

File No. 140940

Committee Item No. 4

Board Item No. \_\_\_\_\_

## COMMITTEE/BOARD OF SUPERVISORS

### AGENDA PACKET CONTENTS LIST

Committee: Government Audit and Oversight Date September 11, 2014

Board of Supervisors Meeting

Date \_\_\_\_\_

#### CMTE BOARD

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| <input type="checkbox"/>            | <input type="checkbox"/> | Legislative Digest                           |
| <input type="checkbox"/>            | <input type="checkbox"/> | Budget and Legislative Analyst Report        |
| <input type="checkbox"/>            | <input type="checkbox"/> | Youth Commission Report                      |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Introduction Form                            |
| <input type="checkbox"/>            | <input type="checkbox"/> | Department/Agency Cover Letter and/or Report |
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| <input type="checkbox"/>            | <input type="checkbox"/> | Form 126 – Ethics Commission                 |
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#### OTHER

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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>Clerk of the Board's Memo receipt of CGJ report to Board</u>       |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>Mayor's consolidated response to the Civil Grand Jury report</u>   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>Clerk of the Board's 60-Day dept response receipt to the Board</u> |
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Completed by: Erica Major Date September 5, 2014

Completed by: \_\_\_\_\_ Date \_\_\_\_\_

1 [Board Response - Civil Grand Jury Report - Rising Sea Levels...At Our Doorstep]

2  
3 **Resolution responding to the Presiding Judge of the Superior Court on the findings**  
4 **and recommendations contained in the 2013-2014 Civil Grand Jury Report, entitled**  
5 **“Rising Sea Levels...At Our Doorstep;” and urging the Mayor to cause the**  
6 **implementation of accepted findings and recommendations through his/her**  
7 **department heads and through the development of the annual budget.**  
8

9 WHEREAS, Under California Penal Code, Section 933 et seq., the Board of  
10 Supervisors must respond, within 90 days of receipt, to the Presiding Judge of the Superior  
11 Court on the findings and recommendations contained in Civil Grand Jury Reports; and

12 WHEREAS, In accordance with California Penal Code, Section 933.05(c), if a finding or  
13 recommendation of the Civil Grand Jury addresses budgetary or personnel matters of a  
14 county agency or a department headed by an elected officer, the agency or department head  
15 and the Board of Supervisors shall respond if requested by the Civil Grand Jury, but the  
16 response of the Board of Supervisors shall address only budgetary or personnel matters over  
17 which it has some decision making authority; and

18 WHEREAS, The 2013-2014 Civil Grand Jury Report, entitled “Rising Sea Levels...At  
19 Our Doorstep” is on file with the Clerk of the Board of Supervisors in File No. 140940, which is  
20 hereby declared to be a part of this resolution as if set forth fully herein; and

21 WHEREAS, The Civil Grand Jury has requested that the Board of Supervisors respond  
22 to Finding Nos. 1, 2, 3, 5, 11, and 12, as well as Recommendation Nos. 1a, 1b, 1c, 1d, 2a, 2b,  
23 3, 5, 11a, 11b, 11c, 11d, 12a, and 12b contained in the subject Civil Grand Jury report; and

24 WHEREAS, Finding No. 1 states: “The City does not have a citywide comprehensive  
25 plan that addresses the rising sea level issue;” and

1           WHEREAS, Finding No. 2 states: "The City's Planning Code has no provisions  
2     addressing the impacts associated with rising sea levels. Without appropriate provisions  
3     within the City's Planning Code, there are no effective means to insure sustainable  
4     development on land vulnerable to rising sea levels;" and

5           WHEREAS, Finding No. 3 states: "The City's Building Code and the Port's Building  
6     Code have no provisions addressing the impacts associated with rising sea levels. Without  
7     appropriate provisions within the city's Building Code and the Port's Building Code, there are  
8     no effective means to control construction methods that would insure a project's resistance to  
9     the impacts of rising sea levels;" and

10          WHEREAS, Finding No. 5 states: "A comprehensive risk assessment of Ocean Beach,  
11     with mitigation recommendations made to the City regarding rising sea levels, was completed  
12     by SPUR, with City, State of California and U.S Corps of Engineers involvement, resulting in  
13     the Ocean Beach Master Plan, dated May, 2012;" and

14          WHEREAS, Finding No. 11 states: "The City has not set aside funds for the cost of  
15     adaptation to sea level rise;" and

16          WHEREAS, Finding No. 12 states: "Rising sea levels is a regional problem. What one  
17     community does to protect its shorelines may have a negative impact on a neighboring  
18     community. This has been successfully accomplished by four counties on the east coast of  
19     Florida, as an example;" and

20          WHEREAS, Recommendation No. 1a states: "The City should prepare and adopt a  
21     risk assessment in preparation for developing its comprehensive plan regarding the rising sea  
22     level issue;" and

23          WHEREAS, Recommendation No. 1b states: "The City should adopt a citywide  
24     comprehensive plan for adaptation to rising sea levels, especially along its shores and its  
25     floodplains. Said plan should include the provision that construction projects' approval should

