6.0 TRAFFIC AND TRANSPORTATION

This chapter describes existing traffic and transportation systems in the project and region. It includes existing roadways in the project vicinity, regional transportation and regulatory settings to provide a context for analyzing the effects of the project. The information presented in this section was compiled largely from information provided by the City of Novato and the California Department of Transportation (CalTrans). In addition, the results of a traffic assessment conducted by Dowling Associates (1995) in conjunction with the 1995 Bahia Master Plan were used to describe existing traffic conditions in the project area. References to other documents are provided as appropriate.

6.1 AFFECTED ENVIRONMENT

Regional access to the site is via U.S. Highway 101 (US 101) and State Route 37 (SR 37). SR 37 runs northeast to southwest approximately one mile south of the site and is connected to US 101 to the west by Atherton Avenue. Local access to the site is via Atherton Avenue, Bugeia Lane, and Bahia Drive (Bugeia Lane becomes Bahia Drive at H Lane). Figure 6-1 shows the regional transportation systems and figures 6-2 and 6-3 show local roadways, construction, and public access at the project site.

6.1.1 Surrounding Street System

The surrounding street system is defined as the various freeway and residential streets that serve the project study area, including all the streets thus potentially affected by the proposed project. Preliminary investigation determined that the surrounding street system for the Bahia Marsh Restoration Project includes the streets along the proposed trucking route for construction materials (Bolero Court and Topaz Drive) as well as streets that may be used by residents as alternate routes of egress and ingress to the Bahia community during project construction (Bahia Drive, Albatross Drive, Laguna Vista Drive, and Cerro Crest Drive). The operational characteristics of these streets are described below.

In addition, the operational characteristics of potentially affected intersections (e.g., intersections along Topaz Drive, from Bolero Court to Bahia Drive) are discussed. The existing level of service (LOS) is provided for those intersections included in the 1995 Dowling Associates traffic study. LOS is a term used to describe the operating performance of an intersection or roadway and is measured on a scale from A to F, with “A” representing the best performance and “F” the worst. Definitions of LOS are provided below in Table 6-1.
Figure 6-1 Regional Traffic Map
Table 6-1  Level of Service Definitions

<table>
<thead>
<tr>
<th>Level of Service Rating</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Free flow; insignificant delays</td>
</tr>
<tr>
<td>B</td>
<td>Stable operations, minimal delays</td>
</tr>
<tr>
<td>C</td>
<td>Stable operations, acceptable delays</td>
</tr>
<tr>
<td>D</td>
<td>Approaching unstable; queues develop rapidly but no excessive delays</td>
</tr>
<tr>
<td>E</td>
<td>Unstable flow; significant delays</td>
</tr>
<tr>
<td>F</td>
<td>Forced flow; low operating speeds</td>
</tr>
</tbody>
</table>

The 1995 Dowling Associates traffic study employed standard methodology to analyze intersections in the project’s surrounding street system. Although the 1995 data are already 10 years old, there have been no changes to the study area likely to have caused changes to the 1995 LOS.

Figure 6-2 shows the locations of most of the streets and intersections described below. The speed limit on all of these roads, with the exception of Bahia Drive, is 25 mph. The speed limit on Bahia Drive is 35 mph. Streets in the surrounding street system have sidewalks, but no bike lanes or paths. Bahia Drive has a gravel shoulder, adequate to accommodate pedestrians.

**Bolero Court**-This relatively short street with houses only on the west side offers access to the western shore of East Bahia Lagoon. It connects with Topaz Drive near the Bahia community center.

**Topaz Drive**-Topaz Drive is the main street within the Bahia community and bears much of the internal site automotive and pedestrian traffic. It is a two-lane residential street and provides access to Bahia Drive at the west and Bolero Drive at the east. Topaz Drive is serpentine in design and has a number of curves that encourage traffic to travel below the posted speed limit of 25 mph. Parking is allowed along Topaz Drive.

**Bahia Drive**-As noted above, Bahia Drive is the extension of Bugeia Lane east of H Lane. East of H Lane, Bahia Drive has a curb-to-curb width that could accommodate four travel lanes; however, only two lanes are striped. Near Topaz Drive, Bahia Drive narrows to two lanes.

This is the main entry into the project site. It bears most, if not all, of the traffic entering or leaving the project area and is the primary access to schools, shopping, downtown Novato, and Highway 101 from the Bahia community. It does not have adjoining housing and serves only as a collector road (a surface street providing land access and traffic circulation service with residential, commercial, and industrial areas).
**Albatross Drive**-This two-lane road offers access to the east side of the West Bahia Lagoon and provides connections between Topaz Drive near its current eastern terminus and Laguna Vista Drive on the ridge south of Topaz Drive.

