



**PUBLIC UTILITIES
REVENUE BOND OVERSIGHT COMMITTEE
CITY AND COUNTY OF SAN FRANCISCO
AGENDA**

REMOTE MEETING

**Listen/Public Call-In Phone Number
(415) 906-4659
Conference ID: 169 587 864#**

May 17, 2022 - 9:00 AM

Regular Meeting

Remote Access to Information and Participation

On March 17, 2020, the Board of Supervisors authorized their Board and Committee meetings to convene remotely (via Microsoft Teams) and will allow remote public comment via teleconference.

Members of the public may participate by phone or may submit their comments by email to: RBOC@sfgov.org; all comments received will be made a part of the official record. Revenue Bond Oversight Committee agendas and their associated documents are available at: <https://sfpuc.org/about-us/boards-commissions-committees/revenue-bond-oversight-committee>

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As the COVID-19 disease progresses, please visit the Board's website (www.sfbos.org) regularly to be updated on the current situation as it affects the legislative process. For more information contact Assistant Clerk Victor Young at (415) 554-7723.

Mission: The Revenue Bond Oversight Committee (RBOC) monitors the expenditure of revenue bond proceeds related to the repair, replacement, upgrade and expansion of the SFPUC's water, power and sewer infrastructure. The RBOC provides independent oversight to ensure transparency and accountability. The RBOC's goal is to ensure that SFPUC revenue bond proceeds are spent for their intended purposes in accordance with legislative authorization and other applicable laws.

1. **Call to Order, Roll Call, and Agenda Changes**

Members:

Seat 1	Ettore Leale, Chair
Seat 2	Lars Kamp
Seat 3	Vacant
Seat 4	Vacant
Seat 5	Vacant
Seat 6	Christina Tang
Seat 7	Reuben Holober

2. **RBOC: Findings to Allow Teleconferenced Meetings During Declared Emergency** (*Discussion and possible action*)

Proposed Motion: ADOPT FINDINGS as required by Assembly Bill 361 that 1) the Committee has considered the circumstances of the state of emergency; 2) the state of emergency continues to directly impact the ability of policy body members to meet safely in person; and 3) state or local officials continue to impose or recommend measures to promote social distancing.

3. **Public Comment:** Members of the public may address the Revenue Bond Oversight Committee (RBOC) on matters that are within the RBOC's jurisdiction but are not on today's agenda.

4. **SFPUC:** Hearing on Finding #1 of the RBOC Performance Audit – update on the implementation of the recommendation to improve visibility of bond proceeds expenditures by Nancy Hom, Deputy Chief Financial Officer, SFPUC. (*Discussion and possible action*) (attachment)

5. **RBOC:** Planning for next RBOC audit (Presentation on suggested approaches by CSA and HKA/Yano.) (*Discussion and possible action*)

RBOC: Planning for potential future audits to evaluate the performance of projects funded by revenue bonds. (*Presentation by Dewberry. Discussion and possible action*) (attachment)

6. **SFPUC:** Bond Issuance Update (*Discussion and possible action*)

7. **Approval of Minutes:** April 19, 2022, Meeting Minutes. (*Discussion and possible action*) (attachment)

8. **Announcements, Comments, Questions, and Future Agenda Items.**
(Discussion and possible action)

Upcoming Meeting Dates: June 14, 2022, July 19, 2022, August 16, 2022, and September 13, 2022.

Pending Issues:

- A. Request that SSIP Quarterly reports include information on Stormwater Management System and details on the bidding climate and possible cost increase)
- B. RBOC: Acquiring consultant to examine expected performance of complete projects.
- C. SFPUC: Staff Report: Environmental Justice
- D. SFPUC: Power Enterprise and Clean Power SF Update
- E. SFPUC: Mountain Tunnel Site Tour
- F. SFPUC: State Federal Loan Updates
- G. SFPUC: Oceanside Wastewater Plant Tour
- H. RBOC: Discussion on the 2015 report, entitled “Evaluation of Lessons Learned from the WSIP Program,” procedures and reporting processes taken from WSIP applied to SSIP
- I. SFPUC: Wastewater System Improvement Program Update
- J. RBOC: Discussion on the coordination of PUC Site Tours
- K. SFPUC: Water Infrastructure Update (June 14, 2022)
 - Water System Improvement Program (WSIP)
 - Water Enterprise Capital Improvement Program (WECIP)
 - Hetch Hetchy Capital Improvement Program (HCIP)

9. **Adjournment**

Agenda Item Information

Each item on the agenda may include: 1) Department or Agency cover letter and/or report; 2) Public correspondence; 3) Other explanatory documents. For more information concerning agendas, minutes, and meeting information, such as these documents, please contact RBOC Clerk, City Hall, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102 – (415) 554-5184.

Audio recordings of the meeting of the Revenue Bond Oversight Committee are available at: http://sanfrancisco.granicus.com/ViewPublisher.php?view_id=97

For information concerning San Francisco Public Utilities Commission please contact by e-mail RBOC@sfgov.org or by calling (415) 554-5184.

Meeting Procedures

Public Comment will be taken before or during the Committee’s consideration of each agenda item. Speakers may address the Committee for up to three minutes on that item. During General Public Comment, members of the public may address the Committee on matters that are within the Committee’s jurisdiction and are not on the agenda.

Procedures do not permit: 1) persons in the audience to vocally express support or opposition to statements by Commissioners by other persons testifying; 2) ringing and use of cell phones, pagers, and similar sound-producing electronic devices; 3) bringing in or displaying signs in the meeting room; and 4) standing in the meeting room.

The ringing of and use of cell phones, pagers and similar sound-producing electronic devices are prohibited at this meeting. Please be advised that the Chair may order the removal from the meeting room of any person(s) responsible for the ringing or use of a cell phone, pager, or other similar sound-producing electronic devices.

LANGUAGE INTERPRETERS: Requests must be received at least 48 hours in advance of the meeting to help ensure availability. Contact Wilson Ng or Arthur Khoo at (415) 554-5184. AVISO EN ESPAÑOL: La solicitud para un traductor debe recibirse antes de mediodía de el viernes anterior a la reunion. Llame a Wilson Ng o Arthur Khoo (415) 554-5184. PAUNAWA: Ang mga kahilingan ay kailangang matanggap sa loob ng 48 oras bago mag miting upang matiyak na matutugunan ang mga hiling. Mangyaring tumawag kay sa (415) 554-5184.

Disability Access

Revenue Bond Oversight Committee meetings are held at the Public Utilities Commission, 525 Golden Gate Avenue, San Francisco, CA. The hearing rooms at the Public Utilities Commission are specified on the agenda and are wheelchair accessible. To request sign language interpreters, readers, large print agendas or other accommodations, please call (415) 554-5184. Requests made at least 48 hours in advance of the meeting will help to ensure availability.

翻譯 必須在會議前最少四十八小時提出要求
請電 (415) 554-7719

Know Your Rights Under the Sunshine Ordinance

Government's duty is to serve the public, reaching its decisions in full view of the public. Commissions, boards, councils, and other agencies of the City and County exist to conduct the people's business. This ordinance assures that deliberations are conducted before the people and that City operations are open to the people's review.

For more information on your rights under the Sunshine Ordinance (San Francisco Administrative Code, Chapter 67) or to report a violation of the ordinance, contact by mail: Sunshine Ordinance Task Force, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102; phone at (415) 554-7724; fax at (415) 554-5163; or by email at sotf@sfgov.org.

Citizens may obtain a free copy of the Sunshine Ordinance by printing San Francisco Administrative Code, Chapter 67, at <http://www.sfbos.org/sunshine>.

