File No. 190849 Committee Item No. 1
Board Item No. 6

COMMITTEE/BOARD OF SUPERVISORS

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Committee: Budget & Finance Committee Date September 11, 2019

Board of Supervisors Meeting Date September 17, 2019

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Completed by: Linda Wong Date September 6, 2019
Completed by: Linda Wong Date September 12, 2019

FILE NO. 190649 RESOLUTION NO.

[Finding of Fiscal Feasibility - Airport Shoreline Protection Program - San Francisco International Airport]

Resolution finding the proposed updated Airport Shoreline Protection Program at the San Francisco International Airport fiscally feasible and responsible pursuant to San Francisco Administrative Code, Chapter 29.

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

WHEREAS, The Airport completed an Airport Shoreline Protection Feasibility Study in September 2015 that identified the deficiencies in its existing shoreline protection system and provided recommendations on improvements needed to protect the Airport from a 100-year flood and 11 inches of sea level rise; and

WHEREAS, The Airport proposed to initiate the Airport Shoreline Protection Program ("Program") to address those 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; and

WHEREAS, The Program was estimated to cost $58 million; and

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

WHEREAS, On December 15, 2015, by Resolution No. 517-15, the Board of Supervisors found the proposed $58 million Shoreline Protection Program was fiscally feasible and responsible; and

WHEREAS, In March 2018, the State of California adopted new Sea-Level Rise Guidance, requiring the Airport to update the Program; the updated Program proposes construction of a new shoreline protection system around the entire perimeter of the Airport, including along the western boundary along Highway 101; the proposed updated Program would protect the Airport's assets and runways, with a 99.5% level of confidence, to approximately 2085 by adopting a design criterion to reduce flood risks at the Airport by providing protection against a 100-year storm and 36 inches of sea level rise; the proposed updated Program is estimated to cost $587 million; and

WHEREAS, On May 21, 2019, by Resolution No. 19-0121, the Airport Commission authorized the Airport Director to submit an updated Fiscal Feasibility Study to and seek a finding from the Board of Supervisors that the proposed updated Program is fiscally feasible and responsible; and

WHEREAS, Pursuant to Administrative Code, Section 29.3, the Airport has submitted to the Board a general description of the Program, the general purpose of the Program, and a fiscal plan, which materials are on file with the Clerk of the Board of Supervisors in File No. 190649, and are hereby declared to be a part of this Resolution as if set forth fully herein; and

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

WHEREAS, The Board has reviewed and considered the general description of the Program, the general purpose of the Program, the fiscal plan, and other information submitted to it and has considered the direct and indirect financial benefits of the Program to the City

and County of San Francisco, the cost of construction, and the available funding for the Program; now, therefore, be it

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

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

Item 1 File 19-0649 *Continued from September 4, 2019*	**Department:** San Francisco International Airport (Airport)

EXECUTIVE SUMMARY

Legislative Objectives

- The proposed resolution would find the Airport's proposed Shoreline Protection Program 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.

Key Points

- In December 2015, the Board of Supervisors found the Airport's proposed Shoreline Protection Program to be fiscally feasible in accordance with Chapter 29. However, in March 2018, the State of California issued a report entitled "Sea-Level Rise Guidance," with updated estimates of sea level rise. The updated Shoreline Protection Program incorporates new design criteria from the State to address sea level rise, resulting in increased Shoreline Protection Program scope and estimated cost, which increased from $58 million to $587 million. The increase is due to constructing infrastructure to address sea level rise up to 36 inches rather than 11 inches in the 2015 plan.
- The City's Administrative Code defines the areas are to be considered by the Board of Supervisors for determination of fiscal feasibility. According to the March 2019 *Airport Shoreline Protection Project Fiscal Feasibility Study,* the Shoreline Protection Program is intended to maintain Airport operations and avoid reductions in passenger travel and associated reductions in Airport employment and revenue.

Fiscal Impact

- The estimated Shoreline Protection Program costs are $587.1 million. The Airport's Capital Improvement Plan (CIP) includes $15.7 million in Airport revenue bonds to fund initial costs. The remaining scope and estimated budget ($571.4 million) for construction costs and environmental mitigation will need to be added to the CIP at a future date.
- The Airport estimates that issuance of $587 million in revenue bonds to fund the Shoreline Protection Program would result in estimated annual average debt service of $50.8 million, or $1.5 billion of debt service payments over the projected 30-year term of the bonds, including approximately $937 million in interest and $578 million in principal. 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.
- As noted above, the finding of fiscal feasibility allows the Airport to proceed to environmental review for the Shoreline Protection Program. Issuance of Airport revenue bonds and appropriation of Airport funds for the Shoreline Protection Program are subject to future Board of Supervisors approval.

Recommendation

- Approve the proposed resolution.

MANDATE STATEMENT

Chapter 29 of the City's Administrative Code requires projects[1] 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

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. In 2013, the Airport contracted with Moffatt & Nichol + AGS Joint Venture, a consulting firm, after a competitive process to conduct an Airport Shoreline Protection Project Feasibility Study Evaluation and Recommendations Report. The report was finalized in 2015 and identified deficiencies in the existing shoreline protection system and provided recommendations on improvements needed to protect the Airport from a 100-year flood and 11 inches of sea level rise.

In December 2015, the Board of Supervisors found the Airport's proposed Shoreline Protection Program to be fiscally feasible and responsible, in accordance with Chapter 29 of the City's Administrative Code (File 15-1099). The $58 million program was expected to take four to six years to complete. Between 2015 and 2018, the Airport completed conceptual design development with final designs completed by December 2017.

However, in March 2018, the State of California issued a report entitled "Sea-Level Rise Guidance," with updated estimates of sea level rise. The updated Shoreline Protection Program incorporates new design criteria from the State of California to address sea level rise, resulting in increased Shoreline Protection Program scope and cost estimates, which increased from $58 million to $587 million.

[1] 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.

DETAILS OF PROPOSED LEGISLATION

The proposed resolution would find the Airport's proposed Shoreline Protection Program 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.

Overview of Shoreline Protection Program

According to the March 2019 *Airport Shoreline Protection Project Fiscal Feasibility Study,* prepared by the Airport, the proposed updated Program would protect the Airport's assets and runways to approximately 2085 by adopting design criteria to reduce flood risks at the Airport by providing protection against a 100-year storm and 36 inches of sea level rise (compared to 11 inches of sea level rise in the 2015 study). The Airport has been collaborating with adjacent neighbors, such as San Bruno, South San Francisco, Millbrae, Burlingame, San Mateo County, and the California Department of Transportation (Caltrans).

