

Chapter 6 Implementation Strategies

This chapter presents the steps that will be necessary to fully implement the Vista Grande Watershed Study. Implementation will depend on securing funding, developing a public outreach plan, complying with regulatory requirements, and establishing long term agreements between the involved parties. Strategies and procedures for addressing each of these issues are discussed in the following chapter. The chapter continues with a discussion of the program phasing, the overall implementation schedule and recommendations for the next steps in making the Vista Grande Watershed Study a reality.

6.1 Funding Strategies

Implementation of the Vista Grande Watershed Study's preliminary program recommendations is dependent on the availability of sufficient funding. Financing a project of this magnitude requires a well planned strategy for acquiring funds from a variety of sources. Innovative local financing techniques combined with State and Federal funding opportunities will generate the support necessary to make these preliminary program recommendations a reality.

6.1.1 Local Financing Options

This section reviews various financing options available to the District for the long-term preliminary program components in the Vista Grande Watershed Study. Because of the unique nature of stormwater projects and relevant California law, potential revenue sources are restricted, and must be approved by voters. However, once a revenue source has been secured, it can be used to borrow funds through a debt issuance that can then be used to finance the projects. In addition, ongoing revenue streams are available for pay-as-you-go improvements on a continuing basis, as well as operating and maintenance expenses. The summary and general approach for each of the long-term components of the Vista Grande Watershed Study is below.

Tunnel South of County Line: The Tunnel South of County Line is the most critical component from a project sequencing perspective. In addition, the project must be funded at one time, as phasing of construction costs is not a realistic option. Potential funding options include debt financing and/or state or Federal appropriations or grants. Debt financing would require an identified, steady revenue stream, such as service charges or parcel charges.

Storm Drain Improvements: These improvements are most appropriately funded using a pay-as-you-go financing strategy. Revenues to fund these improvements may be funded from sewer service charges and/or a new drainage service charge.

Vista Grande Wetland: The construction of wetlands at the Vista Grande canal will improve water quality in Lake Merced and increase water input into the lake. As such, CCSF would likely take the lead in financing this component of the study. Additionally, because of the enhancement benefits of this project, there would likely be opportunities for grant funding to help cover the costs of the Vista Grande Wetland. State and Federal grant opportunities are discussed in Section 6.1.2.

Financing Alternatives

Financing alternatives must consider both sources of capital and sources of revenue, as discussed below.

Sources of Capital

Capital may be generated in a lump sum for the Tunnel South of County Line component of the preliminary program through one of three debt issuance strategies: General Obligation (GO) bonds, Joint Powers Authority (JPA) revenue bonds, or Certificates of Participation (COPs).

GO Bonds: Many flood control agencies have used GO bonds to finance capital projects. Authorization of such bonds requires two-thirds voter approval. The approving vote also authorizes the use of property taxes to repay the bonds – this makes GO bonds the only debt financing instrument that creates a source of revenue and a source of capital at once. Property taxes are collected proportionate to assessed value.

JPA Bonds: NSMCSD could form a Joint Powers Authority with the City of Daly City or another agency, which would then be able to issue revenue bonds solely by Board action. However, JPA bonds are not an option unless a source of revenue has previously been established to support debt service.

COPs: Certificates of participation are revenue-supported debt instruments, differing from traditional revenue bonds only in name and legal structure. NSMCSD could issue COPs solely by Board action, similar to JPA revenue bonds. Like JPA bonds, COPs also need a previously established revenue source to support the debt service on the COPs.

Sources of Revenue

Revenue sources for storm water projects are limited. Aside from GO bonds, which create their own property tax revenue stream, service charges are the only practical source of revenue. Service charge revenues could come from either Board-approved increases to sewer service charges or voter-approved storm water charge, or to some extent based on benefit, sewer service charges. Service charge revenues can be used to support debt financings, contribute to pay-as-you-go capital expenditures, and pay for ongoing operations and maintenance expenses.

Sewer service charges: Sewer service charges can be used to support the components of the preliminary program to the extent to which they are sewer-related. Where a portion of capital or O&M expenses for a project component can reasonably be described as providing benefit to the District's sewer customers, that portion of costs can be allocated to sewer service charges and revenues collected. This would include a portion of debt service on a debt issuance providing shared sewer-storm water benefits, and ongoing O&M expenses. However, costs for projects exceeding the benefit provided to sewer customers may not be recovered through sewer service charges, limiting the amount of revenue generated for storm water-related projects through this revenue source.

Drainage service charges: The Vista Grande drainage area currently does not have any drainage service charges. However, the provisions of Proposition 218 (now Articles 13 C and 13 D of the California Constitution) outline a procedure to implement such a charge with voter approval. It may fund both capital improvements and O&M and requires a rate structure study showing that costs of service are proportional to charges.

To approve a charge, the County would prepare an Engineer's Report and mail a notice to all property owners stating the amount of the proposed fee, the basis for calculating the fee, and information regarding a public hearing on the proposed fee. The public hearing must be held not less than 45 days from the date the notices were mailed. If the County receives written protests from a majority of property owners, the County is precluded from proceeding further. If no majority protest occurs, then the County may proceed with a ballot measure not earlier than 45 days from the public hearing. A mailed ballot to all property owners would require an affirmative vote (50% +1) to authorize new charges.

6.1.2 State and Federal Funding Opportunities

The preliminary program recommendations of the Vista Grande Watershed Study integrate several water management elements, including flood protection, stormwater management, water quality and treatment, wetlands creation, and habitat creation. As a result, these preliminary program recommendations would potentially be eligible for funding through a variety of State and Federal funding mechanisms. Potential funding sources are presented in Table 6-1. Additional discussion of each of these potential vehicles is provided below.

Table 6-1 Potential Funding Sources

Funding Program	Description	Administration	Program Funding Available	Project Limit
Proposition 40	Nonpoint Source Pollution Control Program	SWRCB	Up to \$19 million	\$5 million
Proposition 40	Urban Stormwater Grant Program	SWRCB	Up to \$14.25 million	\$1 million
Proposition 50	Coastal Nonpoint Source Pollution Control Program	SWRCB	Up to \$43.1 million	\$5 million
Federal Clean Water Act Section 319(h)	Nonpoint Source Implementation Program	SWRCB	\$4.5 - \$5.5 million/year	\$1 million
Water Resources Development Act (WRDA)	Water Resources funding through Army Corps of Engineers	Federal	Variable	

Proposition 40

A variety of grant programs are currently being offered, and will continue to be offered in coming years, through Proposition 40 (Prop 40), the California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002. Prop 40 resulted in \$2.6 billion in State funds dedicated to water quality, air quality, open space, wildlife, and State and neighborhood parks. Grant programs funded by Prop 40, for which the preliminary program recommendations of the Vista Grande Watershed Study may be eligible, are described below.

Nonpoint Source Pollution Control Program

The Nonpoint Source Pollution Control Program is a new funding program being administered by the State Water Resources Control Board (SWRCB). Specific requirements for the program are currently under development. However, the program will provide up to \$19 million in funding to local public agencies and nonprofit organizations for projects that protect the beneficial uses of water throughout the State through control of nonpoint source pollution. It is expected that projects will be eligible for up to \$5 million in funding. Funds awarded through this program must be spent prior to December 31, 2008.

The preliminary program recommendations of the Vista Grande Watershed Study will control nonpoint source pollution by resolving flooding issues and through ongoing implementation of BMPs in accordance with the San Mateo Countywide NPDES permit. Further, the preliminary program protects the beneficial uses of Lake Merced by eliminating water quality impacts to the Lake Merced resulting from nonpoint source pollution.

