosts under building siding or shingles. Nursery colonies use caves, mines, buildings and under bridges.	Not likely to occur. No suitable roost/maternity habitat. No local records. May forage over the site.
Greater Western Mastiff Bat (<i>Eumops perotis californicus</i>)	FSC/CSC	Uncommon resident in Southeastern San Joaquin Valley and Coastal Ranges from Monterey County southward through southern California, from the coast eastward to the Colorado Desert. Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban. Crevices in cliff faces, high buildings, trees or tunnels are required for roosting.	Not likely to occur. No suitable roost/maternity habitat. No local records.
San Joaquin Pocket Mouse (<i>Perognathus inornatus</i>)	FSC/CSC	Occurs in dry, open grasslands or scrub areas on fine-textured soils between 350 and 600 meters in the Central and Salinas Valleys occurs in shrubby ridge tops and hillsides, characterized as being open, sandy areas with grasses and forbs. Digs burrows for cover.	Not likely to occur. No suitable roost/maternity habitat. No records within 5 mi.

SCIENTIFIC NAME	STATUS ²	HABITAT/RANGE	OCCURRENCE
Mammals			
Salt Marsh Harvest Mouse <i>(Reithrodontomys raviventris)</i>	FE/CE (CFP)	Inhabits pickleweed salt marsh flats in the SF Bay and lower Delta.	Present. CNDDDB records an occurrence of the species in the perennial marsh habitat on eastern edge of the Tooby property. This area supports localized homogenous stands of pickleweed. Presumed to be still present. There are also a number of small pickleweed stands on the Barnfield property near the railroad tracks. Given the close proximity to the known location, it is likely the species occurs on the Barnfield property, as well.

¹ Sources of information included CDFG's California Natural Diversity Data Base for the Fairfield North, Fairfield South, Denverton and Elmira 7.5 minute USGS quadrangles (CNDDDB 2006), special-status species lists and technical reports prepared by Vollmar Consulting for other projects in the vicinity, United States Fish and Wildlife Service (USFWS) lists of federal endangered and threatened species that occur in or may be affected by projects in Solano County or in the Fairfield South USGS 7.5 minute Quadrangle.

² Status Codes:

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Proposed Endangered	CR	California Rare
FPT	Federally Proposed Threatened	CFP	California Fully Protected
FSC	Federal Species of Concern (most are former C2 Candidates and some former C1)	CSC	California Species of Special Concern
FD	Federal Delisted	SLC	Species of Local Concern – other species of concern to the Sacramento Fish and Wildlife office

³ The state listing is limited to Coho south of San Francisco Bay.

⁴ The Federal listing is limited to naturally spawning populations in streams between Punta Gorda, Humboldt County and the San Lorenzo River, Santa Cruz County.

⁵ Federal listing includes all runs in coastal basins from the Russian River in Sonoma County, south to Soquel Creek in Santa Cruz County, inclusive. Includes the San Francisco and San Pablo Bay basins, but excludes Sacramento-San Joaquin River basins.

⁶ Federal listing includes all runs in the Sacramento and San Joaquin Rivers and their tributaries.

⁷ Refers to population spawning in the Sacramento and San Joaquin Rivers and their tributaries.

⁸ Federal listing refers to Central Valley Spring-run ESU. It includes population spawning in the Sacramento River and its tributaries.

Based on the analysis provided in **Table 4.8-7**, the following species were eliminated from further consideration because 1) there is no suitable habitat at the Project Site; 2) the Project Site is outside of their known range, or 3) accepted protocol-level surveys failed to detect the species at the Project Site. These species include the following:

Ricksecker's Water Scavenger Beetle (*Hydrochara rickseckeri*)
Curved-Foot Hygrotus Diving Beetle (*Hygrotus curvipes*)
California Brown Pelican (*Pelecanus occidentalis californicus*)

Based on the analysis provided in **Table 4.8-7**, the following species were eliminated from further consideration because 1) there are no local records in similar habitat; 2) they are not likely to occur at the site due to the poor or marginal quality of habitat, presence of non-native predators, recurring mowing or discing, 3) migrant status in the area, or 4) while they may occasionally use the site for foraging, and are not likely to be resident or reproduce at the site due to a lack of appropriate habitat or the site being outside of their known breeding range. These species include:

- Longhorn Fairy Shrimp (*Branchinecta longiantenna*)
- Midvalley Fairy Shrimp (*Branchinecta mesovallensis*)
- California Freshwater Shrimp (*Syncaris pacifica*)
- San Francisco Lacewing (*Nothochrysa californica*)
- Sacramento Anthicid Beetle (*Anthicus sacramento*)
- Antioch Dunes Anthicid Beetle (*Anthicus antiochensis*)
- San Joaquin Dune Beetle (*Coelus gracilis*)
- Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)
- Delta Green Ground Beetle (*Elaphrus viridis*)
- Monarch Butterfly (*Danaus plexippus*) (wintering sites)
- Callippe Silverspot Butterfly (*Speyeria callippe callippe*)
- River Lamprey (*Lampetra ayresii*)
- Pacific Lamprey (*Lampetra tridentata*)
- Green Sturgeon (*Acipenser medirostris*)
- Coho Salmon-Central California Coast ESU (*Oncorhynchus kisutch*)
- Western Spadefoot Toad (*Spea (=Scaphiopus) hammondi*)
- California Red-legged Frog (*Rana aurora draytonii*)
- Foothill Yellow-legged Frog (*Rana boylei*)
- California Horned Lizard (*Phrynosoma coronatum frontale*)
- Silvery Legless Lizard (*Anniella pulchra pulchra*)
- Alameda Whipsnake (*Masticophis lateralis euryxanthus*)
- Giant Garter Snake (*Thamnophis gigas*)
- Great Egret (*Ardea alba*) (rookery site)
- Great Blue Heron (*Ardea herodias*) (rookery site)
- White-faced Ibis (*Plegadis chihi*) (rookery site)
- Sharp-shinned Hawk (*Accipiter striatus*) (nesting)
- Swainson's Hawk (*Buteo swainsoni*) (nesting)

- Bald Eagle (*Haliaeetus leucocephalus*) (nesting and wintering)
- American Peregrine Falcon (*Falco peregrinus anatum*)
- Greater Sandhill Crane (*Grus axillarie tabida*) (nesting and wintering)
- Western Snowy Plover (*Charadrius alexandrinus nivosus*) (nesting) (coastal population)
- Mountain Plover (*Charadrius montanus*) (wintering)
- Marbled Godwit (*Limosa fedoa*) (nesting)
- Whimbrel (*Numenius phaeopus*) (nesting)
- Red Knot (*Calendris canutus*) (nesting)
- Long-billed Curlew (*Numenius americanus*) (nesting)
- Black Skimmer (*Rynchops niger*) (nesting colony)
- California Least Tern (*Sterna antillarum browni*) (nesting colony)
- Vaux's Swift (*Chaetura vauxi*) (nesting)
- Black Swift (*Cypseloides niger*) (nesting)
- Rufous Hummingbird (*Selasphorus rufus*) (nesting)
- Allen's Hummingbird (*Selasphorus sasin*) (nesting)
- Lewis' Woodpecker (*Melanerpes lewis*) (nesting)
- Olive-sided Flycatcher (*Contopus cooperi*) (nesting)
- Little Willow Flycatcher (*Empidonax traillii brewsteri*) (nesting)
- Bank Swallow (*Riparia riparia*) (nesting)
- Oak Titmouse (*Baeolophus inornatus*) (nesting)
- California Thrasher (*Toxostoma redivivum*)
- San Pablo Song Sparrow (*Melospiza melodia samuelis*)
- Lawrence's Goldfinch (*Carduelis lawrencei*) (nesting)
- Pacific Western Big-eared Bat (*Corynorhinus (=Plecotus) townsendii townsendii*)
- Small-footed Myotis Bat (*Myotis ciliolabrum*)
- Long-Eared Myotis Bat (*Myotis evotis*)
- Fringed Myotis Bat (*Myotis thysanodes*)
- Long-legged Myotis Bat (*Myotis volans*)
- Yuma Myotis Bat (*Myotis yumanensis*)
- Greater Western Mastiff Bat (*Eumops perotis californicus*)
- San Joaquin Pocket Mouse (*Perognathus inornatus*)

The following species was eliminated from further consideration because while it is included in special animals' lists (CDFG 2005), there is no special regulatory protection provided for this species. Protection of nesting habitat will be discussed in the section on *Migratory and Resident Nesting Birds*, below.

- Nuttall's Woodpecker (*Picoides nuttallii*)

Based on field observations and literature review specific to the special-status animals listed in **Table 4.8-7**, the potential for occurrence has been determined for each species. These species will be discussed further below. Species that are present or may occur in the Study Corridor include:

- Conservancy Fairy Shrimp (*Branchinecta conservatio*)
- Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)
- Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)
- California Linderiella (*Linderiella occidentalis*)
- Steelhead-Central California Coastal ESU (*Oncorhynchus mykiss*)
- Steelhead-Central Valley ESU (*Oncorhynchus mykiss*).
- Chinook Salmon-Central Valley fall/late fall-run (*Oncorhynchus tshawytscha*)
- Chinook Salmon Central Valley spring-run (*Oncorhynchus tshawytscha*).
- Chinook Salmon Winter-Run Sacramento River (*Oncorhynchus tshawytscha*)
- Delta Smelt (*Hypomesus transpacificus*)
- Longfin Smelt (*Spirinchus thaleichthys*)
- Sacramento Splittail (*Pogonichthys macrolepidotus*)
- California Tiger Salamander (*Abystoma californiense*)
- Western Pond Turtle (*Emys*(=*Clemmy*) *marmorata*)
- American Bittern (*Botaurus lentiginosus*)
- Cooper's Hawk (*Accipter cooperii*) (nesting)
- Ferruginous Hawk (*Buteo reglais*) (wintering)
- Northern Harrier (*Circus cyaneus*) (nesting)
- White-tailed Kite (*Elanus leucurus*) (nesting)
- California Black Rail (*Laterallus jamaicensis coturniculus*)
- California Clapper Rail (*Rallus longirostris obsoletus*)
- Short-eared Owl (*Asio flammeus*) (nest site)
- Western Burrowing Owl (*Athene cunicularia hypugea*) (burrow sites)
- Loggerhead Shrike (*Lanius ludovicianus*) (nesting)
- Saltmarsh Common Yellowthroat (*Geothlypis trichas sinuosa*)
- Suisun Song Sparrow (*Melospiza melodia axillaries*)
- Tricolored Blackbird (*Agelaius tricolor*) (nesting colony)
- Suisun Shrew (*Sorex ornatus sinuosus*)
- Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*)

Threatened and Endangered Species Present or that May Occur at the Project Site

Conservancy Fairy Shrimp (Branchinecta conservatio)

The Conservancy fairy shrimp (*Branchinecta conservatio*) was listed as federally endangered in September 1994 (59 FR 48153). The Conservancy fairy shrimp is a small crustacean in the Branchinectidae family. Conservancy fairy shrimp are believed to have occurred historically throughout the Central Valley of California. This species inhabits lake-sized vernal pools (often called playa pools) that have turbid water. The pools at Jepson Prairie and Vina Plains inhabited by the Conservancy fairy shrimp have neutral pH, very low conductivity, total dissolved solids and alkalinity. Fairy Shrimp are not known to occur in permanent bodies of water, and are dependent upon seasonal

fluctuations in their habitat, such as the absence or presence of water during specific times of the year.

Conservancy fairy shrimp are known primarily from the Jepson Prairie area within Solano County, including the Jepson Prairie Preserve and the potential Muzzy and Gridley mitigation banks. Additional records of the Conservancy fairy shrimp are from the large vernal pools lying along the base of the Potrero hills and one location near Collinsville. Suitable large pool habitat is also present in northeast Fairfield, north of Travis Air Force Base although the Conservancy fairy shrimp has yet to be documented there. (Draft Solano Multispecies Habitat Conservation Plan and Natural Community Conservation Plan, Appendix B, 2005). The project site is within an area designated as a, "High Value Conservation Area" for vernal pools by the *Draft Solano Multispecies Habitat Conservation Plan* (LSA Associates 2005).

One Wet and two dry season sampling were conducted for special status vernal pool crustaceans (vernal pool tadpole shrimp, vernal pool fairy shrimp, and Conservancy fairy shrimp). Complete methods and details can be found in these reports and summarized in Huffman-Broadway (2006). The wet season survey was conducted in 2000 and the dry season surveys were conducted in the late fall of 2002 and late fall of 2005. The results of all three surveys were negative. The USFWS has indicated that protocol surveys must be conducted in two consecutive years and results are valid for five years. The surveys conducted in 2000 and 2002 were not during two consecutive years and it has been more than five years since the 2000 wet season surveys. The dry-season survey of 2005 would require a wet-season survey in 2006 in order to be considered a complete survey in accordance USFWS protocol. If present, project activities could impact this species.

Vernal Pool Fairy Shrimp (Branchinecta lynchi)

The vernal pool fairy shrimp (*Branchinecta lynchi*) is a small aquatic crustacean that ranges in size from ½ to one inch long. It is federally listed as a threatened species. Fairy Shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus. 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. It tends to occur in smaller pools (less than 0.05-acre) that are most commonly found in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. It has also been collected in large vernal pools (e.g. 25 acres). Vernal pool fairy shrimp have been collected from early December to early May (USFWS 2005).

Vernal pool fairy shrimp populations are presently known from 32 localities in California, extending from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixel in Tulare county, and along the central coast range from northern Solano county to Pinnacles national Monument in San Benito County. Four other disjunct populations are located near Soda Lake in San Luis Obispo county, in the mountain grasslands of northern Santa Barbara county, on the Santa Rosa Plateau in Riverside County, and near Rancho California in Riverside County. Vernal pool fairy shrimp mature quickly and can both persist in short-lived shallow pools and longer

lasting pools that remain later in the spring. This species inhabits pools with clear to tea-colored water, most commonly in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands, but sometimes in sandstone rock outcrops and alkaline vernal pools. The water in these pools has low total dissolved solids, conductivity, alkalinity, and chloride. The project site is within an area designated as a, “High Value Conservation Area” for vernal pools by the *Draft Solano Multispecies Habitat Conservation Plan* (LSA Associates 2005).

One Wet and two dry season sampling were conducted for special status vernal pool crustaceans (vernal pool tadpole shrimp, vernal pool fairy shrimp, and Conservancy fairy shrimp). Complete methods and details can be found in these reports and summarized in Huffman-Broadway (2006). The wet season survey was conducted in 2000 and the dry season surveys were conducted in the late fall of 2002 and late fall of 2005. The results of all three surveys were negative. The USFWS has indicated that protocol surveys must be conducted in two consecutive years and results are valid for five years. The surveys conducted in 2000 and 2002 were not during two consecutive years and it has been more than five years since the 2000 wet season surveys. The dry-season survey of 2005 would require a wet-season survey in 2006 in order to be considered a complete survey in accordance USFWS protocol. If present, project activities could impact this species.

Vernal Pool Tadpole Shrimp (Lepidurus packardi)

The vernal pool tadpole shrimp was designated as threatened in its entire range on September 19, 1994 (*Federal Register* 59:48136-48153).

Vernal pool tadpole shrimp (*Lepidurus packardi*) is a federally listed threatened species. Vernal pool tadpole shrimp require seasonally aquatic habitats that are wet for at least 7 weeks. It occurs in a variety of natural and artificial seasonally inundated habitats including vernal pools, seasonal wetlands, alkaline pools, clay flats, vernal swales, stock ponds, railroad right of way pools, roadside ditches, and road rut pools resulting from vehicular activity. Occupied pools and wetlands typically have highly turbid waters or aquatic vegetation that may provide shelter from predators. It has also been observed in clear waters.

The vernal pool tadpole shrimp is known from 19 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County, from a small population near the Napa County airport, and from a single vernal pool complex on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County. The ephemeral wetlands that support this network of populations are remnants of what was formerly a pristine vernal pool ecosystem, but which has been converted to mainly agricultural and urban uses. The project site is within an area designated as a, “High Value Conservation Area” for vernal pools by the *Draft Solano Multispecies Habitat Conservation Plan* (LSA Associates 2005).

One Wet and two dry season sampling were conducted for special status vernal pool crustaceans (vernal pool tadpole shrimp, vernal pool fairy shrimp, and Conservancy fairy

shrimp). Complete methods and details can be found in these reports and summarized in Huffman-Broadway (2006). The wet season survey was conducted in 2000 and the dry season surveys were conducted in the late fall of 2002 and late fall of 2005. The results of all three surveys were negative. The USFWS has indicated that protocol surveys must be conducted in two consecutive years and results are valid for five years. The surveys conducted in 2000 and 2002 were not during two consecutive years and it has been more than five years since the 2000 wet season surveys. The dry-season survey of 2005 would require a wet-season survey in 2006 in order to be considered a complete survey in accordance USFWS protocol. If present, project activities could impact this species.

Steelhead-Central California Coastal ESU (*Oncorhynchus mykiss*)

Steelhead-Central Valley ESU (*Oncorhynchus mykiss*)

Chinook Salmon Central Valley spring-run (*Oncorhynchus tshawytscha*)

Chinook Salmon Winter-Run Sacramento River (*Oncorhynchus tshawytscha*)

The Central Valley Evolutionarily Significant Unit (ESU) of steelhead, the Central Valley fall/late fall-run and the spring run Chinook salmon and the Sacramento River winter run of Chinook Salmon have the potential to occur in Ledgewood Creek. Ledgewood Creek is not currently known to support breeding or rearing habitat for these species; however it is accessible from Suisun Slough and these fish could potentially migrate upstream in search of suitable breeding habitat. Indirect impacts of the Project on these species are discussed in the impact section, below. Additionally, the Delta smelt have the potential to occur on the Barnfield and Tooby properties. The lower reach of Ledgewood Creek on the Barnfield property and a slough that runs through the Barnfield and Tooby properties are hydrologically connected to Suisun Slough and may provide suitable spawning habitat for these species. With implementation of a Stormwater Management Plan and Stormwater Pollution Prevention Plan (see below) the proposed Project is not likely to have significant impacts on federally or state listed fish species.

*Chinook Salmon (*Oncorhynchus tshawytscha*)*

Smolts (juvenile salmon spawned upstream) move through the Bay-Delta area to feed in shallow water habitats, including salt marsh channels and submerged tidal mudflats. Adults also pass through this area during seasonal migrations upstream, and forage in both intertidal and subtidal habitats. They feed primarily on invertebrates and small fish. Tidal marsh and other estuarine habitats are reported to have an important role in Chinook salmon life-history. Tidal marshes are important habitats for small juveniles (fry), while older smolts tend to use deeper waters. Fry tend to occur near the shelter of submerged channel bank or marsh edge vegetation at high tide, and retreat with submerged habitat as the tide falls (Maragni 2000; USFWS 1995).

*Steelhead Trout (*Oncorhynchus mykiss*)*

Steelhead are trout species in the same genus as salmon, and they have life-histories essentially like those of Chinook salmon. Adults and juveniles pass through the Bay-Delta area and feed in subtidal and intertidal habitats, including tidal marsh channels and

submerged mudflats, as they migrate upstream to freshwater streams or downstream to marine habitats. Steelhead trout are drift-feeders, consuming a wide range of aquatic invertebrates and small fish. Adult steelhead migrating upstream seldom feed. Small steelhead runs occur in South Bay tributaries (e.g., San Francisquito Creek, Guadalupe River, Alameda Creek), and in many creeks and rivers of the North Bay and Suisun Bay areas. The importance of tidal creeks and other transient estuarine habitats for steelhead is not well understood (Maragni 2000).

Delta Smelt (Hypomesus transpacificus)

Delta smelt are small, short-lived estuarine fish that migrate between shallow freshwater stream habitats in which they spawn, and brackish reaches of the San Francisco Estuary. Delta smelt also spawn at the terminal ends of tidal creeks in fresh-brackish tidal marshes. Downstream habitat is primarily limited to intertidal and subtidal habitats of Suisun Bay and its tidal marshes, but they occur also in San Pablo Bay, particularly during and after heavy freshwater flows. They generally are limited to estuarine salinity below 10 to 14 parts per thousand, and are usually found in tidewater salinity 2 parts per thousand or less. Their abundance in the Bay-Delta area is variable, and appears to be related to both Delta outflows and food supplied by plankton production.

California Tiger Salamander (Ambystoma californiense)

The California tiger salamander (*Ambystoma californiense*) is federally listed as a threatened species. The species is a California Species of Special Concern. The California tiger salamander occurs in central California from the central Sacramento Valley to the central San Joaquin Valley and surrounding foothills of both the Coast Range and the Sierra Nevada. The species also has been recorded in the San Francisco Bay area, the Monterey Bay area, and valleys and foothills in San Luis Obispo and Santa Barbara Counties. The actual occurrence of the species within this range is restricted to locations where breeding ponds are surrounded by suitable upland habitat.

Adult California tiger salamanders inhabit grassland, savanna, or deciduous oak woodland habitats which contain natural ponds, vernal pools, intermittent streams, or stock ponds. They usually are not found unless there is this combination of ponded water for breeding and surrounding upland, with a predominant ground cover of grazed or ungrazed grassland. They spend the majority of their time below ground, in rodent burrows, or other natural crevices.

The known records for the California tiger salamander occur northeast of the property at Jepson Prairie. Grasslands, seasonally flooded annual grasslands, and vernal pools provide suitable breeding and cover for this species throughout the Project Site. Since there was a moderate potential for this species to occur in large vernal pools on the Tooby and Gentry properties, May Consulting Services conducted dip-net surveys for this species concurrently with the wet-season surveys for large branchiopods. Dip-net surveys included checking for mating adults, larvae and egg masses. The dip net surveys also corresponded with the rainy period when breeding salamanders would be most likely

to be observed migrating to breeding sites. Survey results were negative. In addition, none of the pools on the Barnfield property appeared to provide high potential habitat for this species since all pools were fairly shallow, and did not provide the murky water often favored by this species. However, these surveys were not conducted according to USFWS/CDFG protocol (USFWS and CDFG 2003), which states, "For sites with suitable breeding habitat, two consecutive seasons of negative larval surveys and a negative upland drift fence study in the intervening fall/winter are recommended to support a negative finding. For sites with no suitable aquatic breeding habitat, but where suitable upland habitat exists, two consecutive seasons of negative upland drift fence studies are recommended to support a negative finding. Surveys following these established protocols should be conducted in order to determine if this species is present at the Project Site.

California Black Rail (Laterallus jamaicensis coturniculus)

The California black rail (*Laterallus jamaicensis coturniculus*) is a small, secretive marsh bird. It is a state listed threatened species and a federal species of concern. This species is a scarce, yearlong resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area, Sacramento-San Joaquin Delta, and coastal southern California at Morro Bay. The California black rail occurs most commonly in tidal emergent wetlands dominated by pickleweed, or in brackish marshes supporting bulrushes in association with pickleweed. This species is usually found in the immediate vicinity of tidal sloughs and typically occurs in the high wetland zones near upper limit of tidal flooding, not in low wetland areas with considerable annual and/or daily fluctuations in water levels. Nests are concealed in dense vegetation, often in pickleweed, near the upper limits of tidal flooding (Mayer and Laudenslayer 1988).

There are two occurrence records of California black rail within a five-mile radius of the site (CNDDDB 2006). These occurrences are in marsh habitat bordering Suisun Bay and associated sloughs. Based on the known occurrences and the presence of suitable habitat, California black rail has a high potential to occur on-site. Black rails are typically located by hearing their calls. No Black rails were seen or heard on the Project Area, though no formal vocalization surveys were conducted. The CNDDDB records Black rail occurrences south of the site in marsh habitat bordering Suisun Bay and associated sloughs. The perennial marsh habitat on the eastern portion of the Tooby Property provides low to medium quality foraging and nesting habitat for the species. Though not detected during informal surveys, the species is likely to occur along slough channels with dense perennial marsh habitat in the southern portion of the Barnfield property.

This project provides a large benefit to this species by preserving the majority of core habitat areas (alkali seasonal marsh and brackish marsh) of this species at the Project Site within the Barnfield and Tooby properties (~211 ac). However, there may be some loss of upland areas used as refuges during high water events within the proposed development area. Additionally, there an estimated 5.62 ac of alkali seasonal marsh on the Gentry Property; and 0.94 acre of alkali seasonal marsh and 0.27 acre of brackish marsh will be impacted in the Cordelia ROW. However, there is very little emergent

vegetation in these areas and it is highly unlikely that this species occurs in these areas other than as temporary refuge or as a transient. Habitat along Cordelia Road may play a minor role in connecting the marsh habitats north and south of the road. However, the slough channel that goes under the road likely provides the most benefit and it will not be impacted by the project. Indirectly, this project may impact this species through additional lighting, pollution, and by both domestic animals and wildlife attracted to human development that may prey upon them.

California Clapper Rail (Rallus longirostris obsoletus)

The California clapper rail is a federal and state Endangered species. This species is locally common year round in coastal wetlands and brackish areas around San Francisco, Monterey, and Morro bays. The clapper rail forages in higher marsh vegetation along vegetation and mudflat interface, and along tidal creeks. Habitat preference for this species is emergent wetland, dominated by pickleweed and cordgrass (*Spartina* spp.), and brackish emergent wetland with pickleweed, cordgrass, and bulrush. Breeding habitat preference is for saline emergent wetlands, with nests mostly in lower zones where cordgrass is abundant and tidal sloughs are nearby (Mayer and Laudenslayer 1988). The perennial marsh habitat along the eastern portion of the site provides suitable habitat for this species; however, this species was not observed during site surveys. There are two occurrence records of California clapper rail within a five-mile radius of the site (CNDDDB 2006). Based on the known occurrences and the presence of suitable habitat, California clapper rail has a high potential to occur on-site.

This project provides a large benefit to this species by preserving the majority of core habitat areas (alkali seasonal marsh and brackish marsh) of this species at the Project Site within the Barnfield and Tooby properties (~211 ac). However, there may be some loss of upland areas used as refuges during high water events within the proposed development area. Additionally, there an estimated 5.62 ac of alkali seasonal marsh on the Gentry Property; and 0.943 acre of alkali seasonal marsh and 0.27 acre of brackish marsh will be impacted in the Cordelia ROW. However, there is very little emergent vegetation in these areas and it is highly unlikely that this species occurs in these areas other than as temporary refuge or as a transient. Habitat along Cordelia Road may play a minor role in connecting the marsh habitats north and south of the road. However, the slough channel that goes under the road likely provides the most benefit and it will not be impacted by the project. Indirectly, this project may impact this species through additional lighting, pollution, and by both domestic animals and wildlife attracted to human development that may prey upon them.

Salt Marsh Harvest Mouse (Reithrodontomys raviventris)

The salt marsh harvest mouse was federally listed as endangered in its entire range in 1970 (*Federal Register* 35:16047). It is also state listed as endangered and a California fully protected species. The salt marsh harvest mouse is a small native rodent. There are two subspecies: the northern (*R. r. halicoetes*) and the southern (*R. r. raviventris*). The northern subspecies lives in the marshes of the San Pablo and Suisun bays, the southern subspecies resides in the marshes of Corte Madera, Richmond and South San Francisco

Bay. Salt marsh harvest mice are critically dependent on dense cover and their preferred habitat is dominated by pickleweed (*salicornia virginica*). In marshes with an upper zone of peripheral halophytes (salt tolerant plants), mice use the vegetation to escape the higher tides, and may even spend a considerable portion of their lives there. Mice also move into the adjoining grasslands during the highest winter tides. Salt marsh harvest mice probably live on leaves, seeds and stems of plants. The northern subspecies of the salt marsh harvest mouse can drink sea water for extended periods but prefers fresh water.

The CNDDDB records an occurrence of the species in the perennial marsh habitat along the eastern portion of the Tooby Property (see **Figure 4.8-5**) as well as marshland adjacent to the Project Site. This area supports localized, homogeneous stands of pickleweed and is surrounded by other wetland features as well as upland grasslands. It is assumed the species is still present in this location. There are a couple of small pickleweed stands on the Barnfield property near the railroad tracks along the southeastern property line. Given the occurrence of salt marsh harvest mice in similar habitat nearby, it is likely the species also occurs within the perennial marsh habitat on the southern portion of the Barnfield property. The species is unlikely to occur on the rest of the site due to a lack of suitable habitat.

While this species was not observed during any of the site surveys, it is assumed to be present in areas that provide habitat. This project provides a large benefit to this species by preserving the majority of core habitat areas (alkali seasonal marsh and brackish marsh) of this species at the Project Site within the Barnfield and Tooby properties (~211 ac). However, there may be some loss of upland areas used as refuges during high water events within the proposed development area. Additionally, there an estimated 5.62 ac of alkali seasonal marsh on the Gentry Property; and 0.94 acre of alkali seasonal marsh and 0.27 acre of brackish marsh will be impacted in the Cordelia ROW. It is not known if this species occurs on the Gentry Property which is isolated from known areas by Pennsylvania Avenue. While the habitat in the Cordelia ROW is not likely large enough and too highly disturbed (between a road and railroad track) to support permanent habitation, it may provide some value to this species as foraging habitat and more importantly in maintaining movement between marshes north and south of Cordelia Road. Indirectly, this project may impact this species through additional lighting, pollution, and by both domestic animals and wildlife attracted to human development that may prey upon them.

Critical Habitat

Vernal Pool: Contra Costa Goldfields

The project site is within Vernal Pool Critical Habitat Unit 5B, Contra Costa Goldfields (USFWS 2006a). Units 5A-B consist of 839 acres (339 ha) of Local/Private land. This area is among 14,730 ac (5,961 ha) designated for Contra Costa goldfields. This habitat type is described by USFWS (2006a) as, "Topographic features characterized by isolated mound and intermound complex within a matrix of surrounding uplands that result in

continuously, or intermittently, flowing surface water in the depressional features including swales connecting the pools described below in paragraph (2)(ii), providing for dispersal and promoting hydroperiods of adequate length in the pools; (ii) Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water or whose soils are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species and typically exclude both native and nonnative upland plant species in all but the driest years. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands; (3) Existing manmade features and structures, such as buildings, roads, railroads, airports, runways, other paved areas, lawns, and other urban landscaped areas do not contain one or more of the primary constituent elements. Federal actions limited to those areas, therefore, would not trigger a consultation under section 7 of the Act unless they may affect the species and/ or primary constituent elements in adjacent critical habitat.”

Other Special Status Species That Are Present or May Occur at the Project Site.

California Linderiella (Linderiella occidentalis)

The California linderiella (*Linderiella occidentalis*), also known as the California fairy shrimp, is a federal species of concern. It is a member of the fairy shrimp family Linderiellidae. It is generally found in the same types of aquatic habitats as *B. lynchi* and frequently co-occurs with this species. This species tends to live in large, fairly clear vernal pools and lakes. However, they can survive in clear to turbid water with a pH from 6.1 to 8.5, and they have also been found in very small pools. They are tolerant of water temperatures from 41 degrees to 85 degrees F, making them the most heat tolerant fairy shrimp in California.

The California fairy shrimp is the most common fairy shrimp in the Central Valley. It has been documented in most land forms, geologic formations and soil types supporting vernal pools in California, at altitudes as high as 3800 feet above sea level. The range extends from Shasta County south to Fresno County and across the valley to the coast and Transverse Ranges from Willits in Mendocino County south to near Sulfur Mountain in Ventura County. (USFWS 2005). The project site is within an area designated as a, “High Value Conservation Area” for vernal pools by the *Draft Solano Multispecies Habitat Conservation Plan* (LSA Associates 2005).

One Wet and two dry season sampling were conducted for special status vernal pool crustaceans. Complete methods and details can be found in these reports and summarized in Huffman-Broadway (2006). The wet season survey was conducted in 2000 and the dry season surveys were conducted in the late fall of 2002 and late fall of 2005. The results of all three surveys were negative. The USFWS has indicated that protocol surveys must be conducted in two consecutive years and results are valid for five years. The surveys conducted in 2000 and 2002 were not during two consecutive years and it has been more than five years since the 2000 wet season surveys. The dry-season

survey of 2005 would require a wet-season survey in 2006 in order to be considered a complete survey in accordance USFWS protocol. If present, project activities could impact this species.

Chinook Salmon-Central Valley fall/late fall-run (Oncorhynchus tshawytscha), Longfin Smelt (Spirinchus thaleichthys), and Sacramento Splittail (Pogonichthys macrolepidotus)

Chinook Salmon have the potential to occur in LedgeWood Creek. LedgeWood Creek is not currently known to support breeding or rearing habitat for these species; however it is accessible from Suisun Slough and these fish could potentially migrate upstream in search of suitable breeding habitat. Indirect impacts of the Project on these species are discussed in the impact section, below. Additionally, the longfin smelt and Sacramento splittail have the potential to occur on the Barnfield and Tooby properties. The lower reach of LedgeWood Creek on the Barnfield property and a slough that runs through the Barnfield and Tooby properties are hydrologically connected to Suisun Slough and may provide suitable spawning habitat for these species. With implementation of a Stormwater Management Plan and Stormwater Pollution Prevention Plan the proposed Project will have no effect on federally or state listed fish species.

Chinook Salmon (Oncorhynchus tshawytscha)

Smolts (juvenile salmon spawned upstream) move through the Bay-Delta area to feed in shallow water habitats, including salt marsh channels and submerged tidal mudflats. Adults also pass through this area during seasonal migrations upstream, and forage in both intertidal and subtidal habitats. They feed primarily on invertebrates and small fish. Tidal marsh and other estuarine habitats are reported to have an important role in Chinook salmon life-history. Tidal marshes are important habitats for small juveniles (fry), while older smolts tend to use deeper waters. Fry tend to occur near the shelter of submerged channel bank or marsh edge vegetation at high tide, and retreat with submerged habitat as the tide falls (Maragni 2000; USFWS 1995).

Longfin Smelt (Spirinchus thaleichthys)

The longfin smelt (*Spirinchus thaleichthys*) occurs from Prince William Sound, Hinchinbrook Island, Alaska, southward to the Sacramento-San Joaquin estuary and Delta, and south to southern San Francisco Bay. In the fall, adults move from San Francisco Bay and San Pablo Bay to the fresher waters of Montezuma Slough, Suisun Bay, and the lower reaches of the Sacramento and San Joaquin rivers, a sign of anadromous behavior. They spawn in the freshwater portions of the Delta from December through the spring months. They feed on Diaphanosoma, Diaptomus, and Episichura, mysid shrimp and other small crustaceans (Miller and Lea 1972).

Sacramento Splittail (Pogonichthys macrolepidotus)

Sacramento splittail is the only species in a unique genus of large, native minnows. It inhabits the Sacramento-San Joaquin river system and the Delta. The species has been

collected in tidal waters as salty as 18 parts per thousand salinity, but splittail abundance is greatest in salinity lower than 10 parts per thousand. It occurs primarily in the Suisun Bay area, but reaches northern San Pablo Bay regularly in years of high river discharge. They spawn in fresh or nearly fresh, non-saline shallow waters with submerged vegetation. Within the Bay-Delta area, they are reported to be most abundant in small tidal creeks, particularly those with freshwater discharges or partially submerged marsh vegetation (Sommer and Herbold 2000).

Western Pond Turtle (Emys (= Clemmys) marmorata)

The western pond turtle is a medium-sized brown or olive-colored aquatic turtle. The pond turtle is normally found in and along riparian areas, although gravid females have been reported up to a mile away from water in search of appropriate nest sites. The preferred habitat for these turtles includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators (raccoons, introduced fishes, and bullfrogs). None were observed during general wildlife surveys. However, no special effort was made to detect reptiles and amphibians. This species is not likely to breed here, although may occur as a transient. If they do occur here, they are likely to be found in the slough channels and Ledgewood Creek and therefore, are not likely to be impacted by project activities.

American Bittern (Botaurus lentiginosus)

The American bittern (*Botaurus lentiginosus*) is a federal species of concern. It usually hides, rests, and roosts, solitarily amidst tall, dense, emergent vegetation, on ground, or near ground on logs, stumps or on emergent plants. Its nest is a platform of matted emergent aquatics, other herbaceous stems, sticks and/or leaves, usually in shallow water, but sometimes floating, or on ground. It is concealed in tall, dense, fresh emergent vegetation. An American bittern was observed in the northeast portion of the site, by HBG, during the nesting season. This portion of the site provides suitable nesting habitat. There are no project activities planned for the Tooby Parcel, or other areas with extensive tule or cattail marsh, therefore this project is not likely to impact this species.

Cooper's Hawk (Accipiter cooperii) (nesting)

The Cooper's hawk preys upon medium-sized birds. Cooper's hawks use wooded areas with adjacent open fields. Preferred nesting habitat includes dense stands of live oak woodland or riparian areas. Cooper's hawks are uncommon breeders in southern California. They may perch and forage in the mixed riparian habitats. This species might breed in larger trees in the riparian areas on or within 250 feet of the site. However, surveys during the nesting season did not detect nesting birds. The project has the potential to impact this species.

Ferruginous Hawk (Buteo regalis) (wintering)

The ferruginous hawk, a federal and state Species of Concern, is a winter resident and migrant of California. In the winter this species can be found throughout California, with

the exception of the extreme northeastern and northwestern regions (Zeiner 1990a). Ferruginous hawks migrate to California in August or September and return to their breeding grounds in late February or early March. This species occurs in open habitats, including grasslands, shrub steppes, sagebrush, deserts, saltbush-greasewood shrublands, and the outer edges of pinyon pine and other forest. Ferruginous hawks forage for prey (rabbits [*Lepus* sp.], ground squirrels [*Spermophilus* sp.], and mice [*Peromyscus* sp.]) by low flights over open, treeless areas, and glide to intercept prey on the ground.

Ferruginous hawk is not known to exist within five miles of the Project site (CNDDDB 2006). Although this species was not observed during the assessment, suitable wintering habitat and prey for ferruginous hawks exists within the annual grasslands at the site. Consequently, this species has a low potential to occur on-site. This species would only be expected to occur during the rainy season. Therefore, no significant impacts to this species are expected since initial grading would not be expected to occur during the rainy season. Therefore, no impacts to this species are expected and no further discussion of mitigation is expected to be necessary.

Northern Harrier (Circus cyaneus) (nesting)

The northern harrier (*Circus cyaneus*) is a medium-sized raptor. The females are brown with a white tail patch while the males are gray and white. It is a state Species of Special Concern with respect to nesting. Northern harriers mostly nest in emergent wetlands, or along rivers and lakes, but may nest in grasslands. Its nests are found on the ground in shrubby vegetation, usually at the edge of marshes. This species was observed on the site by HBG during nesting season. Vollmar Consulting also observed individuals foraging over the perennial marsh and grassland habitats on the Barnfield site. The species forages over open habitats and annual croplands and nests in grassland and marsh habitats. It is assumed northern harrier occasionally use the site for foraging. There is a high potential for nest sites on the Barnfield property in the perennial marsh and a moderate potential for nest sites to occur in the perennial marsh habitat along the eastern portion of the Tooby Property. These areas are not included in areas that may be developed, therefore the project is not likely to impact this species.

White-tailed Kite (Elanus leucurus) (nesting)

White-tailed kite is a federal Species of Concern and fully protected by the CDFG. White-tailed kites have recovered from near extinction in the 1930s and are now common in central and northern California, but have been slower to recover in southern California. They require relatively open habitat for foraging, as well as trees (isolated or within stands) for nesting and roosting. Habitats with abundant prey populations (ungrazed or little grazed grasslands, agriculture, and grass dominated wetlands) support more kites. Primary concerns include the response of white-tailed kites to reduced foraging and nesting opportunities as prey habitats are urbanized (e.g., conversion of agricultural lands), and as nest site competition increases with the loss of nesting habitats (e.g., riparian corridors and wooded grasslands).

While there are no documented occurrences of the white-tailed kite within five miles of the Project site (CNDDDB 2006) one was observed flying over the site during a site survey. There is a small areas of marginal quality that could support nesting kites within the riparian area on Parcel 2. They have not been recorded nesting here and are not anticipated to do so. This species could however, be impacted by the project.

Short-eared Owl (Asio flammeus) (nest site)

The short-eared owl (*Asio flammeus*) is a state Species of Special Concern. It is found in freshwater and saltwater marshes, lowland meadows, and irrigated alfalfa fields. Tule patches or heavily-grassed areas are needed for nesting and daytime seclusion. These owls nest on dry ground in depressions concealed in vegetation. No short-eared owls were observed on the site. The CNDDDB records numerous nesting occurrences at the Grizzly Island Wildlife Area in both perennial marsh and grassland habitat. The perennial brackish marsh along the eastern portion of the study site provides potential foraging and nesting habitat for the species. The annual grassland and wetland habitats on the rest of the site are generally too short to provide suitable habitat. Therefore the project is not likely to impact this species.

Western Burrowing Owl (Athene cunicularia hypugea) (burrow sites)

Western burrowing owl is a federal and state Species of Concern and a yearlong resident of the Central Valley (CDFG, 2000b). It is afforded special protection by the CDFG, surveys and mitigation are required within areas of suitable habitat in the state (CBOC 1993, CDFG 1995). Burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. In California, burrowing owls most commonly use California ground squirrel burrows, but they also may use manmade structures, such as concrete culverts; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement. Burrowing owls may use a site for breeding, wintering, foraging, and/or migration stopovers during migration. Often it is found perching in open sunlight in the early morning, and moves to shade or to the burrow in hotter temperatures. Burrowing owls primarily feed on insects, small mammals, reptiles, birds, and carrion. Breeding occurs from March through August, with the peak breeding time occurring in April and May. Young emerge from the burrow at about two weeks and fly at about four weeks (Zeiner 1990a).

This species was formerly a common, even locally abundant, permanent resident throughout much of California, but a decline noticeable by the 1940s (Zeiner 1990a) has continued through to the present time. The decline has been almost universal throughout California (CDFG 2000b). Conversion of grasslands and pasturelands to agriculture and destruction of ground squirrel colonies have been the main factors causing the decline of the burrowing owl population (Zeiner 1990a). Assimilation of poisons applied to ground squirrel colonies has probably also taken a toll. The burrowing owls' propensity for nesting in roadside banks also makes them particularly vulnerable to roadside shooting, being hit by cars, road maintenance operations, and general harassment (CDFG 2000b).

Two adult burrowing owls and at least one active burrow were detected on February 6, 2006 on the GF Gentry property. The CNDDDB records another burrow off the site adjacent to Cordelia Road. There are numerous CNDDDB (2006) occurrences within a five-mile radius of the site. Additionally, multiple rodent burrows greater than three inches in diameter were observed throughout the Project Site, particularly on raised areas such as the GF Gentry Property, berms adjacent to Planning Area 3, the boundary with Ledgewood Creek and other raise berms. Most of the grasslands on the site do not provide suitable burrowing habitat for the species since they are seasonally saturated by near-surface groundwater. Protocol-level surveys will need to be conducted to determine the location of nesting and wintering burrows throughout the property. If ground disturbing activities or other project activities are to take place near an active burrow, the project has the potential to impact this species.

Loggerhead Shrike (Lanius ludovicianus) (nesting)

The loggerhead shrike (*Lanius ludvicianus*) is a medium-sized, predatory songbird somewhat similar in appearance to the mockingbird. It is a federal and state Species of Concern, is a common resident and winter visitor in the lowlands and foothills throughout California. This species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. This species forages in open habitats and nests in dense tree and shrub foliage. Nesting preference is for a well-concealed stable branch in densely foliated shrubs or trees (Mayer and Laudenslayer 1988).

This species was observed onsite by HBG in June 2005. Biologists from Vollmar Consulting also observed a single loggerhead shrike perched on the fence line along the western edge of the Tooby parcel in May 2000. Shrike probably use the site for foraging and perching but it is unlikely to nest on the site due to a general lack of suitable habitat, although some nest sites are available in limited onsite riparian habitat and scrub in Planning Area 2 and on the north side of the GF Gilbert property.

If clearing and grubbing, grading or other project activities occurred during the nesting season within or adjacent to nesting habitat, this species could be impacted by the project.

Saltmarsh Common Yellowthroat (Geothlypis trichas sinuosa)

The saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) is a medium-sized songbird with a distinctive yellow throat patch. It is both a federal and state Species of Special Concern. This species nests in fresh and salt water, including perennial brackish marshes, with thick, continuous cover, down to water level. They nest from early April to August, with peak activity in May and June.

Saltmarsh common yellowthroats were observed in dense perennial brackish marsh habitat on the Barnfield property by HBG in June 2005. They were also observed in the same area by Vollmar Consulting. The species forages and nests in dense emergent vegetation in salt and brackish marsh habitats.

The proposed project will have some impacts to brackish marsh within the Cordelia Road ROW and adjacent to Parcel 3. These activities may impact this species.

Suisun Song Sparrow (Melospiza melodia axillaries)

The Suisun song sparrow (*Melospiza melodia maxillaries*) is a federal species of concern and a state Species of Special Concern endemic to Suisun Bay. Intermixed stands of bulrush (*Scirpus* spp.), cattail (*Typha* spp.) and other emergent vegetation provide suitable habitat. Suisun song sparrows forage on the bare surface of tidally exposed mud among the tules and along slough margins in the brackish marshes of Suisun Bay during low tides. They feed on *Scirpus* seeds from the ground once they fall from flower heads above. They also feed on insects (mostly mosquito larvae and flies) and other invertebrates exposed during low tides. This species' nests are strung along the edges of sloughs and bays in linear fashion. Each territory must have enough area for nesting and foraging, including tidally exposed mud, water, and vegetation suitable for nesting and cover while foraging. The vegetation must also harbor food, and include permanent water or moisture in the form of tidal ebb and flow. Suisun song sparrows are physiologically and behaviorally adapted to naturally occurring brackish water conditions of Suisun marsh. They are one of the few passerine birds that are adapted to allow direct consumption of saline water. This species prefers to consume water of the average salinity range that naturally occurs within its habitat.

Previously, the literature suggested that these birds are confined to undiked tidal marshes. Recent field surveys have noted Suisun song sparrows along ditches, permanent ponds and other areas in diked wetlands of Suisun Marsh where required plant assemblages and brackish water conditions exist.

Individuals of this species were observed by HBG in June 2005 foraging in the dense perennial marsh habitat on the Tooby and Barnfield properties. This species was also observed by Vollmar Consulting biologists, foraging in the dense perennial marsh habitat along the eastern portion of the Tooby Property during April and May 2000. The species uses the perennial marsh habitat on the site for foraging and may use the site for nesting.

The proposed project will have some impacts to alkali seasonal marsh on the Gentry Property, and both alkali seasonal marsh and brackish marsh within the Cordelia Road ROW and adjacent to Parcel 3. Project activities may impact this species.

Tricolored Blackbird (Agelaius tricolor) (nesting colony)

The tricolored blackbird (*Agelaius tricolor*) is a medium-sized songbird similar in appearance to the more common red-winged blackbird but with white on the wing as opposed to yellow. Tricolored blackbird nesting colonies are protected as both a federal and state Species of Special Concern. Tricolored blackbirds nest in large colonies near freshwater, usually in emergent wetlands with tall, dense cattails or in thickets of willow, blackberry, or wild rose. Nesting colonies prefer heavy growth of cattails and tules. Tricolored blackbirds use grasslands and agricultural lands for foraging. No tricolored blackbirds were observed on the site and there are no current CNDDDB records for the

species in the vicinity. However, the perennial marsh habitat along the eastern portion of the Tooby Property and stands of tules within the channels within the Cordelia ROW and within the Tooby and Barnfield Properties adjacent to Planning Area 3 and the Cordelia ROW does provide suitable nesting habitat for the species. Project activities may impact this species.

Suisun Shrew (Sorex ornatus sinuosus)

Suisun shrew (*Sorex ornatus sinuosus*) typically inhabit tidal marshes characterized in order of decreasing tolerance to inundation, by *Spartina foliosa*, *Salicornia ambigua*, and *Grindelia cuneifolia* and brackish marshes dominated by *Scirpus californicus* and *Typha latifolia*. It inhabits tidal marshes along the northern shores of San Pablo and Suisun Bays. It is a federal and state species of concern. They require dense, low-lying cover where invertebrates are abundant. Breeding occurs in sites with driftwood and other litter above the mean high tide line (Rudd 1955). Upland habitats are needed during prolonged flooding of marshes and dikes to provide cover and food (Williams 1983).

The CNDDDB records an occurrence within the property as well as immediately east and south of the Barnfield site (**Figure 4.8-4**). It is likely the Suisun shrew occurs on the site within the perennial marsh habitat along the eastern portion of the Tooby Property, as well. It is unlikely to occur elsewhere on the site due to a lack of suitable habitat.

Given the close proximity of this occurrence and the presence of suitable habitat, it is likely the Suisun shrew occurs within the perennial marsh habitat on the southern portion of the Barnfield property.

This project provides a large benefit to this species by preserving the majority of core habitat areas (alkali seasonal marsh and brackish marsh) of this species at the Project Site within the Barnfield and Tooby properties (~211 ac). However, there may be some loss of upland areas used as refuges during high water events within the proposed development area. Additionally, there an estimated 5.62 ac of alkali seasonal marsh on the Gentry Property; and 0.94 acre of alkali seasonal marsh and 0.27 acre of brackish marsh will be impacted in the Cordelia ROW. It is not known if this species occurs on the Gentry Property which is isolated from known areas by Pennsylvania Avenue. While the habitat in the Cordelia ROW is not likely large enough and too highly disturbed (between a road and railroad track) to support permanent habitation, it may provide some value to this species as foraging habitat and more importantly in maintaining movement between marshes north and south of Cordelia Road. Indirectly, this project may impact this species through additional lighting, pollution, and by both domestic animals and wildlife attracted to human development that may prey upon them.

Other Nesting Raptors

Other raptor species forage and nest in a variety of habitats throughout Solano County. Raptor nests are protected under the Migratory Bird Treaty Act and Section 3503.5 of the California Fish and Game Code, which makes it illegal to destroy any active raptor nest.

Several raptor species, including red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and northern harrier (*Circus cyaneus*), White-tailed kite and American kestrel forage and nest in various habitats throughout Solano County. There is marginal nesting habitat within the Project Site in Planning Area 2. Suitable tall trees are also found within 500 ft (150 m) of the site and nests within these trees could be impacted by project activities. Additionally, American kestrels are known to use power poles and Barn Owls may nest under the eaves of buildings adjacent to the site. The project does have the potential to impact nesting raptors.

Migratory and Resident Nesting Birds

Several special-status migratory and resident bird species have the potential to occur within the Project site. Migratory and resident birds forage and nest in various natural and artificial habitat communities including coniferous forest, oak woodlands, agricultural croplands, riparian woodlands, cattail and blackberry thickets, horticultural/landscaped areas and grasslands. The nests of all migratory birds are protected under the Migratory Bird Treaty Act, which makes it illegal to destroy any active migratory bird nest. The site contains supports many of these habitats and does provide suitable nesting habitat for some migratory and resident birds. Consequently, nesting migratory or resident birds have the potential to occur within the Project site. Because the Project proposes to maintain the eastern half of the site (where the perennial brackish marsh is located) as open space, there will be no impacts to life history activities of the migratory and resident birds that may potentially be present within that area. However, if activities take place within the areas to be developed during the nesting season, there is the potential to impact nesting birds.

Special-Status Natural Communities

Northern Claypan Vernal Pool

There is a CNDDDB record for this habitat type on the property. A complete description of the habitat, its location and acreage are described above and provided in **Figure 4.8-5** and **Tables 4.8-3, 4.8-5, and 4.8-5**. The project as proposed may impact this habitat type.

Habitat, Wildlife, and Natural Areas

Most of the non-urbanized land in Solano County is currently used for agriculture. The stated purpose of the County's General Plan is to provide long-term goals for development and growth in a manner that would protect agriculture and natural resources (Solano County Planning Department 1980).

Areas considered having wildlife habitat value within the Project site include the following:

- alkali seasonal marsh;
- perennial brackish marsh;

- seasonally saturated annual grassland;
- vernal pools;
- riparian wetland; and
- drainage canals.

In addition, Solano County is situated in a strategic position in the Pacific Flyway, a major migration route for waterfowl and other birds in North America.

Jurisdictional “Waters of the U.S.”

Jurisdictional “Waters of the U.S.” include jurisdictional wetlands, as well as all other “Waters of the U.S.” such as creeks, ponds, and intermittent drainages. Wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (U.S. Corps of Engineers 1987). The majority of jurisdictional wetlands in the United States meet three wetland assessment criteria: hydrophilic vegetation, hydric soils, and wetland hydrology. Jurisdictional Waters of the U.S. can also be defined by exhibiting a defined bed and bank and ordinary high water mark (OHWM).

The potential wetland areas within the majority of the site have been formally delineated (see Vollmar Consulting, 2003) and the Corps has verified these acreages. . The annexation parcels were not included in the area originally verified by the Corps, but have been subject to a preliminary wetland assessment as provided in (HBG 2006). HBG intends verify these parcels as part of an overall re-verification of the site by the Corps (R. Pererra pers. comm.).

A total of 63 jurisdictional wetland polygons were delineated on the Barnfield, Gentry and Tooby parcels. On the Barnfield portion of the site, 39 were mapped entirely as wetlands and other two consisted of a mix of wetlands and navigable waters but were included in the perennial brackish marsh category in the Corps verified delineation map. **Figure 4.8-3** shows the Corps verified wetlands within the Project Area boundary. The verified wetlands on the Gentry site totaled 33.79⁴ acres; the wetlands on the Tooby site total 58.50 acres; the wetland on the Barnfield Site totaled 228.09⁵ acres; and the annexation properties totaled 9.19 acres. The delineated wetlands include vernal pools, alkali seasonal marsh, seasonally saturated annual grassland, perennial brackish marsh,

⁴ It should be noted that during the preliminary wetland assessment of the additional parcels for annexation conducted by HBG, an additional 0.172 acre area of seasonally saturated annual grassland was noted in roadside drainage channels on the Gentry property. See Table 5 in Section 4.4 and Figure 10.

⁵ It should be noted that during the preliminary wetland assessment of the additional parcels for annexation, conducted by HBG, approximately 0.088 acre of seasonally saturated grassland were noted on the Barnfield property that was not included in the wetland delineation verified by the Corps. These areas are in roadside drainage channels not previously delineated. In addition, according to the current boundary of the Barnfield property, an additional approximately 7.223 acres of brackish marsh would be included within the project area boundary on the Barnfield property (see Figure 10 and Table 5). These areas were not included within the boundary of the verified wetland delineation on the southern boundary and the eastern boundary of the Barnfield property.

and a riparian wetland. No aquatic habitats, other than wetlands, were delineated on the property.

Perennial brackish marsh, is found on the eastern portion of the Tooby Property (48.36 ac), Barnfield Property (105.75 acres verified, 7.22 acres added in the preliminary delineation), and in the Cordelia ROW (0.027 ac).

Nine vernal pools, totaling 16.98 acres, were delineated on the Gentry/Tooby sites. Most of these are artificially created or enhanced due to the presence of road or utility line berms. Nearly all of the vernal pools on the Barnfield site (totaling 6.03 acres) are fairly small and shallow and dry in early to mid spring. The one exception is a pool in which the hydrology has been enhanced (or created) by the adjacent ditch berm.

Alkali seasonal marsh, totaling 7.84 acres, was delineated in seven separate areas on the Gentry and Tooby sites 54.99 acres was delineated on Barnfield Property, and 0.94 acre in the Cordelia ROW. These features range from seasonally inundated basins to seasonally saturated flats. Some of these features appear to be artificially enhanced by berms. Some of the features are artificially enhanced or created by excavation or berms that restrict drainage. Others appear to be natural features associated with the upper margin of Suisun Marsh.