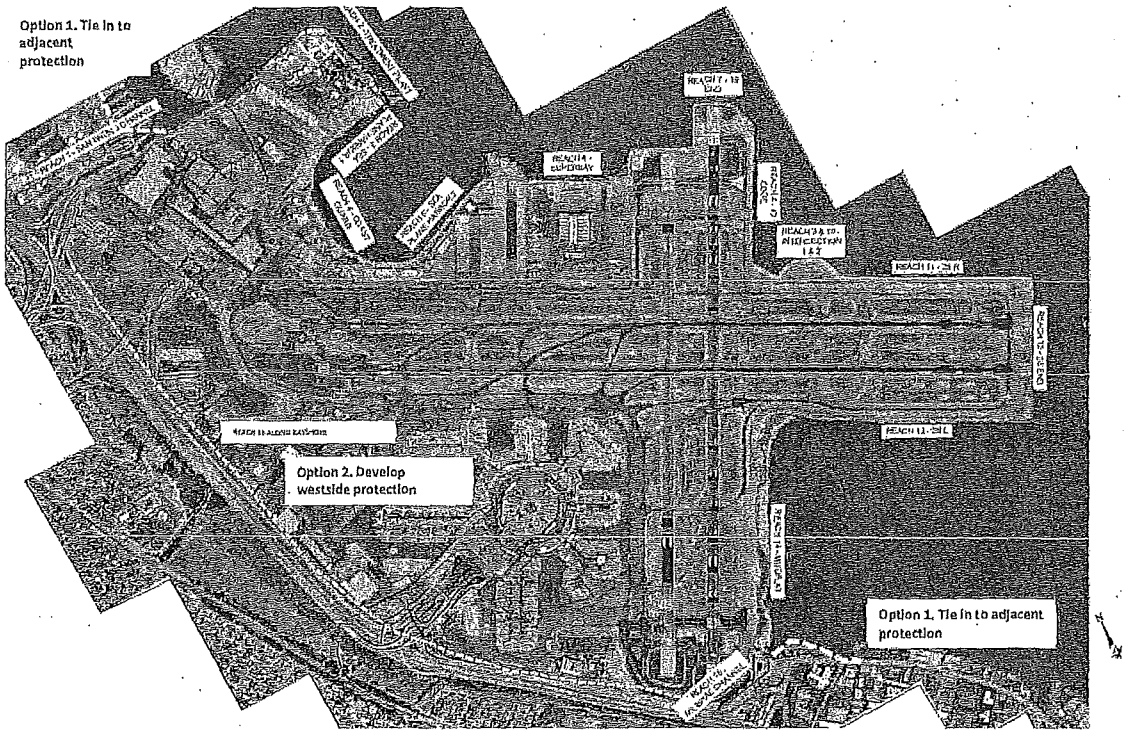
Major components of the Shoreline Protection Program in 2019, compared to 2015, are shown below:

- Construct 7.6 miles of new sheet pile walls at most of the reaches; new concrete walls at the San Bruno Channel and Millbrae Channel; and 2.7 miles of concrete wall on the Airport front side along Highway 101. According to Airport staff, the shoreline protection system will require addition of bay fill (such as rip-rap) to protect against wave action and erosion, and to meet Federal Aviation Administration (FAA) glide slope safety guidelines at the end of runways.
- Remove the existing embankment at the end Runway 19 Ends and Runway 28 to meet glide slope safety guidelines;
- Improve existing embankments including installation of riprap on the Bay side of the proposed seawall to attenuate wave energy along the Bay during storm events; and
- Include environmental mitigation, specifically for wetland and Bay fill.

As noted above, the estimated cost of the Shoreline Protection Program increased ten-fold, from $58 million in 2015 to $587 million in 2019. The increase is due to constructing infrastructure to address sea level rise up to 36 inches rather than 11 inches, as provided by the 2015 Shoreline Protection study. The 2019 Shoreline Protection Program provides for new sheet pile wall and concrete wall construction, and environmental mitigation not included in the 2015 Shoreline Protection study.

According to Mr. Rinaldi Wibowo, Project Manager at the Airport, the Airport will not begin construction until the completion of the environmental review and permitting, which may take three years or longer and could change the proposed work above. Pending the completion of environmental review and permitting, the Airport anticipates construction commencing in 2025 and completion in 2035.

Airport Shoreline Protection Project Overview



Fiscal Feasibility of the Airport Shoreline Protection Program

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 March 2019 *Airport Shoreline Protection Project Fiscal Feasibility Study,* the Shoreline Protection Program is intended to maintain Airport operations and avoid reductions in passenger travel and associated reductions in Airport employment and revenue. The new direct and indirect financial benefits primarily address the City revenue, employment benefits, and related economic benefits that would be created during construction.

Airport and City Revenue Benefits

In accordance with the Lease and Use Agreement between the Airport and the airlines, which extends through FY 2020-21, the Airport pays 15 percent of gross concession revenues as an annual service payment to the City's General Fund. Maintaining Airport operations and avoiding reductions in passenger travel will continue to generate these revenues to the General Fund. The annual service payments provided by the Airport to the City's General Fund over the previous five fiscal years totaled $212.5 million. In FY 2017-18, the Airport transferred $46.5

million in revenue to the City. The annual service payment from the Airport over the past five fiscal years is shown in Table 1 below.

Table 1: Annual Service Payment FY 2013-14 to FY 2017-18 (in millions)

Fiscal Year	Annual Service Payment
FY 2013-14	$38.0
FY 2014-15	40.5
FY 2015-16	42.5
FY 2016-17	45.0
FY 2017-18	46.5
Total	**$212.5**

Employment Benefits

According to the *2017 Economic Impact Study Update* report by the Economic Development Research Group, Inc., 42,828 jobs are directly dependent on the activity of the Airport. The jobs include those directly working for passenger airlines, airport retail, and general aviation professions, as well as transportation, on-airport construction, security firms, and the Transportation Security Administration and other federal jobs.

Based on the construction costs of the Shoreline Protection Program, approximately 2,272 new one-time jobs would be created. These would be limited-term jobs during the duration of the program. In addition, the Airport estimates that the indirect impact of jobs resulting from the economic activity of the Airport would create between 14,000 to 35,000 additional jobs.

Economic and Tax Benefits

The Airport generated approximately $8.4 billion of direct business activity and $62.5 billion of indirect economic activity in FY 2015-16 for San Francisco and the Bay Area.[2] State and local tax revenue in FY 2015-16 generated by Airport activity was $2.9 billion.

(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 Program is estimated to cost $548,118,558 for Shoreline Protection Program infrastructure, and $39,000,000 for environmental mitigation, for a total of $587,118,558, as shown in Table 2 below.

[2] Economic Development Research Group, Inc., "2014 Economic Impact Study Update San Francisco International Airport", prepared for San Francisco Airport Commission, December 2014.

Table 2: Estimated Non-Construction and Construction Costs

Construction Costs	$383,400,000
Design and build contingencies and fees	85,114,800
Soft Costs	79,603,758
Subtotal Infrastructure	$548,118,558
Environmental Mitigation	39,000,000
Total	**$587,118,558**

(3) Available Funding

The Airport anticipates having sufficient funding for the Shoreline Protection Program to fund with internal sources. The Airport anticipates utilizing debt financing through General Aviation Revenue Bonds to fund the project.

The Airport's approved Capital Improvement Plan (CIP) includes $15,751,437 for the Airport Shoreline Protection Program for design and planning, environmental review, project permitting, and public outreach. According to Mr. Wibowo, $3,200,000 in bonds have been issued or will soon be issued to support the project, and an additional $12,551,437 in bonds will need to be issued to complete this phase of the project.

The remaining scope and estimated budget ($571,367,121), which includes all construction costs and environmental mitigation, is not currently in the Airport's CIP, and will need to be added to the CIP at a future date.

(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

The Airport intends to finance the proposed Airport Shoreline Protection Program with the issuance of Airport General Aviation Revenue Bonds, thus incurring additional Airport debt. The Airport has issued $7.5 billion of revenue bonds, previously authorized by the Board of Supervisors, and has $2.5 billion in authorized and unissued bonds.

The Airport estimates that authorization and issuance of $587 million in revenue bonds to fund the Shoreline Protection Program would result in an estimated annual average debt service payment of $50.8 million, or $1.5 billion of debt service payments over the projected 30-year term of the bonds, including approximately $937 million in interest and $578 million in principal.[3] 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

[3] Debt service estimates are based on an estimated interest rate of six percent per year, and 36 months of capitalized interest which accrues prior to completion of construction and payment of annual debt service.