Urban Stormwater Grant Program

Like the Nonpoint Source Pollution Control Program, the Urban Stormwater Grant Program is a new funding program being administered by the SWRCB, and specific requirements for the program are currently under development. The program is intended to provide funding assistance to plan and implement urban pollution runoff controls. Up to \$14.25 million in funds, with a \$1 million limit per project, will be available to local public agencies for projects to implement stormwater runoff pollution reduction and prevention programs such as diversion of dry weather flows to publicly owned treatment works for treatment, acquisition and development of constructed wetlands and the implementation of

approved best management practices, as required by stormwater permits. Funds awarded through this program must be spent prior to December 31, 2008.

The preliminary program recommendations of the Vista Grande Watershed Study are expected to be eligible for funding through this program due to its focus on urban stormwater management. The details of the grant program specifically identify constructed treatment wetlands and associated land acquisition (made possible through tunnel completion) as projects eligible for funding. Furthermore, the wetland will treat dry weather flows, another action identified in the grant.

Proposition 50

Proposition 50 (Prop 50) authorized \$3.44 billion in general obligation bonds to fund water projects including water use efficiency project, Colorado River water use projects, protection of coastal wetlands near urban areas, water management and quality improvements, river parkways, water system security, and desalination. The preliminary program recommendations of the Vista Grande Watershed Study are expected to be eligible for the Coastal Nonpoint Source Pollution Control Program funded by Prop 50. This program is described in further detail below.

Coastal Nonpoint Source Pollution Control Program

The Coastal Nonpoint Source Pollution Control Program is a new Prop 50 funding program being administered by the SWRCB. The program is expected to make up to \$43.1 million available for funding projects that will restore and protect water quality and the environment of coastal waters, estuaries, bays, nearshore waters, and groundwater. Projects will be eligible for up to \$5 million in funding. Funding awarded through this program must be spent prior to June of 2010.

Because it is expected to reduce pollution, protect surface water and groundwater quality, and create wetlands in a coastal area, the preliminary program recommendations of the Vista Grande Watershed Study may be eligible for funding through this program.

Federal Clean Water Act Section 319(h)

The Federal Clean Water Act Section 319(h) program is an annual federally funded program that is intended to control activities impairing beneficial uses and limit pollutants caused by those activities. Details of this the Nonpoint Source Implementation Program are provided below.

Nonpoint Source Implementation Program

As part of Section 319 of the Federal Clean Water Act legislation, states are required to establish and prioritize lists of impaired waters and develop Total Maximum Daily Loads (TMDLs) to improve water quality in impaired waters.

Approximately \$4.5 to \$5.5 million is made available each year through the Nonpoint Source Implementation Program for projects that implement measures to reduce nonpoint source pollution to surface and groundwater, with a \$1 million limit per project. This program will give preference to projects addressing TMDL implementation and problems in impaired waters. In addition, projects focused on management activities intended to reduce or prevent pollution leading to impairment of surface and ground waters are given preference in the selection process.

The preliminary program recommendations of the Vista Grande Watershed Study are expected to be eligible for funding through this program, as it is intended to reduce nonpoint source pollution affecting surface and groundwater quality through flood prevention and stormwater management. Further, Lake Merced is currently listed as an impaired waterbody for dissolved oxygen and pH. As such, the preliminary program recommendations address program preferences by reducing pollution to the impaired Lake Merced.

Water Resources Development Act

The Water Resources Development Act (WRDA) is a U.S. Army Corps of Engineers (Corps) “omnibus” bill, generally enacted every two years. WRDA legislation provides the Corps with authority and funding to study water resources problems and construct solutions. Project proponents nationwide frequently partner with the Corps to have projects written in to new WRDA legislation.

To obtain funding through the WRDA, the project would need to first partner with the San Francisco District U.S. Army Corps of Engineers. To receive funding, the project would require support from State senators and legislators, who would lobby to have the project included in future WRDA legislation.

State and Federal Legislators

Communication and support from State and Federal legislators will be essential to acquire funding through these programs. The current representatives for Daly City and San Francisco are listed in Table 6-2.

Table 6-2 State and Federal Legislators

Daly City

California State Assembly	
Assemblyman Leland Yee	12th Assembly District
Assemblyman Gene Mullin	19th Assembly District
California Senate	
Senator Jackie Speier	District 8
US House of Representatives	
Congressman Tom Lantos	District 12
US Senate	
Senator Dianne Feinstein	California
Senator Barbara Boxer	California

San Francisco

California State Assembly	
Assemblymember Mark Leno	13th Assembly District.
Assemblymember Leland Yee, PhD	12th Assembly District.
California Senate	
Senator Carole V. Migden	District 3
Senator Jackie Speier	District 8
US House of Representatives	
Congresswoman Nancy Pelosi	District 8
Congressman Tom Lantos	District 12
US Senate	
Senator Dianne Feinstein	California
Senator Barbara Boxer	California

6.2 Public Outreach and Community Involvement

The education and involvement of the community is essential to the successful implementation of the preliminary program laid out in the Vista Grande Watershed Study. The magnitude of the preliminary program and the complex relationships involved have the potential to generate concern among the community. A successful outreach strategy will dispel myths, develop understanding, and help generate public understanding and support for the program.

Many of the regulatory requirements for this program will involve public notification processes. However, these requirements will not fulfill the need for a comprehensive public outreach plan. A successful public outreach plan involves active measures to educate and involve the public. Recognizing and addressing public concern lays the foundation for creating consensus among the interested parties. Effective public outreach requires a well developed, cohesive approach; ad hoc, sporadic actions are unlikely to result in the desired public understanding and support.

A key component in developing a comprehensive outreach strategy will be to appoint a public outreach coordinator to oversee the development and implementation of a public outreach plan specific to the Vista Grande Watershed Program. The coordinator will ensure that the plan covers all program components and promotes the appropriate message to the public.

The steps involved in developing an effective, executable public outreach plan involve defining the goals and objectives of the plan, learning about community interests and concerns, preparing and distributing a unified message for outreach efforts, and forming a process to evaluate the value of different outreach approaches (US Environmental Protection Agency (EPA), 2003). These steps are described in more detail as follows.

A public outreach plan must establish clear, specific goals for public outreach and community involvement. This requires developing an understanding of the driving forces and interested stakeholder groups within the project area. Once the key issues are identified, a goal and specific objectives can be developed to address those issues. In the Vista Grande watershed, many of the key stakeholder issues and agencies have already been identified and many of the issues addressed by the proposed project have already been identified. However, further investigation will ensure that the public outreach plan addresses all of the community's concerns.

Once the goals and objectives have been defined, a message to achieve project objectives must be established. For the Vista Grande Watershed Study, the message should be designed to raise general awareness about the proposed program, the problems it addresses, and how they benefit the surrounding community. The plan should then develop methods to package and distribute this message. Websites, newsletters, advertisements and special events could all be good methods for communicating the message to the public.

The last step in developing a public outreach plan should be to establish a method to evaluate the effectiveness of the plan. A public outreach plan must be able to evolve as additional issues arise or if the stakeholders involved change. Since the Vista Grande Watershed Study presents a long-term solution, public concern may shift as the program is developed and implemented. An established process to evaluate the plan and revise it if it is falling short of its goals will increase its long-term effectiveness (EPA, 2003).

The Vista Grande Watershed Study involves a wide range of stakeholders, each with their own interests and concerns. If these stakeholders are not informed and involved in the program, oppositions to the program could develop. Any organized opposition will significantly slow project planning, permitting and implementation. Public support is necessary for the program's overall success. Developing and implementing a well thought out strategy to educate and involve the public will improve support for the project, ease project financing, and increase the efficiency of the implementation process.

6.3 Regulatory Requirements

Regulatory compliance is essential for the success of the Vista Grande Watershed Study. While navigating the permitting process can be complicated and cumbersome, developing a strong understanding of the requirements of each agency early in the project will streamline the permitting process and prevent delays in the implementation of the Watershed Study. This section provides an overview of the local, State and Federal agencies that have jurisdiction over the preliminary program components, the required permits or agreements, an overview of the application process, and recommendations for maximizing efficiency throughout the regulatory process (Peterson, 2005; Weintraub and Anderson, 2005).