Ethics Requirements

Individuals and entities that influence or attempt to influence local legislative or administrative action may be required by the San Francisco Lobbyist Ordinance [SF Campaign & Governmental Conduct Code, Section 2.100] to register and report lobbying activity. For more information about the Lobbyist Ordinance, please contact the San Francisco Ethics Commission at 25 Van Ness Avenue, Suite 220, San Francisco, CA 94102; telephone (415) 252-3100; fax (415) 252-3112; web site <http://www.sfgov.org/ethics>.

Under Campaign and Governmental Conduct Code, Section 1.127, no person or entity with a financial interest in a land use matter pending before the Board of Appeals, Board of Supervisors, Building Inspection Commission, Commission on Community Investment and Infrastructure, Historic Preservation Commission, Planning Commission, Port Commission, or the Treasure Island Development Authority Board of Directors, may make a campaign contribution to a member of the Board of Supervisors, the Mayor, the City Attorney, or a candidate for any of those offices, from the date the land use matter commenced until 12 months after the board or commission has made a final decision, or any appeal to another City agency from that decision has been resolved. For more information about this restriction, visit sfethics.org.

Lobbyist Registration and Reporting Requirements

Individuals and entities that influence or attempt to influence local legislative or administrative action may be required by the San Francisco Lobbyist Ordinance [SF Campaign & Governmental Conduct Code, Section 2.100, et. seq.] to register and report lobbying activity. For more information about the Lobbyist Ordinance, please contact the Ethics Commission at: 25 Van Ness Avenue, Suite 220, San Francisco, CA 94102; telephone (415) 581-3100; fax (415) 252-3112; website www.sfgov.org/ethics.



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Water
Power
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Public Utilities Commission

Revenue Bond Audit – Phase II

May 17, 2022

Progress Update & Phase II Overview

HK>A

Yano Accountancy Corporation



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Revenue Bond Audit – Audit Objectives

Audit Objectives

GAGAS
Performance Audit

Generally
Accepted
Government
Auditing
Standards

To determine whether expenditures from project funds are:

- Allowable under the bond resolutions, laws, and regulations.
- Properly supported.
- Assigned or allocated to the correct project(s) within a bond series; and
- Subjected to appropriate cost control measures.

Respond to RBOC's legislatively mandated responsibilities regarding the status and condition of SFPUC's bond funded capital infrastructure program
(*Administrative Code Section 5A.31*)



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Revenue Bond Audit – Progress Update

Task 1: Audit Planning and Survey

- April 20th - Entrance Meeting
 - Discussed lessons learned from Phase I
 - Identified key contacts at SFPUC
 - Developed plan to engage personnel at different audit stages
 - Leverage internal PUC resource to facilitate information requests

Task 2: Risk Assessment according to GAGAS Standards (8.107)

- Engaging PUC to obtain updated General Ledger, and project “crosswalk” for Wastewater
- Awaiting response from SFPUC
 - *Sensitive to other SFPUC obligations and workload*



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Revenue Bond Audit – Risk Assessment



Non-statistical sampling approach, expenditures are summarized by project for Water and Wastewater

Large net proceeds available for capital expenditures

Bonds associated with high-risk projects (e.g., heavy civil construction and non-typical projects)

Large spend across multiple projects, or concentrated spend in two or three projects

Projects susceptible to costly federal regulations

Projects with numerous construction schedule delays or forecasted costs above baseline budgets



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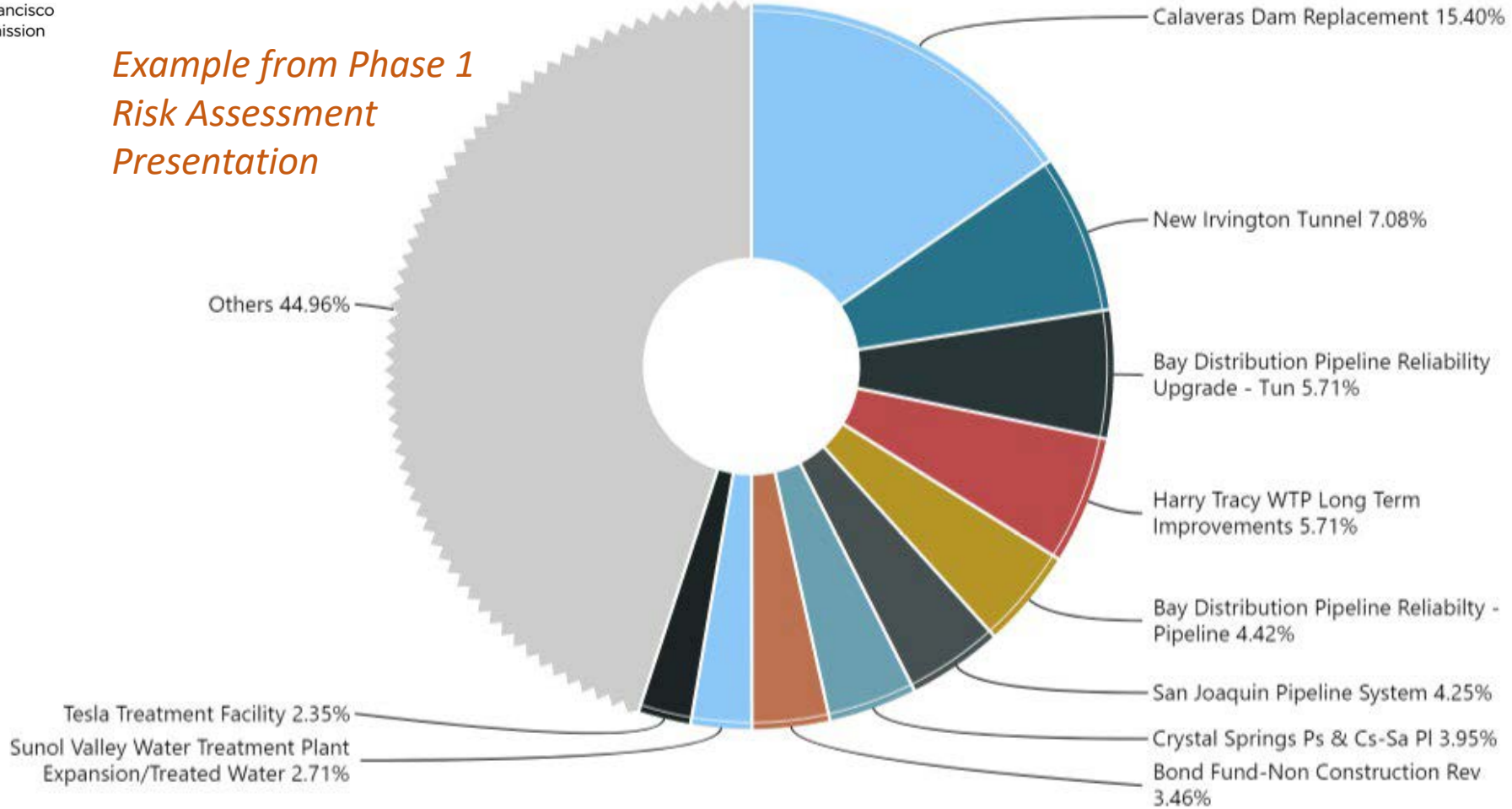


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Revenue Bond Audit – Risk Assessment Example

*Example from Phase 1
Risk Assessment
Presentation*



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Revenue Bond Audit – Risk Assessment Example