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.

FISCAL IMPACT

As discussed above, funding of the Airport Shoreline Protection Program 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 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.

Finding of Fiscal Feasibility

As noted above, the finding of fiscal feasibility allows the Airport to proceed to environmental review for the Shoreline Protection Program. Issuance of Airport revenue bonds and appropriation of Airport funds for the Shoreline Protection Program are subject to future Board of Supervisors approval.

RECOMMENDATION

Approve the proposed resolution.

Item 12 File 19-0649	Department: San Francisco International Airport (Airport)

EXECUTIVE SUMMARY

Legislative Objectives

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Key Points

- In December 2015, the Board of Supervisors found the Airport's proposed Shoreline Protection Program to be fiscally in accordance with Chapter 29. However, in March 2018, the State of California issued a report entitled "Sea-Level Rise Guidance," with updated estimates of sea level rise. The updated Shoreline Protection Program incorporates new design criteria from the State to address sea level rise, resulting in increased Shoreline Protection Program scope and estimated cost, which increased from $58 million to $587 million. The increase is due to constructing infrastructure to address sea level rise up to 36 inches rather than 11 inches, as provided by the 2015 Shoreline Protection study.
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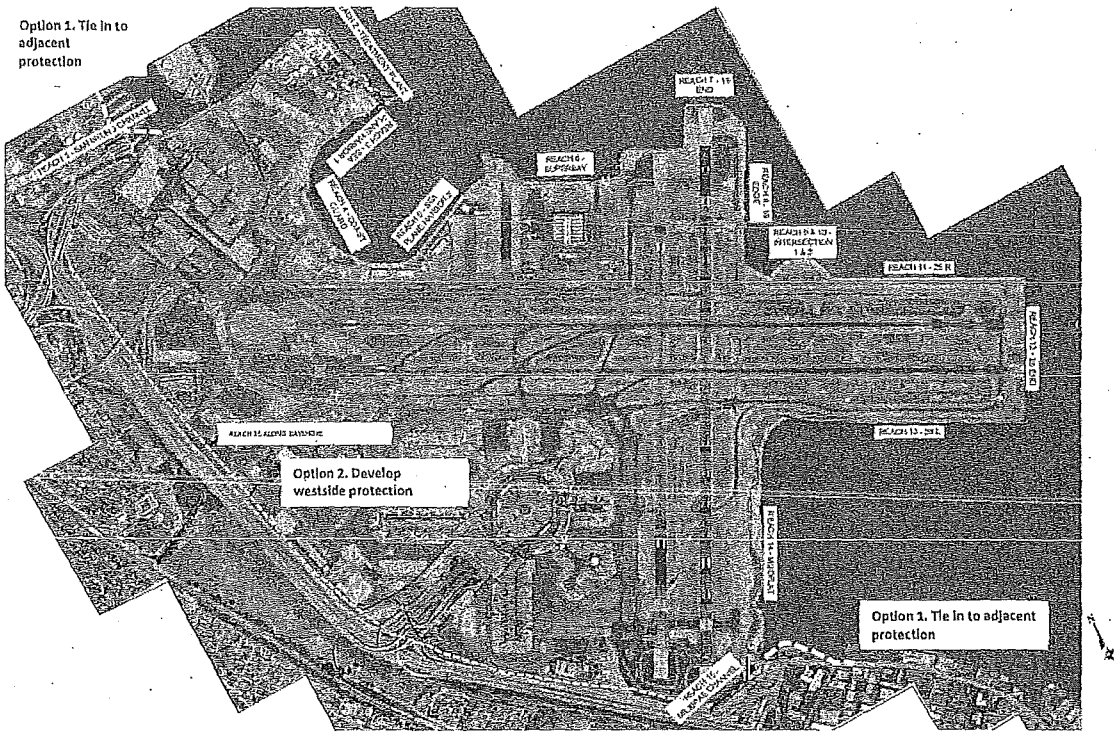

Fiscal Feasibility of the Airport Shoreline Protection Program

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(2) Construction Costs

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The remaining scope and estimated budget ($571,367,121), which includes all construction costs and environmental mitigation, is not currently in the Airport's CIP, and will need to be added to the CIP at a future date.

(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

The Airport intends to finance the proposed Airport Shoreline Protection Program with the issuance of Airport General Aviation Revenue Bonds, thus incurring additional Airport debt. The Airport has issued $7.5 billion of revenue bonds, previously authorized by the Board of Supervisors, and has $2.5 billion in authorized and unissued bonds.

The Airport estimates that authorization and issuance of $587 million in revenue bonds to fund the Shoreline Protection Program would result in an estimated annual average debt service payment of $50.8 million, or $1.5 billion of debt service payments over the projected 30-year term of the bonds, including approximately $937 million in interest and $578 million in principal.[3] 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

[3] Debt service estimates are based on an estimated interest rate of six percent per year, and 36 months of capitalized interest which accrues prior to completion of construction and payment of annual debt service.

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.

FISCAL IMPACT

As discussed above, funding of the Airport Shoreline Protection Program 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 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.

Finding of Fiscal Feasibility

As noted above, the finding of fiscal feasibility allows the Airport to proceed to environmental review for the Shoreline Protection Program. Issuance of Airport revenue bonds and appropriation of Airport funds for the Shoreline Protection Program are subject to future Board of Supervisors approval.

RECOMMENDATION

Approve the proposed resolution.

San Francisco International Airport

AIRPORT SHORELINE PROTECTION PROJECT

Fiscal Feasibility Study

March 2019

I. Introduction

The San Francisco International Airport is submitting this fiscal feasibility study to the Board of Supervisors for its proposed Shoreline Protection Program. A fiscal feasibility study is required under Chapter 29 of the Administrative Code because the Shoreline Protection Program would exceed $25 million in costs, using over $1 million in public monies, and requires California Environmental Quality Act (CEQA) review.

In 2015, the Board of Supervisors reviewed and approved a fiscal feasibility study for a proposed $58 million Shoreline Protection Program; this project proposed improvements to about half of the Airport's existing Bay-facing shoreline protection system and would protect against 11 inches of sea-level rise. But on March 14, 2018, the State of California adopted new Sea-Level Rise Guidance,[1] requiring the Airport to update the Shoreline Protection Program. The updated Shoreline Protection Program proposes construction of a new shoreline protection system around the entire perimeter of the Airport, including along Highway 101, and would protect the Airport assets and runways, with a 99.5% level of confidence, to approximately 2085 by adopting a design criterion that protects against a 100-year storm and 36 inches of sea-level rise. The updated project is estimated to cost $587 million. Given significantly increased scope of the proposed Shoreline Protection Program, the Airport is submitting this updated fiscal feasibility study for Board of Supervisor approval before initiating CEQA review.

II. Background

The City and County of San Francisco owns and operates San Francisco International Airport (the "Airport" or 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 Airports Council International data, SFO was ranked 7th in the United States in terms of total passengers with 55,823,712 annual passengers and ranked 15th in terms of air cargo in calendar year 2017.[2] 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 one of Alaska Airlines' primary bases of operations.