6.3.1 Local permits

Before the long-term components in the Vista Grande Watershed Study can be implemented, they must comply with the requirements of Daly City, the CCSF, and San Mateo County. Each city has jurisdiction over project components within their city boundaries. Since this project is sponsored by the cities involved, it is expected that they will provide guidance in complying with all applicable permitting requirements.

In addition to building and planning permit considerations, it is important to evaluate any potential public health risks. Consulting with representatives from San Mateo County Department of Public Health and the CCSF Department of Public Health established that the recommended project components would not be expected to present a public health hazard that would require a permit from these agencies. However, both agencies will be involved throughout the planning process to ensure that proper precautions are taken to minimize risks.

6.3.2 State and Federal Permits

Several aspects of the preliminary program will trigger both State and Federal involvement in the project. The key agencies involved in the permitting process are as follows.

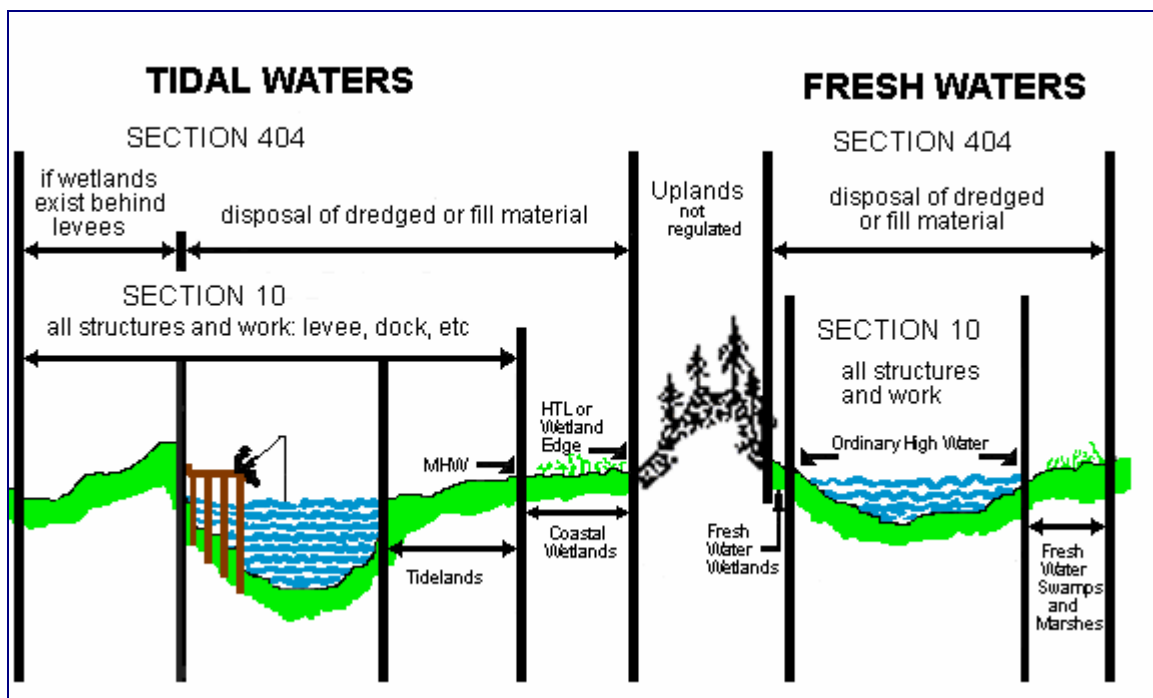
U.S. Army Corps of Engineers (Corps)

In its regulatory capacity, the Corps strives to “protect the Nation’s aquatic resources, while allowing reasonable development through fair, flexible, and balanced permit decisions” (Corps, 2005). The Corps derives its primary regulatory authority from two Federal laws: the Federal Clean Water Act and the River and Harbors Act. Under these two Acts, the Corps regulates activities that impact the “waters of the United States”. §404 of the Federal Clean Water regulates any activity where dredged or fill material is intentionally or unintentionally discharged into any “waters of the United States”, including wetlands adjacent to “waters of the United States”. §10 of the Rivers and Harbors Act applies to any activity that may alter or obstruct “navigable waters”. Since all “navigable waters” are part of the “waters of the United States”, an activity within these areas may require both §404 and §10 permits. It will be important to consider the Corps’s jurisdiction under both Acts when pursuing permits from the Corps to ensure all of the necessary approvals are obtained.

Jurisdiction under the Federal Clean Water and the Rivers and Harbors Act

The jurisdiction of the Corps within and around these regulated waters is delineated based on historical water levels at the given water body. The Corps’s jurisdiction is illustrated in Figure 6-1. For non-tidal waters, the Corps’s jurisdiction begins at the ordinary high water mark for both §404 and §10. However, for tidal waters, the Corps’s §404 jurisdiction begins at the mean higher high water level (the long-term average of the higher of the two daily high tides) whereas its §10 jurisdiction begins at the mean high water level (the long-term average of all high tides). Since the mean high water level is lower than the mean higher high water mark, the Corps’s §10 jurisdiction is completely contained within its §404 jurisdiction for tidal waters.

Figure 6-1 Regulatory Jurisdiction of the U.S. Army Corps of Engineers (CERES, 2002)



Jurisdiction over the Preliminary Program Components

The upstream components of the watershed study are not expected to fall under the Corps's jurisdiction since they will not impact any "waters of the United States". However, the Tunnel South of County Line and the Vista Grande Wetland involve work in and around the Pacific Ocean, Lake Merced, and the wetlands surrounding Lake Merced, which are all "waters of the United States". These two downstream program components will also impact and modify the Vista Grande canal, which may be considered part of the "waters of the United States". As a result, both the Tunnel South of County Line and the Vista Grande Wetland may require permits from the Corps.

The Vista Grande canal is an artificial water channel that was constructed specifically to convey stormwater to the Vista Grande tunnel. It is essentially just a surface feature of the storm drain system. However, it could be deemed part of the "waters of the United States" if it intercepts, or ever intercepted, flow from a natural channel. Therefore, a jurisdictional determination will be necessary to clarify whether the Corps has jurisdiction over the canal.

If the jurisdictional determination establishes that the Vista Grande canal is part of the "waters of the United States" the Vista Grande Wetland will require a §404 permit. The wetland may also require a permit if a cascade for water being conveyed from the wetland to Lake Merced is installed on the banks of Lake Merced. However, this portion of the wetland could be designed to avoid Corps involvement by placing the cascade above the ordinary high water mark and avoiding any natural wetland areas surrounding Lake Merced. The banks of Lake Merced near the project area should be included in the jurisdictional determination to establish the exact locations of regulated wetlands so that impacts to wetlands can be avoided or addressed in the permit.

The Tunnel South of County Line will also likely fall within the jurisdiction of the Corps. Although neither of the proposed inlets for the Tunnel South of County Line will likely trigger Corps involvement, the beach outlet structure may fall within the Corps jurisdiction. Depending on the exact elevation of mean high water level and the mean higher high water level at the outlet location, the outlet structure may

fall within both the Corps's §404 and its §10 jurisdiction. Including the outfall area in the jurisdictional determination would clarify the jurisdiction of the Corps over the beach outlet structure.

Permitting Process for §404 and §10 Permits

The necessary permits can be secured from the Corps in two ways: a nationwide permit or an individual permit. Nationwide permits are generally faster and easier to obtain, but they only apply to specific activities as laid out in the permit (San Francisco Bay Area Joint Aquatic Resource Permit Application (JARPA), 2004).