*Example from Phase 1
Risk Assessment
Presentation*

Project Description	Total
Calaveras Dam Replacement	758,697,921
New Irvington Tunnel	349,114,516
Harry Tracy WTP Long Term Improvements	281,266,731
San Joaquin Pipeline System	209,461,974
Crystal Springs Ps & Cs-Sa PI	194,421,993
Sunol Valley Water Treatment Plant Expansion/Treated Water	133,710,076
Seismic Bay Distribution Pipeline @ Hayward Fault P	74,165,147
San Antonio Backup Pipeline	55,247,504
Peninsula Pipeline Seismic Upg	39,870,815
Total	2,095,956,677



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Revenue Bond Audit – Audit Fieldwork



- Match debt-funded expenditures to funding sources, labor related costs by department
- Engage SFPUC Finance and Infrastructure Bureaus to obtain contracting documents (Competitive Bid and CMGC), pay application approvals, CM and PM procedure documents, and other documents
- Interview various SFPUC project staff as needed, e.g., project and construction managers
- Test of internal controls for change order approvals
- Document Retention tests



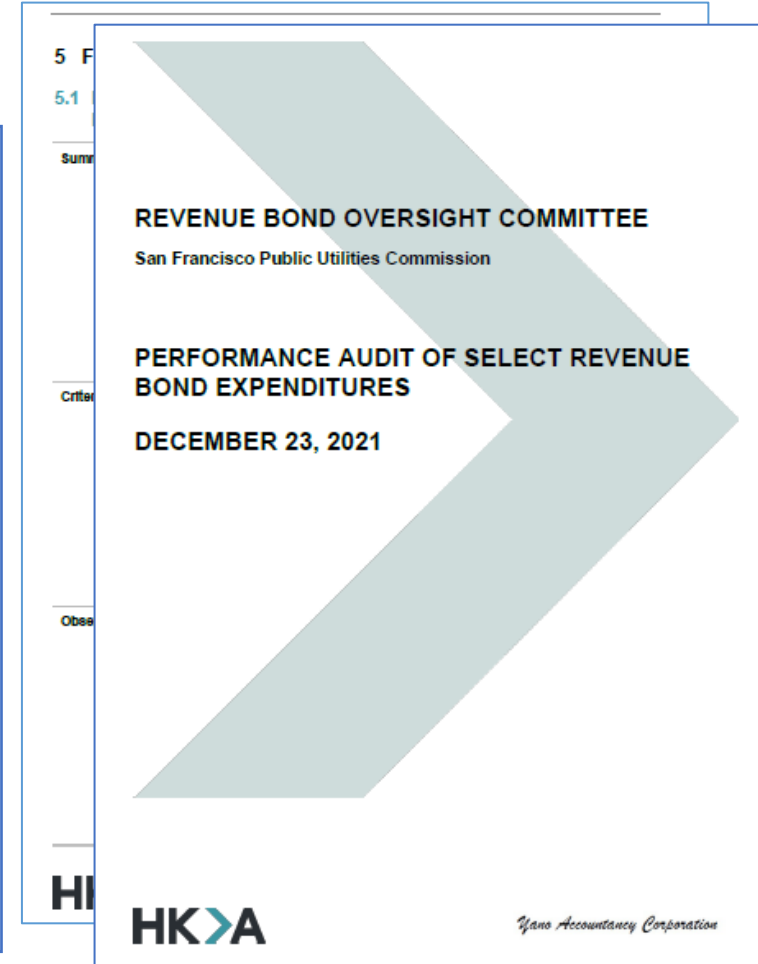
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Revenue Bond Audit – Draft Report

Report Elements (GAGAS 9.17)

- **Accurate**
supported by sufficient, appropriate evidence with key facts, figures, and findings being traceable to the audit evidence.
- **Objective**
presentation of the report is balanced in content and tone
- **Complete**
contains sufficient, appropriate evidence needed to satisfy the audit objectives and promote an understanding of the matters reported
- **Convincing**
audit results are responsive to the audit objectives, that the findings are presented persuasively, and that the conclusions and recommendations flow logically from the facts presented
- **Clear**
the report is easy for the intended user to read and understand
- **Concise**
no longer than necessary to convey and support the message
- **Timely**
providing relevant evidence in time to respond to officials of the audited entity, legislative officials, and other users' legitimate needs is the auditors' goal



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Revenue Bond Audit – Final Report

Reporting Findings, Conclusions, and Recommendations

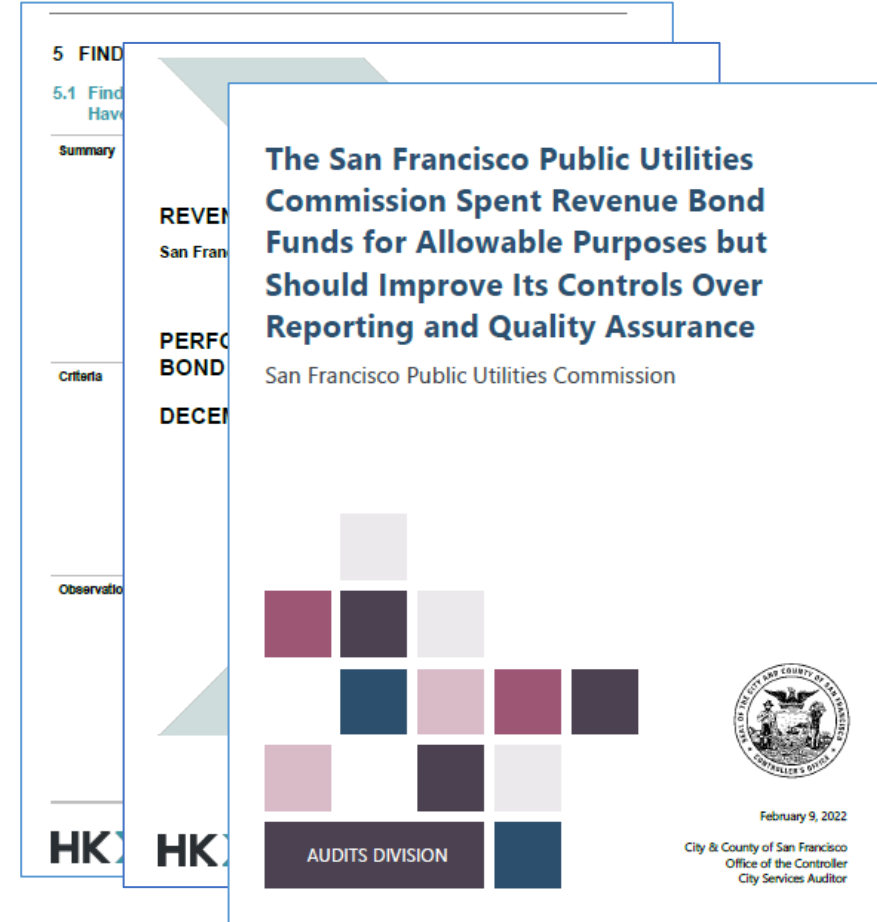
Key Elements:

1) Background Summary, 2) Criteria, 3) Observation, 4)Effect, 5) Cause, and 6)Recommendation

Obtain the Views of Responsible SFPUC Officials

Determine potential recommendations for SFPUC to improve

Assist SFPUC and RBOC in understanding the need for corrective action



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Services of the San Francisco
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Revenue Bond Audit – Phase II

Questions or Comments



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Draft Approach to Determine Return on Investment (ROI) for SFPUC Infrastructure Resilience Projects

Presenter: John Squerciati

May 17, 2022

Presentation Agenda

- Purpose
- Why Dewberry?
 - Qualifications
 - Past Project Examples
- Project Tasks and Schedule
 - Task 1: Kickoff Meeting
 - Task 2: Data Collection
 - Task 3: ROI Preparation
- Closing