1 take into account the anticipated lifespan of each project and the risks faced as outlined in  
2 said plan. Special consideration should be given to those anticipated to survive for more than  
3 30 years. Said plan should include a provision that the plan be reviewed and reassessed  
4 every 5 years;" and

5 WHEREAS, Recommendation No. 1c states: "The City should build infrastructure  
6 systems that are resilient and adaptable to rising sea levels. That the City, through its  
7 planning and building departments, require that any construction project vulnerable to future  
8 shoreline or floodplain flooding be designed to be resilient to sea level rise at the 2050  
9 projection, e.g., 16 inches if the construction is not expected to last longer than 2050. For  
10 construction intended to last longer than 2050, that the City require that the project be  
11 designed to address sea level rise projections for the longer term;" and

12 WHEREAS, Recommendation No. 1d states: "That City departments that would  
13 necessarily be involved in adaptation to rising sea levels, such as Department of Public  
14 Works, Public Utilities Commission, Municipal Transportation Agency, the Port, coordinate  
15 their projects with each other and with utility companies, such as PG&E, Comcast, and AT&T,  
16 to minimize inconvenience to the public, and to businesses, and to further avoid repetition of  
17 efforts and inefficient use of funds, labor, and time;" and

18 WHEREAS, Recommendation No. 2a states: "The Planning Code should be amended  
19 to include maps showing the areas in the City that are most at risk from the impacts of sea  
20 level rise. The Planning Code should be amended to prohibit development in said at-risk  
21 areas unless there is compliance with the provisions of the City's Building Code and the Port's  
22 Building Code (if applicable to the project) outlined in Recommendations 3a and 3b. The  
23 Planning Code should include a provision that the amended sections of the Code regarding  
24 the impact of rising sea levels be reviewed and reassessed every 5 years;" and  
25



1           WHEREAS, Recommendation No. 2b states: “The Planning Code should be amended  
2 to discourage permanent development in at risk areas where public safety cannot be  
3 protected;” and

4           WHEREAS, Recommendation No. 3 states: “The City’s Building Code and the Port’s  
5 Building Code should be amended to include: (1) provisions addressing the impacts  
6 associated with sea level rise, especially when combined with storm surges and king tides; (2)  
7 construction methods that would ensure a project’s resistance to and protection from the  
8 impacts of rising sea levels, especially when combined with sudden storm surges and king  
9 tides; (3) amendments written to protect the most vulnerable systems, including but not  
10 necessarily limited to, electrical, telecommunications, and fire protection systems; (4)  
11 provisions relating to rising sea levels be reviewed and reassessed every five years;” and

12           WHEREAS, Recommendation No. 5 states: “The City should consider implementation  
13 of recommendations that are most pertinent to the City, as set forth in the Ocean Beach  
14 Master Plan of May 2012;” and

15           WHEREAS, Recommendation No. 11a states: “The City should start a reserve fund for  
16 adaptation for rising sea levels, a portion of which could be obtained from a surcharge on  
17 development planned for areas vulnerable to said eventuality;” and

18           WHEREAS, Recommendation No. 11b states: “The City should assess costs of both  
19 implementation of adaptation strategies and potential losses from failing to do so;” and

20           WHEREAS, Recommendation No. 11c states: “The City should explore applying for  
21 grants offered by Congress’ Pre-Disaster Mitigation Program. Receipt of grants is based upon  
22 risk assessments that indicate that potential savings exceed the cost of implementation. The  
23 City should explore available matching funds from the Army Corps of Engineers and other  
24 federal sources;” and  
25

1 WHEREAS, Recommendation No. 11d states: "The City should request an insurance  
2 premium estimate from FEMA and then compare that estimate with the funding it could  
3 acquire from FEMA for mitigation and adaptation against future flooding;" and

4 WHEREAS, Recommendation No. 12a states: "The City, through its Mayor and Board  
5 of Supervisors, should coordinate its efforts with other cities and organizations in the bay area  
6 by establishing a regional working group to address the impact of rising sea levels;" and

7 WHEREAS, Recommendation No. 12b states: "The City should create a local working  
8 group of community citizens and stakeholders to feed into the regional group;" and

9 WHEREAS, In accordance with California Penal Code, Section 933.05(c), the Board of  
10 Supervisors must respond, within 90 days of receipt, to the Presiding Judge of the Superior  
11 Court on Finding Nos. 1, 2, 3, 5, 11, and 12, as well as Recommendation Nos. 1a, 1b, 1c, 1d,  
12 2a, 2b, 3, 5, 11a, 11b, 11c, 11d, 12a, and 12b contained in the subject Civil Grand Jury report;  
13 now, therefore, be it

14 RESOLVED, That the Board of Supervisors reports to the Presiding Judge of the  
15 Superior Court that \_\_\_\_\_ with Finding No. 1 for reasons as follows: \_\_\_\_\_; and, be it

16 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
17 Finding No. 2 for reasons as follows: \_\_\_\_\_; and, be it

18 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
19 Finding No. 3 for reasons as follows: \_\_\_\_\_; and, be it

20 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
21 Finding No. 5 for reasons as follows: \_\_\_\_\_; and, be it

22 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
23 Finding No. 11 for reasons as follows: \_\_\_\_\_; and, be it

