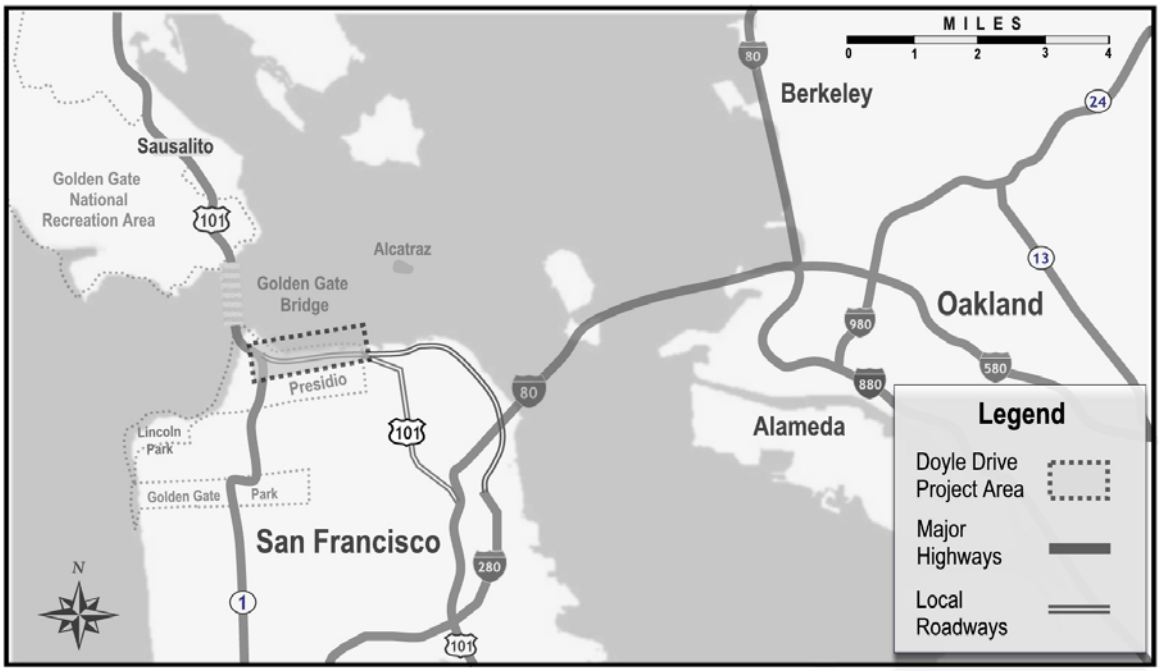
CHAPTER ONE
PURPOSE AND NEED

Doyle Drive, the 72-year-old stretch of Route 101 that provides access to the city of San Francisco from the Golden Gate Bridge, and southern access to Marin County and other Bay Area communities, requires extensive seismic, structural and traffic safety upgrades.

Because of its importance within the Bay Area's regional transportation system, the Federal Highway Administration (FHWA), the California Department of Transportation (Caltrans), and the San Francisco County Transportation Authority (the Authority) have proposed to improve the approximately 2.4 kilometer (1.5 mile) Doyle Drive. Also playing major roles in the development and implementation of this project are the National Park Service (NPS), the Presidio Trust (Trust) and the Department of Veterans Affairs (VA).

In addition to benefiting motorists using the Golden Gate Bridge, the improvements to Doyle Drive would be beneficial to residents, tourists and others driving to and from the Presidio, the Golden Gate National Recreation Area (GGNRA), the Palace of Fine Arts, the Exploratorium, and other destinations.