Purpose

Draft ROI Approach for SFPUC Infrastructure Resilience Projects

Return on Investment (ROI) Overview

- Many government agencies require that infrastructure projects be proven cost-effective (i.e., projects produce more benefits than costs in the long term)
- Return on Investment (ROI), also known as Benefit-Cost Analysis (BCA), is used to demonstrate that the benefits of a project outweigh its costs, or the ROI is greater than 1.0.

$$ROI = \frac{\textit{Project Benefits}}{\textit{Project Costs}}$$

Project Costs Versus Project Benefits

- **Project Costs** represent the total investment in the project, including the costs for design, construction and maintenance
- **Project Benefits** represent the advantages of the project and may include one or more of the following categories:
 - **Service Impacts** (Utility, Additional Temporary Service Costs)
 - **Health and Safety** (Avoided Casualties, Improved Health)
 - **Ecosystem Services** (Environmental Benefits)
 - **Social Benefits** (Positive Impacts on Community Level)
 - **Physical Damages** (Buildings, Contents, Equipment)
- Project Costs are easier to estimate than Project Benefits

Estimating Project Benefits

- ROIs generally prepared on a net present value basis
- Since most project benefits accumulate over time, they can be calculated on an average annual basis (“annualized”) and then multiplied by a Present Value Coefficient (PVC) to determine the present value of the annualized benefits.

$$PVC = \frac{1 - (1 + r)^{-T}}{r}$$

Where:

PVC = Present Value Coefficient

r = Discount Rate (7.00%)

T = Project Useful Life (years)

Why Dewberry?

Draft ROI Approach for SFPUC Infrastructure Resilience Projects

Why Dewberry?

- Decades of experience providing technical feasibility and return-on-investment (ROI) reviews for thousands of hazard mitigation and climate resilience projects
- Federal Emergency Management Agency (FEMA) BCA expertise:
 - Reviewed and re-analyzed hundreds of project BCAs for various mitigation grants
 - Led development of re-engineered FEMA BCA modules for damage-frequency assessment (DFA), flood, and wildfire
 - Prepared training materials and led instruction of over 65 BCA workshops and webinars in California and 32 other states throughout all ten Regions
 - Led the FEMA BCA Helpline for nine years, addressing over 6,500 BCA inquiries of varying complexities with an over 95% on-time response rate
- Reviewed and developed BCA/ROI tools and methodologies for other Federal and local government agencies including the Federal Transit Administration (FTA), New York City Office of Recovery and Resiliency (NYC ORR)

California Project Example: CalOES BCA Support

- **Background:** California's Office of Emergency Services (CalOES) has experienced staff shortages combined with a large number of Presidential Disaster Declarations over the past three years, resulting in an increased number of projects requesting FEMA Hazard Mitigation Grant Program (HMGP) BCA reviews and technical assistance. Dewberry assisted in providing this support as a subcontractor to Hagerty Consulting.
- **Key Issues:** Most BCA reviews and technical assistance calls with subapplicants assigned to Dewberry were for complex projects involving seismic retrofits to major government buildings or utility infrastructure.

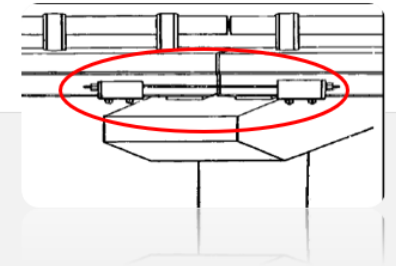
California Project Example: CalOES BCA Support (2)



Infrastructure Retrofits - Overview

Description: Structural retrofits to existing utility facility or transportation facility to reduce earthquake damage, service loss, and potential casualties.

Examples: Pipe upgrades, power facility hardening, bridge retrofits



Benefit Cost Analysis (BCA) for Seismic Retrofit Projects |

California Project Example: CalOES BCA Support (3)

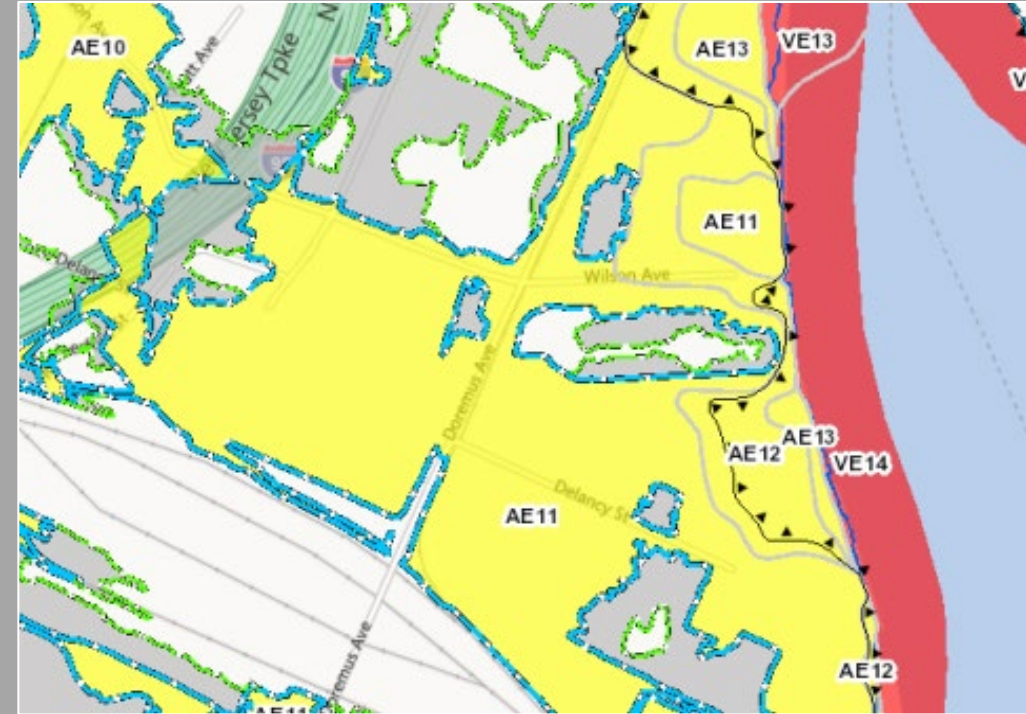
Results: Over the past three years, Dewberry has accomplished the following tasks:

- Developed and instructed over a dozen post-disaster in-person and online BCA training workshops for subapplicants and CalOES support staff
- Reviewed and re-analyzed more than 80 seismic retrofits and landslide reduction projects for buildings and infrastructures valued at over \$500 million
- Provided on-call BCA technical assistance to address Subapplicant concerns on dozens of HMGP projects as well as the new Building Resilience Infrastructure and Communities (BRIC) program