The preliminary program components may be able to be permitted under Nationwide Permit #43 Stormwater Management Permit. This permit covers projects that discharge into non-tidal waters and do not impact more than 300 linear feet of streambed. However, it excludes wetlands that are adjacent to tidal waters. If the Vista Grande canal is deemed part of the "waters of the United States" the Vista Grande Wetland would not be eligible for this permit since it will impact more than 300 linear feet of the canal.

If an individual permit is required, a lengthier permit processing time will be necessary since this type of permit requires the preparation of a Public Notice and a 30 day period for public comment.

Either type of permit will require the submittal of a maintenance plan, a jurisdictional determination, and an alternatives analysis. In addition, the Corps will be required to comply with the National Environmental Policy Act (NEPA) prior to issuing permitting approvals. Thus, the appropriate NEPA documentation must be prepared to obtain the appropriate approvals from the Corps (JARPA, 2004).

During the permit review process, the Corps consults with the US EPA, US Fish and Wildlife Service (USFWS), and the National Oceanic & Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) to ensure all environmental impacts and regulations are considered (CERES, 2005).

US Fish and Wildlife Service and the National Marine Fisheries Service

The mission of the USFWS is to "protect and enhance fish and wildlife, and their habitats, throughout the nation" (JARPA, 2004). Similarly, the NMFS's mission is to "conserve living marine resources while managing their use for the greatest benefit to the nation" (JARPA, 2004). USFWS focuses on the effects of projects on all non-marine fish and wildlife resources. NMFS has the primary responsibility for protecting marine mammals and marine, estuarine and anadromous fish and shellfish. Together, the USFWS and the NMFS administer the Federal Endangered Species Act. These agencies will need to be consulted if the project is thought to have an impact on any listed threatened or endangered species.

Under the Federal Endangered Species Act, permission from USFWS and/or NMFS is required prior to "taking" any endangered species or its habitat. This permission can be obtained in two ways: a permit under §10 of the Federal Endangered Species Act or a consultation under §7 of the Federal Endangered Species Act. A §10 permit is required only when there is no other Federal involvement in the project. Otherwise, a §7 consultation is generally completed as part of the permitting process for the Corps or another involved Federal agency.

Since the preliminary program recommendations of Vista Grande Watershed Study are expected to require a permit under the Corps, the requirements of the Endangered Species Act can be met through a §7 consultation with USFWS and/or NMFS. If the Corps determines that a §7 consultation is necessary, the USFWS and/or NMFS will be asked to write a biological opinion for the project.

Further investigation will be required to determine if endangered species are likely to be affected by the preliminary program recommendations. The area around Lake Merced and the coastal region surrounding the proposed beach outlet structure may provide habitat for endangered species. Even if the presence of

endangered species is not known, appropriate habitat for an endangered species, even without confirmation of the presence of that species, can be considered cause for further investigation.

In addition, many of the regions of the Pacific Ocean along the California coast are protected as parts of the NOAA's National Marine Sanctuaries. Activities within a national marine sanctuary are limited by the National Marine Sanctuaries Act and site-specific legislation and regulations. They are regulated by NMFS. The Gulf of the Farallones and the Monterey Bay National Marine Sanctuaries protect a large portion of the ocean along the coast of the San Francisco Peninsula and Marin. The coast and ocean directly offshore from the San Francisco/San Mateo County line currently falls outside of either marine sanctuary. However, the boundaries of the marine sanctuaries are subject to revision and may change during the implementation of the preliminary program. It will be important to track any changes in the sanctuary, since they may influence the permitting requirements for tunnel construction and the proposed outlet structure.

San Francisco Bay Area Regional Water Quality Control Board

The mission of the SWRCB is to “preserve, enhance and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations” (SWRCB, 2005). The RWQCBs conduct the planning, permitting and enforcement activities to meet that mission. The activities for this watershed study lie within the jurisdiction of the RWQCB.

The RWQCB issues three primary types of permit: §401 water quality certifications, NPDES permits, and waste discharge requirements. Under §401 of the Federal Clean Water Act, any activity that is subject to a permit from a Federal agency must be certified by the appropriate State that the activity also meets all State water quality standards. In California, the RWQCB is responsible for issuing these certifications. A §401 certification may be required for both the tunnel and the wetland projects since both may require a permit from the Corps, a Federal agency. Prior to issuing a §401 certification the RWQCB must review a final environmental document prepared under the California Environmental Quality Act (CEQA).

In addition, the RWQCB, with the support of the US EPA, is responsible for granting Clean Water Act NPDES permits. Stormwater runoff in Daly City is currently regulated under the San Mateo countywide municipal NPDES permit. This permit will continue to cover discharges to the storm drain system to the new tunnel. The RWQCB also issues General Construction Activity Stormwater Permits under the NPDES program. These permits are required for any construction activity that disturbs more than one acre of land, or for programs where the project components disturb fewer than five acres of land but more than five acres are disturbed throughout the program. The general permit requires the site owner to notify the State, to prepare and implement a Stormwater Pollution Prevention Plan, and to monitor the effectiveness of the plan. The clearing, excavation, and grading required for the wetland and the tunnel inlet structure will require this permit for any stormwater discharges occurring from the construction of these preliminary program components.

Finally, the RWQCB regulates the discharge of waste that could affect the quality of the waters of the State under the authority of the California Porter-Cologne Water Quality Control Act. The RWQCB issues Waste Discharge Requirements (WDRs) for any activity that generates dredged material, fill or any other discharge that may directly or indirectly impact the “waters of the State”. The “waters of the State” are defined more broadly than the “waters of the United States” and include any surface water or groundwater within the boundaries of the State. Generally, any action requiring a §401 Water Quality Certification is exempt from waste discharge requirements. Therefore, if a Corps jurisdictional delineation determines that the Vista Grande canal is part of the “waters of the United States” then a §401 certification would be required, however if the canal is not determined to be part of the “waters of the United States”, a WDR would need to be obtained from the RWQCB.

California Department of Fish and Game

The California Department of Fish and Game (CDFG) protects California's fish, wildlife and plant species and their habitat to maximize their ecological value and their value for human enjoyment. Under the Fish and Game Code §1602, any person, State or local government agency, or public utility is required to provide official notification to CDFG before undertaking any activity that will significantly change any river, stream, or lake. This notification is the first step in the process to obtain a Streambed Alteration Agreement, which is required to conduct the proposed work. Modifications subject to this type of agreement include diverting or obstructing flow, changing the streambed, channel or bank, or using material from a streambed for any purpose. Unlike with the permitting requirements for the Corps, any waterway within California, natural or constructed, is part of the jurisdiction of the CDFG.

Because the Vista Grande Wetland will fill the Vista Grande canal and may involve some work on the banks of Lake Merced for installing the cascade at the wetland outlet, the wetland will require a §1602 permit under CDFG. In addition, a permit from ongoing maintenance to remove accumulated sediment will be required. The maintenance permit can be incorporated as part of the Streambed Alteration Agreement and can be issued for periods up to five years at a time. The tunnel and upstream improvements are not expected to require a permit from CDFG.

Prior to issuing a Streambed Alteration Agreement, a final environmental document under CEQA must be submitted. Official documentation from CDFG indicates that a permit application can be submitted and approved but that the final permit will be held until the CEQA documentation is finalized. However, consultation with a representative from CDFG indicated that generally an application is not considered complete until it is CEQA compliant (Grefsrud, 2005). As such, ongoing communication with CDFG will be necessary to ensure that the permitting process goes smoothly.