Seasonally saturated annual grassland was delineated in four areas on the Gentry site, totaling 19.08 acres (**Figure 4.8-3**). These wetlands occur on flat terrain and encompass a broad transitional zone between vernal pools or alkali seasonal marsh and adjacent upland annual grasslands. Wetland characteristics in these areas were marginal. Seasonally saturated annual grassland areas on the Barnfield property total 61.32 acres were verified and 0.09 acre detected in the preliminary delineation and are all transitional between upland annual grasslands and other wetland habitats on the site. Approximately 1.00 acre occurs in the annexation areas.

Riparian wetland totaling 0.03 acre was delineated in one area near the southern end of the Gentry Property. This feature is a remnant of Ledgewood Creek or an excavated slough channel, approximately 300 feet long, 10-15 feet wide, and 6 feet deep. Jurisdictional riparian wetlands occur in the very bottom of the channel. The total area of riparian habitat is somewhat larger and will likely be claimed as under CDFG Jurisdiction.

Navigable waters include open water area subject to the ebb and flow of the tide as well as some large freshwater rivers and lakes used or potentially used for interstate commerce. The limit of jurisdiction in tidal areas is generally considered to be local mean high tide. For the San Francisco Bay region, this mark is 2.77 feet above sea level (2.77 NGVD). According to the USGS 7.5' Fairfield South topographic quadrangle, the channel areas of Ledgewood Creek, the two ditches, and all the sloughs that occur on the property are below 2.77 NGVD and are therefore considered jurisdictional navigable waters. In addition, the southern one-third of the excavated ditch crossing the western side of the property is below 2.77 NGVD and is therefore considered navigable water.

Navigable waters on the Barnfield property total 6.46 acres and were included in the perennial brackish marsh category on the verified wetland delineation map.

Habitat Managed for Wildlife

Solano County has a number of significant marsh and wetland habitat areas including Suisun Marsh. Suisun Marsh is an 85,000-acre tidal marsh, which provides habitat for shorebirds, waterfowl, and other wildlife that is of statewide importance. The marsh is protected under the State Suisun Marsh Preservation Act of 1977. The Suisun Marsh Management Area, as designated by the Solano County General Plan (Solano County Planning Department 1980), is located immediately south of the Project site. The marsh designation is “designed to preserve and enhance the quality and diversity of marsh habitats”.

REGULATORY CONTEXT

The following is a description of federal, state, and local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process.

Federal

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

The FESA prohibits the “take” of endangered or threatened wildlife species. “Take” is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3). Taking can result in civil or criminal penalties.

The FESA and NEPA Section 404 guidelines prohibit the issuance of wetland permits for Projects that would jeopardize the existence of threatened or endangered wildlife or plant species. The Corps must consult with the USFWS and National Oceanic Atmospheric Administration (NOAA) when threatened or endangered species may be affected by a Proposed Project to determine whether issuance of a Section 404 permit would jeopardize the species.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The federal Migratory Bird Treaty Act (MBTA)

prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior. Section 3503.5 of the California Fish and Game Code states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.”

Clean Water Act

The Corps regulates discharge of dredged or fill material into “Waters of the United States” under Section 404 of the Clean Water Act (CWA). “Discharge of fill material” is defined as the addition of fill material into “Waters of the U.S.”, including but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and sub-aqueous utility lines (33 C.F.R. §328.2(f)). In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into “Waters of the United States” to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

“Waters of the U.S.” include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 C.F.R. §328.3(b)).

Furthermore, jurisdictional “Waters of the U.S.” can be defined by exhibiting a defined bed and bank and ordinary high water mark (OHWM). The OHWM is defined by the Corps as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 C.F.R. §328.3(e)).

State

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. CESA requires state agencies to consult with the CDFG when preparing California Environmental Quality Act (CEQA) documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. CESA directs agencies to consult with CDFG on projects or actions that could affect listed species, directs

CDFG to determine whether jeopardy would occur, and allows CDFG to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that “overriding considerations” exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

The CESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. CDFG exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements. CDFG may authorize taking if an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy is implemented. CDFG requires preparation of mitigation plans in accordance with published guidelines.

Section 401 of the Federal Clean Water Act/Porter Cologne Water Quality Act

Pursuant to section 401 of the Federal Clean Water Act, projects that require a Corps permit for the discharge of dredge or fill material must obtain water quality certification that confirms a project complies with state water quality standards before the Corps permit is valid. State water quality is regulated/administered by the State Water Resources Control Board and its nine Regional Water Quality Control Boards (RWQCB). The state also maintains independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Act.

CDFG Species of Special Concern

In addition to formal listing under FESA and CESA, plant and wildlife species receive additional consideration during the CEQA process. Species that may be considered for review are included on a list of “Species of Special Concern” developed by the CDFG. CDFG tracks species in California whose numbers, reproductive success, or habitat may be threatened.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act (NCCP) program is an unprecedented effort by the State of California, as well as numerous private and public partners that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. The program, which began in 1991 under the California Natural Community Conservation Planning Act, is broader in its orientation and objectives than CESA and ESA; these laws are designed to identify and protect individual species that are already listed as threatened or endangered. The primary objective of the NCCP program is to conserve natural communities at the ecosystem scale while accommodating compatible land use (CDFG 2003).

In March 1999, the USFWS, in accordance with section 7 of the federal Endangered Species Act of 1973 (as amended), issued a Biological Opinion regarding the Solano Project Water Service Contract Renewal between the Bureau of Reclamation and the Solano County Water Agency (SCWA). As a condition of the Biological Opinion,

SCWA and its member agencies are required to prepare a Habitat Conservation Plan (HCP), per Section 10(a)1(B) of the federal Endangered Species Act, in order to obtain authorization for incidental take of listed species that may be impacted by activities associated with future water use in the Solano Project contract service area. The draft Solano HCP/NCCP (LSA Associates 2005) has been developed to support the issuance of a Section 10(a)1(B) “incidental take permit” under the federal Endangered Species Act of 1973 (as amended). This permit is required by the March 19, 1999 Solano Project Contract Renewal Biological Opinion between the USFWS and Bureau of Reclamation. The purpose of the HCP/NCCP is to promote conservation of biological diversity consistent with the recognition of private property rights, providing for a healthy economic environment for the citizens, agriculture, and industries, and on-going maintenance and operation of public and private facilities in Solano County.

California Department of Fish and Game-Streambed Alteration Agreement

Section 1602 of the California Fish and Game Code requires any person, governmental agency, or public utility proposing any activity that will divert or obstruct the natural flow or change the bed, channel or bank of any river, stream, or lake, or proposing to use any material from a streambed, to first notify CDFG of such proposed activity. CDFG may propose reasonable modifications, based on the information contained in the notification form and a possible field inspection, CDFG may propose reasonable modifications in the proposed construction as would allow for the protection of fish and wildlife resources. Upon request, the parties may meet to discuss the modifications. If the parties cannot agree and execute a Lake and Streambed Alteration Agreement, then the matter may be referred to arbitration.

California Department of Fish and Game Fish and Game Code 3503 and 3503.5

Section 3503 of the Fish and Game Code makes it unlawful to take, possess, or needlessly destroy the nests or eggs of any bird.. Section 3503.5 makes it unlawful to take or possess birds of prey (hawks, eagles, vultures, owls) or destroy their nests or eggs.

California Department of Fish and Game Fully Protected Species

Species classified as Fully Protected Species by the CDFG may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Local

Draft Solano Multispecies Habitat Conservation Plan and Natural Community Conservation Plan (Solano HCP/NCCP)

In March 1999, the USFWS , in accordance with Section 7 of the federal Endangered Species Act of 1973 (as amended), issued a Biological Opinion regarding the Solano Project Water Service Contract Renewal between the Bureau of Reclamation and the Solano County Water Agency (SCWA). The contract provides for continued delivery of

Solano Project water throughout the SCWA contract service area. SCWA delivers Solano Project water in accordance with its eight Member Agency contracts, which includes the City of Suisun City. The Bureau of Reclamation, SCWA, and the member agencies have agreed to implement conservation measures to ensure the protection of threatened and endangered species and their habitat within the SCWA contract service area. As a condition of the Biological Opinion, SCWA and its member agencies are required to prepare a Habitat Conservation Plan (HCP), per Section 10(a)1(B) of the Federal Endangered Species Act, in order to obtain authorization for incidental take of listed species that may be impacted by activities associated with future water use in the Solano Project contract service area.

The Solano HCP/NCCP has expanded the scope of the Biological Opinion requirements to comply with the State's Natural Communities Conservation Planning Act (NCCPA) of 2002 and includes additional voluntary plan participants and additional species for incidental take coverage. These additional species include federally listed fish species under the jurisdiction of the National Marine Fisheries Service (NOAA Fisheries) and species listed as threatened or endangered under the State's Endangered Species Act. The HCP/NCCP also addresses other species of concern (i.e., species recognized by groups such as the CDFG and the CNPS as having declining or vulnerable populations, but not officially listed as threatened or endangered species.) Seventy-seven species are proposed to be covered under the Solano HCP/NCCP. The purpose of the HCP/NCCP is to promote conservation of biological diversity consistent with the recognition of private property rights, providing for a healthy economic environment for the citizens, agriculture, and industries, and on-going maintenance and operation of public and private facilities in Solano County.

The Solano Multi-Species HCP/NCCP establishes a framework for complying with State and Federal endangered species regulations while accommodating future urban growth, infrastructure development, and ongoing operation and maintenance activities associated with flood control, irrigation facilities, and other public infrastructure. It will account for all activities undertaken by or under the permitting authority and control of the Plan participants within Solano County, of which. Suisun City is a plan participant and therefore the proposed Project would be subject to appropriate HCP/NCCP conservation measures. The Solano HCP/NCCP is currently in draft form.

The Solano HCP/NCCP includes Planning Areas 1 – 4 of the proposed Project Area in Zone 1 "Urban Zone." This zone is defined as the existing and identified potential urban development areas within the member agency cities of Vacaville, Fairfield, Suisun City, Rio Vista, Dixon and Vallejo. Planning Area 5 of the proposed Project is within Zone 3, Remainder of the County. Covered activities within this zone are primarily related to implementation of the HCP/NCCP conservation measures (i.e., management, enhancement, habitat restoration/construction, monitoring, scientific collection, and associated compatible activities on designated reserves, mitigation sites/banks, and open space lands and adjacent lands) and non-agricultural activities carried out under the authority of or participation by the Plan Participants on lands outside of the designated

urban boundaries (communication towers, water supply reservoirs, recreational facilities management).

Solano County General Plan

In addition to federal and state regulations, the Solano County General Plan (Solano County Planning Department 1980) identifies the following policies to provide further protection to biological resources within the County's limits:

Marsh and Wetland Habitat

Policies

- Preserve and enhance wherever possible the diversity of wildlife and aquatic habitats found in the Napa and Suisun Marsh and surrounding upland areas to maintain these unique resources.
- Protect marsh waterways, managed and natural wetlands, tidal marshes, seasonal marshes, and lowland grasslands, which are critical habitats for marsh-related wildlife.
- Continue existing uses in upland grasslands and cultivated area surrounding the critical habits of the Suisun Marsh in order to protect the marsh and preserve valuable marsh-related wildlife habitats. Where feasible, enhance the value of the upland grasslands and cultivated lands as habitat for marsh-related wildlife.
- Limit agriculture within the Primary Management Area of the Suisun Marsh to activities compatible with, or intended for, the maintenance or improvement of wildlife habitat.
- Maintain agricultural uses consistent with protection of the Suisun Marsh, such as grazing and grain production, within the Secondary Management Area.

City of Suisun City General Plan

In addition to federal and state laws and regulations, the Open Space and Conservation Element of the City of Suisun City General Plan (May 2001) identifies the following objectives and policies to provide for a variety of open spaces to meet community needs for environmental protection, agriculture, recreation, flood management, and water quality.

Objective 1: To designate sufficient lands for various open space uses that will meet the parks and recreation requirements of the capital improvements program, protect the City from flooding, preserve the Suisun Marsh, preserve natural resources and amenities, and ensure continued agricultural production as an interim use:

Policy 1: Location of Open Space Lands. Suisun City will designate certain lands to remain undeveloped or developed only

with uses that are consistent with plans and programs (Specific Plan, CIP, Marsh Protection District Plan, etc.) for the use of such lands.

Policy 2: Management of Open Spaces. In some cases, such as for park and recreation use, land will be acquired and managed publicly. In other cases, open space uses will be assured through cooperative agreements with private property owners or through public easements.

Policy 3: Types of Open Spaces. Open space lands will serve a variety of purposes:

- a. Outdoor recreational pursuits
- b. Resource Management and habitat preservation.
- c. Agricultural production
- d. Visual enjoyment and enhancement of community character.
- e. Flood management.
- f. Watershed and water quality protection.
- g. Ensuring the safety of the community by avoiding sites hazardous to urban development.

The City of Suisun City General Plan states that the environmental preservation goal is to improve the qualities and amenities of the Suisun Marsh environment as a natural habitat and recreation area and to the waterways emptying into the Marsh.

Objective 1: To increase the accessibility of the Marsh to residents of Suisun City, in conjunction with State action, while assuring its protection and enhancement in accordance with State policies governing the management of lands within and adjacent to the marsh.

Policy 7: Use and Protection of the Suisun Marsh. Land within the Primary management area prescribed by the Suisun Marsh Protection Plan will be preserved as open space for appropriate agricultural and wildlife habitat and limited outdoor recreational use compatible with the objectives of the Suisun Marsh Protection plan. Other use of the Primary management area will be limited to constructing any roads or bicycle and pedestrian paths, required for access to the marsh for the above uses, to publicly and privately sponsored recreation activities which are compatible with the marsh environment, and the transportation and utility corridor along the south side of Highway 12. Such access must be in conformity to the Marsh Protection Plan on utilities, facilities and transportation.

Policy 9: Protection of Watercourses and Floodways. Natural watercourses and drainage channels shall be protected and preserved to the extent possible; runoff from urban development and upland watershed areas will be contained by channels and reservoirs to control debris, sediment, and the rate and dispersal of runoff.

The City of Suisun City's General Plan currently designates all of the Gentry and Tooby parcels for urban development (mainly as limited industrial/business park, except portions designated as general commercial).

Suisun Marsh Protection Plan

Development and use of the Suisun Marsh is regulated under State law. In 1974, the California legislature passed the Suisun Marsh Preservation Act because of the need to protect the marsh from potential residential, commercial and industrial developments and the need to preserve the marsh for future generations. The Act directs the San Francisco Bay Conservation and Development Commission (BCDC) and the Department of Fish and Game to prepare the Suisun Marsh Protection Plan to "preserve the integrity and assure continued wildlife use" of the Suisun Marsh.

The Plan divides Suisun Marsh into two zones: a primary management area and a secondary management area. The primary management area encompasses 89,000 acres of tidal marsh, managed wetlands, adjacent grasslands and waterways over most of which BCDC has jurisdiction. The secondary management area encompasses approximately 22,500 acres of buffer. Solano County administers the local protection program while BCDC represents the State's interest and also serves as the land use permitting agency for major projects in the primary management area.

In the primary management area, the protection of environmental values and existing uses is the primary consideration. Urban development is precluded and other uses such as oil and gas exploration and construction and operations of utilities and other facilities are highly regulated by BCDC. Nevertheless, these activities are not permitted if they conflict with the protection of the marsh's values and other practicable alternatives are available. Activities within the secondary management area are also severely restricted to activities that will not adversely impact the Marsh. The primary management area encompasses the entire Barnfield property. The primary and secondary management areas are discussed further below.

Primary Management Area

As indicated above, the function of the primary management area is to protect and manage the Suisun Marsh ("Marsh") to enhance the quality and diversity of habitats. Another function of the primary management area is to protect existing uses of the Marsh, such as agricultural and hunting related activities provided they be limited to activities compatible with, or intended for, the maintenance and improvement of wildlife habitat.

Within the primary management area "... land and water areas should be managed so as to achieve the following objectives:

- Preservation and enhancement of Marsh habitat.
- Provision of habitat attractive to waterfowl.
- Improvement of water distribution and levee systems.
- Encouragement of agricultural and grazing practices consistent with wildlife use, waterfowl hunting, and elimination of mosquito breeding.
- Restoration of historic wetlands."

BCDC has jurisdiction over most of the primary management area and serves as the land-use permitting agency for major projects in the primary management area.

Secondary Management Area

The Secondary management area encompasses approximately 22,500 acres of "significant buffer lands", including upland grasslands and agricultural lands, surrounding the primary management area of the Suisun Marsh. The function of the secondary management area is to act as a buffer area protecting the Marsh habitats within the primary management area from adverse impacts of urban development. The secondary management area also serves as a transitional zone that is used by Marsh wildlife particularly when the wetlands are flooded and during periods of high hunting pressure in the Marsh. Goals of the secondary management area include:

- Returning historical marshes that have been converted for urban land use practices back to their original wetland status.
- Maintaining and enhancing Marsh-related wildlife habitats in the Secondary management area by planting or encouraging valuable wildlife food or cover plant species.
- Supporting existing agricultural land uses consistent with the protection of the Marsh, such as grazing and grain production.
- Establishing local runoff, erosion and sediment control ordinances over the watershed of the Suisun Marsh to prevent or minimize earth disturbance, erosion, water pollution, and hazards to public safety.

The secondary management area's function as a buffer and transitional zone to protect the Marsh is the prime consideration in building and land-use restrictions over the area. The Suisun Marsh Protection Plan disfavors urban development, and encourages protection of existing grazing and agricultural practices. It also tolerates existing commercial ventures, provided they do not cause adverse impacts on Suisun Marsh. These potential impacts, whether from an existing or proposed use, includes direct, quantifiable effects such as degradation of water quality, to less quantifiable impacts such as the intrusion of domestic pets.

Solano County, which has jurisdiction over the secondary management area, assesses compatibility of a proposed land use according to the policies defined in the Suisun Marsh Protection Plan and further detailed in Solano County's Local Protection Program. New commercial ventures in the secondary management area are not prohibited, but it is required that such ventures be compatible with the Local Protection Program. Solano County authorizes land use and development through a rigorous permitting process. In considering a permit, there are three principal concerns:

1. That the construction should not be disruptive to the ecosystem.
2. That the new development should not "have lasting effects on wildlife by forming barriers and obstacles to their movements and flight patterns."
3. That the process or development itself should not "stimulate urban development by providing services that are a prerequisite for such development."

Any development within the secondary management area must be authorized through the Marsh Development Permit process. Application for a Marsh Development Permit must be obtained by and filed with the Solano County Planning Department. In order for the Zoning Administrator or Planning Commission to grant a Marsh Development Permit, it must be demonstrated in the application that the proposed development shall be consistent with the policies defined in the Suisun Marsh Local Protection Program, which outlines Solano County's strategies for following policies defined in the Suisun Marsh Protection Plan for the secondary management area.

Agency Responsibilities

Rather than give one agency responsibility over the Suisun Marsh, the Suisun Marsh Protection Plan allows for control by multiple agencies that must maintain practices compatible with the policies of the Plan.

Local government agencies with jurisdiction over an area of the Marsh retain administrative control, including permit authority, and shoulder responsibility for day-to-day implementation of the Plan. For guidance, those agencies reference a "local protection program" that outlines how that area should conform to the Plan.

Besides administrating its own lands in the Marsh, the State maintains an oversight role, which is carried out by BCDC. The State's principal oversight duties are twofold: 1) "to ensure to the maximum extent feasible that existing uses of the Marsh continue," and 2) to ensure "that further development in the watershed does not adversely affect water quality." The means of oversight include a permit system for development in the primary management area, appellate review over local decisions that "significantly affect the Marsh," and certification of the Local Protection Program.

Solano County is responsible for preparing and administering Solano County's Local Protection Program and also has permit authority in the secondary management area. Solano County refers to a regulatory document called the "Solano County Policies and Regulations Governing the Suisun Marsh" for guidelines and policies concerning land

use activities in the secondary management area. Solano County also refers to the County General Plan to determine marsh protection policies and land use designations.

Suisun City, Fairfield, and Benicia have permit authority in the region of the secondary management area that falls within the cities' boundaries. They reference their local protection programs and general plans to determine policies concerning land designations and land use activities within the secondary management area.

The Fish and Game Commission and CDFG maintain ultimate authority and responsibility for management of the fish and wildlife resources of the Marsh. CDFG manages lands acquired with State funds that are intended for wildlife habitat and recreational use. Because of the daily presence of its employees in the Marsh, and the ground-level understanding that comes from this presence, CDFG also has significant influence and responsibility over the general management of the Marsh. This includes review of the Local Protection Program, consultation on wildlife and water management and appeals, the development of Marsh programs, and the authority to inspect and report on the Marsh.

The Suisun Resource Conservation District (District) is empowered to regulate water management practices of private lands in the Marsh. Local agencies retain the responsibilities of day-to-day water management, and those agencies retain the power to enter into agreements with landowners. In instances where the District is unable to regulate water-management practices, then the appropriate State or special purpose district assumes those responsibilities. The State Water Resources Control Board sets salinity standards for water in the Marsh, while the Department of Water Resources administers any alternative freshwater source necessary to the Marsh.

The State Lands Commission advises the BCDC on State land title and ownership questions, and resolves ownership disputes. It also carries out Plan management recommendations on lands under its stewardship.

The State is also authorized to acquire fee interests where appropriate, and to offer advice, data, and staff support to local agencies to help with implementation of the Plan. It also is encouraged to collaborate with non-profit corporations such as the Trust for Public Lands to make timely land purchases for inclusion in the Marsh public lands.

The Plan requires the continuation and expansion of research investigating how to better manage the Marsh. Federal and State agencies and the Solano County Mosquito Abatement District have the responsibility for conducting this research.

BCDC, which has jurisdiction over the primary management area, determines acceptance of permit applications based on whether the proposed land and water uses will be compatible with the maintenance and improvement of wildlife habitat and water quality in the Suisun Marsh. BCDC generally cannot authorize urban uses, such as houses, industries, roads, businesses and offices within the Primary management area. It is

necessary to obtain authorization from BCDC before undertaking any of the following activities within the Commission's jurisdiction:

- Placing solid material, pilings, floating structures, boat docks, or other fill.
- Dredging or other extraction of material.
- Making a substantial change in use of a structure or an area.
- Undertaking most types of development including some subdivisions of property.

In addition to having permit authority over potential development projects in the primary management area, BCDC also regulates currently existing agricultural practices. This type of land use is supported provided it is compatible with management goals. Intensive agricultural activities involving removal or persistent plowing of natural vegetation and maintenance of fallow land during part of the year is not permitted.

Management Area Designations on the Project Site

The Gentry Property and Tooby Property are north of Cordelia Road on the west and east sides of Pennsylvania Avenue, respectively. In this local region, Cordelia Avenue defines the northern boundary of the area regulated by the Suisun Marsh Protection Plan. Both properties are therefore located outside (north of) the jurisdictional area of the Suisun Marsh Protection Plan and are not subject to the land use regulations of the Plan.

The Barnfield Property is south of Cordelia Road. The entire property is situated within the jurisdictional area of the Suisun Marsh Protection Plan. Most of the property is located within the primary management area and the remainder is located within the secondary management area. The entire property is therefore subject to the regulations and land use restrictions of the Suisun Marsh Protection Plan.

The portion of the Barnfield Property located within the primary management area is under the jurisdiction and permitting authority of BCDC. Permitted development projects are typically restricted to the construction or maintenance of duck hunting club or wildlife viewing facilities, maintenance of levees, existing railways, roads, utilities, and buildings, gas and oil exploration, and construction and operation of natural gas wells. Residential or commercial development projects are generally not permitted in this area.

The small area along the western border of the Barnfield property located within the secondary management area is under the jurisdiction and permitting authority of Solano County. This area is zoned by the County as MP (Marsh Preservation District). A single primary residence is an allowed use on MP zoned lands. Other limited developments such as certain types of agricultural operations, hunting clubs or preserves, gas and oil exploration, and construction and operation of natural gas wells can also be permitted. Any proposed development project is authorized through the Marsh Development Permit and must conform to Solano County's General Plan and Suisun Marsh Local Protection Program.

Development is not proposed as part of the Project for either the primary or secondary management areas on the Barnfield property.

Other Statutes, Codes, and Policies Affording Limited Species Protection

California Native Plant Society

The CNPS maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (Tibor 2001). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The following identifies the definitions of the CNPS listings:

- | | |
|----------|--|
| List 1A: | Plants believed extinct. |
| List 1B: | Plants rare, threatened, or endangered in California and elsewhere. |
| List 2: | Plants rare, threatened, or endangered in California, but more numerous elsewhere. |
| List 3: | Plants about which we need more information - a review list. |
| List 4: | Plants of limited distribution - a watch list. |

IMPACTS AND MITIGATION MEASURES

Standards of Significance

For the purposes of this EIR, impacts are considered significant if implementation of the Proposed Project would do any one or more of the following:

- Adversely affect, either directly or through habitat modification, any endangered, threatened or rare species, as listed in Title 14 of the California Code of Regulations (Sections 670.5) or in Title 50, Code of Regulations (Sections 17.11 or 17.12) or their habitats (including but not limited to plants, fish, insects, animals, and birds);
- Have a substantial adverse impact, either directly or through habitat modification, on any species identified as a candidate, sensitive or special-status species in local or regional plans, policies, or regulations or by the CDFG or USFWS, including CNPS plants listed as 1B (CNPS 2001, 2006);
- Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulation or by the CDFG or USFWS;
- Allow development that would be inconsistent with the County's General Plan;
- Allow development that would be inconsistent with other County/City plans, policies, or ordinances;
- Adversely affect federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) either individually or in combination with the known or

probable impacts of other activities through direct removal, filling, hydrological interruption, or other means;

- Have a substantial adverse effect on significant ecological resources including:
 - Wetland areas including vernal pools;
 - Large areas of non-fragmented natural communities that support endangered, threatened or rare species;
 - Wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian routes, and known concentration areas of waterfowl within the Pacific Flyway;
- Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites;
- Conflict with any local or regional policies or ordinances designed to protect or enhance biological resources, such as a tree preservation policy or ordinance;
- Substantially fragment, eliminate or otherwise disrupt foraging areas, access to food sources, range and/or movement;
- Disrupt critical time periods (i.e., nesting and breeding) for fish and other wildlife species; or,
- Conflict with local, state, or federal resource conservation plans, goals, or regulations that would result in a physical impact on the environment.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish or result in the loss of an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important, but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of a defined important resource on a population-wide or region-wide basis (CEQA Guidelines – Article 5, Section 15065).

Methods of Analysis

Sources of information used for this section include the results of biological studies performed by Vollmar Consulting as described in their *Wetland Delineation and Special-Status Species Survey Report* (2003). Additionally, this section includes the results from Foothill Associates' independent biological studies, as well as local, state, and federal resource agencies. Nomenclature for biological communities was based on *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988) with additional information provided by *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995).

Documents pertaining to the biological resources of the site that were reviewed for Foothill Associates' Biological Resources Report include the following:

- California Department of Fish and Game (CDFG 2006). California Natural Diversity Data Base (CNDDDB) (query for U.S. Geological Survey *Fairfield South, Fairfield North, Denverton, Elmira, Mt. George, Cordelia, Benicia, Vine Hill, and Honker Bay, California* 7.5-minute quadrangles). Sacramento, CA. October 2004.
- Solano County Planning Department. 1980. Solano County General Plan (as amended through July 1995).
- LSA Associates 2005. Solano Multispecies Habitat Conservation Plan and Natural Community Conservation Plan, Working Draft 2.1. LSA Project No. SCD930. Pt. Richmond, California.
- U.S. Fish and Wildlife. 2006. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the *Fairfield South, California* USGS 7.5-minute series topographic quadrangle: February 2006.
- Vollmar Consulting. 2003. Wetland Delineation and Special-Status Species Survey Report for the Gentry and Tooby Properties, Suisun, Solano County, California.
- Vollmar Consulting. 2005. Gentry, Tooby and Barnfield Properties: Special-Status Plant Survey Report 2000-2002, & 2005 Field Seasons.
- Foothill Associates' biologists conducted field surveys on the site on April 6, 2004. The field surveys included general plant and wildlife surveys and a focused special-status plant survey. Special attention was given to those areas on the site with the potential to support special-status plant and wildlife species and sensitive habitats, including wetlands. Recent aerial photography (WAC Corporation 1999) was examined to identify biological resources and map biological communities in conjunction with field surveys.

Project Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the Suisun Gentry Proposed Project. Because the Project incorporates open space, but would alter existing on-site natural resources, this impact discussion reflects full build-out of the Project.

Mitigation Incorporated into the Proposed Project

The proposed Project includes elements that are designed to reduce onsite impacts to the existing biological resources and enhance habitat in the Project Area. The Proposed Project involves annexation of the Project site, general plan amendments, and pre-zoning. The applicant is proposing development on the Gentry parcels, which are located in the northwestern portion of the Project Area, and with the exception of Planning Area 3, the Project is avoiding direct impacts to wetlands and wildlife habitat on the Tooby property and the Barnfield property. As a result of placing development in the northwest portion of the property area, the Project minimizes impacts to seasonal wetland areas and avoids impacts to brackish marsh within the Project Area.

**Table 4.8-8. Avoidance/ Minimization Of
 Corps Verified Jurisdictional Waters Of The U.S.**

Type of Water of the United States	Acreage Verified by the Corps within the Project Area boundary	Proposed Project Area that would be impacted: Entire Gentry property & a portion of the Tooby property (ac):	Areas Avoided (ac):
Jurisdictional Wetlands	320.38	35.72	284.66

The applicant proposes to preserve/enhance wetland areas on the Barnfield property and on the remainder of the Tooby property. The Barnfield and Tooby properties would be subject to a conservation easement and a long-term management plan that would protect the resources on these sites in perpetuity. Any required wetland mitigation that could not be accommodated on the Barnfield and Tooby properties would be implemented at an offsite location or satisfied through the purchase of wetland credits at an approved wetland mitigation bank.

Mitigation for Contra Costa goldfields, Saline clover and alkali milk-vetch is also proposed on the Barnfield and Tooby properties. This would serve to expand the current populations of these species in this area and preserve existing occurrences of these species in the preservation area in perpetuity.

Although mitigation measures are recommended below, conditions of state and federal permits, as applicable, would supersede these mitigation measures.

Impacts and Mitigation Measures

4.8-1 Impacts to Annual Grassland Habitat.

Development of the Mixed Use Site for buildings, roads, and other infrastructure would result in the direct loss of approximately 156.54 acres of annual grassland habitat (**Table 4.8-3**). The loss of annual grassland not used by special-status species would be considered to be a *less-than-significant* impact because this habitat type is not considered a sensitive natural community. However, annual grassland in the Project Area could support burrowing owl, a special-status species. Annual grassland on the Project Site could also be used as foraging habitat for Swainson’s hawk, which is also a special-status species. Mitigation for potential impacts to burrowing owl and Swainson’s hawk foraging habitat are described below in *mitigation measures 4.8-28(a) and 4.8-29(a)*.

4.8-2 Impacts to Wetlands.

Wetlands Impacts 1a and 1b:

The proposed 88.44-acre Project Site includes 35.72 acres of wetlands and other waters under state and federal jurisdiction (**Table 4.8.4**). Impacted wetlands within the Project Area are shown by wetland habitat type in the table below.

- 1a) Wetlands and waters of the U.S. subject to Corps jurisdiction will be filled to accommodate the proposed development. Wetland impacts related to Project fill would total 35.72 acres. There would be consequent loss of the wetland functions and values provided by these areas unless mitigated. This is considered a *significant* impact.
- 1b) Additional areas that are part of the Project Area, but not within the Project Site development footprint, were investigated in a preliminary wetland assessment in 2005. These areas are listed in **Table 4.8.5**. No detailed wetland delineation of these areas has been completed. A preliminary wetland assessment found that there are approximately 9.19 acres of wetlands in these parcels. If these areas were developed, any potential jurisdictional wetlands present could be impacted, with a consequent loss of wetland functions and values. This is considered a *potentially significant* impact

Mitigation Measures for Wetlands Impacts 1a and 1b:

Implementation of the following mitigation measures would reduce these impacts to a *less-than-significant* level.

4.8-2 (a) Detailed delineation of preliminary wetland assessment areas.

*If areas that were not part of the verified wetland delineation are proposed for development, and the preliminary wetland assessment indicates the presence of wetlands potentially under state or federal jurisdiction, a detailed wetland delineation will be required, as well as Corps verification of the wetland delineation. **Figure 4.8.3** shows the areas that were not part of the verified wetland delineation and **Figure 4.8.3** shows the locations of wetland habitat types found during the preliminary wetland assessment of these areas. These areas, if determined to be under state and/or federal jurisdiction and impacted by development, would be subject to Wetland Mitigation Measures 1-2 and 1-3 below.*

4.8-2 (b) 404 Permit(s) and State 401 Water Quality Certification. For all dredge or fill activities in wetlands, other waters of the United States, or waters of the state, authorization from the Corps in the form of a Corps permit under Section 404 of the Clean Water Act and authorization from the RWQCB in the form of water quality

certification under Section 401 of the Clean Water Act will be required. Appropriate wetland mitigation will be required by the Corps and the RWQCB to compensate for onsite impacts to wetlands under federal or state jurisdiction.

- 4.8-2 (c) **Wetland Mitigation.** *The applicant should compensate for the loss of wetland habitat to ensure no net loss of habitat functions and values. To mitigate for the direct loss of 35.72 acres of jurisdictional wetlands, the applicant should create/restore wetlands at a ratio of 1:1 (1 acre created/restored for every acre lost) and preserve wetlands at a ratio of 2:1 either on the Tooby and Barnfield properties or at a nearby location. Created/restored wetlands and preserved wetlands should generally be in-kind for wetlands lost.*

A detailed wetland mitigation plan will be required that includes monitoring and reporting requirements, responsibilities, performance success criteria, and contingency requirements. Mitigation lands would be subject to a conservation easement and an agency approved long term management plan. The conservation easement would ensure that the wetlands were protected in perpetuity. The wetland mitigation plan will require approval by the Corps and the RWQCB.

Alternatively, with Corps and RWQCB approval, the applicant can satisfy the wetland mitigation requirement in part, or in full, by purchasing wetland creation/restoration credits at a 1.5:1 ratio and preservation credits at a 2:1 ratio at an approved wetland mitigation bank.

- 4.8.2(d) **Temporary and Permanent Fencing.** *In addition to the buffers, temporary fencing shall be placed around all areas scheduled for development to provide an additional barrier for the unauthorized movement of people, pets, and wildlife associated with human development into the wetlands area and to keep sensitive species from entering the construction area. Fencing during construction will ensure that construction related disturbances such as soil compaction, fuel spills, and dust generation will not occur beyond the boundaries of the permanent riparian protection buffer. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications should include clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced area. This fencing will be replaced with permanent fencing as soon as it is practicable to do so. This*

fencing should be adequate to deter people and domestic animals from entering the property and have provisions for maintenance. Signage should be provided, directing people to keep out of natural areas and mitigation sites. In addition, the project applicant shall be required to post signage stating that dogs, horses, and off-road vehicles are not permitted in these areas and will take all necessary measures to physically prevent them from entering.

4.8-3 Impacts to Wetlands 2.

The development proposed for Planning Area 3 could indirectly impact the alkali seasonal marsh north of the planning area through alterations in water quality or disruption to the wildlife that may use this area. This is a **potentially significant** impact.

Mitigation Measure for Wetlands Impact 2:

Implementation of the following mitigation measure would reduce this potentially significant impact to a **less-than-significant** level.

*4.8.3 (a) **Buffer.** To avoid potential indirect impacts to the alkali seasonal marsh adjacent to the northern boundary of Planning Area 3, the applicant should provide an unmowed buffer having a minimum average width of 25 feet along the north boundary of Planning Area 3 where wetlands occur adjacent to the boundary. In addition to the unmowed buffer, the fire department may require a 30 foot mowed firebreak adjacent to the residential fence line.*

Alternatively, if the unmowed buffer is not feasible, wetlands within 25 feet of the northern boundary of Planning Area 3 would be considered indirectly impacted, and would require mitigation at a 1:1 ratio. Approximately 0.29 acre of alkali seasonal marsh lies within this 25-foot buffer area on the northern border and would require mitigation if indirectly impacted

4.8-4 Impacts to Wetlands 3.

The eastern border of Planning Area 3 abuts a perennial brackish marsh drainage ditch and development could indirectly impact the drainage ditch through alterations in water quality or disruption to the wildlife that may use this area. This is a **potentially significant** impact.

Mitigation Measure for Wetlands Impact 3:

Implementation of the following mitigation measure would reduce this impact to a **less-than-significant** level.

4.8.4 (a) **Buffer.** *The eastern boundary of Planning Area 3 should be set back a minimum of 25 feet from the perennial brackish marsh drainage ditch. In addition to the 25-foot unmowed buffer, the fire department may require a 30 foot mowed firebreak adjacent to the residential fence line.*

4.8-5 Impacts to Vernal Pools.

There are 9.06 acres of vernal pool habitat within Planning Area 1 on the Gentry Property that are within the area of development. Additionally, vernal pools are adjacent to Planning Area 3 and the Gibert Property. The site is within designated critical habitat for vernal pools (Contra Costa Goldfields) (USFWS 2006a). The entire development area is within an area designated as both a “Draft Vernal Pool Core Area” and a “High Value Conservation Area” by the *Draft Solano Multispecies Habitat Conservation Plan* (LSA Associates 2005). Direct and indirect impacts to this habitat is a **potentially significant** impact.

Mitigation Measure for Vernal Pools:

Implementation of *mitigation measures 4.8-2(a-d)* and *mitigation measures 4.8-24(a-f)*, below would reduce this impact to a **less-than-significant** level.

4.8.4 (a) **Buffer.** *The eastern boundary of Planning Area 3 should be set back a minimum of 250 feet from the perennial brackish marsh drainage ditch. In addition to the 250-foot unmowed buffer, the fire department may require a 30 foot mowed firebreak adjacent to the residential fence line.*

Alternatively, if the unmowed buffer is not feasible, wetlands within 250 feet of the northern boundary of Planning Area 3 would be considered indirectly impacted, and would require mitigation.

4.8-6 Impacts to Riparian Habitat 1.

The western boundary of Planning Areas 1 and 2 is adjacent to Ledgewood Creek. Project development in this area could reduce the value of the wildlife habitat of this riparian area and disrupt natural wildlife movement corridors. This is a **potentially significant** impact.

Mitigation Measures for Riparian Habitat Impact 1:

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

4.8.6 (a) **Buffer.** *The western boundary of Planning Areas 1 and 2 should be set back on average 50 feet from the top of the bank or outside edge of riparian vegetation within Ledgewood Creek and Planning Area 2, whichever distance is greater.*

4.8.6 (b) **Fencing during construction.** *In addition to maintaining a riparian protection buffer average of 50 feet from the top of the bank or outside edge of riparian vegetation, the Project applicant should also install fencing along the boundary of the riparian protection zone adjacent to construction activities during the construction of the Project in the vicinity of the riparian area in Planning Areas 1 and 2. Fencing during construction will ensure that construction related disturbances such as soil compaction, fuel spills, and dust generation will occur beyond the boundaries of the permanent riparian protection buffer. The location of the fencing shall be marked in the field with stakes and flagging and shown on the construction drawings. The construction specifications should include clear language that prohibits construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the fenced area. Prior to obtaining permits, signs and if necessary fencing will be constructed directing people to keep out of natural areas and mitigation sites. In addition, the project applicant shall be required to post signage stating that dogs, horses, and off-road vehicles are not permitted in these areas and will take all necessary measures to physically prevent them from entering them.*

4.8.6 (c) **Permanent fencing.** *Project development in Planning Areas 1 and 2 should be fenced to avoid intrusion into the adjacent riparian areas. The fence should be placed along the riparian setback (50-feet from top of bank or outside edge of riparian vegetation). This fencing should be adequate to deter people and domestic animals from entering the property and have provisions for maintenance. The existing permanent fencing may be sufficient for this purpose. Prior to obtaining permits, signs and if necessary fencing will be constructed directing people to keep out of natural areas and mitigation sites. In addition, the project applicant shall be required to post signage stating that dogs, horses, and off-road vehicles are not permitted in these areas and will take all necessary measures to physically prevent them from entering them.*

4.8-7 Impacts to Riparian Habitat 2.

Project development in Planning Area 2 will impact 0.03 acre of Corps Jurisdictional riparian habitat and approximately 0.33 acres of potential CDFG Jurisdictional riparian habitat that is a remnant portion of Ledgewood Creek. CDFG will need to make a determination of its jurisdictional areas as part of the 1602 streambed alteration agreement that will be prepared for this site. This area is now cut off from Ledgewood Creek, which lies west of the proposed Project Site. It is anticipated that because this area is within the development footprint, it

will be filled as part of development or alternatively, used for stormwater detention before the stormwater is discharged offsite. In either case, mitigation would be required. This is a ***potentially significant*** impact since this wetland is under federal jurisdiction and may be under state jurisdiction.

Mitigation Measure for Riparian Habitat Impact 2:

Implementation of the following mitigation measure would reduce this potentially significant impact to ***less-than-significant***.

4.8.7 (a) Impacts to the riparian wetland habitat of the remnant portion of Ledgewood Creek should be mitigated as part of the wetlands mitigation plan (see above).

4.8-8 Impacts to Riparian Habitat 3.

Construction activities could result in degradation of sensitive habitat areas through increased erosion, increased sedimentation, spills during vehicle refueling, or disposal of food and trash. This is a ***potentially significant*** impact.

Mitigation Measures for Riparian Habitat Impact 3:

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

4.8-8 (a) Construction activities should be designed and implemented using Best Management Practices (BMPs) to prevent erosion, blowing dust, and increased sedimentation.

4.8-8 (b) All fueling and maintenance of vehicles and other equipment as well as locations of staging areas should occur at least 75 feet from any riparian area proposed to be preserved (including those adjacent to the western boundaries of Planning Areas 1 and 2) and other wetlands proposed to be preserved (wetlands not within the Mixed Use site). All workers should be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

4.8-8 (c) The number of access routes, and number and size of staging areas should be limited to the minimum necessary to achieve the Project goal. Routes and boundaries should be clearly marked/flagged. These areas should be outside of wetland areas and other sensitive areas proposed for preservation.

4.8-8 (d) Food, trash, and other solid wastes should be disposed of in properly contained, covered refuse containers and regularly removed from the construction site.

4.8-9 Impacts of Loss of Wildlife Corridors.

The Project Site as a whole serves little value as a wildlife corridor due to the large amount of development and barriers that surround it. While the Barnfield and Tooby Parcels do provide large areas of habitat for several sensitive salt marsh species, they are at the northern extend of these species range in the immediate area and do not represent corridors between two large populations. The project is not anticipated to impact Ledgewood Creek which may serve a limited function as a wildlife corridor for species inhabiting the brackish and freshwater emergent vegetation within its channel. The site is not within an area designated as a key corridor by the HCP (LSA Associates2005). Therefore this project is anticipated to have *less-than-significant* impacts to wildlife corridors.

4.8-10 Impacts to Common Species Animal Populations 1.

Some terrestrial wildlife may be impacted directly during construction activities. In terms of common species, any loss that occurs would be considered a *less-than-significant* impact and no mitigation is required. Special status species are discussed below.

4.8-11 Impacts to Common Species Animal Populations 2.

Foraging and reproductive activities of wildlife in the adjacent sensitive habitat areas, including habitat of special-status species, could be disrupted by Project construction activity and noise. In terms of common species, since this is a temporary impact, it would be considered a *less-than-significant* impact and no mitigation is required. Migratory bird species and other protected species are discussed below.

4.8-12 Impacts to Common Species Animal Populations 3.

Loss of vegetation and habitats located within the proposed development footprint could displace existing wildlife. Some bird roosting and foraging areas may be eliminated. Reptiles, amphibians, and small mammals that use these areas may be killed or displaced to remaining undisturbed areas. Given the high ratio of open space to developed land, however, any impacts to most species should be minor and this is considered a *less-than-significant* impact, not requiring mitigation. Special status species impacts are discussed below.

4.8-13 Impacts to Common Species Animal Populations 4.

Animal species that have adapted to living in close association with human disturbance can be expected to increase after construction of the proposed Project. These species include mammals such as raccoon, deer mouse, and house mouse, and birds such as ring-billed and California gull, rock dove, mourning dove, western scrub jay, American crow, common raven, American robin, European

starling, house sparrow, Brewer's blackbird, brown-headed cowbird, house finch, and California towhee. In terms of common species, this is considered a **less-than-significant** impact not requiring mitigation. Special status species impacts are discussed below.

4.8-14 Impacts to Common Species Animal Populations 5.

Placement of fill material and other ground disturbing activities could prompt erosion and allow elevated levels of sediment to wash into riparian areas or wetland areas to be preserved. Surface water runoff could continue offsite and consequent siltation and sedimentation may impact fish and wildlife species utilizing these areas. This would be considered a **potentially significant** impact.

Mitigation Measure for Common Species Animal Populations Impact 5:

Implementation of this mitigation measure would reduce this impact to a **less-than-significant** level.

4.8-14 (a) During construction, vegetation should be cleared only from the permitted construction footprint. Areas cleared of (1) vegetation, (2) pavement, or (3) other substrates should be stabilized as quickly as possible to prevent erosion and runoff. Implementation of Best Management Practices (BMPs) and the Stormwater Pollution Prevention Plan (SWPPP) for the site would provide mitigation for this impact.

4.8-15 Impacts to Common Species Animal Populations 6.

Project landscaping is expected to introduce exotic, nonnative vegetation, some of which may not exist in the area. This would be considered a **potentially significant** impact.

Mitigation Measure for Common Species Animal Populations Impact 6:

Implementation of the following mitigation measure would reduce this potentially significant impact to **less-than-significant**.

4.8-15 (a) Where feasible, vegetation removed as a result of Project activities should be replaced with native species which are of value to local wildlife. Native plants generally are more valuable as wildlife food sources and require less irrigation, fertilizers, and pesticides than exotic species.

4.8-16 General Impacts to Special Status Plant Species.

The Proposed Project consists of 493.36 acres and involves the annexation of approximately 172.36 acres into the City limits of Suisun City, re-designation of land uses, and pre-zoning of the site in to four Planning Areas. Contra Costa

goldfields, saline clover, and alkali milkvetch are known to occur here. Additionally, suitable habitat for brittlescale, heartscale, and San Joaquin saltbush occurs on-site. Implementation of the Proposed Project would directly impact the Contra Costa goldfields, saline clover, and alkali milkvetch populations and result in the loss of suitable habitat for brittlescale, heartscale, and San Joaquin saltbush. Furthermore, the draft Solano Habitat Conservation Plan currently identifies the Project site as a conservation area for Contra Costa goldfields. Special status plant species could be impacted if development were to occur in suitable habitat areas not previously surveyed for special status plant species. This is a **potentially significant** impact.

Mitigation Measure for Special Status Plant Species General Impact:

Implementation of the following mitigation measure would reduce this potentially significant impact to a **less-than-significant** level.

4.8-16 (a) Prior to construction, surveys for special status plant species should be undertaken in areas not previously surveyed, if development is proposed to occur in suitable habitat for special status plant species. If additional locations of species previously identified onsite are identified in these surveys, mitigation for those species would be implemented as indicated below. Although not anticipated, if special status species not discussed below are found, suitable mitigation should be coordinated with the USFWS or CDFG, as applicable for federally listed or state listed species (or state Species of Special Concern), respectively

4.8-16 (b) Upon approval of current Project entitlements by City Council, the Project would require additional approvals including but not limited to the issuance of grading permits. If feasible, special-status plant populations shall be avoided and protected using methods developed through consultation with the CNPS and CDFG. If special-status plant populations observed during the focused plant survey cannot be avoided, land supporting known populations of the species impacted shall be purchased by the applicant. If no land supporting the species can be located, the populations within the Project site must be preserved. At a minimum, offsite mitigation shall occur at a 1:1 ratio (one plant preserved for each plant impacted). CNPS and CDFG shall be consulted to evaluate the suitability for transplanting impacted species to suitable habitats within the established offsite preserve. A detailed preservation management plan shall be prepared only for the special-status plant species found during the focused survey that includes the species found and the habitat type. Preservation management strategies shall be developed in consultation with the CNPS and CDFG.

4.8-17 Impacts to Contra Costa Goldfields 1.

On the basis of the 2000 – 2002 and 2005 surveys conducted by Vollmar Consulting, a 0.02 acre area occupied by the Contra Costa goldfields would be adversely affected by the proposed Project. This population represents a 0.13 percent loss to the known population of Contra Costa goldfields in the Gentry, Tooby and Barnfield properties during the survey years. The project site is within Vernal Pool Critical Habitat Unit 5B, Contra Costa Goldfields (USFWS 2006a). This represents a *potentially significant* impact.

Mitigation Measure for Contra Costa Goldfields Impact 1:

Implementation of the mitigation measure below would reduce this impact to a *less than significant* level.

4.8-17 (a) In coordination with a botanist familiar with Contra Costa goldfields salvage and relocation programs, the applicant should attempt to establish new populations of Contra Costa goldfields that result in a net increase in plant numbers and/or a real extent of occupied habitat based on average populations derived from the 2000 – 2002 and 2005 surveys conducted by Vollmar Consulting. Establishing new populations may be accomplished by collecting seed from extant populations and salvaging seed and topsoil from occupied wetlands within the impacted area. The restored or new Contra Costa goldfields populations may be established in constructed/restored and existing enhanced wetlands. A plan for the relocation and monitoring efforts should be coordinated with the U. S. Fish and Wildlife Service.

4.8-18 Impacts to Contra Costa Goldfields 2.

Impact 2 outlines Project impacts to wetland habitat that could be Contra Costa goldfields habitat but that is not currently occupied by Contra Costa goldfields.

Contra Costa goldfields occur on the Gentry property within seasonally saturated annual grasslands. On the Tooby property this species occurs in vernal pools. On the Barnfield property Contra Costa goldfields occurs in seasonally saturated annual grassland, alkaline seasonal marsh, and vernal pools. The loss of the seasonally saturated annual grassland, alkali seasonal marsh, and vernal pool wetland types represents the loss of potential Contra Costa goldfields habitat. Loss of potential Contra Costa goldfields habitat would therefore total 35.72 acres, which equals the amount of impacted jurisdictional wetlands within the Project development site. Loss of this potential habitat is a *potentially significant* impact.

Mitigation Measure for Contra Costa Goldfields Impact 2:

Implementation of the mitigation measure below would reduce this impact to a ***less-than-significant*** level.

4.8-18 (a) *The applicant should preserve potential Contra Costa goldfields habitat at a ratio of 2:1 either on the Tooby and Barnfield property or at a nearby site (2 acres preserved for each acre lost) with the same general type of wetlands habitat as is found within the impacted site. This 71.44-acre wetland preservation area should be protected in perpetuity by a conservation easement.*

4.8-19 Impacts to Alkali Milk-Vetch 1.

On the basis of 2005 survey data, approximately 0.02 acre of known occurrences of alkali milk-vetch will be impacted by the proposed Project development. The alkali milk-vetch is a federal species of concern and is on the CNPS List 1B. This is a ***potentially significant*** impact.

Mitigation Measure for Alkali Milk-Vetch Impact 1:

Implementation of the mitigation measure below would reduce this impact to a ***less-than significant*** level.

4.8-19 (a) *The preservation of seasonally saturated annual grassland habitat within the wetland habitat complex provided on the Barnfield property as partial mitigation for the loss of potential habitat for the Contra Costa goldfields (see above) will also serve as mitigation for the loss of potential alkali milk-vetch habitat. The preservation area should be protected in perpetuity by a conservation easement. It should be noted that a salvage and relocation program is not considered a feasible mitigation measure for the alkali milk-vetch.*

4.8-20 Impacts to Alkali Milk-Vetch 2.

This species was found in areas of seasonally saturated annual grassland on the Gentry property. In 2005, a year with very high rainfall, it was also found on the Gentry property in three locations of ruderal annual grassland habitat. The proposed Project development will impact 19.67 acres of seasonally saturated annual grassland habitat. This represents a loss of potential habitat for the alkali milk vetch of 19.67 acres. This is a ***potentially significant*** impact. This impact would be reduced to ***less-than-significant*** by *Mitigation Measure 4.8-19(a)*

4.8-21 Impacts to Saline Clover 1.

Impacts to 1.10 acres of the western Suisun population of Saline clover are anticipated as a result of Project implementation, based on the 2000 – 2002 and 2005 surveys. Saline clover is a CNPS LIST 1B species. This is a *potentially significant* impact.

Mitigation Measure for Saline Clover Impact 1:

Implementation of the following mitigation measure would reduce this impact to a *less-than significant* level.

4.8-21 (a) In coordination with a botanist familiar with salvage and relocation programs, the applicant should attempt to establish new populations of saline clover that result in a net increase in plant numbers and/or occupied available habitat. Reestablishment should be accomplished through collection of seed from extant populations and salvage of seed and top soil from occupied wetlands within the impacted area. The restored or new saline clover populations may be established in constructed/restored and enhanced wetlands.

4.8-22 Impacts to Saline Clover 2.

Saline clover was observed around the upper margins of the large vernal pool in the Gentry property and in seasonally saturated annual grassland. The loss of the vernal pool habitat and the seasonally saturated annual grassland habitat within the Project development footprint represents a potential loss of potential habitat for the saline clover. This is a potentially significant impact.

Mitigation Measure for Saline Clover Impact 2:

Implementation of the above mitigation measure would reduce this impact to a *less-than-significant* level.

4.8-22 (a) The preservation of vernal pool, seasonally saturated annual grassland habitat, and alkali seasonal marsh on the Barnfield property as partial mitigation for the loss of potential habitat for Contra Costa goldfields (see above) will also serve as mitigation for loss of potential saline clover habitat. A conservation easement should be placed on this preservation area and it should be protected in perpetuity.

4.8-23 Impacts to Suisun Marsh Aster 1.

In the 2000 – 2002 and 2005 special status plant surveys the Suisun Marsh aster was observed in scattered locations along the ditch that traverses the Tooby Property. This population is estimated at 200 plants. Based on the current Project

development footprint the eastern edge of Planning Area 3 could potentially impact the Suisun Marsh aster along this ditch. This is a potentially significant impact. The Suisun Marsh aster was also observed in scattered colonies along slough banks in the southern and southeastern portions of the Barnfield property. No impact is proposed in this area since no development is proposed on the Barnfield property.

Mitigation Measure for Suisun Marsh Aster Impact 1:

Implementation of the mitigation measure below would reduce this impact to a *less-than-significant* level.

4.8-23 (a) Buffer. The recommended 25-foot buffer from the top of the bank of the perennial brackish marsh ditch on the eastern border of Planning Area 3 (wetland buffer) would serve to avoid direct impacts to the Suisun marsh aster (see mitigation measure above, under "wetlands").

4.8-24 Impacts to Vernal Pool Habitat and Crustaceans.

One Wet and two dry season sampling were conducted for special status vernal pool crustaceans (vernal pool tadpole shrimp, vernal pool fairy shrimp, and Conservancy fairy shrimp). The wet season survey was conducted in 2000 and the dry season surveys were conducted in the late fall of 2002 and late fall of 2005. The results of all three surveys were negative. The USFWS has indicated that protocol surveys must be conducted in two consecutive years and results are valid for five years. The surveys conducted in 2000 and 2002 were not during two consecutive years and it has been more than five years since the 2000 wet season surveys. The dry-season survey of 2005 would require a wet-season survey in 2006 in order to be considered a complete survey in accordance USFWS protocol. The survey is currently in progress. Although unlikely, if special status vernal pool crustaceans are present in wetland habitats within the Project Site, the proposed Project could have a *potentially significant* direct impact on special status vernal pool crustaceans due to the filling of wetlands for the proposed development. Indirect impacts to occupied habitat would include all habitats within 250 feet of the proposed development, and vernal pools supported by destroyed upland habitat.

