

File No. 151099

Committee Item No. 12

Board Item No. 23

### COMMITTEE/BOARD OF SUPERVISORS

#### AGENDA PACKET CONTENTS LIST

Committee: Budget and Finance

Date December 9, 2015

Board of Supervisors Meeting

Date December 15, 2015

#### Cmte Board

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| <input type="checkbox"/>            | <input type="checkbox"/>            | Legislative Digest                           |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Budget and Legislative Analyst Report        |
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| <input type="checkbox"/>            | <input type="checkbox"/>            | Grant Information Form                       |
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| <input type="checkbox"/>            | <input type="checkbox"/>            | Award Letter                                 |
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Completed by: Victor Young Date December 4, 2015

Completed by: Victor Young Date 12/10/15

1 [Finding of Fiscal Feasibility - Airport Shoreline Protection Project at San Francisco  
2 International Airport]

3 **Resolution finding the proposed Airport Shoreline Protection Project at San Francisco**  
4 **International Airport fiscally feasible and responsible pursuant to San Francisco**  
5 **Administrative Code, Chapter 29.**

6  
7 WHEREAS, The City and County of San Francisco owns and operates San Francisco  
8 International Airport, which is the primary commercial service airport for the San Francisco  
9 Bay Area; and

10 WHEREAS, The Airport completed an Airport Shoreline Protection Feasibility Study  
11 that identifies the deficiencies in its existing shoreline protection system and provides  
12 recommendations on improvements needed to protect the Airport from a 100-year flood and  
13 sea level rise; and

14 WHEREAS, The Airport proposes to initiate the Airport Shoreline Protection Project  
15 ("Project") to address these deficiencies by constructing new seawall segments, improving  
16 existing seawalls and upgrading a tide gate downstream of San Bruno Creek at the north side  
17 of the Airport to provide adequate outflow capacity; and

18 WHEREAS, The Project is estimated to cost \$58,000,000 and is included in the  
19 Airport's Capital Plan; and

20 WHEREAS, On September 22, 2015, by Resolution No. 15-0192, the Airport  
21 Commission authorized the Airport Director to seek a finding from the Board that the proposed  
22 Project is fiscally feasible and responsible under San Francisco Administrative Code, Chapter  
23 29; and

24 WHEREAS, Pursuant to Administrative Code, Section 29.3, the Airport has submitted  
25 to the Board a general description of the Project, the general purpose of the Project, and a

1 fiscal plan, which materials are on file with the Clerk of the Board of Supervisors in File No.  
2 151099, and are hereby declared to be a part of this Resolution as if set forth fully herein; and

3 WHEREAS, Pursuant to Administrative Code, Section 29.2, prior to submittal to the  
4 San Francisco Planning Department ("Planning Department") of the environmental evaluation  
5 application ("EE Application") to initiate environmental review for the Project pursuant to  
6 Administrative Code, Chapter 31, and CEQA, it is necessary to procure from the Board a  
7 determination that the plan for undertaking and implementing the proposed Project is fiscally  
8 feasible and responsible; and

9 WHEREAS, The Board has reviewed and considered the general description of the  
10 Project, the general purpose of the Project, the fiscal plan, and other information submitted to  
11 it and has considered the direct and indirect financial benefits of the Project to the City of San  
12 Francisco, the cost of construction, and the available funding for the project; now, therefore,  
13 be it

14 RESOLVED, The Board of Supervisors finds that the plan to undertake and implement  
15 the Project is fiscally feasible and responsible under San Francisco Administrative Code,  
16 Chapter 29; and, be it

17 FURTHER RESOLVED, Pursuant to San Francisco Administrative Code, Chapter 29,  
18 the EE Application may now be filed with the Planning Department, and the Planning  
19 Department may now undertake environmental review of the proposed Project as required by  
20 Administrative Code, Chapter 31, and CEQA.

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**Item 12****Files 15-1099****Department:**

San Francisco International Airport (Airport)

**EXECUTIVE SUMMARY****Legislative Objective**

- The proposed resolution would find that the Airport's proposed Airport Shoreline Protection Project is fiscally feasible and responsible pursuant to Administrative Code Chapter 29.

**Key Points**

- The Airport Shoreline Protection Project would implement various capital improvements to protect the Airport from a 100-year flood and anticipated sea level rise, including constructing new shoreline perimeter protections, stabilizing embankments, providing geotechnical improvements, upgrading closure devices and tide gates and environmental mitigation.
- This Project is included in the Airport's Five Year Capital Plan, which was approved by the Board of Supervisors as part of the City's Capital Plan in April, 2015.
- Chapter 29 of the City's Administrative Code states that the Board of Supervisors shall evaluate a project's financial feasibility and responsibility if (a) the project is subject to environmental review under the California Environmental Quality Act (CEQA), (b) total project costs are estimated to exceed \$25,000,000, and (c) construction costs are estimated to exceed \$1,000,000. Chapter 29 states the Board of Supervisors shall review the project's financial feasibility and responsibility, in five areas including: (1) direct and indirect financial benefits to the City, (2) construction costs, (3) available funding, (4) long-term operating and maintenance costs, and (5) debt load carried by the relevant City Department.

**Fiscal Impact**

- The fiscal benefits are primarily from the jobs, payroll and economic impacts during construction. However, if the proposed project is not completed, the Airport's runways could flood, reducing the number of take-offs and landings, resulting in decreased number of passengers, economic activity and tax revenues to the Airport, City and region.
- The Airport Shoreline Protection Project is estimated to cost \$57,509,880, including \$8,610,403 for planning, design, inspection, project and construction management expenses and \$48,899,477 for construction expenses.
- This project would be funded with Airport General Aviation Revenue Bonds, with an average of \$4.9 million annual debt service paid over 30 years from Airport airline and non-airline operating revenues. The Airport has \$1.64 billion available of previously authorized by unissued debt, which could be used to finance this project. The Airport also has \$945.6 million remaining appropriation previously approved by the Board of Supervisors for Airport capital projects.
- The Budget and Legislative Analyst considers the proposed Airport Shoreline Protection Project to be fiscally feasible and responsible.

**Recommendation**

- Approve the proposed resolution.