24 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
25 Finding No. 12 for reasons as follows: \_\_\_\_\_; and, be it

1 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
2 Recommendation No. 1a for reasons as follows: \_\_\_\_\_; and, be it

3 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
4 Recommendation No. 1b for reasons as follows: \_\_\_\_\_; and, be it

5 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
6 Recommendation No. 1c for reasons as follows: \_\_\_\_\_; and, be it

7 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
8 Recommendation No. 1d for reasons as follows: \_\_\_\_\_; and, be it

9 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
10 Recommendation No. 2a for reasons as follows: \_\_\_\_\_; and, be it

11 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
12 Recommendation No. 2b for reasons as follows: \_\_\_\_\_; and, be it

13 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
14 Recommendation No. 3 for reasons as follows: \_\_\_\_\_; and, be it

15 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
16 Recommendation No. 5 for reasons as follows: \_\_\_\_\_; and, be it

17 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
18 Recommendation No. 11a for reasons as follows: \_\_\_\_\_; and, be it

19 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
20 Recommendation No. 11b for reasons as follows: \_\_\_\_\_; and, be it

21 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
22 Recommendation No. 11c for reasons as follows: \_\_\_\_\_; and, be it

23 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
24 Recommendation No. 11d for reasons as follows: \_\_\_\_\_; and, be it  
25

1 FURTHER RESOLVED, That the Board of Supervisors reports hat \_\_\_\_\_ with  
2 Recommendation No. 12a for reasons as follows: \_\_\_\_\_; and, be it

3 FURTHER RESOLVED, That the Board of Supervisors reports that \_\_\_\_\_ with  
4 Recommendation No. 12b for reasons as follows: \_\_\_\_\_; and, be it

5 FURTHER RESOLVED, That the Board of Supervisors urges the Mayor to cause the  
6 implementation of the accepted findings and recommendations through his/her department  
7 heads and through the development of the annual budget.

BOARD of SUPERVISORS



City Hall  
Dr. Carlton B. Goodlett Place, Room 244  
San Francisco 94102-4689  
Tel. No. 554-5184  
Fax No. 554-5163  
TDD/TTY No. 544-5227

DATE: August 25, 2014

TO: Members of the Board of Supervisors

FROM: *ACC* Angela Calvillo, Clerk of the Board

SUBJECT: 2013-2014 Civil Grand Jury Report "Rising Sea Levels...At Our Doorstep"

We are in receipt of the following required responses to the San Francisco Civil Grand Jury report released June 25, 2014, entitled: **Rising Sea Levels...At Our Doorstep**. Pursuant to California Penal Code, Sections 933 and 933.05, the City Departments shall respond to the report within 60 days of receipt, or no later than August 24, 2014.

For each finding the Department response shall:

- 1) agree with the finding; or
- 2) disagree with it, wholly or partially, and explain why.

As to each recommendation the Department shall report that:

- 1) the recommendation has been implemented, with a summary explanation; or
- 2) the recommendation has not been implemented but will be within a set timeframe as provided; or
- 3) the recommendation requires further analysis. The officer or agency head must define what additional study is needed. The Grand Jury expects a progress report within six months; or
- 4) the recommendation will not be implemented because it is not warranted or reasonable, with an explanation.

The Civil Grand Jury Report identified the following City Departments to submit responses (attached):

Mayor's Office, received August 22, 2014, submitted a consolidated response for:

- a. City Administrator
- b. City Controller
- c. Planning Department
- d. Building Inspection Department
- e. Department of Emergency Management
- f. Department of Environment
- g. Department of Public Works
- h. Port of San Francisco
- i. Public Utilities Commission
- j. San Francisco International Airport

(Received August 22, 2014, for Findings 1 through 12 and Recommendations 1a through 1d, 2a, 2b, 3 through 8, 9a through 9c, 10a, 10b, 11a through 11d, 12a, and 12b)

These departmental responses are being provided for your information, as received, and may not conform to the parameters stated in California Penal Code, Section 933.05 et seq. The Government Audit and Oversight Committee will consider the subject report, along with the responses, at an upcoming hearing and will prepare the Board's official response by Resolution for the full Board's consideration.

C:

Honorable Cynthia Ming-mei Lee, Presiding Judge  
Elena Schmid, Foreperson, 2013-2014 San Francisco  
Civil Grand Jury  
Antonio Guerra, Mayor's Office  
Roger Kim, Mayor's Office  
Naomi Kelly, City Administrator  
Ben Rosenfield, Controller  
Asja Steeves, Controller  
Jon Givner, Deputy City Attorney  
Rick Caldeira, Legislative Deputy  
Severin Campbell, Budget and Legislative Analyst  
Matt Jaime, Budget and Legislative Analyst  
John Rahaim, Planning Department  
AnMarie Rodgers, Planning Department