Mitigation Measures for Vernal Pool Crustaceans:

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

4.8-24 (a) The Project applicant should coordinate with the U.S. Fish and Wildlife Service to obtain approval for updated protocol-level surveys in 2006 for vernal pool crustaceans on the Project Site to fulfill any additional survey requirements of the USFWS.

If two consecutive protocol-level surveys are conducted and completed in accordance with USFWS Interim Survey Guidelines and the results are negative, no mitigation is required.

If survey results indicate the presence of listed vernal pool crustaceans, the following mitigation (1-2 through 1-6) should be implemented, subject to approval of the USFWS, through the consultation process under Section 7 of the Endangered Species Act. The consultation with the USFWS will be initiated by the Corps as part of the Corps permit process under Section 404 of the Clean Water Act.

The following mitigation measures are based on the USFWS's *Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Vernal Pools Within the Jurisdiction of the Sacramento Field Office* (1995) and would be superseded by the terms and conditions of the USFWS's Biological Opinion for this project:

4.8-24 (b) *Preservation component*: For every acre of habitat directly or indirectly impacted, at least two vernal pool credits will be dedicated within a Service approved ecosystem preservation bank, or, based on Service evaluation of site-specific conservation values, 2 acres of vernal pool habitat may be preserved within the Project Area.

4.8-24 (c) *Creation component*: For every acre of habitat directly impacted, at least one vernal pool creation credit will be dedicated within a Service approved habitat mitigation bank, or, based on Service evaluation of site-specific conservation values, one acre of vernal pool habitat will be created and monitored within the Project Area as approved by the Service.

4.8-24 (d) *Vernal pool habitat and associated upland habitat used as onsite mitigation will be protected from adverse impacts and managed in perpetuity or until the Corps, the applicant and the Service agree on a process to exchange such area for credits within a Service-approved mitigation banking system.*

4.8-24 (e) *If habitat is avoided (preserved) onsite, then a Service-approved biological monitor will inspect any construction-related activities at the proposed Project Site to ensure that no unnecessary take of listed species or destruction of their habitat occurs.*

4.8-24 (f) *Adequate fencing will be placed and maintained around any avoided (preserved) vernal pool habitat to prevent impacts from vehicles.*

4.8-25 Impacts to California Tiger Salamander.

Proposed Project

Implementation of the Proposed Project would impact the annual grasslands, vernal pools, and seasonal wetlands on-site (see **Figure 4.8-5**), which provide habitat for California tiger salamander. As a result, loss of this habitat is considered a *potentially significant* impact.

Mitigation Measure(s)

The following mitigation measures would reduce adverse effects to tiger salamander to a *less-than-significant* level.

4.8-25 (a) The project applicant shall have a qualified, permitted biologist conduct protocol-level surveys in area subject to development for California Tiger Salamander according to USFWS and CDFG protocols (USFWS & CDFG 2003). If the survey results are negative, no further mitigation measures will be necessary.

4.8-25 (b) If California Tiger Salamanders are detected at the project site during protocol-level surveys, the project applicant shall consult with the USFWS and CDFG regarding appropriate measures to mitigate any potential impacts. These measures may include:

- *Conduct preconstruction surveys to find individuals and relocate them prior to ground disturbance activities;*
- *Set up construction zone limits using silt fencing to restrict salamander access onto construction areas;*
- *Mark exclusion areas with signs that identify protected habitat;*
- *Provide a qualified Biological Monitor during construction within potential California tiger salamander habitat;*
- *Find and relocate individuals prior to ground disturbance activities, and relocate to safe areas outside the construction zone limits.*

4.8-26 General Impacts to Avian Species.

Direct and indirect impacts to nesting populations of state and federal species of concern such as the American bittern, Cooper's hawk, northern harrier, white-tailed kite, short-eared owl, western burrowing owl, loggerhead shrike, saltmarsh common yellowthroat, Suisun song sparrow, or tricolored blackbird could occur through habitat removal or disturbance of potential nest sites during construction. Human disturbances from construction activities could cause nest abandonment and death of young or loss of reproductive potential at active nests on or near the

Project Site. This is a **potentially significant** impact. (The burrowing owl is discussed separately below.)

Mitigation Measures for Avian Species General Impact:

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

4.8-26 (a) **Preconstruction Surveys.** *If construction activities are scheduled to occur during the breeding season (between February 1 and August 1), a qualified ornithologist shall conduct preconstruction surveys of all potentially active nest sites within 0.25 mile of the Project Site for the species listed above to ensure impacts to these species do not occur during the nesting season. The presence of nests of these species may require delay of construction until young have fledged.*

No surveys would be required if construction activities are scheduled to occur during the non-nesting season. Clearing and grubbing and grading the site during the non-nesting season would help to reduce the potential for nesting birds.

No mitigation would be required if surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period.

4.8-26 (b) **Buffers.** *If active nests are found and construction activities are scheduled to occur during the breeding season (February 1 – August 1), the Project applicant shall establish buffers around active nests until it is determined that young have fledged. Buffers for raptors should have a 300-foot radius; buffers for the migratory birds listed above should have a radius of 50 feet.*

The size of individual buffers can be adjusted based on an evaluation of the site by a qualified biologist. The evaluation will include identifying topographic features that obstruct the line of site from construction activities to the nest and observing the sensitivity of the nesting pair to construction activities (road traffic for example). Evaluations and buffer adjustments should be done in consultation with appropriate resource agencies (CDFG, USFWS). No construction activities would occur within the approved buffer unless resource agencies allow specified construction activities based on site-specific conditions and the particular species in question. If construction activities occur only during the non-breeding season (between August 1 and February 1), no surveys would be conducted and no buffers would be required.

4.8-27 Impacts to Burrowing Owls.

Burrowing owls have been detected on the GF Gilbert Parcel, and there is potential habitat for this species elsewhere at the project site. Burrowing owls, could be both directly and indirectly impacted by Project development. According to the CDFG's *Staff Report on Burrowing Owl Mitigation* (CDFG 1995), the following would be considered **potentially significant** impacts:

1. Disturbance within 50 meters (approximately 160 feet), which may result in harassment of owls at occupied burrows;
2. Destruction of natural and artificial burrows (culverts, concrete slabs and debris piles that provide shelter to burrowing owls); and
3. Destruction and/or degradation of foraging habitat adjacent (within 100 meters) of an occupied burrow.

Mitigation Measures for Burrowing Owl Impacts:

Implementation of the following mitigation measures would reduce these impacts to **less-than-significant**. Surveys, impact assessment, and mitigation should follow the CDFG's *Staff Report on Burrowing Owl Mitigation* (CDFG 1995), which is summarized below:

General Mitigation Measures:

4.8-27 (a) **Surveys.** *Burrowing owl and burrow surveys should be conducted during both the nesting and wintering seasons, unless the species is detected on the first survey. The nesting season survey should be conducted between April 15 and July 15, the winter survey should be conducted between December 1 and January 31. Surveys should be conducted in suitable habitat on the Project Site, and where possible, in areas within 150 meters (approximately 500 feet) of the Project Site.*

4.8-27 (b) **Avoidance.** *If avoidance is the preferred method of dealing with potential project impacts, then no disturbance should occur within 50 meters (approx. 160 ft.) of occupied burrows during the non-breeding season of September 1 through January 31 or within 75 meters (approx. 250 ft.) during the breeding season of February 1 through August 31. Avoidance also requires that a minimum of 6.5 acres of foraging habitat be permanently preserved contiguous with occupied burrow sites for each pair of breeding burrowing owls (with or without dependent young) or single unpaired resident bird. The configuration of the protected habitat should be approved by the CDFG. Mitigation for the known nest on the GF*

Gilbert Parcel may include portions of both the GF Gilbert Parcel and protected areas within the adjacent Tooby Parcel in Planning Area 4.

Specific Mitigation Measures:

- 4.8-27 (c) Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the Department verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival;*
- 4.8-27 (d) To offset the loss of foraging and burrow habitat on the project site, a minimum of 6.5 acres of foraging habitat (calculated on a 100 m {approx. 300 ft.} foraging radius around the burrow) per pair or unpaired resident bird, should be acquired and permanently protected. The protected lands should be adjacent to occupied burrowing owl habitat and at a location acceptable to the CDFG.*
- 4.8-27 (e) When destruction of occupied burrows is unavoidable, existing suitable burrows should be enhanced or new burrows created at a ratio of 2:1 on the protected lands onsite or a site within a reasonable distance of the Project Area.*
- 4.8-27 (f) If owls must be moved away from a disturbance area, passive relocation techniques should be used, as described in the CDFG Staff Report; and*
- 4.8-27 (g) The Project sponsor should provide funding for long-term management and monitoring of the protected lands.*

4.8-28 Impacts to Swainson's Hawk 1.

The grassland and wetland habitats on the site represent potential foraging habitat for the Swainson's hawk if the project is within the home range of an active Swainson's hawk nest. Nests are considered active if they have been used at least once during the last five years. Losses of suitable foraging habitat within 2 miles of a Swainson's hawk nest site should be mitigated by protection or creation of equally suitable foraging habitat elsewhere within the territory's 2-mile radius. The closest occurrence to the Project Site of a documented nesting Swainson's hawk is 3.4 miles west/southwest of the Project Site along Cordelia Slough, approximately 0.80 mile southeast of the junction of I-80 and I-680, and east of Cordelia. Most occurrences are east of the site, with the closest being

approximately 8.5 miles to the northeast of the Project Site on Cypress Lakes Golf Course, 3 miles southeast of Vacaville (CNDDDB 2005).

Implementation of the Project will therefore not result in loss of potential foraging habitat for Swainson's hawk, which is regulated by CDFG. Disturbance of Swainson's hawk foraging habitat would be a *potentially significant* impact.

Mitigation Measure for Swainson's Hawk Impact 1:

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

4.8-28 (a) Before or concurrently with the start of construction, protocol-level surveys should be conducted to determine whether nesting Swainson's hawks occur within a 2 mile radius of the Project Site. If Swainson's hawks are determined, or assumed, to nest within 2 miles of the Project Site consultation with CDFG would be required. If no nests are located, no mitigation would be required.

4.8-29 Impacts to Swainson's Hawk 2.

Disturbance within ¼ mile of an active Swainson's hawk nest is a potential impact on Swainson's hawk because construction-related disturbance may cause nest abandonment or forced fledging. The peak active nest period is usually between March 15 and August 31, or until fledglings are no longer dependent upon the nest tree habitat. Disturbance of an active Swainson's hawk nest site would be a *potentially significant* impact.

Mitigation Measure for Swainson's Hawk Impact 2:

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

4.8-29 (a) Surveys should be conducted for a ¼ mile radius around all Project activities, and if active nesting is identified within the ¼ mile radius, consultation with CDFG would be required. The aforementioned pre-construction surveys for breeding raptors and other migratory bird species should therefore include surveys for Swainson's hawks, particularly in the riparian habitat of Ledgewood Creek on the west side of Planning Areas 1 and 2. If no nests are located, no mitigation would be required.

4.8-30 Impacts to State and/or Federally Threatened and/or Endangered Salt Marsh Species including Black Rail, Clapper Rail, and Salt Marsh Harvest Mouse 1.

The introduction of residential development in the Proposed Project Site, especially in Planning Area 3 could have indirect impacts on the federal- and

state-listed endangered salt marsh harvest mouse; people and domestic pets could intrude near potential salt marsh harvest mouse habitat. Additionally, upland areas adjacent to these marshes, that may be used by the species as refuge during high water events will be impacted. Small areas of brackish marsh in the Cordelia Road ROW may provide some foraging habitat and support movement between marshes on the north and south side of the road. The CNDDDB reports that a salt marsh harvest mouse was trapped in the perennial brackish marsh on the Tooby property in 1986. It is assumed that salt marsh harvest mice could occur within suitable habitat on the Project Site. **Figure 4.8-4** shows CNDDDB salt marsh harvest mouse listings in the Project vicinity, as well as potential salt marsh harvest mouse habitat in the Project Area. The presence of salt marsh harvest mice would be a *potentially significant* impact.

Mitigation Measures for Salt Marsh Harvest Mouse Impact 1:

Implementation of *mitigation measures 4.8-2(d), 4.8-14 (a)* (see above) and the following mitigation measures would reduce this impact to a *less than significant* level.

- 4.8-30 (a) **Buffer.** *The recommended 25-foot (average) setback from the wetland drainage ditch and the 30 foot firebreak west of the 25-foot buffer area (see Wetlands Mitigation Measure 2-1) will serve to buffer potential salt marsh harvest mouse habitat from the residential development in Planning Area 3.*
- 4.8-30 (b) **Fence.** *See Mitigation Measure 4.8.2(d) **Temporary and Permanent Fencing.***
- 4.8-30 (c) **Maintaining connectivity between Tooby and Barnfield Properties.** *The existing culvert and slough channel that flows between the Tooby and Barnfield Properties under Cordelia Road and the UPRR Railroad should be maintained and not blocked or hindered by project activities. Any future modifications of this culvert or Cordelia Road between the eastern boundary of the project site and the eastern boundary of the intersection of Cordelia Road and Pennsylvania Avenue should be designed to avoid impacts or mitigate any impacts to movement of this species.*
- 4.8-30 (d) **High tide refuge.** *The Wetland Mitigation Plan (see above) shall include components for providing either natural or artificial high water refuges in areas subject to complete inundation in a high water event.*

4.8-31 Impacts to Threatened and Endangered Salt Marsh Species including Black Rail, Clapper Rail, and Salt Marsh Harvest Mouse 2.

Mammalian and avian predators. The proposed commercial development in Planning Area 1 and residential development in Planning Areas 2 and 3 could increase predation pressure on salt marsh harvest mouse populations. Increased food availability associated with development could attract and support larger small mammal populations, including rats, house mice, feral and domestic cats, and raccoons that could prey on salt marsh harvest mice. Additionally, as predator populations associated with development increase, other predators forced out of developed areas could infiltrate harvest mouse habitat. In addition, these developments could provide additional habitat for crows and ravens with detrimental effects on special status species. If desirable food is available and suitable nesting habitat exists nearby, gulls, crows and ravens will breed and/or forage in the area. The potential for mammalian and avian predators to be present is a *potentially significant* impact.

Mitigation Measure for Salt Marsh Harvest Mouse Impact 2:

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

- 4.8-31 (a) *Appropriate waste disposal procedures should be adopted and enforced in the commercial and residential development of Planning Area 1-3 (i.e., all garbage will need to be placed in cans with lids) and regularly cleaned from adjacent parking areas.*
- 4.8-31 (b) *Trees and shrubs that produce nuts or edible fruits should be prohibited in the commercial and residential development of Planning Area 1-3 landscaping plan since they can provide forage for crows.*
- 4.8-31 (c) *Landscape trees in the commercial and residential development of Planning Area 1-3 should be ones that are relatively short at maturity, with sparse, spindly branches.*
- 4.8-31 (d) *Buildings should not provide sheltered perch sites or should have such sites covered with anti-perching materials to discourage crows and ravens from roosting.*

Suisun Shrew

4.8-32 Impacts to Suisun Shrew.

The CNDDDB records an occurrence of the Suisun shrew east of the Barnfield property. It is likely this species is present within the perennial marsh on the Tooby and Barnfield properties. Residential development adjacent to the Suisun Marsh could introduce domestic animals such as cats and dogs into the area that could be predators of the Suisun shrew. Commercial development in Planning Area 1 could encourage local wildlife that benefits from human development such as raccoons. This is a *potentially significant* impact.

Mitigation Measure for Suisun Shrew:

Implementation of the following *mitigation measures 4.8-2(d), 4.8-14 (a), 4.8-30 (a-d) and 4.8-31 (a-d)* would reduce this impact to a *less-than significant* level.

4.8-33 Indirect Impacts to Vegetation.

Siltation and runoff. Indirect impacts on riparian vegetation downstream from the Project site due to erosion, siltation, and runoff during project construction may be significant if Best Management Practices are not implemented to minimize erosion and siltation (see the Hydrology and Water Quality section of this document).

Mitigation Measure for Siltation and runoff

4.8-33 (a) The Project Applicant shall comply with National Pollutant Discharge Elimination System and Municipal Separate Storm Sewer System permit standards to ensure, during and following construction, that no pollutants, siltation, or runoff are discharged from the Project site and eventually drain into on-site or downstream riparian habitats. This would reduce this impact to less-than-significant.

Increased Dust and Urban Pollutants. Grading activities would disturb soils and result in the accumulation of dust on the surface of their leaves, impairing respiration. However, this impact is considered adverse, but not significant because it does not reduce plant populations below self-sustaining levels, and much of this vegetation will be removed as part of the proposed project and mitigated (see above). Therefore, no mitigation would be required.

4.8-34 Indirect Impacts to Wildlife

Construction dust, noise, and vibration, and increased human presence and construction equipment may result in indirect effects on wildlife on the Project site, including birds and other species using the site, and may result in temporary

avoidance of these areas by some birds and other wildlife species. Indirect impacts on wildlife due to project construction, which are generally species well-adapted to human disturbances, would not be considered significant.

Noise. Noise levels in the Project site are likely to increase over present levels during construction. This has the potential to disrupt foraging, roosting, nesting, and denning activities for wildlife. Several species considered to be Threatened or Endangered may occur in the vicinity of project activities and may be suffer short term *significant impacts* if construction noise occurs adjacent to occupied territories and nests during the nesting season. These impacts would be reduced to less than significant with implementation of mitigation measures described below

Noise would also increase over present levels with the operation of a commercial building at the Project Site. Therefore native habitat that borders the Project Site would be disturbed by this noise. Wildlife stressed by this noise may leave the immediate vicinity. The increased disturbed area along the edges is called “edge effect.” When an ecotone is created between a disturbed and undisturbed area it creates a border within the previously undisturbed area which suffers increased effect from the adjacent development, including noise. This creates an incremental loss of viable habitat, as most of the bordering habitat is sage scrub. The 25-foot buffer of natural vegetation and 30-foot mowed buffer described in *mitigation measures 4.8.3 (a)* and fence described in *mitigation measure 4.8-2(d)* will reduce this impact to a *less-than-significant* level.

Impact Analysis: Increased Dust and Urban Pollutants. Additional impacts on biological resources could occur as the result of impacts to water quality by siltation and urban pollutants. Runoff from improper disposal of chemicals (including petroleum) and other materials from construction activities (temporary); vehicles associated with the new residential and commercial buildings (permanent), and the use of fertilizers, herbicides and insecticides (permanent) could adversely impact water quality. Additionally, increased siltation caused by disturbing the soil (temporary) and increased hardscape (permanent) could also adversely affect water quality. This could impact populations of aquatic species including common and special status fish, amphibian, reptile, bird and mammal species. Siltation and runoff could also cover and sweep away eggs of fish and amphibians. This impact is considered significant as areas adjacent to the development may support Threatened and Endangered Species. *Mitigation measure 4.8-33 (a)* (see above) will reduce this impact to less than significant levels.

Night Lighting. There is currently no night lighting in the project area, except for adjacent homes and businesses at the corner of Cordelia Road and Pennsylvania Avenue. Lighting at the construction site (temporary) and developments (permanent) would impact behavioral patterns of nocturnal and crepuscular (active at dawn and dusk) wildlife at the edges of these areas. These effects

include increased predation on small mammals and reptiles. Increased lighting and increased edge effects and associated loss of high quality habitat would be considered potentially significant since adjacent land is mostly sage scrub habitat.

Mitigation Measure Night Lighting.

4.8-34(a) Lighting from the proposed project will be directed away from natural open space areas on and adjacent to the project site, and proposed mitigation sites. In addition to the 25-foot buffer of natural vegetation and 30-foot mowed buffer this mitigation measure will reduce this impact to a less-than-significant level.

Human Activity. The increase in human activity would increase disturbance of natural open space within and adjacent to the Project site. Human disturbance may disrupt normal foraging and reproductive behaviors of wildlife within or adjacent to the construction and permanent developed site. In conjunction with other increased impacts at the border or “edge” areas, this would be considered significant since it would contribute to the loss of these habitats. The 25-foot buffer of natural vegetation and 30-foot mowed buffer described in *mitigation measures 4.8.3 (a)* and fence with signage described in *mitigation measure 4.8-2(d)* will reduce this impact to a *less-than-significant* level

4.8-35 Cumulative Impacts.

CEQA mandates that project impacts be analyzed in conjunction with other related past, current, and probable future projects whose impacts might compound or interrelate with those of the project (Pub. Res. Code § 21083 (b), CEQA Guidelines § 15130). This project is one of many projects proposed in the Project Site vicinity. A large number of transportation, commercial, residential and industrial projects are proposed and underway for the Fairfield/Suisun City area. Already completed projects Fairfield and Suisun City have reduce the area’s usefulness as a wildlife corridor and future projects will further reduce this function. Areas of existing habitat in lands designated for development by the Solano County HCP, the Solano County General Plan and the Suisun City General Plan will be reduced in the immediate future. Without mitigation, this project would result in significant cumulative impacts to biological resources due to the removal of riparian and wetland habitats, and habitat for Threatened, Endangered and other special status species. Implementation of the mitigation measures identified above would reduce this impact to less than significant.

REFERENCES

- American Ornithologists Union (AOU). 1997. *Checklist of North American Birds*. Seventh Edition. American Ornithologists Union. Lawrence, Kansas. 829 pp.
- California Burrowing Owl Consortium (CBOC). 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. The California Burrowing Owl Consortium. April 1993. 13 pp.
- California Department of Fish and Game (CDFG). 1995. *Memorandum: Staff Report on Burrowing Owl Mitigation*. CDFG, Sacramento, CA 8 pp + Attachment.
- _____. 2000a. *The Status of Rare and Endangered Animals and Plants in California, Greater Sandhill Crane*. Habitat Conservation Planning Branch. Sacramento, CA.
- _____. 2000b. *The Status of Rare and Endangered Animals and Plants in California, Western Burrowing Owl*. Habitat Conservation Planning Branch. Sacramento, CA.
- _____. 2003. Natural Community Conservation Act (as amended), California Fish and Game Code Sections 2800-2835.
- _____. July 2005. Special Animals. Natural Diversity Database, Sacramento, CA.
- _____. January 2006. Special Plants. Natural Diversity Database, Sacramento, CA.
- California Native Plant Society (CNPS). 2001. *Inventory of Rare and Endangered Plants of California* (6th ed.). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society, Sacramento. +388 pp.
- _____. 2006. *Inventory of Rare and Endangered Plants* (online edition, v7.06a). Rare Plant Scientific Advisory Committee, David P. Tibor, Ed. California Native Plant Society, Sacramento, California. Available: <http://cnps.web.aplus.net/cgi-bin/inv/inventory.cgi>.
- California Natural Diversity Data Base (CNDDDB). 2006. (query for U.S. Geological Survey Fairfield South, Fairfield North, Denverton, Elmira, Mt. George, Cordelia, Benicia, Vine Hill, and Honker Bay, California 7.5-minute quadrangles). Sacramento, CA.
- Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, CA.
- Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Natural Heritage Program, California Department of Fish and Game, Sacramento, California.
- _____. *Endangerment status of *Legenere limosa* (Greene) McVaugh in California*. Submitted to the California Natural Diversity Database, Department of Fish and Game. Sacramento, CA.

- The Huffman Broadway Group. 2006. *Biological Assessment: Gentry-Suisun Project: City of Suisun City, Solano County, California*. Prepared for Tom Gentry California Company. Prepared by The Huffman Broadway Group, San Rafael, California. 85 pp + attachments.
- LSA Associates, Inc. 2005. *Solano Multispecies Habitat Conservation Plan and Natural Community Conservation Plan*, Working Draft 2.1. LSA Project No. SCD930. Pt. Richmond, California.
- Maragni, D.B. 2000. Chinook salmon (*Onchorhynchus tshawytscha*). in: Olofson, P.R., ed. 2000. *Baylands Ecosystem Species and Community Profiles: life histories and environmental requirements of key plants, fish, and wildlife*. Goals Project (Baylands Ecosystem Habitat Goals), San Francisco Bay Regional Water Quality Control Board, Oakland, California.
- Mayer, K.E. and W.F. Laudenslayer Jr. 1988. *CDFG A Guide to Wildlife Habitats of California*. Sacramento, CA.
- Miller D. J. and R. N. Lea. 1972 (1976). *Guide to the coastal marine fishes of California*. California Department of Fish and Game Bulletin 157. 249 pp.
- Morin, N. 1993. Campanulaceae. Pages 459–468 in J.C. Hickman (ed.), *The Jepson Manual: higher plants of California*. Berkeley, CA: University of California Press.
- Peterson, R.T. 1990. *The Peterson Field Guide Series: A Field Guide to Western Birds*. Third Edition. Houghton Mifflin Company. Boston, NY.
- Reed, P.B., Jr. 1988. *National List of Plant Species That Occur in Wetlands: California (Region O)*; U.S. Fish & Wildlife Service.
- Rudd, R.L. 1955. *Population variation and hybridization in some Californian shrews*. Systematic Zoology. 4. 21-34.
- Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society (CNPS), Sacramento, CA.
- Skinner, M. W. and B.M. Pavlik, (Eds.). 1994. *Inventory of Rare and Endangered Vascular Plants of California* (5 ed.). Sacramento: Griffin Printing Company.
- Solano County Planning Department. 1980. *Solano County General Plan*. December 1980, amended through July 1995.
- Sommer, T.R. and B. Herbold. 2000. Delta smelt (*Hypomesus transpacificus*). In: Olofson, P.R., ed. 2000. *Baylands Ecosystem Species and Community Profiles: life histories and environmental requirements of key plants, fish, and wildlife*. Goals Project (Baylands Ecosystem Habitat Goals), San Francisco Bay Regional Water Quality Control Board, Oakland, California.
- Stebbins, R.C. 1985. *Peterson Field Guides: Western Reptiles and Amphibians*. Houghton Mifflin Company. New York, NY.
- Tibor, D.P. 2001. *Inventory of Rare and Endangered Plants of California* (sixth edition). California Native Plant Society. Sacramento, CA.

- U.S. Army Corps of Engineers (Corps). 1987. *Corps of Engineers Wetlands Delineation Manual*. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.
- _____. October 1996. *Common Wetland Plants of Central California*. Sacramento District's Regulatory Branch. Sacramento, CA.
- U.S. Fish and Wildlife Service (USFWS). 1995. *Sacramento-San Joaquin Delta Native Fishes Recovery Plan*. USFWS Region 1, Portland, Oregon. 195 pages.
- _____. 2006. *Federal Endangered and Threatened Species that may be affected by Projects in the Fairfield South 7.5 minute quadrangle and Solano County*. Sacramento, CA. Letter dated February 2, 2006. Document No. 060202040844.
- U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). 2003. *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander October 2003*. USFWS, Sacramento, CA and California Department of Fish and Game, Sacramento, CA. October 2003
- Vollmar Consulting. 2003a. *Wetland Delineation and Special-Status Survey Report for the Tooby and Gentry Properties, Suisun, Solano County, California*.
- _____. 2003b. *Wetland Delineation and Special Status Species Survey Report for the Gentry and Tooby Properties, Suisun, Solano County, California*. . Prepared for Tom Gentry California Company. Prepared by Vollmar Consulting, Berkeley, California. 29 pp + Appendices.
- _____. 2005. *Gentry, Tooby and Barnfield Properties: Special-Status Plant Survey Report 2000-2002, & 2005 Field Seasons*. Prepared for Tom Gentry California Company. Prepared by Vollmar Consulting, Berkeley, California.
- WAC Corporation. 1999. Aerial photo. April 1999. Eugene, OR.
- Williams, D.F. 1983. *Populations surveys of the Santa Catalina, San Bernardino, and Suisun Shrews*. U.S. Department of Interior, USFWS, Endangered Species Office, Sacramento, California. 69pp.
- Zeiner D.C., W.F., Laudenslayer Jr., K.E., Mayer, and M. White, eds. 1988. *California's Wildlife Vol. I: Amphibian and Reptiles*. State of California: The Resource Agency, Department of Fish and Game, Sacramento, CA.
- _____. 1990a. *California's Wildlife Vol. II: Birds*. State of California: The Resource Agency, Department of Fish and Game, Sacramento, CA.
- _____. 1990b. *California's Wildlife Vol. III: Mammals*. State of California: The Resource Agency, Department of Fish and Game, Sacramento, CA.

ATTACHMENT 1.

- Table 1. Plant Species Observed on the Gentry, Tooby and Barnfield Properties
Table 2. Animal Species Observed on the Project Site or Expected to Use the
Project Site

Table 1. Plant Species Observed on the Gentry, Tooby and Barnfield Properties, Solano County, California.

(Surveys conducted spring and summer 2000, 2001, and 2002, and spring 2005 by Vollmar Consulting. Asterisk (*) indicates nonnative species; plus sign (+) indicates special status species.)

FAMILY/Species¹	FAMILY/Common Name²
ALISMATACEAE <i>Alisma plantago-aquatica</i>	WATER-PLANTAIN FAMILY broad-leaved water-plantain
APIACEAE <i>Eryngium vaseyi</i> * <i>Foeniculum vulgare</i> <i>Hydrocotyle verticillata</i> <i>Oenanthe sarmentosa</i>	CARROT FAMILY Vasey's coyote-thistle fennel whorled pennywort water-parsley
ASTERACEAE <i>Achyrachaena mollis</i> <i>Ambrosia psilostachya</i> <i>Artemisia douglasiana</i> + <i>Aster lentus</i> <i>Aster subulatus</i> var. <i>ligulatus</i> <i>Baccharis douglasii</i> <i>Baccharis pilularis</i> <i>Bidens</i> sp. * <i>Carduus pycnocephalus</i> * <i>Centaurea solstitialis</i> * <i>Centaurea calcitrapa</i> * <i>Cichorium intybus</i> * <i>Cirsium vulgare</i> * <i>Conyza canadensis</i> * <i>Cotula coronopifolia</i> <i>Euthamia occidentalis</i> <i>Gnaphalium palustre</i> <i>Hemizonia pungens</i> <i>Holocarpa virgata</i> ssp. <i>virgata</i> * <i>Hypochaeris glabra</i> <i>Jaumea carnosa</i> * <i>Lactuca serriola</i> <i>Lasthenia californica</i> + <i>Lasthenia conjugens</i> <i>Lasthenia ferrisiae</i> <i>Lasthenia glaberrima</i> * <i>Leontodon taraxicoides</i> ssp. <i>taraxicoides</i> <i>Microseris campestris</i> * <i>Picris echioides</i> <i>Psilocarphus brevissimus</i> var. <i>brevissimus</i> <i>Psilocarphus oregonus</i> * <i>Senecio vulgaris</i> * <i>Sonchus oleraceus</i> * <i>Xanthium spinosum</i> * <i>Xanthium strumarium</i>	SUNFLOWER FAMILY blow wives western ragweed mugwort Suisun Marsh Aster annual saltmarsh aster Douglas' false-willow coyote brush beggar-ticks Italian thistle yellow star-thistle purple star-thistle blue sailors bull thistle horseweed brass buttons western goldenrod cudweed common spikeweed virgate tarweed smooth cat's-ear fleshy jaumea prickly lettuce California goldfields Contra Costa goldfields Ferris' goldfields smooth lasthenia hairy hawkbit field microseris bristly ox-tongue dwarf woolly marbles Oregon woolly-heads common grousel common sow thistle spiny cocklebur cocklebur
BORAGINACEAE <i>Plagiobothrys austinae</i> <i>Plagiobothrys humistratus</i> <i>Plagiobothrys leptocladus</i> <i>Plagiobothrys stipitatus</i> var. <i>micranthus</i>	BORAGE FAMILY popcornflower dwarf popcornflower alkali popcornflower stipitate popcornflower

FAMILY/Species¹	FAMILY/Common Name²
BRASSICACEAE <i>*Lepidium latifolium</i> <i>Lepidium nitidum</i> var. <i>nitidum</i> <i>*Hirschfeldia incana</i> <i>*Raphanus sativus</i> <i>Rorippa nasturtium-aquaticum</i>	MUSTARD FAMILY broad-leaved peppergrass shining peppergrass field mustard wild radish water cress
CALLITRICHACEAE <i>Callitriche marginata</i>	WATER-STARWORT FAMILY water-starwort
CAMPANULACEAE <i>Downingia pulchella</i>	BELLFLOWER FAMILY flat-faced downingia
CAROPHYLLACEAE <i>*Cerastium glomeratum</i> <i>*Silene gallica</i> <i>Spergularia marina</i> <i>Spergularia macrotheca</i> var. <i>longistyla</i>	CARNATION FAMILY mouse-eared chickweed windmill pink saltmarsh sand-spurry large-flowered sand-spurry
CHENOPODIACEAE <i>Atriplex triangularis</i> <i>*Chenopodium album</i> <i>Salicornia virginica</i>	GOOSEFOOT FAMILY triangular-leaved saltbush lamb's quarters pickleweed
CONVOLVULACEAE <i>Calystegia sepium</i> ssp. <i>limnophila</i> <i>Convolvulus arvensis</i> <i>Cressa truxillensis</i>	MORNING-GLORY FAMILY hedge bindweed field bindweed alkali weed
CRASSULACEAE <i>Crassula aquatica</i>	STONECROP FAMILY pygmy-weed
CYPERACEAE <i>Carex rostrata</i> <i>Cyperus eragrostis</i> <i>Eleocharis macrostachya</i> <i>Scirpus acutus</i> var. <i>occidentalis</i> <i>Scirpus californicus</i> <i>Scirpus americanus</i> <i>Scirpus robustus</i>	SEDGE FAMILY beaked sedge tall nutsedge pale spikerush tule California bulrush Olney's bulrush saltmarsh bulrush
EUPHORBIACEAE <i>Eremocarpus setigerius</i>	SPURGE FAMILY dove weed
FABACEAE + <i>Astragalus tener</i> var. <i>tener</i> + <i>Lathyrus jepsonii</i> var. <i>jepsonii</i> <i>*Lotus corniculatus</i> <i>Lupinus bicolor</i> <i>*Medicago polymorpha</i> <i>*Melilotus alba</i> <i>*Melilotus indica</i> <i>Trifolium barbigerum</i> <i>Trifolium campestre</i> <i>Trifolium depauperatum</i> var. <i>amplectens</i> <i>Trifolium depauperatum</i> var. <i>depauperatum</i> + <i>Trifolium depauperatum</i> var. <i>hydrophilum</i> <i>Trifolium fucatum</i> <i>Trifolium microcephalum</i> <i>Trifolium subterraneum</i> <i>Trifolium variegatum</i> <i>Trifolium willdenovii</i> <i>*Vicia sativa</i>	PEA FAMILY alkali milkvetch Delta Tule Pea bird's-foot trefoil miniature lupine bur-clover white sweetclover yellow sweetclover bearded clover hop clover dwarf sack clover dwarf sack clover Saline Clover sour clover small-headed clover subterranean clover white-tipped clover tomcat clover spring vetch

FAMILY/Species¹	FAMILY/Common Name²
<i>*Vicia villosa</i>	hairy vetch
FRANKENIACEAE <i>Frankenia salina</i>	FRANKENIA FAMILY alkali heath
GERANIACEAE <i>*Erodium botrys</i> <i>*Erodium cicutarium</i> <i>*Geranium carolinianum</i>	GERANIUM FAMILY filaree filaree Carolina geranium
JUNCACEAE <i>Juncus balticus</i> <i>Juncus bufonius</i> <i>Juncus effusus</i> var. <i>pacificus</i> <i>Juncus mexicanus</i>	RUSH FAMILY Baltic rush toad rush soft rush Mexican rush
JUNCAGINACEAE <i>Lillaea scilloides</i> <i>Triglochin concinna</i> var. <i>concinna</i> <i>Triglochin maritima</i>	ARROW-GRASS FAMILY flowering quillwort arrow-grass seaside arrow-grass
LAMIACEAE <i>*Mentha x piperita</i>	MINT FAMILY spearmint
LILAEACEAE <i>Asparagus officinalis</i> <i>Brodiaea minor</i> <i>Dichelostemma capitatum</i> ssp. <i>capitatum</i> <i>Muilla maritima</i> <i>Triteleia hyacinthina</i>	LILY FAMILY asparagus dwarf brodiaea bluedicks common muilla white triteleia
LYTHRACEAE <i>*Lythrum hyssopifolium</i>	LOOSESTRIFE FAMILY hyssop loosestrife
MALVACEAE <i>Malva neglecta</i> <i>*Malvella leprosa</i>	MALLOW FAMILY cheeseweed alkali mallow
ONAGRACEAE <i>Epilobium brachycarpum</i> <i>Epilobium cleistogamum</i>	EVENING PRIMROSE FAMILY panicked willow-herb cleistogamous spike-primrose
PLANTAGINACEAE <i>Plantago elongata</i> <i>*Plantago lanceolata</i> <i>*Plantago major</i>	PLANTAIN FAMILY slender plantain English plantain common plantain
PRIMULACEAE <i>*Anagallis arvensis</i>	PRIMROSE FAMILY scarlet pimpernel
POACEAE <i>*Avena fatua</i> <i>*Briza minor</i> <i>*Bromus diandrus</i> <i>*Bromus hordeaceus</i> <i>Crypsis vaginaflora</i> <i>Deschampsia danthonioides</i> <i>Distichlis spicata</i> <i>*Echinochloa muricata</i> <i>Hainardia cylindrica</i> <i>Hordeum brachyantherum</i> <i>Hordeum depressum</i> <i>*Hordeum marinum</i> ssp. <i>gussoneanum</i> <i>*Hordeum murinum</i> <i>Leymus triticoides</i>	GRASS FAMILY wild oats little quaking grass ripgut brome soft chess prickle grass annual hairgrass saltgrass barnyard grass thintail meadow barley low barley Mediterranean barley foxtail barley alkali ryegrass

FAMILY/Species¹	FAMILY/Common Name²
<i>*Lolium perenne</i> <i>*Lolium multiflorum</i> <i>Parapholis incurva</i> <i>Paspalum dilatatum</i> <i>Paspalum distichum</i> <i>*Phalaris paradoxa</i> <i>Pleuropogon californicus</i> <i>*Poa annua</i> <i>*Polypogon monspeliensis</i> <i>*Schismus arabicus</i> <i>*Taeniatherum caput-medusa</i> <i>Vulpia bromoides</i> <i>*Vulpia myuros</i>	perennial ryegrass Italian ryegrass sicklegrass dallis grass joint paspalum paradox canary grass California semaphore grass annual bluegrass rabbit's-foot grass Mediterranean grass medusa head six-weeks fescue rattail fescue
POLYGONACEAE <i>Polygonum punctatum</i> <i>*Rumex crispus</i> <i>*Rumex conglomeratus</i>	BUCKWHEAT FAMILY dotted smartweed curly dock clustered dock
RANUNCULACEAE <i>Myosorus minimus</i> <i>Myosorus sessilis</i> <i>*Ranunculus scleratus</i> <i>*Ranunculus muricatus</i>	BUTTERCUP FAMILY little mouse-tail mouse-tail prickle-pod buttercup celery-leaf buttercup
ROSACEAE <i>Potentilla anserina</i> ssp. <i>pacifica</i> <i>Rosa californica</i> <i>*Rubus discolor</i> <i>Rubus ursinus</i>	ROSE FAMILY pacific silverweed California rose Himalaya blackberry California blackberry
SCROPHULARIACEAE <i>*Bellardia trixago</i> <i>Castilleja attenuata</i> <i>Limosella aquatica</i> <i>Triphysaria eriantha</i> ssp. <i>eriantha</i> <i>Triphysaria versicolor</i> ssp. <i>faucibarbata</i> <i>Triphysaria pusilla</i> <i>Verbascum thapsis</i> <i>Veronica peregrina</i> ssp. <i>xalapensis</i>	FIGWORT FAMILY bellardia valley tassels mudwort butter-and-eggs yellow owl's-clover dwarf owl's-clover mullien purslane speedwell
SALICACEAE <i>Salix gooddingii</i> <i>Salix lasiolepis</i>	WILLOW FAMILY Gooding's black willow arroyo willow
TYPHACEAE <i>Typha angustifolia</i> <i>Typha latifolia</i>	CATTAIL FAMILY narrow-leaved cattail broad-leaved cattail
VERBENACEAE <i>Phyla nodiflora</i> var. <i>nodiflora</i>	VERVAIN FAMILY common frog-fruit

Source: Vollmar Consulting, 2005

1. Scientific names from Hickman (1993)
2. Common names from Abrams (1940), Hickman (1993), and Reed (1988).

Table 2. Animal Species Observed on the Project Site or Expected to Utilize the Project Site

REPTILES AND AMPHIBIANS

Pacific Treefrog	<i>Hyla regilla</i>
Bullfrog	<i>Rana catesbeiana</i>
Western Toad	<i>Bufo boreas</i>
Western Fence Lizard	<i>Sceloporus occidentalis</i>
Coast Horned Lizard	<i>Phrynosoma coronatum</i>
Gilbert's Skink	<i>Eumeces gilberti</i>
Western Whiptail	<i>Cnemidophorus tigris</i>
Southern Alligator Lizard	<i>Gerrhonotus multicarinatus</i>
Racer	<i>Coluber constrictor</i>
Coachwhip	<i>Masticophis flagellum</i>
Glossy Snake	<i>Arizona elegans</i>
Gopher Snake	<i>Pituophis melanoleucus</i>
Common Kingsnake	<i>Lampropeltis getulus</i>
Long-nosed Snake	<i>Rhinocheilus lecontei</i>
Common Garter Snake	<i>Thamnophis sirtalis</i>
Western Terrestrial Garter Snake	<i>Thamnophis elegans</i>
Western Rattlesnake	<i>Crotalis viridis</i>

BIRDS

Pied-billed Grebe	<i>Podilymbus podiceps</i>
Eared Grebe	<i>Podiceps nigricollis</i>
Western Grebe	<i>Aechmophorus occidentalis</i>
Clark's Grebe	<i>Aechmophorus clarkii</i>
American White Pelican	<i>Pelecanus erythrorhynchos</i>
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
American Bittern	<i>Botaurus lentiginosus</i>
Great Blue Heron	<i>Ardea herodias</i>
Green Heron	<i>Butorides virescens</i>
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>
Great Egret	<i>Ardea albus</i>
Snowy Egret	<i>Egretta thula</i>
Cattle Egret	<i>Bubulcus ibis</i>
Canada Goose	<i>Branta Canadensis</i>
American Green-Winged Teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</i>
Northern Pintail	<i>Anas acuta</i>
Cinnamon Teal	<i>Anas cyanoptera</i>
Northern Shoveler	<i>Anas clypeata</i>
Gadwall	<i>Anas strepera</i>
American Wigeon	<i>Anas americana</i>
Canvasback	<i>Aythya valisineria</i>
Redhead	<i>Aythya americana</i>
Ring-necked Duck	<i>Aythya collaris</i>
Lesser Scaup	<i>Aythya affinis</i>
Common Goldeneye	<i>Bucephala clangula</i>
Bufflehead	<i>Bucephala albeola</i>
Ruddy Duck	<i>Oxyura jamaicensis</i>
Turkey Vulture	<i>Cathartes aura</i>
Osprey	<i>Pandion haliaetus</i>
White-tailed Kite	<i>Elanus caeruleus</i>

Northern Harrier	<i>Circus cyaneus</i>
Sharp-shinned Hawk	<i>Accipiter striatus</i>
Cooper's Hawk	<i>Accipiter cooperi</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Golden Eagle	<i>Aquila chrysaetos</i>
American Kestrel	<i>Falco sparverius</i>
Prairie Falcon	<i>Falco mexicanus</i>
Merlin	<i>Falco columbarius</i>
Ring-necked Pheasant	<i>Phasianus colchicus</i>
California Quail	<i>Callipepla californica</i>
Virginia Rail	<i>Rallus limicola</i>
Sora	<i>Porzana carolina</i>
Common Moorhen	<i>Gallinula chloropus</i>
American Coot	<i>Fulica Americana</i>
Black-bellied Plover	<i>Pluvialis squatarola</i>
Killdeer	<i>Charadrius vociferous</i>
Black-necked Stilt	<i>Himantopus mexicanus</i>
American Avocet	<i>Recurvirostra americana</i>
Greater Yellowlegs	<i>Tringa melanoleuca</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Long-billed Curlew	<i>Numenius americanus</i>
Least Sandpiper	<i>Calidris minutilla</i>
Western Sandpiper	<i>Calidris mauri</i>
Dunlin	<i>Calidris alpina</i>
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>
Wilson's Snipe	<i>Gallinago delicata</i>
Mew Gull	<i>Larus Canus</i>
Ring-billed Gull	<i>Larus delawarensis</i>
California Gull	<i>Larus californicus</i>
Herring Gull	<i>Larus argentatus</i>
Forster's Tern	<i>Sterna forsteri</i>
Caspian Tern	<i>Sterna caspia</i>
Rock Dove	<i>Columba livia</i>
Mourning Dove	<i>Zenaida macroura</i>
Barn Owl	<i>Tyto alba</i>
Great Horned Owl	<i>Bubo virginianus</i>
Burrowing Owl	<i>Athene cunicularia</i>
Short-eared Owl	<i>Asio flammeus</i>
Vaux's Swift	<i>Chaetura vauxi</i>
Anna's Hummingbird	<i>Calypte annas</i>
Belted Kingfisher	<i>Ceryle alcyon</i>
Northern Flicker	<i>Colaptes auratus</i>
Nuttall's Woodpecker	<i>Picoides nuttallii</i>
Downy Woodpecker	<i>Dendrocopos pubescens</i>
Black Phoebe	<i>Sayornis nigricans</i>
Say's Phoebe	<i>Sayornis saya</i>
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Western Kingbird	<i>Tyrannus verticalis</i>
California Horned Lark	<i>Eremophila alpestris actica</i>
Barn Swallow	<i>Hirundo rustica</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Western Scrub-jay	<i>Aphelocoma californica</i>

American Crow
 Common Bushtit
 Bewick's Wren
 House Wren
 Marsh Wren
 American Robin
 Hermit Thrush
 Western Bluebird
 Ruby-crowned Kinglet
 Northern Mockingbird
 American Pipit
 Cedar Waxwing
 Loggerhead Shrike
 European Starling
 Warbling Vireo
 Orange-crowned Warbler
 Yellow Warbler
 Yellow-rumped Warbler
 Townsend's Warbler
 Saltmarsh Common Yellowthroat
 Wilson's Warbler
 Western Tanager
 Black-headed Grosbeak
 Lazuli Bunting
 Spotted Towhee
 Savannah Sparrow
 Lark Sparrow
 White-crowned Sparrow
 Golden-crowned Sparrow
 Fox Sparrow
 Suisun Song Sparrow
 Lincoln's Sparrow
 Dark-eyed Junco
 Western Meadowlark
 Red-winged Blackbird
 Tricolored Blackbird
 Brewer's Blackbird
 Brown-headed Cowbird
 Bullock's Oriole
 Purple Finch
 House Finch
 Pine Siskin
 American Goldfinch
 Lesser Goldfinch
 House Sparrow

Corvus brachyrhynchos
Psaltriparus minimus
Thryomanes bewickii
Troglodytes aedon
Cistothorus palustris
Turdus migratorius
Hylocichla guttata
Sialia mexicana
Regulus calendula
Mimus polyglottos
Anthus rubescens
Bombycilla cedrorum
Lanius ludovicianus
Sturnus vulgaris
Vireo gilvus
Vermivora celata
Dendroica petechia
Dendroica coronata
Dendroica townsendi
Geothlypis trichas sinuosa
Wilsonia pusilla
Piranga ludoviciana
Pheucticus melanocephalus
Passerina amoena
Pipilo maculatus
Passerculus sandwichensis
Chondestes grammacus
Zonotrichia leucophrys
Zonotrichia atricapilla
Passerella iliaca
Melospiza melodia maxillaris
Melospiza lincolni
Junco hyemalis
Sturnella neglecta
Agelaius phoeniceus
Agelaius tricolor
Euphagus cyanocephalus
Molothrus ater
Icterus bullockii
Carpodacus purpureus
Carpodacus mexicanus
Carduelis pinus
Spinus tristis
Spinus psaltria
Passer domesticus

MAMMALS

Virginia Opossum
 Suisun Shrew
 Broad-footed Mole
 California Myotis
 Western Pipistrelle
 Big Brown Bat
 Red Bat
 Pallid Bat

Didelphis virginiana
Sorex ornatus sinuosus
Scapanus latimanus
Myotis californicus
Pipistrellus hesperus
Eptesicus fuscus
Lasiurus borealis
Antrozous pallidus

Brazilian Free-tailed Bat
Black-tailed Hare
Desert Cottontail
California Ground Squirrel
Botta's Pocket Gopher
Western Harvest Mouse
Saltmarsh Harvest Mouse
Deer Mouse
Dusky-footed Woodrat
California Vole
Muskrat
Norway Rat
House Mouse
Coyote
Red Fox
Gray Fox
Raccoon
Long-tailed Weasel
Striped Skunk
Mule Deer

Tadarida brasiliensis
Lepus californicus
Sylvilagus audubonii
Spermophilus beecheyi
Thomomys bottae
Reithrodontomys megalotis
Reithrodontomys raviventris
Peromyscus maniculatus
Neotoma fuscipes
Microtus californicus
Ondatra zibethicus
Rattus norvegicus
Mus musculus
Canis latrans
Vulpes fulva
Urocyon cinereoargenteus
Procyon lotor
Mustela frenata
Mephitis mephitis
Odocoileus hemionus

Stebbins (1985)
National Geographic Society (2000)
Robbins et al (1966)
AOU (1997)
Burt and Grossenheider (1976)
Mayer and Laudenslayer (1988)
Zeiner, et al. (1990b)

SEDWAY GROUP

Real Estate and Urban Economics

**GENTRY-SUISUN
MIXED USE PROJECT
ECONOMIC IMPACT ANALYSIS
SUISUN CITY, CALIFORNIA**

Prepared for:

**RANEY PLANNING &
MANAGEMENT, INC.**

MARCH 2006

March 31, 2006

Ms. Cindy Gnos
Raney Planning & Management, Inc.
1401 Halyard Drive, Suite 120
West Sacramento, California 95691

Re: Suisun Marketplace Shopping Center Socio-Economic Impacts Study

Dear Ms. Gnos:

CB Richard Ellis Consulting/Sedway Group ("Sedway Group") is pleased to submit this report regarding the socio-economic impact analysis for the planned Suisun Marketplace retail development and associated residential development in the City of Suisun City, California. The report discusses the proposed Suisun Marketplace's anticipated sales, the likely impact of these sales on existing retailers, cumulative impacts of other selected planned developments in the primary market area, the extent to which the center may or may not contribute to urban decay in the primary market area, and the fiscal benefit to the City of Suisun General Fund resulting from property and sales tax revenue.

It has been a pleasure working with you on this project. Please let us know if you have any questions or additional needs.