The Airport occupies approximately 5,171 acres of land, with approximately eight miles of shoreline along the west side of the San Francisco Bay. A report released by the San Francisco Bay Conservation Development Commission in 2011 suggested that 72% of the Airport would be at risk from a 16-inch sea level rise. Currently, more than six of the eight miles of shoreline are protected by engineered earthen berms, concrete seawalls, and vinyl sheet piles that were constructed in the early 1980s. However, there are gaps in our shoreline protection system at the U.S. Coast Guard Air Station, Mel Leong Wastewater Treatment Plant, the Airport's north and south boundaries, and specific drainage outfall locations. These gaps, as well as occasional wave overtopping of some flood protection structures, would allow water to enter the airfield. That water is captured in the storm drain system and is pumped back out into the Bay.

[1] Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (National Research Council, 2012)

[2] Airports Council International and Airports Council International - North America Airport Statistics (2017).

In 2015, SFO completed a Shoreline Protection Feasibility Study to understand the deficiencies in the existing shoreline protection. The Study also provided recommendations on improvements needed to protect the Airport from a 100-year flood and sea level rise, based on the 2012 National Research Council Sea-Level Rise projections.[3] At that time, the Airport Commission proposed a $58 million shoreline protection project ("Shoreline Protection Program"), which was limited to enhancements of about half of the Airport's existing Bay-facing shoreline protection system for flood protection and to address 11 inches of sea level rise.[4] In December 2015, the Airport submitted a fiscal feasibility study based on this proposal. The Board of Supervisors determined under Chapter 29 of the San Francisco Administrative Code that the Shoreline Protection Program was fiscally feasible and responsible.

In 2016, SFO began developing a conceptual design for the Shoreline Protection Program based on these recommendations. However, in March 2018, the State of California issued a report "Rising Seas in California: An Update on Sea Level Rise Science.[5]" This report provides guidance to state and local agencies for incorporating sea level rise into design, planning, permitting, construction, investment, and other decisions. The 2018 report contained improved science and policy with a better understanding of risks quantified as probabilities. The Airport accordingly updated the proposed Shoreline Protection Program to respond to these more stringent criteria. The proposed Shoreline Protection Program now covers the entire perimeter of the Airport, including along Highway 101, and assumes 36 inches of sea level rise at an estimated cost of $587 million.

Under Chapter 29 of the San Francisco Administrative Code, before initiating environmental review for a proposed project, as defined by CEQA, 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 CEQA review.

The Airport is submitting this fiscal feasibility study to the Board of Supervisors to comply with Chapter 29 of the Administrative Code because the Shoreline Protection Program would exceed $25 million in costs, using more than $1 million in public monies, and will require CEQA review.

III. Project Overview

The proposed Shoreline Protection Program was developed based on projections in the 2018 State of California guidance document. The updated Shoreline Protection Program would protect the Airport assets and runways, with a 99.5% level of confidence, to approximately 2085 by adopting a design criterion that protects against a 100-year storm and 36 inches of sea-level rise.

[3] The 2012 NRC projections forecast sea-level rise of 11" and 36" by 2050 and 2100, respectively.

[4] The 2015 Airport Shoreline Protection Project included building walls at Mel Leong Wastewater 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.

[5] California Natural Resources Agency & California Ocean Protection Council, "Rising Seas in California: An Update on Sea Level Rise Science" (March 2018).

To significantly reduce flood risk and enhance the safety of the airfield facility and Airport passengers, the Shoreline Protection Program includes the entire Airport perimeter.

The Airport has been collaborating with adjacent neighbors at the Cities of San Bruno and South San Francisco to the north and the Cities of Millbrae and Burlingame to the south, as well as the County of San Mateo and the California Department of Transportation (Caltrans). Specifically, we are looking for opportunities to connect with shoreline protections that these neighboring agencies might develop to coincide with the completion of the construction of the Airport's Shoreline Protection Program. However, at this time, they are only in the initial stages of identifying vulnerabilities to flooding and future sea level rise, and it is unlikely that they would have protection systems in place in the next 10 years. As a result, we have included a west side or front side section (along Highway 101) to protect the Airport against flood risk in the event that the neighboring agencies do not develop any protection systems.

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

Table 1
Airport Shoreline Protection Project Costs[6]

Airport Shoreline Protection Project Component	Amount
Seawall Improvements	$ 548,118,558
Environmental Mitigation	$ 39,000,000
TOTAL	**$587,118,558**

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

- ***Seawall Improvements*** - Construction of new sheetpile walls at most of the reaches. New concrete wall would be constructed at the San Bruno Channel, Millbrae Channel, and on the Airport front side along Highway 101. SFO would 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. The existing embankment at the runway 19 Ends and runway 28 Ends would be removed.[7] Embankment improvements include installation of riprap on the Bay side of the proposed seawall to attenuate wave energy along the Bay during storm events.
- ***Environmental Mitigation*** – The Seawall Improvements would involve wetland and Bay fill that would require environmental permits and compensatory mitigation to

[6] The cost estimates presented are based on planning-level requirements and design drawings and are preliminary in nature. Final cost estimates will be prepared once the environmental process is complete and detailed design drawings are prepared. Please note that Table 1 in the 2015 Fiscal Feasibility Study included subcategories not included here (Embankment Improvements, Geotechnical Improvements, and Closures). These were presented because the 2015 project contemplated the use of embankments, geotechnical improvements, and closures to improve portions of the existing seawall. The current project proposes rebuilding the entire shoreline protection system.

[7] The Shoreline Protection Program may include modifications to the Airport's drainage system, if necessary to meet Federal Emergency Management Agency (FEMA) system certification requirements. If those modifications are needed, they will be reviewed under CEQA before implementation.

offset the fill impacts of the project.

IV. Environmental Review

The Airport has not yet filed an Environmental Evaluation Application with the City and County of San Francisco's Planning Department – Environmental Planning Division (SFEP), the lead agency under 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 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; the Airport anticipates the SFEP Environmental Review Officer will prepare a Mitigated Negative Declaration or an Environmental Impact Report for the Shoreline Protection Program.

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 the final 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, San Francisco Bay Conservation and Development Commission, and Bay Area Air Quality Management District. Airport staff estimates completion of the environmental review and permitting process for this project within 24 to 36 months from the start of the environmental process. The project will also require review by the Federal Aviation Administration under the National Environmental Policy Act (NEPA).

V. Fiscal Feasibility Analysis

Under the provisions of San Francisco Administrative Code section 29.2, there are five criteria to evaluate a project's fiscal feasibility. The five criteria are:

(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 Shoreline Protection Program is analyzed under 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 and Highway 101 to provide campus-wide flood protection for the Airport, which would reduce significant air traffic interruption costs due to sea level rise and extreme weather events. In addition, the shoreline protection system would allow the Airport to build on grade without elevating or flood proofing, as would otherwise be required by the Federal Emergency Management Agency (FEMA); this would significantly reduce construction costs for Airport development projects.

Direct Financial Benefits

The City receives numerous direct financial benefits from efficient Airport operations. The Airport Shoreline Protection project is critical to ensure safe operations of air traffic during extreme storm events. 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 to 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. The annual service payments provided by the Airport to the City's General Fund over the previous five fiscal years totaled $212.6 million. In FY 2018, the Airport transferred $46.6 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 2014 to FY 2018
(in millions)

Fiscal Year	Annual Service Payment
FY 2014	$ 38.0
FY 2015	$ 40.5
FY 2016	$ 42.5
FY 2017	$ 45.0
FY 2018	$ 46.5
Total	**$ 212.5**

Source: San Francisco International Airport Annual Financial Statements

The average annual payment received by the City over the most recent five fiscal years was $42.5 million, with the FY 2018 payment representing an increase of 22% from FY 2014 to FY 2018. 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

The Airport is an economic driver for the City and County of San Francisco and 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, and construction services.