**MANDATE STATEMENT**

Chapter 29 of the City's Administrative Code requires projects<sup>1</sup> to be submitted to the Board of Supervisors to approve the fiscal feasibility and responsibility of the project prior to submitting the project to the Planning Department for environmental review if (a) the project is subject to environmental review under the California Environmental Quality Act (CEQA), (b) total project costs are estimated to exceed \$25,000,000, and (c) predevelopment, planning and/or construction costs are estimated to exceed \$1,000,000 of public monies. Chapter 29 specifies five areas for the Board of Supervisors to consider when reviewing the fiscal feasibility and responsibility of a project, including the (1) direct and indirect financial benefits to the City, including costs savings or new revenues, including tax revenues, (2) construction costs, (3) available funding, (4) long term operating and maintenance costs, and (5) debt load carried by the relevant City department. Chapter 29 also states that a finding of fiscal feasibility and responsibility means that a "project merits further evaluation and environmental review."

**BACKGROUND**

On April 21, 2015, the Board of Supervisors adopted the City's Ten-Year Capital Expenditure Plan for FYs 2016-2025 (Resolution No. 144-15), which includes capital projects for the San Francisco International Airport (Airport). The Airport's Five-Year Capital Plan for FY 2015-2019, approved by the Airport Commission, specifies completion of a shoreline protection feasibility study to analyze the Airport's vulnerability to flooding from a 100-year flood and likely sea level rise. The Airport's Capital Plan indicates that based on the feasibility study's findings, the Airport will begin design and construction of both near term and longer term measures to protect the Airport's shoreline. The estimated five year cost of such measures is \$48 million, with the total project cost estimated at \$57.5 million over ten years.

**DETAILS OF PROPOSED LEGISLATION**

The proposed resolution would find the Airport's proposed Shoreline Protection Project at San Francisco International Airport to be fiscally feasible and responsible, in accordance with Chapter 29 of the City's Administrative Code. Approval of this resolution would allow the Airport to proceed with environmental review for the project.

**Airport Shoreline Protection Project**

San Francisco International Airport (Airport) occupies approximately 5,171 acres of land, with approximately eight miles of shoreline along the west side of San Francisco Bay. Since the early 1980s, the Airport has constructed various types of seawalls, including earth berms, concrete dikes and vinyl sheet piles along portions of the shoreline to prevent water from entering the airfield. Recognizing that there were significant gaps in these seawalls, combined with the

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<sup>1</sup> Chapter 29 excludes various types of projects from the fiscal feasibility requirement, including (a) any utilities improvement project by the Public Utilities Commission, (b) projects with more than 75 percent of funding from the San Francisco Transportation Authority, and (c) a project which was approved by the voters of San Francisco.

future potential for sea level rise and flooding, in 2013, based on a competitive Request for Proposal (RFP) process, the Airport contracted with Moffatt & Nichol + AGS Joint Venture, a consulting firm, at a cost of \$500,000 to conduct an Airport Shoreline Protection Project Feasibility Study Evaluation and Recommendations Report.

This Airport Shoreline Protection Project Feasibility Report, issued in June 2015, recommended various improvements to protect the Airport from a 100-year flood and anticipated sea level rise. Based on this consultant study, in September 2015 the Airport staff issued a Fiscal Feasibility Study for the Airport Shoreline Protection Project. According to Ms. Rosalyn Yu, Contract Manager for Design and Construction at the Airport, all the recommended improvement projects would provide system wide flood protection, in accordance with the Federal Emergency Management Agency (FEMA) levee standards.

The proposed Airport Shoreline Protection Project would address the identified deficiencies to protect and improve the existing seawall and levees along the Airport's shoreline by

- constructing new shoreline protection segments at the Mel Leong Waste Treatment Plant, U.S. Coast Guard Station and the south end boundary along the perimeter of the airfield;
- stabilizing the embankments at the end of Runway 19s and at the intersection of Taxiways Lima (L) and Charlie (C), including replacing vinyl sheets along Runway 1R and capping existing concrete seawalls at various locations;
- providing geotechnical improvements by installing seepage cutoff walls at the end of Runways 19L and 19R;
- constructing closures devices at drainage outfall pump stations and upgrading tide gates downstream of San Bruno Creek to provide higher outflow capacity; and
- including environmental mitigation measures.

These Airport Shoreline Protection Program improvements are expected to take four to six years to complete and cost an estimated \$57.5 million. If the Board of Supervisors approves the proposed resolution finding that the Airport Shoreline Protection Project is fiscally feasible and responsible, Airport staff intends to submit an Environmental Evaluation Application to the City's Planning Department for environmental review of this project in accordance with the California Environmental Quality Act (CEQA) and Chapter 31 of the City's Administrative Code. In order to expedite this Project, the Airport intends to pursue the environmental review process concurrently with the environmental permitting process<sup>2</sup>. The Airport estimate completion of the environmental review and permitting process would take approximately 18-24 months to complete.

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<sup>2</sup> The Airport anticipates that permits will be required from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, National Marine Fisheries Service, San Francisco Bay Regional Water Quality Control Board, San Francisco Bay Conservation and Development Commission, and Bay Area Air Quality Management District.

The overview photograph of the Airport below highlights the specific areas that would be addressed with the proposed Airport Shoreline Protection Project improvements.



### Fiscal Feasibility of the Airport Shoreline Protection Project

In accordance with Chapter 29 of the City's Administrative Code, the following five areas are to be considered by the Board of Supervisors for determination of fiscal feasibility: (1) direct and indirect financial benefits to the City, including cost savings or new revenues, including tax revenues, (2) construction cost, (3) available funding, (4) long term operating and maintenance costs, and (5) debt load carried by the relevant City department.

#### **(1) Direct and Indirect Financial Benefits**

According to the September 2015 *Feasibility Study (Study)* for the proposed Airport Shoreline Protection Project, prepared by the Airport, the new direct and indirect financial benefits primarily address the jobs, payroll and related economic benefits that would be created during

construction. Otherwise, the direct and indirect financial benefits of the proposed Shoreline Protection Project do not address new revenues or cost savings, but rather the maintenance of existing and future revenues to the Airport, the City's General Fund and the region that would otherwise be lost or diminished if the Airport and its runways and taxiways were to flood, thereby reducing the number of take-offs and landings, which would cause passengers, economic activity and tax revenues to decrease.