Sincerely,



Elliot R. Stein
Senior Managing Director



Kevin J. August
Senior Consultant

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY	1
INTRODUCTION	1
SUMMARY OF FINDINGS—BASE PROJECT	2
II. INTRODUCTION	7
STUDY BACKGROUND	7
STUDY TASKS	8
STUDY RESOURCES	8
REPORT ORGANIZATION	9
III. STORE SALES IMPACTS	10
SUISUN MARKETPLACE AND GILBERT PARCEL DESCRIPTION	10
PROJECTED SUISUN MARKETPLACE SALES	11
NEW SALES TO THE PRIMARY MARKET AREA	13
IV. IMPACTS ON EXISTING PRIMARY MARKET AREA RETAILERS	22
COMPETITIVE SHOPPING CENTERS AND STORES	22
V. CUMULATIVE IMPACTS	32
IDENTIFIED PROJECTS	32
PRIMARY MARKET AREA STORE SALES ANALYSIS	33
CUMULATIVE SALES IMPACTS	34
VI. URBAN DECAY DETERMINATION	37
STUDY DEFINITION OF URBAN DECAY	37
APPROACH TO DETERMINING URBAN DECAY POTENTIAL	37
RETAILER DEMAND IN THE PRIMARY MARKET AREA	37
URBAN DECAY-SUMMARY AND CONCLUSION	40
VII. GENERAL FUND REVENUE IMPACTS	41
SALES TAX	41
PROPERTY TAX	42
GENERAL FUND REVENUE IMPACTS CONCLUSION	43
VIII. ALTERNATIVE SUISUN CITY SITE IDENTIFICATION	44
IX. ANALYSIS OF ALTERNATIVE DEVELOPMENT PROGRAMS	45
OVERVIEW	45
PROJECTED SALES FOR ALTERNATIVES	45
PRIMARY MARKET AREA SALES IMPACTS BY RETAIL CATEGORY	46
IMPACTS ON EXISTING PRIMARY MARKET AREA RETAILERS	48
CUMULATIVE IMPACTS	50
URBAN DECAY CONCLUSION	50
GENERAL FUND REVENUE IMPACTS	50
ASSUMPTIONS AND GENERAL LIMITING CONDITIONS	52
APPENDICES	
A: EXHIBITS—BASE PROJECTS	
B: EXHIBITS—ALTERNATIVE 1	
C: EXHIBITS—ALTERNATIVE 2	

LIST OF EXHIBITS**APPENDIX A – BASE PROJECT EXHIBITS**

- Exhibit 1: Development Program Summary, Suisun Marketplace
- Exhibit 2: Estimated Annual Sales, Suisun Marketplace, 2009
- Exhibit 3: Estimated Annual Sales by Retail Category, Suisun Marketplace, 2009
- Exhibit 4: Map of Major General Merchandise and Home Improvement Retailers in the Primary and secondary market area
- Exhibit 5: Population Assumptions, Primary and Primary and Secondary Market Area, 2000 - 2020
- Exhibit 6: Taxable Retail Sales and Required Adjustment, Primary and Primary and Secondary Market Area, 2003
- Exhibit 7: Retail Sales Leakage Analysis, Primary Market Area (cities of Suisun City and Fairfield), 2003
- Exhibit 8: Retail Sales Leakage Analysis, Primary Market Area (cities of Suisun City and Fairfield), 2009
- Exhibit 9: Retail Sales Leakage Analysis, Primary and Secondary Market Area (Solano County), 2003
- Exhibit 10: Retail Sales Leakage Analysis, Primary and Secondary Market Area (Solano County), 2009
- Exhibit 11: Retail Sales Leakage Analysis, Secondary Market Area, 2009
- Exhibit 12: Maximum Suisun Marketplace Sales Impacts on Primary Market Area (cities of Suisun City and Fairfield) Retail Sales, 2009
- Exhibit 13: Maximum Diverted Sales as a Percent of Primary Market Area (cities of Suisun City and Fairfield) Sales, 2009
- Exhibit 14: Annual Population Retail Demand, Primary and Secondary Market Area, 2009 - 2014
- Exhibit 15: Cumulative Population Retail Demand, Primary and Secondary Market Area, 2009 - 2014
- Exhibit 16: New Residential Development, Primary Market Area (cities of Suisun City and Fairfield), June 2005
- Exhibit 17: Map of Community Serving Shopping Centers in Primary Market Area (cities of Suisun City and Fairfield)
- Exhibit 18: Map of Selected Retailers in Primary Market Area (cities of Suisun City and Fairfield)
- Exhibit 19: Other Potential Major Retail Development Activity, Primary and Secondary Market Area, May 2005
- Exhibit 20: Sales Estimates for Major Planned Retail Development, 2009
- Exhibit 21: Allocation of Retail Sales, Major Planned Retail Development, 2009
- Exhibit 22: Retail Sales Base Adjustment, Primary and Primary and Secondary Market Area, 2009
- Exhibit 23: Cumulative Impacts of Major Retail Developments on Primary Market Area (cities of Suisun City and Fairfield) Retailers, 2009
- Exhibit 24: Cumulative Maximum Diverted Sales as a Percent of Primary Market Area Sales, 2009
- Exhibit 25: Cumulative Impacts of Major Retail Developments (Assuming No Fairfield Wal-Mart Supercenter) on Primary Market Area (cities of Suisun City and Fairfield) Retailers, 2009
- Exhibit 26: Cumulative Maximum Diverted Sales (Assuming No Fairfield Wal-Mart Supercenter) as a Percent of Primary Market Area Sales, 2009
- Exhibit 27: Maximum Diverted Sales Impacts, Suisun Marketplace and Cumulative Retail Projects, 2009
- Exhibit 28: Fiscal Benefit Analysis, Sales Tax Revenue, 2009
- Exhibit 29: Fiscal Benefit Analysis, Property Tax Revenue from Suisun Marketplace, 2009
- Exhibit 30: Fiscal Benefit Analysis, Property Tax Revenue from Proposed Residential Development, 2009
- Exhibit 31: Fiscal Benefit Analysis, Summary Net New Fiscal Revenues, City of Suisun, 2009
- Exhibit 32: Vacant Land Summary, City of Suisun City, June 2005

APPENDIX B – ALTERNATIVE 1 EXHIBITS

- Exhibit 1: Development Program Summary, Alternative 1, Suisun Marketplace
- Exhibit 2: Estimated Annual Sales, Alternative 1, Suisun Marketplace, 2009
- Exhibit 3: Estimated Annual Sales by Retail Category, Alternative 1, Suisun Marketplace, 2009
- Exhibit 12: Maximum Suisun Marketplace Sales Impacts on Primary Market Area (cities of Suisun City and Fairfield) Retail Sales, Alternative 1, 2009
- Exhibit 13: Maximum Diverted Sales as a Percent of Primary Market Area (cities of Suisun City and Fairfield) Sales, Alternative 1, 2009
- Exhibit 23: Cumulative Impacts of Major Retail Developments on Primary Market Area (cities of Suisun City and Fairfield) Retailers, Alternative 1, 2009
- Exhibit 24: Cumulative Maximum Diverted Sales as a Percent of Primary Market Area Sales, Alternative 1, 2009
- Exhibit 25: Cumulative Impacts of Major Retail Developments (Assuming No Fairfield Wal-Mart Supercenter) on Primary Market Area (cities of Suisun City and Fairfield) Retailers, Alternative 1, 2009
- Exhibit 26: Cumulative Maximum Diverted Sales (Assuming No Fairfield Wal-Mart Supercenter) as a Percent of Primary Market Area Sales, Alternative 1, 2009
- Exhibit 27: Maximum Diverted Sales Impacts, Suisun Marketplace and Cumulative Retail Projects, Alternative 1, 2009
- Exhibit 28: Fiscal Benefit Analysis, Sales Tax Revenue, Alternative 1, 2009
- Exhibit 29: Fiscal Benefit Analysis, Property Tax Revenue from Suisun Marketplace, Alternative 1, 2009
- Exhibit 30: Fiscal Benefit Analysis, Property Tax Revenue from Proposed Residential Development, Alternative 1, 2009
- Exhibit 31: Fiscal Benefit Analysis, Summary Net New Fiscal Revenues, City of Suisun, Alternative 1, 2009

APPENDIX C – ALTERNATIVE 2 EXHIBITS

- Exhibit 1: Development Program Summary, Alternative 2, Suisun Marketplace
- Exhibit 2: Estimated Annual Sales, Alternative 2, Suisun Marketplace, 2009
- Exhibit 3: Estimated Annual Sales by Retail Category, Alternative 2, Suisun Marketplace, 2009
- Exhibit 12: Maximum Suisun Marketplace Sales Impacts on Primary Market Area (cities of Suisun City and Fairfield) Retail Sales, Alternative 2, 2009
- Exhibit 13: Maximum Diverted Sales as a Percent of Primary Market Area (cities of Suisun City and Fairfield) Sales, Alternative 2, 2009
- Exhibit 23: Cumulative Impacts of Major Retail Developments on Primary Market Area (cities of Suisun City and Fairfield) Retailers, Alternative 2, 2009
- Exhibit 24: Cumulative Maximum Diverted Sales as a Percent of Primary Market Area Sales, Alternative 2, 2009
- Exhibit 25: Cumulative Impacts of Major Retail Developments (Assuming No Fairfield Wal-Mart Supercenter) on Primary Market Area (cities of Suisun City and Fairfield) Retailers, Alternative 2, 2009
- Exhibit 26: Cumulative Maximum Diverted Sales (Assuming No Fairfield Wal-Mart Supercenter) as a Percent of Primary Market Area Sales, Alternative 2, 2009
- Exhibit 27: Maximum Diverted Sales Impacts, Suisun Marketplace and Cumulative Retail Projects, Alternative 2, 2009
- Exhibit 28: Fiscal Benefit Analysis, Sales Tax Revenue, Alternative 2, 2009
- Exhibit 29: Fiscal Benefit Analysis, Property Tax Revenue from Suisun Marketplace, Alternative 2, 2009
- Exhibit 30: Fiscal Benefit Analysis, Property Tax Revenue from Proposed Residential Development, Alternative 2, 2009
- Exhibit 31: Fiscal Benefit Analysis, Summary Net New Fiscal Revenues, City of Suisun, Alternative 2, 2009

I. EXECUTIVE SUMMARY

INTRODUCTION

The purpose of this study is to assess the economic impact of the proposed Suisun Marketplace retail center, and the adjacent Gilbert Parcel, in the City of Suisun City, California. Suisun Marketplace is a 71.3-acre component of a 480+ acre land holding referred to as the "Gentry Property." Most of this property is currently located in unincorporated Solano County, with efforts underway to annex 157.5 acres into Suisun City. Suisun Marketplace is located immediately south of Highway 12 at the southwest corner of Highway 12 and Pennsylvania Avenue.

The proposed Suisun Marketplace and Gilbert Parcel will result in the addition of approximately 721,000 square feet of retail space on approximately 76.3 acres (71.3 acres for the Suisun Marketplace site and 5.0 acres for the Gilbert Parcel). For the purposes of this report, this development scenario is called the "Base Project." As of the date of this analysis, Tom Gentry California Company has not identified the specific tenants for Suisun Marketplace. However, because a Supercenter is considered to be a possible anchor for the center, the Base Project has been defined to include a 227,200-square-foot Supercenter¹ (it is estimated that approximately 25 percent of the Supercenter space will be dedicated to a grocery component), a 162,700-square-foot home improvement retailer, a 3,000-square-foot gas station, and 139,500 square feet of apparel, home furnishings, and eating and drinking places. The remaining 123,099 square feet of space represents "unknown retail." The Base Project also includes 65,340 square feet of retail space on the Gilbert Parcel.

Two alternative development plans, featuring reduced square footage, are also considered in this analysis. Both alternatives include a Supercenter. The total square footage of Alternatives 1 and 2 are 490,000 and 360,000 square feet, respectively.

In addition to the retail project, high-density residential development (359 units in the Base Project) is planned for a portion of the Gentry Property. The residential component will be located on two properties to the south and east of the Suisun Marketplace on a total of approximately 17.1 acres. A portion of the residential units is planned for the area south of the existing railroad spur line and north of Cordelia Road, with the balance planned for the area immediately east of Pennsylvania Avenue across from the Suisun Marketplace

The completion of Suisun Marketplace's construction is expected in 2008 with full operations assumed in 2009. This study probes the potential impacts of the center on existing primary market area retailers, especially those offering goods similar to those expected to be sold at Suisun Marketplace and the Gilbert Parcel, including apparel, general merchandise, food stores, home furnishings and appliances, dining, and "other retail stores" categories. This study

¹ Pursuant to the Notice of Preparation, prepared by the City of Suisun City, dated February 24, 2005, the term "Supercenter" is intended to refer to a retail tenant with a building size of approximately 200,000 square feet that will include grocery, general merchandise, and a garden center. A Supercenter would presumably operate 7 days a week and up to 24 hours a day. The quantitative component of this analysis is based the experience of Wal-Mart Supercenters, although Wal-Mart is not committed to the project at this time.

also estimates the extent to which the Suisun Marketplace and the Gilbert Parcel may or may not contribute to urban decay in the primary market area.

SUMMARY OF FINDINGS—BASE PROJECT

Suisun Marketplace and Gilbert Parcel Sales

Sedway Group estimates that annual stabilized Suisun Marketplace and Gilbert Parcel sales will total \$271.6 million in 2009 dollars, comprised of:

- \$45.0 million in apparel sales;
- \$68.0 million in general merchandise sales;
- \$25.0 million in food stores sales;
- \$10.8 million in eating and drinking places;
- \$43.0 million in home furnishings and appliances sales;
- \$37.5 million in building materials; and
- \$42.5 million in “other retail stores” sales.

Of these new sales, approximately 90 percent, or \$244.5 million, is estimated to be generated by primary (cities of Suisun City and Fairfield) and secondary market area (Solano County) residents. The remaining 10 percent of sales generated at Suisun Marketplace and the Gilbert Parcel are expected to originate from shoppers residing outside this area. Stabilized sales are not expected to occur the first year of store operations, but rather the second or third year, which is typical of new retail operations. However, for the sake of simplicity, the analysis conservatively assumes stabilized sales are achieved in 2009. Accordingly, all dollar figures unless otherwise noted are presented in 2009 dollars.

Impacts on Existing Primary Market Area Retailers

The cities of Suisun City and Fairfield are defined as the primary market area. The balance of Solano County comprises the secondary market area. The primary market area is a stable retail market, with regional attraction in nearly all retail categories. The equivalent of approximately 21.5 percent of all retail sales achieved by primary market area retailers are sales captured from people living outside the primary market area. The development of the Suisun Marketplace and the Gilbert Parcel will provide an opportunity for the primary market area to further enhance its retail orientation. However, there may be sales impacts on existing retailers in specific retail categories.

Assuming that the new primary and secondary market area sales of Suisun Marketplace and the Gilbert Parcel occurred at the proportional expense of existing primary market area retailers, then existing retailers would experience a maximum annual impact of \$58.3 million in sales upon stabilization of the Suisun Marketplace and Gilbert Parcel in 2009 dollars. This diverted impact, 4.0 percent of total sales, supportable square feet, and number of years for new retail demand to mitigate the diverted sales is broken down by retail category as follows:

Table 1
Proposed Suisun Marketplace, Base Project
Summary of Impacts on Primary Market Area Retailers¹

Retail Category	Diverted Sales	Percent of Sales	Supportable Square Feet	Years to Mitigate
Apparel	\$14.4	17.1%	40,800	10+ Years
General Merchandise	\$24.3	6.4%	69,100	5+ Years
Food Stores	\$7.5	2.3%	21,400	1 to 2 Years
Eating and Drinking Places	\$0.0	0.0%	0	N/A
Home Furnishings and Appliances	\$4.1	5.3%	11,600	2 to 3 Years
Building Materials	\$8.0	6.4%	22,800	4 to 5 Years
"Other Retail Stores"	<u>\$0.0</u>	<u>0.0%</u>	<u>0</u>	<u>N/A</u>
Total	\$58.3	4.0%	165,700	

(1) Refer to Exhibits 12, 13, and 27.
Source: Sedway Group.

In total, the maximum diverted sales represent 4.0 percent of the primary market area's estimated 2009 sales in relevant Suisun Marketplace and Gilbert Parcel sales categories. New population growth is anticipated to help mitigate a portion of the lost store sales. In addition, retailers could successfully reposition their stores and primary market area sales could increase overall due to the enhanced regionalism of the primary market area's retail market.

Cumulative Impacts

In addition to Tom Gentry California Company's plans to construct Suisun Marketplace, other developers are planning new primary market area retail projects. The major, relevant projects in the primary market area include Villages at Fairfield, and the Fairfield Wal-Mart Supercenter (in conjunction with the closure of the existing Wal-Mart Discount Store in Fairfield). These projects are currently in the entitlement process in the City of Fairfield. There were no major, relevant retail projects identified in the City of Suisun City. The total net incremental retail space at these planned retail projects would be 157,400 square feet assuming all are approved under their current plans.

Sedway Group conducted analysis for two scenarios, one assuming both projects are completed, and one assuming only the Villages at Fairfield project is completed. Assuming all the projects are built, including the Suisun Marketplace, the maximum annual impact to primary market area retailers is estimated at \$77.4 million in diverted sales, with the apparel category representing \$16.1 million, the general merchandise category representing \$29.6 million, the food stores category representing \$19.6 million, the home furnishings and appliances representing \$4.1 million, and building materials representing \$8.0 million in diverted sales. Assuming the Suisun Marketplace, Villages at Fairfield and Fairfield Wal-Mart Supercenter projects are built there is a significant increase in diverted sales from primary market area retailers in the general merchandise and food stores categories. Assuming only the Suisun Marketplace and Villages at Fairfield projects are completed, the annual impact is estimated at \$70.8 million, with the apparel category representing \$16.1 million, the general merchandise category representing \$27.0 million, the food stores category representing \$15.6 million, the home furnishings and appliances category representing \$4.1 million, and the building

materials category representing \$8.0 million in diverted sales. There are no diverted sales impacts estimated for the eating and drinking places or “other retail stores” categories.

Urban Decay Determination

Sedway Group engaged in several retail market research tasks to assess the probability of urban decay ensuing from development of Suisun Marketplace, with urban decay defined as physical deterioration that is so prevalent and substantial it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. If any primary market area stores close due to Suisun Marketplace, the analysis considers if they are likely to remain vacant for a prolonged period of time or be leased to other retailers within a reasonable marketing period. The last step is to consider whether, if they would remain closed, urban decay would result.

Sedway Group’s retail market research indicated that the retail market in the primary market area is stable. The existing primary market area shopping centers have low vacancy rates, which is an indication of the primary market area’s ability to re-tenant vacancies as they may occur. Therefore, vacated retail spaces have the potential to be successfully re-tenanted over the long-term. The retail re-tenanting of vacated spaces would benefit the market and expand local and regional shopping opportunities. The potential impacts to the apparel and general merchandise categories may be significant enough to require several years to re-tenant the potential vacancies depending on the type of user, and the size and location of the space. However, those vacancies are not expected to lead to physical deterioration so prevalent and substantial that it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Therefore, Sedway Group concludes that although development of the Suisun Marketplace may contribute to further retail vacancies in the primary market area, those vacancies are unlikely to result in urban decay. The same conclusion applies under both scenarios analyzed, i.e., all identified primary market area retail projects are developed (Suisun Marketplace, Villages at Fairfield, and Fairfield Wal-Mart Supercenter) or just two projects (Suisun Marketplace and Villages at Fairfield).

General Fund Revenue Impacts

Sedway Group examined the impacts of Suisun Marketplace on the City of Suisun City’s General Fund revenues assuming the subject property is annexed into the City. The construction of Suisun Marketplace will impact General Fund revenues by increasing the property tax and sales tax that the City of Suisun City will receive. For property tax, Sedway Group estimated the assessed value of the completed Suisun Marketplace, Gilbert Parcel and adjacent residential development and applied an estimated property tax rate. The cost approach was used to estimate the assessed value of Suisun Marketplace and Gilbert Parcel and the average selling price of the units was used to estimate the assessed value of the residential development. The new property tax revenue is estimated at \$444,325 per year to the City of Suisun City in 2009 dollars.

For sales tax, Sedway Group estimated taxable sales generated at Suisun Marketplace and Gilbert Parcel and applied the local tax share rate. Then, the tax attributable to the maximum sales diversions anticipated in the City of Suisun City from development of the Suisun Marketplace and Gilbert Parcel was deducted to measure the impact on Suisun City retailers.

The incremental retail sales tax revenue is estimated at approximately \$2.5 million per year in 2009 dollars.

With property and sales taxes combined, the City of Suisun City is estimated to receive \$3.0 million per year in new tax revenue to its General Fund as a result of Suisun Marketplace and adjacent residential development in 2009, assuming stabilized sales in that year.

Alternative Site Identification

Sedway Group researched local planning documents and contacted primary market area city staff to identify potential vacant land sites of a size and nature suitable to support development of the Suisun Marketplace. Sedway Group concludes that there are no other suitable sites within or immediately adjacent to the City of Suisun City to support the development of Suisun Marketplace.

SUMMARY OF FINDINGS—ALTERNATIVES 1 AND 2

Suisun Marketplace and Gilbert Parcel Sales

Sedway Group estimates that annual stabilized Suisun Marketplace and Gilbert Parcel sales for development Alternatives 1 and 2 will total \$193.8 million and \$142.7 million in 2009 dollars, respectively, comprised of:

Table 2
Estimated Suisun Marketplace and Gilbert Parcel Sales by Retail Category for Alternatives 1 and 2¹
2009 Dollars, in Millions

Retail Category	Alt 1 Estimated Retail Sales	Alt 2 Estimated Retail Sales
Apparel	\$11.6	\$16.9
General Merchandise ²	64.7	66.1
Food Stores	23.7	23.9
Eating and Drinking Places	11.4	12.1
Home Furnishings and Appliances	23.3	3.8
Building Materials ²	39.1	0
“Other Retail Stores”	<u>20.1</u>	<u>19.9</u>
Total³	\$193.8	\$142.7

(1) Based on California Board of Equalization retail categories.
(2) Includes the estimated garden center sales.
(3) Figures may not total due to rounding.
Sources: Tom Gentry California Company; and Sedway Group.

Of these new sales, approximately 90 percent, or \$174.4 million and \$128.4 million, respectively, is estimated to be generated by primary (cities of Suisun City and Fairfield) and secondary market area (Solano County) residents. The remaining 10 percent of sales generated at Suisun Marketplace and the Gilbert Parcel are expected to originate from shoppers residing outside this area.

Impacts on Existing Primary Market Area Retailers

The results for Alternative 1 indicate that, at worst, \$42.4 million in sales generated at Suisun Marketplace and the Gilbert Parcel upon stabilization will be diverted away from existing primary market area (cities of Suisun City and Fairfield) retailers. This represents 2.9 percent of estimated sales in the primary market area. Thus, the balance of new sales, or \$151.4 million, is the minimum estimate of Suisun Marketplace and Gilbert Parcel sales new to the primary market area.

The results for Alternative 2 indicate that, at worst, \$36.3 million in sales generated at Suisun Marketplace and the Gilbert Parcel upon stabilization will be diverted away from existing primary market area (cities of Suisun City and Fairfield) retailers. This represents 2.5 percent of estimated sales in the primary market area. Thus, the balance of new sales, or \$106.4 million, is the minimum estimate of Suisun Marketplace and Gilbert Parcel sales new to the primary market area.

Cumulative Impacts

These results indicate that assuming development of Alternative 1 of the Suisun Marketplace and the Gilbert Parcel and all cumulative projects, at worst, \$61.4 million in sales will comprise sales diverted away from existing primary market area retailers. The diverted sales impact estimate is \$5.4 million on apparel stores, \$28.4 million on general merchandise stores, \$19.2 million on food stores, and \$8.4 million on building materials stores. There are no estimated impacts on eating and drinking places, home furnishings and appliances stores, and "other retail stores." The diverted sales impacts for Alternative 2 and all cumulative projects are, at worst, \$55.3 million. This includes \$7.1 million in apparel stores, \$28.9 million in general merchandise stores, and \$19.3 million in food stores. There are no estimated impacts on eating and drinking places, home furnishings and appliances, building materials, or "other retail stores."

In the case where only Suisun Marketplace and Villages at Fairfield were developed, the results indicate that for Alternative 1, at worst, \$54.8 million in sales will comprise sales diverted away from existing primary market area retailers. The diverted sales impact estimate is \$5.4 million on apparel stores, \$25.8 million on general merchandise stores, \$15.2 million on food stores, and \$8.4 million on building materials. There are no estimated impacts on eating and drinking places, home furnishings and appliances, and "other retail stores." For Alternative 2, the results indicate that, at worst, \$48.7 million in sales will comprise diversion away from existing primary market area retailers. The diverted sales impacts include \$7.1 million on apparel stores, \$26.3 million on general merchandise stores, and \$15.3 million on food stores. There are no estimated impacts on eating and drinking places, home furnishings and appliances, building materials, and "other retail stores."

Urban Decay Determination

Sedway Group concluded that although development of Base Project may contribute to further retail vacancies in the primary market area, those vacancies are unlikely to result in urban decay. Because Alternatives 1 and 2 are smaller in size than the Base Project, Sedway Group reaches the same conclusion regarding the potential for urban decay.

II. INTRODUCTION

STUDY BACKGROUND

Tom Gentry California Company is seeking to build a retail shopping center on 71.3 acres of vacant property in the City of Suisun City, California. Suisun Marketplace is a component of a 480+ acre land holding referred to as the "Gentry Property." A significant portion of this property is currently located in unincorporated Solano County, with efforts underway to annex a portion thereof into Suisun City. The project site is bounded on the north by Highway 12, on the east by Pennsylvania Avenue, on the south by the existing railroad line, and on the west by Ledgewood Creek. The planned Suisun Marketplace is anticipated to be completed in 2008, with the first full year of operations in 2009. Retail development is also envisioned for an adjacent five acre parcel, known as the "Gilbert Parcel." For the purposes of this analysis, it is assumed that the Gilbert Parcel would be developed simultaneously with Suisun Marketplace.

Suisun Marketplace and the Gilbert Parcel are proposed to have 721,000 square feet of retail space, including 49,700 square feet for outdoor garden centers. This development scenario is called the "Base Project." As of the date of this analysis, Tom Gentry California Company has not identified all the specific tenants for Suisun Marketplace. However, a Supercenter is considered to be a possible anchor for the center. The Suisun Marketplace is planned to include a 227,200-square-foot Supercenter² (it is estimated that approximately 25 percent of the Supercenter space will be dedicated to a grocery component), a 162,700-square-foot home improvement retailer, a 3,000-square-foot gas station, and 139,500 square feet of apparel, home furnishings, and dining. The remaining 123,099 square feet of space represents "unknown retail." The Gilbert Parcel is expected to include 65,340 additional square feet of retail space. For the purposes of this analysis Sedway Group worked with Tom Gentry California Company to allocate the unknown retail sales to specific retail categories. The unknown retail sales were allocated based on Tom Gentry California Company's expectations of the types of retailers they would seek to attract and represent a typical mix of tenants for a shopping center of this type and size. In addition to the retail component, high-density residential development (359 units) is also planned for approximately 17.1-acres of land in unincorporated Solano County adjacent to the Suisun Marketplace.

Two alternative development plans, featuring reduced square footage, are also considered in this analysis. Both alternatives include a Supercenter. The total square footage of Alternatives 1 and 2 are 490,000 and 360,000 square feet, respectively.

The City of Suisun City commissioned this socio-economic impact study to accompany its environmental impact report for Suisun Marketplace and the Gilbert Parcel. The purpose of the study is as follows:

- 1) probe potential impacts of Suisun Marketplace on existing primary market area retailers;

² Pursuant to the Notice of Preparation, prepared by the City of Suisun City, dated February 24, 2005, the term "Supercenter" is intended to refer to a retail tenant with a building size of approximately 200,000 square feet that will include grocery, general merchandise, and a garden center. A Supercenter would presumably operate 7 days a week and up to 24 hours a day.

- 2) estimate cumulative impacts of other selected retail projects in the primary market area;
- 3) develop an estimate of the extent to which the opening of Suisun Marketplace and the Gilbert Parcel (either alone or cumulatively) may or may not contribute to urban decay in the primary market area; and
- 4) estimate the City of Suisun City General Fund fiscal benefits resulting from development of the Suisun Marketplace and Gilbert Parcel and residential development (assuming annexation).

This report documents Sedway Group's research and analysis of the aforementioned issues.

STUDY TASKS

Sedway Group performed several steps during the course of this assignment. In brief, these steps included the following:

- Identified major general merchandise, food stores, and home improvement retailers in the primary market area and beyond;
- Conducted fieldwork to identify and evaluate existing primary market area retailers and selected shopping centers;
- Estimated the planned Suisun Marketplace and Gilbert Parcel sales;
- Identified a secondary market area for prospective Suisun Marketplace and Gilbert Parcel shoppers;
- Collected and analyzed primary market area and secondary market area taxable retail sales;
- Conducted retail leakage analyses for the primary market area and the secondary market area;
- Estimated the share of Suisun Marketplace and the Gilbert Parcel's sales to be generated by the primary and secondary market area versus a tertiary market area;
- Estimated the maximum Suisun Marketplace and Gilbert Parcel impacts on existing primary market area retailers;
- Estimated the share of the Suisun Marketplace and the Gilbert Parcel's sales likely to be new to the primary market area;
- Assessed the competitiveness of existing primary market area stores and likely Suisun Marketplace and Gilbert Parcel impacts;
- Identified planned retail projects in the primary and secondary market area;
- Assessed the cumulative impacts of the selected retail projects in the primary market area;
- Assessed the extent to which opening of the Suisun Marketplace and Gilbert Parcel may or may not contribute to urban decay in the primary market area;
- Estimated the property and sales tax revenue accruing to the Suisun City General Fund due to the proposed project; and
- Attempted to identify in the Suisun City or areas immediately adjacent to Suisun City other prospective locations for a retail development of the magnitude of Suisun Marketplace and the Gilbert Parcel.

STUDY RESOURCES

Many resources were relied upon for this study. These resources included information provided by Tom Gentry California Company and the City of Suisun City. Additional study resources

included the Association of Bay Area Governments' "Projections 2005" population estimates and projections, and taxable sales data generated by the State of California Board of Equalization. The Board of Equalization publishes taxable sales numbers for counties and major cities; its most recent full-year taxable sales numbers are from 2003 in its publication, *Taxable Sales in California – 2003*. Business-specific data identifying primary and secondary market area retailers were obtained from the 2004 Shopping Center Directory for the Western United States, Claritas, Inc., and other sources. Additional resources prepared by Claritas, Inc., a national provider of demographic and economic data, were relied upon for mean household income trend data. Inflationary adjustments were made based upon the Consumer Price Index for all urban consumers in the Bay Area. Local commercial and residential real estate brokers also provided insight and information.

REPORT ORGANIZATION

This report includes eight chapters, as follows:

- I. Executive Summary
- II. Introduction
- III. Store Sales Impacts
- IV. Impacts on Existing Primary Market Area Retailers
- V. Cumulative Impacts
- VI. Urban Decay Determination
- VII. General Fund Revenue Impacts
- VIII. Alternative Suisun City Site Identification
- IX. Analysis of Alternative Development Programs

All the exhibits referenced in the report are included in Appendices A, B and C This report is subject to the appended Assumptions and General Limiting Conditions.

III. STORE SALES IMPACTS

Sedway Group's summary findings relative to the anticipated retail sales of the proposed Suisun Marketplace and Gilbert Parcel are presented below. These include estimates of the total sales generated by the center, the minimum amount of sales estimated to be new to the primary market area, and the maximum amount of sales estimated to be diverted away from existing primary market area stores competing in various retail categories. The potential for population growth to recover lost sales is also presented.

SUISUN MARKETPLACE AND GILBERT PARCEL DESCRIPTION

The site consists of undeveloped, vacant land. According to the developer, Tom Gentry California Company, the Suisun Marketplace and Gilbert Parcel will have approximately 671,139 square feet of retail space, with an additional 49,700 square feet of outdoor garden center space for total retail space of 720,839 square feet.³

While Tom Gentry California Company has not identified all of the specific retail tenants, it has considered Supercenter as a possible anchor and targeted retail sales categories for much of the remaining shopping center space. The Suisun Marketplace is planned to include a 227,200-square-foot Supercenter⁴ (it is estimated that approximately 25 percent of the Supercenter space will be dedicated to a grocery component), a 162,700-square-foot home improvement retailer, a 3,000-square-foot gas station, and 139,500 square feet of apparel, home furnishings, and dining. The remaining 123,099 square feet of space represents "unknown retail." The unknown retail sales were allocated based on Tom Gentry California Company's expectations of the types of retailers they would seek to attract and represent a typical mix of tenants for a shopping center of this type and size. Additionally, development of the Gilbert Parcel would include 65,340 square feet of retail, for which tenants are also unknown. Sedway Group assumes that this development would include tenants typically located near large community and regional shopping centers. Therefore, the analysis assumes the space will be divided evenly among a book store, an electronics store, and a home furnishings store. A breakdown of the retail square footage by targeted retail category is displayed in Exhibit 1, and summarized in Table 3.

³ The garden center space is divided between the Supercenter and Home Improvement retailers as follows; 20,800 square feet with the Supercenter, and 28,900 square feet with the home improvement retailer.

⁴ Pursuant to the Notice of Preparation, prepared by the City of Suisun City, dated February 24, 2005, the term "Supercenter" is intended to refer to a retail tenant with a building size of approximately 200,000 square feet that will include grocery, general merchandise, and a garden center. A Supercenter would presumably operate 7 days a week and up to 24 hours a day.

Table 3
Proposed Suisun Marketplace and Gilbert Parcel
Type of Retail and Associated Square Feet

Retailer	Retail Space (Sq. Ft.)	Percent Distribution
Supercenter ¹	227,200	31.5%
Home Improvement ²	162,700	22.6%
Apparel	88,000	12.2%
Home Furnishings	27,500	3.8%
Restaurant	18,000	2.5%
Fast Food	6,000	0.8%
Unknown Retail	123,099	17.1%
Gas Station	3,000	0.4%
Book Store (Gilbert Parcel)	21,780	3.0%
Electronics Store (Gilbert Parcel)	21,780	3.0%
Home Furnishings (Gilbert Parcel)	<u>21,780</u>	<u>3.0%</u>
Total (3)	720,839	100.0%

(1) Includes the 20,800-square-foot garden center.

(2) Includes the 28,900-square-foot garden center.

(3) Figures may not total due to rounding.

Sources: Tom Gentry California Company; and Sedway Group.

The majority of the retail space, approximately 66.3 percent, will be dedicated to anchor tenants such as the Supercenter, home improvement, and apparel retailers. The balance will consist of inline shops and retail pads.

PROJECTED SUISUN MARKETPLACE SALES

Total Suisun Marketplace Store Sales

In order to determine the annual sales of the proposed Suisun Marketplace, Sedway Group made assumptions based on the Retail MAXIM's *Perspectives on Retail Real Estate and Finance, July 2004*. The Retail MAXIM publication provides average sales per square foot figures for many national retailers and aggregates the data by specific retail categories. Tom Gentry California Company anticipates that Suisun Marketplace will be completed in the fourth quarter 2008, with the first full year of sales in 2009. A completion date for the Gilbert Parcel is unknown, but it is conservatively assumed to open at the same time as the Suisun Marketplace for the purposes of this analysis. Thus, all sales estimates were projected to 2009 using the inflation assumptions in Exhibit 2. Sedway Group used the resulting sales per square foot figures to estimate annual sales based on the total square feet for each targeted retail category.

While not all specific retailers have been identified, targeted retail categories for a majority of the space are proposed. Where the retailer was known, Sedway Group prepared sales estimates based on relevant retailer information provided by the Retail MAXIM publication. For example, a Supercenter is a possible anchor for the Suisun Marketplace. In order to estimate the sales per square foot, Sedway Group utilized the average sales per square foot of Wal-Mart as reported in the Retail MAXIM. When the targeted retail category was known, Sedway Group

utilized an average representative of stores within that category, as reported by the Retail MAXIM. This approach was taken for the home improvement, apparel, home furnishings, restaurant, and fast food space. All of the per square foot sales estimates and assumptions are detailed in Exhibit 2.

Where the targeted retail category was unknown, Sedway Group relied on the industry-accepted standard of \$300 per square foot of sales per year. Sedway Group assumed that \$300 sales per square foot represents 2003 data and inflated the amount to 2009 dollars based on inflation assumptions in Exhibit 2. Sedway Group used the \$300 figure as a floor for 2003 sales per square foot estimates for unknown retail categories. This might overstate sales at Suisun Marketplace if some of the tenants are local non-chain retailers who achieve lower sales per square foot. Overall, it is a conservative approach when trying to determine the maximum impact of the project on primary market area retail, as this study seeks to accomplish.

Tom Gentry California Company currently estimates Suisun Marketplace's opening by fourth quarter 2008, and this analysis assumes development of the Gilbert Parcel will occur simultaneously. Stabilized sales for a shopping center generally are not expected to occur the first year of store operations, but rather the second or third year, which is more typical of new retail operations. For the purposes of this analysis, stabilized sales are conservatively assumed to occur in 2009, the first full year of operations. Based on the methodology described above and detailed in Exhibit 2, Sedway Group estimates Suisun Marketplace and Gilbert Parcel sales in 2009 will total \$271.6 million.

Projected Sales by Category

The new sales generated by Suisun Marketplace and the Gilbert Parcel will be spread across many store-merchandising categories due to the range of retailers anticipated. Sedway Group contacted the California Board of Equalization ("BOE") to obtain the categories in which the sales of the targeted Suisun Marketplace and Gilbert Parcel retailers will be classified for sales tax purposes. The unknown retail sales were allocated to specific retail categories using information provided by Tom Gentry California Company and assumptions prepared by Sedway Group. The representative BOE retail categories at Suisun Marketplace and the Gilbert Parcel are apparel, general merchandise, food stores, eating and drinking places, home furnishings and appliances, building materials, and "other retail stores." Exhibit 3 presents Suisun Marketplace sales by retail category, including assumptions developed by Sedway Group with input from Tom Gentry California Company regarding the unknown retail.

In general, the Board of Equalization records a retailer's sales in only one sales category; however, a more detailed breakdown of sales is required for the Supercenter and home improvement retailers. Ultimately, the BOE will record the Supercenter's sales in the general merchandise category. However, the Supercenter's sales will impact the food stores (due to the grocery component) and the "other retail stores" (due to the garden center) categories as well. As a result, Sedway Group allocated the Supercenter's sales to those three categories based on the assumptions detailed in Exhibit 3. Further, the BOE will record the home improvement retailer's sales in the building materials category. However, the home improvement retailer's sales will impact the building materials, home furnishings and appliances, and "other retail stores" (due to the garden center) categories as well. As a result, Sedway Group allocated the home improvement retailer's sales to those three categories based on the assumptions detailed in Exhibit 3. The additional detail provided by this level of analysis enables better understanding

of the types of retail sales to be generated by Suisun Marketplace and the Gilbert Parcel, and its potential impact on specific retail categories.

Exhibit 3 attributes sales to the appropriate category and sums the total sales of Suisun Marketplace and the Gilbert Parcel by BOE retail category. The results are summarized in Table 4 below.

Table 4
Estimated Suisun Marketplace and Gilbert Parcel Sales by Retail Category¹
2009 Dollars, in Millions

Retail Category	Estimated Retail Sales
Apparel	\$45.0
General Merchandise	68.0
Food Stores	25.0
Eating and Drinking Places	10.8
Home Furnishings and Appliances	43.0
Building Materials	37.5
"Other Retail Stores" ²	<u>42.5</u>
Total³	\$271.6

(1) Based on California Board of Equalization retail categories.

(2) Includes the estimated garden center sales.

(3) Figures may not total due to rounding.

Sources: Exhibits 1, 2, and 3; Tom Gentry California Company; and Sedway Group.

The following analysis examines whether Suisun Marketplace and the Gilbert Parcel would attract new sales to the primary market area as opposed to diverting sales from existing retailers. The degree of impact on existing primary market area retailers is considered.

NEW SALES TO THE PRIMARY MARKET AREA

To assess the prospective minimum share of Suisun Marketplace and Gilbert Parcel sales that would be new to the primary market area and the potential impacts on existing Suisun City retailers, Sedway Group estimated the following:

- Primary market area;
- Secondary market area;
- Share of Suisun Marketplace and Gilbert Parcel sales originating from a tertiary market area;
- Primary market area and combined primary and secondary market area retail leakage and attraction;
- Maximum share of Suisun Marketplace and Gilbert Parcel sales likely to be initially diverted from existing primary market area retailers on a worst case basis; and,
- Impact of population growth and other factors on sales impacts.

Market Area Definitions

Primary Market Area Definition. Sedway Group estimates that the primary market area for retail demand is the combined cities of Suisun City and Fairfield with residents of the primary market area comprising the largest share of demand for retail sales. Sedway Group's retail leakage

analysis documented in this chapter (see Retail Leakage Analysis) indicates that resident spending represents the equivalent of 78.5 percent of sales in the primary market area. Thus, the primary market area generates many of its own retail sales, but the primary market area also captures sales from non-residents. Further examination of the primary market area's spending and sales patterns indicates that the primary market area attracts sales in most categories but has sales leakage in the eating and drinking places and building materials categories.⁵

Secondary Market Area Definition. Sedway Group identified a secondary market area for the proposed Suisun Marketplace and the Gilbert Parcel defined as the balance of Solano County. This secondary market area definition reflects the existing nature and mix of retailing in the primary market area and the location of other major general merchandise and home improvement retailers in the region. Sedway Group identified all major general merchandise and home improvement retailers within an approximately 25-mile radius of the proposed Suisun Marketplace and Gilbert Parcel site. The research included locations in Solano County, Napa County to the west, and Contra Costa County to the south. The boundaries of the secondary market area, as depicted in Exhibit 4, are reflective of the area the proposed Suisun Marketplace will most likely draw the largest balance of its customers.

Sedway Group assumed that residents in areas south of the secondary market area will be attracted to retailers in Contra Costa County; residents in areas north of the secondary market area will be attracted to retailers in Yolo County; residents to the west will be attracted to Napa County; and residents to the east will be attracted to yet other more remote locations.

Within the combined primary and secondary market area depicted in Exhibit 4, the major general merchandise and home improvement retailers are located in the cities of Vacaville, Fairfield, and Vallejo. Currently there are twelve major general merchandise retailers within the combined primary and secondary market area. Of the twelve retailers, four (Wal-Mart, Target, Costco, and K-Mart) have locations within the primary market area, all within the City of Fairfield. There is no major general merchandise retailer in the City of Suisun City. Currently there are four major home improvement retailers within the combined primary and secondary market area. Of these four retailers, only one, a Home Depot, has a location within the primary market area. Specifically, the Home Depot is located in the City of Fairfield.

In addition, there is a Wal-Mart Supercenter in planning for a site in the City of Fairfield. The proposed Supercenter is located on North Texas Street and will replace an existing Wal-Mart Discount store that will close. The location of other major general merchandise and home improvement retailers may change as new development occurs within the secondary market area. These issues will be addressed in the cumulative impacts section.

Sedway Group estimates that primary and secondary market area residents will generate 90 percent of Suisun Marketplace sales. Thus, residents coming from tertiary markets will generate the remaining 10 percent of sales. The 10 percent tertiary percentage allocation is consistent with the retail leakage analysis findings below that indicate that the combined primary and secondary market area collectively attracts 10.1 percent of sales from other areas.

⁵ It should be noted that the Suisun City retail sales represent just 5.3 percent of total retail sales in the primary market area. Refer to Exhibit 6.

The concept of a percentage share allocation of demand from a market area is consistent with general real estate market analysis principles, which recognize that regional retailers have primary, secondary, and often even tertiary market areas. It is also consistent with discussions Sedway Group had with retail brokerage professionals.

Market Area Sales. Applying the estimated division of sales between the combined primary and secondary market area (90 percent) and tertiary market area (10 percent) to the stabilized Suisun Marketplace sales estimates of \$271.6 million indicates that the sales from Suisun Marketplace are estimated to be distributed as presented in Table 5.

Table 5
Origin of Suisun Marketplace and Gilbert Parcel Sales
2009 Dollars, in Millions

Retail Category	Total	Primary and Secondary Market Area	Tertiary Market Area
Apparel	\$45.0	\$40.5	\$4.5
General Merchandise	68.0	61.2	6.8
Food Stores	25.0	22.5	2.5
Eating and Drinking Places	10.8	9.7	1.1
Home Furnishings and Appliances	43.0	38.7	4.3
Building Materials	37.5	33.7	3.7
Other Retail	<u>42.5</u>	<u>38.2</u>	<u>4.2</u>
Total	\$271.6	\$244.5	\$27.2

Source: Sedway Group.

These estimates indicate that a total of \$244.5 million in Suisun Marketplace and Gilbert Parcel sales are estimated to be generated from within the center’s combined primary and secondary market area, with \$27.2 million of sales generated from a tertiary market area.

Retail Leakage Analysis

Approach. Sedway Group operates a proprietary model that estimates retail spending potential for a market area (usually a city, grouping of cities, or county) based upon population, income, and consumer spending patterns.⁶ The model then determines the extent to which a market area is or is not capturing its sales potential based upon taxable sales data published by BOE or provided by city tax consultants. In order to determine the anticipated pattern of retail spending for a market area, the model uses a benchmarked control area. For the purposes of this study, the control area has been defined as the nine Bay Area counties, the regional planning area of the Association of Bay Area Governments (“ABAG”) – Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. The purpose of the control area is to control for characteristics unique to individual markets that might artificially inflate or deflate the calculated spending pattern of area residents.

Retail categories in which spending is not fully captured are called “leakage” categories, while retail categories in which more sales are captured than are generated by residents are called “attraction” categories. Generally, attraction categories signal particular strengths of a retail market, while leakage categories signal particular weaknesses.

⁶ Much of the analysis is predicated upon spending patterns by household income per the United States Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey.

Sedway Group's leakage model conducts the analysis for all retail sales in an area, including taxable and nontaxable. However, for purposes of this study, the findings below focus on the categories most relevant to Suisun Marketplace, e.g., apparel, general merchandise, building materials, home furnishings and appliances, eating and drinking places, and "other retail stores."

Population Estimates. Staff at the City of Suisun City indicated to Sedway Group that it generally relies on ABAG population figures for its own use. As a result, Sedway Group relied on ABAG's population figures and projections for the leakage analysis, as depicted in Exhibit 5. ABAG uses the U.S. Census estimate of population in 2000 and does projections in five-year increments to 2030. Sedway Group utilized the population projections to project the primary market area's (cities of Suisun City and Fairfield) population each year to 2020. To interpolate the population between the data points, Sedway Group utilized the compound annual growth rate in three periods: 2000 to 2005, 2005 to 2015, and 2015 to 2020.

Adjustment Required Due to Confidentiality. The leakage analysis conducted for the combined primary and secondary market area involved an analytic adjustment necessitated due to data limitations. When the Board of Equalization publicly reports data, it will not report data for a sales category if it does not meet certain disclosure requirements. For example, if there are only one or two stores in a category or if one retailer dominates the category sales in a single city, then the sales in that category will not be released. Instead, they will be combined with the sales in the "other retail stores" category. This is more prone to occur in retail markets where the number of retailers is small or one large retailer makes up most of the sales. This is the case with the apparel and general merchandise sales in the City of Suisun City. For the City of Suisun City, the Board of Equalization combined the apparel and general merchandise sales with "other retail stores." Exhibit 6 details how Sedway Group made adjustments to avoid overstating the "other retail stores" category and understating the apparel and general merchandise categories.

Findings. Three leakage analyses were conducted to assess the state of the primary market area's retail climate. The first leakage analysis examines the primary market area's sales performance relative to its own population base in order to assess the degree to which the primary market area is serving the retail needs of its resident population. A second leakage analysis examines the sales performance of Suisun Marketplace's combined primary and secondary market area. The combined primary and secondary market area is defined as Solano County. Finally, a third leakage analysis examines the secondary market area sales performance.

The leakage analyses were conducted using 2003 sales data and extrapolated to 2009, reflecting the sales estimates for Suisun Marketplace upon completion. The per capita expenditure trends from 2003 were assumed to be equivalent to the per capita expenditure trends for 2009, with adjustments for interim population growth and inflation. The purpose of this adjustment was to maximize comparison with Suisun Marketplace's anticipated net additional combined primary and secondary market area sales during its first full year of operations in 2009.

The leakage results for the primary market area and the combined primary and secondary market area are located in the Appendix (see Exhibits 7 and 8 for primary market area results, Exhibits 9 and 10 for combined primary and secondary market area results, and Exhibit 11 for

the secondary market area). For benchmark purposes, detailed results for all retail categories are presented in each market area.

The primary market area has overall attraction in retail sales. Nearly all of the retail categories, with the exception of eating and drinking places and building materials, experienced attraction in sales. Spending by primary market area residents represents the equivalent of approximately 78.5 percent of total retail spending in the primary market area. This indicates that the primary market area has strong overall attraction, bringing in an additional 21.5 percent of spending after retaining the equivalent of its own residents' spending. Similarly, the combined primary and secondary market area experience overall sales attraction. In the primary and secondary market area combined, the only categories experiencing sales leakage are eating and drinking places, home furnishings and appliances, and other retail. The combined sales leakage of those categories totals an estimated \$229.4 million in 2009 dollars. Despite this amount of leakage, the primary and secondary market area combined have overall attraction, bringing in an additional 10 percent of spending after retaining the equivalent of its own residents' spending.

In addition, Sedway Group estimated the leakage/attraction of the secondary market area (i.e., the combined primary and secondary market area less the primary market area), in Exhibit 11. Consistent with the results of the leakage analysis discussed above, the secondary market has overall attraction of sales. However, the overall attraction of sales in the secondary market area is just 3.5 percent. In the secondary market area, the categories experiencing sales leakage are eating and drinking places, home furnishings and appliances, and "other retail stores." The combined sales leakage of those categories totals an estimated \$255.3 million in 2009 dollars.

Implications For New Sales Generation

Sales Impacts on Existing Stores. Sedway Group has developed an analytic approach that conservatively estimates the maximum impact of retailers such as those proposed for Suisun Marketplace on existing retailers. For this analysis, the approach assumes that if Suisun Marketplace is adding sales to a category in an amount greater than any primary or combined primary and secondary market area leakage in the category, **then at worst**, the amount of Suisun Marketplace sales in that category in excess of any leakage will be diverted away from existing primary market area (cities of Suisun City and Fairfield) retailers in proportion to the primary market area retailers' contribution to combined primary and secondary market area (Solano County) sales. In other words, the negative economic impacts of Suisun Marketplace's sales will be spread proportionally among all the like retailers in the combined primary and secondary market area. This diversion estimate, prepared for analytic purposes, conservatively assumes no recovery among the impacted retailers.

Sedway Group's approach is displayed in Exhibit 12, which takes into account the following factors for the most relevant retail sales categories:

- Suisun Marketplace sales by major category;
- Estimated Suisun Marketplace sales by major category generated by combined primary and secondary market area residents;
- The primary market area's (cities of Suisun City and Fairfield) share of combined primary and secondary market area sales based upon the historic distribution of sales;
- Leakage, if any, occurring in the primary market area or secondary market area;

- The portion of leakage, if any, in the primary market area or secondary market area that might be absorbed by Suisun Marketplace sales;
- The share of Suisun Marketplace sales estimated, at maximum, to be diverted from existing primary market area (cities of Suisun City and Fairfield) retailers upon stabilization; and
- The minimum new sales achieved by Suisun Marketplace **not** diverted away from existing primary market area (cities of Suisun City and Fairfield) retailers (i.e., sales resulting from recaptured leakage, if any, and from secondary and tertiary market areas).

This is a conservative approach, in that it assumes there will be no net increase in combined primary and secondary market area sales after Suisun Marketplace achieves market stabilization. Such increases commonly happen as residents shift their shopping patterns or increase their expenditures based upon the enhanced availability of consumer goods. This is why Sedway Group considers the resulting existing retailer impacts **maximum estimates** upon stabilization, and the resulting new sales to the primary market area (cities of Suisun City and Fairfield) **minimum estimates**.

Table 6
Maximum Suisun Marketplace and Gilbert Parcel Retailers Sales Impacts Upon Stabilization
2009 Dollars, in Millions

Retail Category	Suisun Marketplace and Gilbert Parcel Sales	Maximum Sales Diverted From Primary Market Area Retailers	Minimum New Sales to Primary Market Area
Apparel	\$45.0	\$14.4	\$30.6
General Merchandise	68.0	24.3	43.7
Food Stores	25.1	7.5	17.5
Eating and Drinking Places	10.8	0.0	10.8
Home Furnishings & Appliances	43.0	4.1	38.9
Building Materials	37.5	8.0	29.4
Other Retail	<u>42.5</u>	<u>0.0</u>	<u>42.5</u>
Total	\$271.6	\$58.3	\$213.3

Source: Sedway Group.

These results indicate that, at worst, \$58.3 million in sales generated at Suisun Marketplace upon stabilization will be diverted away from existing primary market area (cities of Suisun City and Fairfield) retailers. Thus, the balance of new sales, or \$213.3 million, is the minimum estimate of Suisun Marketplace and Gilbert Parcel sales new to the primary market area. These new sales will come from a combination of recaptured leakage (if any), the secondary market area, and tertiary market area.

These figures are conservative and are presented as an analytical benchmark. They are considered conservative for several reasons. Foremost, they assume the maximum diversion away from existing retailers upon stabilization of Suisun Marketplace. Thus, they do not take into account any prospective market corrections or enhancements following the introduction of Suisun Marketplace to the market, including competitive retailer repositioning. More importantly, they do not take into consideration population growth in the combined primary and secondary market area following introduction of Suisun Marketplace.

Absent any market adjustments, the maximum sales diverted represent 4.0 percent of the estimated combined total apparel, general merchandise, food stores, eating and drinking places, home furnishings and appliances, building materials, and “other retail stores” categories in the primary market area in 2009 (refer to Exhibit 13). The maximum sales diverted as a percent of total sales in each retail category range from a low of no impact in the eating and drinking places and “other retail stores” categories to a high of 17.1 percent in the apparel stores category. The maximum diverted sales as a percent of estimated primary market area sales by category, is displayed in the following Table 7.

Table 7
Maximum Diverted Sales as a Percent of Primary Market Area (PMA) Sales
2009 Dollars

Retail Category	Diverted Sales as A Percent of PMA Sales
Apparel	17.1%
General Merchandise	6.4%
Food Stores	2.3%
Eating and Drinking Places	0.0%
Home Furnishings & Appliances	5.3%
Building Materials	6.4%
Other Retail	<u>0.0%</u>
Total – All Retail Categories	4.0%

Source: Exhibit 13; and Sedway Group.

Leakage Considerations By Market Area. In this impact analysis, it is important to distinguish primary market area leakages from combined primary and secondary market area leakages. As presented in Exhibit 12, the new retail sales from Suisun Marketplace and the Gilbert Parcel expected to be generated from primary market area residents is netted against any leakages within the primary market area to determine maximum impacts in each category. If the leakage exceeds the new sales, no impact is estimated.

Sedway Group’s impact analysis generally assumes that given the same retail opportunities closer to home, residents will shift shopping to the more convenient location. Thus, whereas a primary market area resident might have traveled to Vallejo or Vacaville for a certain purchase, that resident will likely choose to make that purchase closer to home at the new retail center given the enhanced critical mass of retail space. Instead of leaking those sales, the primary market area would divert them from Vacaville. This can occur even if there is an attraction in the combined primary and secondary market area. If only leakages of the combined primary and secondary market area were considered, a large attraction in the secondary market area might mask leakages in the primary market area.

In a similar way, an attraction might occur in the primary market area while an overall leakage might occur in the combined primary and secondary market area in a certain category. If only the primary market area is considered, it would indicate that the market already attracts sales in that category and, therefore, any new sales in that category would then exceed resident spending and cause an impact on existing retail. Yet, this conclusion cannot be drawn without considering the secondary market area. Despite a primary market area attraction, the secondary market area might be leaking a large amount of sales that might be redirected to new retail development in the primary market area. The new retail in the primary market area

would be more convenient than, or as convenient as, other retail opportunities for secondary market area residents. In turn, they would shift some spending to the primary market area.

Based on the considerations above, the sales leakages in the primary market area and secondary market area should be considered separately since a leakage in either could help to reduce the sales impacts of Suisun Marketplace and the Gilbert Parcel. Exhibit 12 calculates the maximum sales diverted from primary market area retailers after assuming that the primary market area would absorb existing leakage in the primary market area and up to 33.3 percent of the leakage in the secondary market area.⁷

Mitigating Effects of Population Growth and Other Factors. The maximum diverted sales estimate summarized in Tables 6 and 7 will likely be reduced by the time the Suisun Marketplace achieves stabilization after about two to three years because new demand from anticipated population growth in the primary market area and secondary market area will absorb some of the new sales.

The greatest mitigating factor to any potential negative economic impacts is the anticipated population growth and the associated spending of these new residents. For example, between 2009 and 2014, the primary market area's population is anticipated to grow by 13,586, while the combined primary and secondary market area population is anticipated to grow by 39,260 (see Exhibits 5, 14, and 15). Given the estimated per capita spending for the primary market area and combined primary and secondary market area residents, and the primary market area's historic share of combined primary and secondary market area sales, this new population is estimated to generate millions in new sales by 2014, as summarized in Table 8.

Table 8
New Population Retail Demand
Primary Market Area (PMA) and Secondary Market Area
2009 – 2014, in 2009 Dollars, in Millions

Retail Category	Primary Market Area	Secondary Market Area	Estimated Primary Market Area Capture ¹
Apparel	\$6.4	\$18.8	\$6.7
General Merchandise	20.6	60.6	24.1
Food Stores	26.6	78.1	26.1
Eating and Drinking Places	16.8	49.4	16.3
Home Furnishings & Appliances	6.8	20.0	7.5
Building Materials	11.6	34.2	8.8
Other Retail	<u>23.5</u>	<u>69.2</u>	<u>30.1</u>
Total	\$112.4	\$330.3	\$119.6

(1) The estimated primary market area capture rate based on the primary market area's estimated share of primary and secondary market area sales, by category. Refer to Exhibits 12 and 15.
Source: Sedway Group.

These figures indicate that by 2014, primary market area retailers are estimated to capture an additional \$119.6 million in sales categories impacted by the Suisun Marketplace. The majority of this new demand, approximately 67 percent, will be generated in the general merchandise,

⁷ It is possible that Suisun Marketplace and Gilbert Parcel would absorb leakage at an amount greater than the estimate of leakage in the secondary market area. This depends on many factors, such as customer preferences and the quality and location of retail opportunities outside of the secondary market area. Assumption developed by Sedway Group based on market observations and professional judgment.

food stores, and “other retail stores” categories. These figures are substantial and help to mitigate the sales estimated to be diverted away from primary market area retailers as a result of the Suisun Marketplace and Gilbert Parcel sales.

New demand and corresponding sales from population growth (refer to Table 7) might be understated due to conservative population forecasts. Currently, substantial amounts of new residential construction are in the pipeline for the primary market area (see Exhibit 16). This amount of growth suggests that the preceding primary market area population growth forecast of 13,586 between 2009 and 2014 may understate actual growth in the primary market area and associated retail spending. According to the cities of Suisun City and Fairfield Planning Departments, as of June 2005, there were approximately 6,672 known new residential units in the planning process that were either under construction (1,681) or in planning (4,991) in the primary market area.⁸ Applying the 2000 U.S Census average household size for each of the primary market area cities (Suisun City and Fairfield) to the projects in their respective cities, the planned residential development might accommodate an additional 20,277 residents in the primary market area. This compares to 13,586 residents based on estimates presented in Exhibit 15.

The extent to which diverted sales truly will impact existing retailers depends on many additional factors, such as their market niche, hours of operation, market strength, store and management quality, and location relative to Suisun Marketplace and the Gilbert Parcel. Some of these factors are presented in the following chapters.