Utility Plant BCA Example: PVSC Newark Bay Treatment Plant

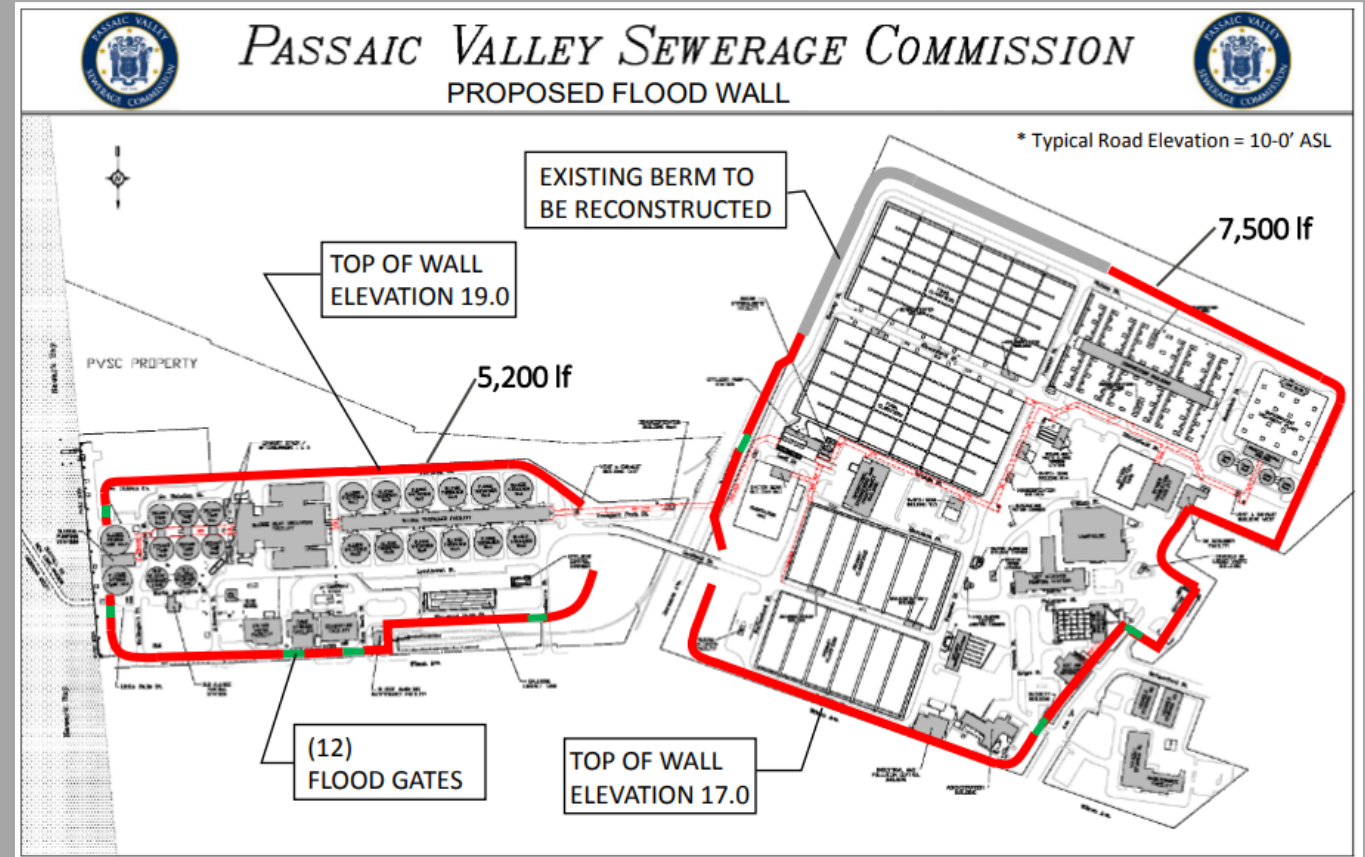
- **Background:** Passaic Valley Sewerage Commission's (PVSC) Newark Bay Treatment Plant is a low-lying facility at the edge of Newark Bay that treats wastewater, municipal sewage sludge and drinking water sludge from 3.43 million residents in New Jersey and New York. After the PVSC plant suffered \$90+ million in physical damages and extended service losses during Hurricane Sandy (FEMA-4086-DR-NJ), a FEMA Public Assistance (Section 406) hazard mitigation proposal (HMP) was developed to protect the plant from the 500-year storm event. Largest HMP ever.
- **Key Issues:** Hurricane Sandy was estimated to be a 185-year recurrence interval (RI) event near the PVSC plant, and the facility had no history of significant flood damages prior to Sandy. Wastewater service loss calculations were very complex.

Utility Plant BCA Example: PVSC Newark Bay Treatment Plant (2)



Utility Plant BCA Example: PVSC Newark Bay Treatment Plant – Project Details and Costs

- Proposed 406 HMP consists of perimeter floodwall with passive floodgates (shown), storm water drainage with pump stations, and onsite standby power system with natural gas generators
- Project cost \$246.7 million
- Total BCA cost \$267.3 million including O&M



Utility Plant BCA Example: PVSC Newark Bay Treatment Plant – Quantitative Benefits

For the initial BCA, prepared detailed inventory of damages and conservative estimates of service losses from Hurricane Sandy following in-person meetings with PVSC officials as well as field data collection and verification.

- **Event RI:** 185.0 years, based on a detailed post-event coastal study
- **Physical Damages:** \$90.66 million, based on \$90.16 million in PVSC plant damages from 34 FEMA Project Worksheets (PWs) for Hurricane Sandy (\$90.16) plus \$495,000 in plant dewatering costs based on conservative estimate from USACE.
- **Wastewater Service Losses:** \$4.54 billion, based on complete loss of wastewater service for 4.125 days (\$556.6 million), significant loss of service for an additional 20 days (\$2.48 billion), and partial loss of service for another 21 days (\$1.50 billion).

Utility Plant BCA Example: PVSC Newark Bay Treatment Plant – Alternate Approaches

Following the initial BCA, a range of alternatives for various scenarios and bounded analyses were reviewed and analyzed:

- **Alternative 1 (ALT1):** Full Service Loss to District Population Plus LWA Revenue Loss Approach
- **Alternative 2 (ALT2):** Service Loss to District and LWA Populations Using Modified Approach
- **Alternative H12 (ALTH12):** Hybrid of Full Service Loss Modified Approaches Applied to District and LWA Populations
- **Lower-Bound Alternative 1C (LB-ALT1C):** Conservative Application of Full Service Loss to District Population Plus LWA Revenue Loss Approach
- **Lower-Bound Alternative 2C (LB-ALT2C):** Conservative Application of Modified Approach to Service Loss to District and LWA Populations
- **Upper-Bound Analysis Approach (UB):** Full Service Loss to District and LWA Populations Plus Other Categories of Benefits

Utility Plant BCA Example: PVSC Newark Bay Treatment Plant – Analysis Results

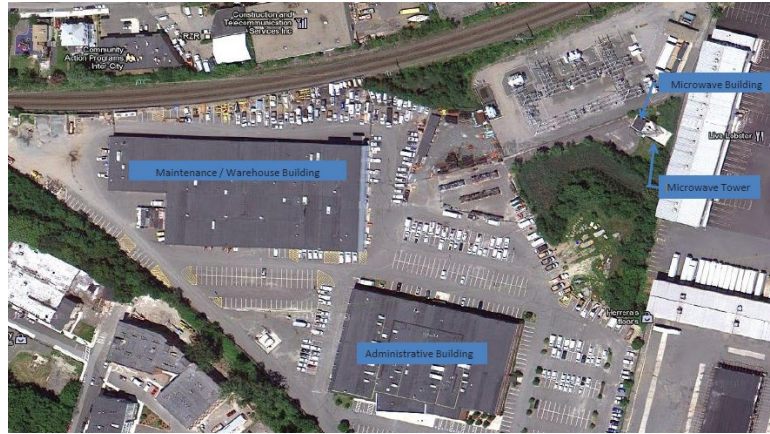
Results: Initial BCA was determined to be cost-effective with a BCR of 1.29. Most alternative approaches also supported cost-effectiveness.