Tom Hui, Department of Building Inspection  
Carolyn Jayin, Department of Building Inspection  
Anne Kronenberg, Department of Emergency Management  
Deborah Raphael, Department of Environment  
Guillermo Rodriguez, Department of Environment  
Mohammad Nuru, Department of Public Works  
Fuad Sweiss, Department of Public Works  
Frank Lee, Department of Public Works  
Monique Moyer, Port of San Francisco  
Elaine Forbes, Port of San Francisco  
Aaron Starr, Planning Department  
Harlan, Kelly, Jr, Public Utilities Commission  
Juliet Ellis, Public Utilities Commission  
Cathy Widener, San Francisco International Airport



August 22, 2014

The Honorable Cynthia Ming-mei Lee  
Presiding Judge  
Superior Court of California, County of San Francisco  
400 McAllister Street  
San Francisco, CA 94102

Dear Judge Lee:

Pursuant to Penal Code sections 933 and 933.05, the following is the official City and County of San Francisco response to the 2013-2014 Civil Grand Jury report, *Rising Sea Levels... At Our Doorstep*.

Included is the consolidated reply of the Office of the Mayor and the following departments: City Planning, Building Inspection, Emergency Management, Environment, Office of the City Administrator, Office of the Controller, Port of San Francisco, Public Works, San Francisco International Airport, and San Francisco Public Utilities Commission.

**The City and County of San Francisco's response to the Civil Grand Jury's findings and recommendations are as follows:**

**Finding 1:**

**The City does not have a citywide comprehensive plan that addresses the rising sea level issue.**

*Agree.* The City has a draft comprehensive plan for addressing sea level rise for City assets. At the direction of the Mayor in the summer of 2013, a Sea Level Rise (SLR) Committee made up of representatives from seven City departments and two consulting firms, (Moffatt & Nichol and AECOM,) produced draft "Guidance for Incorporating Sea Level Rise Into Capital Planning in San Francisco: Assessing Vulnerability, Risk, and Adaptation." This draft Guidance was presented to the City Administrator, Department heads, and the Capital Planning Committee on May 12 and is currently undergoing review by City agencies. The draft Guidance includes findings on the state of the science, expected and possible sea level rise through 2100, and assessment of storm surge and wave action effecting water levels. It further provides a comprehensive approach for departments to follow to ensure City assets and capital improvement programs are resilient to the anticipated effects of sea level rise.

**Recommendation 1a:**

**The City should prepare and adopt a risk assessment in preparation for developing a comprehensive plan regarding the rising sea level issue.**

*Recommendation has not been implemented but is underway.* The draft Guidance referenced in the response to Finding 1 provides for comprehensive assessment of the vulnerability of City assets to sea level rise. In addition, it provides a framework that can be used in assessing risk associated with development along San Francisco's shoreline and in addressing that risk, thereby providing a road map for preparation of a risk assessment.



**Recommendation 1b:**

**The City should adopt a citywide comprehensive plan for adaptation to rising sea levels, especially along its shores and its floodplains, which should include a provision that the plan be reviewed and reassessed every five years. The plan should include the provision that construction projects approval should take into account the anticipated lifespan of each project and the risks faced as outlined in said plan. Special consideration should be given to those anticipated to survive for more than thirty years.**

*Recommendation has not been implemented but is underway.* The draft Guidance currently under City-wide review provides a framework for development of a comprehensive plan to address adaptation for City assets to the potential effects of sea level rise and states that the Guidance, the science behind SLR projections, and the approach outlined will need to be revisited periodically as new information becomes available. The Guidance requires consideration of asset life cycle in implementation. In addition, CEQA provides the Planning Department with authority to require that projects be designed to minimize and mitigate potential hazards related to sea level rise and takes into account the asset life cycle in its evaluation.

**Recommendation 1c:**

**The City should build infrastructure systems that are resilient and adaptable to rising sea levels. The City, through its planning and building departments, should require that any construction project vulnerable to future shoreline or floodplain flooding be designed to be resilient to sea level rise at the 2050 projection, e.g., 16 inches, if the construction is not expected to last longer than 2050. For construction intended to last longer than 2050, it is recommended that the City require that the project be designed to address sea level rise projections for the longer term.**

*Recommendation will not be implemented because it is not warranted or reasonable.* The City agrees with the statement that it should build infrastructure systems that are resilient and adaptable to rising sea levels. It disagrees, however, with some of the specifics in the recommendations that follow. Requiring any construction project be designed to be resilient to the existing 16 inch rise 2050 projection does not take into account other factors that should influence scenario selection, including exposure to storm surge or wave action, asset lifespan and location, and consequence of failure of a project. The Draft Guidance prepared by the Mayor's Sea Level Rise Committee described under Findings 1 above will address this issue.

Looking beyond 2050, while it is the case that assets with life cycles extending into the late 21<sup>st</sup> century must consider longer term SLR projections, it may be unwise – and expensive – to require *immediate* measures to adapt to wide-ranging, highly uncertain SLR projections further out in time. Consideration of adaptive management approaches, the adaptive capacity of assets, and revisiting of SLR science as the decades unfold are clear components of the draft Guidance that will provide the basis of City policy going forward.

Moreover, the Planning Department already evaluates whether proposed projects would expose people or structures to a significant risk of loss, injury or death due to flooding as a result of future sea level rise as part of the environmental review process required under the California Environmental Quality Act (CEQA). CEQA provides the City with an effective means to ensure that development in areas vulnerable to sea level rise is designed to address related flood hazards.