Exhibit 1-1
Regional Context of Doyle Drive



1.1 Project Background

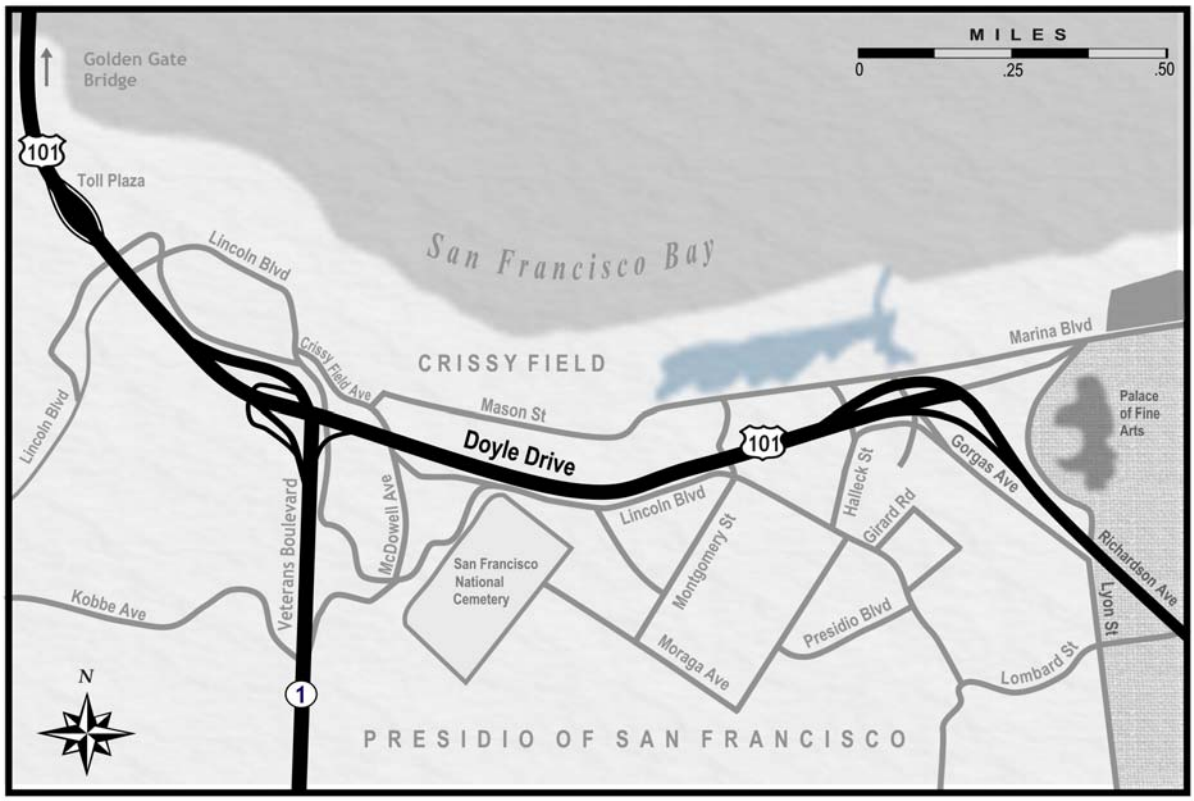
The Doyle Drive portion of Route 101 provides the southern access to the Golden Gate Bridge and is part of the primary north-south link in coastal California (see **Exhibit 1-2**).

Currently, over 91,000 vehicles use Doyle Drive every weekday. Typically, eighty percent of the vehicles traveling on Doyle Drive are coming from or going to the Golden Gate Bridge. The remaining twenty percent of the vehicles begin or end their trips in San Francisco. Doyle Drive weekend traffic volumes are comparable to the weekday volumes, confirming that it serves as both a primary commute and a recreational route.

1.1.1 Doyle Drive and the Presidio

The Presidio has served as a military post for more than two hundred years, under the flags of Spain, Mexico and the United States. This has included a period, between 1848 and its closure in 1994, during which the Presidio protected commerce and trade, and played a logistical role in major United States military conflicts.

Exhibit 1-2
Doyle Drive and the Presidio

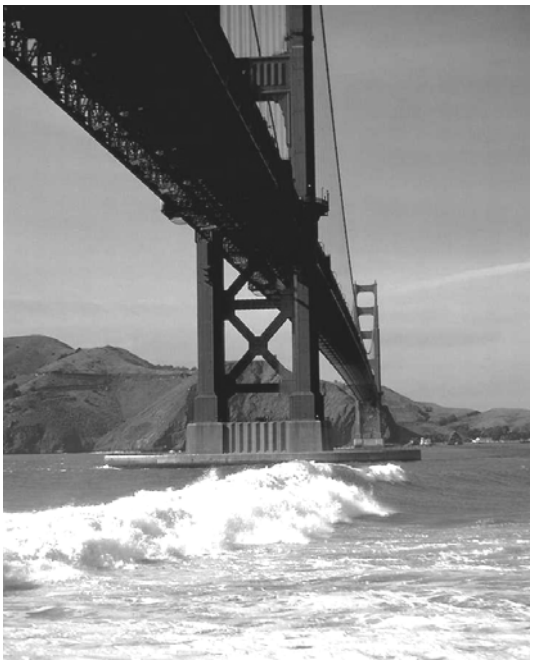


It was also during this period, in 1962, that the Presidio became a National Historic Landmark District (NHLD), and that Doyle Drive was determined to be a contributing structure within that landmark.