Description of Approach	BCR	Analysis Determination
Initial BCA	1.29	Cost-Effective
ALT1 BCA: Full Service Loss to District Population Plus LWA Revenue	4.54	Cost-Effective
ALT2 BCA: Service Loss to District and LWA Populations Using Modified Approach	1.23	Cost-Effective
ALTH12 BCA: Hybrid of Full Service Loss and Modified Approaches Applied to District and LWA Populations	1.72	Cost-Effective
LB-ALT1C BCA: Lower-Bound Analysis Approach to ALT1 (Conservative)	0.86	Insufficient Data
LB-ALT2C BCA: Lower-Bound Analysis Approach to ALT2 (Conservative)	0.78	Insufficient Data
UB BCA: Upper-Bound Analysis Approach	5.42	Insufficient Data

Utility Infrastructure Example: MWRA Support

- **Background:** The Massachusetts Water Resources Authority (MWRA) requested assistance from the Massachusetts Emergency Management Agency (MEMA) in developing a series of hazard mitigation project applications with BCAs. Dewberry was requested by MEMA to conduct site visits and prepare up to six MWRA project applications with BCAs. Projects included wind shutters, lightning protection, electrical line mitigation and a water reservoir generator.
- **Key Issues:** Many of the projects relied only had limited data available to assess technical feasibility and cost-effectiveness. The lightning protection system was the first project of its kind proposed for MEMA grant funding.

Utility Infrastructure Example: MWRA Support (2)



Technical Memorandum
Maintenance/Warehouse/Microwave
Building / Microwave Tower
Lightning Risk Assessment
MWRA Contract No. 7391
Task Order No. 4

December 15, 2011

Submitted to:

Massachusetts Water
Resources Authority



Utility Infrastructure Example: MWRA Support (3)

Results:

- Dewberry prepared several MWRA grant applications that were reviewed and approved by MEMA, including a lightning protection that used an innovative BCA approach to confirm cost-effectiveness.
- Dewberry also designed a minimal cost flood-proofing solution for a communications building which the MWRA could implement without grant support.

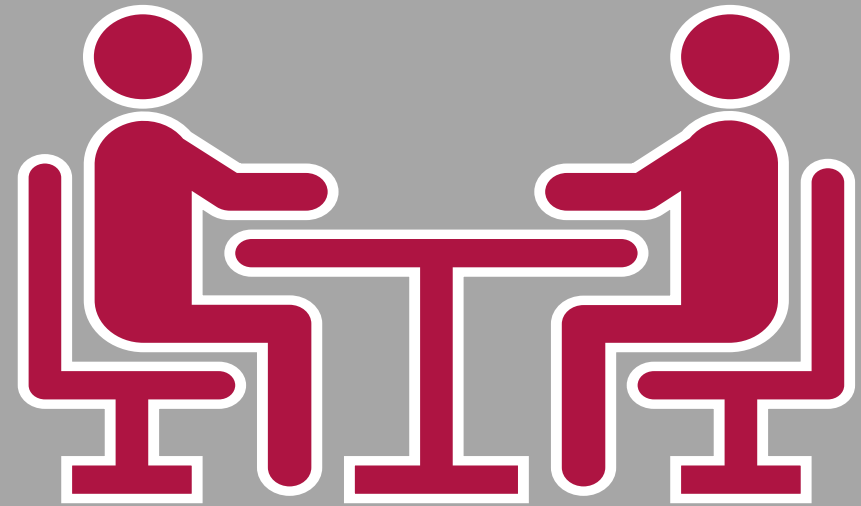
Project Tasks and Schedule

Draft ROI Approach for SFPUC Infrastructure Resilience Projects

Task 1: Kickoff Meeting (KOM)

Upon receipt of Notice to Proceed (NTP), Dewberry will work with SFPUC to host a virtual kickoff meeting to confirm project details:

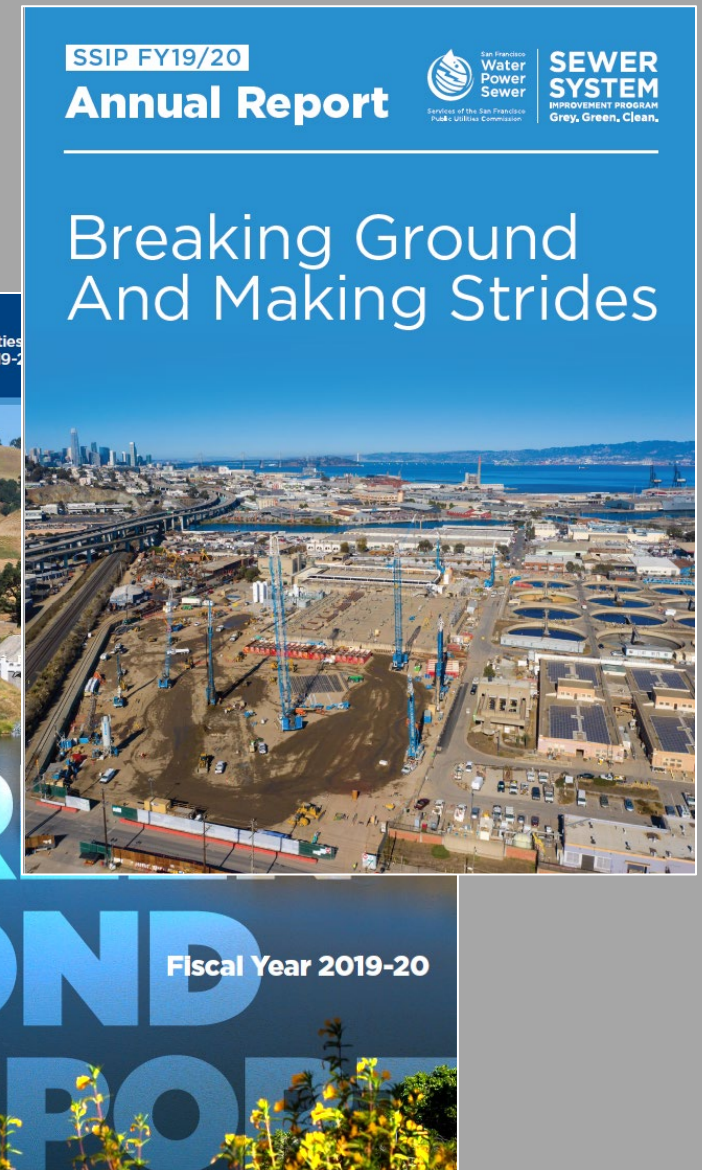
- ROI priorities
- Key project types
- Anticipated data needs
- Projected timeline



Task 2: Data Collection

Following Kickoff (Task 1), Dewberry will work with SFPUC technical staff to collect the necessary data to prepare ROI assessments

- Pre-project and post-project conditions
- Service impacts
- Increased efficiencies
- Reduced fuel and maintenance
- Health and safety benefits



Task 3: ROI Preparation

Draft project categories to facilitate ROI preparation:

1) Water Projects

- Groundwater Storage and Recovery
- Water Filtration/Purification
- Tunnel/Pipeline Improvements
- System Improvements

2) Wastewater Projects

- System Improvements
- Biosolids Digester Facility

3) Combined Projects

- Flood Control/Storm Water Management (SWM)
- Habitat Reserve/Watershed Improvement

4) Power Projects

- Control Systems/Oil Containment
- Water Conveyance

Task 3: ROI Preparation – Project Costs & Project Benefit Categories

Once Project Costs are verified, focus on the following categories of Project Benefits

- 1) Service Impacts
- 2) Health and Safety
- 3) Ecosystem Services
- 4) Social Benefits
- 5) Physical Damages

Task 3: ROI Preparation – Service Impacts

Service Impacts associated with improved delivery of services by utility facilities and may include one or more of the following benefits:

- Increased efficiencies (reduced water, wastewater or power use; additional storage capacity)
- Reduced operation and maintenance (O&M) costs
- Reduced magnitude of utility service losses (initial and long term economic impacts) or residential building displacements