**Recommendation 1d:**

**The City departments that would necessarily be involved in adaptation to rising sea levels, such as**



**Department of Public Works, Public Utilities Commission, Municipal Transportation Agency, the Port, should coordinate their projects with each other and with utility companies, such as PG&E, Comcast, and AT&T, to minimize inconvenience to the public, and to businesses, and further to avoid repetition of efforts and inefficient use of funds, labor, and time.**

*Recommendation has been implemented.* Currently, City departments coordinate projects with each other and with various utility companies according to procedures established many years ago. In fact, under the lead of DPW various city departments and utility companies have recently invested in implementing an online mapping system that allow all members to view each other projects and facilitate coordination of all projects within the Right-of-Way.

**Finding 2:**

**The City's Planning Code has no provisions addressing the impacts associated with rising sea levels. Without appropriate provisions within the City's Planning Code, there are no effective means to insure sustainable development on land vulnerable to rising sea levels.**

*Disagree in part.* The City agrees with the statement that the Planning Code does not include provisions addressing impacts associate with sea level rise. However, the Planning Department evaluates whether proposed projects would expose people or structures to a significant risk of loss, injury or death due to flooding as a result of future sea level rise as part of the environmental review process required under the California Environmental Quality Act (CEQA). CEQA provides the City with an effective means to ensure that development in areas vulnerable to sea level rise is designed to address related flood hazards. As such, we disagree with the conclusion that without provisions in the Planning Code addressing sea level rise there are no effective means to insure sustainable development on land vulnerable to rising sea levels.

**Recommendation 2a:**

**The City should amend its Planning Code to include maps showing the areas in the City that are most at risk from the impacts of sea level rise. The Planning Code should be amended to prohibit development in said at-risk areas unless there is compliance with the provisions of the City's Building Code and the Port's Building Code (if applicable to the project) outlined in Recommendation 3 below. The amendment should include a provision that the amended sections of the Code regarding the impact of rising sea levels be reviewed and reassessed every five years.**

*The recommendation requires further analysis.* The SFPUC and Port have published maps depicting areas along San Francisco's bay and ocean shorelines that are potentially vulnerable to future flooding due to projected sea level rise through 2100. The Planning Department considers these maps in evaluating potential flood hazards for projects located in areas vulnerable to sea level rise under CEQA. In addition, the Federal Emergency Management Service is currently preparing a pilot study analyzing future coastal flood risks that account for sea-level rise as part of the California Coastal Analysis and Mapping Project Open Pacific Coast Study. The Planning Department will consider this study in evaluating sea level rise hazards for projects located in affected areas under CEQA. CEQA provides the Planning Department with sufficient authority to require projects to be designed to minimize and mitigate potential hazards related to sea level rise, and because maps of areas that are vulnerable to impacts from sea level rise have already been developed, amendments to the Planning Code to include such maps or to enforce flood resilient building standards for development in the affected areas may not be warranted. However, the City is currently evaluating whether to develop new policies addressing sea level rise. Such policies may include amendments to the Planning Code. As such, the recommended planning code amendments require further analysis.

**Recommendation 2b:**

**The Planning Code should be amended to discourage permanent development in at-risk areas where public safety cannot be protected regarding the impact of rising sea levels.**

*The recommendation requires further analysis.* CEQA provides the Planning Department with sufficient authority to require projects to be designed to minimize and mitigate potential hazards related to sea level rise. However, as stated above, the City is currently evaluating whether to develop new policies addressing sea level rise. Such policies may include amendments to the Planning Code. As such, the recommended planning code amendments require further analysis.

**Finding 3:**

**The City's Building Code and the Port's Building Code have no provisions addressing the impacts associated with rising sea levels. Without appropriate provisions within the City's Building Code and the Port's Building Code, there are no effective means to control construction methods that would insure a project's resistance to the impacts of rising sea levels.**

*Disagree in part.* The City agrees with the statement that the City's Building Code and the Port's Building Code do not include provisions addressing impacts associated with sea level rise. However, the Planning Department evaluates whether proposed projects would expose people or structures to a significant risk of loss, injury or death due to flooding as a result of future sea level rise as part of the environmental review process required under the California Environmental Quality Act (CEQA). CEQA provides the City with an effective means to ensure that development in areas vulnerable to sea level rise is designed to address related flood hazards. As such, we disagree with the conclusion that without provisions in the City's and Port's Building Codes addressing sea level rise there are no effective means to insure sustainable development on land vulnerable to rising sea levels.