#### *Airport and City Revenue Benefits*

The Airport advises that the proposed Shoreline Protection Project is essential to ensure safe operations of air traffic during extreme storms and in the future, with potential sea level rise. Otherwise, flooding at the Airport could result in closure of runways, significantly decreasing passenger traffic and negatively impacting Airport operations and revenue. In accordance with the Lease and Use Agreement between the Airport and the airlines, which extends through FY 2020-21, the Airport pays 15% of gross concession revenues as an Annual Service Payment to the City's General Fund. Therefore, reductions in Airport operations and revenue would decrease the Airport's Annual Service Payment to the City's General Fund. The FY 2014-15 Annual Service Payment to the City's General Fund was \$40.5 million.

#### *Employment Benefits*

If the proposed project is not undertaken such that flooding occurs at the Airport, negatively impacting Airport operations and passenger activity, the Airport estimates a significant number of the 36,000 direct jobs at the Airport and related \$2.4 billion payroll and resulting tax revenues could be impacted, although specific amounts are not identified. Based on the construction costs of the Shoreline Protection Project, approximately 414 new one-time jobs would be created. These would be limited-term jobs during the approximate four to six-year duration of the project.

#### *Economic and Tax Benefits*

According to the Airport's *Fiscal Feasibility Study*, the Airport generated approximately \$6 billion of direct business activity and \$59 billion of indirect economic activity in FY 2013-14 for San Francisco and the Bay Area<sup>3</sup>. Related to such economic activity, State and local taxes attributed to the Airport in FY 2013-14 are estimated to total \$2.5 billion. As noted above, the proposed project would protect the airfield from potential flooding and thereby protect the Airport against potential future losses of passengers, economic activity and related tax benefits.

## **(2) Construction Costs**

The fiscal feasibility of a project must be determined, pursuant to Administrative Code Chapter 29, for projects with (a) total costs over \$25,000,000, and (b) predevelopment, planning or construction costs over \$1,000,000 of public monies. The proposed Airport Shoreline Protection Project is estimated to cost \$8,610,403 in related planning, design, inspection,

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<sup>3</sup> Economic Development Research Group, Inc., "2014 Economic Impact Study Update San Francisco International Airport", prepared for San Francisco Airport Commission, December 2014.

project and construction management costs (soft costs) and \$48,899,477 in construction costs, resulting in total estimated project costs of \$57,509,880, as shown in Table 1 below.

**Table 1: Estimated Non-Construction and Construction Costs**

	Soft Costs	Construction Costs	Total
Seawall Improvements	\$5,864,068	\$27,854,366	\$33,718,434
Embankment Improvements	1,438,823	6,834,418	8,273,241
Geotechnical Improvements	719,051	3,415,500	4,134,551
Closures	588,461	2,795,193	3,383,654
Environmental Mitigation	0	8,000,000	8,000,000
<b>Total</b>	<b>\$8,610,403</b>	<b>\$48,899,477</b>	<b>\$57,509,880</b>

### **(3) Available Funding**

As noted above, the Airport's Capital Plan, previously approved by the Airport Commission and the Board of Supervisors, included an estimated cost of \$48 million for the Airport Shoreline Protection Project over five years and an estimated cost of \$57.5 million over ten years. The Airport anticipates funding the entire \$57,509,880 using Airport General Aviation Revenue Bonds. Debt service for such Airport Revenue Bonds is paid by the Airport from operating revenues, including airline and non-airline revenues.

Currently, the Board of Supervisors has authorized a total of \$3.19 billion of Capital Bonds for the Airport, of which \$1.64 billion remain unissued. The Airport would use a portion of this unused bond authorization to finance this project. In addition, Ms. Nicole Sanders of the Airport advises that there is approximately \$945.6 million remaining from the \$1,969.8 million supplemental appropriation previously approved by the Board of Supervisors for capital projects in 2014 that could be used for this project.

### **(4) Long Term Operating and Maintenance Costs**

The Airport estimates the long-term operating and maintenance costs from the proposed project would not be significantly different from current practices. Maintenance activities will be performed by Airport Maintenance staff and include the ongoing costs to perform routine inspections of the seawalls, recording findings and preparing repair recommendations in accordance with Federal Emergency Management Agency (FEMA) certification guidelines.

### **(5) Debt Load of the Airport**

Currently, the Airport manages an approximately \$4.5 billion debt portfolio, which is primarily used to fund capital projects. As noted above, the Airport intends to finance the proposed Airport Shoreline Protection Project with the issuance of Airport General Aviation Revenue Bonds, thus incurring additional Airport debt. As noted above, the Board of Supervisors has currently authorized a total of \$3.19 billion of Capital Bonds for the Airport, of which \$1.64 billion remain unissued.

Debt service costs to repay Airport revenue bonds are paid from Airport operating revenues, received from the airlines doing business at the Airport through the various Airport rates and charges as well as from non-airline lease and concession revenues. Issuance of any additional Airport revenue bonds would be subject to approval and appropriation by the Board of Supervisors.

The Airport estimates that the total \$57.5 million Shoreline Protection Project would result in \$147.9 million of debt service payments over the projected 30-year term of the bonds, including approximately \$80.1 million of interest costs. This assumes a conservative interest rate of 6.1%, a 12-month capitalized interest period, 3% cost for issuance expenses and 10% debt service reserve requirement. Overall, debt service payments would be approximately \$4.93 million annually over the 30 year term of the bonds.

### **FISCAL IMPACT**

As discussed above, funding of the Airport Shoreline Protection Project would be contingent on issuance of future Airport revenue bonds, and appropriation of the bond proceeds for this project by the Board of Supervisors. Annual debt service on the proposed bonds would be paid from annual Airport operating revenues, which include annual payments to the Airport by the airlines under their landing fee and other lease agreements as well as from concession and other non-airline revenues.

As a result of the Airport's "residual rate setting methodology" (a breakeven policy) used by the Airport to determine rental rates, landing fees, and related fees for all airlines, increases in the Airport's operating costs due to increased debt service will be primarily funded by increased annual payments by the airlines to the Airport under their landing fee and other lease agreements with the Airport.