Task 3: ROI Preparation – Service Impacts (2)

Service Impacts – Sources of Documentation:

- Historic data from utility company records or professional engineering estimates
- Operation and maintenance records
- Service loss durations for buildings from flood Depth Damage Functions (DDFs) or seismic Fragility Curves
- Standard values for loss of utility service (Source: FEMA)
 - Potable Water: \$114/person/day
 - Wastewater: \$58/person/day
 - Power: \$174/person/day
 - IT/Telecommunications: \$130/person/day (new)

Task 3: ROI Preparation – Health and Safety

Health and Safety may include one or more of the following benefits:

- Improved health associated with reduced carbon dioxide (CO₂) or and other greenhouse gas (GHG) emissions
- Improved safety associated with reduced air or water pollution
- Avoided casualties associated with flood protection or seismic retrofit projects

Health and Safety – Sources of Documentation

- Environmental and engineering reports, economic analyses
- Standard values for casualties (Source: FAA): \$28,000/minor injury, \$1,008,000/serious injury, \$9,600,000/fatality

Task 3: ROI Preparation – Ecosystem Services

Ecosystem Services are potentially diverse environmental benefits associated with select utility mitigation/resilience projects including:

- Climate regulation
- Erosion control
- Stormwater management
- Biodiversity
- Aesthetics/Acoustics
- Quality of life
- Water quality
- Local economic benefits

Task 3: ROI Preparation – Ecosystem Services (2)

Ecosystem Services – Sources of Documentation:

- Estimate by land use for open space acquisition, vegetation management and stream restoration using FEMA Ecosystem Service Benefits
- Estimate using average unit benefits for green infrastructure and energy efficiency projects based on Climate Resiliency Design Guidelines (CRDG) published by the New York City Mayor’s Office of Resiliency

Task 3: ROI Preparation – Ecosystem Services (3)

FEMA Ecosystem Service Benefits by Land Use (\$/Acre/year)

Ecosystem Service	Green Open Space	Riparian	Forest	Wetland	Marine & Estuary
Aesthetic Value	\$1,707	\$612		\$3,640	
Air Quality	\$215	\$226			
Biological Control		\$173			
Climate Regulation	\$61	\$81	\$153	\$136	\$63
Erosion Control	\$68	\$12,042			
Flood Hazard Reduction		\$4,215	\$321		
Food Provisioning		\$641			
Habitat		\$878			\$1,214
Nutrient Cycling				\$536	\$522
Pollination	\$305				
Recreation/Tourism	\$5,644	\$15,967			
Stormwater Retention	\$308				
Water Filtration		\$4,473		\$1,406	
Water Supply		\$237	\$80	\$292	
Total Annual Value	\$8,308	\$39,535	\$554	\$6,010	\$1,799

Task 3: ROI Preparation – Ecosystem Services (4)

NYC CRDG Average Flood Unit Benefits:

- Combined Sewer Overflow (CSO) Volume Reduction: \$0.015/gallon/year

Project Type	Average Annual Unit Benefit	Project Life, T (years)
Green Roof	\$0.133/SF	40
Bioswale/ Rain Garden	\$0.020/SF	30
Permeable Grass Pavers	\$0.020/SF	30
Tree Plantings	\$303/Tree	30
Planter Box Trees	\$101/Tree	15

NYC CRDG Average Extreme Heat Unit Benefits

Project Type	Average Annual Unit Benefit(s)	Project Life, T (years)
Green Roof	\$0.301/SF	40
Bioswale/Rain Garden	\$0.363/SF	30
Cool Roof	\$0.092/SF	20
Light Colored Pavers/Materials	\$0.041/SF	30
HVAC Improvements	\$0.311/kWh, \$0.517/Therm	25
Building Envelope Improvements	\$0.304/kWh, \$0.479/Therm	50
Tree Planting	\$92.23/Tree	30

Task 3: ROI Preparation – Social Benefits

Social Benefits are intended to address the positive impact of resilience on a community level, and may include:

- The impact of a resilience project on vulnerable or disadvantaged populations
- Avoided mental stress and anxiety associated reduced risk

Social Benefits – Sources of Documentation

- Social vulnerability assessments or planning reports
- Standard values for Social Benefits (Source: FEMA): For flood mitigation projects that directly protect residential buildings if $ROI \geq 0.75$
 - Mental Stress and Anxiety: \$2,443/person
 - Lost Productivity: \$8,736/person

Task 3: ROI Preparation – Avoided Damages

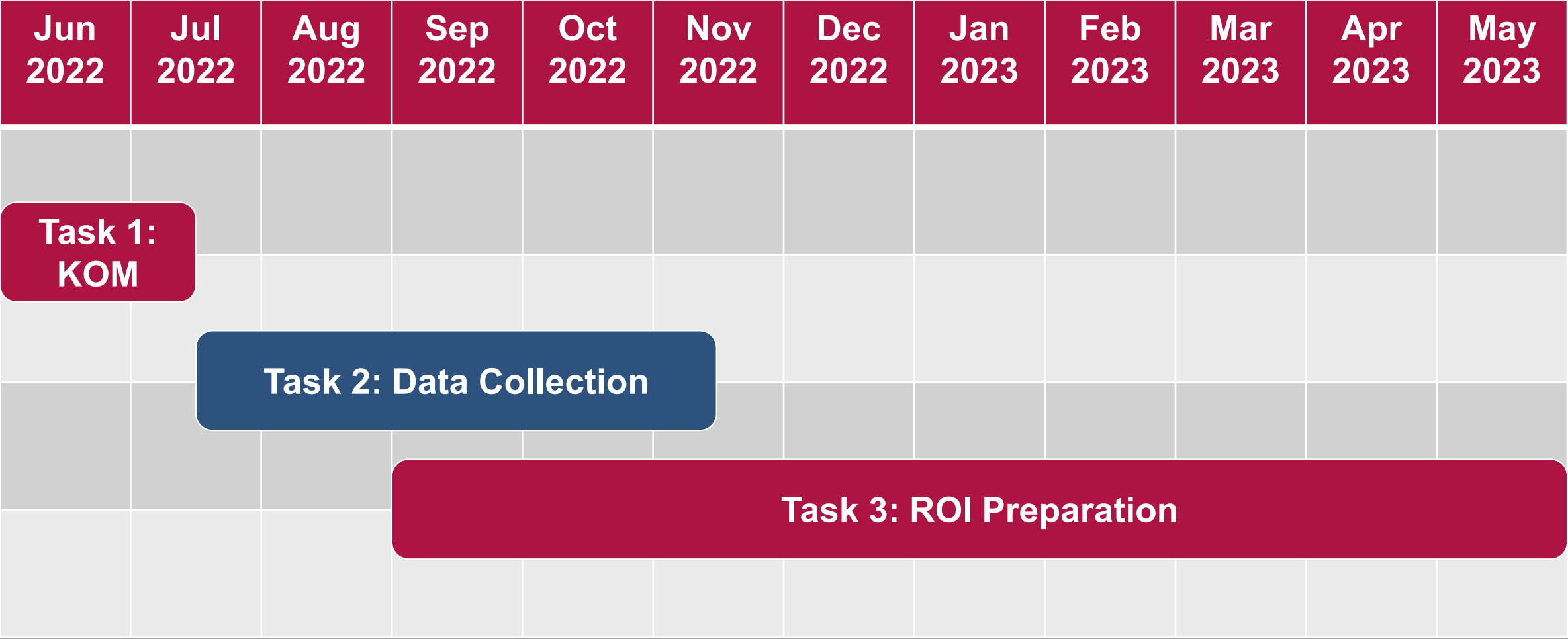
Avoided Damages are reduced/avoided physical damages to buildings and infrastructure associated with the project:

- Structures
- Contents and equipment

Avoided Damages – Sources of Documentation:

- Historic damage records, insurance claims, or engineering estimates for utility facilities
- Depth Damage Functions (DDFs), Wind Damage Functions (WDFs) or Earthquake Fragility Curves for buildings

Project Schedule



Closing

Draft ROI Approach for SFPUC Infrastructure Resilience Projects

Presentation Summary: Topics Addressed

- Purpose
- Why Dewberry?
 - Qualifications
 - Past Project Examples
- Project Tasks and Schedule
 - Task 1: Kickoff Meeting
 - Task 2: Data Collection
 - Task 3: ROI Preparation
- Closing

Questions

Contact:

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**PUBLIC UTILITIES
REVENUE BOND OVERSIGHT COMMITTEE
CITY AND COUNTY OF SAN FRANCISCO
MINUTES – DRAFT**

REMOTE MEETING

April 19, 2022 - 9:00 AM

Regular Meeting

Remote Access to Information and Participation

On March 17, 2020, the Board of Supervisors authorized their Board and Committee meetings to convene remotely (via Microsoft Teams) and will allow remote public comment via teleconference.

Members of the public may participate by phone or may submit their comments by email to: RBOC@sfgov.org; all comments received will be made a part of the official record. Revenue Bond Oversight Committee agendas and their associated documents are available at: <https://sfpuc.org/about-us/boards-commissions-committees/revenue-bond-oversight-committee>

Listen/Public Call-In Phone Number:
(415) 906-4659 Conference ID: 374 896 305#

As the COVID-19 disease progresses, please visit the Board's website (www.sfbos.org) regularly to be updated on the current situation as it affects the legislative process. For more information contact Assistant Clerk Victor Young at (415) 554-7723.

Mission: The Revenue Bond Oversight Committee (RBOC) monitors the expenditure of revenue bond proceeds related to the repair, replacement, upgrade, and expansion of the SFPUC’s water, power, and sewer infrastructure. The RBOC provides independent oversight to ensure transparency and accountability. The RBOC’s goal is to ensure that SFPUC revenue bond proceeds are spent for their intended purposes in accordance with legislative authorization and other applicable laws.

1. **Call to Order, Roll Call, and Agenda Changes**

Members:

- Seat 1 Ettore Leale, Chair
- Seat 2 Lars Kamp
- Seat 3 Vacant
- Seat 4 Vacant
- Seat 5 Vacant
- Seat 6 Christina Tang
- Seat 7 Reuben Holober

The Revenue Bond Oversight Committee meeting was called to order at 9:02 a.m. On the call of the roll, Chair Leale and Members Kamp, Tang, and Holober were noted present. A quorum was present.

There were no agenda changes.

2. **RBOC: Findings to Allow Teleconferenced Meetings During Declared Emergency**

Proposed Motion: ADOPT FINDINGS as required by Assembly Bill 361 that 1) the Committee has considered the circumstances of the state of emergency; 2) the state of emergency continues to directly impact the ability of policy body members to meet safely in person; and 3) state or local officials continue to impose or recommend measures to promote social distancing.

Chair Leale, seconded by Member Tang, moved to ADOPT FINDINGS as required by Assembly Bill 361 that 1) the Committee has considered the circumstances of the state of emergency; 2) the state of emergency continues to directly impact the ability of policy body members to meet safely in person; and 3) state or local officials continue to impose or recommend measures to promote social distancing.

Public Comment: None.

The motion PASSED by the following vote.

Ayes: Leale, Kamp, Tang, Holober
Noes: None

3. **Public Comment:** Members of the public may address the Revenue Bond Oversight Committee (RBOC) on matters that are within the RBOC’s jurisdiction but are not on today’s agenda.

Public Comment: None.

4. **SFPUC: Bond Issuance Update**

Eric Kwon (Capital Finance Group) was present in Mike Brown’s absence and requested this item be continued to the next meeting. Mr. Kwon informed the Committee of various revenue bonds sold.

Chair Leale, seconded by Member Kamp motions to continue this item to the next meeting.

Public Comment: None

The motion PASSED by the following vote:

Ayes: Leale, Kamp, Tang, Holober

Noes: None

5. **SFPUC: Hearing on Finding #2 of the RBOC Performance Audit – Presentation on the Quality Assurance Audit Function of the Infrastructure Division, Infrastructure Division, SFPUC.**

Alan Johansson (SFPUC) presented and responded to questions from the committee regarding planning and procedure of various performance audits and future staffing changes at the SFPUC in July.

Public Comment: None

No Action was taken on this item.

6. **RBOC: Planning for next RBOC audit (Presentation on suggested approaches by CSA and HKA/Yano.)**

Hunter Wong (CSA) provided updates and responded to questions from the committee.

Public Comment: None

Chair Kamp, seconded by Member Holober motions to continue this item to the next meeting.

The motion PASSED by the following vote:

Ayes: Leale, Kamp, Tang, Holober

Noes: None

7. **RBOC: Planning for potential future audits to evaluate the performance of projects funded by revenue bonds.**

Chair Leale provided updates to the Committee on researching other companies and their process for performing audits. Chair Leale connected with Dewberry Engineering Firm to which he received a detailed memorandum regarding their process and methodology.

Chair Leale requested that the RBOC invite the Dewberry Engineering Firm to the next meeting.

Member Tang, seconded by Member Holober moved to continue the matter to the next meeting.

Public Comment: None

The motion PASSED by the following vote:

Ayes: Leale, Kamp, Tang, Holober

Noes: None

8. **Approval of Minutes:** February 15, 2022, and March 8, 2022, Meeting Minutes.

Public Comment: None

Member Holober seconded by Tang motioned to approve both the February 15, 2022 and March 8, 2022 Minutes.

The motion PASSED by the following vote:

Ayes: Leale, Kamp, Tang, Holober

Noes: None

9. **Announcements, Comments, Questions, and Future Agenda Items.**

Upcoming Meeting Dates: May 17, 2022, June 14, 2022, and July 19, 2022

The Committee confirmed additional Upcoming Meeting Dates: August 16, 2022 and September 13, 2022.

Pending Issues:

- A. Request that SSIP Quarterly reports include information on Stormwater Management System and details on the bidding climate and possible cost increase)
- B. RBOC: Acquiring consultant to examine expected performance of complete projects.
- C. SFPUC: Staff Report: Environmental Justice
- D. SFPUC: Power Enterprise and Clean Power SF Update
- E. SFPUC: Mountain Tunnel Site Tour
- F. SFPUC: State Federal Loan Updates
- G. SFPUC: Oceanside Wastewater Plant Tour
- H. RBOC: Discussion on the 2015 report, entitled "Evaluation of Lessons Learned from the WSIP Program," procedures and reporting processes taken from WSIP applied to SSIP
- I. SFPUC: Wastewater System Improvement Program Update
- J. RBOC: Discussion on the coordination of PUC Site Tours
- K. SFPUC: Water Infrastructure Update (May)
 - Water System Improvement Program (WSIP)
 - Water Enterprise Capital Improvement Program (WECIP)
 - Hetch Hetchy Capital Improvement Program (HCIP)

The Committee chose to continue item K. (SFPUC: Water Infrastructure Update) to the June 14, 2022 meeting.

10. **Adjournment**

The meeting adjourned at 10:09 a.m.

N.B. The Minutes of this meeting set forth all actions taken by the Revenue Bond Oversight Committee on the matters stated but not necessarily in the chronological sequence in which the matters were taken up.