**Laguna Vista Drive**-This two-lane road provides access to the residential areas on the ridge south of Topaz Drive. Laguna Vista Drive extends generally east-west, curving north at its east end and becoming Albatross Drive at the Albatross/Topaz intersection. The western end of Laguna Vista Drive is a cul-de-sac. Laguna Vista Drive has a variable cross section. For the residents living on Albatross Drive, Laguna Vista Drive provides an alternative route in and out of the Bahia community so that Topaz Drive does not have to be used.

**Cerro Crest Drive**-This two-lane road connects the northwestern end of Laguna Vista Drive (east of the Laguna Vista Drive cul-de-sac) with Bahia Drive.

**Intersections**-Potentially affected intersections include those intersections along Topaz Drive, from Bolero Court to Bahia Drive, as well as intersections along streets that may be used by residents as alternate routes of egress and ingress to the Bahia community during project construction (i.e., Laguna Vista Drive/Cerro Crest Drive and Cerro Crest Drive/Bahia Drive). The following intersections were studied:

- Intersection of Bolero Court and Topaz Drive
- Intersection of Albatross Drive and Topaz Drive
- Intersection of Santana Road and Topaz Drive
- Intersection of Baruna Court and Topaz Drive
- Intersection of Circle Court and Topaz Drive
- Intersection of Andale Avenue and Topaz Drive
- Intersection of Misty Road and Topaz Drive
- Intersection of Malobar Drive and Topaz Drive
- Intersection of Topaz Drive and Bahia Drive
- Intersection of Laguna Vista Drive and Cerro Crest Drive
- Intersection of Cerro Crest Drive and Bahia Drive

There is a four-way stop sign at the intersection of Albatross and Topaz and a single stop sign on the north terminus of Cerro Crest Drive as it enters Bahia Drive. The other intersections in the surrounding street system remain un-signalized. The 1995 LOS data indicate that the Albatross/Topaz and Topaz/Bahia intersections were operating at LOS “A” at that time. As noted above, estimated levels of service in the surrounding street system remain unchanged since 1995. Levels of service for the remaining project area roads and intersections were not included in the 1995 traffic study, but visual observations during peak hour travel times indicate that these roads and intersections are also operating at LOS “A.”

**6.1.2  Regional Transportation Setting**
Described below are the regional roadways that may be used to access the project area, as well other information relevant to regional transportation in the project area (public transit, airports, commercial activity).

6.1.2.1 Regional Circulation

**U.S. Highway 101 (US 101)** - US 101 is a six-lane north/south interstate highway. From US 101, access to the project is provided via the San Marin Drive/Atherton Avenue freeway interchange. San Marin Drive is a major east-west arterial (a street serving a major movement of traffic not served by a freeway), which serves the westerly portions of Novato, while Atherton Avenue is a rural arterial, which serves the easterly portions of Novato. The San Marin Drive/Atherton Avenue interchange is the most northerly US 101 interchange in Novato.

**State Route 37 (SR 37)** - SR 37 is a four-lane east/west state highway serving Marin County and points east including Vallejo, Napa Valley, and U.S. Interstate 80 (US 80) to Sacramento. SR 37 has its western terminus at Highway 101. Access to Atherton Avenue from SR 37 is provided about 2.3 miles east of the Highway 101/ SR 37 interchange. The SR 37/Atherton Avenue interchange is split into two segments. The westbound ramps are located near the terminus of Atherton Avenue north of SR 37 while the eastbound off-ramp is located to the southeast of SR 37 at the terminus of Atherton Avenue at Harbor Drive. Harbor Drive serves the Black Point and Green Point areas adjacent to SR 37 at the eastern border of Marin County.

**Atherton Avenue** - This is a two-lane arterial roadway without curbs and gutters. Atherton Avenue has a 24-foot cross section marked with a centerline and edge line producing 11-foot travel lanes. Atherton Avenue is about 3.2 miles in length and connects with Highway 101 to the west and SR 37 to the east. Between Highway 101 and SR 37, Atherton Avenue intersects with Binford Road, Bugeia Lane, H Lane, Olive Avenue, and School Road. Bugeia Lane serves the project and other limited development. A left-turn lane is provided on the eastbound approach of Atherton Avenue at Bugeia Lane. Atherton Avenue is shown as a future bicycle route in the City of Novato and County of Marin General Plans. The speed limit on Atherton Avenue is 45 miles per hour.