### **Conclusion**

Based on the five areas described above, the Budget and Legislative Analyst concurs that the Airport's proposed Airport Shoreline Protection Project is fiscally feasible and responsible. Approval by the Board of Supervisors of the resolution would authorize the Airport to move forward with environmental review under CEQA.

### **RECOMMENDATION**

Approve the proposed resolution.



RECEIVED  
BOARD OF SUPERVISORS  
SAN FRANCISCO San Francisco International Airport

151099

October 26, 2015

Ms. Angela Calvillo  
Clerk of Board  
Board of Supervisors  
City Hall  
1 Dr. Carlton B. Goodlett Place, Room 244  
San Francisco, California 94102-4689

2015 OCT 23 PM 1:40

*3113*

Subject: Finding of Fiscal Feasibility of Airport Shoreline Protection Project at San Francisco International Airport

Dear Ms. Calvillo,

Pursuant to Administrative Code Chapter 29, I am forwarding a Fiscal Feasibility Report for the Airport Shoreline Protection Project at San Francisco International Airport for Board of Supervisor's consideration.

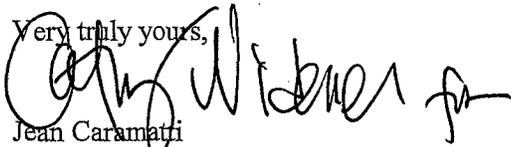
The Airport completed an Airport Shoreline Protection Feasibility Study that identifies deficiencies in its existing shoreline protection system and provides recommendations on improvements needed to protect the Airport from a 100-year flood and sea level rise. The Airport Shoreline Protection Project is being proposed to address these deficiencies by constructing new seawall segments, improving existing seawalls, and upgrading a tide gate downstream of San Bruno Creek at the north side of the Airport to provide adequate outflow capacity.

The proposed Project is estimated to cost \$58 million and was included in the Airport's Capital Plan. As the cost of this project will exceed \$25 million, prior to initiating environmental review under the California Environmental Quality Act for the Project, the Airport has prepared a Fiscal Feasibility Report for the Board of Supervisors' review and seeks a determination from the Board that the Project is fiscally feasible and responsible, as required by Chapter 29 of the San Francisco Administrative Code.

Two sets of the following documents are enclosed for review:

- Proposed Board of Supervisors Resolution
- Approved Airport Commission Resolution No. 15-0192
- Airport Shoreline Protection Project Fiscal Feasibility Report

Please contact Cathy Widener, Airport Government Affairs at 650-821-5023 if you have any questions or concerns regarding this matter.

Very truly yours,  
  
Jean Caramatti  
Commission Secretary  
Enclosures

AIRPORT COMMISSION

CITY AND COUNTY OF SAN FRANCISCO

RESOLUTION NO. 15-0192

**AUTHORIZATION TO SEEK A FINDING FROM THE SAN FRANCISCO BOARD OF SUPERVISORS THAT THE PROPOSED AIRPORT SHORELINE PROTECTION PROJECT IS FISCALLY FEASIBLE AND RESPONSIBLE PURSUANT TO ADMINISTRATIVE CODE CHAPTER 29**

WHEREAS, San Francisco Administrative Code Chapter 29 requires that prior to initiating environmental review, City departments proposing a project that is estimated to have an implementation or construction costs greater than \$25 million and use more than \$1 million in public monies prepare a financial feasibility study and submit it to the Board of Supervisors for a finding that the proposed project is fiscally feasible and responsible; and

WHEREAS, in 2013, the Airport contracted with a consulting firm to provide a Shoreline Protection Feasibility Study. The study is now complete and recommends various improvements necessary to protect the Airport from a 100-year flood and anticipated sea level rise; and

WHEREAS, the proposed Airport Shoreline Protection Project ("Project") would address the deficiencies in the existing seawall system by constructing new shoreline protection segments, stabilizing the embankments, installation of seepage cutoff walls and providing closures in the seawall system; and

WHEREAS, the proposed Project is estimated to cost \$58 million and was included in the prior Capital Plan; now, therefore, be it

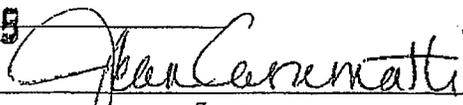
RESOLVED, that the Commission hereby authorizes the Airport Director to seek a finding from the Board of Supervisors that the proposed Airport Shoreline Protection Project is fiscally feasible and responsible under San Francisco Administrative Code Chapter 29.

*I hereby certify that the foregoing resolution was adopted by the Airport Commission*

*at its meeting of*

SEP 22 2015

2190

  
Secretary

# **San Francisco International Airport**

## **AIRPORT SHORELINE PROTECTION PROJECT**

### *Fiscal Feasibility Study*

September 2015



## I. Introduction

The City and County of San Francisco owns and operates San Francisco International Airport (SFO), which is the primary commercial service airport for the San Francisco Bay Area. The Airport serves the Bay Area with domestic and international passenger flights as well as all-cargo flights. SFO is one of the busiest airports in the United States and provides economic benefits to the City of San Francisco and the entire Bay Area. According to Airport Council International (ACI) data, SFO was ranked 7<sup>th</sup> in the United States in terms of total passengers with 44,399,885 and ranked 19<sup>th</sup> in terms of air cargo in calendar year (CY) 2012<sup>1</sup>. SFO is one of the country's principal international gateways for Pacific Rim traffic, it serves as a hub for United Airlines, and it is Virgin America's primary base of operations.

San Francisco International Airport occupies approximately 5,171 acres of land, with approximately eight miles of shoreline along the west side of San Francisco Bay. The existing seawall system is in need of major improvements in order to protect against 100 year floods and sea level rise. Implementing this proposed Airport Shoreline Protection project would reduce flood risks at SFO by providing protection against 100-year floods. The Airport believes this project is both fiscally responsible and feasible.

Since the early 1980's, SFO has been constructing various types of seawalls including earth berms, concrete dikes and vinyl sheet piles. However, there are gaps of various lengths along the shoreline that may allow water to enter the airfield. These gaps include segments at US Coast Guard Air Station, Mel Leong Waste Treatment Plant, the Airport's north and south boundaries and specific drainage outfall locations.