According to Economic Development Research Group, Inc., a total of 42,828 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[8]
Direct Job Impacts from SFO

Job Category	Direct Jobs	Percent
Passenger Airlines	14,962	34.9%
Airport Retail & Concessions	4,904	11.5%
FBOs & General Aviation & Aviation.	4,062	9.5%
Services		
Taxi Cabs	2,809	6.6%
Limos/Buses/Vans/Transit	2,618	6.1%
Rental Car	2,238	5.2%
Transportation Network Companies (TNCs)	2,131	5.0%
On-Airport Construction	2,041	4.8%
Security Firms	2,011	4.7%
City of San Francisco Airport Commission	1,998	4.7%
Federal Government	1,814	4.2%
Other	1,240	2.9%
TOTAL	**42,828**	**100.0%**

Source: Economic Development Research Group, Inc., July 2017

[8] Economic Development Research Group, Inc., "2017 Economic Impact Study Update: San Francisco International Airport," July 2017, pp. 8, 24.

Table 4
Estimated Airport Shoreline Protection Project Job Impact

Construction Component	Amount	Estimated Job Impact
San Bruno Channel	$15,500,000	92
Treatment Plant Sub-reach 2A	1,500,000	9
Treatment Plant Sub-reach 2B	8,500,000	50
Treatment Plant Sub-reach 2C	1,800,000	11
Sea Plane Harbor 1	2,700,000	16
Coast Guard	6,500,000	39
Sea Plane Harbor 2	6,700,000	40
Superbay	8,600,000	51
19 End Sub-reach 7A	40,000,000	237
19 End Sub-reach 7B	93,000,000	551
19 End Sub-reach 7C	5,000,000	30
19 Edge	7,500,000	44
Intersection 1	2,500,000	15
Intersection 2	2,500,000	15
28R	10,600,000	63
28End	13,900,000	82
28L	16,500,000	98
Mudflat	17,500,000	104
Millbrae Channel	12,600,000	75
Airport Westside	110,000,000	652
TOTAL	**$383,400,000**	**2,272**

Notes: Amounts exclude contingencies, design-build fees, and environmental mitigation.
Totals may not add due to rounding.
Economic Multipliers from Office of Economic Analysis, Controller's Office, Regional Economic Models, Inc. (REMI) Model Outputs.

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 14,974 of indirect jobs are generated in the local economy from purchases of goods and services by firms completely dependent upon activity of SFO.
- A total of 20,008 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 were estimated at $2.9 billion in Fiscal Year 2015-16, including approximately $1.6 billion from direct activities and $1.3 billion from purchases of supplier goods and services and re-spending of

worker income.

SFO also serves as an economic driver for San Francisco and the Bay Area as a whole. In Fiscal Year 2015/16, SFO directly accounted for approximately $8.4 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 $35.6 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 $62.5 billion in business sales, including $20.9 billion in total payroll, and more than 300,000 jobs in the region.

(2) Costs of Construction

The total project cost is estimated to be $587 million for the entire Airport Shoreline Protection project. This amount includes environmental mitigation, as well as construction costs, soft 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

Airport Shoreline Protection Project Component	Total Amount	Construction Costs	Soft Costs*
Seawall Improvements	$548,118,558	$468,514,800	$79,603,758
Environmental Mitigation	$39,000,000	$39,000,000	$0
TOTAL	**$587,118,558**	**$507, 514,800**	**$79,603,758**

* 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 $508 million and the construction costs related to the project include: earth moving, seawall foundation installation, new sheetpile and concrete seawall installation, wall cap installation, riprap 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 Shoreline Protection Program to fund with internal sources. The Airport anticipates utilizing debt financing through General Aviation Revenue Bonds to fund the project. Upon completion of the CEQA review, the Airport will seek funding opportunities from the State of California through the Office of Emergency Services (Cal OES) FEMA's Hazard Mitigation Assistance Grant Program.

(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 Engineering & Construction Services, and include typical costs of routine inspection of seawalls, recording of findings, and preparation of repair recommendations per 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 $7.5 billion debt portfolio.

The Airport anticipates funding the full cost of the Shoreline Protection Program 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 $57.9 million (after the capitalized interest period), or a total of $1.7 billion over the 30-year term of the bonds. This assumes a conservative all-in true interest cost of 6% and a 36-month capitalized interest period.

VI. Conclusion

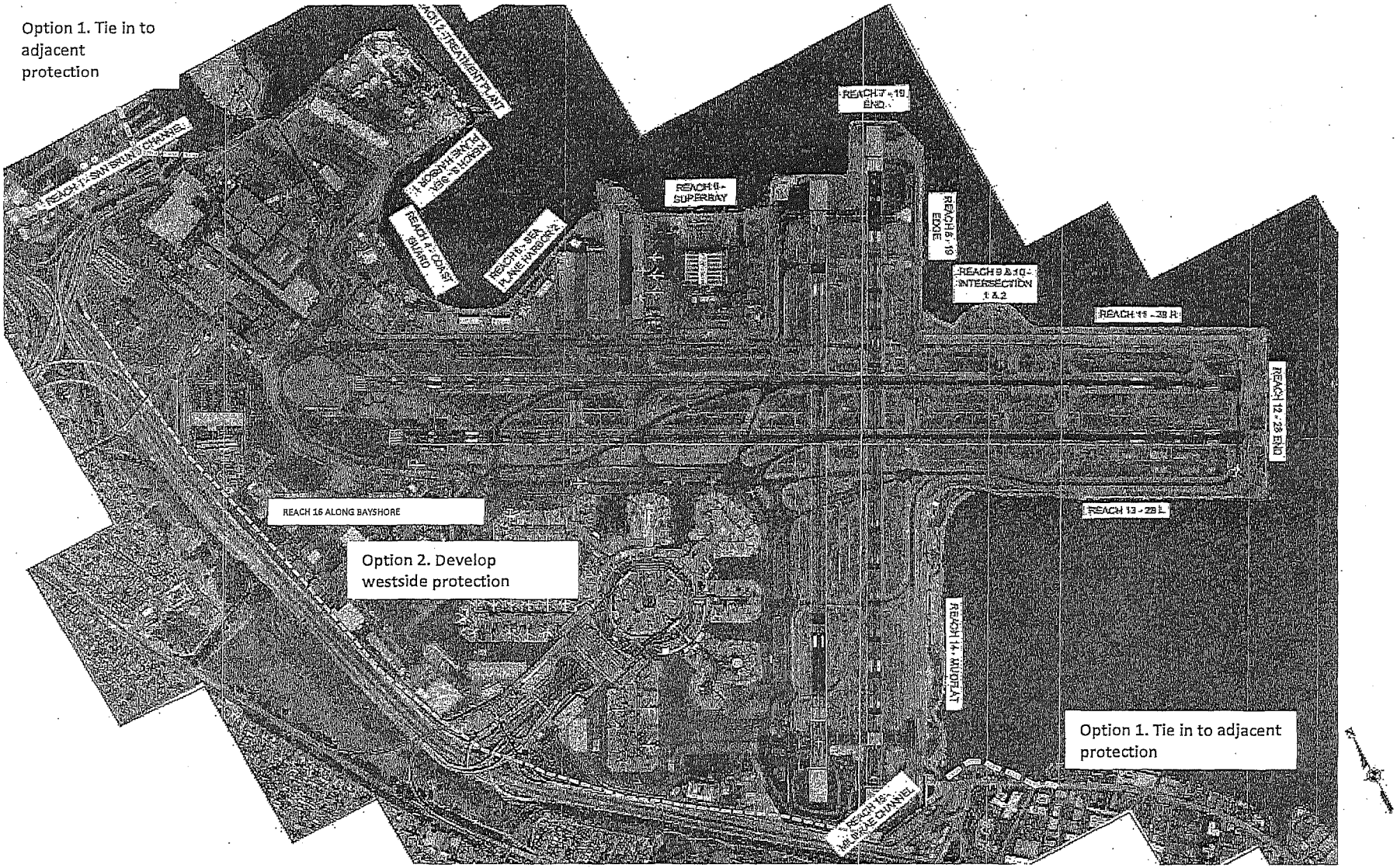
Implementing this proposed Airport Shoreline Protection project is essential to reduce flood risks at SFO by proving protection against 100-year floods and sea level rise. The Airport believes this project is both fiscally responsible and feasible. The project would enable the City of San Francisco to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