**Bugeia Lane** - Bugeia Lane is a City of Novato street and is classified as a collector street in the City of Novato General Plan. This facility is the access road to the existing Bahia community and project site. The road is two-lane between Atherton Avenue and H Lane, at which point it widens and becomes Bahia Drive, the entrance to the Bahia Community. The speed limit on Bugeia Lane is 35 miles per hour.

6.1.2.2 Public Transit
Novato does not have a local “in town” public transportation facility. Golden Gate Transit provides public transportation through Marin from Sonoma County to San Francisco. Currently, four commuter buses to the San Francisco Financial District (from 6:00 a.m. to 7:30 a.m.) service the Bahia community at the Bugeia Lane/Bahia Drive turnaround near H Lane. Four afternoon buses return to the same drop-off location in the afternoon. In addition to the bus service, personalized van pool and ride sharing programs are available to specific destinations through Rides for Bay Area Commuters.

6.1.2.3 Airports

**Gnoss Field**-Also known as the Marin County Airport, Gnoss Field is a general aviation airport that serves small civilian aircraft and is located 2 miles northwest of the project site. Its single runway is 3300 x 75 ft and runs 312 degrees true (N by NW). The prevailing winds, coupled with runway direction, require small engine aircraft to land and take off on a flight vector to the west of the project site. The direction of flight and altitudes produce no significant effect on bird life or bird flight in the project area.

**Hamilton Air Force Base**-The Hamilton Army Airfield is located on the southeast edge of the City of Novato, approximately 4.5 miles south of the project site. The U.S. Department of Defense closed the base in 1976 and the airfield was officially vacated in 1995.

6.1.2.4 Commercial Activity

The Bahia community relies on the greater Novato area to meet its commercial needs. Downtown Novato is approximately 3 miles from the project site and provides all shopping needs. Additionally Vintage Oaks Shopping Center, 5 miles southwest from the project site provides an array of commercial activities.

6.1.3 Regulatory Setting

The project is within the Novato city limits and therefore is subject to the laws and regulations of that city. As noted above, the posted speed limit on all streets within the project’s surrounding street system is 25 mph, with the exception of Bahia Drive, which has a speed limit of 35 mph.

The city generally does not allow trucks exceeding five tons in gross weight to use city streets. Exceptions are made for pick up and deliveries of goods and materials, including construction projects. The Municipal Code of Novato: 18-10 Truck Routes describes these restrictions and the exceptions in the following section.

18-10.3 *Exceptions.* The operator of any vehicle exceeding the weight limit of five tons shall drive or park on such [designated] truck route and none other, except that nothing in this chapter shall prohibit any such commercial vehicle
coming from a truck route having ingress and egress by direct route to and from restricted streets, when necessary for the purpose of making pick-ups or deliveries of merchandise from or to any building located on such restricted streets, or for the purpose of delivering materials to be used in the actual and bona fide repair, alteration, remodeling or construction of any building or structure upon such [designated] restricted streets, for which a building permit has previously been issued. The provisions of this chapter shall not apply to passenger buses under the jurisdiction of the public utilities commission or to any vehicle owned by a public utility or licensed contractor while necessarily in use in the construction installation or repair of any public utility. (Ord. No. 758, § 59; Ord. No. 1121, § 4)

6.2 CRITERIA FOR DETERMINING SIGNIFICANCE OF EFFECTS

Criteria based on the CEQA Guidelines, CalTrans and local traffic standards and regulations, as well as professional judgment, were used to determine the significance of transportation impacts. The project would have a significant impact on transportation if it would:

- Cause an increase in traffic that is substantial in relation to existing traffic load and capacity of the street system for the duration of the project (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- Cause either individually or cumulatively, exceedance of an established LOS standard;
- Substantially increase hazards due to a design feature, (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., construction equipment);
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
- Result in inadequate emergency access;
- Result in inadequate parking capacity;
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)
- Violate any of the conditions of permits issued by the City of Novato;
- Substantially degrade the condition of existing roadways;
- Interfere with road access to residences etc.;
- Substantially contribute to pedestrian, bicycle, or automotive safety hazards (e.g., by obstructing views)

6.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES
The baseline for comparison of traffic and transportation impacts is current conditions (e.g., current LOS). Project traffic impacts are expected to be minimal and short-term (lasting only during the construction period, or approximately 6 weeks). Therefore, a formal traffic analysis was deemed unnecessary for this project.