⁸ These figures include the 282 units planned for the residential component associated with the Suisun Marketplace and commercial development.

IV. IMPACTS ON EXISTING PRIMARY MARKET AREA RETAILERS

The findings presented in the previous chapter indicate that, at worst, \$58.3 million in total annual sales might be initially diverted away from existing primary market area retailers after the completion of the Suisun Marketplace and Gilbert Parcel: \$14.4 million in apparel; \$24.3 million in general merchandise; \$7.5 million in food stores; \$4.1 million in home furnishings and appliances; and \$8.0 million in building materials. These maximum figures represent between 2.3 percent (food stores) and 17.1 percent (apparel) of total sales for each category in 2009 (see Exhibit 13). The maximum sales diverted will likely be reduced by the time the Suisun Marketplace and the Gilbert Parcel achieve stabilization after about two to three years because new demand from anticipated population growth in the primary market area and secondary market area will absorb some of the new sales.

This chapter first considers the extent to which these maximum sales impacts could affect existing primary market area stores competing in the above categories based on their store characteristics.

COMPETITIVE SHOPPING CENTERS AND STORES

Sedway Group visited competitive shopping centers and major general merchandise, food stores, and home improvement stores in the primary market area in April 2005 to visually assess their performance, to determine their market niche, and to qualitatively assess the degree to which they may actually incur lost sales due to the addition of Suisun Marketplace and the Gilbert Parcel. Sedway Group identified competitive shopping centers based on their size and retail focus relative to Suisun Marketplace and the Gilbert Parcel. Sedway Group located existing competitive stores via store location information provided by InfoUSA. The major competitive shopping center and stores will be discussed according to their category of sales. Shopping centers and selected store locations are mapped on Exhibits 17 and 18, respectively. The maps also depict the location of the proposed Suisun Marketplace and the Gilbert Parcel.

It should be noted that the Travis Air Force Base Commissary and Exchange was considered for this analysis but not included because it is located outside of the primary market area and therefore outside the scope of this analysis of impacts of primary market area retailers and because there is no existing primary market area leakage in the general merchandise or food stores categories which tend to comprise the bulk of exchange sales.

Competitive Shopping Centers

Overview. The primary market area contains several competitive shopping centers. There are other smaller, more neighborhood serving shopping centers in the primary market area. However, Sedway Group toured those shopping centers considered most competitive with the Suisun Marketplace and the Gilbert Parcel. These shopping centers are identified in Exhibit 17 and described below, followed by a discussion by store type.

- **Gateway Courtyard** is a community-serving shopping center located on the northeast corner of Interstate 80 and E. Travis Boulevard in the City of Fairfield. It is located approximately

1.6 miles north of the proposed Suisun Marketplace. The center opened in 2000 and has approximately 135,000 square feet of gross leaseable area. Major anchor tenants include Barnes & Noble and Linens 'N Things. Additional tenants include Aaron Brothers, Sprint PCS, Hallmark and Mimi's Café. Gateway Courtyard is located immediately west of Westfield Shoppingtown Solano.

- **Gateway Plaza** is a community-serving shopping center located at the intersection of Pennsylvania Avenue and Gateway Boulevard in the City of Fairfield. It is located approximately 1.6 miles north of the proposed Suisun Marketplace. The center opened in 1988 and has approximately 211,000 square feet of gross leaseable area. Major anchor tenants include Trader Joes, Office Max, Good Guys, and Toys R Us. Additional tenants include Sally Beauty Supply, Countryside Mortgage, Red Wing Shoes, and Verizon Wireless. Gateway Plaza is located immediately north of Westfield Shoppingtown Solano.
- **Green Valley Crossing** is a community-serving shopping center located at the intersection of Green Valley and Business Center drives in the City of Fairfield. It is located approximately 5.4 miles southwest of the proposed Suisun Marketplace. The center opened in 2001 and has approximately 180,000 square feet of gross leaseable area. Major anchor tenants include Safeway, and Longs Drugs. Additional tenants include TJ Maxx, Ethan Allen, and Radio Shack. There is also a Costco store adjacent to the center.
- **Heritage Park Shopping Center** is a community-serving shopping center located at the intersection of Highway 12 and Sunset Avenue in the City of Suisun City. Heritage Park Shopping Center is a grocery store anchored center located approximately 1.8 miles east of the proposed Suisun Marketplace. The center opened in 1989 and has approximately 165,000 square feet of gross leaseable area. The anchor tenant is a Raley's grocery store discussed later in this chapter.
- **Raley's Plaza** is a community-serving shopping center located on the southeast corner of North Texas Street and Dickson Hill Road in the City of Fairfield. Raley's Plaza is a grocery store anchored center located approximately 4.2 miles north of the proposed Suisun Marketplace. The center opened in 1997 and has approximately 105,000 square feet of gross leaseable area. The anchor tenant is a Raley's grocery store discussed later in this chapter.
- **Winery Square** is a community-serving shopping center located on the southeast corner of Texas Street and Beck Avenue in the City of Fairfield. Winery Square is a grocery store anchored center located approximately 1.3 miles northwest of the proposed Suisun Marketplace. The center opened in 1986 and has approximately 122,000 square feet of gross leaseable area. The anchor tenant is a Food Maxx grocery store discussed later in this chapter.
- **Westfield Shoppingtown Solano** is a super regional center located on the northwest corner of Travis and Gateway boulevards in the City of Fairfield. It is located approximately 1.6 miles north of the proposed Suisun Marketplace. The Westfield Shoppingtown Solano is a major indoor mall that opened in 1981 and has approximately 1.0 million square feet of gross leaseable area. There are several anchor tenants including Macy's, Sears, JC Penny, and an Edward's Cinema.

Apparel Stores

Overview. The primary market area (cities of Suisun City and Fairfield) contains several apparel stores. The primary market area includes both national and specialty/boutique apparel retailers. The national chain retailers sell a variety of clothes that appeal to all family members. The specialty/boutique stores represent niche retail spaces targeting specific customer groups.

Suisun Marketplace and Gilbert Parcel Impacts. The adjusted leakage analysis indicated that in 2009 dollars, a maximum of \$14.4 million in sales may be diverted away from existing apparel stores in the primary market area, comprising 17.1 percent of estimated 2009 apparel sales of \$84.3 million (see Exhibit 13). This level of diverted sales and the associated percentage share of sales assume the Suisun Marketplace and the Gilbert Parcel achieve full stabilization in 2009, which is unlikely. This level of sales is equivalent to support for approximately 40,800 square feet of apparel store space.⁹ The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take more than ten years to generate \$14.4 million in apparel sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and Gilbert Parcel. However, if stores cannot withstand this downturn in sales it is possible that a maximum of 40,800 square feet of existing apparel store space is at risk of closing.

General Merchandise

Overview. Sedway Group researched major general merchandise stores in the primary market area. The four major general merchandise stores in the primary market area include the following: Wal-Mart, K-Mart, Target, and Costco. All of the major general merchandise stores are located in the City of Fairfield.

- **Wal-Mart** is located off of Highway 12 at Chadbourne Road, approximately 2.0 miles west of the proposed Suisun Marketplace. The existing Wal-Mart is a traditional Discount Store, not a Supercenter. However, as discussed in the cumulative impact section of this analysis, it is Sedway Group's understanding that Wal-Mart intends to build a Wal-Mart Supercenter store in the City of Fairfield and to close the existing Discount Store. The location of the proposed Fairfield Wal-Mart Supercenter is the existing, vacant Mission Village shopping center, which is located approximately 3.1 miles from the Suisun Marketplace.
- **K-Mart** is located at 2525 N. Texas Street immediately south of the vacant Mission Village in the City of Fairfield. The K-Mart appears to be an older store in a depressed shopping center with a few additional discount-oriented retailers (Big Lots and Dollar Tree) and a Bingo Center. The K-Mart is located approximately 3.1 miles northeast of the proposed Suisun Marketplace.
- **Target** is located 1.5 miles northwest of the proposed Suisun Marketplace at Cadenasso Drive and Beck Avenue. The Target has a garden center and pharmacy. The center is of

⁹ Assuming average retail sales of \$300 per square foot in 2003 dollars, which after inflation adjustment is equivalent to \$352 in 2009 dollars.

good quality and includes a Home Depot. An adjacent shopping center includes a Smart and Final, 99 Cent Store, and McDonalds.

- **Costco** is located 5.4 miles southwest of the proposed Suisun Marketplace. The Costco is located in the Green Valley Crossing shopping center discussed in the preceding section.

Suisun Marketplace and Gilbert Parcel Impacts. The adjusted leakage analysis indicated that in 2009 dollars, a maximum of \$24.3 million in sales may be diverted away from existing general merchandise stores in the primary market area, comprising 6.4 percent of estimated 2009 general merchandise sales of \$381.8 million (see Exhibit 13). This level of diverted sales and the associated percentage share of sales assume the Suisun Marketplace and the Gilbert Parcel achieves full stabilization in 2009, which is unlikely. This level of sales is equivalent to support for approximately 69,100 square feet of general merchandise store space¹⁰. Stores of this type could potentially sustain a reduction in sales, at least until new demand is generated by population growth.

The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take slightly more than five years to generate \$24.3 million in general merchandise sales within the primary market area from new growth following the assumed 2009 full year operation of the Suisun Marketplace and the Gilbert Parcel. However, if stores cannot withstand this temporary downturn in sales it is possible that a maximum of 69,100 square feet of general merchandise space is at risk of closing.

Food Stores

Overview. As Exhibit 18 indicates, the food stores are dispersed throughout the primary market area. Sedway Group identified a total of twelve food stores, with six located in each of the cities of Suisun City and Fairfield. The food stores located nearest the proposed Suisun Marketplace include Suisun Port of Call Grocery, Asian Market, and Marina Market. Based upon Sedway Group's fieldwork, the existing food stores can be classified into one of two store categories reflecting their size, range of merchandise, and independent (not a national chain) nature. These categories, and the corresponding stores, are as follows:

- **Major Grocery Stores:** Albertson's, Raley's, Food Maxx, Safeway, Trader Joe's; and
- **Convenience/Niche Markets:** Marina Market, Suisun Port of Call Grocery, Asian Market, and Suisun Oriental Store.

The stores were classified in this manner for the following reasons. Albertson's, Raley's, Food Maxx, and Safeway are traditional full-service grocery stores selling the full complement of expected food and related items.¹¹ They are also located in neighborhood- or community-oriented shopping centers. The convenience/niche market stores, Marina Market, Suisun Port of Call Grocery, Asian Market, and Suisun Oriental Store, sell many of the same items as

¹⁰ Assuming average retail sales of \$300 per square foot in 2003 dollars, which after inflation adjustment is equivalent to \$352 in 2009 dollars.

¹¹ It should be noted that Food Maxx is considered a price-impact warehouse store, i.e., large format discount grocery store. In addition, Food Maxx offers an array of packaged and prepared Hispanic-themed food products not available at the more traditional grocery stores.

traditional stores, but are classified as convenience/niche markets largely because of their tendency toward specialized goods and services, including ethnic goods.

Major Grocery Stores

Albertson's: The Albertson's is located at 106 Sunset Avenue in the Sunset Center shopping center in Suisun City. The Albertson's is a full-service grocery store offering fresh bakery, deli counter, and fresh meat and seafood counter. Albertson's is approximately 1.8 miles east of the proposed Suisun Marketplace. The Sunset Center is located on Highway 12 at Sunset Avenue in the Suisun City. Additional tenants located in the Sunset Center include Rite Aid, Taco Bell, UPS Store, KFC/Pizza Hut, McDonalds, Great Clips, Curves for Women, dry cleaners, hair salon, laundromat, beauty shop and several smaller independent restaurants. At the time of Sedway Group's fieldwork there was one space for lease. According to the listing agent the space is approximately 600 square feet. The agent reported significant interest from smaller "mom and pop" retailers, but no lease was signed. In addition, Sedway Group observed a single out pad under construction.

Raley's: There are three Raley's stores located in the primary market area as follows:

- **268 Sunset Avenue:** The Raley's grocery store is located in the Heritage Park Shopping Center at the intersection of Highway 12 and Sunset Avenue in Suisun City. The store is approximately 1.8 miles south of the proposed Suisun Marketplace. The Raley's is a full-service grocery store offering fresh bakery, deli counter, florist, fresh meat and seafood, organic and health goods, pharmacy, photo center, video rentals, and prepared foods. Additional tenants located in Heritage Park include Ace Hardware, Hollywood Video, Cingular Wireless, 99 Cent Plus Discount, Auto Zone, H&R Block, Round Table Pizza, cigarette store, hair cuts, nail salon, optometrist, chiropractor, cleaners, dentists, beauty salon and smaller independent restaurants. At the time of Sedway Group's fieldwork there were no identifiable vacant storefronts.
- **3330 N. Texas Street:** The Raley's grocery store is located in Fairfield at the intersection of N. Texas Street and Dickson Hill Road approximately 4.2 miles north of the proposed Suisun Marketplace. The store is a full-service grocery store offering fresh bakery, deli counter, fresh meat and seafood, organic and health goods, pharmacy, photo center, garden/patio furniture, and prepared foods. The Raley's includes the Paradise Café, which provides hot and cold prepared foods and a seating area. Additional tenants located in the center include Washington Mutual Bank, Round Table Pizza, Blockbuster, Panda Express, Starbucks, Dreyers Ice Cream, Supercuts, UPS, Subway, ERA real estate, Nextel, Century 21, nail salon, hair cuts, and smaller independent restaurants. At the time of Sedway Group's fieldwork there were no identifiable vacant storefronts.
- **3001 Travis Boulevard:** The Raley's grocery store is located in the Geri Towne Mall at the intersection of Holiday and Travis Boulevard on the west side of Highway 80 in Fairfield. The Raley's is approximately 2.4 miles north of the proposed Suisun Marketplace. The store is a full-service grocery store offering fresh bakery, deli counter, fresh meat and seafood, pharmacy, and some prepared foods. Additional tenants located in the center include H&R Block, Subway, cigarette store, vitamin store, cleaners, nail salon, check cashing, Farmers Insurance, credit union, and dog grooming.

Food Maxx: There are two Food Maxx stores (discount warehouse stores) located in the primary market area as follows:

- **1955 W. Texas Street:** The Food Maxx is located in the Winery Square shopping center at the intersection of Beck Avenue and Cadenasso Drive just east of the Target and Home Depot in Fairfield. The Food Maxx offers bulk items, Hispanic-themed goods, fresh meat, and the traditional range of grocery goods. Food Maxx is located approximately 1.3 miles northwest of the proposed Suisun Marketplace. Additional tenants located at Winery Square include Walgreens, Blockbuster, Max Home Furnishings, cigarette store, and smaller independent restaurants. The Food Maxx is open 24 hours. At the time of Sedway Group's field work there was one vacancy. However, the listing agent did not have information to provide regarding potential interest on the space.
- **SWC N. Texas Street and Acacia Street:** The Food Maxx is located in the Oakmont Plaza shopping center on the southwest corner of N. Texas Street and Acacia Street in Fairfield. The Food Maxx appears to be a newer store and offers bulk items, Hispanic-themed goods, fresh meat, and the traditional range of grocery goods. Food Maxx is located approximately 2.4 miles north of the proposed Suisun Marketplace. Additional tenants located in Oakmont Plaza include Hollywood Video, Kragen Auto, and Game Crazy. The Food Maxx is open 24 hours. While there were no vacancies in the center, there was a listing for anchor and junior anchor build to suit opportunities. Several calls to the listing agents were not returned.

Safeway: There are two Safeway stores located in the primary market area as follows:

- **2401 Waterman Boulevard:** The Safeway is located in the Waterman Village shopping center at the intersection of Airbase Parkway and Hillborn Road in Fairfield. The store is approximately 3.0 miles north of the proposed Suisun Marketplace. The store offers the typical range of food sales consistent with a full-service grocery store including fresh bakery, deli counter, florist, fresh meat and seafood, pharmacy, and prepared foods. In addition, the Safeway offers a small café, Chinese Express, and sandwich counter to purchase prepared foods with an adjacent indoor seating area. Other tenants in the Waterman Village center include Blockbuster, Round Table Pizza, Coffee World, Cost Cutters, UPS store, Choice wireless, a dry cleaners, and a staffing agency. The Safeway store is open 24-hours. At the time of the fieldwork, Sedway Group observed no vacancies.
- **5051 Business Center Drive:** The Safeway is located in the Green Valley Crossing shopping center at 5051 Business Center Drive in Fairfield. The Green Valley Crossing is a newer center in excellent condition that opened in 2001 and is located approximately 6.0 miles southwest of the proposed Suisun Marketplace. The Safeway store offers the typical range of food sales consistent with a full-service grocery store including fresh bakery, deli counter, florist, fresh meat and seafood, a US Bank counter, and a small area of garden/patio furniture. Other tenants in the Green Valley Crossing center include Longs Drugs, Curves for Women, UPS store, Washington Mutual, Applebee's, Ethan Allen, Subway, TJ Maxx, tanning salon, a dentist, Travis Credit Union, Round Table Pizza, a jeweler, and several independent restaurants. The Safeway store is open 24-hours. At the time of the fieldwork, Sedway Group observed new buildings and pad sites under construction immediately south of the existing center.

Trader Joe's: The Trader Joe's is located at 1350 Gateway Boulevard in the Gateway Plaza shopping center in Fairfield. The Trader Joe's is a neighborhood grocery store offering both

traditional and specialty items. Trader Joe's is approximately 1.6 miles north of the proposed Suisun Marketplace. Additional tenants located in the Gateway Plaza include Office Max, Good Guys, Toys R Us, Sally Beauty Supply, Countryside Mortgage, Red Wing Shoes, and Verizon Wireless.

Convenience/Niche Markets

In addition to the major grocery stores, Sedway Group toured selected convenience/niche markets. There are several convenience/niche markets located within the primary market area. However, Sedway Group toured those locations most proximate to the proposed Suisun Marketplace. The convenience/niche markets included the Marina Market, Suisun Port of Call Grocery, Asian Market, and Suisun Oriental Store. The stores were classified as convenience/niche markets for the following reasons: the stores are smaller format; they are convenience-oriented; or they provide specialty, primarily ethnic goods. The goods offered are specialty-oriented or ethnic in nature and do not directly compete with the broad draw of a Supercenter.

While the convenience/niche markets may sell some of the same items as a Supercenter (primarily drinks, snacks, and some small household goods), they are providing goods to the residents of the immediate area on a convenience basis as opposed to the Supercenter's more regional draw. Sedway Group believes that existing primary market area convenience/niche markets are not competitive with the proposed Suisun Marketplace and will not experience any short- or long-term negative economic impacts due to the Suisun Marketplace. The existing convenience/niche markets have well-established market niches. Although many of the convenience/niche markets appear marginal, the opening of the Suisun Marketplace is not expected to have a significant negative impact.

Suisun Marketplace and Gilbert Parcel Impacts. The adjusted leakage analysis indicated that in 2009 dollars, a maximum of \$7.5 million in sales may be diverted away from existing food stores in the primary market area, comprising 2.3 percent of estimated 2009 food stores sales of \$327.6 million (see Exhibit 13). This estimated diversion of 2.3 percent is minimal when spread across all food stores and is expected to be temporary at worst. This is because this level of diverted sales and the associated percentage share of sales assume the Suisun Marketplace achieves full stabilization in 2009, which is unlikely. Moreover, population growth following the opening of the Suisun Marketplace will likely mitigate these potentially diverted sales within one to two years of the Suisun Marketplace opening (see Exhibit 15). Thus, any impacts likely to be experienced by existing primary market area food stores will be mitigated within a relatively short time following the opening of the Suisun Marketplace.

In summary, Sedway Group believes that existing primary market area food stores will not experience any long-term negative economic impacts due to the Suisun Marketplace. The projected worst case lost food sales are not anticipated to materialize, with limited to no net loss in sales following an initial market adjustment period of one to two years. The existing food stores are well-positioned relative to the primary market area's existing population base and have well-established market niches.

Eating and Drinking Places

The analysis indicates there is approximately \$19.3 million of primary market area sales leakage in the eating and drinking category. New eating and drinking sales generated by the Suisun Marketplace can be satisfied entirely by the existing leakage. As a result, the Suisun Marketplace will have no negative impact on existing primary market area eating and drinking retailers (see Exhibit 13).

Home Furnishings & Appliances / Building Materials

Overview. Sedway Group considers these categories together since some retailers overlap in these areas. Sedway Group identified two major home improvement retailers in the primary market area. The local retailers that Sedway Group reviewed as part of this category are described below.

- **Home Depot** is a large warehouse store located at 2121 Cadenasso Drive, approximately 1.5 miles northwest of the Suisun Marketplace. The Home Depot is adjacent to the existing Target store in the City of Fairfield. Home Depot caters to both the do-it-yourselfer and professional customers. The Home Depot store offers a wide variety of home improvement goods, including building materials and lawn and garden products. Additional store services include free in-store clinics regarding home improvement projects as well as design and decorating consultation, truck and tool rental, and home delivery.

- **Ace Hardware** is located in the Heritage Park Shopping Center at the intersection of Highway 12 and Sunset Avenue. The store is approximately 1.8 miles east of the proposed Suisun Marketplace in the City of Suisun City. Additional tenants in the Heritage Park shopping center include a Raley's grocery store. The Ace Hardware store is a much smaller store than the Home Depot in Fairfield or the proposed home improvement retailer space in the Suisun Marketplace. The store offers a wide selection of hardware materials, a small garden supply area, tools, barbeques, and propane. The Ace Hardware does not offer building materials in bulk quantities like that offered by Lowe's or Home Depot. The small store appeals to convenience shoppers due to its limited retail space and selection of supplies.

Sedway Group also considered stores that would compete with the type and variety of home furnishings offered by a home furnishings retailer. One large primary market area retailer with a variety of bed- and bath-related product is K-Mart. However, K-Mart does not offer the selection or same price range as a dedicated home furnishings retailer. The other major market player in this category is Linens 'N Things, located in the Gateway Courtyard shopping center in the City of Fairfield. These stores target mass market and discount shoppers.

Suisun Marketplace and Gilbert Parcel Impacts. The primary market area retail leakage analysis for 2009 (see Exhibit 8) indicates that it suffers leakage of \$0.7 million in building materials and no leakage in home furnishings and appliances. The secondary market area retail leakage analysis (see Exhibit 11) indicates that it suffers leakage of \$31.1 million in home furnishings and appliances and no leakage in building materials. The adjusted leakage analysis in Exhibit 12 indicates that a maximum of \$8.0 million in sales may be diverted from existing building materials stores in the primary market area, and \$4.1 million in sales may be diverted from existing home furnishings and appliances stores. As a percent of estimated 2009 sales, the

diverted sales comprise 6.4 percent of building materials sales of \$125.5 million, and 5.3 percent of home furnishings and appliances sales of \$76.3 million (see Exhibit 13).

The extent to which this will negatively impact existing stores will depend upon their ability to sustain a temporary downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take four to five years to generate \$8.0 million in building materials sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and the Gilbert Parcel. While there will likely be short term impacts to existing retailers, the impacts are not expected to be so severe as to lead to store closures.

“Other Retail Stores”

Overview. “Other retail stores” is a broad category that includes sales in office supplies, gardening, or other specialty retail offerings. As a result, it is difficult to precisely identify the “other retail stores” in the primary market area without first knowing all of the “other retail stores” tenants at the proposed Suisun Marketplace.

Suisun Marketplace Impacts. The analysis indicates that there is no primary market area leakage and \$163.1 million in secondary market area sales leakage in the “other retail stores” category. Moreover, new retail demand from population growth in the combined primary and secondary market area will create new “other retail stores” demand of approximately \$69.2 million within five years of Suisun Marketplace’s opening. As a result, new “other retail stores” sales generated by the Suisun Marketplace will likely have no negative impact on existing primary market area “other retail stores.”

The findings detailed in this chapter are summarized in the following Table 9.

Table 9
Proposed Suisun Marketplace and Gilbert Parcel
Summary of Impacts¹

Retail Category	Diverted Sales	Percent of Sales	Supportable Square Feet	Years to Mitigate
Apparel	\$14.4	17.1%	40,800	10 +
General Merchandise	24.3	6.4	69,100	5 +
Food Stores	7.5	2.3	21,400	1 to 2
Eating and Drinking Places	0.0	0.0	N/A	N/A
Home Furnishings and Appliances	4.1	5.3	11,600	2 to 3
Building Materials	8.0	6.4	22,800	4 to 5
“Other Retail Stores”	<u>0.0</u>	<u>0.0</u>	<u>N/A</u>	N/A
Total	\$58.3	4.0%	165,700	

(1) Refer to Exhibits 12, 13, and 27.
Source: Sedway Group.

Table 9 provides a summary of the diverted sales impact discussed in this chapter. Assuming Suisun Marketplace and the Gilbert Parcel’s new primary and secondary market area sales occurred at the proportional expense of existing primary market area retailers, then existing retailers would experience a maximum annual impact of \$58.3 million in sales upon

stabilization of the Suisun Marketplace and Gilbert Parcel in 2009 dollars. In total, the maximum diverted sales represent 4.0 percent of the primary market area's estimated 2009 sales in relevant Suisun Marketplace and Gilbert Parcel sales categories. New population growth is anticipated to help recoup a portion of the lost store sales. In addition, retailers could successfully reposition their stores and primary market area sales could increase overall due to the enhanced regionalism of the primary market area. This is a conservative approach, in that it assumes there will be no net increase in combined primary and secondary market area sales after Suisun Marketplace and the Gilbert Parcel achieve market stabilization. This is why Sedway Group considers the resulting existing retailer impacts maximum estimates upon stabilization.

V. CUMULATIVE IMPACTS

An additional charge of this study was to analyze the Suisun Marketplace shopping center and Gilbert Parcel in the context of other currently proposed retail projects in the primary market area. This includes the Villages at Fairfield and the proposed Fairfield Wal-Mart Supercenter. These represent the major developments that could impact the primary market area in a significant way via additional retail sales. Other, smaller retail developments of less than 25,000 square feet were excluded because they are not competitive with a shopping center like the Suisun Marketplace, both in terms of size and tenant mix.

IDENTIFIED PROJECTS

Primary Market Area

Sedway Group identified selected major retail projects in the primary market area (cities of Suisun City and Fairfield) and surrounding areas. There were two projects identified in the primary market area, with both projects located in the City of Fairfield. There were no projects of significance identified in the City of Suisun City.¹² The selected retail projects are identified in Exhibit 19.

- **Villages at Fairfield:** Lewis Operating Company has prepared an Environmental Impact Report (EIR) for a 110,000-square-foot retail center. The retail center represents the commercial component of a larger 2,400-unit residential master planned community. According to the City of Fairfield Planning Department, the proposed retail center will consist of local-serving retailers and is likely to include a grocery store, drug store, gas station, and miscellaneous inline retail shops. The City of Fairfield anticipates that the retail center will begin construction during the summer of 2006.
- **Fairfield Wal-Mart Supercenter:** Wal-Mart is preparing an EIR for a proposed 202,000-square-foot Wal-Mart Supercenter store, which includes a 15,000-square-foot garden center. According to the City of Fairfield Planning Department, approximately 30,000 square feet will be dedicated to grocery sales. Further, Wal-Mart has indicated publicly its intention to close the existing 155,600-square-foot Fairfield Wal-Mart store. Assuming the Supercenter store is built and the existing Wal-Mart is closed, there will be a net incremental additional of 46,400 square feet. Sedway Group assumes that 30,000 square feet of the incremental addition will be dedicated to grocery sales (as the existing Wal-Mart does not have a significant grocery component) and the balance will represent general merchandise sales. The City of Fairfield anticipates that the retail center will begin construction during the summer of 2006.

¹² The City of Suisun City recently selected a master developer, the Miller-Sorg Group, for the Main Street West development ("MSW"). According to Suisun City staff, the MSW program is actually multiple projects on 12 non-contiguous parcels, ranging in size from 2,300 square feet to approximately 3.0 acres. The total land area involved is approximately 9.0 acres. Sedway Group did not consider this project in this analysis because MSW is proposed to be a mixed-use project with smaller retail and commercial uses, and various housing products. No retail uses greater than 10,000 square feet are expected.

Secondary Market Area

Within the secondary market area, Sedway Group identified several retail projects in the planning stages. Specific projects of note include: the Wal-Mart expansion in Dixon from a Discount Store to a Supercenter; the nearly 300,000-square-foot Nut Tree Redevelopment project in Vacaville; and the 500,000-square-foot Waterfront Redevelopment Project, the 750,000-square-foot Solano County Fairgrounds project, and the 107,000-square-foot Northgate project in Vallejo. According to the relevant planning departments, the development timeframes range from as early as late 2005 for the Wal-Mart expansion in Dixon, to between 10 and 15 years for the waterfront Redevelopment in Vallejo. Cumulative impacts resulting from secondary market area projects are not analyzed in this report.

PRIMARY MARKET AREA STORE SALES ANALYSIS

Sales Estimates for Planned Retail Developments

Sedway Group estimated sales for all of the proposed primary market area retail developments in Exhibit 20. For many of the retail projects, the composition of the retail space and specific tenants were unknown due to the preliminary nature of the projects. Sedway Group utilized generic retail categories when provided. However, for the unknown portion of the retail space, Sedway Group assumed the industry accepted standard of \$300 sales per square foot (in 2003 dollars to be consistent with Exhibit 2). For all other known retailers, Sedway Group relied on Retail MAXIM for sales per square foot estimates.

The expected construction start dates for projects in the primary market is Summer 2006. For this analysis, all planned development sales are projected to 2009. Sedway Group has assumed 2009 for analytical purposes since that would be the earliest that all projects, including the Suisun Marketplace, could be completed.

Exhibits 20 and 21 identify estimates of sales by retail category for the identified planned retail projects in the primary market area. The sales estimates indicate that the planned primary market area retail projects will have the potential to generate up to \$68.0 million in new sales, including \$5.4 million in apparel sales, \$13.9 million in general merchandise sales, \$38.8 million in food stores sales, \$3.8 million in eating and drinking places sales, and \$6.1 million in "other retail stores" sales.

Of these new sales, \$61.2 million are estimated to be generated by primary and secondary market area residents, per the previous market split assumptions (90 percent / 10 percent). The remaining sales are expected to originate from the tertiary market.

Utilizing the same methodology discussed in Chapter 3 Store Sales Impacts, Sedway Group estimated the maximum impact of the planned retail developments on existing retailers in the primary market area. This approach, presented in Exhibits 22 to 27, considered the following factors:

- New sales by major category;
- Estimated new sales by major category generated by primary and secondary market area residents;

- The primary market area's (cities of Suisun City and Fairfield) new retail sales base after development of Suisun Marketplace and the Gilbert Parcel;
- The combined primary and secondary market area' new retail sales base after development of Suisun Marketplace and the Gilbert Parcel;
- The primary market area's share of the combined primary and secondary market area sales after development of Suisun Marketplace and the Gilbert Parcel;
- The share of the planned retail projects' sales, at maximum, to be diverted from existing primary market area (cities of Suisun City and Fairfield) retailers upon stabilization; and
- The minimum new sales achieved by the planned retail projects not diverted away from existing primary market area (cities of Suisun City and Fairfield) retailers.

CUMULATIVE SALES IMPACTS

The cumulative sales impacts analysis was conducted for two scenarios in order to analyze the option of one versus two Supercenter stores in the primary market area. The first scenario assumed all identified primary market area cumulative projects are completed, i.e., the Villages at Fairfield and the Fairfield Wal-Mart Supercenter. The second scenario assumes only the Villages at Fairfield project is completed and does not include the Fairfield Wal-Mart Supercenter.

Suisun Marketplace and Gilbert Parcel and all Primary Market Area Cumulative Retail Projects

Exhibits 23 through 27 summarize the maximum diverted sales impacts resulting from development of the Suisun Marketplace and Gilbert Parcel and all primary market area cumulative projects, i.e., both the Villages at Fairfield and the Fairfield Wal-Mart Supercenter. These results indicate that assuming development of the Suisun Marketplace and the Gilbert Parcel and all cumulative projects, at worst, \$77.4 million in sales will comprise sales diverted away from existing primary market area retailers (see Exhibit 27). The diverted sales impact estimate is \$16.1 million on apparel stores, \$29.6 million on general merchandise stores, \$19.6 million on food stores, \$4.1 million on home furnishings and appliances stores, and \$8.0 million on building materials stores. There are no estimated impacts on eating and drinking places and "other retail stores." The impact to home furnishings and appliances and building materials does not change from the preceding analysis relating to the Suisun Marketplace and the Gilbert Parcel, as there are no new sales estimated for these categories.

- **Apparel.** The estimated \$16.1 million in diverted apparel store sales is equivalent to approximately 45,700 square feet of supportable space. The primary market area is projected to require more than ten years to generate this level of additional demand.¹³ Thus, it appears approximately 45,700 square feet of apparel store space in the primary market area is at risk of closing.
- **General Merchandise.** The estimated \$29.6 million in diverted general merchandise store sales is equivalent to approximately 84,200 square feet of supportable space. The primary market area is projected to require more than five years to generate this level of additional

¹³ The exact number of years is difficult to estimate. Sedway Group's demand estimates due to population growth only extend out as far as 2013. It is difficult to project beyond this period because of the uncertainties associated with forecasting population growth and changes in spending patterns so far into the future.

demand. Thus, it appears at maximum 84,200 square feet of general merchandise space in the primary market area is at risk of closing.

- **Food Stores.** The estimated \$19.6 million in diverted food store sales is equivalent to approximately 55,600 square feet of supportable space. The primary market area is projected to require between three and four years to generate this level of additional demand. Thus, any impacts likely to be experienced by existing primary market area food stores will be mitigated within a relatively short time following the opening of the Suisun Marketplace and Gilbert Parcel and all cumulative projects. Sedway Group therefore believes that existing food stores will not experience any long-term negative economic impacts due to the Suisun Marketplace and Gilbert Parcel and cumulative projects.

Suisun Marketplace and Gilbert Parcel and Cumulative Retail Projects Excluding Fairfield Wal-Mart Supercenter

Exhibits 25 and 27 summarize the maximum diverted sales impacts resulting from development of the Suisun Marketplace and the Gilbert Parcel and the Villages at Fairfield. Assuming only the Villages at Fairfield project results in lower overall diverted sales impacts, specifically lower diverted sales in the general merchandise and food stores categories. These results indicate that, at worst, \$70.8 million in sales will comprise sales diverted away from existing primary market area retailers. The diverted sales impact estimate is \$16.1 million on apparel stores, \$27.0 million on general merchandise stores, \$15.6 million on food stores, \$4.1 million on home furnishings and appliances, and \$8.0 million on building materials. There are no estimated impacts on eating and drinking places and "other retail stores." The impact to home furnishings and appliances and building materials does not change from the preceding analysis relating to the Suisun Marketplace and Gilbert Parcel, as there are no new sales estimated for these categories.

- **Apparel.** The apparel conclusions remain the same as discussed under the all cumulative projects scenario above.
- **General Merchandise.** This scenario results in less diverted sales impact on general merchandise retailers than does the scenario discussed above. The estimated \$27.0 million in diverted general merchandise store sales is equivalent to approximately 76,700 square feet of supportable space. The primary market area is projected to require more than five years to generate this level of additional demand. Thus, it appears at worst 76,700 square feet of general merchandise space in the primary market area is at risk of closing.
- **Food Stores.** This scenario results in less diverted sales impact on food stores than does the all cumulative projects scenario discussed above. The estimated \$15.6 million in diverted food store sales is equivalent to approximately 44,400 square feet of supportable space. The primary market area is projected to require between three and four years to generate this level of additional demand. Thus, any impacts likely to be experienced by existing primary market area food stores will likely be mitigated within a relatively short time following the opening of the Suisun Marketplace and Gilbert Parcel and the Villages at Fairfield. Sedway Group believes that existing food stores will not experience any long-term negative economic impacts due to the Suisun Marketplace and Gilbert Parcel and Villages at Fairfield projects.

These cumulative impact figures are conservative and are presented as an analytical benchmark. They are considered conservative for several reasons. Foremost, they assume the maximum diversion away from existing retailers upon stabilization of the Suisun Marketplace and Gilbert Parcel, the Villages at Fairfield, and the Fairfield Wal-Mart Supercenter. Thus, they do not take into account any prospective market corrections or enhancements following the introduction of the Suisun Marketplace and Gilbert Parcel, Villages at Fairfield and the Fairfield Wal-Mart Supercenter into the marketplace, including competitive retailer repositioning. This is a conservative analysis in that it assumes the stores achieve stabilized sales in year one. However, retail stores typically achieve stabilized sales after about two to three years. Therefore the initial impact is overstated.

VI. URBAN DECAY DETERMINATION

The purpose of this chapter is to assess the degree to which development of Suisun Marketplace and the Gilbert Parcel may or may not contribute to urban decay in the primary market area (cities of Suisun City and Fairfield). This includes impacts associated with the cumulative impacts of Suisun Marketplace and Gilbert Parcel and other planned primary market area retail developments. Urban decay could theoretically result from the closure of stores due to the development of Suisun Marketplace and Gilbert Parcel and other known primary market area planned retail developments. However, while urban decay could result from such store closures, it does not necessarily result. To make this determination, it is necessary to consider whether, if stores remained closed, urban decay would likely result. This chapter discusses the definition of urban decay, the study's approach to determining urban decay potential, retailer demand in the primary market area, and Sedway Group's urban decay determination.

STUDY DEFINITION OF URBAN DECAY

For the purpose of this study, urban decay is defined as physical deterioration that is so prevalent and substantial it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Physical deterioration includes, but is not limited to, abnormally high business vacancies, abandoned buildings and industrial sites, boarded doors and windows, parked trucks and long term unauthorized use of properties and parking lots, extensive gang or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees or shrubbery and uncontrolled weed growth or homeless encampments.

APPROACH TO DETERMINING URBAN DECAY POTENTIAL

Sedway Group engaged in several tasks to assess the probability of urban decay ensuing from development of Suisun Marketplace and the Gilbert Parcel or the identified cumulative store impacts. These tasks revolved around assessing the potential for closed primary market area store spaces, if any, to remain vacant for a prolonged period of time or to be leased to other retailers within a reasonable marketing period. Several sources active in the primary market area were contacted regarding the health of the primary market area retail market and the depth of prospective demand for retail space. The purpose of this research was to determine if sufficient retailer demand exists to absorb vacated space in the event existing primary market area retailers close due to any negative economic impacts of Suisun Marketplace and the Gilbert Parcel and the other identified planned projects.

RETAILER DEMAND IN THE PRIMARY MARKET AREA

Sedway Group conducted telephone interviews with five real estate brokers experienced in the primary market area, with experience dating back twenty years. The real estate brokers represented a mix of independent commercial brokerage houses and in-house leasing agents for owners of shopping centers in the primary market area. All of the brokers contacted have experience working with tenants and landlords in the primary market area. Two of the brokers

were contacted at the recommendation of City of Suisun City staff as being very knowledgeable with respect to the retail market in the primary market area. In the course of the interviews, the real estate brokers shared their candid thoughts and some proprietary information with Sedway Group. Findings from these interviews are summarized below.

Market Characterization

All of the retail brokers contacted stated that the cities of Suisun City and Fairfield comprise the appropriate primary market area for the proposed Suisun Marketplace and the Gilbert Parcel. In general, the brokers characterized the primary market area's retail market as stable and well served with high occupancy rates but little rent escalation. Further, the general perception is that the primary market area's retail market is healthy with the existing supply of retailers meeting demand. It was mentioned that significant future retail supply expansion would require additional population growth in the primary market area.

The brokers indicated that Fairfield's retail market features a mix of regional, community, and neighborhood draw, whereas Suisun City's market is primarily neighborhood-serving. Fairfield's regional attraction is generally located near Interstate 80, with the Westfield Shoppingtown Solano, Gateway Courtyard Shopping Center, and Gateway Plaza Shopping Center providing a synergistic shopping district with visibility from Interstate 80. Suisun City is home to several neighborhood-serving shopping centers, such as the Albertson's- and Raley's-anchored shopping centers at the intersection of Highway 12 and Sunset Avenue. In addition, Suisun City recently redeveloped the downtown waterfront with a commercial district including several restaurants and boutique shops. Significant recent entries into the primary market area include the Gateway Courtyard Shopping Center in the City of Fairfield, which is anchored by Barnes and Noble and Linens 'N Things.

Retailer Interest

According to the brokers contacted, most national retailers are currently represented in the primary market area. It was reported that current interest is limited with a few notable exceptions, including the categories of apparel, general merchandise, home furnishings, and building materials. Additional projects are planned in the primary market area with major retail space including the Villages at Fairfield, the Suisun Marketplace and the Gilbert Parcel, and the proposed Wal-Mart Fairfield Supercenter. In addition, a broker identified Lowe's Home Improvement Warehouse as being interested in establishing a location in the primary market area. It was noted that PetCo (along with Starbucks coffee shop) recently opened a new store near the intersection of Holiday and Travis boulevards in the City of Fairfield. It was noted that smaller scale retail stores were in demand in Suisun City from local independent business owners. One broker reported significant interest in smaller retail stores in Suisun City, particularly for inline shops that can be purchased by local retailers interested in owning their store.

Re-tenanting Potential

Brokers in the market were unable to predict or comment on the potential to re-tenant major store closures in the primary market area resulting from the development of the Suisun Marketplace and the Gilbert Parcel. The reasoning provided was that there was not a lot of history of significant vacancies and subsequent re-tenanting in the primary market area in

recent years. The general perception from the brokers is that re-tenanting large format vacancies would not happen quickly. It is believed that such backfilling of retail space might take several years, to facilitate tenant outreach, business negotiations, tenant improvements, and ultimately store opening (all of these steps are time-consuming regardless of location). However, the existing primary market area shopping centers have low vacancy rates, which is an indication of the primary market area's stable performance and ability to re-tenant smaller vacancies as they may occur. The sources have a strong belief that re-tenanting would occur in the long-term with continued population growth.

The experience of the Mission Village Shopping Center in Fairfield is worth noting in this discussion of re-tenanting potential in the primary market area. It is the location of the proposed Wal-Mart Fairfield Supercenter and has remained largely vacant for the past five years. Extenuating circumstances explain the reasons for this situation. Mission Village is located within the City of Fairfield's North Texas Street Redevelopment Project Area. It is an approximately 188,000-square-foot shopping center located on North Texas Street. Currently, the only tenants include a large church and two to three small retail shops. In the late 1990s, Mission Village was anchored by an Albertson's grocery store and a Rite Aid (formerly Pay Less) pharmacy. In addition, there were several smaller inline retail shops. According to the City of Fairfield Planning Department, vacancy at Mission Village began to increase in 1996. By 2000, Albertson's and Rite Aid both vacated their spaces. It was noted that neither retailer reopened at new locations in Fairfield. The departure of the anchor tenants resulted in a continued decline in occupancy at Mission Village.

Two factors have delayed the reuse of Mission Village since the property was acquired by Capital and Counties, an international commercial real estate investment firm with a portfolio estimated at approximately \$1.7 billion. The first was focused on existing environmental issues at Mission Village. The environmental delay kept Mission Village in limbo for approximately one year after acquisition. In 2002, the City of Fairfield amended the General Plan and changed the property's zoning designation to accommodate mixed-use commercial development. The rezoning process added an additional 18-months beyond the environmental delay. The property owner is investigating the option of re-zoning the property again to eliminate the requirement for housing on the site. In addition, the City of Fairfield is analyzing a potential Wal-Mart Supercenter store for the site. As discussed in the preceding section, Wal-Mart is in the process of preparing an EIR for a proposed 202,000-square-foot Supercenter store for the site. Wal-Mart would demolish a majority of the existing Mission Village to make way for the proposed Supercenter store. Wal-Mart has stated publicly that it will close the existing Fairfield Wal-Mart store. Re-tenanting plans have not been announced for that store.

In addition to Mission Village, Sedway Group noted the existing vacant movie theater adjacent to the Westfield Shoppingtown Solano. The space is being marketed by Westfield; however, Westfield declined to comment on the status of the space.

Wal-Mart Re-tenanting Potential

The reuse of Wal-Mart stores is not an unrealistic prospect and there are many examples where successful reuse has occurred. Wal-Mart Stores, Inc. operates Wal-Mart Realty, a full-service real estate company, to assist with the selection, renovation, and reuse of vacated Wal-Mart stores. In recent years Wal-Mart Realty has converted vacated stores into retail centers, call centers, warehouse and distribution centers, classrooms, churches, automotive dealerships, banks, and general office buildings. Wal-Mart stores are typically located in prime locations

selected to provide high visibility, significant parking, and heavy traffic. As a result, vacated stores often present an optimal reuse opportunity for new retail tenants.

URBAN DECAY-SUMMARY AND CONCLUSION

While there may be alternative definitions of what constitutes urban decay, Sedway Group relied on the definition presented earlier in this section, which focused on determining whether or not prevalent and substantial physical deterioration in the primary market area would likely result from the development of Suisun Marketplace and the Gilbert Parcel. Sedway Group's conclusion is based on consideration of current primary market area conditions, retailer interest, findings regarding diverted sales, and re-tenanting potential, as summarized below.

- **Current Market Conditions**—In general, the primary market area's retail market is healthy with high occupancy rates and overall "attraction" in retail sales (i.e. more sales are captured in the primary market area than are generated its residents).
- **Retailer Interest**—National retailers have demonstrated an interest in the primary market area, as evidenced by the presence of many such retailers in existing shopping centers and the expressed interest by others in locating within the primary market area.
- **Diverted Sales**—The opening of the Suisun Marketplace and Gilbert Parcel may result in some existing primary market area store closures due to diverted sales. In certain categories, it could take five, ten or more years to generate additional market area sales from new population growth to offset the diverted sales in those specific categories. However, it is quite likely that the duration of this diverted sales impact would be reduced if vacated stores (such as apparel shops) are re-tenanting by other types of retail, restaurant, and/or service establishments (e.g. a jewelry store, gift shop, restaurant, etc.), which is a common occurrence in most shopping centers.
- **Re-tenanting Potential**—The existing primary market area shopping centers have low vacancy rates, which is an indication of the primary market area's stable performance and ability to re-tenant smaller vacancies as they may occur. Therefore, vacated retail spaces have the potential to be successfully re-tenanting. Such re-tenanting would benefit the market and expand local and regional shopping opportunities.

In conclusion, while it is expected that the Suisun Marketplace and Gilbert Parcel will result in some diverted sales and that some closures of primary market area stores may occur, these events are not expected to lead to physical deterioration so prevalent and substantial that it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Therefore, Sedway Group concludes that although development of the Suisun Marketplace and the Gilbert Parcel may contribute to further retail vacancies in the primary market area, those vacancies are unlikely to result in urban decay.

VII. GENERAL FUND REVENUE IMPACTS

Sedway Group determined the fiscal benefit to the City of Suisun City's General Fund based on changes in sales and property tax receipts due to the addition of Suisun Marketplace. This analysis assumes that the Suisun Marketplace and associated residential development is annexed into the City of Suisun City. For this task, Sedway Group collected information from the California Board of Equalization, the Solano County Assessor and Auditor/Tax Collector, and the City of Suisun City. Sedway Group contacted the developer, Tom Gentry California Company, to determine the parcel numbers and total development costs associated with Suisun Marketplace. In addition, Sedway Group contacted Silverwing Development, the developer of the for-sale residential component, regarding anticipated sales prices of the residential units.

SALES TAX

Determination of Taxable Sales. Sales tax revenue accrues to the Suisun City General Fund based on retail sales. However, not all retail sales are taxable. For this analysis Sedway Group estimated taxable sales generated by the Suisun Marketplace. It is assumed that 30 percent of food stores sales, and 100 percent of the remaining retail categories analyzed are taxable. Estimated taxable sales by retail category are contained in Exhibit 29. The analysis is conducted in 2009 dollars.

As presented earlier, the proposed Suisun Marketplace is estimated to generate about \$271.6 million in total retail sales, based on average sales per square foot in Exhibit 3. Based upon the taxable sales assumptions, Sedway Group estimates that about \$254.1 million comprise taxable sales.

It should be noted, however, that estimates of taxable sales, and thus sales tax revenue, are based on industry standards, which may or may not be achieved in any particular market area.

Estimated Sales Tax Revenue. The Suisun City General Fund receives 1.0 percent of taxable retail sales.¹⁴ Given the \$254.1 million taxable sales estimate, the City of Suisun City is estimated to receive total annual sales tax revenue of \$2.5 million (see Exhibit 28).

If the maximum projected store sales impacts on existing Suisun City retailers materialize, then Suisun City will experience a reduction in sales tax revenue generated by these retailers. The taxable assumptions are the same as discussed above. Thus, while the total maximum primary market area sales impact is estimated at \$58.3 million, only \$53.0 million would comprise taxable sales impacts on primary market area retailers. A further adjustment is necessary to estimate the impact on just Suisun City. Sedway Group calculated Suisun City's share of retail sales in the primary market area, which was 5.3 percent, and utilized this assumption to estimate the impact on Suisun City. Suisun City's share of diverted retail sales would therefore

¹⁴ Sedway Group is aware that 0.25 percent of the local 1.0 percent taxable sales will be "flipped" to the State of California to fund the voter-approved Proposition 57 bond initiative. However, since that 0.25 percent will be returned to cities through the Education Revenue Augmentation Fund ("ERAF"), the City's associated revenues will not be affected (i.e., its sales tax revenues will be made whole to 1 percent).

total \$2.8 million.¹⁵ The total loss of sales taxes in Suisun City assuming the maximum impact on existing retailers and the Suisun City adjustment would therefore equal \$28,371 (see Exhibit 28).

Net Result. Therefore, the annual net sales tax revenue results are equal to \$2.5 million. This is equivalent to the total new sales tax revenue from the proposed Suisun Marketplace of \$2.5 million, less the estimated sales tax revenue associated with the diverted sales impacts on Suisun City retailers of \$28,371.

PROPERTY TAX

Property taxes generated by Suisun Marketplace and the adjacent residential development will be a function of the assessed value. For the purpose of this analysis, it is assumed that the assessed value of Suisun Marketplace will be estimated based on the cost approach. That is, the construction costs (hard and soft costs) plus land value (total development costs) will be the basis for calculating real property taxes. Construction cost estimates from Tom Gentry California Company were used to estimate the potential assessed value of the Suisun Marketplace. The construction costs include both Tom Gentry California Company's development cost and the development cost associated with any construction related to the sale or ground lease of sites to a user. Additional tenant improvement costs required for specific retail tenants were estimated by Tom Gentry California Company by retail category. Detailed development cost estimates were reviewed for reasonableness by Sedway Group. Development costs were provided in 2005 dollars and adjusted for inflation by Sedway Group at 3.0 percent per year.

For the residential portion, it is assumed that the assessed value of the residential component will be based on the selling price of the units. Selling price data were provided by Silverwing Development in 2005 dollars and adjusted for inflation by Sedway Group at 3.0 percent per year. The analysis assumes all units are sold in 2009. If some of the units were sold prior to 2009, the value of those units would increase up to 2.0 percent per year as allowed by Proposition 13. This may underestimate the assessed value of the residential and related property tax revenues slightly. Therefore, Sedway Group deems its estimate conservative.

Sedway Group contacted the Solano County Assessor's and Auditor's Offices for property tax rate information. The property is located in unincorporated Solano County and the existing property tax rate allocation factors do not apply to Suisun City. Assuming the property is annexed into the City of Suisun City as intended, the property will then have a new tax rate area and associated allocation factors that will include revenue accruing to the City of Suisun City General Fund. The new tax rate allocation factors were not developed as of the date of this analysis. At the suggestion of the County Assessor's office, Sedway Group utilized the property tax allocation factor of 14.47 percent (of the 1.0 percent property tax rate) for Suisun City as defined in the Property Tax Exchange Rate agreement, as a reasonable proxy. The Property Tax Exchange Rate agreement sets forth the estimated property tax revenue accruing to local jurisdictions from properties undergoing the annexation process. However, this property tax allocation factor excludes any allocations to the Education Revenue Augmentation Fund ("ERAF"), which would result in some reduction to the City of Suisun City.

¹⁵ The \$2.8 million figure is equal to 5.3 percent of \$53.3 million. Does not total due to rounding.

Sedway Group calculated that Suisun Marketplace and Gilbert Parcel commercial project would generate General Fund property tax revenue of \$233,843 on an assessed value of \$161.6 million in 2009 dollars (see Exhibit 29). The residential component would generate General Fund property tax revenue of \$210,482 on an estimated assessed value of \$145.5 million in 2009 dollars (see Exhibit 30). Due to the intended annexation, the property tax revenue is net new to the City of Suisun City; there is no deduction necessary for existing property tax revenue. In total, Sedway Group estimates the Suisun Marketplace and associated residential development will generate total property tax revenue to the Suisun City General Fund of \$444,325 in 2009 dollars.

GENERAL FUND REVENUE IMPACTS CONCLUSION

The minimum tax revenue gain for both sales and property tax is summarized in Table 10 and detailed in Exhibit 31. The table indicates the total taxes generated, nets out the maximum tax revenue lost, and presents the incremental tax revenue gain from Suisun Marketplace.

Table 10
Estimated Property and Sales Tax Revenue from
Suisun Marketplace and Residential Development¹
2009 Dollars

Type of Tax	New Tax Revenue	Diverted Tax Revenue	Net New Tax Revenue
Sales Tax	\$2,541,302	\$28,371	\$2,512,931
Property Tax	<u>\$444,325</u>	<u>\$0</u>	<u>\$444,325</u>
Total	\$2,985,627	\$28,371	\$2,957,256

(1) Includes City of Suisun City revenues only.
Source: Exhibits 28 – 31; and Sedway Group

Suisun Marketplace is estimated to generate \$2.99 million in annual taxes but cause \$28,371 in tax losses to the City of Suisun General Fund. In total, the Suisun Marketplace will generate an estimated incremental tax gain of \$2.96 million to the City of Suisun City General Fund. Any incremental city service costs (e.g., police or fire) that may be caused by Suisun Marketplace and associated residential development have not been estimated in this revenue analysis.

VIII. ALTERNATIVE SUISUN CITY SITE IDENTIFICATION

An additional charge of the analysis was to identify potential alternative sites. Sedway Group surveyed the primary market area to identify other prospective locations for a retail/residential development of the magnitude of Suisun Marketplace. It is Sedway Group's understanding that such a survey is required to meet Army Corps of Engineer requirements relating to wetlands issues associated with the project. Based on information contained within city documents, Sedway Group prepared an inventory of vacant sites sufficient to support a significant retail development. The inventory includes property size, location and a general discussion of the zoning designation. Because the Suisun Marketplace property will be annexed into Suisun City, the inventory also includes properties immediately adjacent to the primary market area that could be the subject of an annexation effort.

Sedway Group contacted the City of Suisun City and reviewed selected city documents in order to identify existing vacant land sites and vacant land sites immediately adjacent to the city's boundary that may be annexed into the city. Exhibit 32 identifies the vacant land inventory in and around Suisun City. There are no sites within Suisun City's boundaries to accommodate a retail project of the size and type (i.e., center orientation and types of anchor stores) of the Suisun Marketplace. In addition, there are no vacant sites immediately adjacent to Suisun City, with the exception of the Gentry Property, that could be annexed and would accommodate a retail project of the size and type of the Suisun Marketplace. Further, there are no sites within the City of Fairfield. There is the 463-acre State Route 12/Travis Air Force Base property; however the City of Fairfield indicates that this property may not be considered for annexation because of its proximity to Travis Air Force Base and aircraft operations. Suisun City staff confirmed Sedway Group's findings.