If the Shoreline Protection Program is not implemented, the Airport will be subject to flood risks posed by tidal flooding, storm surge and sea level rise. 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 flood-proof all new structures and substantial improvements to existing structures, as required by FEMA and the City and County of San Francisco Flood Management Ordinance. This would increase construction costs of future developments at the Airport. Failure to implement the Shoreline Protection Program 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 negatively impact the City's economy.

Appendix I
Airport Shoreline Protection Program Costs

REACH #	REACH NAME	FEMA + 36" SLR ALTERNATIVE	TOTAL COST TO MEET DESIGN CRITERIA
1	SAN BRUNO CHANNEL	Reinforced Concrete Wall	$ 15,500,000
2A	TREATMENT PLANT SUB-REACH 2A	Steel Sheet Pile Wall	$ 1,500,000
2B	TREATMENT PLANT SUB-REACH 2B	Steel Sheet Pile Wall	$ 8,500,000
2C	TREATMENT PLANT SUB-REACH 2C	Steel Sheet Pile Wall	$ 1,800,000
3	SEA PLANE HARBOR 1	Steel Sheet Pile Wall	$ 2,700,000
4	US COAST GUARD	Steel Sheet Pile Wall	$ 6,500,000
5	SEA PLANE HARBOR 2	Steel Sheet Pile Wall	$ 6,700,000
6	SUPERBAY	Steel Sheet Pile Wall	$ 8,600,000
7A	19 END SUB-REACH 7A	King Pile Wall	$ 40,000,000
7B	19 END SUB-REACH 7B	King Pile Wall	$ 93,000,000
7C	19 END SUB-REACH 7C	Steel Sheet Pile Wall	$ 5,000,000
8	19 EDGE	Steel Sheet Pile Wall	$ 7,500,000
9	INTERSECTION 1	Steel Sheet Pile Wall	$ 2,500,000
10	INTERSECTION 2	Steel Sheet Pile Wall	$ 2,500,000
11	28R	Steel Sheet Pile Wall	$ 10,600,000
12	28 END	Steel Sheet Pile Wall	$ 13,900,000
13	28L	Steel Sheet Pile Wall	$ 16,500,000
14	MUDFLAT	Steel Sheet Pile Wall	$ 17,500,000
15	MILLBRAE CHANNEL	Reinforced Concrete Wall	$ 12,600,000
16	AIRPORT WESTSIDE	New Reinforced Concrete Wall	$ 110,000,000
		Subtotal Construction Costs (2019 dollars)	**$ 383,400,000**
		Design & Bid Contingencies, , Design build fees (2019 dollars)	**$85,114,800**
		Soft Costs (2019 dollars)	**$79,603,758**
		Environmental Mitigation (37 Acres)	**$39,000,000**
		Total Project Costs	**$ 587,118,558**

Appendix II
Airport Shoreline Protection Project Overview



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 7th in the United States in terms of total passengers with 44,399,885 and ranked 19th in terms of air cargo in calendar year (CY) 2012[1]. 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).

[1] 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[2]. 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.

[2] San Francisco International Airport, "Strategies and Goal 2007 – 2012", pg. 3.

Table 1
Airport Shoreline Protection Project Costs[3]

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

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

[3] 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)

Fiscal Year	Annual Service Payment
FY 2010	$ 28.1
FY 2011	$ 30.2
FY 2012	$ 34.0
FY 2013	$ 36.5
FY 2014	$ 38.0
Total	**$ 166.8**

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[4]
Direct Job Impacts from SFO for 2014

Job Category	Direct Jobs	Percent
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%
TOTAL	**36,392**	**100.0%**

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.

[4] 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

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

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

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[5].
- 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.[6]

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[7].

[5] Ibid. pg. 23
[6] Ibid, pg. 39
[7] 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

Airport Shoreline Protection Project Component	Total Amount	Construction Costs	Soft Costs*
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
TOTAL	**$57,509,880**	**$48,899,477**	**$8,610,461**

* 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.

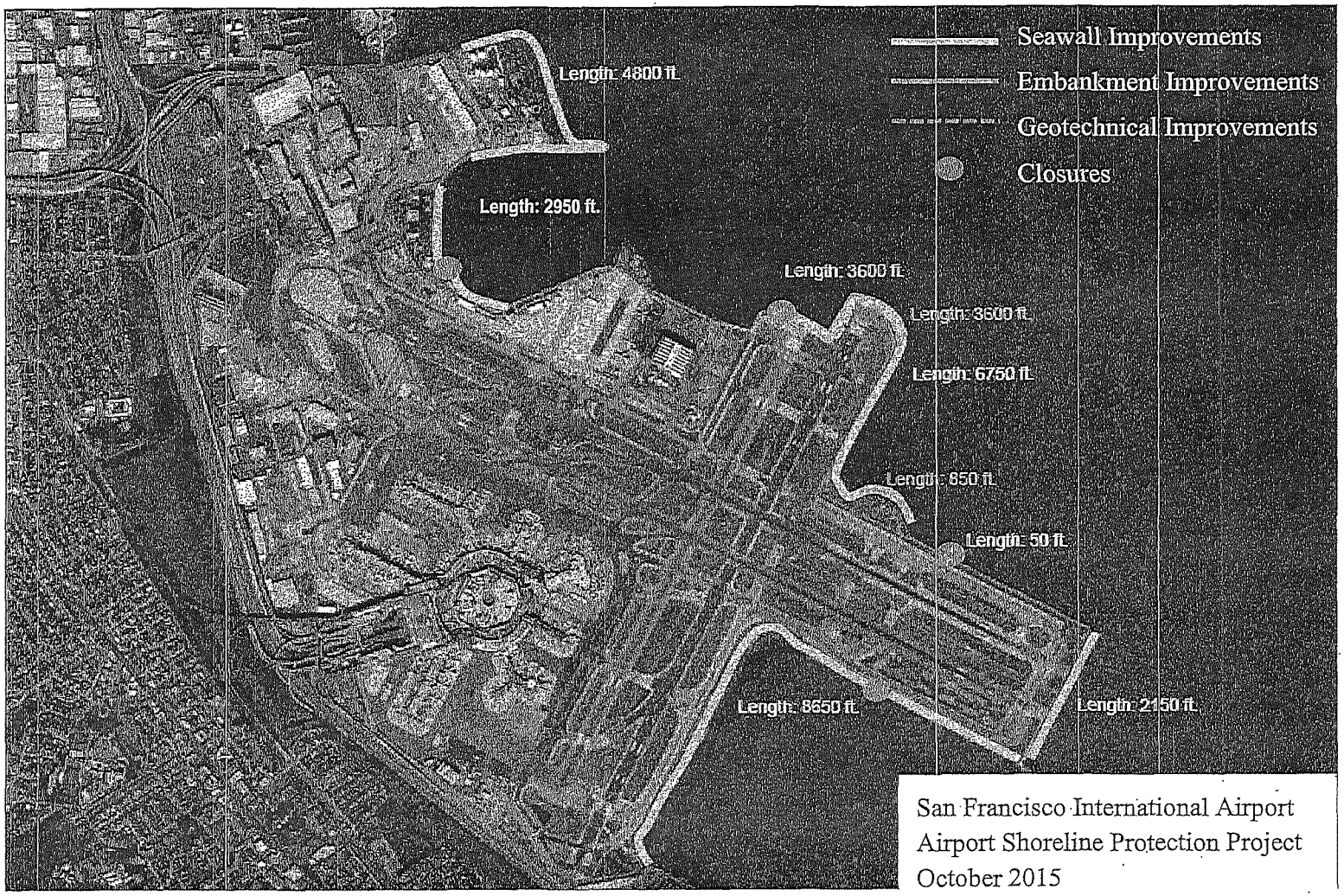
If the Airport Shoreline Protection project is not allowed to be considered by the Airport Commission for implementation, the Airport will be subject to flood risks posed by extreme storm and sea level rise effects. Consequently, the Airport would incur significant operational and cost impacts, as a 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
Total Construction Costs	**$ 33,718,433.80**	**$ 8,273,240.27**	**$ 4,134,551.55**	**$ 3,383,654.14**	**$ 49,509,879.76**
Environmental Mitigation	$ 5,448,356.40	$ 1,336,822.52	$ 668,077.01	$ 546,744.07	$ 8,000,000.00
Total Project Costs	**$ 39,166,790.21**	**$ 9,610,062.79**	**$ 4,802,628.56**	**$ 3,930,398.20**	**$ 57,509,879.76**