Recognizing the potential flood risks, SFO completed an Airport Shoreline Protection Feasibility Study (Study) to better understand the deficiencies in its existing shoreline protection system. The Study also provides recommendations on improvements needed to protect the Airport from a 100-year flood and sea level rise.

### Summary of Study:

- Performed coastal engineering modeling, geotechnical stability analysis and interior drainage system review
- Identified flood protection system deficiencies in accordance with Article 44 CFR 65.10
- Identified implications of Sea Level Rise (SLR)
- Developed flood protection measures to rectify the current deficiencies as well as address future rising sea levels
- Developed budgetary implementation costs for the protection measures

To address the potential flood risks, SFO is developing a new Shoreline Protection Program (SPP) based upon recommendations in the Airport Shoreline Protection Feasibility Study Report (Report).

<sup>1</sup> 2012 Airports Council International (ACI) and Airports Council International- North America (ACI-NA) Airport Statistics

At this stage, the Airport is proposing this Airport Shoreline Protection project to address the deficiencies identified by the Study in the existing seawall system by constructing new shoreline protection segments, stabilizing the embankments, installation of seepage cutoff walls and providing closures in the seawall system.

Pursuant to Chapter 29 of the San Francisco Administrative Code, prior to initiating environmental review for a proposed project, as defined by the California Environmental Quality Act, which is estimated to have implementation and/or construction costs greater than \$25 million and use more than \$1 million in public monies, the proposal must be submitted to the Board of Supervisors to determine whether the plan for undertaking and implementing the project is fiscally feasible and responsible. The proposing City department must prepare a feasibility study and submit it to the Board of Supervisors prior to submitting the project to the Planning Department for environmental review.

The Airport is submitting this fiscal feasibility study to the Board of Supervisors to comply with Chapter 29 of the Administrative Code, since the total project cost for the Airport Shoreline Protection project is in excess of \$25 million and the project will require a CEQA review.

## II. San Francisco International Airport

San Francisco International Airport is owned and operated by the City and serves as the primary airport for the Bay Area. The Airport is governed by the Airport Commission, as outlined in the City Charter. The five-person Airport Commission is primarily a policy-making body, establishing the policies by which the Airport operates. The Airport Director oversees the operation and management of the Airport. SFO also operates under the regulations of the FAA and the Transportation Security Administration (TSA). The Airport's mission is to provide safe and secure facilities for airlines, tenants, employees, and the traveling public and to be fiscally prudent and contribute to the health of the local economy<sup>2</sup>. The Airport Shoreline Protection project would significantly reduce flood risk and enhance safety of the airfield facility and passengers at SFO.

## III. Project Overview

The purpose of this project is to address the deficiencies in the existing seawall system by constructing new shoreline protection segments at various locations, including Mel Leong Treatment Plant, U.S. Coast Guard, and south end boundary along the perimeter of the airfield; stabilizing the embankments at end of Runway 19s and at the intersection of Taxiways Lima and Charlie; installation of seepage cutoff walls at Runway 19s and providing closures at outfall pump stations and downstream of San Bruno Channel.

An estimate of probable construction costs is provided in the table below. More details regarding the project costs are shown in Appendix I.

<sup>2</sup> San Francisco International Airport, "Strategies and Goal 2007 – 2012", pg. 3.



**Table 1  
Airport Shoreline Protection Project Costs<sup>3</sup>**

<b>Airport Shoreline Protection Project Component</b>	<b>Amount</b>
Seawall Improvements	\$33,718,434
Embankment Improvements	\$ 8,273,240
Geotechnical Improvement	\$ 4,134,552
Closures	\$ 3,383,654
Environmental Mitigation	\$ 8,000,000
<b>TOTAL</b>	<b>\$57,509,880</b>

The **Airport Shoreline Protection** project components are diagrammed in Appendix II, and include:

- **Seawall Improvements** -This component will include construction of new berm at Mel Leong Treatment Plant, construction of new seawall at U.S. Coast Guard, extension of existing seawalls with minimum freeboard deficiencies, raising of existing vehicle service road to serve as berm and replacement of existing sheetpiles. SFO will have to obtain necessary approval from the U.S. government/U.S. Coast Guard before implementing improvements at the U.S. Coast Guard located at SFO.
- **Embankment Improvements** - This component will include installation of riprap on the bay side of existing seawall to flatten embankment at the end of Runway 19s and intersection of Taxiways Lima and Charlie.
- **Geotechnical Improvement** - This component will include installation of seepage wall at foot of existing berm landside at the end of Runway 19s.
- **Closures** - This component will include construction of closure devices at existing outfall pump stations and modification of tide gate at the downstream of San Bruno Channel.

## IV. Environmental Review

An Environmental Evaluation Application for environmental review has yet to be filed with the City and County of San Francisco’s Planning Department – Environmental Planning Division (SFEP), the City department responsible for undertaking the administrative actions required of the City as lead agency under the California Environmental Quality Act (CEQA). Upon review by the Board of Supervisors of the fiscal feasibility study and a determination that the project is fiscally feasible and responsible, Airport staff will submit the Environmental Evaluation Application for the current project proposal to SFEP for review of potential environmental

<sup>3</sup> The cost estimates presented here are based on planning-level requirements and design drawings and are preliminary in nature as developed by SFO. Final cost estimates will be prepared once the environmental process is complete and detailed design drawings are prepared.

impacts for each of the 17 resource categories, conducted according to the procedural requirements of CEQA (California Public Resources Code Section 21000 et seq.), State CEQA Guidelines (Title 14 California Code of Regulations, Section 15000 et seq.) and Chapter 31 of the San Francisco Administrative Code. Airport staff will submit an Initial Study at a future date, which will include environmental analyses of the CEQA resource categories; Airport anticipates the SFEP Environmental Review Officer will prepare a Mitigated Negative Declaration or an Environmental Impact Report.

The environmental permitting process will be conducted concurrently with the environmental review process to expedite the project. Such permits must be coordinated with the design process to ensure final key design conforms to the conditions and analyses provided in the permit applications to various federal, state, and local regulatory agencies. Staff anticipates permits will be required from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, National Marine Fisheries Service, San Francisco Bay Regional Water Quality Control Board (RWQCB), San Francisco Bay Conservation and Development Commission (BCDC), and Bay Area Air Quality Management District (BAAQMD). Airport staff estimates completion of the environmental review and permitting process for this project within 18 - 24 months from the start of the environmental process.