In 1972, the Golden Gate National Recreation Area was created, and the Presidio was designated to be part of the recreation area if the military ever closed the base. As part of a military base reduction program in 1989, Congress decided to close the post. As such, the Presidio was transferred to the National Park Service on October 1, 1994. Then in 1998, the management of the Presidio became split between the National Park Service (Area A) and the Presidio Trust (Area B).

1.2 Project History

The history of this project dates back to 1933 when the Golden Gate Bridge and Highway District (renamed in 1969, the Golden Gate Bridge Highway and Transportation District) started construction on Doyle Drive as the southern approach to the Golden Gate Bridge. Doyle Drive was named after Frank P. Doyle, a director of the California State Automobile Association. Mr. Doyle was a roadway advocate and civic leader, and the first private citizen to cross the Golden Gate Bridge.



Doyle Drive provides access to the Golden Gate Bridge

Doyle Drive was designed and built to operate with three, three-meter (ten-foot) lanes in each direction, separated by painted double stripes. In September 1945, Doyle Drive became a state highway. Subsequently, the California Division of Highways, now known as Caltrans, assumed responsibility for maintenance of the section extending from near the Golden Gate Bridge toll plaza to the Palace of Fine Arts and the Marina District of San Francisco.

In 1955, the Golden Gate Bridge Highway District requested that the State widen and reconstruct Doyle Drive to handle increasing congestion. In 1962, the District specifically asked for an eight-lane divided roadway as part of a proposed Golden Gate Freeway. The proposal was not pursued due to public objection. In 1970, after a fatal accident on the facility, the National

Transportation Safety Board (NTSB) recommended that Doyle Drive be upgraded to current freeway design standards. In 1973, a *Draft Environmental Impact Statement* (DEIS) was completed for reconstruction of Doyle Drive as an eight-lane highway with a fixed median barrier. The public objected to the proposal, and the following year the state legislature passed the Marks Bill, which prohibited Caltrans from widening Doyle Drive to more than six lanes without the specific approval of the San Francisco Board of Supervisors.

In 1985, the San Francisco Board of Supervisors recommended that Caltrans develop alternatives that would improve safety but not increase the number of vehicles using Doyle Drive. Caltrans responded with two alternative recommendations: an eight-lane roadway design and a six-lane roadway design. The issues surrounding each of these alternatives were never resolved and a preferred solution was not identified.

1.2.1 Continued Studies: 1990's through Present

In 1991, Caltrans requested that the San Francisco Board of Supervisors revisit the most recent design concepts for Doyle Drive. The Supervisors responded with the establishment of the Doyle Drive Task Force, consisting of representatives from various local governments and public and private organizations. The task force considered design alternatives; developed a consensus on a preferred alternative, and in 1993 issued the *Report of the Doyle Drive Task Force*, which proposed a scenic parkway through the Presidio.

Historic structures within the Presidio

This parkway concept envisioned three travel lanes in a separate tunnel in each direction and an additional eastbound auxiliary lane between the Park Presidio interchange and a new direct access point to the Presidio. In principle, the Board of Supervisors unanimously approved the recommendations of the Task Force and urged Caltrans to expedite inclusion of rebuilding Doyle Drive in the next state transportation funding cycle.

In the same year, Caltrans completed a project study report for the replacement of Doyle Drive. The Task Force's recommended concepts were included in the alternatives evaluated in the Caltrans report.