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

Appendix II
Airport Shoreline Protection Project Overview



AIRPORT COMMISSION

CITY AND COUNTY OF SAN FRANCISCO

RESOLUTION NO. 19-0121

AUTHORIZATION TO SEEK A FINDING FROM THE SAN FRANCISCO BOARD OF SUPERVISORS THAT THE PROPOSED AIRPORT SHORELINE PROTECTION PROGRAM IS FISCALLY FEASIBLE AND RESPONSIBLE UNDER SAN FRANCISCO 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 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 San Francisco Board of Supervisors (BOS) for a finding that the proposed project is fiscally feasible and responsible; and

WHEREAS, on September 22, 2015, by Resolution No.15-0192, the Commission authorized the Airport Director to submit a fiscal feasibility study to and seek a finding from the BOS that a proposed $58 million Shoreline Protection Program was fiscally feasible and responsible; and

WHEREAS, the $58 million Shoreline Protection Program proposed improvements to about half of the Airport's existing Bay-facing shoreline protection system and would protect against 11 inches of sea-level rise; and

WHEREAS, on December 15, 2015, by Resolution No. 517-15, the BOS found the proposed $58 million Shoreline Protection Program was fiscally feasible and responsible; and

WHEREAS, on March 14, 2018, the State of California adopted new Sea-Level Rise Guidance, requiring the Airport to update the Shoreline Protection Program; and

WHEREAS, the updated Shoreline Protection Program proposes construction of a new shoreline protection system around the entire perimeter of the Airport, including along our western boundary along Highway 101, and would protect the Airport's assets and runways, with a 99.5% level of confidence, to approximately 2085 by adopting a design criterion that protects against a 100-year storm and 36 inches of sea-level rise at an estimated cost of $587 million; now, therefore, be it

RESOLVED, that the Commission hereby authorizes the Director to submit an updated Fiscal Feasibility Study to and seek a finding from the San Francisco Board of Supervisors that the proposed updated Shoreline Protection Program 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 MAY 21 2019

Secretary

San Francisco International Airport

MEMORANDUM
May 21, 2019

TO: AIRPORT COMMISSION
Hon. Larry Mazzola, President
Hon. Linda S. Crayton, Vice President
Hon. Eleanor Johns
Hon. Richard J. Guggenhime
Hon. Malcolm Yeung

19-0121

MAY 21 2019

FROM: Airport Director

SUBJECT: Authorization to seek a finding from the San Francisco Board of Supervisors that the proposed Airport Shoreline Protection Program is fiscally feasible and responsible under San Francisco Administrative Code, Chapter 29.

DIRECTOR' S RECOMMENDATION: AUTHORIZE THE DIRECTOR TO SEEK A FINDING FROM THE SAN FRANCISCO BOARD OF SUPERVISORS THAT THE PROPOSED AIRPORT SHORELINE PROTECTION PROGRAM IS FISCALLY FEASIBLE AND RESPONSIBLE UNDER SAN FRANCISCO ADMINISTRATIVE CODE, CHAPTER 29

Executive Summary

Recognizing potential flood risks, the Airport completed a Shoreline Protection Feasibility Study to identify deficiencies in its existing shoreline protection system. The study provides recommendations on improvements necessary to protect the Airport from a 100-year flood and sea-level rise. Before the Airport can initiate environmental review for its recommended Shoreline Protection Program, the San Francisco Board of Supervisors (BOS) must find that it is fiscally feasible and responsible.

In 2015, the BOS reviewed and approved a fiscal feasibility study for the Shoreline Protection Program at an estimated cost of $58 million. At that time, the program was focused on addressing current levels of flood risk and a moderate amount of sea-level rise. The sea-level rise projections incorporated into the program were based on science from 2012. However, based on updated science from 2018 with new design criteria from the State of California, the scope of the proposed Shoreline Protection Program has dramatically increased, with a new estimated cost of $587 million.

Given the significant increase in program scope and cost, the Airport is submitting an updated fiscal feasibility study for BOS approval before initiating environmental review. Attached is a proposed Resolution authorizing the Director to seek a finding from the BOS that the updated Shoreline Protection Program is fiscally feasible and responsible under San Francisco Administrative Code, Chapter 29.

Background

Under Chapter 29 of the San Francisco Administrative Code, prior to initiating environmental review for a proposed project, any project with estimated implementation or construction costs greater than $25 million and requiring more than $1 million in public monies must be submitted to the BOS to determine whether the plan for undertaking and implementing the project is fiscally feasible and responsible. The Director of the proposing City department must prepare a financial feasibility study and submit it to the BOS prior to submitting the project to the San Francisco Planning Department for environmental review.

The BOS then reviews the project and issues a formal determination of whether the project is fiscally feasible and responsible.

In 2015, the Airport completed a Shoreline Protection Feasibility Study to understand the deficiencies in the existing shoreline protection. At that time, the Commission proposed a $58 million Shoreline Protection Program, which was limited to enhancements of about half of the Airport's existing shoreline protection system and assumed 11 inches of sea-level rise.

On September 22, 2015, by Resolution No. 15-0192, the Commission authorized the Airport Director to seek a finding from the BOS that the proposed program was fiscally feasible and responsible.

On December 15, 2015, by Resolution No. 517-15, the BOS found that the program was fiscally feasible and responsible.

However, in March 2018, the State of California issued a report: "Sea-Level Rise Guidance." This report provides guidance to state and local agencies for incorporating sea-level rise into design, planning, permitting, construction, investment, and other decisions. The 2018 report contained improved science and policy with a better understanding of risks quantified as probabilities.