IX. ANALYSIS OF ALTERNATIVE DEVELOPMENT PROGRAMS

OVERVIEW

Sedway Group was asked to consider two alternative development scenarios for the Gentry Property and Gilbert Parcel. Analysis of these alternatives, summarized in Table 11 below, is shown in an additional set of exhibits included as Appendices B and C at the end of this report. When compared with the Base Project, each alternative features a slightly smaller Supercenter (due to a reduced garden center component) and significantly less square footage allocated to the other retail categories. While Alternative 1 still includes a Home Improvement anchor, Alternative 2 does not. Moreover, anticipated square footage for the Gilbert Parcel development is reduced to 10,000 square feet. In total, Alternatives 1 and 2 include 490,000 and 360,000 square feet, respectively.

Table 11
Proposed Suisun Marketplace and Gilbert Parcel, Alternatives 1 and 2
Type of Retail and Associated Square Feet

Retailer	Alt 1 Retail Space (Sq. Ft.)	Percent Distribution	Alt 2 Retail Space (Sq. Ft.)	Percent Distribution
Supercenter ¹	221,398	45.2%	221,398	61.5%
Home Improvement ²	169,793	34.7%	0	0.0%
Apparel	20,000	4.1%	20,000	5.6%
Home Furnishings	14,000	2.9%	14,000	3.9%
Restaurant	20,000	4.1%	20,000	5.6%
Fast Food	10,000	2.0%	10,000	2.8%
Unknown Retail	21,809	4.5%	61,602	17.1%
Gas Station	3,000	0.6%	3,000	0.8%
Gilbert Parcel (Unknown Retail)	<u>10,000</u>	<u>2.0%</u>	<u>10,000</u>	<u>2.8%</u>
Total (3)	490,000	100.0%	360,000	100.0%

(1) Includes 14,480 square foot garden center.

(2) Alternative 1 includes 31,659 square foot garden center.

(3) Figures may not total due to rounding.

Source: Sedway Group

PROJECTED SALES FOR ALTERNATIVES

Using the same methodology detailed in Chapter III, Sedway Group estimated sales at Suisun Marketplace and the Gilbert Parcel assuming the development includes the mix of retail tenants identified in Table 11. As shown in Table 12, sales estimates for Alternatives 1 and 2 are \$193.8 and \$142.7 million, respectively. The Supercenter accounts for the largest share of sales in each alternative. The reduced square footage in Alternative 2, which includes the removal of the Home Improvement retailer and other square footage modifications, results in about \$51.1 million in reduced sales. Sedway Group assumes that 90 percent of sales for each Alternative will derive from residents of the primary and secondary market areas, while the remaining 10 percent will be attributable to the undefined tertiary market area.

Table 12
Estimated Suisun Marketplace and Gilbert Parcel Sales by Retail Category for
Alternatives 1 and 2¹
2009 Dollars, in Millions

Retail Category	Alt 1 Estimated Retail Sales	Alt 2 Estimated Retail Sales
Apparel	\$11.6	\$16.9
General Merchandise ²	64.7	66.1
Food Stores	23.7	23.9
Eating and Drinking Places	11.4	12.1
Home Furnishings and Appliances	23.3	3.8
Building Materials ²	39.1	0
"Other Retail Stores"	<u>20.1</u>	<u>19.9</u>
Total³	\$193.8	\$142.7

(1) Based on California Board of Equalization retail categories.

(2) Includes the estimated garden center sales.

(3) Figures may not total due to rounding.

Sources: Tom Gentry California Company; and Sedway Group.

PRIMARY MARKET AREA SALES IMPACTS BY RETAIL CATEGORY

Sedway Group assessed the impacts Suisun Marketplace and the Gilbert Parcel would have on existing primary market area retailers. See Chapter III for an explanation of the methodology used for this determination. Tables 13 and 14 summarize the maximum sales diversion for each of the two alternative development plans.

As shown in Table 13 on the following page, the results for Alternative 1 indicate that, at worst, \$42.4 million in sales generated at Suisun Marketplace and the Gilbert Parcel upon stabilization will be diverted away from existing primary market area (cities of Suisun City and Fairfield) retailers. This represents 2.9 percent of estimated sales in the primary market area. Thus, the balance of new sales, or \$151.4 million, is the minimum estimate of Suisun Marketplace and Gilbert Parcel sales new to the primary market area. These new sales will come from a combination of recaptured leakage (if any), the secondary market area, and tertiary market area.

Table 13
Maximum Suisun Marketplace and Gilbert Parcel Retailers Sales Impacts Upon Stabilization, Alternative 1
2009 Dollars, in Millions

Retail Category	Suisun Marketplace and Gilbert Parcel Sales	Maximum Sales Diverted From Primary Market Area Retailers	Minimum New Sales to Primary Market Area
Apparel	\$11.6	\$3.7	\$7.9
General Merchandise	64.7	23.1	41.6
Food Stores	23.7	7.1	16.5
Eating and Drinking Places	11.4	0.0	11.4
Home Furnishings & Appliances	23.3	0.0	23.3
Building Materials	39.1	8.4	30.7
Other Retail	<u>20.1</u>	<u>0.0</u>	<u>20.1</u>
Total	\$193.8	\$42.4	\$151.4

Source: Sedway Group.

As shown in Table 14, the results for Alternative 2 indicate that, at worst, \$36.3 million in sales generated at Suisun Marketplace and the Gilbert Parcel upon stabilization will be diverted away from existing primary market area (cities of Suisun City and Fairfield) retailers. This represents 2.5 percent of estimated sales in the primary market area. Thus, the balance of new sales, or \$106.4 million, is the minimum estimate of Suisun Marketplace and Gilbert Parcel sales new to the primary market area. These new sales will come from a combination of recaptured leakage (if any), the secondary market area, and tertiary market area.

Table 14
Maximum Suisun Marketplace and Gilbert Parcel Retailers Sales Impacts Upon Stabilization, Alternative 2
2009 Dollars, in Millions

Retail Category	Suisun Marketplace and Gilbert Parcel Sales	Maximum Sales Diverted From Primary Market Area Retailers	Minimum New Sales to Primary Market Area
Apparel	\$16.9	\$5.4	\$11.5
General Merchandise	66.1	23.6	42.5
Food Stores	23.9	7.2	16.7
Eating and Drinking Places	12.1	0.0	12.1
Home Furnishings & Appliances	3.8	0.0	3.8
Building Materials	0.0	0.0	0.0
Other Retail	<u>19.9</u>	<u>0.0</u>	<u>19.9</u>
Total	\$142.7	\$36.3	\$106.4

Source: Sedway Group.

IMPACTS ON EXISTING PRIMARY MARKET AREA RETAILERS

Chapter IV considered the extent to which estimated sales impacts of the Base Project could affect existing primary market area stores. It included an overview of the current retail climate in the primary market area, including an assessment of competitive shopping centers and stores currently operating in the market. This section addresses the same impacts based on the modified development programs that define Alternatives 1 and 2. In general, because Alternatives 1 and 2 include less retail square footage than the Base Project, the impacts on existing primary market area retailers are smaller. Findings are presented below for Alternative 1, followed by Alternative 2.

Apparel – Whereas the analysis in Chapter IV indicated the Base Project would have a maximum diversion of \$14.4 million in apparel store sales, the reduction in apparel square footage for Alternative 1 results in a diversion of only \$3.7 million. This represents about 10,600 square feet of impacted space. The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take two to three years to generate \$3.7 million in apparel sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and Gilbert Parcel. However, if stores cannot withstand this downturn in sales it is possible that a maximum of 10,600 square feet of existing apparel store space is at risk of closing.

General Merchandise – Similar to the results in Chapter IV that indicated the Base Project would have a maximum diversion of \$24.3 million in general merchandise store sales, the analysis for Alternative 1 results in a diversion of \$23.1 million. This represents about 65,700 square feet of impacted space. The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take five to six years to generate \$23.1 million in general merchandise store sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and Gilbert Parcel. However, if stores cannot withstand this downturn in sales it is possible that a maximum of 65,700 square feet of existing general merchandise store space is at risk of closing.

Food Stores – While the results in Chapter IV that indicated the Base Project would have a maximum diversion of \$7.5 million in food store sales, the analysis for Alternative 1 results in a diversion of \$7.1 million. This represents about 20,200 square feet of impacted space. The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take one to two years to generate \$7.1 million in food store sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and Gilbert Parcel. However, if stores cannot withstand this downturn in sales it is possible that a maximum of 20,200 square feet of existing food store space is at risk of closing.

Building Materials – The results in Chapter IV that indicated the Base Project would have a maximum diversion of \$8.0 million in building materials sales, and the analysis for Alternative 1 shows similar results with a diversion of \$8.4 million. This represents about 23,900 square

feet of impacted space. The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take four to five years to generate \$8.4 million in building materials sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and Gilbert Parcel. However, if stores cannot withstand this downturn in sales it is possible that a maximum of 23,900 square feet of existing building materials store space is at risk of closing.

The removal of a Home Improvement anchor from Alternative 2 eliminates impacts on the building materials category. The impacts on the remaining three categories are summarized below.

Apparel – Whereas the analysis in Chapter IV indicated the Base Project would have a maximum diversion of \$14.4 million in apparel store sales, the reduction in apparel square footage for Alternative 2 results in a diversion of only \$5.4 million. This represents about 15,400 square feet of impacted space. The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take four to five years to generate \$5.4 million in apparel sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and Gilbert Parcel. However, if stores cannot withstand this downturn in sales it is possible that a maximum of 15,400 square feet of existing apparel store space is at risk of closing.

General Merchandise – Similar to the results in Chapter IV that indicated the Base Project would have a maximum diversion of \$24.3 million in general merchandise store sales, the analysis for Alternative 2 results in a diversion of \$23.6 million. This represents about 67,200 square feet of impacted space. The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take four to five years to generate \$23.6 million in general merchandise store sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and Gilbert Parcel. However, if stores cannot withstand this downturn in sales it is possible that a maximum of 67,200 square feet of existing general merchandise store space is at risk of closing.

Food Stores – While the results in Chapter IV that indicated the Base Project would have a maximum diversion of \$7.5 million in food store sales, the analysis for Alternative 2 results in a diversion of \$7.2 million. This represents about 20,500 square feet of impacted space. The extent to which this will negatively impact existing stores will depend upon their ability to sustain a downturn in sales. This downturn will diminish over time as new market area residents generate additional sales. The cumulative retail demand estimates due to population growth documented in Exhibit 15 indicate that it will take one to two years to generate \$7.2 million in food store sales from new growth following the assumed 2009 full year operation of the Suisun Marketplace and Gilbert Parcel. However, if stores cannot withstand this downturn in sales it is possible that a maximum of 20,500 square feet of existing food store space is at risk of closing.

CUMULATIVE IMPACTS

Exhibits 23 through 27 in Appendices B and C summarize the maximum diverted sales impacts resulting from development of Alternatives 1 and 2 of the Suisun Marketplace and Gilbert Parcel and all primary market area cumulative projects, i.e., both the Villages at Fairfield and the Fairfield Wal-Mart Supercenter. These results indicate that assuming development of Alternative 1 of the Suisun Marketplace and the Gilbert Parcel and all cumulative projects, at worst, \$61.4 million in sales will comprise sales diverted away from existing primary market area retailers (see Exhibit 27). The diverted sales impact estimate is \$5.4 million on apparel stores, \$28.4 million on general merchandise stores, \$19.2 million on food stores, and \$8.4 million on building materials stores. There are no estimated impacts on eating and drinking places, home furnishings and appliances stores, and "other retail stores." The diverted sales impacts for Alternative 2 and all cumulative projects are, at worst, \$55.3 million. This includes \$7.1 million in apparel stores, \$28.9 million in general merchandise stores, and \$19.3 million in food stores. There are no estimated impacts on eating and drinking places, home furnishings and appliances, building materials, or "other retail stores."

Suisun Marketplace and Gilbert Parcel and Cumulative Retail Projects Excluding Fairfield Wal-Mart Supercenter

Exhibits 25 and 27 in Appendices B and C summarize the maximum diverted sales impacts resulting from development of Alternatives 1 and 2 of the Suisun Marketplace and the Gilbert Parcel and the Villages at Fairfield. Assuming only the Villages at Fairfield project results in lower overall diverted sales impacts, specifically lower diverted sales in the general merchandise and food stores categories. These results indicate that for Alternative 1, at worst, \$54.8 million in sales will comprise sales diverted away from existing primary market area retailers. The diverted sales impact estimate is \$5.4 million on apparel stores, \$25.8 million on general merchandise stores, \$15.2 million on food stores, and \$8.4 million on building materials. There are no estimated impacts on eating and drinking places, home furnishings and appliances, and "other retail stores." For Alternative 2, the results indicate that, at worst, \$48.7 million in sales will comprise diversion away from existing primary market area retailers. The diverted sales impacts include \$7.1 million on apparel stores, \$26.3 million on general merchandise stores, and \$15.3 million on food stores. There are no estimated impacts on eating and drinking places, home furnishings and appliances, building materials, and "other retail stores."

URBAN DECAY CONCLUSION

As noted in Chapter VI of this report, Sedway Group concluded that although development of Base Project may contribute to further retail vacancies in the primary market area, those vacancies are unlikely to result in urban decay. Because Alternatives 1 and 2 are smaller in size than the Base Project, Sedway Group reaches the same conclusion regarding the potential for urban decay.

GENERAL FUND REVENUE IMPACTS

The revenues accruing to City of Suisun City General Fund as a result of Development Alternatives 1 and 2 are summarized in Tables 15 and 16 below.

Table 15
Estimated Property and Sales Tax Revenue from
Suisun Marketplace and Residential Development, Alternative 1¹
2009 Dollars

Type of Tax	New Tax Revenue	Diverted Tax Revenue	Net New Tax Revenue
Sales Tax	\$1,772,495	\$20,001	\$1,752,493
Property Tax	<u>\$385,377</u>	<u>\$0</u>	<u>\$385,377</u>
Total	\$2,157,872	\$20,001	\$2,137,870

(1) Includes City of Suisun City revenues only.
Source: Alternative 1 Exhibits 28 – 31; and Sedway Group

A total of \$2.1 million in net new tax revenue would result from Alternative 1. While \$1.8 million dollars in sales tax would be generated by the retail sales in the shopping center, \$20,001 would represent diversion away from existing retailers in Suisun City. Annual property tax revenues of \$385,377 would be generated by the project’s commercial and residential space.

Table 16
Estimated Property and Sales Tax Revenue from
Suisun Marketplace and Residential Development, Alternative 2¹
2009 Dollars

Type of Tax	New Tax Revenue	Diverted Tax Revenue	Net New Tax Revenue
Sales Tax	\$1,259,208	\$16,696	\$1,242,512
Property Tax	<u>\$451,123</u>	<u>\$0</u>	<u>\$451,123</u>
Total	\$1,710,331	\$16,696	\$1,693,635

(1) Includes City of Suisun City revenues only.
Source: Alternative 2 Exhibits 28 – 31; and Sedway Group

A total of \$1.7 million in net new tax revenue would result from Alternative 2. Retail sales would contribute \$1.2 million in new General Fund revenues, after accounting for \$16,696 in diverted sales taxes. Annual property taxes of \$451,123 would be generated from the project’s commercial and residential development.

ASSUMPTIONS AND GENERAL LIMITING CONDITIONS

Sedway Group has made extensive efforts to confirm the accuracy and timeliness of the information contained in this study. Such information was compiled from a variety of sources, including interviews with government officials, review of City and County documents, and other third parties deemed to be reliable. Although Sedway Group believes all information in this study is correct, it does not warrant the accuracy of such information and assumes no responsibility for inaccuracies in the information by third parties. We have no responsibility to update this report for events and circumstances occurring after the date of this report. Further, no guarantee is made as to the possible effect on development of present or future federal, state or local legislation, including any regarding environmental or ecological matters.

The accompanying projections and analyses are based on estimates and assumptions developed in connection with the study. In turn, these assumptions, and their relation to the projections, were developed using currently available economic data and other relevant information. It is the nature of forecasting, however, that some assumptions may not materialize, and unanticipated events and circumstances may occur. Therefore, actual results achieved during the projection period will likely vary from the projections, and some of the variations may be material to the conclusions of the analysis.

Contractual obligations do not include access to or ownership transfer of any electronic data processing files, programs or models completed directly for or as by-products of this research effort, unless explicitly so agreed as part of the contract.

This report may not be used for any purpose other than that for which it is prepared. Neither all nor any part of the contents of this study shall be disseminated to the public through publication advertising media, public relations, news media, sales media, or any other public means of communication without prior written consent and approval of Sedway Group.

APPENDIX A: EXHIBITS – BASE PROJECT

**BASE PROJECT, EXHIBIT 1
DEVELOPMENT PROGRAM SUMMARY
SUISUN MARKETPLACE AND GILBERT PARCEL**

Retail Type of Retail (1)	Square Feet (2)		
	Building	Garden Center	Total
<u>Anchor Tenants</u>			
Supercenter	206,400	20,800	227,200
Home Improvement	133,800	28,900	162,700
Apparel	88,000	0	88,000
<u>Additional Tenants</u>			
Home Furnishings	27,500	0	27,500
Restaurant	18,000	0	18,000
Fast Food	6,000	0	6,000
Unknown Retail	123,099	0	123,099
Gas Station	3,000	0	3,000
Suisun Marketplace Subtotal	605,799	49,700	655,499
<u>Gilbert Parcel (3)</u>			
Other Retail Stores (Books)	21,780	0	21,780
Home Furnishings and Appliances	21,780	0	21,780
Home Furnishings and Appliances (Electronics)	21,780	0	21,780
Gilbert Parcel Subtotal	65,340	0	65,340
TOTAL	671,139	49,700	720,839

Notes:

(1) Specific retail tenants have not been identified by the developer. The type of retail targeted for specific spaces have been identified where available.

(2) Development plan and square footages for Suisun Marketplace provided by Tom Gentry California Company. Figures are rounded.

(3) Tenants for the Gilbert parcel are not yet identified. Sedway Group assumes that development on the parcel will include tenants often located adjacent to large community or regional shopping centers. For the purpose of this analysis, the 65,340 square feet has been divided evenly among three retail categories: Book Stores (included in Other Retail Stores per State Board of Equalization); Home Furnishings and Appliances; and Electronic Stores (included in Home Furnishings and Appliances per State Board of Equalization).

Sources: Tom Gentry California Company; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives

Update\UPDATED Development Program Summary.xls]Ex1[JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 2
ESTIMATED ANNUAL SALES
SUISUN MARKETPLACE AND GILBERT PARCEL
2003 AND 2009 YEAR DOLLARS**

Retail Type of Retail	Total Square Feet (1)	Average Sales per Square Foot		2009 Estimated Sales
		2003 (2)	2009 (3)	
<u>Anchor Tenants</u>				
Supercenter	227,200	\$362 (4)	\$425	\$96,490,273
Home Improvement	162,700	\$327 (5)	\$384	\$62,416,864
Apparel	88,000	\$276 (6)	\$324	\$28,494,326
<u>Additional Tenants</u>				
Home Furnishings	27,500	\$230 (7)	\$270	\$7,420,397
Restaurant	18,000	\$285 (8)	\$334	\$6,018,441
Fast Food	6,000	\$365 (9)	\$428	\$2,569,276
Unknown Retail	123,099	\$300	\$352	\$43,325,384
<u>Gilbert Parcel</u>				
Other Retail Stores (Books)	21,780	\$316 (10)	\$371	\$8,074,425
Home Furnishings	21,780	\$230 (7)	\$270	\$5,876,955
Home Furnishings (Electronics)	21,780	\$428 (11)	\$502	\$10,936,246
Total	717,839		\$378	\$271,622,586

Notes:

- (1) Annual sales estimates do not include the 3,000-square-foot gas station.
- (2) Sedway Group relied on Retail MAXIM's July 2004 report of 2003 retail sales per square foot estimates, which also includes averages for different categories of retailers. For all unidentified retail, Sedway Group assumed the generally accepted industry standard average sales of \$300 per square foot in 2003 dollars.
- (3) Adjusted for inflation based on the consumer price index for all urban consumers in the San Francisco/Oakland/San Jose MSA as defined by the U.S. Department of Labor Bureau of Labor Statistics. Inflation for the 2003-04 period is 1.2 percent; assumed annual inflation of 3.0 percent for projected years.
- (4) Average sales per square foot of Wal-Mart, per Retail MAXIM.
- (5) Average sales per square foot of Home Depot and Lowes, per Retail MAXIM.
- (6) Average sales per square foot of Loehman's, Mervyn's, Old Navy, Ross, Stein Mart, and TJ Maxx, per Retail MAXIM.
- (7) Average sales per square foot of Bed Bath and Beyond, Cost-Plus, Home Goods, Kirklands, Linens 'N Things, Pier One, and Sears Great Outdoors, per Retail MAXIM.
- (8) Average sales per square foot of the casual dining and family dining categories per Retail MAXIM.
- (9) Average sales per square foot of fast food chains per Retail MAXIM.
- (10) Average sales per square foot of Barnes and Noble and Borders, per Retail MAXIM.
- (11) Average sales per square foot of the electronics category per Retail MAXIM.

Sources: Highland Development Company; Retail MAXIM's Perspectives on Retail Real Estate and Finance, July 2004; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED
Development Program Summary.xls]Ex1 [JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 3
ESTIMATED SALES BY RETAIL CATEGORY
SUISUN MARKETPLACE AND GILBERT PARCEL
2009 DOLLARS**

Type of Retail	Suisun Marketplace and Gilbert Parcel (1)		California Board of Equalization Retail Category (2)						
	Total Square Feet	2009 Estimated Sales	Apparel	General Merchandise (3)	Food Stores	Eating and Drinking Places	Home Furnishings and Appliances	Building Materials	Other Retail Stores (4)
Supercenter (5) As % of estimated store sales	227,200	\$96,490,273	\$0 0.0%	\$63,683,580 66.0%	\$24,122,568 25.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$8,684,125 9.0%
Home Improvement (6) As % of estimated store sales	162,700	\$62,416,864	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$18,725,059 30.0%	\$37,450,118 60.0%	\$6,241,686 10.0%
Apparel As % of estimated store sales	88,000	\$28,494,326	\$28,494,326 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Home Furnishings As % of estimated store sales	27,500	\$7,420,397	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$7,420,397 100.0%	\$0 0.0%	\$0 0.0%
Restaurant As % of estimated store sales	18,000	\$6,018,441	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$6,018,441 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Fast Food As % of estimated store sales	6,000	\$2,569,276	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$2,569,276 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Unknown Retail (7) As % of estimated store sales	123,099	\$43,325,384	\$16,463,646 38.0%	\$4,332,538 10.0%	\$866,508 2.0%	\$2,166,269 5.0%	\$0 0.0%	\$0 0.0%	\$19,496,423 45.0%
Gilbert Parcel Books As % of estimated store sales	21,780	\$8,074,425	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$8,074,425 100.0%
Gilbert Parcel Home Furnishings As % of estimated store sales	21,780	\$5,876,955	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$5,876,955 100.0%	\$0 0.0%	\$0 0.0%
Gilbert Parcel Electronics As % of estimated store sales	21,780	\$10,936,246	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$10,936,246 100.0%	\$0 0.0%	\$0 0.0%
Total	717,839	\$271,622,586	\$44,957,972	\$68,016,118	\$24,989,076	\$10,753,986	\$42,958,657	\$37,450,118	\$42,496,658

Notes:

(1) Estimated square feet and annual sales are from Exhibit 2. Does not include the gas station.

(2) Selected retail categories as defined by the California Board of Equalization that pertain to the type of retail targeted for the Suisun Marketplace and Gilbert Parcel.

(3) The general merchandise category includes limited price variety, department, dry goods, general merchandise, country, and drug stores.

(4) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

(5) The Supercenter sales were divided into appropriate retail categories to determine the potential impact on those categories. The analysis assumes an approximately 56,000-square-foot grocery component, an 20,800-square-foot garden center. The grocery square footage is an estimate developed by Sedway Group based on previous work and includes both sales floor area and stockroom space.

(6) The home improvement sales were divided into appropriate retail categories to determine the potential impact on those categories. Based on breakdown of sales at Lowe's and Home Depot stores provided for in the relevant Form 10-Ks on file with the United States Securities and Exchange Commission.

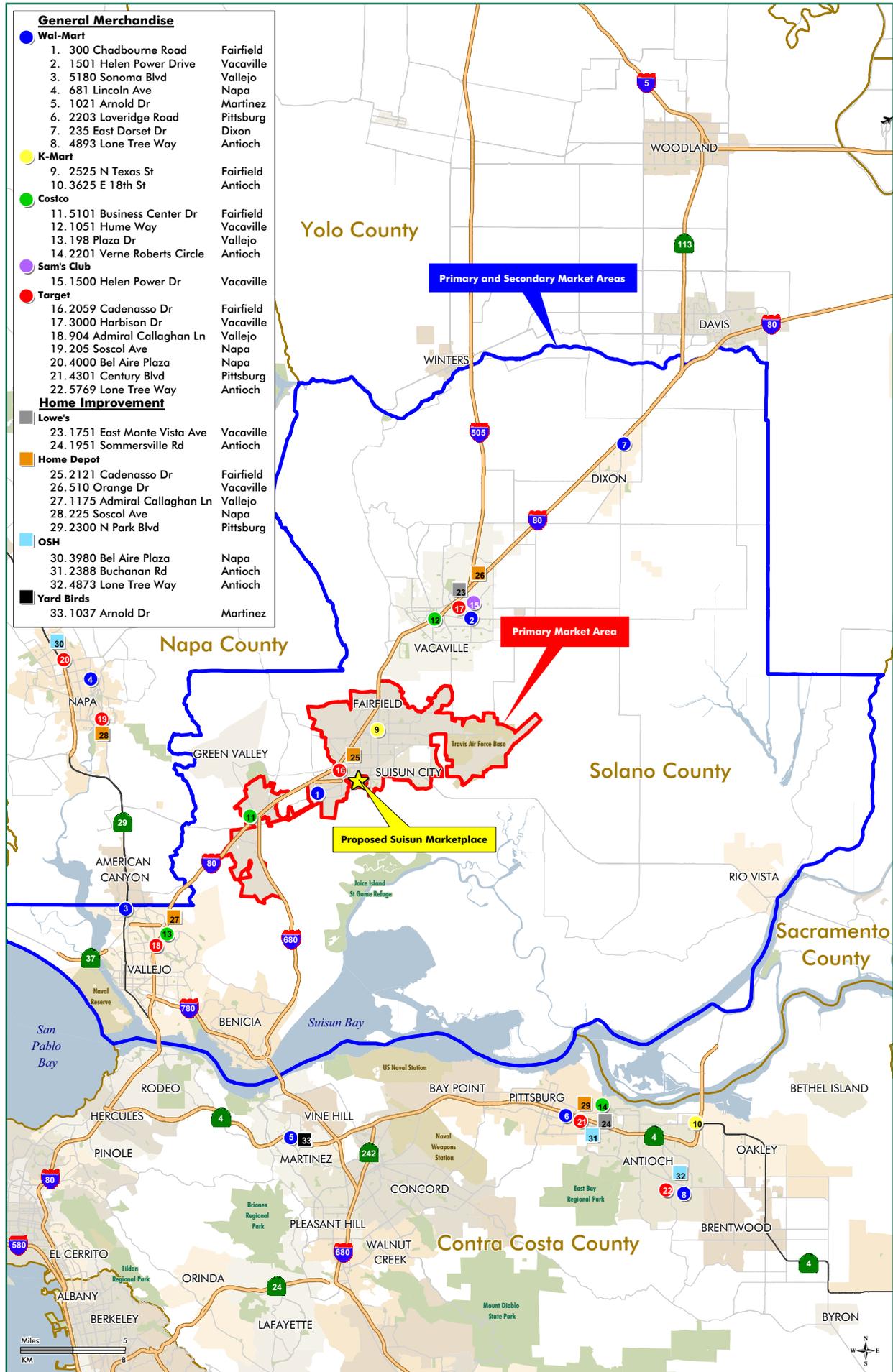
(7) Highland Development Company has identified targeted retail categories for some spaces but not others. In the case of unknown retail, Highland Development Company provided generic retail categories. Based on this information, Sedway Group allocated the unknown retail sales to specific retail categories.

Sources: Highland Development Company; Retail Maxim's Perspectives on Retail Real Estate and Finance, July 2004; Lowes, 2004 Form 10-K; Home Depot, 2004 Form 10-K; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\UPDATED Development Program Summary.xls[Ex1]JB

08-Mar-06

Exhibit 4: General Merchandise and Home Improvement Retailers Map



This map contains information from sources we believe to be reliable, but we make no representation, warranty or guaranty of its accuracy. This map is published for the use of CBRE and its clients only. Redistribution in whole or part to any third party without the prior written consent of CBRE is strictly prohibited. © 2005 CB Richard Ellis. All Rights Reserved. Sources: CBRE Mapping Services (877) 580-4074; Claritas, Inc./GDT, Inc. MapFiles/Work2005/768647.wor 3/30/2005

**BASE PROJECT, EXHIBIT 5
POPULATION ASSUMPTIONS (1)
PRIMARY MARKET AREA AND PRIMARY AND SECONDARY MARKET AREAS
2000 ESTIMATE AND 2005 - 2020 PROJECTION**

Area	2000	Calculated				2005	Calculated				2010	2015	2020	Average Annual Growth Rate			
		2001	2002	2003	2004		2006	2007	2008	2009				00-05	05-10	10-15	15-20
Primary Market Area																	
City of Suisun City	26,640	27,002	27,369	27,741	28,118	28,500	29,150	29,814	30,494	31,189	31,900	33,800	35,400	1.4%	2.3%	1.2%	0.9%
City of Fairfield	96,545	98,477	100,448	102,458	104,509	106,600	109,082	111,621	114,220	116,879	119,600	130,500	136,800	2.0%	2.3%	1.8%	0.9%
Total	123,185	125,479	127,817	130,199	132,626	135,100	138,231	141,435	144,714	148,068	151,500	164,300	172,200	1.9%	2.3%	1.6%	0.9%
Primary and Secondary Market Area																	
Solano County	394,542	400,227	405,995	411,845	417,780	423,800	431,941	440,239	448,696	457,315	466,100	504,500	532,400	1.4%	1.9%	1.6%	1.1%

Notes:

(1) As reported by the Association of Bay Area Governments ("ABAG"), Projections 2005. Data for 2000, 2005, 2010, 2015 and 2020 provided by ABAG with intermediate years (2001 to 2004 and 2006 to 2009) estimated by Sedway Group.

Sources: Association of Bay Area Governments, Projections 2005; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex1[JB]

8-Mar-06

**BASE PROJECT, EXHIBIT 6
TAXABLE SALES DATA AND ANALYTIC ADJUSTMENT (1)
PRIMARY AND COMBINED PRIMARY AND SECONDARY MARKET AREAS
2003 DOLLARS (\$000)**

Retail Category	Primary Market Area			Primary and Secondary Market Area (Solano County) [D]
	City of Fairfield [A]	Suisun City [B]	Primary Market Area [C = A+B]	
<u>As Reported by the California Board of Equalization</u>				
Apparel Stores	\$62,442	N/A (2)	\$62,442	\$182,142
General Merchandise Stores	\$268,546	N/A (2)	\$268,546	\$701,505
Food Stores	\$58,514	\$15,144	\$73,658	\$225,641
Eating and Drinking Places	\$108,188	\$14,413	\$122,601	\$380,271
Home Furnishings and Appliances	\$55,020	\$2,176	\$57,196	\$156,856
Building Materials	\$87,150	\$6,949	\$94,099	\$374,052
Auto Dealers and Auto Supplies	\$330,430	\$2,144	\$332,574	\$864,996
Service Stations	\$84,129	\$20,705	\$104,834	\$321,596
Other Retail Stores	<u>\$217,695</u>	<u>\$10,350</u> (2)	<u>\$228,045</u>	<u>\$526,287</u>
Total	\$1,272,114	\$71,881	\$1,343,995	\$3,733,346
Percent of Total	94.7%	5.3%		
<u>Adjusted by Sedway Group</u>				
Apparel Stores	\$62,442	\$735 (3)	\$63,177	\$182,142
General Merchandise Stores	\$268,546	\$3,604 (4)	\$272,150	\$701,505
Food Stores	\$58,514	\$15,144	\$73,658	\$225,641
Eating and Drinking Places	\$108,188	\$14,413	\$122,601	\$380,271
Home Furnishings and Appliances	\$55,020	\$2,176	\$57,196	\$156,856
Building Materials	\$87,150	\$6,949	\$94,099	\$374,052
Auto Dealers and Auto Supplies	\$330,430	\$2,144	\$332,574	\$864,996
Service Stations	\$84,129	\$20,705	\$104,834	\$321,596
Other Retail Stores	<u>\$217,695</u>	<u>\$6,011</u> (5)	<u>\$223,706</u>	<u>\$526,287</u>
Total	\$1,272,114	\$71,881	\$1,343,995	\$3,733,346
Percent of Total	94.7%	5.3%		

Notes:

(1) Due to disclosure issues, per the California State Board of Equalization, the apparel stores and general merchandise data are reported with the other retail stores category for Suisun City. However, in order to accurately assess the impact to the apparel stores and general merchandise categories, adjustments are necessary to estimate sales in those categories. The estimated taxable sales in apparel stores and general merchandise categories are then deducted from the other retail stores category.

(2) Due to disclosure issues apparel stores and general merchandise sales are included under the "other retail stores."

(3) Data provided by the City of Suisun City suggests that there were approximately \$735,000 in taxable apparel store sales in Suisun City in 2003.

(4) According to City of Suisun City staff there is an existing 18,000-square-foot Rite Aid store in Suisun City. The Retail MAXIM reports 2003 sales per square foot of \$286 for Rite Aid, which adjusted by 70 percent to account for only taxable sales is equivalent to \$200 per square foot. Sedway Group estimated taxable sales of \$3.6 million. Rite Aid store sales are categorized under the general merchandise category.

(5) The other retail stores category was adjusted downward to account for the apparel stores and general merchandise sales estimates.

Sources: City of Suisun City staff; Retail MAXIM, July 2004 publication; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\UPDATED Development Program Summary.xls\Ex1 [JB]

08-Mar-06

**EXHIBIT 7
RETAIL SALES LEAKAGE ANALYSIS (1)
PRIMARY MARKET AREA (PMA)
2003**

Type of Retailer	PER CAPITA (2)			TOTAL			
	Control Area Average Sales (3)	PMA Spending (4)	PMA Sales	PMA Spending	PMA Sales (5)	Attraction/ (Leakage)	Percent Attraction/ (Leakage)
Apparel Stores	\$497	\$399	\$485	\$51,927,723	\$63,177,000	\$11,249,277	17.8%
General Merchandise Stores (6)	\$1,590	\$1,290	\$2,198	\$167,905,533	\$286,145,865	\$118,240,332	41.3%
Food Stores (7)	\$1,839	\$1,684	\$1,886	\$219,236,487	\$245,526,667	\$26,290,179	10.7%
Eating and Drinking Places	\$1,276	\$1,053	\$942	\$137,081,407	\$122,601,000	(\$14,480,407)	(10.6%)
Home Furnishings and Appliances	\$518	\$427	\$439	\$55,539,864	\$57,196,000	\$1,656,136	2.9%
Building Materials (8)	\$917	\$727	\$723	\$94,590,006	\$94,099,000	(\$491,006)	(0.5%)
Auto Dealers and Auto Supplies	\$1,812	\$1,494	\$2,554	\$194,454,429	\$332,574,000	\$138,119,571	41.5%
Service Stations	\$761	\$679	\$805	\$88,386,949	\$104,834,000	\$16,447,051	15.7%
Other Retail Stores (9)	<u>\$1,815</u>	<u>\$1,473</u>	<u>\$1,718</u>	<u>\$191,738,545</u>	<u>\$223,706,400</u>	<u>\$31,967,855</u>	<u>14.3%</u>
Totals	\$11,024	\$9,223	\$11,750	\$1,200,860,943	\$1,529,859,932	\$328,998,988	21.5%

Notes:

(1) All figures are expressed in constant 2003 dollars.

(2) 2003 primary market area population of 130,199, based on Association of Bay Area Governments data. Refer to Exhibit 5.

(3) Control Area defined as Nine-county Bay Area: San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, and Marin counties.

(4) Analysis assumes 2003 average household income of \$69,279, per Claritas, Inc.

(5) Refer to Exhibit 6.

(6) Includes general merchandise and drug stores. Drug stores are assumed to comprise 12 percent of total general merchandise sales based on Sedway Group's analysis of control area averages. Taxable transactions for drug stores have been adjusted by 0.70, to account for non-taxable sales. Therefore, 70 percent of all drug store sales are taxable.

(7) Taxable transactions for grocery stores have been adjusted by 0.30, to account for non-taxable sales. Therefore, 30 percent of all food store sales are taxable.

(8) Building materials group includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, farm implement dealers, and lumber.

(9) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

Sources: State Board of Equalization "Taxable Sales in California - 2003"; Association of Bay Area Governments "Projections 2005"; Claritas, Inc.; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[Highland PMA Leakage 2003.xls]Ex7 PMA 2003[JB]

08-Mar-06

**EXHIBIT 8
PROJECTED RETAIL SALES LEAKAGE
PRIMARY MARKET AREA (PMA)
2009 ESTIMATE**

Type of Retailer	PMA Annual Per Capita				2009 Estimated Total (3)			
	2003 (1)		2009 Estimate (2)		PMA Spending	PMA Sales	Attraction / (Leakage)	Percent Attraction/ (Leakage)
	Spending	Sales	Spending	Sales				
Apparel Stores	\$399	\$485	\$468	\$569	\$69,281,845	\$84,290,604	\$15,008,759	17.8%
General Merchandise Stores (4)	\$1,290	\$2,198	\$1,513	\$2,578	\$224,019,165	\$381,775,136	\$157,755,972	41.3%
Food Stores (5)	\$1,684	\$1,886	\$1,975	\$2,212	\$292,504,803	\$327,581,098	\$35,076,295	10.7%
Eating and Drinking Places	\$1,053	\$942	\$1,235	\$1,105	\$182,893,689	\$163,573,964	(\$19,319,725)	(10.6%)
Home Furnishings and Appliances	\$427	\$439	\$500	\$515	\$74,101,155	\$76,310,768	\$2,209,613	2.9%
Building Materials (6)	\$727	\$723	\$852	\$848	\$126,201,763	\$125,546,663	(\$655,099)	(0.5%)
Auto Dealers and Auto Supplies	\$1,494	\$2,554	\$1,752	\$2,997	\$259,440,639	\$443,719,444	\$184,278,805	41.5%
Service Stations	\$679	\$805	\$796	\$945	\$117,925,658	\$139,869,275	\$21,943,617	15.7%
Other Retail Stores (7)	<u>\$1,473</u>	<u>\$1,718</u>	<u>\$1,728</u>	<u>\$2,016</u>	<u>\$255,817,114</u>	<u>\$298,468,550</u>	<u>\$42,651,436</u>	<u>14.3%</u>
Totals	\$9,223	\$11,750	\$10,821	\$13,785	\$1,602,185,830	\$2,041,135,503	\$438,949,672	21.5%

Notes:

(1) Refer to Exhibit 7.

(2) Adjusted for inflation based on the consumer price index for all urban consumers in the San Francisco MSA, as defined by the U.S. Department of Labor, Bureau of Labor Statistics. Inflation for the year 2003-2004 period is 1.2 percent; assumed annual inflation rate of 3.0 percent for projected years.

(3) Estimated 2009 primary market area population of 148,068, based on Association of Bay Area Governments data. Refer to Exhibit 5.

(4) Includes general merchandise and drug stores. Drug stores are assumed to comprise 12 percent of total general merchandise sales based on Sedway Group's analysis of control area averages.

Taxable transactions for drug stores have been adjusted by 0.70, to account for non-taxable sales. Therefore, 70 percent of all drug store sales are taxable.

(5) Taxable transactions for grocery stores have been adjusted by 0.30, to account for non-taxable sales. Therefore, 30 percent of all food store sales are taxable.

(6) Building materials group includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, farm implement dealers, and lumber.

(7) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

Sources: Benchmarked to Exhibit 7 and State Board of Equalization "Taxable Sales in California- 2003"; Claritas, Inc.; U.S. Department of Labor, Bureau of Labor Statistics; Association of Bay Area Governments "Projections 2005"; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[Highland PMA Leakage 2003.xls]Ex8 PMA 2009[JB]

08-Mar-06

**EXHIBIT 9
RETAIL SALES LEAKAGE ANALYSIS (1)
PRIMARY AND SECONDARY MARKET AREAS (P&SMA)
2003**

Type of Retailer	PER CAPITA (2)			TOTAL			
	Control Area Average Sales (3)	P&SMA Spending (4)	P&SMA Sales	P&SMA Spending	P&SMA Sales (5)	Attraction/ (Leakage)	Percent Attraction/ (Leakage)
Apparel Stores	\$497	\$408	\$442	\$167,880,960	\$182,142,000	\$14,261,040	7.8%
General Merchandise Stores (6)	\$1,590	\$1,316	\$1,791	\$541,840,003	\$737,582,400	\$195,742,397	26.5%
Food Stores (7)	\$1,839	\$1,697	\$1,826	\$698,783,845	\$752,136,667	\$53,352,822	7.1%
Eating and Drinking Places	\$1,276	\$1,073	\$923	\$441,763,031	\$380,271,000	(\$61,492,031)	(13.9%)
Home Furnishings and Appliances	\$518	\$435	\$381	\$179,071,046	\$156,856,000	(\$22,215,046)	(12.4%)
Building Materials (8)	\$917	\$742	\$908	\$305,654,041	\$374,052,000	\$68,397,959	18.3%
Auto Dealers and Auto Supplies	\$1,812	\$1,521	\$2,100	\$626,534,228	\$864,996,000	\$238,461,772	27.6%
Service Stations	\$761	\$685	\$781	\$282,289,815	\$321,596,000	\$39,306,185	12.2%
Other Retail Stores (9)	<u>\$1,815</u>	<u>\$1,502</u>	<u>\$1,278</u>	<u>\$618,750,390</u>	<u>\$526,287,000</u>	<u>(\$92,463,390)</u>	<u>(14.9%)</u>
Totals	\$11,024	\$9,379	\$10,431	\$3,862,567,361	\$4,295,919,067	\$433,351,706	10.1%

Notes:

(1) All figures are expressed in constant 2003 dollars.

(2) 2003 primary and secondary market areas population of 411,845, based on Association of Bay Area Governments data. Refer to Exhibit 5.

(3) Control Area defined as Nine-county Bay Area: San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, and Marin counties.

(4) Analysis assumes 2003 average household income of \$71,414, per Claritas, Inc.

(5) Refer to Exhibit 6.

(6) Includes general merchandise and drug stores. Drug stores are assumed to comprise 12 percent of total general merchandise sales based on Sedway Group's analysis of control area averages. Taxable transactions for drug stores have been adjusted by 0.70, to account for non-taxable sales. Therefore, 70 percent of all drug store sales are taxable.

(7) Taxable transactions for grocery stores have been adjusted by 0.30, to account for non-taxable sales. Therefore, 30 percent of all food store sales are taxable.

(8) Building materials group includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, farm implement dealers, and lumber.

(9) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

Sources: State Board of Equalization "Taxable Sales in California - 2003"; Association of Bay Area Governments "Projections 2005"; Claritas, Inc.; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[Highland P&SMA Leakage 2003.xls]Ex9 P&SMA 2003[JB]

08-Mar-06

**EXHIBIT 10
PROJECTED RETAIL SALES LEAKAGE
PRIMARY AND SECONDARY MARKET AREAS (P&SMA)
2009 ESTIMATE**

Type of Retailer	P&SMA Annual Per Capita				2009 Estimated Total (3)			
	2003 (1)		2009 Estimate (2)		P&SMA Spending	P&SMA Sales	Attraction / (Leakage)	Percent Attraction/ (Leakage)
	Spending	Sales	Spending	Sales				
Apparel Stores	\$408	\$442	\$478	\$519	\$218,700,455	\$237,278,475	\$18,578,020	7.8%
General Merchandise Stores (4)	\$1,316	\$1,791	\$1,543	\$2,101	\$705,861,192	\$960,857,061	\$254,995,868	26.5%
Food Stores (5)	\$1,697	\$1,826	\$1,991	\$2,143	\$910,313,738	\$979,817,071	\$69,503,333	7.1%
Eating and Drinking Places	\$1,073	\$923	\$1,258	\$1,083	\$575,489,773	\$495,383,398	(\$80,106,375)	(13.9%)
Home Furnishings and Appliances	\$435	\$381	\$510	\$447	\$233,277,908	\$204,338,112	(\$28,939,796)	(12.4%)
Building Materials (6)	\$742	\$908	\$871	\$1,066	\$398,179,029	\$487,281,835	\$89,102,806	18.3%
Auto Dealers and Auto Supplies	\$1,521	\$2,100	\$1,785	\$2,464	\$816,193,333	\$1,126,840,220	\$310,646,888	27.6%
Service Stations	\$685	\$781	\$804	\$916	\$367,742,183	\$418,946,801	\$51,204,618	12.2%
Other Retail Stores (7)	<u>\$1,502</u>	<u>\$1,278</u>	<u>\$1,763</u>	<u>\$1,499</u>	<u>\$806,053,237</u>	<u>\$685,600,117</u>	<u>(\$120,453,120)</u>	<u>(14.9%)</u>
Totals	\$9,379	\$10,431	\$11,003	\$12,237	\$5,031,810,848	\$5,596,343,090	\$564,532,243	10.1%

Notes:

(1) Refer to Exhibit 9.

(2) Adjusted for inflation based on the consumer price index for all urban consumers in the San Francisco MSA, as defined by the U.S. Department of Labor, Bureau of Labor Statistics. Inflation for the year 2003-2004 period is 1.2 percent; assumed annual inflation rate of 3.0 percent for projected years.

(3) Estimated 2009 primary and secondary market areas population of 457,315, based on Association of Bay Area Governments data. Refer to Exhibit 5.

(4) Includes general merchandise and drug stores. Drug stores are assumed to comprise 12 percent of total general merchandise sales based on Sedway Group's analysis of control area averages.

Taxable transactions for drug stores have been adjusted by 0.70, to account for non-taxable sales. Therefore, 70 percent of all drug store sales are taxable.

(5) Taxable transactions for grocery stores have been adjusted by 0.30, to account for non-taxable sales. Therefore, 30 percent of all food store sales are taxable.

(6) Building materials group includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, farm implement dealers, and lumber.

(7) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

Sources: Benchmarked to Exhibit 9 and State Board of Equalization "Taxable Sales in California- 2003"; Claritas, Inc.; U.S. Department of Labor, Bureau of Labor Statistics; Association of Bay Area Governments "Projections 2005"; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[Highland P&SMA Leakage 2003.xls]Ex10 P&SMA 2009[JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 11
PROJECTED RETAIL SALES LEAKAGE (1)
SECONDARY MARKET AREA (2)
2009 ESTIMATE**

Type of Retailer	Secondary Market Area Spending	Secondary Market Area Sales	Attraction/ (Leakage)	Percent Attraction/ (Leakage)
Apparel Stores	\$149,418,609	\$152,987,871	\$3,569,261	2.3%
General Merchandise	\$481,842,028	\$579,081,924	\$97,239,897	16.8%
Food Stores	\$617,808,935	\$652,235,973	\$34,427,038	5.3%
Eating and Drinking Places	\$392,596,084	\$331,809,433	(\$60,786,651)	(15.5%)
Home Furnishings and Appliances	\$159,176,753	\$128,027,344	(\$31,149,409)	(19.6%)
Building Materials	\$271,977,266	\$361,735,172	\$89,757,905	24.8%
Auto Dealers and Supplies	\$556,752,694	\$683,120,776	\$126,368,082	18.5%
Service Stations	\$249,816,525	\$279,077,527	\$29,261,002	10.5%
Other Retail Stores	<u>\$550,236,123</u>	<u>\$387,131,568</u>	<u>(\$163,104,556)</u>	<u>(29.6%)</u>
Total	\$3,429,625,017	\$3,555,207,588	\$125,582,571	3.5%

Notes:

(1) The figures are calculated by deducting Exhibit 8 results from Exhibit 10 results.

(2) The secondary market area is defined as Solano County less the primary market area (cities of Suisun City and Fairfield).

Source: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program

8-Mar-06

**BASE PROJECT, EXHIBIT 12
MAXIMUM SUISUN MARKETPLACE AND GILBERT PARCEL SALES IMPACTS
ON PRIMARY MARKET AREA (PMA) RETAIL SALES
2009 ESTIMATE (IN MILLIONS)**

Type of Retailer	Suisun Marketplace New Sales (1) [A]	Source of Sales (2)		Retail Sales			Leakage Available for Capture			
		Primary and Secondary Market Areas [B]	Tertiary Market Area [C]	Primary Market Area (3) [D]	Primary and Secondary Market Areas (4) [E]	PMA Percent of P&SMA [F = D/E]	Primary Market Area	Secondary Market Area	Maximum Sales Diverted from PMA Retailers (7) [I = Bx F + G + H]	Minimum Net New Sales to PMA (8) [J = A + I]
							Leakage (5) [G]	Leakage (6) [H]		
Apparel Stores	\$45.0	\$40.5	\$4.5	\$84.3	\$237.3	35.5%	\$0.0	\$0.0	(\$14.4)	\$30.6
General Merchandise	\$68.0	\$61.2	\$6.8	\$381.8	\$960.9	39.7%	\$0.0	\$0.0	(\$24.3)	\$43.7
Food Stores	\$25.0	\$22.5	\$2.5	\$327.6	\$979.8	33.4%	\$0.0	\$0.0	(\$7.5)	\$17.5
Eating and Drinking Places	\$10.8	\$9.7	\$1.1	\$163.6	\$495.4	33.0%	(\$19.3)	\$0.0	\$0.0	\$10.8
Home Furnishings and Appliances	\$43.0	\$38.7	\$4.3	\$76.3	\$204.3	37.3%	\$0.0	(\$10.4)	(\$4.1)	\$38.9
Building Materials	\$37.5	\$33.7	\$3.7	\$125.5	\$487.3	25.8%	(\$0.7)	\$0.0	(\$8.0)	\$29.4
Other Retail Stores	<u>\$42.5</u>	<u>\$38.2</u>	<u>\$4.2</u>	<u>\$298.5</u>	<u>\$685.6</u>	<u>43.5%</u>	<u>\$0.0</u>	<u>(\$54.3)</u>	<u>\$0.0</u>	<u>\$42.5</u>
Total	\$271.6	\$244.5	\$27.2	\$1,457.5	\$4,050.6	36.0%	(\$20.0)	(\$64.7)	(\$58.3)	\$213.3

Notes:

- (1) These figures are from Exhibit 3.
- (2) Sedway Group estimates that 90 percent of sales will be generated from primary and secondary market area residents, with the 10 percent balance of sales generated by tertiary market area residents. This tertiary market area is not defined, but extends beyond the boundaries of Solano County.
- (3) Refer to Exhibit 8, primary market area sales. Does not include all retail categories, only those categories impacted by sales at Suisun Marketplace and the Gilbert Parcel.
- (4) Refer to Exhibit 10, primary and secondary market area sales. Does not include all retail categories, only those categories impacted by sales at Suisun Marketplace and the Gilbert Parcel.
- (5) Refer to Exhibit 8. Assumes any existing primary market area leakage is absorbed by Suisun Marketplace and Gilbert Parcel sales.
assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by Suisun Marketplace and the Gilbert Parcel. Assumption developed by Sedway Group based on market observations and professional judgment.
- (7) The figures in this column comprise the maximum amount of net new primary market area Suisun Marketplace and the Gilbert Parcel sales diverted from existing primary market area retailers, assuming sales in excess of any leakage will be diverted away from existing primary market area retailers in proportion to the primary market area retailers' estimated contribution to combined primary and secondary market areas sales. This implies that any negative impacts of the Suisun Marketplace and Gilbert Parcels' sales will be spread proportionally among all the like retailers by retail category in the primary market area.
- (8) This column comprises all new Suisun Marketplace and Gilbert Parcel sales less the maximum sales diverted from primary market area retailers. Figures may not total due to rounding.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\UPDATED Development Program Summary.xls\Ex1[JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 13
 MAXIMUM DIVERTED SALES AS A PERCENT
 OF ESTIMATED PRIMARY MARKET AREA (PMA) SALES
 2009 ESTIMATE (IN MILLIONS)**

Type of Retailer	Maximum Sales Diverted From PMA Retailers (1)	Estimated PMA Retail Sales (2)	Diverted Sales as a Percent of Estimated Sales
Apparel Stores	(\$14.4)	\$84.3	17.1%
General Merchandise	(\$24.3)	\$381.8	6.4%
Food Stores	(\$7.5)	\$327.6	2.3%
Eating and Drinking Places	\$0.0	\$163.6	0.0%
Home Furnishings and Appliances	(\$4.1)	\$76.3	5.3%
Building Materials	(\$8.0)	\$125.5	6.4%
Other Retail Stores	<u>\$0.0</u>	<u>\$298.5</u>	<u>0.0%</u>
Total	(\$58.3)	\$1,457.5	4.0%

Notes:

(1) Refer to Exhibit 12, column I.

(2) Refer to Exhibit 8, primary market area sales.

Source: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED
 Development Program Summary.xls]Ex1[JB]

8-Mar-06

**BASE PROJECT, EXHIBIT 14
NEW POPULATION RETAIL DEMAND (ANNUAL)
PRIMARY MARKET AREA AND COMBINED PRIMARY AND SECONDARY MARKET AREAS (1)
2009 - 2014
2009 DOLLARS (MILLIONS)**

	Per Capita Retail Spending (2)	Calendar Year				
		09-10	10-11	11-12	12-13	13-14
Primary Market Area						
Annual Population Growth (3)		3,432	2,476	2,517	2,559	2,602
Estimated Additional Sales						
Apparel	\$468	\$1.6	\$1.2	\$1.2	\$1.2	\$1.2
General Merchandise	\$1,513	\$5.2	\$3.7	\$3.8	\$3.9	\$3.9
Food Stores	\$1,975	\$6.8	\$4.9	\$5.0	\$5.1	\$5.1
Eating and Drinking Places	\$1,235	\$4.2	\$3.1	\$3.1	\$3.2	\$3.2
Home Furnishings and Appliances	\$500	\$1.7	\$1.2	\$1.3	\$1.3	\$1.3
Building Materials	\$852	\$2.9	\$2.1	\$2.1	\$2.2	\$2.2
Other Retail Stores	\$1,728	\$5.9	\$4.3	\$4.3	\$4.4	\$4.5
Total		\$28.4	\$20.5	\$20.8	\$21.2	\$21.5
Primary and Secondary Market Area						
Annual Population Growth (3)		8,785	7,439	7,557	7,678	7,801
Estimated Additional Sales						
Apparel	\$478	\$4.2	\$3.6	\$3.6	\$3.7	\$3.7
General Merchandise	\$1,543	\$13.6	\$11.5	\$11.7	\$11.9	\$12.0
Food Stores	\$1,991	\$17.5	\$14.8	\$15.0	\$15.3	\$15.5
Eating and Drinking Places	\$1,258	\$11.1	\$9.4	\$9.5	\$9.7	\$9.8
Home Furnishings and Appliances	\$510	\$4.5	\$3.8	\$3.9	\$3.9	\$4.0
Building Materials	\$871	\$7.6	\$6.5	\$6.6	\$6.7	\$6.8
Other Retail Stores	\$1,763	\$15.5	\$13.1	\$13.3	\$13.5	\$13.7
Total		\$73.9	\$62.6	\$63.6	\$64.6	\$65.6
Projected Primary Market Area Capture of New Retail Sales Demand (4)						
Apparel		\$1.5	\$1.3	\$1.3	\$1.3	\$1.3
General Merchandise		\$5.4	\$4.6	\$4.6	\$4.7	\$4.8
Food Stores		\$5.8	\$5.0	\$5.0	\$5.1	\$5.2
Eating and Drinking Places		\$3.7	\$3.1	\$3.1	\$3.2	\$3.2
Home Furnishings and Appliances		\$1.7	\$1.4	\$1.4	\$1.5	\$1.5
Building Materials		\$2.0	\$1.7	\$1.7	\$1.7	\$1.7
Other Retail Stores		\$6.7	\$5.7	\$5.8	\$5.9	\$6.0
Total		\$26.8	\$22.7	\$23.0	\$23.4	\$23.8

Notes:

- (1) The cities of Suisun City and Fairfield comprise the primary market area and Solano County comprises the primary and secondary market areas.
- (2) Refer to Exhibit 8 for the primary market area and Exhibit 10 for the primary and secondary market areas.
- (3) Refer to Exhibit 5. Interim population numbers not indicated in Exhibit 5 are estimated using the calculated growth rates.
- (4) Primary market area's potential capture rate based upon the primary market area's estimated share of primary and secondary market area sales, by category. Refer to Exhibit 12, column F.