In July 1994, the National Park Service published the *Final General Management Plan Amendment* (GMPA), which identified the following objectives for Doyle Drive:

- redesign the Doyle Drive corridor as a parkway rather than a freeway;
- respect the Presidio's status as a National Historic Landmark District in redesign options;
- minimize the effects of noise and other pollution from the parkway on natural and recreational areas at Crissy Field and other areas adjacent to the Presidio;
- improve the Presidio entrance and circulation features as part of the Doyle Drive redesign; and
- maintain the functions that the Doyle Drive corridor provides as part of the regional and City transportation network.

Additionally, in 1994, the San Francisco County Transportation Authority initiated the *Doyle Drive Intermodal Study*, which was funded by a Caltrans state planning and research grant, "to further the development and ultimate implementation of a realistic and fundable replacement for Doyle Drive."

The results of the *Intermodal Study* were released in 1996. They supported the Doyle Drive Task Force and GMPA recommendations that multi-modal and direct vehicular access, in and out of the Presidio, would be the central features of the replacement design. The study also emphasized that the Doyle Drive replacement be designed as a parkway. Other important recommendations included building a transit center; introducing transportation systems management and intelligent transportation systems technology, such as roadway surveillance cameras and real-time transit information kiosks.

View of Doyle Drive looking west

1.2.2 Related Plans and Projects

In addition to the proposed South Access to the Golden Gate Bridge-Doyle Drive Project, other planning efforts for future projects and developments in the Presidio are moving forward. Some of these plans include: the National Park Service's *General Management Plan Amendment;* the Presidio's *Vegetation Management*

Plan (VMP); the *Presidio Trails and Bikeways Master Plan*; and the *Presidio Trust Management Plan* (2002). More information about these plans, and other projects within the Presidio, is discussed in Chapters 3 and 5 of this document.

1.2.3 Environmental and Engineering Analysis: the Next Step

This environmental document has been initiated as the next step in the progression of the proposed Doyle Drive Project.

Under the *National Environmental Policy Act* (NEPA), an environmental analysis must be performed if the proposed action that is being implemented by a federal agency, requires a federal permit, or has federal funding. At the state level, any agency that proposes a major action is required to comply with the *California Environmental Quality Act* (CEQA)

Since the South Access to the Golden Gate Bridge-Doyle Drive Project (Doyle Drive Project), is being initiated by state and county agencies, and is programmed for federal funding, it must follow federal and state environmental laws (NEPA and CEQA). Pursuant to these environmental regulations, this *Draft Environmental Impact Statement/Report* (DEIS/R) contains a discussion of proposed project alternatives, existing environmental and community resources, potential permanent and temporary impacts, and proposed mitigation. Pursuant to CEQA, this document also identifies the environmentally superior alternative (see Chapter 4).

1.3 Project Purpose and Need

NEPA analyses require that a proposed project's alternatives be developed based upon the project's purpose and need. The purpose and need statement should clearly and succinctly explain why the project is needed and the project's intended purpose. The purpose and need is considered the cornerstone of NEPA environmental documentation.

A clear, well-justified purpose and need explains to the public and decision-makers why the expenditure of funds for the project is necessary and worthwhile. Even though environmental impacts could result from the project, the purpose and need statement justifies why impacts are acceptable based on the project's importance.

The following purpose and need discussion was prepared in accordance with FHWA *Technical Advisory T 6640.8*. It also reflects the recommendations of federal, state, regional, and local agencies, as well as community members and legislators who have, over the past three years, refined the project's purpose and need through a collaborative process.

1.3.1 Project Purpose

The purpose of the proposed project is to improve the seismic, structural, and traffic safety of Doyle Drive within the setting and context of the Presidio of San Francisco and its purpose as a National Park.

Doyle Drive viaduct structure

Specific objectives of the Doyle Drive Project, as they relate to the project's purpose, are:

- to improve the seismic, structural and traffic safety on Doyle Drive;
- to maintain the functions that the Doyle Drive corridor serves as part of the regional and city transportation network;
- to improve the functionality of Doyle Drive as an approach to the Golden Gate Bridge;
- to preserve the natural, cultural, scenic and recreational values of affected portions of the Presidio;
- to be consistent with the *San Francisco General Plan* and the *General Management Plan Amendment Final Environmental Impact Statement*, *Presidio of San Francisco, Golden Gate National Recreation Area (*NPS 1994a and 1994b) *for Area A of the Presidio and the Presidio Trust Management Plan: Land Use Policies for Area B of the Presidio of San Francisco* (Presidio Trust 2002);
- to minimize the effects of noise and other pollution from the Doyle Drive corridor on natural and recreational areas at Crissy Fields and other areas adjacent to the project;
- to minimize the traffic impacts of Doyle Drive on the Presidio and local roadways;
- to improve intermodal and vehicular access to the Presidio; and
- to redesign the Doyle Drive corridor using the parkway concept described within the *Doyle Drive Intermodal Study* (1996).