California Coastal Commission

The California Coastal Act of 1976 established the California Coastal Commission (CCC) to “protect, conserve, restore, and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable and prudent use by current and future generations.” In addition, the CCC and the Bay Conservation and Development Commission (BCDC)¹ are the two management agencies responsible for administering the Federal Coastal Zone Management Act in California (CCC, 2005). The CCC requires a Coastal Development Permit for any development occurring in the coastal zone. The coastal zone is delineated by official maps available from the CCC and generally includes areas extending from the shoreline inland for anywhere from 500 yards to five miles. The coastal zone around the preliminary program area of the Vista Grande Watershed Study includes the area along the coast and extends inland surrounding Lake Merced. The tunnel outlet structure, the inlet for the John Muir Drive site tunnel alignment, and the wetland all fall within the coastal zone.

The administrative structure of the CCC creates unique connections between State and local governments. The California Coastal Act authorized the creation of local coastal programs (LCP) to help carry out the requirements of the Act. The CCC maintains jurisdiction over development on the immediate shoreline, but the local coastal programs issue coastal development permits for projects that fall within their jurisdiction. If more than one LCP has jurisdiction over a project area, permits must be secured from each one. Daly City, CCSF, and the County of San Mateo all have established Local Coastal Programs. Since the tunnel and the wetland both fall within the coastal zone, permits will be required from Daly City's LCP, CCSF's LCP, and the CCC. A permit may be required from the County of San Mateo's LCP, depending on the alignment of the tunnel relative to the County's jurisdiction.

¹ The Vista Grande Watershed Study program area falls outside of the jurisdiction of the BCDC, which regulates all activities in the San Francisco Bay and up to 100 feet inland of the areas along the bay's shoreline that are subject to tidal action.

For large planning projects, the appropriate permit can be acquired directly from the Coastal Commission through the development of a “Public Works Plan” as authorized by §30605 of the Coastal Act. A “Public Works Plan” is reviewed by the CCC in the same way that a Local Coastal Program is reviewed. The Public Works Plan is certified with the local coastal programs but is issued directly from the CCC. A Public Works Plan allows the program to be approved as a whole and avoids the need for individual permits from each program component from each LCP. This approach may require more preparatory work but would provide a permit for the entire project, would reduce the number of regulatory entities involved, and make the permitting process more efficient.

In addition to issuing Coastal Development Permits, the CCC reviews the §404 permit applications for the Corps and documents prepared under CEQA or NEPA.

Golden Gate National Recreation Area

The Golden Gate National Recreation Area (GGNRA), as part of the National Park Service (NPS), strives to preserve natural resources for the enjoyment of current and future generations. The GGNRA area extends from Tomales Bay in Marin County along the shore all the way to San Mateo County encompassing 59 miles of bay and ocean shoreline and covers 75,398 acres of land and water. The tunnel outlet structure and two of the proposed tunnel alignments are located on or beneath GGNRA land.

Consultation with representatives from GGNRA indicated that their primary concerns include the water quality, aesthetic, and beach access impacts of the tunnel outlet structure (Ortega, et al., 2005). In addition they are concerned about the impacts to the park as a result of construction activities. Approval of this type of project by the NPS may be challenging. The project will require approval of a permanent easement for the tunnel components and temporary access for construction purposes. Both of these actions fall under the category of “Special Park Uses” which are described in the NPS Management Policies and in Director’s Order #53: Special Park Uses (NPS, 2000; NPS, 2001). Construction activities will require a Special Use Permit. According to Director’s Order #53, a Special Use Permit can only be issued if the proposed activity will not:

- Cause injury or damage to park resources.
- Be contrary to the purposes for which the park was established.
- Unreasonably impair the atmosphere of peace and tranquility maintained in wilderness, natural, historic or commemorative locations within the park.
- Unreasonably interfere with the interpretive, visitor service, or other program activities, or with the administrative activities of the NPS.
- Substantially impair the operation of public facilities or services of NPS concessioners or contractors.
- Present a clear and present danger to public health and safety.
- Result in significant conflict with other existing uses.

A Special Use Permit can be issued for a period up to, but no longer than, five years. For longer-term projects, such as the permanent installation of the tunnel, a right-of-way permit must be obtained. NPS issues right-of-way agreements for utilities to pass over, under or through NPS property. According to the NPS Management Policies a right-of-way may be issued “only if there is no practicable alternative to such use of NPS lands.” It is considered a temporary agreement and does not transfer any interest in the land itself. The fees associated with this type of agreement may be high and the NPS pays special attention to recovering the fair market value for the use of their land.

Since NPS is a Federal Agency, it is required to comply with the National Environmental Policy Act (NEPA). Thus, the appropriate NEPA documentation would be required to obtain these permits.

California State Parks

The California Department of Parks and Recreation (California State Parks) manages more than 270 park units, which contain the finest and most diverse collection of natural, cultural, and recreational resources to be found within California. Their mission is to “provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation”.

Thornton State Beach in Daly City is part of the California State Parks system. If the final alignment of the Tunnel South of County Line terminates at Thornton State Beach, and easement from California State Parks would be required for the tunnel and the beach outlet structure. This easement could be granted under §5012 of the California Public Resource Code.

Obtaining the appropriate easements and right-of-way permits is may be challenging since granting this type of access is generally disfavored by California State Parks. In order to obtain these approvals a detailed assessment of potential impacts or concerns would need to be conducted and mitigation for these impacts incorporated into the final project design. Specific concerns of California State Parks include adverse impacts to the public’s use and enjoyment of the area, adverse visual impacts of the outlet structure, short and long-term impacts to the natural beach and near-shore environment, coastal bluff impacts and water quality concerns.

In addition, California State Parks would require that the project satisfy all GGNRA requirements, since Thornton State Beach may be the subject of a future land transfer between California State Parks and GGNRA.

California Department of Transportation

A California Department of Transportation (Caltrans) encroachment permit is required for any project that occurs within, under, or over a State highway right-of-way (Caltrans, 2002). Both of the proposed tunnel alignments pass under State Highway 35 so this permit will need to be secured.

California State Lands Commission

The State acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. Generally, these sovereign lands include all ungranted tidelands and submerged lands and the beds of navigable rivers, streams, lakes, bays, estuaries, inlets, and straits. In coastal areas, sovereign lands include both tidelands and submerged lands from the shore to three miles in the Pacific Ocean. Tidelands lie between mean high tide and mean low tide, and submerged lands are below mean low tide. The State holds these lands for the benefit of all the people of the State for statewide Public Trust purposes which include waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. The landward boundaries of the State’s sovereign interests are generally based upon the extent and location of the subject waterways as they last naturally existed, prior to artificial influences. The California State Lands Commission's authority is defined in the Public Resources Code - Division 6 Public Lands.

A California State Lands Commission land use lease is required for any project “in State-owned areas waterward of the ordinary high water mark as it last existed naturally, before artificial influences, in waterways that are subject to tidal action, or the ordinary low-water mark before artificial influences, in water ways that are not subject to tidal action (California Association of Resource Conservation Districts (CARCD), 2002)”. Depending on the placement of the tunnel outlet structure and the final design of the Vista Grande Wetland, a State Lands Commission General Lease – Right-of-Way may be required for one or both of these alternatives. Further investigation is necessary to make this determination. The processing time for this type of lease ranges from one to three years.

Additional Permitting Requirements

The above descriptions list the primary agencies that will have regulatory influence on the preliminary program components of the Vista Grande Watershed Study. However, further investigation should be conducted during the implementation phase of the Watershed Study to ensure that all permitting requirements are met. Special attention should be given to Executive Order 11990 Protection of Wetlands.

Executive Order 11990 covers any project that is located on Federal land, sponsored by a Federal agency or receiving Federal funding that may affect wetlands. It requires that Federal agencies avoid initiating or assisting projects that involve construction in wetlands unless there is no practicable alternative to the construction and that steps to minimize harm to wetlands are taken.

6.3.3 Environmental Documentation

The permitting requirements for the Vista Grande Watershed Study dictate that environmental documentation under both NEPA and CEQA are expected to be required. The required documentation for NEPA and CEQA can be prepared jointly.