**Recommendation 3:**

**The City's Building Code and the Port's Building Code should be amended to include: (1) provisions addressing the impacts associated with sea level rise, especially when combined with sudden storm surges and king tides, (2) construction methods that would ensure a project's resistance to and protection from the impacts of rising sea levels, especially when combined with sudden storm surges and king tides; (3) amendments written to protect the most vulnerable systems, including but not necessarily limited to, electrical, telecommunications, and fire protection systems; (4) a provision that the sections of the Codes regarding the impact of rising sea levels should be reviewed and reassessed every five years.**

*The recommendation requires further analysis.* Although CEQA provides the City with sufficient authority to require projects to be designed to minimize and mitigate potential hazards related to sea level rise, City departments are working with one another and with regional and state agencies to evaluate and develop consistent guidance and policies to address sea level rise. This includes researching adaptation and resiliency measures implemented by other municipalities, including building and planning code changes; and considering incorporating similar changes to the City's codes. The sea level rise projections will continue to evolve as new science and prediction methods become available. Therefore, any future implementation of new building code provisions will require specific, prescriptive changes that account for flexibility. Further analysis and coordination between the scientific community and affected agencies must be performed to develop consistent, effective, and practical policies, including possibly building or planning code changes, to address sea level rise.

**Finding 4:**

**BCDC has the final say on any permit within its jurisdiction.**

*Disagree in part.* BCDC does not have the final say on *any* permit within its jurisdiction. BCDC has jurisdiction over the land area lying between the Mean High Water Line of the Bay shoreline and a line drawn parallel to and 100 feet from the Bay shoreline. BCDC permits the following activities within its jurisdiction: 1) Placement of solid material, building or repairing docks, pile-supported or cantilevered structures, disposing of material or mooring of a vessel for a long period in San Francisco Bay or in certain tributaries that flow into the Bay; 2) Dredging or extracting material from the Bay bottom; 3) Substantially changing the use of any structure or area; 4) Constructing, remodeling or repairing a structure; or 5) Subdividing property or grading land.

**Recommendation 4:**

**The City should consult with BCDC at the onset of development plans within BCDC's jurisdiction to ensure equitable and efficient results without necessitating surplus expenditures and time.**

*The recommendation has been implemented.* The City consults with BCDC throughout the planning and environmental review processes on projects located within BCDC's regulatory jurisdiction.

**Finding 5:**

**A comprehensive risk assessment of Ocean Beach, with mitigation recommendations made to the City regarding rising sea levels, was completed by SPUR, with City, State of California and U.S Corps of Engineers involvement, resulting in the Ocean Beach Master Plan, dated May, 2012.**

*Agree.*

**Recommendation 5:**

**The City should consider implementation of recommendations that are most pertinent to the City set forth in the Ocean Beach Master Plan, May 2012.**

*The recommendation has been implemented.* The City has considered implementation of the most pertinent recommendations set forth in the Ocean Beach Master Plan. SFPUC, MTA, DPW, and the Planning Department are actively working with SPUR, the California Coastal Commission other state and federal agencies and community stakeholders to implement the Ocean Beach Master Plan recommendations concerning coastal erosion hazards at Ocean Beach between Sloat and Skyline Boulevards.

**Finding 6:**

**A number of measures can be taken now by the Public Utilities Commission to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.**

*Agree.*

**Recommendation 6:**

**The City should build, through the Public Utilities Commission, larger sewer pumps, sewer pipes, and sewer transport storage boxes surrounding the city in the near future to accommodate king tides, sudden surges, and sea level rise.**

*Recommendation has not been implemented but is underway.* The SFPUC levels of service incorporate climate change as a requirement for all projects implemented through the \$6.9B Sewer System Improvement Program (SSIP). A comprehensive Climate Change Adaptation Plan is currently being developed as part of the SSIP. Within this planning effort the SFPUC has conducted research of industry best science, has developed Sea Level Rise inundation maps for San Francisco, and is researching what climate science is telling us about future storm intensity. These factors, with conditions unique to the Bayside and Westside, including the impact of King Tides, will inform the planning and design decisions for critical sewer assets.

**Finding 7:**

**Salt water backflows have already infiltrated the City's wastewater treatment plants, both in the Bayside and Oceanside plants. Salt water kills organisms in the system that clean wastewater and damages wastewater treatment equipment. As a result of sea level rise, bay and ocean saltwater backflow into the wastewater treatment systems will dramatically increase, causing serious problems for the wastewater treatment processes.**

*Agree.*

**Recommendation 7:**

**The City should, as an interim measure, retrofit outfalls in the wastewater treatment system with backflow prevention devices to prevent salt water intrusion into the collection systems resulting from high tides, sudden surges, and rising sea level. Local pump stations should also be installed to raise the flow to sewer discharge structures with higher elevations.**

*Recommendation has been partially implemented and is ongoing.* The projects associated with the SFPUC's SSIP include the installation of new backflow prevention devices on Combined Sewage Discharge outfalls on the Bayside that are impacted by high tides, sudden surges and rising sea level. SFPUC is presently piloting an installed device to serve as backflow preventer at one location and continuing design analysis to address all locations. Saltwater backflows do not occur at the Oceanside Plant and are not expected to be an issue in the future. Regarding pump stations, the SFPUC will monitor actual sea level rise and identify adaptation strategies as-needed.

**Finding 8:**

**The Southeast Wastewater Treatment Plant (Bayside), built in 1952, is aging and needs restoration.**

*Agree.*

**Recommendation 8:**

**The City should retrofit the Southeast Wastewater Treatment Plant to accommodate future king tides, sudden surges, and sea level rise.**

*Recommendation has not been implemented but is underway.* Over the next 20 years, through proposed projects associated with the SSIP, the SFPUC plans to implement over \$2.5 billion related to improvements to the Southeast Wastewater Treatment Plant. These projects are all informed by predicted sea level rise elevations including king tides and surges.