1.3.2 Project Need

After almost seventy years, Doyle Drive is approaching the end of its useful life. In the short-term, regular maintenance, seismic retrofit, and rehabilitation activities are keeping the structure safe. However, in the long-term, permanent improvements are needed to bring Doyle Drive up to current design and safety standards. **Exhibit 1-3** (on the following page) summarizes the need for the project, while a detailed discussion of each element, in the exhibit, follows.

Exhibit 1-3
Need for this Project

ELEMENT	DEFICIENCY	RESULT
STRUCTURAL DEGRADATION	▪ Age of the facility ▪ The effects of heavy traffic ▪ Exposure to salt air	Seismically and structurally unsafe
LOCATION	Eastern portion is located in an identified liquefaction[1] zone	Structural failure during an earthquake
DESIGN	1937 original design does not meet today's safety standards	Today's vehicle fleet combined with traffic volumes contributes to driving patterns not anticipated when Doyle Drive was designed
ACCESS	Lack of direct vehicular access into the Presidio	Limited access to facilities within the Presidio

[1]Liquefaction is the process by which a solid behaves as a liquid. This is often the case with some soils, resulting in landslides. Liquefaction can also happen during an earthquake in certain filled areas.

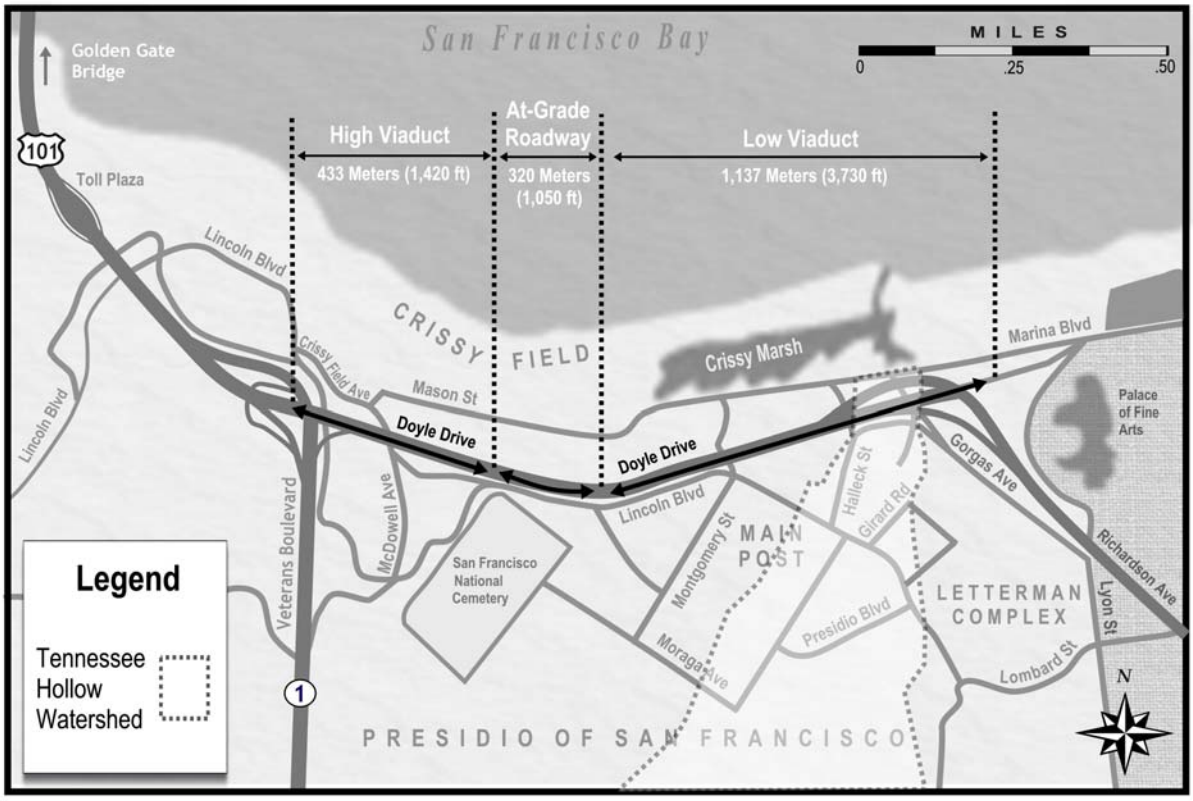
Structural Degradation

The Doyle Drive roadway contains two viaduct sections (see **Exhibit 1-4** on the following page). In 1995, the low-viaduct was retrofitted to withstand a probabilistic earthquake assuming that Doyle Drive would be replaced within a ten-year period. The substructure (foundations and the main trusses) of the high-viaduct was retrofitted for a maximum credible earthquake.

However, neither of these retrofits addressed the bridge decks. The long-term effects of heavy traffic and exposure to salt air have caused Doyle Drive's structure to deteriorate. In the early 1990s, the concrete decks were sealed and coated with corrosion inhibiting polymer. These measures slowed the rate of corrosion and concrete deterioration and added up-to-ten-years of service to the life of the viaduct bridge decks. The decks need to be replaced because they have deteriorated and are near the end of their useful life span.

While the previous corrosion prevention and seismic stabilization measures provided short-term solutions to the deck degradation and seismic vulnerability issues; they did not bring the roadway up to current design and safety standards. The current lifespan of Doyle Drive was not ultimately prolonged by these measures, which only delayed the roadway's replacement. In the interim, the high viaduct will increasingly become a financial burden as Caltrans will need to