National Environmental Policy Act (NEPA)

NEPA requires Federal agencies to evaluate the impacts of their actions and decisions on the “human environment”. It was established in 1969 in response to public concern over environmental degradation. Its goal is to encourage Federal agencies consider the environment in their decisions and ensure that any environmental impacts resulting from those decisions are disclosed to the public. Compliance with NEPA will likely be required for the proposed tunnel and wetland, since the Corps or GGNRA, both Federal agencies, are expected to have jurisdiction over these preliminary program components

The first step in the NEPA process is to identify whether the proposed action is subject to NEPA requirements. If the proposed action qualifies for a categorical exclusion, the project will not require further NEPA actions. If no categorical exclusion or other exemption applies, an Environmental Assessment (EA) must be prepared. The Environmental Assessment evaluates the impact from the proposed project and determines if it will significantly affect the quality of the environment. If the project has no impacts, or if the impacts are very minor, a Finding of No Significant Impact (FONSI) can be issued and the NEPA process is complete. If there are significant impacts that can be mitigated to less than significant levels by redesigning the proposed project, a Mitigated FONSI can be filed. Otherwise, an Environmental Impact Statement (EIS) must be prepared. While investigation through the NEPA process is necessary to determine what level of documentation will be required, the Vista Grande Watershed Study will likely require the development of a full EIS. The NEPA lead agency is expected to be the Corps with other involved agencies participating as either co-lead agencies or cooperating agencies.

California Environmental Quality Act (CEQA)

Protecting and enhancing the environment in California is the primary purpose of CEQA. It further seeks to help public agencies identify the environmental impacts of their actions and avoid or mitigate those impacts whenever possible. All public agencies are required to comply with CEQA. For projects where there are multiple agencies involved, as with those described in the Vista Grande Watershed Study, CEQA requires that a lead agency be selected.

Under CEQA the lead agency must complete an environmental review process that documents the impacts of the proposed project, analyzes alternatives to the project and proposes mitigation measures for any “significant” impacts. The environmental review process includes three basic steps. First, the agency must determine if the proposed project is subject to the requirements of CEQA and if any categorical or statutory exemptions apply. If an exemption applies, no further CEQA analysis is required. Otherwise, the agency performs an initial study to identify any potential impacts from the project and determine if those impacts are “significant”. Based on those findings, the agency must then prepare one of three

environmental documents: A Negative Declaration if no “significant” impacts were identified, a Mitigated Negative Declaration if the initial investigation found “significant” impacts but the project was revised to avoid or minimize those impacts, or an Environmental Impact Report (EIR) if there were “significant” impacts. Because both the tunnel and the wetland will be regulated under multiple State and local agencies, CEQA compliance, likely involving the development of an EIR, will be required. The lead agency will likely be Daly City, with the other involved agencies participating as Responsible and Trustee agencies per CEQA guidelines.

6.3.4 Regulatory Summary and Recommendations

Table 6-3 includes a summary of the State and Federal regulatory requirements that are expected for the Vista Grande Watershed Study.

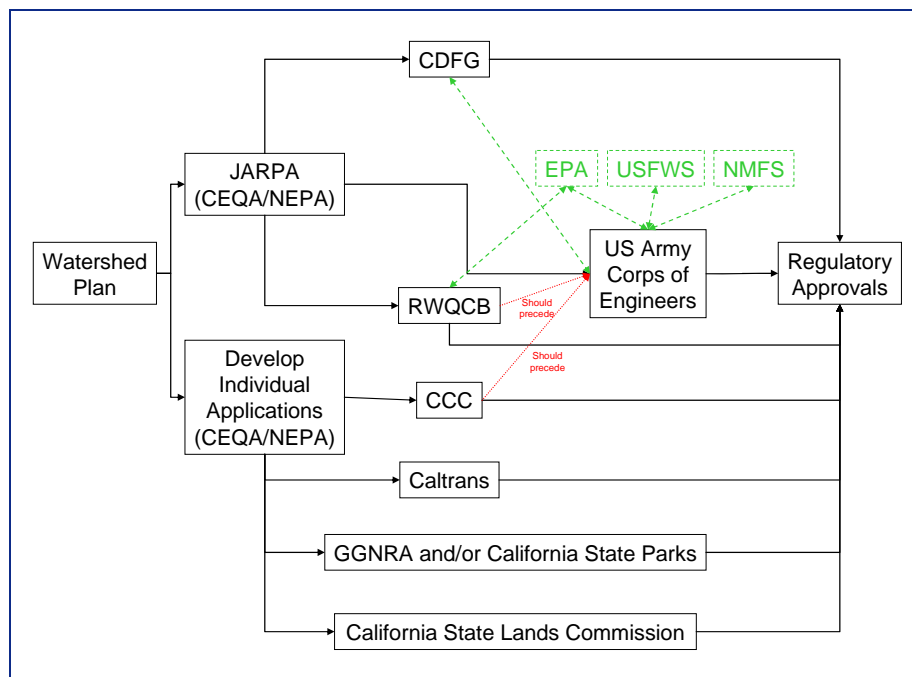
Table 6-3 Summary of State and Federal Regulatory Requirements

Agency	Permit or Requirement	Authority	Project Component Regulated	Time Frame
US Army Corps of Engineers	§404 Permit	Clean Water Act	Tunnel, Wetland	4-6 months – Individual Permit 45-60 days -Nationwide Permit
	§10 Permit	River and Harbors Act	Tunnel, Wetland	An additional year or more if a biological opinion is required.
US Fish and Wildlife Service	§7 Consultation	Endangered Species Act	Tunnel, Wetland	1-3 years
National Marine Fisheries Service	§7 Consultation	Endangered Species Act	Tunnel	1-3 years
San Francisco Regional Water Quality Control Board	§401 Permit -Water Quality Certification	Clean Water Act §401	Tunnel, Wetland	60 days after application is deemed complete. Up to one year of additional time may be requested from the Corps.
	§402 Permit - NPDES: General Construction Activity Stormwater Permit	Clean Water Act §402	Tunnel, Wetland, Storm Drain Improvements	Approximately six months
	Waste Discharge Requirements (WDRs)	Porter-Cologne Water Quality Control Act	Waived if §401 Permit required, Tunnel Inlet	Approximately three months
California Department of Fish and Game	Streambed Alteration Agreement (§1602 permit)	Fish and Game Code §1602	Wetland	30 days after application submittal to evaluate completeness; 60 days after application is deemed complete.
California Coastal Commission and/or Daly City Local Coastal Programs San Francisco Local Coastal Program	Coastal Development Permit or Public Works Plan	California Coastal Act of 1976; Federal Coastal Zone Management Act	Tunnel, Wetland	Six months to two years
California State Parks	Easement / Right-of-Way	California Public Resource Code §5012	Tunnel	Six months to several years
Golden Gate National Recreation Area	Special Use Permit	The National Park Service Organic Act	Tunnel Construction	Six months to several years
	Right-of-Way Permit		Tunnel	Six months to several years
California Department of Transportation	Encroachment Permit	California Streets and Highways Code	Tunnel	60 days after application is deemed complete
California State Lands Commission	General Lease – Right-of-Way	California Public Resources Code - Division 6 Public Lands	Tunnel, Wetland	1-3 years

In order to ensure compliance with each of the regulatory requirements, a systematic, detailed approach to the application process will be necessary. The first step in the application project will be to prepare all of the materials necessary for each application. Consulting with each of the agencies to ensure understanding of the application process is essential. The San Francisco Bay Area Joint Aquatic Resource Permit Application (JARPA) is a standard application form that can be used for a variety of different projects in the San Francisco Bay Area and submitted to multiple agencies in place of each agency's specific application. JARPA can be used for applications to RWQCB, the Corps, CDFG, EPA, USFWS, NMFS, and California State Lands Commission. Agencies not covered by this permit will require their own application procedure, including CCC, Caltrans, California State Parks, and GGNRA.