Source: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex1[JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 15
NEW POPULATION RETAIL DEMAND (CUMULATIVE)
PRIMARY MARKET AREA AND COMBINED PRIMARY AND SECONDARY MARKET AREAS (1)
2009 - 2014
2009 DOLLARS (MILLIONS)**

	Per Capita Retail Spending (2)	Calendar Year				
		09-10	10-11	11-12	12-13	13-14
Primary Market Area						
Annual Population Growth (3)		3,432	5,908	8,425	10,984	13,586
Estimated Additional Sales						
Apparel	\$468	\$1.6	\$2.8	\$3.9	\$5.1	\$6.4
General Merchandise	\$1,513	\$5.2	\$8.9	\$12.7	\$16.6	\$20.6
Food Stores	\$1,975	\$6.8	\$11.7	\$16.6	\$21.7	\$26.8
Eating and Drinking Places	\$1,235	\$4.2	\$7.3	\$10.4	\$13.6	\$16.8
Home Furnishings and Appliances	\$500	\$1.7	\$3.0	\$4.2	\$5.5	\$6.8
Building Materials	\$852	\$2.9	\$5.0	\$7.2	\$9.4	\$11.6
Other Retail Stores	\$1,728	\$5.9	\$10.2	\$14.6	\$19.0	\$23.5
Total		\$28.4	\$48.9	\$69.7	\$90.9	\$112.4
Primary and Secondary Market Area						
Annual Population Growth (3)		8,785	16,224	23,781	31,459	39,260
Estimated Additional Sales						
Apparel	\$478	\$4.2	\$7.8	\$11.4	\$15.0	\$18.8
General Merchandise	\$1,543	\$13.6	\$25.0	\$36.7	\$48.6	\$60.6
Food Stores	\$1,991	\$17.5	\$32.3	\$47.3	\$62.6	\$78.1
Eating and Drinking Places	\$1,258	\$11.1	\$20.4	\$29.9	\$39.6	\$49.4
Home Furnishings and Appliances	\$510	\$4.5	\$8.3	\$12.1	\$16.0	\$20.0
Building Materials	\$871	\$7.6	\$14.1	\$20.7	\$27.4	\$34.2
Other Retail Stores	\$1,763	\$15.5	\$28.6	\$41.9	\$55.4	\$69.2
Total		\$73.9	\$136.5	\$200.1	\$264.7	\$330.3
Projected Primary Market Area Capture of New Retail Sales Demand (4)						
Apparel		\$1.5	\$2.8	\$4.0	\$5.3	\$6.7
General Merchandise		\$5.4	\$9.9	\$14.6	\$19.3	\$24.1
Food Stores		\$5.8	\$10.8	\$15.8	\$20.9	\$26.1
Eating and Drinking Places		\$3.7	\$6.7	\$9.9	\$13.1	\$16.3
Home Furnishings and Appliances		\$1.7	\$3.1	\$4.5	\$6.0	\$7.5
Building Materials		\$2.0	\$3.6	\$5.3	\$7.1	\$8.8
Other Retail Stores		\$6.7	\$12.4	\$18.2	\$24.1	\$30.1
Total		\$26.8	\$49.4	\$72.4	\$95.8	\$119.6

Notes:

- (1) The cities of Suisun City and Fairfield comprise the primary market area and Solano County comprises the primary and secondary market areas.
- (2) Refer to Exhibit 8 for the primary market area and Exhibit 10 for the primary and secondary market areas.
- (3) Refer to Exhibit 5. Interim population numbers not indicated in Exhibit 5 are estimated using the calculated growth rates.
- (4) Primary market area's potential capture rate based upon the primary market area's estimated share of primary and secondary market area sales, by category. Refer to Exhibit 12, column F.

Source: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\UPDATED Development Program Summary.xls[Ex1]JB

08-Mar-06

**BASE PROJECT, EXHIBIT 16
NEW RESIDENTIAL DEVELOPMENT IN PLANNING AND UNDER CONSTRUCTION
PRIMARY MARKET AREA
AS OF JUNE 2005 (1)**

Location Development Status	Projects	Total Units	Estimated Persons/HH (2)	Estimated Population
<u>Primary Market Area</u>				
City of Suisun City (3)				
In Planning Process	7	1,407	3.26	4,587
Projects Under Construction	0	0	3.26	0
City of Fairfield				
In Planning Process	5	3,584	2.98	10,680
Projects Under Construction	26	1,681	2.98	5,009
Total				
In Planning Process	12	4,991		15,267
Project Under Construction	<u>26</u>	<u>1,681</u>		<u>5,009</u>
Totals	38	6,672		20,277

Notes:

(1) While Fairfield information was compiled by the City in April 2005, city staff validated its continued accuracy in June 2005.

(2) Population estimate based on average household size data, per the U.S. Census of Population 2000.

(3) Includes the 282 units planned to be located adjacent to the Suisun Marketplace.

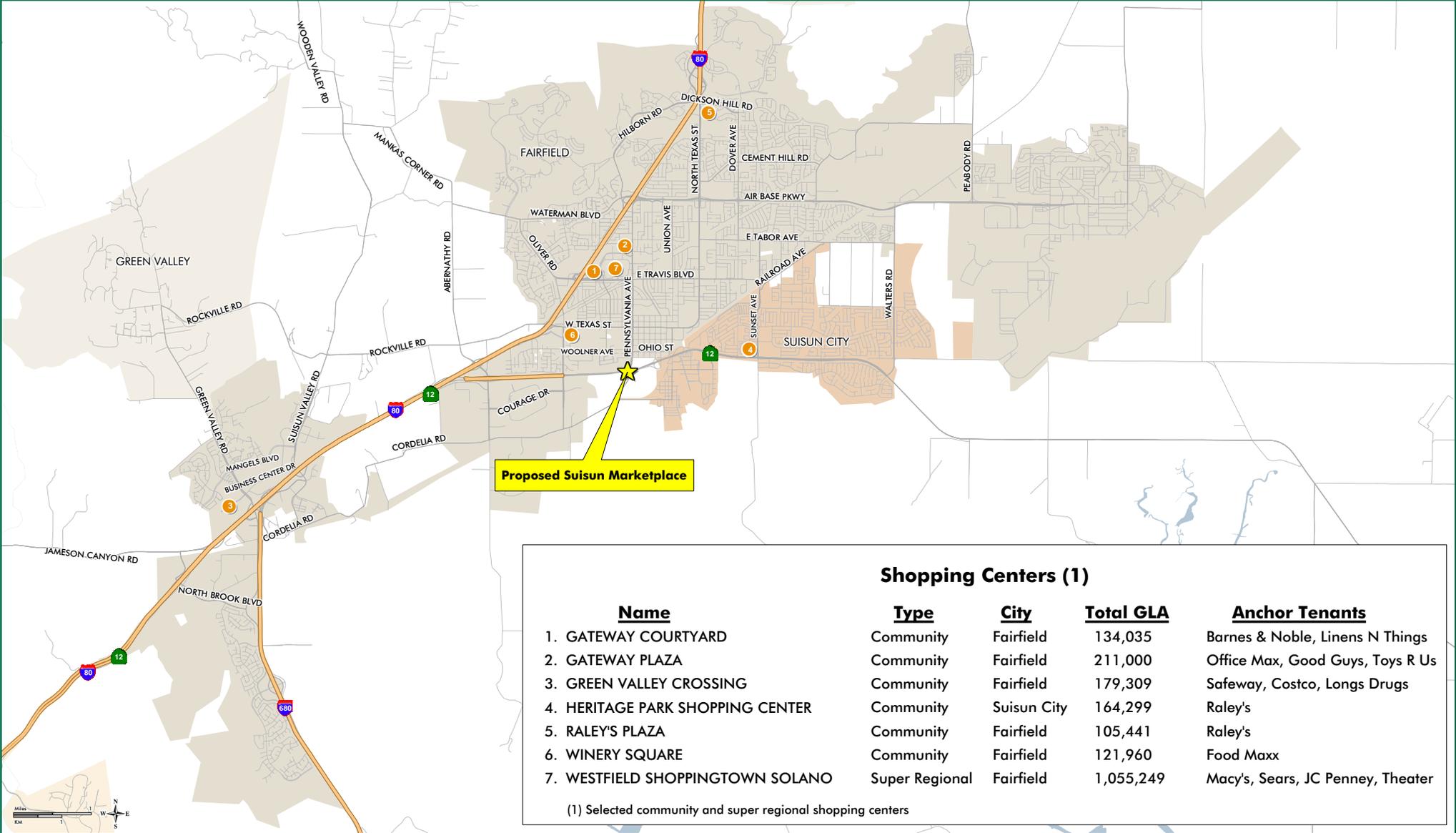
Sources: City of Fairfield, Planning Department; City of Suisun City Planning Department; U.S. Census 2000; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex1[KJA]

08-Mar-06

Exhibit 17: Selected Shopping Centers

Primary Market Area



Proposed Suisun Marketplace

Shopping Centers (1)				
Name	Type	City	Total GLA	Anchor Tenants
1. GATEWAY COURTYARD	Community	Fairfield	134,035	Barnes & Noble, Linens N Things
2. GATEWAY PLAZA	Community	Fairfield	211,000	Office Max, Good Guys, Toys R Us
3. GREEN VALLEY CROSSING	Community	Fairfield	179,309	Safeway, Costco, Longs Drugs
4. HERITAGE PARK SHOPPING CENTER	Community	Suisun City	164,299	Raley's
5. RALEY'S PLAZA	Community	Fairfield	105,441	Raley's
6. WINERY SQUARE	Community	Fairfield	121,960	Food Maxx
7. WESTFIELD SHOPTOWN SOLANO	Super Regional	Fairfield	1,055,249	Macy's, Sears, JC Penney, Theater

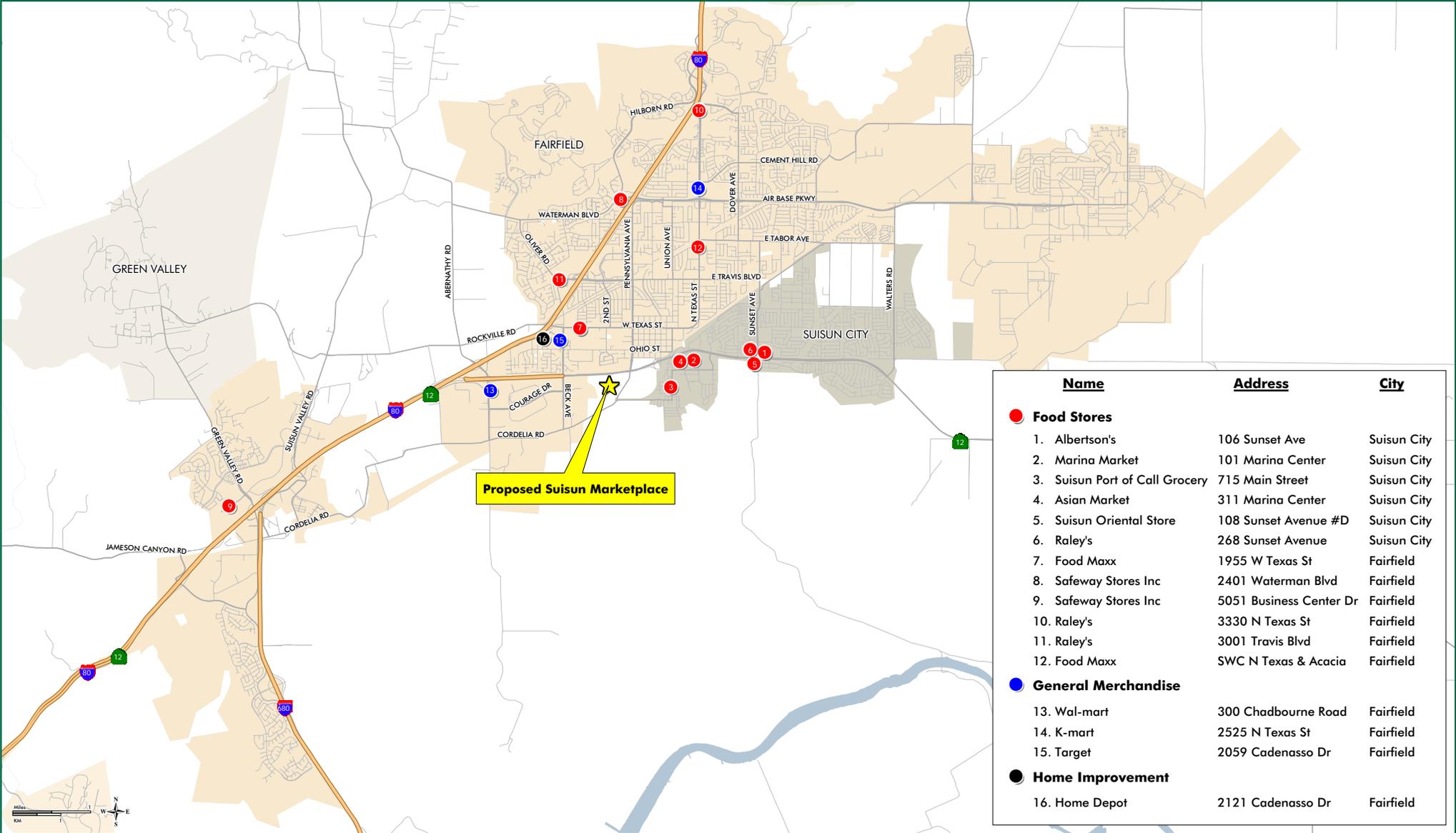
(1) Selected community and super regional shopping centers

This map contains information from sources we believe to be reliable, but we make no representation, warranty or guaranty of its accuracy. This map is published for the use of CBRE and its clients only. Redistribution in whole or part to any third party without the prior written consent of CBRE is strictly prohibited.

© 2005 CB Richard Ellis, All Rights Reserved. Sources: CBRE Mapping Services (877) 580-4674; Claritas, Inc./GDT, Inc. MapFiles\Work\2005\77535.wor 4/11/2005

Exhibit 18: Existing Food Stores, Selected General Merchandise and Home Improvement Retailers

Primary Market Area



Name	Address	City
● Food Stores		
1. Albertson's	106 Sunset Ave	Suisun City
2. Marina Market	101 Marina Center	Suisun City
3. Suisun Port of Call Grocery	715 Main Street	Suisun City
4. Asian Market	311 Marina Center	Suisun City
5. Suisun Oriental Store	108 Sunset Avenue #D	Suisun City
6. Raley's	268 Sunset Avenue	Suisun City
7. Food Maxx	1955 W Texas St	Fairfield
8. Safeway Stores Inc	2401 Waterman Blvd	Fairfield
9. Safeway Stores Inc	5051 Business Center Dr	Fairfield
10. Raley's	3330 N Texas St	Fairfield
11. Raley's	3001 Travis Blvd	Fairfield
12. Food Maxx	SWC N Texas & Acacia	Fairfield
● General Merchandise		
13. Wal-mart	300 Chadbourne Road	Fairfield
14. K-mart	2525 N Texas St	Fairfield
15. Target	2059 Cadenasso Dr	Fairfield
● Home Improvement		
16. Home Depot	2121 Cadenasso Dr	Fairfield

This map contains information from sources we believe to be reliable, but we make no representation, warranty or guaranty of its accuracy. This map is published for the use of CBRE and its clients only. Redistribution in whole or part to any third party without the prior written consent of CBRE is strictly prohibited. © 2005 CB Richard Ellis, All Rights Reserved. Sources: CBRE Mapping Services (877) 580-4674; Claritas, Inc./GDT, Inc. MapFiles\Work\2005\76848.wor 4/8/2005

**BASE PROJECT, EXHIBIT 19
SELECTED SURVEY OF OTHER POTENTIAL MAJOR RETAIL DEVELOPMENT ACTIVITY (1)
PRIMARY AND SECONDARY MARKET AREAS
MAY 2005**

Area Development	Location	Net New Sq. Ft.	Development Timeframe	Status/Information
Primary Market Area (Suisun City and Fairfield)				
Villages at Fairfield/ Laurel Creek Plaza	Fairfield	111,000	Break ground in Summer 2006	The developer, Lewis Operating Corp, has prepared an EIR for an 111,000-square-foot commercial component of a 2,400 residential unit master planned community. The retail will be neighborhood-serving and will include a supermarket, drug store, gas station, and miscellaneous inline shops.
Wal-Mart Supercenter	Fairfield	46,400	Break ground in Summer 2006	Wal-Mart is preparing an EIR for a proposed 202,000-square-foot Wal-Mart Supercenter, which includes a 15,000-square-foot garden center. The City of Fairfield Planning Department reports that approximately 30,000 square feet will be dedicated to grocery sales. Wal-Mart has stated publicly that it will close the existing 155,600-square-foot Fairfield Wal-Mart store. The square footage indicated is the net incremental square footage of the Wal-Mart Supercenter. Of the net incremental square footage, Sedway Group assumes 30,000 square feet, or 64.6 percent of the net incremental space, are dedicated to grocery sales with the balance comprising general merchandise and other sales.
Secondary Market Area (Solano County)				
Wal-Mart Expansion	Dixon	80,000	Late 2005	Expansion of existing Wal-Mart discount store into Supercenter. The project is currently under construction.
Davis Street Shopping Center	Vacaville	41,845	Late 2005/Early 2006	Phase 2 of a new shopping center. Phase 1 consisted of a 111,155-square-foot WinCo Foods store. No retail tenants have been identified for Phase 2.
Nut Tree Redevelopment Project	Vacaville	292,000	Break ground in 2006	Master Plan has been approved; includes 267,000 square feet of retail, 25,000 square feet of restaurants, and 34,000 square feet of office space. Retail portion is near receiving approval. Prospective tenants have not been identified. Planning Department predicts construction will occur in 2006.
Orchard Supply Hardware	Vacaville	43,000	2006	A new 43,000-square-foot stand-alone Orchard Supply Hardware store has been approved. The project is currently in the process of obtaining building permits.
Waterfront Redevelopment	Vallejo	500,000	(2) Phased over next 10-15 years	Long-term project in conceptual stages. While 562,000 square feet of commercial space has been approved, there are no specific tenants at this time. Current concept includes 10,000 - 14,000 square feet of restaurants and marine-related retail on the Northern Waterfront, 60,000 - 70,000 square feet of office space, a 200-room hotel, and 175,000 square feet of commercial space on the Southern Waterfront, which could be converted to light industrial depending on market factors. Developer is expected to deliver a revised EIR to the City in summer 2005.
Solano County Fairgrounds	Vallejo	750,000	Phased over next 3-5 years	Mills Corporation is preparing an EIR and the project calls for 1.2 million square feet of commercial space, with at least 750,000 square feet of retail. Focus will be high end, with recreational and entertainment uses included. Project is at least 3-5 years from completion. Approvals will come from Solano County.
Northgate	Vallejo	107,000	2007	Master-planned community on 107 acres with residential, office, and retail space, and a community college. A 52,000-square-foot Nugget grocery store is planned.

Note:
(1) Sedway Group excluded developments with 25,000 square feet or less.
(2) Total reflects the amount of commercial square feet approved. At the time of Sedway Groups research the amount dedicated to retail uses was unknown.

**BASE PROJECT, EXHIBIT 20
SALES ESTIMATES FOR MAJOR PLANNED RETAIL DEVELOPMENTS
PRIMARY MARKET AREA
2009 DOLLARS**

Location Development Tenant	Average Sales Per Sq. Foot 2003 Dollars [A]	Average Sales Per Sq. Foot 2009 Dollars (1) [B]	Estimated Square Feet [C]	Estimated Store Sales 2009 [D=BxC]
<u>PRIMARY MARKET AREA</u>				
Villages at Fairfield (2)				
Grocery Store	\$404 (3)	\$474	54,800	\$25,999,051
Drug Store	\$464 (4)	\$544	12,800	\$6,967,152
Unknown	\$300 (5)	\$352	43,400	\$15,289,967
Total			111,000	\$48,256,170
Wal-Mart Supercenter				
Wal-Mart Supercenter	\$362	\$425	46,400	\$19,725,232
Total Primary Market Area			157,400	\$67,981,402

Notes:

(1) Adjusted for inflation based on the consumer price index for all urban consumers in the San Francisco MSA, as defined by the U.S. Department of Labor, Bureau of Labor Statistics. Inflation for the year 2003-2004 period is 1.2 percent; assumed annual inflation rate of 3.0 percent for projected years.

(2) Specific tenants were not identified. Grocery and drug store sizes are estimated based on the average square footage of representative grocery and drug stores active in the market area. Grocery store chains active in Solano County, Safeway, Albertsons, and Raley's, were considered for the typical grocery store size. Walgreen's and Rite Aid were considered for the typical drug store size.

(3) The average of sales at Safeway and Albertsons, per Retail MAXIM.

(4) The average for sales at national drug store chains, including Rite Aid and Walgreen's.

(5) For unknown retailers, Sedway Group used the retail industry sales standard of \$300 per square foot.

Sources: Bureau of Labor Statistics; Retail MAXIM's Perspectives on Retail Real Estate and Finance, July 2004; Crittenden Retail Space Users Directory 2000; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex1 [MBH]

08-Mar-06

**BASE PROJECT, EXHIBIT 21
ALLOCATION OF RETAIL SALES: MAJOR PLANNED RETAIL DEVELOPMENTS
PRIMARY MARKET AREA (PMA)
2009 DOLLARS**

Location Project/Retailer	2009 Estimated Sales (2)	Retail Sales Category				
		Apparel	General Merchandise	Food Stores	Eating and Drinking Places	Other Retail Stores
Primary Market Area (PMA)						
Villages at Fairfield						
Grocery Store	\$25,999,051	\$0	\$0	\$25,999,051	\$0	\$0
Drug Store	\$6,967,152	\$0	\$6,967,152	\$0	\$0	\$0
Unknown (3)	\$15,289,967	\$5,351,489	\$0	\$0	\$3,822,492	\$6,115,987
Total	\$48,256,170	\$5,351,489	\$6,967,152	\$25,999,051	\$3,822,492	\$6,115,987
Fairfield Wal-Mart Supercenter (4)	\$19,725,232	\$0	\$6,971,849	\$12,753,383	\$0	\$0
Total Primary Market Area	\$67,981,402	\$5,351,489	\$13,939,001	\$38,752,434	\$3,822,492	\$6,115,987

Notes:

- (1) Sedway Group allocated the estimated major planned retail stores' sales to a category based on California Board of Equalization retail sales categories.
- (2) From Exhibit 20.
- (3) Allocation of the unknown sales estimated by Sedway Group based on the following assumptions: 35 percent to apparel, 25 percent to eating and drinking places, and 40 percent to other retail stores.
- (4) Of the net incremental square footage, Sedway Group assumes 30,000 square feet, or 64.6 percent of the total, is dedicated to grocery sales. The balance of sales comprise general merchandise sales.

Source: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program

08-Mar-06

BASE PROJECT, EXHIBIT 22
RETAIL SALES BASE ADJUSTMENT FOR CUMULATIVE SALES IMPACTS
PRIMARY MARKET AREA (PMA) AND COMBINED PRIMARY AND SECONDARY MARKET AREA (P&SMA)
2009 ESTIMATE (IN MILLIONS)

Type of Retailer	New Primary Market Area (PMA) Sales Base			New Primary and Secondary Market Areas (P&SMA) Sales			PMA as a Percent of P&SMA [G=C/F]
	PMA Retail Sales (1) [A]	Minimum New Sales to PMA (2) [B]	New PMA Retail Sales Base [C=A+B]	P&SMA Retail Sales (3) [D]	Minimum New Sales to PMA (2) [E]	New P&SMA Retail Sales Base [F=D+E]	
Apparel Stores	\$84.3	\$30.6	\$114.9	\$237.3	\$30.6	\$267.9	42.9%
General Merchandise	\$381.8	\$43.7	\$425.5	\$960.9	\$43.7	\$1,004.6	42.4%
Food Stores	\$327.6	\$17.5	\$345.1	\$979.8	\$17.5	\$997.3	34.6%
Eating and Drinking Places	\$163.6	\$10.8	\$174.3	\$495.4	\$10.8	\$506.1	34.4%
Home Furnishings and Appliances	\$76.3	\$38.9	\$115.2	\$204.3	\$38.9	\$243.2	47.4%
Building Materials	\$125.5	\$29.4	\$155.0	\$487.3	\$29.4	\$516.7	30.0%
Other Retail Stores	\$298.5	\$42.5	\$341.0	\$685.6	\$42.5	\$728.1	46.8%
Total	\$1,457.5	\$213.3	\$1,670.9	\$4,050.6	\$213.3	\$4,263.9	39.2%

Notes:

(1) Refer to primary market area sales in Exhibit 8.

(2) Minimum new sales resulting from the Suisun Marketplace and Gilbert Parcel project. Refer to Exhibit 12, Column J.

(3) Refer to primary and secondary market areas sales in Exhibit 10.

Source: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex1[JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 23
CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
ON PRIMARY MARKET AREA (PMA) RETAILERS
2009 DOLLARS (IN MILLIONS)**

	2009 Estimated New Sales (1)	Retail Sales Category				
		Apparel	General Merchandise	Food Stores	Eating and Drinking Places	Other Retail Stores
<u>Total New Sales (2)</u>						
Villages at Fairfield	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
Fairfield Wal-Mart Supercenter	<u>\$19.7</u>	<u>\$0.0</u>	<u>\$7.0</u>	<u>\$12.8</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$68.0	\$5.4	\$13.9	\$38.8	\$3.8	\$6.1
<u>Portion of New Sales from P&SMA at 90% (3)</u>						
Villages at Fairfield	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
Fairfield Wal-Mart Supercenter	<u>\$17.8</u>	<u>\$0.0</u>	<u>\$6.3</u>	<u>\$11.5</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$61.2	\$4.8	\$12.5	\$34.9	\$3.4	\$5.5
<u>Sales Generated in PMA</u>						
<i>PMA as a Percent of P&SMA (4)</i>		35.5%	42.4%	34.6%	33.0%	46.8%
Villages at Fairfield	\$16.2	\$1.7	\$2.7	\$8.1	\$1.1	\$2.6
Fairfield Wal-Mart Supercenter	\$6.6	\$0.0	\$2.7	\$4.0	\$0.0	\$0.0
Total PMA	\$22.8	\$1.7	\$5.3	\$12.1	\$1.1	\$2.6
<u>Unabsorbed Leakage</u>						
Unabsorbed PMA Leakage (5)	(\$9.6)	\$0.0	\$0.0	\$0.0	(\$9.6)	\$0.0
Unabsorbed Secondary Market Area Leakage (6)	(\$54.3)	\$0.0	\$0.0	\$0.0	\$0.0	(\$54.3)
<u>Max Sales Diverted from PMA Retailers (7)</u>						
Villages at Fairfield	(\$12.5)	(\$1.7)	(\$2.7)	(\$8.1)	\$0.0	\$0.0
Fairfield Wal-Mart Supercenter	<u>(\$6.6)</u>	<u>\$0.0</u>	<u>(\$2.7)</u>	<u>(\$4.0)</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	(\$19.1)	(\$1.7)	(\$5.3)	(\$12.1)	\$0.0	\$0.0

Notes:

(1) Reflects the sum of the retail categories.

(2) Refer to Exhibit 21.

(3) Primary and secondary market area estimated at 90 percent of total sales. Refer to Exhibit 11, footnote 2.

(4) Percentage calculated in Exhibit 22 to account for Suisun Marketplace sales in the retail base.

(5) The analysis assumes that any leakage in the primary market area will be absorbed before sales impacts occur. Accounts for primary market area leakage already absorbed by new sales at the Suisun Marketplace in Exhibit 12.

(6) In addition to the absorbed primary market area leakage, the cumulative retail projects will retain some spending that is currently leaked out of the secondary market area. Sedway Group, assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by the cumulative projects.

(7) The maximum sales diverted from primary market area retailers is equivalent to the sales generated in the primary market area, less any unabsorbed leakage.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex1[JB]

08-Mar-06

BASE PROJECT, EXHIBIT 24
CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS (1)
MAXIMUM DIVERTED SALES AS A PERCENT
PRIMARY MARKET AREA
ASSUMING SALES ADJUSTMENT FOR SUISUN MARKETPLACE AND GILBERT PARCEL
2009 ESTIMATE (IN MILLIONS)

Retail Category	Maximum Sales Diverted from PMA Retailers (2) [A]	New PMA Retail Sales Base (3) [B]	Additional Diverted Sales as a % of Estimated Sales [C=A/B]
Apparel Stores	(\$1.7)	\$114.9	1.5%
General Merchandise	(\$5.3)	\$425.5	1.2%
Food Stores	(\$12.1)	\$345.1	3.5%
Eating and Drinking Places	\$0.0	\$174.3	0.0%
Home Furnishings and Appliances	\$0.0	\$115.2	0.0%
Building Materials	\$0.0	\$155.0	0.0%
Other Retail Stores	\$0.0	\$341.0	0.0%
Total	(\$19.1)	\$1,670.9	

Notes:

(1) Includes the Villages at Fairfield and Fairfield Wal-Mart Supercenter.

(2) Refer to Exhibit 23.

(3) Refer to Exhibit 22, column C.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex1[JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 25
CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
ASSUMING NO FAIRFIELD WAL-MART SUPERCENTER
ON PRIMARY MARKET AREA (PMA) RETAILERS
2009 DOLLARS (IN MILLIONS)**

	2009 Estimated New Sales (1)	Retail Sales Category				
		Apparel	General Merchandise	Food Stores	Eating and Drinking Places	Other Retail Stores
<u>Total New Sales (2)</u>						
Villages at Fairfield	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
<u>Portion of New Sales from P&SMA at 90% (3)</u>						
Villages at Fairfield	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
<u>Sales Generated in PMA</u>						
<i>PMA as a Percent of P&SMA (4)</i>		35.5%	42.4%	34.6%	33.0%	46.8%
Villages at Fairfield	\$16.2	\$1.7	\$2.7	\$8.1	\$1.1	\$2.6
Fairfield Wal-Mart Supercenter	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total PMA	\$16.2	\$1.7	\$2.7	\$8.1	\$1.1	\$2.6
<u>Unabsorbed Leakage</u>						
Unabsorbed PMA Leakage (5)	(\$9.6)	\$0.0	\$0.0	\$0.0	(\$9.6)	\$0.0
Unabsorbed Secondary Market Area Leakage (6)		\$0.0	\$0.0	\$0.0	\$0.0	(\$54.3)
<u>Max Sales Diverted from PMA Retailers (7)</u>						
Villages at Fairfield	(\$12.5)	(\$1.7)	(\$2.7)	(\$8.1)	\$0.0	\$0.0
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	-
Total PMA	(\$12.5)	(\$1.7)	(\$2.7)	(\$8.1)	\$0.0	\$0.0

Notes:

- (1) Reflects the sum of the retail categories.
- (2) Refer to Exhibit 21.
- (3) Primary and secondary market area estimated at 90 percent of total sales. Refer to Exhibit 12, footnote 2.
- (4) Percentage calculated in Exhibit 22 to account for Suisun Marketplace and Gilbert Parcel sales in the retail base.
- (5) The analysis assumes that any leakage in the primary market area will be absorbed before sales impacts occur. Accounts for primary market area leakage already absorbed by new sales at the Suisun Marketplace and Gilbert Parcel in Exhibit 12.
- (6) In addition to the absorbed primary market area leakage, the cumulative retail projects will retain some spending that is currently leaked out of the secondary market area. Sedway Group, assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by the cumulative projects.
- (7) The maximum sales diverted from primary market area retailers is equivalent to the sales generated in the primary market area, less any unabsorbed leakage.

Sources: Sedway Group.

BASE PROJECT, EXHIBIT 26
CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
ASSUMING NO FAIRFIELD WAL-MART SUPERCENTER (1)
MAXIMUM DIVERTED SALES AS A PERCENT
PRIMARY MARKET AREA
ASSUMING SALES ADJUSTMENT FOR SUISUN MARKETPLACE AND GILBERT PARCEL
2009 ESTIMATE (IN MILLIONS)

Type of Retailer	Maximum Sales Diverted from PMA Retailers (2) [A]	New PMA Retail Sales Base (3) [B]	Additional Diverted Sales as a % of Estimated Sales [C=A/B]
Apparel Stores	(\$1.7)	\$114.9	1.5%
General Merchandise	(\$2.7)	\$425.5	0.6%
Food Stores	(\$8.1)	\$345.1	2.3%
Eating and Drinking Places	\$0.0	\$174.3	0.0%
Home Furnishings and Appliances	\$0.0	\$115.2	0.0%
Building Materials	\$0.0	\$155.0	0.0%
Other Retail Stores	\$0.0	\$341.0	0.0%
Total	<u>(\$12.5)</u>	<u>\$1,670.9</u>	

Notes:

- (1) Includes only the Villages at Fairfield.
- (2) Refer to Exhibit 25.
- (3) Refer to Exhibit 22, Column C.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\UPDATED
Development Program Summary.xls]Ex1 [JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 27
MAXIMUM DIVERTED SALES IMPACTS
SUISUN MARKETPLACE AND GILBERT PARCEL
CUMULATIVE PRIMARY MARKET AREA PROJECTS
2009 ESTIMATE (IN MILLIONS)**

Project Retail Category	Maximum Sales Diversion (1) [A]	Number of Years to Mitigate (2) [B]	Sales Average (2009 Dollars) (3) [C]	Impacted Square Feet (Rounded) [D=A/C]
Suisun Marketplace Only				
Apparel Stores	\$14,373,749	10 + Years	\$352	40,800
General Merchandise	\$24,322,220	5 + Years	\$352	69,100
Food Stores	\$7,519,112	1 to 2 Years	\$352	21,400
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$4,065,999	2 to 3 Years	\$352	11,600
Building Materials	\$8,028,917	4 to 5 Years	\$352	22,800
Other Retail Stores	\$0	N/A	\$352	0
Total	\$58,309,996			165,700
Suisun Marketplace and All Primary Market Area Cumulative Projects				
Apparel Stores	\$16,084,701	10 + Years	\$352	45,700
General Merchandise	\$29,635,591	5 + Years	\$352	84,200
Food Stores	\$19,586,261	3 to 4 Years	\$352	55,600
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$4,065,999	2 to 3 Years	\$352	11,600
Building Materials	\$8,028,917	4 to 5 Years	\$352	22,800
Other Retail Stores	\$0	N/A	\$352	0
Total	\$77,401,469			219,900
Suisun Marketplace and Cumulative Projects Less Fairfield Wal-Mart Supercenter				
Apparel Stores	\$16,084,701	10 + Years	\$352	45,700
General Merchandise	\$26,978,010	5 + Years	\$352	76,700
Food Stores	\$15,614,976	3 to 4 Years	\$352	44,400
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$4,065,999	2 to 3 Years	\$352	11,600
Building Materials	\$8,028,917	4 to 5 Years	\$352	22,800
Other Retail Stores	\$0	N/A	\$352	0
Total	\$70,772,603			201,200

Notes:

(1) Refer to Exhibits 12, 23, and 25.

(2) Estimated based on the cumulative retail demand in Exhibit 15.

(3) The current performance of existing retailers is unknown. In order to estimate the supportable square feet Sedway Group assumed the generally accepted retail standard of \$300 per square foot (2005 dollars) and inflated to 2009 dollars at 3.0 percent annually.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program

Summary.xls]Ex1[JB]

08-Mar-06

**BASE PROJECT, EXHIBIT 28
FISCAL BENEFIT ANALYSIS
TAXABLE SALES AND SALES TAX REVENUE ASSUMPTIONS
PROPOSED SUISUN MARKETPLACE AND GILBERT PARCEL
2009 DOLLARS**

PROPOSED SUISUN MARKETPLACE

For the purposes of calculating sales tax revenue, Sedway Group relied on the estimated retail sales and assumptions in Exhibit 3.

Estimated Sales	Total Sales (1)	Percent Taxable (2)	Total Taxable Sales
Apparel Stores	\$44,957,972	100.0%	\$44,957,972
General Merchandise	\$68,016,118	100.0%	\$68,016,118
Food Stores	\$24,989,076	30.0%	\$7,496,723
Eating and Drinking Places	\$10,753,986	100.0%	\$10,753,986
Home Furnishings and Appliances	\$42,958,657	100.0%	\$42,958,657
Building Materials	\$37,450,118	100.0%	\$37,450,118
Other Retail Stores	\$42,496,658	100.0%	\$42,496,658
Total	\$271,622,586		\$254,130,233
Tax Estimate			
Total			\$254,130,233
Sales Tax Accruing to Suisun City General Fund (3)			1.0%
Annual Sales Taxes Accruing to Suisun City General Fund			<u>\$2,541,302</u>

LESS DIVERTED SALES IMPACTS

For the purpose of calculating proposed sales tax revenue impacts, Sedway Group relied on the maximum sales impacts analysis in Exhibit 11.

Estimated Diverted Sales	Total Sales (4)	Percent Taxable (2)	Total Taxable Sales
Apparel Stores	\$14,373,749	100.0%	\$14,373,749
General Merchandise	\$24,322,220	100.0%	\$24,322,220
Food Stores	\$7,519,112	30.0%	\$2,255,734
Eating and Drinking Places	\$0	100.0%	\$0
Home Furnishings and Appliances	\$4,065,999	100.0%	\$4,065,999
Building Materials	\$8,028,917	100.0%	\$8,028,917
Other Retail Stores	\$0	100.0%	\$0
Total	\$58,309,996		\$53,046,618
Distribution of Diverted Sales (5)			
Total Diverted Sales			\$53,046,618
Suisun City as a Percent of Primary Market Area (6)			5.3%
Estimated Diverted Suisun City Sales			<u>\$2,837,097</u>
Diverted Sales Tax Estimate			
Estimated Diverted Suisun City Sales			\$2,837,097
Sales Tax Accruing to Suisun City General Fund (3)			1.0%
Annual Diverted Sales Taxes (diverted from the Suisun City General Fund)			<u>\$28,371</u>

TOTAL NEW SALES TAX REVENUE (7) \$2,512,931

Notes:

- (1) Refer to Exhibit 3.
- (2) Sedway Group assumes 30 percent of all grocery sales are taxable, based on data provided by the State of California Board of Equalization.
- (3) Sales tax rate accruing to the City of Suisun City General Fund.
- (4) Refer to Exhibit 12, column I.
- (5) Because the analysis estimates diverted sales for the entire primary market area, which includes Suisun City and the City of Fairfield, it is necessary to estimate the portion of such sales that would be diverted from the Suisun City General Fund.
- (6) Refer to Exhibit 6. Represents Suisun City's share of total taxable sales in the primary market area.
- (7) The proposed Suisun Marketplace sales tax revenue less the diverted Suisun City sales tax revenue.

Sources: City of Suisun City; and Sedway Group.
P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\UPDATED
Development Program Summary.xls]Ex32[JB]

15-Mar-06

**BASE PROJECT, EXHIBIT 29
FISCAL BENEFIT ANALYSIS
PROPERTY VALUE AND PROPERTY TAX REVENUE ASSUMPTIONS (1)
PROPOSED SUISUN MARKETPLACE AND GILBERT PARCEL
ALL FIGURES IN 2009 DOLLARS**

Suisun Marketplace Development	2005 Value (2)	2009 Value (3)
Total Development Costs	\$143,584,394	\$161,605,500
Property Tax Estimate		
Total Assessed Value (1)		\$161,605,500
Property Tax Rate (4)		1.0%
Total Annual Property Taxes		<u>\$1,616,055</u>
Property Tax Rate to Suisun City General Fund (5)		<u>14.47%</u>
New Property Tax Revenue Accruing to Suisun City General Fund		\$233,843

Notes:

(1) For purposes of calculating real property taxes, it is assumed that the assessed value of the Suisun Marketplace will be based on the total development costs of the project.

(2) Total development costs were provided by Highland Development Company and checked for reasonableness by Sedway Group. Detailed cost estimates were provided. The construction cost detail is suppressed for confidentiality. Total development costs include the construction costs incurred either by Highland Development Company or by individual retail tenants. The estimates include land acquisition costs, hard and soft costs, on and off-site costs, and all tenant improvement costs.

(3) Assumes an inflation adjustment of 3.0 percent annually.

(4) Per Proposition 13.

(5) Property tax rate accruing to the Suisun City General Fund is an estimate based on information provided by the Solano County Auditor's office. Currently, the property is located in unincorporated Solano County and current property tax allocation factors do not apply to Suisun City. However, after annexation the property will have a new tax rate area and property tax allocation factors. The new tax rate area and allocation factors were not determined as of the date of this analysis. As a reasonable proxy, Sedway Group utilized the tax allocation percentage for Suisun City as defined in the Property Tax Exchange Rate for properties in Solano County undergoing the annexation process as recommended by the Solano County Assessor's Office.

Sources: Highland Development Company; Solano County Assessor's Office; Solano County Auditor's Office; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex29[JB]

15-Mar-06

**BASE PROJECT, EXHIBIT 30
FISCAL BENEFIT ANALYSIS
PROPERTY VALUE AND PROPERTY TAX REVENUE ASSUMPTIONS (1)
PROPOSED RESIDENTIAL DEVELOPMENT
ALL FIGURES IN 2009 DOLLARS**

Residential Development	2005 Value (2)	2009 Value (3)
Value Assumptions		
Estimated Selling Price per Unit	\$360,000	\$405,183
Total Units (4)		359
Total Assessed Value (5)		<u>\$145,460,759</u>
Property Tax Estimate		
Total Assessed Value		\$145,460,759
Property Tax Rate (6)		1.0%
Total Annual Property Taxes		<u>\$1,454,608</u>
Property Tax Rate to Suisun City General Fund (7)		14.47%
Total Annual Property Taxes to Suisun City General Fund		<u>\$210,482</u>
NET PROPERTY TAX REVENUE ACCRUING TO SUISUN CITY GENERAL FUND		\$210,482

Notes:

- (1) For purposes of calculating real property taxes, it is assumed that the assessed value of the residential component will be based on the total selling price of the residential units. Selling price data provided by Silverwing Development. The analysis conservatively assumes all units are sold in 2009. If some units were sold prior to 2009, the assessed value of those units sold would increase 2.0 percent per year as allowed by
- (2) Estimated selling price data provided by Silverwing Development in 2005 year dollars.
- (3) Assumes an inflation adjustment of 3.0 percent annually.
- (4) Data provided by Tom Gentry California Company.
- (5) For assessed valuation, analysis assumes all units sold in 2009 year dollars.
- (6) Per Proposition 13.
- (7) Property tax rate accruing to the Suisun City General Fund is an estimate based on information provided by the Solano County Auditor's office. Currently, the property is located in unincorporated Solano County and current property tax allocation factors do not apply to Suisun City. However, after annexation the property will have a new tax rate area and property tax allocation factors. The new tax rate area and allocation factors were not determined as of the date of this analysis. As a reasonable proxy, Sedway Group utilized the tax allocation percentage for Suisun City as defined in the Property Tax Exchange Rate for properties in Solano County undergoing the annexation process as recommended by the Solano County Assessor's Office.

Sources: Silverwing Development; Solano County Assessor's Office; Solano County Auditor's Office; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[UPDATED Development Program Summary.xls]Ex29[JB]

15-Mar-06

BASE PROJECT, EXHIBIT 31
FISCAL BENEFIT ANALYSIS (1)
SUMMARY OF NET NEW TAX REVENUES
CITY OF SUISUN CITY
2009 DOLLARS (2)

Source	2009
New Tax Revenues	
Net New Sales Tax Revenues (3)	\$2,512,931
Net New Property Tax Revenues	
Commercial Development (4)	\$233,843
Residential Development (5)	\$210,482
Subtotal	\$444,325
Net New Tax Revenue Total	\$2,957,256

Notes:

- (1) The economic impact analysis estimated the impact of the proposed Suisun Marketplace on the primary market area, defined as the cities of Suisun City and Fairfield. The fiscal benefit analysis estimated the fiscal benefit to the City of Suisun City only, as Suisun City will be the jurisdiction receiving property tax and sales tax revenue as a result of the proposed development.
- (2) For the purpose of internal consistency with the economic impact analysis the fiscal benefit analysis assumes build out of the commercial and residential projects in 2009.
- (3) Refer to Exhibit 28.
- (4) Refer to Exhibit 29.
- (5) Refer to Exhibit 30.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives

Update\UPDATED Development Program Summary.xls[Ex29[JB]

15-Mar-06

**BASE PROJECT, EXHIBIT 32
VACANT LAND SITES AVAILABLE FOR ANNEXATION
SUISUN CITY
JUNE 2005**

Site	Total Acres	Zoning (1)
<u>Vacant Sites within Suisun City</u>		
Hoffman Commercial	31	Commercial Service
North side of Petersen Rd. (5 parcels)	26	Commercial Service
West side of Walters at Hwy 12	20	General Commercial
North side of Railroad, west of Sunset (4 parcels)	16	Commercial Service
East side of Sunset at Railroad (3 parcels)	15	General Commercial / Commercial Service
Lawler Commercial (multiple parcels)	12	General Commercial
Lotz Way Parcels	10	General Commercial
Crystal School	7	Public/Open Space
West side of Olive, N&S of New Railroad	7	Medium Density Residential
South side of SR 12 at Marina Blvd.	6	Mixed Use
Marina at Driftwood	3	Low Density Residential
East side of Walters at Hwy 12	3	General Commercial
West side of Worley at Railroad	3	Low Density Residential
West side of Humphrey at Railroad	3	Commercial Servng
South side, Cordelia Rd. at SPRR	2	Medium Density Residential
Denverton Curve	2	General Commercial
Civic Center Blvd Parcels	2	General Commercial
North of AM/PM	1	Commercial Service
Main Street Parcels	1	Main Street Commercial
Waterfront Parcels	0	Waterfront Commercial

Site	Total Acres	Comments (2)
<u>Potential Annexations</u>		
South of Railroad Avenue on both sides of Blossom Avenue.	26	An "island" site envisioned to include 76 new single-family dwelling units.
North of Peterson Rd, between Lambrecht Sports Complex and the City's eastern boundary.	20	City staff anticipates 180 single-family dwelling units and some neighborhood commercial uses.
North of SR 12 along the City's outer boundary.	463	Because of the influences of Travis AFB, this piece of land may not be considered for annexation.

(1) Gleaned from the City of Suisun City Draft Municipal Services Review and Comprehensive Annexation Plan (MSRCAP), dated March 2005.

(2) As detailed in the City of Suisun City Draft MSRCAP, March 2005.

Sources: City of Suisun City Planning Dept.; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\UPDATED Development Program Summary.xls]Ex29[JB]

15-Mar-06

APPENDIX B: EXHIBITS – ALTERNATIVE 1

**ALTERNATIVE 1, EXHIBIT 1
DEVELOPMENT PROGRAM SUMMARY
SUISUN MARKETPLACE AND GILBERT PARCEL**

Retail Type of Retail (1)	Square Feet (2)		
	Building	Garden Center	Total
<u>Anchor Tenants</u>			
Supercenter	206,558	14,840	221,398
Home Improvement	138,134	31,659	169,793
<u>Additional Tenants</u>			
Apparel	20,000	0	20,000
Home Furnishings	14,000	0	14,000
Restaurant	20,000	0	20,000
Fast Food	10,000	0	10,000
Unknown Retail	21,809	0	21,809
Gas Station	3,000	0	3,000
Suisun Marketplace Subtotal	433,501	46,499	480,000
<u>Gilbert Parcel (3)</u>			
Unknown Retail	10,000	0	10,000
TOTAL	443,501	46,499	490,000

Notes:

(1) Specific retail tenants have not been identified by the developer. The type of retail targeted for specific spaces have been identified where available.

(2) Development plan and square footages provided by Tom Gentry California Company. Figures are rounded.

(3) Tenants for the small retail square footage identified for the Gilbert Parcel are unknown and are therefore assumed to fall in the "Other Retail Stores" Board of Equalization Category.

Sources: Tom Gentry California Company; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives

Update\[ALT 1 Development Program Summary.xls]Ex1 [JB]

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 2
ESTIMATED ANNUAL SALES
SUISUN MARKETPLACE AND GILBERT PARCEL
2003 AND 2009 YEAR DOLLARS**

Retail Type of Retail	Total Square Feet (1)	Average Sales per Square Foot		2009 Estimated Sales
		2003 (2)	2009 (3)	
<u>Anchor Tenants</u>				
Supercenter	221,398	\$362 (4)	\$425	\$94,026,203
Home Improvement	169,793	\$327 (5)	\$384	\$65,137,963
<u>Additional Tenants</u>				
Apparel	20,000	\$371 (6)	\$435	\$8,705,035
Home Furnishings	14,000	\$230 (7)	\$270	\$3,777,657
Restaurant	20,000	\$285 (8)	\$334	\$6,687,157
Fast Food	10,000	\$365 (9)	\$428	\$4,282,127
Unknown Retail	21,809	\$300	\$352	\$7,675,800
<u>Gilbert Parcel</u>				
Unknown Retail	10,000	\$300	\$352	\$3,519,556
Total	487,000		\$398	\$193,811,497

Notes:

- (1) Annual sales estimates do not include the 3,000-square-foot gas station.
- (2) Sedway Group relied on Retail MAXIM's July 2004 report of 2003 retail sales per square foot estimates, which also includes averages for different categories of retailers. For all unidentified retail, Sedway Group assumed the generally accepted industry standard average sales of \$300 per square foot in 2003 dollars.
- (3) Adjusted for inflation based on the consumer price index for all urban consumers in the San Francisco/Oakland/San Jose MSA as defined by the U.S. Department of Labor Bureau of Labor Statistics. Inflation for the 2003-04 period is 1.2 percent; assumed annual inflation of 3.0 percent for projected years.
- (4) Average sales per square foot of Wal-Mart, per Retail MAXIM.
- (5) Average sales per square foot of Home Depot and Lowes, per Retail MAXIM.
- (6) Average sales per square foot of specialty apparel per Retail MAXIM.
- (7) Average sales per square foot of Bed Bath and Beyond, Cost-Plus, Home Goods, Kirklands, Linens 'N Things, Pier One, and Sears Great Outdoors, per Retail MAXIM.
- (8) Average sales per square foot of the casual dining and family dining categories per Retail MAXIM.
- (9) Average sales per square foot of fast food chains per Retail MAXIM.

Sources: Highland Development Company; Retail MAXIM's Perspectives on Retail Real Estate and Finance, July 2004; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 1 Development Program Summary.xls]Ex1 [JB]

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 3
ESTIMATED SALES BY RETAIL CATEGORY
SUISUN MARKETPLACE AND GILBERT PARCEL
2009 DOLLARS**

Type of Retail	Suisun Marketplace and Gilbert Parcel (1)		California Board of Equalization Retail Category (2)						
	Total Square Feet	2009 Estimated Sales	Apparel	General Merchandise (3)	Food Stores	Eating and Drinking Places	Home Furnishings and Appliances	Building Materials	Other Retail Stores (4)
Supercenter (5) As % of estimated store sales	221,398	\$94,026,203	\$0 0.0%	\$63,937,818 68.0%	\$23,506,551 25.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$6,581,834 7.0%
Home Improvement (6) As % of estimated store sales	169,793	\$65,137,963	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$19,541,389 30.0%	\$39,082,778 60.0%	\$6,513,796 10.0%
Apparel As % of estimated store sales	20,000	\$8,705,035	\$8,705,035 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Home Furnishings As % of estimated store sales	14,000	\$3,777,657	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$3,777,657 100.0%	\$0 0.0%	\$0 0.0%
Restaurant As % of estimated store sales	20,000	\$6,687,157	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$6,687,157 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Fast Food As % of estimated store sales	10,000	\$4,282,127	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$4,282,127 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Unknown Retail (7) As % of estimated store sales	21,809	\$7,675,800	\$2,916,804 38.0%	\$767,580 10.0%	\$153,516 2.0%	\$383,790 5.0%	\$0 0.0%	\$0 0.0%	\$3,454,110 45.0%
Gilbert Parcel Unknown Retail (8) As % of estimated store sales	10,000	\$3,519,556	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$3,519,556 100.0%
Total	487,000	\$193,811,497	\$11,621,839	\$64,705,398	\$23,660,067	\$11,353,073	\$23,319,046	\$39,082,778	\$20,069,297

Notes:

(1) Estimated square feet and annual sales are from Exhibit 2. Does not include the gas station.

(2) Selected retail categories as defined by the California Board of Equalization that pertain to the type of retail targeted for the Suisun Marketplace and Gilbert Parcel.

(3) The general merchandise category includes limited price variety, department, dry goods, general merchandise, country, and drug stores.

(4) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

(5) The Supercenter sales were divided into appropriate retail categories to determine the potential impact on those categories. The analysis assumes an approximately 55,000-square-foot grocery component, and 14,840-square-foot garden center. The grocery square footage is an estimate developed by Sedway Group based on previous work and includes both sales floor area and stockroom space.

(6) The home improvement sales were divided into appropriate retail categories to determine the potential impact on those categories. Based on breakdown of sales at Lowe's and Home Depot stores provided for in the relevant Form 10-Ks on file with the United States Securities and Exchange Commission.

(7) Highland Development Company has identified targeted retail categories for some spaces but not others. In the case of unknown retail, Highland Development Company provided generic retail categories. Based on this information, Sedway Group allocated the unknown retail sales to specific retail categories.

(8) A small amount of retail is envisioned for the "Gilbert Parcel" across the street from Suisun Marketplace. Its potential tenants are unknown.