The Airport accordingly updated the proposed Shoreline Protection Program to respond to these more stringent criteria. The proposed Shoreline Protection Program now covers the entire perimeter of the Airport, including along our western boundary of Highway 101, at an estimated cost of $587 million. The updated Shoreline Protection Program would protect the Airport is assets and runways, with a 99.5% level of confidence, to approximately 2085 by adopting a design criterion that protects against a 100-year storm and 36 inches of sea-level rise.

Upon completion of the CEQA review, the Airport will seek funding opportunities from the State of California through the Office of Emergency Services (Cal OES) FEMA's Hazard Mitigation Assistance Grant Program.

Airport staff have prepared the attached Fiscal Feasibility Study for the updated Shoreline Protection Program, which supports a finding that the project is fiscally feasible and responsible.

Recommendation

I recommend the Commission authorizes the Director to submit the updated Fiscal Feasibility Study to and seek a finding from the San Francisco Board of Supervisors that the proposed Shoreline Protection Program is fiscally feasible and responsible under San Francisco Administrative Code, Chapter 29.

Ivar C. Satero
Airport Director

Prepared by: Geoffrey W. Neumayr
Chief Development Officer
Planning, Design & Construction

Attachments

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

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Secretary

San Francisco International Airport

MEMORANDUM
September 22, 2015

TO: AIRPORT COMMISSION
Hon. Larry Mazzola, President
Hon. Linda S. Crayton, Vice President
Hon. Eleanor Johns
Hon. Richard J. Guggenhime
Hon. Peter A. Stern

15-0192
SEP 22 2015

FROM: Airport Director

SUBJECT: Authorization 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

DIRECTOR'S RECOMMENDATION: AUTHORIZE THE 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

Executive Summary

Transmitted herewith for your approval is a proposed Resolution authorizing the Director to seek a finding from the Board of Supervisors (BOS) that the proposed Airport Shoreline Protection Project is fiscally feasible and responsible under San Francisco Administrative Code Chapter 29.

Recognizing the potential flood risks, the Airport completed an Airport Shoreline Protection Feasibility Study to identify deficiencies in its existing shoreline protection system. The study provides recommendations on improvements necessary to protect the Airport from a 100-year flood and sea level rise. The Airport staff recommends proceeding with the improvements under the Airport Shoreline Protection Project ("Project").

Background

Pursuant to Chapter 29 of the San Francisco Administrative Code, prior to initiating environmental review for a proposed project, any project with an estimated implementation or construction costs greater than $25 million and requiring more than $1 million in public monies is required to be submitted to the BOS to determine whether the plan for undertaking and implementing the project is fiscally feasible and responsible. The Director of the proposing City department must prepare a financial feasibility study and submit to the BOS prior to submitting the project to the San Francisco Planning Department for environmental review. The BOS reviews the project plan and its proposed implementation and issues a formal determination of whether the project is fiscally responsible and feasible.

THIS PRINT COVERS CALENDAR ITEM NO. 11

Since the early 1980s, the Airport has been constructing various types of seawalls including earth berms, concrete dikes and vinyl sheet piles which now provides protection of 80% of the Airport's bay front perimeter. However, there are gaps of various lengths along the shoreline that may allow water to enter the airfield. These gaps include segments at the US Coast Guard station, the Mel Leong Treatment Plant, the north and south boundaries, and the drainage outfall locations.

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 needed to protect the Airport from a 100-year flood and anticipated sea level rise.

The proposed Project would address the deficiencies in the existing seawall system by constructing new shoreline protection segments at the Mel Leong Treatment Plant, the US Coast Guard station, the Runways 28L and 28R end, and the north bank of the Millbrae canal. The proposed Project would also replace vinyl sheetpiles along Runway 1R; cap existing concrete seawalls at various locations to provide adequate freeboard; stabilize the embankments at the end of Runways 19L and 19R and other unstable locations; install seepage cutoff walls at the end of Runways 19L and 19R; provide closures at drainage outfall pump stations along the seawall; and replace a tide gate downstream of San Bruno Creek at the north side of the Airport to provide higher outflow capacity.

The proposed Project is estimated to cost $58 million and was included in the prior Capital Plan.

A copy of the Fiscal Feasibility Study Report ("Report") for the Airport Shoreline Protection Project is attached for information.

Recommendation

Based on the above, I recommend that the Commission 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.

John L. Martin
Airport Director

Prepared by: Geoffrey W. Neumayr
Deputy Airport Director
Design & Construction

Attachments

San Francisco International Airport

May 22, 2019

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

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

Dear Ms. Calvillo:

Pursuant to Administrative Code Chapter 29, I am forwarding a Fiscal Feasibility Study for the Airport Shoreline Protection Program at San Francisco International Airport for the Board of Supervisors' consideration.

On September 22, 2015, by Resolution No. 15-0192, the Commission authorized the Airport Director to submit a fiscal feasibility study to and seek a finding from the Board of Supervisors that the Airport's Shoreline Protection Program was fiscally feasible and responsible. The Airport Shoreline Protection Feasibility Study identified deficiencies in its existing shoreline protection system and provided recommendations on improvements needed to protect the Airport from a 100-year flood and 11 inches of sea level rise. On December 15, 2015, by Resolution No. 517-15, the Board of Supervisors found the proposed $58 million Shoreline Protection Program fiscally feasible and responsible.

On March 14, 2018, the State of California adopted new Sea-Level Rise Guidance, requiring the Airport to update the Shoreline Protection Program. The updated Program proposes construction of a new shoreline protection system around the entire perimeter of the Airport, including along the western boundary along Highway 101. The proposed, updated Program would protect the Airport's assets and runways by adopting a design criterion to reduce flood risks at the Airport by providing protection against a 100-year storm and 36 inches of sea level rise.

The proposed, updated Program is estimated to cost $587 million. As the cost of this Program will exceed $25 million, prior to initiating environmental review under the California Environmental Quality Act for the Program, the Airport has prepared a Fiscal Feasibility Study for the Board of Supervisors' review and seeks a determination from the Board of Supervisors that the proposed, updated Program is fiscally feasible and responsible, as required by Chapter 29 of the San Francisco Administrative Code.

On May 21, 2019, by Resolution No. 19-0121, the Commission authorized the Airport Director to submit an updated Fiscal Feasibility Study to and seek a finding from the Board of Supervisors that the proposed updated Shoreline Protection Program is fiscally feasible and responsible.

One (1) set of the following documents are enclosed for review:

- Proposed Board of Supervisors Resolution (two copies attached);
- Adopted Airport Commission Resolution No. 15-0192;
- Memorandum recommending Resolution No. 15-0192;
- Adopted Airport Commission Resolution No. 19-0121;
- Memorandum recommending Resolution No. 19-0121;
- Fiscal Feasibility Study, dated September 2015; and

Post Office Box 8097 San Francisco, California 94128 Tel 650.821.5000 Fax 650.821.5005 www.flysfo.com

- Fiscal Feasibility Study, dated March 2019

Please contact Cathy Widener, Airport Governmental Affairs Manager, at (650) 821-5023 if you have questions or concerns regarding this matter.

Very truly yours,

C. Corina Monzón
Commission Secretary

Enclosures

Cc: Cathy Widener
Rinaldi Wibowo
Olga Perez
Katarina Sy

Post Office Box 8097 San Francisco, California 94128 Tel 650.821.5000 Fax 650.821.5005 www.flysfo.com