**Finding 9:**

**The San Francisco Airport (SFO) is located slightly above sea level and therefore vulnerable to flooding from**

**heavy rainfall, king tides, and rising sea levels. A number of measures can be taken now by SFO to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.**

*Agree in part and disagree in part.* SFO agrees that it is minimally vulnerable to flooding from future heavy rainfall and king tides. Currently, the Airport has a system of seawalls which protects Airport property from daily tidal fluctuations, including the highest tides of the year called King Tides; and seawalls also protect the property against regular storm events. There are some known minor deficiencies in the seawall system that we are addressing which could pose some risk during extreme storm events. In addition to the seawalls, the Airport has an internal drainage and pump station system to evacuate any rain or ground water which accumulates on the Airfield. The entire airfield operational system of runways, taxiways, lighting systems and navigational aids is constructed with the understanding of operations occurring outdoors during inclement and wet weather. Therefore, SFO is not unduly vulnerable to today's heavy rainfalls and king tides. SFO is currently taking measures to review and develop a plan to mitigate any outstanding deficiencies in the seawall system related to long-term sea level rise.

**Recommendation 9a:**

**SFO should increase the height of its existing seawalls along its runways to accommodate rising sea levels.**

*The recommendation has not been implemented but will be within a set timeframe as provided.* A shoreline protection feasibility study is being conducted by Moffatt and Nichol that will provide recommendations to SFO on immediate improvements needed to protect SFO from combined impacts of a 100 year flood and sea level rise. Immediate implementation including environmental review and permitting, design and construction will take place in the next 6-8 years to address a 100 year flood event. SFO is also planning on long term improvements to the entire seawall system to address sea level rise. Long term strategies, with implementation 10 to 15 years in duration, include upgrading of drainage pump stations to handle larger storm events and building seawalls with robust foundations that will allow future extensions to accommodate additional sea level rise.

**Recommendation 9b:**

**SFO should continue to improve measures to eliminate standing water on its runways to ensure they remain sufficiently above sea level.**

*The recommendation will not be implemented because it is not warranted.* SFO does not have an ongoing problem with standing water on our taxiways or runways. Occasionally, we have had temporary small pockets of standing water on our in-field or turf areas, but it only takes a short time for the pump stations to catch up with the rainfall and drain these locations. Over the last ten years, SFO has spent \$26.4 million on pump station and storm drainage improvements, including \$18.8 million spent on our on-going Runway Safety Area program. As part of our on-going capital improvement plan, SFO is planning on investing \$22 million in storm drainage and pump station improvements over the next 5 years. SFO believes the combination of upgrading our storm drain pump stations and fortifying the perimeter seawalls is the best way to protect the runways from sea level rise.

**Recommendation 9c:**

**The northern section of SFO should be analyzed by SFO engineers to determine how best to protect its wastewater treatment plant and other infrastructure in that section from sea level rise (e.g. construction of sea walls).**

*The recommendation is being implemented.* SFO engineers are analyzing the best ways to protect the north field area, including the wastewater treatment plant and other infrastructure, as part of the feasibility study mentioned above.

**Finding 10:**

**The Port of San Francisco is built on landfill, and its seawall lies beneath many buildings along the bay. Many piers are in poor condition. A number of measures can be taken now by the Port to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.**

*Agree.*

**Recommendation 10a:**

**The Port should begin planning and create a timeline for construction of flood control barriers in the low spots along the edges of the piers to prevent waterfront flooding associated with sea level rise.**

*The recommendation is being implemented.* The Port is currently scoping the level of effort for earthquake retrofit and flood protection improvements to the San Francisco seawall. It is anticipated between 2014 and 2017 an earthquake vulnerability assessment as well as retrofit design concepts will be developed and funding secured. Between 2017 and 2030, individual sections of the retrofit will be designed and constructed.

**Recommendation 10b:**

**To assist with the cost of protective measures to address sea level rise, the Port Commission should establish a reserve fund as part of its leasing policy whereby a surcharge is assessed as part of the rent or as a separate line item in each lease.**

*The recommendation will not be implemented because it is not warranted.* The Port is currently seeking alternate funding sources from federal and state grant programs as well as including consideration of sea level rise in projects identified in the capital planning process. The U.S. Army Corps of Engineers is evaluating the San Francisco Seawall to determine if there is a federal interest in retrofitting the seawall, which could lead to federal matching funds through the federal Water Resources Development Act. By resolution 0125-13, the Board of Supervisors adopted "Guidelines for the Establishment and Use of an Infrastructure Financing District with Project Areas on Land under the Jurisdiction of the San Francisco Port Commission" which state:

"Any portion of the City's share of tax increment that the City allocated to the waterfront district from the project area but that is not required to fund eligible project-specific public facilities will be re-allocated to the City's General Fund or to improvements to the City's seawall and other measures to protect the City against sea level rise or other foreseeable risks to the City's waterfront."