Exhibit 1-4
Location of Doyle Drive Viaducts and other Key Features



perform more frequent routine maintenance and monitoring to ensure its safety. Caltrans is currently programming extensive maintenance work to further stabilize the degradation of the high viaduct. Should additional structural degradation lead to Doyle Drive closures or accessibility restrictions, the consequences to the regional transportation network would be dramatic.

Location in a Liquefaction Zone

The eastern half of the Doyle Drive alignment, which includes the low-viaduct section and lower Tennessee Hollow watershed, is within a potential liquefaction zone. Soils in this area, occurring at shallow depths not exceeding ten meters (thirty-three feet), include loose, well-sorted sands and silts. There is also evidence of potentially liquefiable saturated soils at the location of the high-viaduct.

Liquefaction, due to ground shaking during a strong earthquake, could cause soils to subside rapidly and unevenly. Heavy structures, such as the low- or high-viaducts, could subsequently collapse or be severely damaged due to this subsidence and the loss of lateral support of the foundation elements.

Nonstandard Design Elements

The existing roadway has many nonstandard design elements. Existing lane widths range between 2.9 and three meters (9.5 and 10 feet) compared to the current standard of 3.6-meter (twelve-foot) lanes.

The existing roadway does not have shoulders. Current Caltrans design standards call for three-meter (ten-foot) wide shoulders on either side of the roadway. The current lack of shoulders, and the resultant inability to clear disabled vehicles from travel lanes, contributes to the high level of congestion and increased likelihood of serious accidents occurring.

The tight curves in the Park Presidio interchange ramps cause vehicles to brake abruptly to exit the roadway. This, in turn, causes traffic to slow down, which contributes to increased congestion on Doyle Drive. Weaving in this area also contributes to increased congestion. In addition, the acceleration lengths of the exit ramps are insufficient, given the speed of the approaching vehicles.

Vehicular Access into the Presidio

With the exception of the ramps at the Golden Gate Bridge toll plaza, and the new slip ramp for the Letterman facility, no direct vehicular access is provided from Doyle Drive into the Presidio. The new slip ramp only provides access to the Presidio for northbound traffic. When access to the Presidio is provided via Doyle Drive, the slip ramp will be eliminated. A slip ramp is a short connector ramp that is located between a major roadway and its adjacent frontage road. These ramps allow motorists to "slip" from one roadway to another.