Project impacts to traffic and LOS on the surrounding street system were analyzed quantitatively by:

1. Calculating the total number of daily trips generated during the project mobilization and construction phases;
2. Comparing existing LOS data from the 1995 Dowling Associates traffic study and visual observations of current LOS with the estimated traffic generated by the project and proposed alternatives; and
3. Determining whether the additional project traffic would result in significant impacts (e.g., congestion leading to a change of LOS at specific intersections).

### 6.3.1 Proposed Project

Under the Proposed Project, trucks would transport approximately 23,000 cubic yards (cy) of fill materials excavated from the East Bahia peninsulas to Central Bahia for use as fill material. Figure 6-2 shows the location of construction staging and the proposed construction access road between East and Central Bahia. Figure 6-3 shows construction staging and access for West Bahia. Construction staging for the work in East Bahia would be located directly south of the East Bahia peninsulas, on land owned by Marin Audubon Society (MAS). There would be no need to use adjacent residential streets for project-related parking or construction staging.

Trucks hauling fill material would exit the East Bahia site at the end of Bolero Court (where the Bahia Community Center is located), turn right onto Topaz Drive, and wind along Topaz Drive past Bahia Drive to the Central Bahia staging area (the 5-acre former RV parking lot). Empty trucks would return to East Bahia along the same route to refill. Trucks would encounter a single stop sign at the Topaz/Albatross intersection. The rest of the truck transport route remains unsignalized.

Project traffic impacts would be short-term and limited in extent (i.e., they would be limited to the duration of the construction phase, or approximately 4 weeks, and would not extend beyond the confines of the Project Site and the Bahia community since there would be no movement of excavated materials off-site).
Bahia Wetland Restoration

PURPOSE: HABITAT RESTORATION

DATUM: NAVD88

ADJACENT PROPERTY OWNERS:
1. BAHIA HOMEOWNERS ASSOCIATION
2. CALIFORNIA STATE LANDS COMMISSION
3. MARIN COUNTY OPEN SPACE DISTRICT

MARIN AUDUBON SOCIETY (MAS)
PO BOX 599
MILL VALLEY, CA 94942

CA DEPT. OF FISH & GAME (DFG)
PO BOX 47
YOUNTVILLE, CA 94558

CONSTRUCTION ACCESS PROPOSED PROJECT

IN: LOWER PETALUMA RIVER
AT: NOVATO
COUNTY OF: MARIN
STATE: CA
DATE 05/04/05
APPLICATION BY: MAS & DFG
The project could result in a temporary increase in the safety hazard to pedestrians, bicyclists, and motorists during the construction phase, particularly given the narrow and winding nature of Topaz Drive and lack of off-street parking, resulting in poor visibility, and given the lack of signalized intersections along the proposed project truck route. Since this is a residential district, the pedestrian traffic is demographically mixed and includes children and the elderly, who may be at greatest risk.

These general types of impacts, at least some of which are also relevant to the proposed project alternatives, are discussed in greater detail below.

**Traffic Impact-1: Increased traffic on Bolero Court and Topaz Drive during construction.**

A total of 1,150 round-trips are estimated, based on a figure of 23,000 cy of material to be hauled from East to West Bahia and a capacity of 20 cy per truckload. Assuming the transport of this material is completed within four 40-hour work weeks (160 hours total), hauling this amount of material would result in approximately 7 truck round-trips per hour (1,150 round trips divided by 160 hours total), or 14 one-way trips per hour. During peak commute hours (7:30 to 9 am and 4:30 to 6 pm), this could cause some traffic congestion at the Topaz/Albatross intersection, where there is a four-way stop sign, with LOS possibly degrading to a “C” at that intersection. (Note that an LOS of “C,” while a significant degradation from existing conditions, still represents stable operations and acceptable delays at impacted intersections.)

Significance: Significant, but short-term (approximately 4 weeks)

**Mitigation for Traffic Impact-1: Restrict truck traffic to the hours between 9 am and 4:30 pm.**

**Post-mitigation Significance:** Less than significant (this mitigation would be sufficient to avoid a degradation in the LOS of the Topaz/Albatross intersection).

**Traffic Impact-2: Increased safety risks to pedestrians, bicyclists, and motorists on Bolero Court and Topaz Drive during construction.** The proposed project would generate approximately 7 round-trips, or 14 one-way trips per hour (see calculations under Traffic Impact-1, above). Averaged out, this would equate to one truck every 4.5 minutes, approximately.