## V. Fiscal Feasibility Analysis

Under the provisions of the San Francisco Administrative Code §29.2 there are five criteria to evaluate the project's fiscal feasibility. The five criteria to study the fiscal feasibility are as follows:

- (1) Direct and indirect financial benefits of the project to the City, including to the extent applicable cost savings or new revenues, including tax revenues generated by the proposed project;
- (2) The cost of construction;
- (3) Available funding for the project;
- (4) The long-term operating and maintenance cost of the project; and
- (5) Debt load to be carried by the City department or agency.

The fiscal feasibility of the Airport Shoreline Protection project is analyzed based on the five criteria below.

### (1) Financial Benefits to the City

The Airport provides both direct and indirect financial benefits to San Francisco, including employment and tax revenues. This project plans to construct new levees and improve existing levees at various locations along the shoreline to provide campus wide flood protection for the Airport which in turn would reduce significant air traffic interruption costs due to extreme weather events. In addition, the completed shoreline protection system would allow the Airport to build on grade without elevating or flood proofing which would significantly reduce construction costs on airport development projects.



Direct Financial Benefits

The City receives numerous direct financial benefits resulting from the operation of the Airport in the most efficient and effective manner possible. The Airport Shoreline Protection project is critical to ensure safe operations of air traffic during extreme storm events with a campus wide flood protection system. This will ensure the City continues to receive the maximum financial benefits including tax revenue generated by visitors, job creation benefits, and the Airport’s annual service payment into the General Fund. The Airport’s economic activity also provides financial benefits to the entire Bay Area economy.

City Revenue

Under the current Lease and Use Agreement between the Airport and the airlines, SFO provides 15% of gross concession revenues to the City’s General Fund. These General Fund revenues can be applied to any use determined by policy makers. Without undertaking this essential project, aircraft operations, passenger volumes, and concession revenues could be reduced, and the City’s General Fund could see a loss in revenue due to potential reductions in annual service payments.

The annual service payments provided by the Airport to the City’s General Fund over the previous five fiscal years totaled \$166.8 million. In FY 2014, the Airport transferred \$38.0 million in revenue to the City. The five-year breakdown of the annual service payments is shown in the table below.

**Table 2**  
**Annual Service Payment**  
**FY 2010 to FY 2014**  
**(in millions)**

<b>Fiscal Year</b>	<b>Annual Service Payment</b>
FY 2010	\$ 28.1
FY 2011	\$ 30.2
FY 2012	\$ 34.0
FY 2013	\$ 36.5
FY 2014	\$ 38.0
<b>Total</b>	<b>\$ 166.8</b>

*Source: San Francisco International Airport Annual Financial Statements*

The average annual payment received by the City over the most recent five fiscal years was \$33.4 million which has increased by 35% over the past five-years. The current Lease and Use Agreement between the Airport and signatory airlines operating at the Airport includes the annual service payments through FY 2021. The Airport expects the annual service payments to continue to increase with passenger volumes and concession spending during that period.

Direct Employment

San Francisco International Airport is an economic driver for the City and County of San Francisco and also the entire Bay Area. A key measure of economic activity is the direct employment based on activities related to the Airport. These are jobs that would not exist without the Airport, and they would be impacted by any reduced airport activity. These jobs are within the aviation sector, transportation, professional services, or construction services.

According to Economic Development Research Group, Inc., a total of 36,392 direct jobs are dependent on the activity of SFO. These jobs would be discontinued immediately if airport activity ceased. These jobs would also likely be impacted as a result of changes in number of flights and passenger levels. The table below provides a breakdown of the types of direct jobs by category created by the Airport.

**Table 3<sup>4</sup>**  
**Direct Job Impacts from SFO for 2014**

<b>Job Category</b>	<b>Direct Jobs</b>	<b>Percent</b>
Passenger Airlines	14,520	39.9%
Airport Retail & Concessions	3,858	10.6%
Rental Car	3,663	10.1%
Limos/Buses/Vans/Transit	3,091	8.5%
FBOs & General Aviation & Aviation. Services	1,817	5.0%
City of San Francisco Airport Commission	1,668	4.6%
All Other Ground Transportation	1,409	3.9%
Security Firms	1,367	3.8%
Federal Government	1,166	3.2%
Capital Construction	949	2.6%
Taxi Cabs	948	2.6%
Other	1,936	5.3%
<b>TOTAL</b>	<b>36,392</b>	<b>100.0%</b>

*Source: Economic Development Research Group, Inc., December 2014*

Failure to proceed with this project may impact passenger levels at SFO that could in turn impact the number of direct jobs. The total payroll from direct jobs in Fiscal Year 2014 is \$2.4 billion. These jobs provide tax revenue to the City and County of San Francisco and throughout the Bay Area.

The Airport Shoreline Protection construction project will employ significant staff. Based on the construction costs of the project an estimated 414 jobs would result from this project.

<sup>4</sup> Economic Development Research Group, Inc., "2014 Economic Impact Study of San Francisco International Airport", December 2014, pg. 22.



**Table 4**  
**Airport Shoreline Protection Project Job Impact**

<b>Airport Shoreline Protection Project Component</b>	<b>Amount</b>	<b>Total Job Impact</b>
Seawall Improvements	\$33,718,434	282
Embankment Improvements	\$8,273,240	69
Geotechnical Improvements	\$4,134,552	35
Closures	\$3,383,654	28
<b>TOTAL</b>	<b>\$49,509,880</b>	<b>414</b>

Source of employment impacts: *Regional Economic Models, Inc. (REM)*.

The construction impact is a one-time job creation impact for the City and County of San Francisco, but the project duration spans several years.

However, the indirect impact of jobs resulting from the economic activity of the Airport is also significant:

- A total of 11,745 of indirect jobs are generated in the local economy from purchases of goods and services by firms completely dependent upon activity of SFO<sup>5</sup>.
- A total of 13,234 jobs are induced in the region from purchases of goods and services by the direct jobs created by activity at SFO.