Currently, the lack of direct access into the Presidio has forced Doyle Drive traffic to detour through city neighborhoods adjacent to the Presidio gates. As illustrated in **Exhibit 1-5** usage of the Presidio is expected to increase dramatically over the next twenty years. Without proper access to the Presidio, increased traffic will have a greater negative affect on the surrounding neighborhoods.

The *Doyle Drive Intermodal Study* stated that direct access to the Presidio from Doyle Drive is a key feature of the current replacement strategy. The study also notes that a new Doyle Drive should greatly enhance multi-modal access choices

Exhibit 1-5
Current and Projected Presidio Users

	2001	2020	INCREASE
EMPLOYEES	2,020	7,190	256%
RESIDENTS	2,250	3,720	65%
ANNUAL VISITORS	5.1 million	9.9 million	95%

Source: The Presidio Trust, 2002.

into the Presidio, including improved transit service and connections, and enhanced pedestrian and bicycle facilities.

1.4 Project Partners

A number of agencies are participating in this Doyle Drive environmental process. The agencies and their roles are discussed below.

Federal Lead Agency

A National Environmental Policy Act (NEPA) environmental document is required for most federal actions. An action can include funding a project, building a project on federal land, or issuing a federal permit. The federal agency which takes this action is typically the lead NEPA agency. A lead agency is the agency with the main responsibility for complying with federal environmental regulations. For the Doyle Drive project, the Federal Highway Administration (FHWA) is the lead federal agency for the purposes of NEPA. The Authority and Caltrans are also co-lead agencies on this project.

State Lead Agency

Similar to NEPA regulations, CEQA requires that a state, regional, or local agency take responsibility for complying with state environmental regulations if a governmental (state, regional, or local) action is being taken. The lead CEQA agency for the Doyle Drive project is the San Francisco County Transportation Authority (the Authority), and it has the responsibility for complying with state environmental regulations.

CEQA Responsible Agencies

Under CEQA, a Responsible Agency reviews the environmental document and is responsible for considering the environmental effects of the project. For this project, Caltrans and the Golden Gate Bridge, Highway and Transportation District are the CEQA Responsible Agencies. Caltrans is also the owner and operator of Doyle Drive.

NEPA Cooperating Agencies

Upon request of the lead agency, any other Federal agency having jurisdiction within the project area, or having special expertise with respect to any environmental issue, may be a cooperating agency. The three cooperating agencies for the Doyle Drive Project are:

- The Presidio Trust
- United States Department of the Interior, National Park Service (NPS) - Golden Gate National Recreation Area
- Department of Veteran Affairs.

To satisfy both NEPA and CEQA requirements, the lead and cooperating agencies have developed this combined NEPA/CEQA document for the South Access to the Golden Gate Bridge-Doyle Drive Project.

1.5 Environmental Process

This *Draft Environmental Impact Statement/Report* (DEIS/R) evaluates the environmental impacts of the proposed project during the construction and the operational phases. When warranted, mitigation measures will be proposed to address project impacts.

After publishing and circulating (for public review and comment) this Draft Environmental Impact Statement/Report (DEIS/R), the sponsor agencies will follow the typical NEPA/CEQA procedure:

- conduct a public hearing on this DEIS/R (Winter 2006);
- provide a public comment period where interested parties can submit written comments on this document (Winter 2006);
- select a Preferred Alternative (Spring 2006);
- develop and circulate a Final Environmental Impact Statement/Report (FEIS/R). The FEIS/R will address comments received on the DEIS/R (Summer 2006); and
- issue a NEPA Record of Decision (ROD) and a CEQA Notice of Determination. This will allow the sponsor agencies to move forward with final design and permitting (Fall 2006).

1.5.1 Preferred Alternative

The FEIS/R will identify a preferred alternative. FHWA will select this alternative based on:

- collaboration with, and input from Caltrans, the Authority, and the cooperating agencies;
- findings from the DEIS/R; and
- state and federal agency, local government, tribal, and public comments.

Following circulation of the FEIS/R, the Authority (under CEQA) will certify the EIR and issue a *Notice of Determination* and FHWA will prepare a *Record of Decision* (ROD) which will identify a "selected alternative". If the selected alternative is a build alternative, the selected alternative will advance to the design and permitting stage. Based on available funding, permitting and construction could begin as early as 2008.