Significance: Significant, but short-term (approximately 4 weeks)

**Mitigation A for Traffic Impact-2: Reduce speed limit for project trucks to 10mph.** At this speed, the ability of truck drivers to see around the tight serpentine bends of Topaz Drive and their ability to stop quickly if need be, would be greatly improved.

**Mitigation B for Traffic Impact-2: Restrict street parking along Topaz Drive and Bolero Court during construction/truck hauling hours.** Residents who normally park
their cars on Topaz and Bolero would be asked to park in the garages, driveways, or on side-streets during the hours of construction (9am to 4:30pm). This would reduce safety risks by improving visibility.

**Mitigation C for Traffic Impact-2: Notify the Bahia community immediately prior to the beginning of excavations at East Bahia.** This notification should alert Bahia residents to the project and the safety precautions that will be taken.

Post-mitigation Significance: Less than significant

### 6.3.2 No Project Alternative

This alternative does not involve the transport of excavated materials through existing residential streets, from East to West Bahia. Therefore, the No Project Alternative would not cause traffic congestion, safety, or road condition impacts.

### 6.3.3 Alternative 1 (Reduced Fill Removal from East Bahia)

Under Alternative 1, trucks would transport approximately 11,000 cy of fill materials excavated from the East Bahia peninsulas to Central Bahia for use as fill material (a 50% reduction of material from the Proposed Project). Construction staging locations would be the same as the Proposed Project (see figure 6-2 and 6-3). The proposed trucking route would also be the same as the Proposed Project (figure 6-2).

**Traffic Impact-1: Increased traffic on Bolero Court and Topaz Drive during construction.**

A total of 550 round-trips are estimated, based on a figure of 11,000 cy of material to be hauled from East to Central Bahia and a capacity of 20 cy per truckload. Assuming the transport of this material is completed within two 40-hour work weeks (80 hours total), hauling this amount of material would result in slightly under 7 truck round-trips per hour (550 round trips divided by 80 hours), or approximately 14 one-way trips per hour. During peak commute hours (7:30 to 9 am and 4:30 to 6 pm), this could cause some traffic congestion at the Topaz/Albatross intersection, where there is a four-way stop sign, with LOS possibly degrading to a “B” at that intersection. This would be a higher LOS than anticipated under the Proposed Project, which would degrade the Topaz/Albatross LOS to “C.” (Note that an LOS of “B,” while a significant degradation from existing conditions, represents stable operations and minimal delays at impacted intersections.)

Significance: Significant, but short-term approximately 2 weeks.

**Mitigation for Traffic Impact-1: Restrict truck traffic to the hours between 9am and 4:30pm.**
Post-mitigation Significance: Less than significant (this mitigation would be sufficient to avoid a degradation in the LOS of the Topaz/Albatross intersection).

**Traffic Impact-2: Increased safety risks to pedestrians, bicyclists, and motorists on Bolero Court and Topaz Drive during construction.** Alternative 1 would generate slightly over 6 round-trips, or 14 one-way trips per hour (see calculations under Traffic Impact-1, above). Averaged out, this would equate to one truck every 4 minutes, approximately. The safety risk resulting from Alternative 1 would be less than that under the Proposed Project, but still significant.

Significance: Significant, but short-term (approximately 2 weeks)

**Mitigation A for Traffic Impact -2: Reduce speed limit for project trucks to 10mph.** At this speed, the ability of truck drivers to see around the tight serpentine bends of Topaz Drive and their ability to stop quickly if need be, would be greatly improved.

**Mitigation B for Traffic Impact -2: Restrict street parking along Topaz Drive and Bolero Court during construction/truck hauling hours.** Residents who normally park their cars on Topaz and Bolero would be asked to park in the garages, driveways, or on side-streets during the hours of construction (9am to 4:30pm). This would reduce safety risks by improving visibility.

**Mitigation C for Traffic Impact -2: Notify the Bahia Community immediately prior to the beginning of excavations at East Bahia.** This notification should alert Bahia residents to the project and the safety precautions that will be taken.

Post-mitigation Significance: Less than significant

### 6.3.4 Alternative 2 (No Fill Removal from East Bahia)

This alternative does not involve the transport of excavated materials through existing residential streets, from East to West Bahia. Therefore, Alternative 2 would not cause traffic congestion, safety, or road condition impacts.