**Tax and Economic Benefits**

In addition to the direct and indirect job impact, activities from SFO generate significant tax revenues for San Francisco and the Bay Area. State and local taxes linked to the Airport are estimated at \$2.5 billion in Fiscal Year 2013-14, including approximately \$1.4 billion from direct activities and \$1.2 billion from purchases of supplier goods and services and re-spending of worker income.<sup>6</sup>

SFO also serves an economic driver for San Francisco and the Bay Area as a whole. In FY 2013/14, SFO directly accounted for approximately \$6.0 billion of business activity. Off-site business activities that depend directly on local air service for staff movements, cargo deliveries, or visitor spending result in a direct airport economic contribution to the Bay Area totaling an estimated \$35.0 billion in business sales. Additionally, there are regional spin-off activities associated with suppliers and services to the directly affected businesses, and the re-spending of additional worker income on consumer goods and services. Adding in these indirect effects brings SFO’s total economic footprint within the Bay Area to approximately \$59.0 billion in business sales, including \$21.0 billion in total payroll, and more than 285,000 jobs in the region<sup>7</sup>.

<sup>5</sup> Ibid. pg. 23

<sup>6</sup> Ibid. pg. 39

<sup>7</sup> Ibid. pg. ii

## (2) Costs of Construction

The total project cost is \$58 million for the entire Airport Shoreline Protection project. This amount includes environmental mitigation, as well as construction costs, internal costs for Airport staff, external professional services to provide project management and construction management support, and associated design and engineering work for the project. The full breakdown of the project costs including construction costs and soft costs are shown in the table below.

**Table 5**  
**Airport Shoreline Protection Total Project Costs**

<b>Airport Shoreline Protection Project Component</b>	<b>Total Amount</b>	<b>Construction Costs</b>	<b>Soft Costs*</b>
Seawall Improvements	\$33,718,434	\$27,854,366	\$5,864,068
Embankment Improvements	\$8,273,240	\$6,834,418	\$1,438,823
Geotechnical Improvements	\$4,134,552	\$3,415,500	\$719,051
Closures	\$3,383,654	\$2,795,193	\$588,461
Environmental Mitigation	\$8,000,000	\$8,000,000	\$0
<b>TOTAL</b>	<b>\$57,509,880</b>	<b>\$48,899,477</b>	<b>\$8,610,461</b>

\* Soft costs include project management, design, inspection, and construction management.  
Source: SFO

Detailed construction cost estimates are included in Appendix I. The direct construction costs are \$49.5 million and the construction costs related to the project include; earth moving, berm construction, seawall foundation installation; new soldier pile seawall installation, wall cap installation, new sheetpiles, roadway reconstruction, riprap installation, rebar installation, concrete forming and pouring. Standard general conditions and design contingency allowances for the conceptual design stage are also shown.

## (3) Available Funding

The Airport anticipates having sufficient funding for the Airport Shoreline Protection project. The Airport's Plan of Finance and the Airport's Five-Year and 10-Year Capital Improvement Plan (CIP) include this project for the Airport. The Airport anticipates funding this project with internal sources.

As a large-hub airport with a robust capital improvement program, the Airport included the costs of the project into the annual 5- and 10-year capital plan. The Airport currently has remaining appropriation from the 2014 \$1,969.8 million supplemental appropriation for capital projects. The Airport will utilize debt financing through General Aviation Revenue Bonds (GARBs) to fund the project.

## (4) Project Long-term Operating and Maintenance Costs

The long-term operating and maintenance costs from the proposed project are minimal. These activities will be performed by SFO Maintenance and include typical costs to routine inspection of seawalls, recording of finding and prepare repair recommendation per Federal Emergency Management Agency's (FEMA) certification guidelines

## **(5) Debt Load Carried by the Airport**

The Airport will have to finance the construction costs associated with this project, and thus will incur additional debt. The Airport has an active debt finance department to fund capital projects and manage the Airport's \$4.5 billion debt portfolio.

Based on the FY 2015-16 Capital Improvement Plan, the Airport anticipates funding the full cost of the Shoreline Protection project with debt, however it will pursue any federal and state grant funding that the project may qualify for.

The debt service costs associated with this project will not impact the General Fund. Rather, the debt service payments will increase the costs borne by the airlines doing business at the Airport, through the rates and charges they pay the Airport. The issuance of debt for the project would result in estimated annual debt service payments of approximately \$5.2 million (after the capitalized interest period), or a total of \$147.9 million over the 30-year term of the bonds. This assumes a conservative all in true interest cost of 6.1% and a 12-month capitalized interest period.

## **VI. Conclusion**

Implementing this proposed Airport Shoreline Protection project is essential to reduce flood risks at SFO by proving protection against 100-year floods. The Airport believes this project is both fiscally responsible and feasible. The project would enable the City of San Francisco to maintain a world class airport and continue to be the airport of choice for the Bay Area. The project would continue to provide the City and the entire Bay Area region with significant financial and economic benefits.

If the Airport Shoreline Protection project is not allowed to be considered by the Airport Commission for implementation, the Airport will be subject to flood risks posed by extreme storm and sea level rise effects. Consequently, the Airport would incur significant operational and cost impacts, as a result of flooding. In Addition, the Airport would be required to elevate or floodproof all new structures and substantial improvements to existing structures. This would increase construction costs of future developments at the Airport. Failure to implement this project could in turn adversely affect Airport revenue, reduce annual service payments by the Airport to the City's General Fund, reduce employment provided from Airport activities, and impact the City's economy.