The permitting processes for each agency are not independent; agencies rely on each other and have requirements establishing what order permits should be pursued. For example, the Corps requires that an application be filed with the California Coastal Commission prior to submitting an §404 application to the Corp. They do not require that the CCC permit process be completed, just that an application has been filed. Additional communication with the agencies is necessary to determine the details of these dependencies but a preliminary flow chart showing the known relationships is shown in Figure 6-2.

Figure 6-2 Regulatory Agency Relationships



Securing the appropriate permits and agreements will be a significant part of implementing the Vista Grande Watershed Study. The permitting process is extensive and will require a significant investment of time and resources in the project. Overall the permitting process is expected to take approximately three years. Advance preparation and coordination with the agencies can help maximize efficiency in this process. Sponsoring a meeting to inform agencies about the project and give them an opportunity to collaborate on the regulatory issues involved would be an ideal method to ensure understanding of the existing requirements. As an alternative, the Corps sponsors monthly interagency meetings where multiple agencies can comment on the project at once. Attendance at one of these meetings may clarify the relationships between the agencies and determine the best approach to the permitting process.

It is essential to start the permitting process early in the implementation period to avoid delays. The critical next steps for this process are as follows:

- Conduct a jurisdictional delineation to determine the jurisdiction of the Corps
- Determine the requirements for preparing a public works plan for the CCC and decide if it is the preferred approach
- Arrange an interagency meeting or attend one that is sponsored by the Corps

6.4 Institutional Arrangements

The Vista Grande Watershed Study involves many different organizations each with their own needs and interests. The recommended program will require the long-term cooperation of many of the involved parties. Coordination agreements between the key agencies will need to be established to ensure a long-term commitment to the program. In addition, these arrangements may be necessary to secure funding and regulatory approval for the project components as part of a comprehensive watershed plan. Table 6-4 summarizes the relationships that are involved in implementing the Vista Grande Watershed Study.

Table 6-4 Summary of Recommended Institutional Arrangements

Agencies	Relationship
City of Daly City & San Mateo County	Stormwater from the portion of unincorporated San Mateo County that is located within the Vista Grande Drainage Basin contributes to the current capacity problems. An arrangement between the County and Daly City will be necessary to ensure the County participates in the funding and implementation of the tunnel and storm drain improvements.
City of Daly City & City and County of San Francisco	Historic conflicts over the flooding at the Vista Grande canal require that these two agencies enter into a MOU that clarifies each city's commitment to the program and establishes a plan for ongoing communication.
City of Daly City & Golden Gate National Recreation Area and/or California State Parks	As described in the section 6.3 Regulatory Requirements, the City of Daly City will need to establish a right-of-way agreement with GGNRA and/or California State Parks for the tunnel and its outlet structure depending on the final alignment selected. In addition a Special Use Permit will be required for access through the park area during the construction phase.
City of Daly City & Private property owners	An easement for the tunnel alignment will need to be obtained. When the final tunnel alignment is selected, the affected property owners would need to be identified and the appropriate easements secured (e.g. the Olympic Club if the John Muir Drive to Beach alignment is selected).
City of Daly City and/or the City and County of San Francisco & The Olympic Club	A portion of the Olympic Club near the wetland may need to be regraded to convey overland runoff into the upstream end of the wetland. Based on the conceptual level design of the Vista Grande Wetland, this grading is expected to be limited to the area immediately surrounding the Vista Grande canal, and is not expected to modify active portions of the golf course or interfere with course play. An agreement with the Olympic Club will need to be established to perform this work or the land will need to be acquired.

This Study was jointly funded in 2005 by CCSF and Daly City, which continued cooperative effort on resolving issues related to the overflow of stormwater from the Vista Grande canal into Lake Merced. The SFPUC participated as the lead agency for CCSF in cooperation with the SFRPD and the San

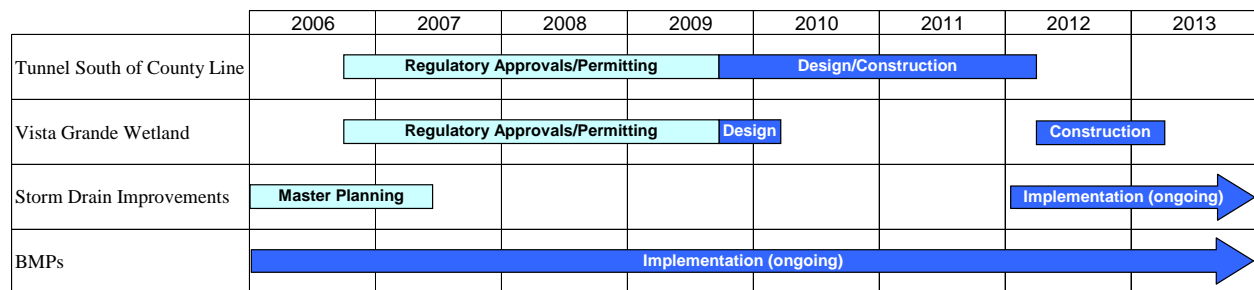
Francisco Department of Public Works. SFPUC’s support for this study was prompted by several factors including the need to evaluate flooding issues on a watershed basis, to reduce or eliminate flooding at the Vista Grande canal, and reuse the stormwater for beneficial purposes such as recharging Lake Merced and/or the Westside Groundwater Basin. The SFPUC continues to support project planning that will ultimately lead to implementation of solutions to resolve longstanding flooding problems associated with the Vista Grande watershed. The SFPUC also supports further planning studies needed to define a project that may result in the conversion of the Vista Grande canal to a stormwater treatment wetland, following resolution of the larger stormwater diversion problem that is the focus of this joint study. Proposed drainage solutions and treatment options for addition of a small volume of stormwater to Lake Merced will require detailed environmental review and permitting before proceeding to the implementation phase. This study continues past cooperative efforts between CCSF and Daly City on resolving integrated water resources issues involving recycled water, groundwater, stormwater, and Lake Merced. However, participation of CCSF as a joint sponsor of this report should not be interpreted as a commitment by CCSF to contribute funding for projects outside of its jurisdiction.

6.5 Phasing and Schedule

6.5.1 Program Phasing

The specific projects that make up the preliminary program build on each other to solve the flooding problems in the Vista Grande watershed. Their dependence on each other places several constraints on the overall phasing of the preliminary program. Although the program components could be conducted independently, developing program components together will improve their effectiveness as a comprehensive watershed-wide solution. The program should be implemented in two primary stages: planning and permitting followed by design and construction, as shown in Figure 6-3. The schedule provided below is designed to give an overview of how the individual preliminary program components could be implemented as an overall watershed program. This schedule would need to be refined based on when projects are selected for implementation and funding is secured.

Figure 6-3 General Schedule for the Watershed Study



From a programmatic perspective, the planning and permitting for the tunnel, wetland, and storm drain improvements will be most successful if completed simultaneously. By presenting the preliminary program components as a comprehensive watershed plan with multiple goals and benefits, it will be easier to secure the permits necessary for the tunnel and the wetland. In addition, beginning the planning phase of the storm drain master plan in conjunction with the tunnel planning phase will facilitate the planning of the interface between the tunnel inlet and the rest of the storm drain system. In addition, conducting the planning for the storm drain improvements in the near future will help define the capital improvement project and create a better understanding of funding needs and opportunities. By developing the preliminary program components in conjunction with each other, a more effective, comprehensive upstream solution will be developed.

Construction of the preliminary program components will require specific phasing measures. The Vista Grande Wetland is located on the site of the existing Vista Grande canal, which conveys stormwater to

the existing stormwater tunnel. Until the new tunnel is constructed, and the canal is no longer needed for stormwater conveyance, the canal must remain active. As a result, the wetland cannot be constructed until the tunnel is completely operational.