Sources: Highland Development Company; Retail Maxim's Perspectives on Retail Real Estate and Finance, July 2004; Lowes, 2004 Form 10-K; Home Depot, 2004 Form 10-K; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 1 Development Program Summary.xls\Ex1\JB

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 12
MAXIMUM SUISUN MARKETPLACE AND GILBERT PARCEL SALES IMPACTS
ON PRIMARY MARKET AREA (PMA) RETAIL SALES
2009 ESTIMATE (IN MILLIONS)**

Type of Retailer	Suisun Marketplace New Sales (1) [A]	Source of Sales (2)		Retail Sales			Leakage Available for Capture			
		Primary and Secondary Market Areas [B]	Tertiary Market Area [C]	Primary Market Area (3) [D]	Primary and Secondary Market Areas (4) [E]	PMA Percent of P&SMA [F = D/E]	Primary Market Area	Secondary Market Area	Maximum Sales Diverted from PMA Retailers (7) [I = Bx F + G + H]	Minimum Net New Sales to PMA (8) [J = A + I]
							Leakage (5) [G]	Leakage (6) [H]		
Apparel Stores	\$11.6	\$10.5	\$1.2	\$84.3	\$237.3	35.5%	\$0.0	\$0.0	(\$3.7)	\$7.9
General Merchandise	\$64.7	\$58.2	\$6.5	\$381.8	\$960.9	39.7%	\$0.0	\$0.0	(\$23.1)	\$41.6
Food Stores	\$23.7	\$21.3	\$2.4	\$327.6	\$979.8	33.4%	\$0.0	\$0.0	(\$7.1)	\$16.5
Eating and Drinking Places	\$11.4	\$10.2	\$1.1	\$163.6	\$495.4	33.0%	(\$19.3)	\$0.0	\$0.0	\$11.4
Home Furnishings and Appliances	\$23.3	\$21.0	\$2.3	\$76.3	\$204.3	37.3%	\$0.0	(\$10.4)	\$0.0	\$23.3
Building Materials	\$39.1	\$35.2	\$3.9	\$125.5	\$487.3	25.8%	(\$0.7)	\$0.0	(\$8.4)	\$30.7
Other Retail Stores	\$20.1	\$18.1	\$2.0	\$298.5	\$685.6	43.5%	\$0.0	(\$54.3)	\$0.0	\$20.1
Total	\$193.8	\$174.4	\$19.4	\$1,457.5	\$4,050.6	36.0%	(\$20.0)	(\$64.7)	(\$42.4)	\$151.4

Notes:

- (1) These figures are from Exhibit 3.
- (2) Sedway Group estimates that 90 percent of sales will be generated from primary and secondary market area residents, with the 10 percent balance of sales generated by tertiary market area residents. This tertiary market area is not defined, but extends beyond the boundaries of Solano County.
- (3) Refer to Exhibit 8, primary market area sales. Does not include all retail categories, only those categories impacted by sales at Suisun Marketplace and the Gilbert Parcel.
- (4) Refer to Exhibit 10, primary and secondary market area sales. Does not include all retail categories, only those categories impacted by sales at Suisun Marketplace and the Gilbert Parcel.
- (5) Refer to Exhibit 8. Assumes any existing primary market area leakage is absorbed by Suisun Marketplace and Gilbert Parcel sales.
assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by Suisun Marketplace and the Gilbert Parcel. Assumption developed by Sedway Group based on market observations and professional judgment.
- (7) The figures in this column comprise the maximum amount of net new primary market area Suisun Marketplace and the Gilbert Parcel sales diverted from existing primary market area retailers, assuming sales in excess of any leakage will be diverted away from existing primary market area retailers in proportion to the primary market area retailers' estimated contribution to combined primary and secondary market areas sales. This implies that any negative impacts of the Suisun Marketplace and Gilbert Parcels' sales will be spread proportionally among all the like retailers by retail category in the primary market area.
- (8) This column comprises all new Suisun Marketplace and Gilbert Parcel sales less the maximum sales diverted from primary market area retailers. Figures may not total due to rounding.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 1 Development Program Summary.xls\Ex1\JB

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 13
 MAXIMUM DIVERTED SALES AS A PERCENT
 OF ESTIMATED PRIMARY MARKET AREA (PMA) SALES
 2009 ESTIMATE (IN MILLIONS)**

Type of Retailer	Maximum Sales Diverted From PMA Retailers (1)	Estimated PMA Retail Sales (2)	Diverted Sales as a Percent of Estimated Sales
Apparel Stores	(\$3.7)	\$84.3	4.4%
General Merchandise	(\$23.1)	\$381.8	6.1%
Food Stores	(\$7.1)	\$327.6	2.2%
Eating and Drinking Places	\$0.0	\$163.6	0.0%
Home Furnishings and Appliances	\$0.0	\$76.3	0.0%
Building Materials	(\$8.4)	\$125.5	6.7%
Other Retail Stores	<u>\$0.0</u>	<u>\$298.5</u>	<u>0.0%</u>
Total	(\$42.4)	\$1,457.5	2.9%

Notes:

(1) Refer to Exhibit 12, column I.

(2) Refer to Exhibit 8, primary market area sales.

Source: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 1
 Development Program Summary.xls]Ex1[JB]

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 23
CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
ON PRIMARY MARKET AREA (PMA) RETAILERS
2009 DOLLARS (IN MILLIONS)**

	2009 Estimated New Sales (1)	Retail Sales Category				
		Apparel	General Merchandise	Food Stores	Eating and Drinking Places	Other Retail Stores
<u>Total New Sales (2)</u>						
Villages at Fairfield	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
Fairfield Wal-Mart Supercenter	<u>\$19.7</u>	<u>\$0.0</u>	<u>\$7.0</u>	<u>\$12.8</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$68.0	\$5.4	\$13.9	\$38.8	\$3.8	\$6.1
<u>Portion of New Sales from P&SMA at 90% (3)</u>						
Villages at Fairfield	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
Fairfield Wal-Mart Supercenter	<u>\$17.8</u>	<u>\$0.0</u>	<u>\$6.3</u>	<u>\$11.5</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$61.2	\$4.8	\$12.5	\$34.9	\$3.4	\$5.5
<u>Sales Generated in PMA</u>						
<i>PMA as a Percent of P&SMA (4)</i>		35.5%	42.2%	34.5%	33.0%	45.1%
Villages at Fairfield	\$16.1	\$1.7	\$2.6	\$8.1	\$1.1	\$2.5
Fairfield Wal-Mart Supercenter	\$6.6	\$0.0	\$2.6	\$4.0	\$0.0	\$0.0
Total PMA	\$22.7	\$1.7	\$5.3	\$12.0	\$1.1	\$2.5
<u>Unabsorbed Leakage</u>						
Unabsorbed PMA Leakage (5)	(\$9.1)	\$0.0	\$0.0	\$0.0	(\$9.1)	\$0.0
Unabsorbed Secondary Market Area Leakage (6)	(\$54.3)	\$0.0	\$0.0	\$0.0	\$0.0	(\$54.3)
<u>Max Sales Diverted from PMA Retailers (7)</u>						
Villages at Fairfield	(\$12.4)	(\$1.7)	(\$2.6)	(\$8.1)	\$0.0	\$0.0
Fairfield Wal-Mart Supercenter	<u>(\$6.6)</u>	<u>\$0.0</u>	<u>(\$2.6)</u>	<u>(\$4.0)</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	(\$19.1)	(\$1.7)	(\$5.3)	(\$12.0)	\$0.0	\$0.0

Notes:

(1) Reflects the sum of the retail categories.

(2) Refer to Exhibit 21.

(3) Primary and secondary market area estimated at 90 percent of total sales. Refer to Exhibit 11, footnote 2.

(4) Percentage calculated in Exhibit 22 to account for Suisun Marketplace and Gilbert Parcel sales in the retail base.

(5) The analysis assumes that any leakage in the primary market area will be absorbed before sales impacts occur. Accounts for primary market area leakage already absorbed by new sales at the Suisun Marketplace and Gilbert Parcel in Exhibit 12.

(6) In addition to the absorbed primary market area leakage, the cumulative retail projects will retain some spending that is currently leaked out of the secondary market area. Sedway Group, assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by the cumulative projects.

(7) The maximum sales diverted from primary market area retailers is equivalent to the sales generated in the primary market area, less any unabsorbed leakage.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 1 Development Program Summary.xls\Ex1\JB

20-Mar-06

ALTERNATIVE 1, EXHIBIT 24
 CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS (1)
 MAXIMUM DIVERTED SALES AS A PERCENT
 PRIMARY MARKET AREA
 ASSUMING SALES ADJUSTMENT FOR SUISUN MARKETPLACE AND GILBERT PARCEL
 2009 ESTIMATE (IN MILLIONS)

Retail Category	Maximum Sales Diverted from PMA Retailers (2) [A]	New PMA Retail Sales Base (3) [B]	Additional Diverted Sales as a % of Estimated Sales [C=A/B]
Apparel Stores	(\$1.7)	\$92.2	1.9%
General Merchandise	(\$5.3)	\$423.3	1.3%
Food Stores	(\$12.0)	\$344.1	3.5%
Eating and Drinking Places	\$0.0	\$174.9	0.0%
Home Furnishings and Appliances	\$0.0	\$99.6	0.0%
Building Materials	\$0.0	\$156.2	0.0%
Other Retail Stores	\$0.0	\$318.5	0.0%
Total	(\$19.1)	\$1,609.0	

Notes:

(1) Includes the Villages at Fairfield and Fairfield Wal-Mart Supercenter.

(2) Refer to Exhibit 23.

(3) Refer to Exhibit 22, column C.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 1 Development
 Program Summary.xls]Ex1 [JB]

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 25
CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
ASSUMING NO FAIRFIELD WAL-MART SUPERCENTER
ON PRIMARY MARKET AREA (PMA) RETAILERS
2009 DOLLARS (IN MILLIONS)**

	2009 Estimated New Sales (1)	Retail Sales Category				
		Apparel	General Merchandise	Food Stores	Eating and Drinking Places	Other Retail Stores
<u>Total New Sales (2)</u>						
Villages at Fairfield	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
<u>Portion of New Sales from P&SMA at 90% (3)</u>						
Villages at Fairfield	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
<u>Sales Generated in PMA</u>						
<i>PMA as a Percent of P&SMA (4)</i>		35.5%	42.2%	34.5%	33.0%	45.1%
Villages at Fairfield	\$16.1	\$1.7	\$2.6	\$8.1	\$1.1	\$2.5
Fairfield Wal-Mart Supercenter	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total PMA	\$16.1	\$1.7	\$2.6	\$8.1	\$1.1	\$2.5
<u>Unabsorbed Leakage</u>						
Unabsorbed PMA Leakage (5)	(\$9.1)	\$0.0	\$0.0	\$0.0	(\$9.1)	\$0.0
Unabsorbed Secondary Market Area Leakage (6)		\$0.0	\$0.0	\$0.0	\$0.0	(\$54.3)
<u>Max Sales Diverted from PMA Retailers (7)</u>						
Villages at Fairfield	(\$12.4)	(\$1.7)	(\$2.6)	(\$8.1)	\$0.0	\$0.0
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	-
Total PMA	(\$12.4)	(\$1.7)	(\$2.6)	(\$8.1)	\$0.0	\$0.0

Notes:

- (1) Reflects the sum of the retail categories.
- (2) Refer to Exhibit 21.
- (3) Primary and secondary market area estimated at 90 percent of total sales. Refer to Exhibit 12, footnote 2.
- (4) Percentage calculated in Exhibit 22 to account for Suisun Marketplace and Gilbert Parcel sales in the retail base.
- (5) The analysis assumes that any leakage in the primary market area will be absorbed before sales impacts occur. Accounts for primary market area leakage already absorbed by new sales at the Suisun Marketplace and Gilbert Parcel in Exhibit 12.
- (6) In addition to the absorbed primary market area leakage, the cumulative retail projects will retain some spending that is currently leaked out of the secondary market area. Sedway Group, assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by the cumulative projects.
- (7) The maximum sales diverted from primary market area retailers is equivalent to the sales generated in the primary market area, less any unabsorbed leakage.

Sources: Sedway Group.

ALTERNATIVE 1, EXHIBIT 26
 CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
 ASSUMING NO FAIRFIELD WAL-MART SUPERCENTER (1)
 MAXIMUM DIVERTED SALES AS A PERCENT
 PRIMARY MARKET AREA
 ASSUMING SALES ADJUSTMENT FOR SUISUN MARKETPLACE AND GILBERT PARCEL
 2009 ESTIMATE (IN MILLIONS)

Type of Retailer	Maximum Sales Diverted from PMA Retailers (2) [A]	New PMA Retail Sales Base (3) [B]	Additional Diverted Sales as a % of Estimated Sales [C=A/B]
Apparel Stores	(\$1.7)	\$92.2	1.9%
General Merchandise	(\$2.6)	\$423.3	0.6%
Food Stores	(\$8.1)	\$344.1	2.3%
Eating and Drinking Places	\$0.0	\$174.9	0.0%
Home Furnishings and Appliances	\$0.0	\$99.6	0.0%
Building Materials	\$0.0	\$156.2	0.0%
Other Retail Stores	\$0.0	\$318.5	0.0%
Total	<u>(\$12.4)</u>	<u>\$1,609.0</u>	

Notes:

- (1) Includes only the Villages at Fairfield.
- (2) Refer to Exhibit 25.
- (3) Refer to Exhibit 22, Column C.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 1 Development
 Program Summary.xls]Ex1[JB]

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 27
MAXIMUM DIVERTED SALES IMPACTS
SUISUN MARKETPLACE AND GILBERT PARCEL
CUMULATIVE PRIMARY MARKET AREA PROJECTS
2009 ESTIMATE (IN MILLIONS)**

Project Retail Category	Maximum Sales Diversion (1) [A]	Number of Years to Mitigate (2) [B]	Sales Average (2009 Dollars) (3) [C]	Supportable Square Feet (Rounded) [D=A/C]
Suisun Marketplace Only				
Apparel Stores	\$3,715,679	2 to 3 Years	\$352	10,600
General Merchandise	\$23,138,323	5 + Years	\$352	65,700
Food Stores	\$7,119,218	1 to 2 Years	\$352	20,200
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$0	N/A	\$352	0
Building Materials	\$8,407,502	4 to 5 Years	\$352	23,900
Other Retail Stores	\$0	N/A	\$352	0
Total	\$42,380,722			120,400
Suisun Marketplace and All Primary Market Area Cumulative Projects				
Apparel Stores	\$5,426,632	4 Years	\$352	15,400
General Merchandise	\$28,436,351	5 + Years	\$352	80,800
Food Stores	\$19,165,097	3 to 4 Years	\$352	54,500
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$0	N/A	\$352	0
Building Materials	\$8,407,502	4 to 5 Years	\$352	23,900
Other Retail Stores	\$0	N/A	\$352	0
Total	\$61,435,581			174,600
Suisun Marketplace and Cumulative Projects Less Fairfield Wal-Mart Supercenter				
Apparel Stores	\$5,426,632	4 Years	\$352	15,400
General Merchandise	\$25,786,444	5 + Years	\$352	73,300
Food Stores	\$15,200,812	2 to 3 Years	\$352	43,200
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$0	N/A	\$352	0
Building Materials	\$8,407,502	4 to 5 Years	\$352	23,900
Other Retail Stores	\$0	N/A	\$352	0
Total	\$54,821,389			155,800

Notes:

(1) Refer to Exhibits 12, 23, and 25.

(2) Estimated based on the cumulative retail demand in Exhibit 15.

(3) The current performance of existing retailers is unknown. In order to estimate the supportable square feet Sedway Group assumed the generally accepted retail standard of \$300 per square foot (2005 dollars) and inflated to 2009 dollars at 3.0 percent annually.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 1 Development Program

Summary.xls]Ex1 [JB]

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 28
FISCAL BENEFIT ANALYSIS
TAXABLE SALES AND SALES TAX REVENUE ASSUMPTIONS
PROPOSED SUISUN MARKETPLACE AND GILBERT PARCEL
2009 DOLLARS**

PROPOSED SUISUN MARKETPLACE

For the purposes of calculating sales tax revenue, Sedway Group relied on the estimated retail sales and assumptions in Exhibit 3.

Estimated Sales	Total Sales (1)	Percent Taxable (2)	Total Taxable Sales
Apparel Stores	\$11,621,839	100.0%	\$11,621,839
General Merchandise	\$64,705,398	100.0%	\$64,705,398
Food Stores	\$23,660,067	30.0%	\$7,098,020
Eating and Drinking Places	\$11,353,073	100.0%	\$11,353,073
Home Furnishings and Appliances	\$23,319,046	100.0%	\$23,319,046
Building Materials	\$39,082,778	100.0%	\$39,082,778
Other Retail Stores	\$20,069,297	100.0%	\$20,069,297
Total	\$193,811,497		\$177,249,450
Tax Estimate			
Total			\$177,249,450
Sales Tax Accruing to Suisun City General Fund (3)			1.0%
Annual Sales Taxes Accruing to Suisun City General Fund			<u>\$1,772,495</u>

LESS DIVERTED SALES IMPACTS

For the purpose of calculating proposed sales tax revenue impacts, Sedway Group relied on the maximum sales impacts analysis in Exhibit 11.

Estimated Diverted Sales	Total Sales (4)	Percent Taxable (2)	Total Taxable Sales
Apparel Stores	\$3,715,679	100.0%	\$3,715,679
General Merchandise	\$23,138,323	100.0%	\$23,138,323
Food Stores	\$7,119,218	30.0%	\$2,135,765
Eating and Drinking Places	\$0	100.0%	\$0
Home Furnishings and Appliances	\$0	100.0%	\$0
Building Materials	\$8,407,502	100.0%	\$8,407,502
Other Retail Stores	\$0	100.0%	\$0
Total	\$42,380,722		\$37,397,270
Distribution of Diverted Sales (5)			
Total Diverted Sales			\$37,397,270
Suisun City as a Percent of Primary Market Area (6)			5.3%
Estimated Diverted Suisun City Sales			\$2,000,121
Diverted Sales Tax Estimate			
Estimated Diverted Suisun City Sales			\$2,000,121
Sales Tax Accruing to Suisun City General Fund (3)			1.0%
Annual Diverted Sales Taxes (diverted from the Suisun City General Fund)			<u>\$20,001</u>

TOTAL NEW SALES TAX REVENUE (7) \$1,752,493

Notes:

- (1) Refer to Exhibit 3.
- (2) Sedway Group assumes 30 percent of all grocery sales are taxable, based on data provided by the State of California Board of Equalization.
- (3) Sales tax rate accruing to the City of Suisun City General Fund.
- (4) Refer to Exhibit 12, column I.
- (5) Because the analysis estimates diverted sales for the entire primary market area, which includes Suisun City and the City of Fairfield, it is necessary to estimate the portion of such sales that would be diverted from the Suisun City General Fund.
- (6) Refer to Exhibit 6. Represents Suisun City's share of total taxable sales in the primary market area.
- (7) The proposed Suisun Marketplace sales tax revenue less the diverted Suisun City sales tax revenue.

Sources: City of Suisun City; and Sedway Group.
P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 1 Development Program Summary.xls\Ex1\JB]

20-Mar-06

ALTERNATIVE 1, EXHIBIT 29
 FISCAL BENEFIT ANALYSIS
 PROPERTY VALUE AND PROPERTY TAX REVENUE ASSUMPTIONS (1)
 PROPOSED SUISUN MARKETPLACE AND GILBERT PARCEL
 ALL FIGURES IN 2009 DOLLARS

Suisun Marketplace Development	2005 Value (2)	2009 Value (3)
Total Development Costs	\$88,308,918	\$99,392,466
Property Tax Estimate		
Total Assessed Value (1)		\$99,392,466
Property Tax Rate (4)		1.0%
Total Annual Property Taxes		\$993,925
Property Tax Rate to Suisun City General Fund (5)		14.47%
New Property Tax Revenue Accruing to Suisun City General Fund		\$143,821

Notes:

(1) For purposes of calculating real property taxes, it is assumed that the assessed value of the Suisun Marketplace will be based on the total development costs of the project.

(2) Total development costs were provided by Highland Development Company and checked for reasonableness by Sedway Group. Detailed cost estimates were provided. The construction cost detail is suppressed for confidentiality. Total development costs include the construction costs incurred either by Highland Development Company or by individual retail tenants. The estimates include land acquisition costs, hard and soft costs, on and off-site costs, and all tenant improvement costs.

(3) Assumes an inflation adjustment of 3.0 percent annually.

(4) Per Proposition 13.

(5) Property tax rate accruing to the Suisun City General Fund is an estimate based on information provided by the Solano County Auditor's office. Currently, the property is located in unincorporated Solano County and current property tax allocation factors do not apply to Suisun City. However, after annexation the property will have a new tax rate area and property tax allocation factors. The new tax rate area and allocation factors were not determined as of the date of this analysis. As a reasonable proxy, Sedway Group utilized the tax allocation percentage for Suisun City as defined in the Property Tax Exchange Rate for properties in Solano County undergoing the annexation process as recommended by the Solano County Assessor's Office.

Sources: Highland Development Company; Solano County Assessor's Office; Solano County Auditor's Office; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 1 Development Program Summary.xls]Ex1 [JB]

20-Mar-06

**ALTERNATIVE 1, EXHIBIT 30
FISCAL BENEFIT ANALYSIS
PROPERTY VALUE AND PROPERTY TAX REVENUE ASSUMPTIONS (1)
PROPOSED RESIDENTIAL DEVELOPMENT
ALL FIGURES IN 2009 DOLLARS**

Residential Development	2005 Value (2)	2009 Value (3)
Value Assumptions		
Estimated Selling Price per Unit	\$360,000	\$405,183
Total Units (4)		412
Total Assessed Value (5)		<u>\$166,935,467</u>
Property Tax Estimate		
Total Assessed Value		\$166,935,467
Property Tax Rate (6)		1.0%
Total Annual Property Taxes		<u>\$1,669,355</u>
Property Tax Rate to Suisun City General Fund (7)		14.47%
Total Annual Property Taxes to Suisun City General Fund		<u>\$241,556</u>
NET PROPERTY TAX REVENUE ACCRUING TO SUISUN CITY GENERAL FUND		\$241,556

Notes:

- (1) For purposes of calculating real property taxes, it is assumed that the assessed value of the residential component will be based on the total selling price of the residential units. Selling price data provided by Silverwing Development. The analysis conservatively assumes all units are sold in 2009. If some units were sold prior to 2009, the assessed value of those units sold would increase 2.0 percent per year as allowed by
- (2) Estimated selling price data provided by Silverwing Development in 2005 year dollars.
- (3) Assumes an inflation adjustment of 3.0 percent annually.
- (4) Data provided by Tom Gentry California Company.
- (5) For assessed valuation, analysis assumes all units sold in 2009 year dollars.
- (6) Per Proposition 13.
- (7) Property tax rate accruing to the Suisun City General Fund is an estimate based on information provided by the Solano County Auditor's office. Currently, the property is located in unincorporated Solano County and current property tax allocation factors do not apply to Suisun City. However, after annexation the property will have a new tax rate area and property tax allocation factors. The new tax rate area and allocation factors were not determined as of the date of this analysis. As a reasonable proxy, Sedway Group utilized the tax allocation percentage for Suisun City as defined in the Property Tax Exchange Rate for properties in Solano County undergoing the annexation process as recommended by the Solano County Assessor's Office.

Sources: Silverwing Development; Solano County Assessor's Office; Solano County Auditor's Office; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 1 Development Program Summary.xls]Ex1[JB]

20-Mar-06

ALTERNATIVE 1, EXHIBIT 31
 FISCAL BENEFIT ANALYSIS (1)
 SUMMARY OF NET NEW TAX REVENUES
 CITY OF SUISUN CITY
 2009 DOLLARS (2)

Source	2009
New Tax Revenues	
Net New Sales Tax Revenues (3)	\$1,752,493
Net New Property Tax Revenues	
Commercial Development (4)	\$143,821
Residential Development (5)	\$241,556
Subtotal	\$385,377
Net New Tax Revenue Total	\$2,137,870

Notes:

- (1) The economic impact analysis estimated the impact of the proposed Suisun Marketplace on the primary market area, defined as the cities of Suisun City and Fairfield. The fiscal benefit analysis estimated the fiscal benefit to the City of Suisun City only, as Suisun City will be the jurisdiction receiving property tax and sales tax revenue as a result of the proposed development.
- (2) For the purpose of internal consistency with the economic impact analysis the fiscal benefit analysis assumes build out of the commercial and residential projects in 2009.
- (3) Refer to Exhibit 28.
- (4) Refer to Exhibit 29.
- (5) Refer to Exhibit 30.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives

Update\ALT 1 Development Program Summary.xls]Ex1]JB]

20-Mar-06

APPENDIX C: EXHIBITS – ALTERNATIVE 2

**ALTERNATIVE 2, EXHIBIT 1
DEVELOPMENT PROGRAM SUMMARY
SUISUN MARKETPLACE AND GILBERT PARCEL**

Retail Type of Retail (1)	Square Feet (2)		
	Building	Garden Center	Total
<u>Anchor Tenant</u>			
Supercenter	206,558	14,840	221,398
<u>Additional Tenants</u>			
Apparel	20,000	0	20,000
Home Furnishings	14,000	0	14,000
Restaurant	20,000	0	20,000
Fast Food	10,000	0	10,000
Unknown Retail	61,602	0	61,602
Gas Station	3,000	0	3,000
Suisun Marketplace Subtotal	335,160	14,840	350,000
<u>Gilbert Parcel (3)</u>			
Unknown Retail	10,000	0	10,000
TOTAL	345,160	14,840	360,000

Notes:

(1) Specific retail tenants have not been identified by the developer. The type of retail targeted for specific spaces have been identified where available.

(2) Development plan and square footages provided by Highland Development Company.

(3) Tenants for the small retail square footage identified for the Gilbert Parcel are unknown and are therefore assumed to fall in the "Other Retail Stores" Board of Equalization Category.

Sources: Tom Gentry California Company; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives

Update\[ALT 2 Development Program Summary.xls]Ex1 [JB]

20-Mar-06

**ALTERNATIVE 2, EXHIBIT 2
ESTIMATED ANNUAL SALES
SUISUN MARKETPLACE AND GILBERT PARCEL
2003 AND 2009 YEAR DOLLARS**

Retail Type of Retail	Total Square Feet (1)	Average Sales per Square Foot		2009 Estimated Sales
		2003 (2)	2009 (3)	
<u>Anchor Tenant</u> Supercenter	221,398	\$362 (4)	\$425	\$94,026,203
<u>Additional Tenants</u>				
Apparel	20,000	\$371 (5)	\$435	\$8,705,035
Home Furnishings	14,000	\$230 (6)	\$270	\$3,777,657
Restaurant	20,000	\$285 (7)	\$334	\$6,687,157
Fast Food	10,000	\$365 (8)	\$428	\$4,282,127
Unknown Retail	61,602	\$300	\$352	\$21,681,169
<u>Gilbert Parcel</u>				
Unknown Retail	10,000	\$300	\$352	\$3,519,556
Total	357,000		\$400	\$142,678,904

Notes:

- (1) Annual sales estimates do not include the 3,000-square-foot gas station.
(2) Sedway Group relied on Retail MAXIM's July 2004 report of 2003 retail sales per square foot estimates, which also includes averages for different categories of retailers. For all unidentified retail, Sedway Group assumed the generally accepted industry standard average sales of \$300 per square foot in 2003 dollars.
(3) Adjusted for inflation based on the consumer price index for all urban consumers in the San Francisco/Oakland/San Jose MSA as defined by the U.S. Department of Labor Bureau of Labor Statistics. Inflation for the 2003-04 period is 1.2 percent; assumed annual inflation of 3.0 percent for projected years.
(4) Average sales per square foot of Wal-Mart, per Retail MAXIM.
(5) Average sales per square foot of Loehman's, Mervyn's, Old Navy, Ross, Stein Mart, and TJ Maxx, per Retail MAXIM.
(6) Average sales per square foot of specialty apparel per Retail MAXIM.
(7) Average sales per square foot of the casual dining and family dining categories per Retail MAXIM.
(8) Average sales per square foot of fast food chains per Retail MAXIM.

Sources: Highland Development Company; Retail MAXIM's Perspectives on Retail Real Estate and Finance, July 2004; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 2 Development Program Summary.xls]Ex1[JB]

20-Mar-06

**ALTERNATIVE 2, EXHIBIT 3
ESTIMATED SALES BY RETAIL CATEGORY
SUISUN MARKETPLACE AND GILBERT PARCEL
2009 DOLLARS**

Type of Retail	Suisun Marketplace and Gilbert Parcel (1)		California Board of Equalization Retail Category (2)						
	Total Square Feet	2009 Estimated Sales	Apparel	General Merchandise (3)	Food Stores	Eating and Drinking Places	Home Furnishings and Appliances	Building Materials	Other Retail Stores (4)
Supercenter (5) As % of estimated store sales	221,398	\$94,026,203	\$0 0.0%	\$63,937,818 68.0%	\$23,506,551 25.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$6,581,834 7.0%
Apparel As % of estimated store sales	20,000	\$8,705,035	\$8,705,035 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Home Furnishings As % of estimated store sales	14,000	\$3,777,657	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$3,777,657 100.0%	\$0 0.0%	\$0 0.0%
Restaurant As % of estimated store sales	20,000	\$6,687,157	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$6,687,157 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Fast Food As % of estimated store sales	10,000	\$4,282,127	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$4,282,127 100.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%
Unknown Retail (6) As % of estimated store sales	61,602	\$21,681,169	\$8,238,844 38.0%	\$2,168,117 10.0%	\$433,623 2.0%	\$1,084,058 5.0%	\$0 0.0%	\$0 0.0%	\$9,756,526 45.0%
Gilbert Parcel Unknown Retail (7) As % of estimated store sales	10,000	\$3,519,556	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$0 0.0%	\$3,519,556 100.0%
Total	357,000	\$142,678,904	\$16,943,880	\$66,105,935	\$23,940,174	\$12,053,342	\$3,777,657	\$0	\$19,857,917

Notes:

(1) Estimated square feet and annual sales are from Exhibit 2. Does not include the gas station.

(2) Selected retail categories as defined by the California Board of Equalization that pertain to the type of retail targeted for the Suisun Marketplace and Gilbert Parcel.

(3) The general merchandise category includes limited price variety, department, dry goods, general merchandise, country, and drug stores.

(4) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

(5) The Supercenter sales were divided into appropriate retail categories to determine the potential impact on those categories. The analysis assumes an approximately 55,000-square-foot grocery component, and 14,840-square-foot garden center. The grocery square footage is an estimate developed by Sedway Group based on previous work and includes both sales floor area and stockroom space.

(6) Tom Gentry California Company has identified targeted retail categories for some spaces but not others. In the case of unknown retail, Tom Gentry California Company provided generic retail categories. Based on this information, Sedway Group allocated the unknown retail sales to specific retail categories.

(7) A small amount of retail is envisioned for the Gilbert Parcel. Its potential tenants are unknown.

**ALTERNATIVE 2, EXHIBIT 12
MAXIMUM SUISUN MARKETPLACE AND GILBERT PARCEL SALES IMPACTS
ON PRIMARY MARKET AREA (PMA) RETAIL SALES
2009 ESTIMATE (IN MILLIONS)**

Type of Retailer	Suisun Marketplace New Sales (1) [A]	Source of Sales (2)		Retail Sales			Leakage Available for Capture			
		Primary and Secondary Market Areas [B]	Tertiary Market Area [C]	Primary Market Area (3) [D]	Primary and Secondary Market Areas (4) [E]	PMA Percent of P&SMA [F = D/E]	Primary Market Area Leakage (5) [G]	Secondary Market Area Leakage (6) [H]	Maximum Sales Diverted from PMA Retailers (7) [I = Bx F + G + H]	Minimum Net New Sales to PMA (8) [J = A + I]
Apparel Stores	\$16.9	\$15.2	\$1.7	\$84.3	\$237.3	35.5%	\$0.0	\$0.0	(\$5.4)	\$11.5
General Merchandise	\$66.1	\$59.5	\$6.6	\$381.8	\$960.9	39.7%	\$0.0	\$0.0	(\$23.6)	\$42.5
Food Stores	\$23.9	\$21.5	\$2.4	\$327.6	\$979.8	33.4%	\$0.0	\$0.0	(\$7.2)	\$16.7
Eating and Drinking Places	\$12.1	\$10.8	\$1.2	\$163.6	\$495.4	33.0%	(\$19.3)	\$0.0	\$0.0	\$12.1
Home Furnishings and Appliances	\$3.8	\$3.4	\$0.4	\$76.3	\$204.3	37.3%	\$0.0	(\$10.4)	\$0.0	\$3.8
Building Materials	\$0.0	\$0.0	\$0.0	\$125.5	\$487.3	25.8%	(\$0.7)	\$0.0	\$0.0	\$0.0
Other Retail Stores	\$19.9	\$17.9	\$2.0	\$298.5	\$685.6	43.5%	\$0.0	(\$54.3)	\$0.0	\$19.9
Total	\$142.7	\$128.4	\$14.3	\$1,457.5	\$4,050.6	36.0%	(\$20.0)	(\$64.7)	(\$36.3)	\$106.4

Notes:

- (1) These figures are from Exhibit 3.
- (2) Sedway Group estimates that 90 percent of sales will be generated from primary and secondary market area residents, with the 10 percent balance of sales generated by tertiary market area residents. This tertiary market area is not defined, but extends beyond the boundaries of Solano County.
- (3) Refer to Exhibit 8, primary market area sales. Does not include all retail categories, only those categories impacted by sales at Suisun Marketplace and the Gilbert Parcel.
- (4) Refer to Exhibit 10, primary and secondary market area sales. Does not include all retail categories, only those categories impacted by sales at Suisun Marketplace and the Gilbert Parcel.
- (5) Refer to Exhibit 8. Assumes any existing primary market area leakage is absorbed by Suisun Marketplace and Gilbert Parcel sales.
- (6) In addition to the absorbed primary market area leakage, the new retail stores at Suisun Marketplace and the Gilbert Parcel will retain some spending that is currently leaked out of the secondary market area. Sedway Group assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by Suisun Marketplace and the Gilbert Parcel. Assumption developed by Sedway Group based on market observations and professional judgment.
- (7) The figures in this column comprise the maximum amount of net new primary market area Suisun Marketplace and the Gilbert Parcel sales diverted from existing primary market area retailers, assuming sales in excess of any leakage will be diverted away from existing primary market area retailers in proportion to the primary market area retailers' estimated contribution to combined primary and secondary market areas sales. This implies that any negative impacts of the Suisun Marketplace and Gilbert Parcels' sales will be spread proportionally among all the like retailers by retail category in the primary market area.
- (8) This column comprises all new Suisun Marketplace and Gilbert Parcel sales less the maximum sales diverted from primary market area retailers. Figures may not total due to rounding.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 2 Development Program Summary.xls\Ex1\JB

20-Mar-06

**ALTERNATIVE 2, EXHIBIT 13
 MAXIMUM DIVERTED SALES AS A PERCENT
 OF ESTIMATED PRIMARY MARKET AREA (PMA) SALES
 2009 ESTIMATE (IN MILLIONS)**

Type of Retailer	Maximum Sales Diverted From PMA Retailers (1)	Estimated PMA Retail Sales (2)	Diverted Sales as a Percent of Estimated Sales
Apparel Stores	(\$5.4)	\$84.3	6.4%
General Merchandise	(\$23.6)	\$381.8	6.2%
Food Stores	(\$7.2)	\$327.6	2.2%
Eating and Drinking Places	\$0.0	\$163.6	0.0%
Home Furnishings and Appliances	\$0.0	\$76.3	0.0%
Building Materials	\$0.0	\$125.5	0.0%
Other Retail Stores	<u>\$0.0</u>	<u>\$298.5</u>	<u>0.0%</u>
Total	(\$36.3)	\$1,457.5	2.5%

Notes:

(1) Refer to Exhibit 12, column I.

(2) Refer to Exhibit 8, primary market area sales.

Source: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 2
 Development Program Summary.xls]Ex1[JB]

20-Mar-06

ALTERNATIVE 2, EXHIBIT 23
 CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
 ON PRIMARY MARKET AREA (PMA) RETAILERS
 2009 DOLLARS (IN MILLIONS)

	2009 Estimated New Sales (1)	Retail Sales Category				
		Apparel	General Merchandise	Food Stores	Eating and Drinking Places	Other Retail Stores
<u>Total New Sales (2)</u>						
Villages at Fairfield	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
Fairfield Wal-Mart Supercenter	\$19.7	\$0.0	\$7.0	\$12.8	\$0.0	\$0.0
Total PMA	\$68.0	\$5.4	\$13.9	\$38.8	\$3.8	\$6.1
<u>Portion of New Sales from P&SMA at 90% (3)</u>						
Villages at Fairfield	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
Fairfield Wal-Mart Supercenter	\$17.8	\$0.0	\$6.3	\$11.5	\$0.0	\$0.0
Total PMA	\$61.2	\$4.8	\$12.5	\$34.9	\$3.4	\$5.5
<u>Sales Generated in PMA</u>						
<i>PMA as a Percent of P&SMA (4)</i>		35.5%	42.3%	34.6%	33.0%	45.1%
Villages at Fairfield	\$16.1	\$1.7	\$2.7	\$8.1	\$1.1	\$2.5
Fairfield Wal-Mart Supercenter	\$6.6	\$0.0	\$2.7	\$4.0	\$0.0	\$0.0
Total PMA	\$22.7	\$1.7	\$5.3	\$12.1	\$1.1	\$2.5
<u>Unabsorbed Leakage</u>						
Unabsorbed PMA Leakage (5)	(\$8.5)	\$0.0	\$0.0	\$0.0	(\$8.5)	\$0.0
Unabsorbed Secondary Market Area Leakage (6)	(\$54.3)	\$0.0	\$0.0	\$0.0	\$0.0	(\$54.3)
<u>Max Sales Diverted from PMA Retailers (7)</u>						
Villages at Fairfield	(\$12.4)	(\$1.7)	(\$2.7)	(\$8.1)	\$0.0	\$0.0
Fairfield Wal-Mart Supercenter	(\$6.6)	\$0.0	(\$2.7)	(\$4.0)	\$0.0	\$0.0
Total PMA	(\$19.1)	(\$1.7)	(\$5.3)	(\$12.1)	\$0.0	\$0.0

Notes:

(1) Reflects the sum of the retail categories.

(2) Refer to Exhibit 21.

(3) Primary and secondary market area estimated at 90 percent of total sales. Refer to Exhibit 11, footnote 2.

(4) Percentage calculated in Exhibit 22 to account for Suisun Marketplace and Gilbert Parcel sales in the retail base.

(5) The analysis assumes that any leakage in the primary market area will be absorbed before sales impacts occur. Accounts for primary market area leakage already absorbed by new sales at the Suisun Marketplace and Gilbert Parcel in Exhibit 12.

(6) In addition to the absorbed primary market area leakage, the cumulative retail projects will retain some spending that is currently leaked out of the secondary market area. Sedway Group, assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by the cumulative projects.

(7) The maximum sales diverted from primary market area retailers is equivalent to the sales generated in the primary market area, less any unabsorbed leakage.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 2 Development Program Summary.xls\Ex1\JB

20-Mar-06

ALTERNATIVE 2, EXHIBIT 24
 CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS (1)
 MAXIMUM DIVERTED SALES AS A PERCENT
 PRIMARY MARKET AREA
 ASSUMING SALES ADJUSTMENT FOR SUISUN MARKETPLACE AND GILBERT PARCEL
 2009 ESTIMATE (IN MILLIONS)

Retail Category	Maximum Sales Diverted from PMA Retailers (2) [A]	New PMA Retail Sales Base (3) [B]	Additional Diverted Sales as a % of Estimated Sales [C=A/B]
Apparel Stores	(\$1.7)	\$95.8	1.8%
General Merchandise	(\$5.3)	\$424.2	1.3%
Food Stores	(\$12.1)	\$344.3	3.5%
Eating and Drinking Places	\$0.0	\$175.6	0.0%
Home Furnishings and Appliances	\$0.0	\$80.1	0.0%
Building Materials	\$0.0	\$125.5	0.0%
Other Retail Stores	\$0.0	\$318.3	0.0%
Total	(\$19.1)	\$1,564.0	

Notes:

(1) Includes the Villages at Fairfield and Fairfield Wal-Mart Supercenter.

(2) Refer to Exhibit 23.

(3) Refer to Exhibit 22, column C.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 2 Development
 Program Summary.xls]Ex1[JB]

20-Mar-06

**ALTERNATIVE 2, EXHIBIT 25
CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
ASSUMING NO FAIRFIELD WAL-MART SUPERCENTER
ON PRIMARY MARKET AREA (PMA) RETAILERS
2009 DOLLARS (IN MILLIONS)**

	2009 Estimated New Sales (1)	Retail Sales Category				
		Apparel	General Merchandise	Food Stores	Eating and Drinking Places	Other Retail Stores
<u>Total New Sales (2)</u>						
Villages at Fairfield	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$48.3	\$5.4	\$7.0	\$26.0	\$3.8	\$6.1
<u>Portion of New Sales from P&SMA at 90% (3)</u>						
Villages at Fairfield	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>
Total PMA	\$43.4	\$4.8	\$6.3	\$23.4	\$3.4	\$5.5
<u>Sales Generated in PMA</u>						
<i>PMA as a Percent of P&SMA (4)</i>		35.5%	42.3%	34.6%	33.0%	45.1%
Villages at Fairfield	\$16.1	\$1.7	\$2.7	\$8.1	\$1.1	\$2.5
Fairfield Wal-Mart Supercenter	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Total PMA	\$16.1	\$1.7	\$2.7	\$8.1	\$1.1	\$2.5
<u>Unabsorbed Leakage</u>						
Unabsorbed PMA Leakage (5)	(\$8.5)	\$0.0	\$0.0	\$0.0	(\$8.5)	\$0.0
Unabsorbed Secondary Market Area Leakage (6)		\$0.0	\$0.0	\$0.0	\$0.0	(\$54.3)
<u>Max Sales Diverted from PMA Retailers (7)</u>						
Villages at Fairfield	(\$12.4)	(\$1.7)	(\$2.7)	(\$8.1)	\$0.0	\$0.0
Fairfield Wal-Mart Supercenter	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	-
Total PMA	(\$12.4)	(\$1.7)	(\$2.7)	(\$8.1)	\$0.0	\$0.0

Notes:

- (1) Reflects the sum of the retail categories.
- (2) Refer to Exhibit 21.
- (3) Primary and secondary market area estimated at 90 percent of total sales. Refer to Exhibit 12, footnote 2.
- (4) Percentage calculated in Exhibit 22 to account for Suisun Marketplace and Gilbert Parcel sales in the retail base.
- (5) The analysis assumes that any leakage in the primary market area will be absorbed before sales impacts occur. Accounts for primary market area leakage already absorbed by new sales at the Suisun Marketplace and Gilbert Parcel in Exhibit 12.
- (6) In addition to the absorbed primary market area leakage, the cumulative retail projects will retain some spending that is currently leaked out of the secondary market area. Sedway Group, assumed that up to 33.3 percent of the leakage in the secondary market area could be absorbed by the cumulative projects.
- (7) The maximum sales diverted from primary market area retailers is equivalent to the sales generated in the primary market area, less any unabsorbed leakage.

Sources: Sedway Group.

ALTERNATIVE 2, EXHIBIT 26
 CUMULATIVE IMPACTS OF MAJOR RETAIL DEVELOPMENTS
 ASSUMING NO FAIRFIELD WAL-MART SUPERCENTER (1)
 MAXIMUM DIVERTED SALES AS A PERCENT
 PRIMARY MARKET AREA
 ASSUMING SALES ADJUSTMENT FOR SUISUN MARKETPLACE AND GILBERT PARCEL
 2009 ESTIMATE (IN MILLIONS)

Type of Retailer	Maximum Sales Diverted from PMA Retailers (2) [A]	New PMA Retail Sales Base (3) [B]	Additional Diverted Sales as a % of Estimated Sales [C=A/B]
Apparel Stores	(\$1.7)	\$95.8	1.8%
General Merchandise	(\$2.7)	\$424.2	0.6%
Food Stores	(\$8.1)	\$344.3	2.3%
Eating and Drinking Places	\$0.0	\$175.6	0.0%
Home Furnishings and Appliances	\$0.0	\$80.1	0.0%
Building Materials	\$0.0	\$125.5	0.0%
Other Retail Stores	\$0.0	\$318.3	0.0%
Total	<u>(\$12.4)</u>	<u>\$1,564.0</u>	

Notes:

- (1) Includes only the Villages at Fairfield.
- (2) Refer to Exhibit 25.
- (3) Refer to Exhibit 22, Column C.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 2 Development
 Program Summary.xls]Ex1[JB]

20-Mar-06

**ALTERNATIVE 2, EXHIBIT 27
 MAXIMUM DIVERTED SALES IMPACTS
 SUISUN MARKETPLACE AND GILBERT PARCEL
 CUMULATIVE PRIMARY MARKET AREA PROJECTS
 2009 ESTIMATE (IN MILLIONS)**

Project Retail Category	Maximum Sales Diversion (1) [A]	Number of Years to Mitigate (2) [B]	Sales Average (2009 Dollars) (3) [C]	Supportable Square Feet (Rounded) [D=A/C]
Suisun Marketplace Only				
Apparel Stores	\$5,417,217	4 to 5 Years	\$352	15,400
General Merchandise	\$23,639,148	4 to 5 Years	\$352	67,200
Food Stores	\$7,203,501	1 to 2 Years	\$352	20,500
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$0	N/A	\$352	0
Building Materials	\$0	N/A	\$352	0
Other Retail Stores	\$0	N/A	\$352	0
Total	\$36,259,866			103,100
Suisun Marketplace and All Primary Market Area Cumulative Projects				
Apparel Stores	\$7,128,169	5+ Years	\$352	20,300
General Merchandise	\$28,943,674	5 + Years	\$352	82,200
Food Stores	\$19,253,866	3 to 4 Years	\$352	54,700
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$0	N/A	\$352	0
Building Materials	\$0	N/A	\$352	0
Other Retail Stores	\$0	N/A	\$352	0
Total	\$55,325,710			157,200
Suisun Marketplace and Cumulative Projects Less Fairfield Wal-Mart Supercenter				
Apparel Stores	\$7,128,169	5+ Years	\$352	20,300
General Merchandise	\$26,290,517	5 + Years	\$352	74,700
Food Stores	\$15,288,105	2 to 3 Years	\$352	43,400
Eating and Drinking Places	\$0	N/A	\$352	0
Home Furnishings and Appliances	\$0	N/A	\$352	0
Building Materials	\$0	N/A	\$352	0
Other Retail Stores	\$0	N/A	\$352	0
Total	\$48,706,791			138,400

Notes:

(1) Refer to Exhibits 12, 23, and 25.

(2) Estimated based on the cumulative retail demand in Exhibit 15.

(3) The current performance of existing retailers is unknown. In order to estimate the supportable square feet Sedway Group assumed the generally accepted retail standard of \$300 per square foot (2005 dollars) and inflated to 2009 dollars at 3.0 percent annually.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 2 Development Program Summary.xls\Ex1\JB]

20-Mar-06

**ALTERNATIVE 2, EXHIBIT 28
FISCAL BENEFIT ANALYSIS
TAXABLE SALES AND SALES TAX REVENUE ASSUMPTIONS
PROPOSED SUISUN MARKETPLACE AND GILBERT PARCEL
2009 DOLLARS**

PROPOSED SUISUN MARKETPLACE

For the purposes of calculating sales tax revenue, Sedway Group relied on the estimated retail sales and assumptions in Exhibit 3.

Estimated Sales	Total Sales (1)	Percent Taxable (2)	Total Taxable Sales
Apparel Stores	\$16,943,880	100.0%	\$16,943,880
General Merchandise	\$66,105,935	100.0%	\$66,105,935
Food Stores	\$23,940,174	30.0%	\$7,182,052
Eating and Drinking Places	\$12,053,342	100.0%	\$12,053,342
Home Furnishings and Appliances	\$3,777,657	100.0%	\$3,777,657
Building Materials	\$0	100.0%	\$0
Other Retail Stores	\$19,857,917	100.0%	\$19,857,917
Total	\$142,678,904		\$125,920,782
Tax Estimate			
Total			\$125,920,782
Sales Tax Accruing to Suisun City General Fund (3)			1.0%
Annual Sales Taxes Accruing to Suisun City General Fund			<u>\$1,259,208</u>

LESS DIVERTED SALES IMPACTS

For the purpose of calculating proposed sales tax revenue impacts, Sedway Group relied on the maximum sales impacts analysis in Exhibit 11.

Estimated Diverted Sales	Total Sales (4)	Percent Taxable (2)	Total Taxable Sales
Apparel Stores	\$5,417,217	100.0%	\$5,417,217
General Merchandise	\$23,639,148	100.0%	\$23,639,148
Food Stores	\$7,203,501	30.0%	\$2,161,050
Eating and Drinking Places	\$0	100.0%	\$0
Home Furnishings and Appliances	\$0	100.0%	\$0
Building Materials	\$0	100.0%	\$0
Other Retail Stores	\$0	100.0%	\$0
Total	\$36,259,866		\$31,217,415
Distribution of Diverted Sales (5)			
Total Diverted Sales			\$31,217,415
Suisun City as a Percent of Primary Market Area (6)			5.3%
Estimated Diverted Suisun City Sales			<u>\$1,669,604</u>
Diverted Sales Tax Estimate			
Estimated Diverted Suisun City Sales			\$1,669,604
Sales Tax Accruing to Suisun City General Fund (3)			1.0%
Annual Diverted Sales Taxes (diverted from the Suisun City General Fund)			<u>\$16,696</u>

TOTAL NEW SALES TAX REVENUE (7) \$1,242,512

Notes:

- (1) Refer to Exhibit 3.
- (2) Sedway Group assumes 30 percent of all grocery sales are taxable, based on data provided by the State of California Board of Equalization.
- (3) Sales tax rate accruing to the City of Suisun City General Fund.
- (4) Refer to Exhibit 12, column I.
- (5) Because the analysis estimates diverted sales for the entire primary market area, which includes Suisun City and the City of Fairfield, it is necessary to estimate the portion of such sales that would be diverted from the Suisun City General Fund.
- (6) Refer to Exhibit 6. Represents Suisun City's share of total taxable sales in the primary market area.
- (7) The proposed Suisun Marketplace sales tax revenue less the diverted Suisun City sales tax revenue.

Sources: City of Suisun City; and Sedway Group.
P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\ALT 2 Development Program Summary.xls\Ex1\JB]

20-Mar-06

ALTERNATIVE 2, EXHIBIT 29
 FISCAL BENEFIT ANALYSIS
 PROPERTY VALUE AND PROPERTY TAX REVENUE ASSUMPTIONS (1)
 PROPOSED SUISUN MARKETPLACE AND GILBERT PARCEL
 ALL FIGURES IN 2009 DOLLARS

Suisun Marketplace Development	2005 Value (2)	2009 Value (3)
Total Development Costs	\$81,878,881	\$92,155,401
Property Tax Estimate		
Total Assessed Value (1)		\$92,155,401
Property Tax Rate (4)		1.0%
Total Annual Property Taxes		\$921,554
Property Tax Rate to Suisun City General Fund (5)		14.47%
New Property Tax Revenue Accruing to Suisun City General Fund		\$133,349

Notes:

(1) For purposes of calculating real property taxes, it is assumed that the assessed value of the Suisun Marketplace will be based on the total development costs of the project.

(2) Total development costs were provided by Highland Development Company and checked for reasonableness by Sedway Group. Detailed cost estimates were provided. The construction cost detail is suppressed for confidentiality. Total development costs include the construction costs incurred either by Highland Development Company or by individual retail tenants. The estimates include land acquisition costs, hard and soft costs, on and off-site costs, and all tenant improvement costs.

(3) Assumes an inflation adjustment of 3.0 percent annually.

(4) Per Proposition 13.

(5) Property tax rate accruing to the Suisun City General Fund is an estimate based on information provided by the Solano County Auditor's office. Currently, the property is located in unincorporated Solano County and current property tax allocation factors do not apply to Suisun City. However, after annexation the property will have a new tax rate area and property tax allocation factors. The new tax rate area and allocation factors were not determined as of the date of this analysis. As a reasonable proxy, Sedway Group utilized the tax allocation percentage for Suisun City as defined in the Property Tax Exchange Rate for properties in Solano County undergoing the annexation process as recommended by the Solano County Assessor's Office.

Sources: Highland Development Company; Solano County Assessor's Office; Solano County Auditor's Office; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 2 Development Program Summary.xls]Ex1 [JB]

20-Mar-06

**ALTERNATIVE 2, EXHIBIT 30
FISCAL BENEFIT ANALYSIS
PROPERTY VALUE AND PROPERTY TAX REVENUE ASSUMPTIONS (1)
PROPOSED RESIDENTIAL DEVELOPMENT
ALL FIGURES IN 2009 DOLLARS**

Residential Development	2005 Value (2)	2009 Value (3)
Value Assumptions		
Estimated Selling Price per Unit	\$360,000	\$405,183
Total Units (4)		542
Total Assessed Value (5)		<u>\$219,609,279</u>
Property Tax Estimate		
Total Assessed Value		\$219,609,279
Property Tax Rate (6)		1.0%
Total Annual Property Taxes		<u>\$2,196,093</u>
Property Tax Rate to Suisun City General Fund (7)		14.47%
Total Annual Property Taxes to Suisun City General Fund		<u>\$317,775</u>
NET PROPERTY TAX REVENUE ACCRUING TO SUISUN CITY GENERAL FUND		\$317,775

Notes:

- (1) For purposes of calculating real property taxes, it is assumed that the assessed value of the residential component will be based on the total selling price of the residential units. Selling price data provided by Silverwing Development. The analysis conservatively assumes all units are sold in 2009. If some units were sold prior to 2009, the assessed value of those units sold would increase 2.0 percent per year as allowed by
- (2) Estimated selling price data provided by Silverwing Development in 2005 year dollars.
- (3) Assumes an inflation adjustment of 3.0 percent annually.
- (4) Data provided by Tom Gentry California Company.
- (5) For assessed valuation, analysis assumes all units sold in 2009 year dollars.
- (6) Per Proposition 13.
- (7) Property tax rate accruing to the Suisun City General Fund is an estimate based on information provided by the Solano County Auditor's office. Currently, the property is located in unincorporated Solano County and current property tax allocation factors do not apply to Suisun City. However, after annexation the property will have a new tax rate area and property tax allocation factors. The new tax rate area and allocation factors were not determined as of the date of this analysis. As a reasonable proxy, Sedway Group utilized the tax allocation percentage for Suisun City as defined in the Property Tax Exchange Rate for properties in Solano County undergoing the annexation process as recommended by the Solano County Assessor's Office.

Sources: Silverwing Development; Solano County Assessor's Office; Solano County Auditor's Office; and Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives Update\[ALT 2 Development Program Summary.xls]Ex1[JB]

20-Mar-06

ALTERNATIVE 2, EXHIBIT 31
 FISCAL BENEFIT ANALYSIS (1)
 SUMMARY OF NET NEW TAX REVENUES
 CITY OF SUISUN CITY
 2009 DOLLARS (2)

Source	2009
New Tax Revenues	
Net New Sales Tax Revenues (3)	\$1,242,512
Net New Property Tax Revenues	
Commercial Development (4)	\$133,349
Residential Development (5)	<u>\$317,775</u>
Subtotal	<u>\$451,123</u>
Net New Tax Revenue Total	\$1,693,635

Notes:

(1) The economic impact analysis estimated the impact of the proposed Suisun Marketplace on the primary market area, defined as the cities of Suisun City and Fairfield. The fiscal benefit analysis estimated the fiscal benefit to the City of Suisun City only, as Suisun City will be the jurisdiction receiving property tax and sales tax revenue as a result of the proposed development.

(2) For the purpose of internal consistency with the economic impact analysis the fiscal benefit analysis assumes build out of the commercial and residential projects in 2009.

(3) Refer to Exhibit 28.

(4) Refer to Exhibit 29.

(5) Refer to Exhibit 30.

Sources: Sedway Group.

P:\2004\1004232 Highland Dev Co, Suisun EIR\2005 Alternatives

Update\ALT 2 Development Program Summary.xls]Ex1 [JB]

20-Mar-06