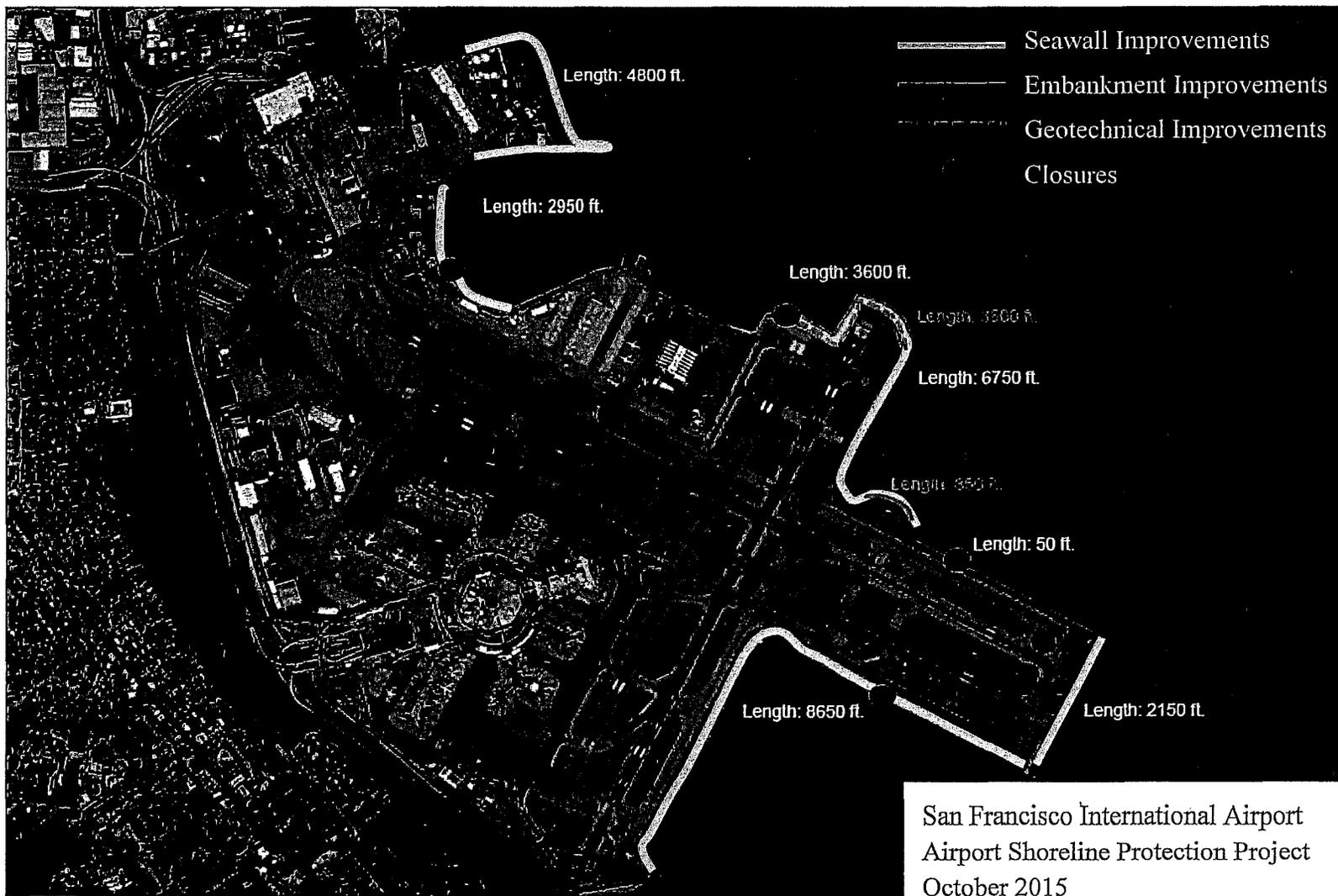
## Appendix I

### Detailed Airport Shoreline Protection Project Costs

Seawall Reach/Component	Seawall Improvements	Embankment Improvements	Geotechnical Improvement	Closures	Total
San Bruno Tide Gate	\$ -	\$ -	\$ -	\$ 2,509,151.24	\$ 2,509,151.24
Mel Leong Treatment Plant	\$ 9,125,247.62	\$ -	\$ -	\$ -	\$ 9,125,247.62
Sea Plane Harbor North	\$ 243,339.94	\$ -	\$ -	\$ -	\$ 243,339.94
US Coast Guard	\$ 4,935,238.09	\$ -	\$ -	\$ -	\$ 4,935,238.09
Pump Station #2 Closure (MERF/USCG)	\$ -	\$ -	\$ -	\$ 296,570.55	\$ 296,570.55
Sea Plane Harbor South	\$ 66,538.26	\$ -	\$ -	\$ -	\$ 66,538.26
19 End	\$ 4,662,124.51	\$ 8,039,405.80	\$ 4,134,551.55	\$ -	\$ 16,836,081.86
Pump Station #1C Closure (19R)	\$ -	\$ -	\$ -	\$ 171,098.39	\$ 171,098.39
19L Edge	\$ 199,614.79	\$ -	\$ -	\$ -	\$ 199,614.79
Lima Charlie Intersection	\$ -	\$ 233,834.47	\$ -	\$ -	\$ 233,834.47
Pump Station #1B Closure (28R)	\$ -	\$ -	\$ -	\$ 171,098.39	\$ 171,098.39
28 End(Raise Road)	\$ 1,908,697.63	\$ -	\$ -	\$ -	\$ 1,908,697.63
28L Edge	\$ 471,471.13	\$ -	\$ -	\$ -	\$ 471,471.13
Pump Station #1A Closure (28L)	\$ -	\$ -	\$ -	\$ 235,735.56	\$ 235,735.56
Lima South (1R) and Millbrae Connection	\$ 12,106,161.84	\$ -	\$ -	\$ -	\$ 12,106,161.84
<b>Total Construction Costs</b>	<b>\$ 33,718,433.80</b>	<b>\$ 8,273,240.27</b>	<b>\$ 4,134,551.55</b>	<b>\$ 3,383,654.14</b>	<b>\$ 49,509,879.76</b>
<b>Environmental Mitigation</b>	<b>\$ 5,448,356.40</b>	<b>\$ 1,336,822.52</b>	<b>\$ 668,077.01</b>	<b>\$ 546,744.07</b>	<b>\$ 8,000,000.00</b>
<b>Total Project Costs</b>	<b>\$ 39,166,790.21</b>	<b>\$ 9,610,062.79</b>	<b>\$ 4,802,628.56</b>	<b>\$ 3,930,398.20</b>	<b>\$ 57,509,879.76</b>

Notes \* Design contingency amount is consistent with industry standard of approximately 20% at conceptual design stage.

## Appendix II Airport Shoreline Protection Project Overview



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