Upstream improvements that increase downstream flow must also be phased after the completion of the tunnel. The Vista Grande watershed can produce 1,300 cfs of stormwater for the 10-year, 4-hour storm. Currently, only 680 cfs of this runoff makes it through the storm drain system and down to the canal. However, the existing Vista Grande tunnel only has a 170 cfs capacity, resulting in flooding along the Vista Grande canal. Upstream improvements to the storm drain system that would convey additional water down to the canal, increasing the flooding at that site. Therefore, while maintenance activities, small conveyance improvements that are not expected to have a significant impact on downstream flow, and localized detention can be implemented throughout the planning and construction of the tunnel, the majority of the storm drain conveyance improvements must be conducted after the new tunnel is complete so that there is a receptor for the increased flows in the storm drain system.

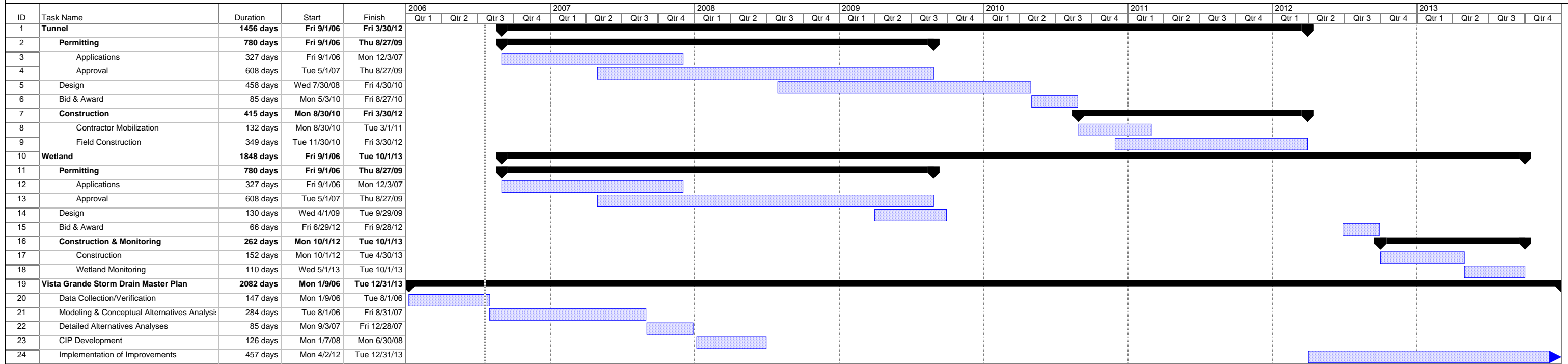
6.5.2 Overall Implementation Schedule for the Vista Grande Watershed Study

The Vista Grande Watershed Study will be an involved, multi-year process. A more detailed overall schedule for the preliminary program is shown in Figure 6-4. As this schedule shows, implementation can begin immediately with planning and permitting for the tunnel and wetland, flow monitoring and master planning for the storm drain improvements, and ongoing BMPs. The tunnel will take at least six years to implement. Under the proposed schedule the tunnel will be completed in the Spring of 2012. Wetland construction can begin once the tunnel replaces the need for the Vista Grande canal and is expected to take approximately one year, placing its completion in 2013. Flow monitoring and master planning for storm drain improvement can begin immediately and will take approximately two years to complete. After the tunnel is completed in early 2012, conveyance improvements for the storm drain system can begin and should continue to be implemented on an ongoing basis.

The preparation of the permit applications for the tunnel and the wetland are expected to take approximately one year. Once submitted, and complete, the permit review time for each agency ranges from two months to several years. During this same period, the environmental documentation under CEQA and NEPA will be prepared and requests by regulatory agencies for additional supporting materials may be fulfilled. Compliance with CEQA, NEPA, and any additional requests will be required before the final permits can be issued. Near the end of the regulatory process, in mid-2009, the design of the tunnel and the wetland can begin. Although the wetland cannot be constructed until after the tunnel is complete, developing the design early in the process will help develop support for the program and facilitate the ultimate implementation of the wetland.

The schedule provided below is designed to give an overview of how the individual preliminary program components could be implemented as an overall watershed program. This schedule includes only permitting, design and construction phases and is dependent on funding availability. This schedule would need to be refined when projects are selected for implementation and funding is secured.

Figure 6-4 Overall Implementation Schedule for the Vista Grande Watershed Study



6.6 Next Steps

As discussed previously, the intent of this Study is to establish a general approach to flood protection within the watershed. Since this is a planning level document, the preliminary alternatives included in the preliminary program have not been selected for implementation and acceptance of this Study by the agencies does not constitute adoption of these alternatives. Rather, it is recommended that the agencies accept this study as a general approach for further investigation to solve flooding in the Vista Grande watershed.

The next steps in developing the preliminary program recommendations identified in this Study include:

- Defining the Recommended Program
- Defining a funding approach and establish a financing plan
- Maintaining coordination between key agencies
- Conducting preliminary design of the Recommended Program components
- Obtaining required permits and regulatory approvals
- Conducting final design of the Recommended Program components
- Constructing the Recommended Program components
- Performing maintenance on the Vista Grande drainage basin until a long-term solution is implemented
- Conduct shoreline restoration at Lake Merced after completion of long-term downstream program components.

Within these next steps, a number of critical path items have been identified in order to streamline the implementation process. These items are described below.

Continued Development of the Preliminary Program Recommendations

Storm Drain Improvements

- Calibrate existing model based on flow monitoring data
- Conduct storm drain modeling to evaluate local storage and define design flow criteria
- Develop a storm drain master plan

Tunnel South of County Line

- Conduct site survey and geotechnical investigation
- Evaluate inlet hydraulics and need for interim bypass facilities
- Evaluate the location and conceptual design for the beach outlet structure
- Identify alternative locations and mechanisms for spoils disposal
- Conduct alternatives analysis to refine concepts and define preliminary recommendations
- Conduct CEQA/NEPA analyses and finalize recommendations

Vista Grande Wetland

- Conduct water quality monitoring to define seasonal variations in quality with respect to potential constituents of concern

- Quantify dry-weather stormwater flows in the Vista Grande canal
- Conduct alternatives analysis to refine concepts and define preliminary recommendations
- Conduct CEQA/NEPA analyses and finalize recommendations

Funding

The overall preliminary program is expected to cost from \$86,000,000 to \$117,000,000. Further investigation of the funding strategies described in Section 6.1 will be essential to identifying and securing the necessary backing to implement the program. Pursuing a variety of funding avenues will maximize the funds available and developing a detailed financing plan will be necessary to make the preliminary program recommendations a reality.

Coordination Between Agencies

Successful implementation of the Vista Grande Watershed Study will depend on establishing a successful working arrangement between the key agencies. Clearly defining responsibilities and the relationships between the interested parties may be necessary to secure funding and regulatory approval for the program components as part of a comprehensive watershed plan.

Regulatory Requirements / Permitting

Securing the appropriate permits and regulatory agreements is necessary prior to program implementation. This is expected to be a lengthy and involved process, thus it is essential to begin as soon as possible. Arranging or attending an interagency meeting will jumpstart this process, and will ensure that all of the appropriate regulatory requirements are met. In addition, the agencies should consider preparing a public works plan with the CCC, as described in Section 6.3.2, since a public works plan may make the permitting process more efficient.

Maintenance

Maintenance of the Vista Grande drainage system, especially the Vista Grande canal and the Vista Grande tunnel, will be essential in minimizing flooding damages until a long-term program is in place. This maintenance should include a pre-storm season walkthrough of the canal and adjacent areas to identify debris and other maintenance activities to be conducted prior to the storm season. Maintenance during storm events could be enhanced by installing a mechanical device to catch and remove debris to maintain flow through the canal and tunnel.