Exhibit 1-6
State of California Transportation Funding Programs

FUNDING PROGRAM	DESCRIPTION
TCRP (Traffic Congestion Relief Program)	TCRP is a state funding source managed by the California Transportation Commission for the Governor. The TCRP requires the California Transportation Commission (Commission) to adopt guidelines and implement an Exchange Program that allows the exchange of federal Congestion Mitigation and Air Quality Improvement (CMAQ) and Regional Surface Transportation Program (RSTP) funds for state transportation funds, based upon funding availability.
ITIP (Interregional Transportation Improvement Program)	ITIP is a state funding program for Interregional Transportation Improvement Program funds. Caltrans nominates and the California Transportation Commission approves a listing of interregional highway and rail projects for twenty-five percent of the funds to be programmed in the State Transportation Improvement Program.
SHOPP (State Highway Operation and Protection Program)	SHOPP is a state funding category used by Caltrans to maintain and operate state highways.
RIP (Regional Improvement Program)	RIP is a state funding source which provides for the regional allocation of state transportation improvement funds.

1.6 Funding and Programming

Revenues for transportation improvement projects are generated from a variety of sources. The primary traditional sources for state transportation projects are state gasoline and diesel fuel taxes, vehicle weight fees, and federal revenues. Additional sources include sales tax measures, local funds other than sales taxes, and private funds. **Exhibit 1-6** presents a description of some of these programs.

Because each funding program targets specific project activities (planning, design, and construction), the proposed Doyle Drive Project has been divided into four phases. These phases are:

- Phase 1: Project Approval and Environmental Documentation (PAED) - this document and accompanying engineering are part of PAED;
- Phase 2: Plans, Specifications, and Estimates (PS&E) - final design and development of project cost estimates;
- Phase 3: Acquisition of interest and right of way; and
- Phase 4: Construction. This phase includes implementation of identified mitigation and monitoring.

Exhibit 1-7 presents these proposed implementation phases in relation to anticipated funding sources and committed and proposed funding amounts. The project is currently in Phase 1.

Exhibit 1-7
Proposed and Committed Funding Sources and Levels (in thousands)

Source	Type		Phase 1 (*Environmental*)	Phase 2 (*Engineering*)	Phase 3 (*Right of Way*)	Phase 4 (*Construction*)	Total Capital Phases 3-4	Total
TCRP	State	Committed	$6,000	$ 9,000				$15,000
		Proposed						
PLH Funds	Federal	Committed	$8,192					$8,192
		Proposed				$182,900	$182,900	$182,900
High Priority	Federal	Committed			$13,500	$3,500	$17,000	$17,000
		Proposed				$80,000	$80,000	$80,000
STIP-RIP	Local	Committed		$5,000	$5,551		$5,551	$10,551
		Proposed			$6,550	$54,050	$60,600	$60,600
STIP-IIP	State	Committed		$28,000				$28,000
		Proposed			$20,822	$41,612	$62,434	$62,434
SHOPP	State	Committed				$83,000	$83,000	$83,000
		Proposed				$107,550	$107,550	$107,550
Prop K Sales Tax	Measure	Committed		$5,000	$6,550	$85,000	$91,550	$96,550
		Proposed						
Other Local*	Local	Committed						
		Proposed				$124,900	$124,900	$124,900
	Totals	Committed	$14,192	$47,000	$25,601	$171,500	$197,101	$258,293
		Proposed			$27,372	$591,012	$618,384	$618,384
		Total	$14,192	$47,000	$52,973	$762,512	$815,485	$ 876,677

Source: San Francisco County Transportation Authority, 2005

Note: Funding plan is based upon estimated capital costs for Alternative 5, Presidio Parkway, Diamond Option with Hook Ramp. Construction support and night of way support costs are taken as 10% of the respective capital amounts. Costs below do not include PAED or PS&E (Phase 1 and 2). Costs are as follows:

Construction	*$689,965*
Construction Support (10%)	*$68,997*
Right of Way	*$36,794*
Right of Way Support (10%)	*$3,679*
Total Capital Costs	*$799,435*

**Other local funds include sources such as bridge tolls and value pricing.*