Infrastructure Financing District (IFD) law generally authorizes certain classes of public facilities to be financed through IFDs. The Legislature has broadened the types of authorized public facilities for waterfront districts to include (1) structural repairs and improvements to piers, seawalls, and wharves, and installation of piles, (2) shoreline restoration, and (3) improvements, which may be publicly owned, to protect against potential sea level rise. The Port is in the process of planning and implementing IFDs on Port property at Seawall Lot 337 in Mission Bay and at Pier 70, and will likely pursue legislative authorization to form IFDs in other areas of the waterfront.

**Finding 11:**

**The City has not set aside funds for the cost of adaptation to sea level rise.**

*Agree.* While the City has not specifically set aside funds for the cost of adaptation to sea level rise, that does not restrict the ability of the City to spend funds in the future. On an annual basis, the Mayor and the Board of Supervisors have the ability to allocate funds towards sea level rise if they wish to do so. It should be noted that the City has been very strategic in planning and funding capital improvement projects. The Capital Planning Program regularly develops a ten-year capital expenditure plan for city-owned facilities and infrastructure and the draft Guidance referred to above will address SLR in the development of this Capital Plan. The Capital Plan allows the City to take a long-range view of all needed infrastructure improvements and prioritize funding for the most critical projects. The Mayor and the Board of Supervisors allocate funding for the City's capital plan on an annual basis.

**Recommendation 11a:**

**The City should start a reserve fund for adaptation for rising sea levels, a portion of which could be obtained from a surcharge on development planned for areas vulnerable to said eventuality.**

*Recommendation will not be implemented because it is not warranted.* A reserve fund for sea level rise adaptation is unnecessary since the Mayor and the Board of Supervisors allocate capital funds on an annual basis. If policymakers did want to set aside funds, a reserve fund is not the only way of reserving City resources. Depending on the policy objective, a project, baseline, or Charter requirement could be more appropriate. However, any creation of a new reserve would need to be balanced against the loss of allocation flexibility for both the Mayor and the Board of Supervisors. Based on the language of the recommendation, it is assumed that the Jury is asking for a surcharge on all development, public or private. It should be noted that the Sea Level Rise Committee is in the process of creating guidelines for public development. A surcharge on private development has not been analyzed.

**Recommendation 11b:**

**The City should assess costs of both implementation of adaptation strategies and potential losses from failing to do so.**

*Recommendation has been partially implemented.* As part of the 2014 San Francisco Hazard Mitigation Plan, the City identified both natural and human-made hazards facing the City. The document formulated a plan to reduce losses from those hazards and established a process for implementing the plan. However, the 2014 HMP is not a comprehensive sea level rise plan, nor was it intended to be. It should be noted that the 2014 HMP includes the cost of several mitigation strategies either directly or closely related to sea level rise. The following are all high-priority mitigation actions that the City intends to implement during the five-year lifespan of the 2014 HMP, assuming funding availability.

- Implement Phase I of the SFPUC's Sewer System Improvement Program (SSIP), including stormwater management, flood control, and green infrastructure projects. Funding source: bond financing: \$75,000,000 approved over the next five years.
- Continue the Great Highway Long-Term Stabilization program to respond to continuing beach erosion impacts along the Great Highway at Ocean Beach south of Sloat Boulevard. Estimated project timeframe: 4-5 years. Potential funding source: SFMTA and Federal Highway Administration (FHWA). Estimated cost: \$3,000,000 - \$5,000,000.

- Upgrade segments of the San Francisco International Airport (SFO) shoreline protection system. Address gaps in the system that could allow the entry of floodwater; and address openings for stormwater drainage that do not have closure devices, which could allow the entry of floodwaters. Upgrade seawalls to address sea level rise. Estimated project timeframe: 5 years. Potential funding source: Capital Planning/Federal Government. Estimated cost: \$60,000,000.
- Upgrade storm drainage outfall pump stations 1A, 1B, and 1C to protect the SFO airfield from 100-year floods and sea level rise. Estimated project timeframe: 1-2 years. Potential funding source: TBD. Estimated cost: \$3,500,000.

The 2014 HMP does include a brief hazard profile for sea level rise as part of the HMP's climate change section, but does not contain an analysis of the city's vulnerability to sea level rise. This is because the 2014 HMP was completed before the Sea Level Rise Committee chose sea level rise maps for the City and agreed on the level of sea level rise they believe will impact the City. Future versions of the HMP will incorporate the more recent work of the Sea Level Rise Committee by updating the sea level rise hazard profile and by including a vulnerability analysis for sea level rise.

**Recommendation 11c:**

**The City should explore applying for grants offered by Congress' Pre-Disaster Mitigation Program. Receipt of grants is based upon risk assessments indicating that potential savings would exceed the cost of implementation. The City should explore available matching funds from the Army Corps of Engineers and other federal sources.**

***Recommendation implemented.*** The City has taken the necessary steps to qualify for and receive federal funding. Having a FEMA approved HMP makes San Francisco eligible for federal hazard and flood mitigation grant funding before and after a Presidentially-declared disaster. Additionally, the Port has explored various opportunities with the US Army Corps of Engineers (USACE). In December, 2012, the Port has asked the USACE to conduct a study under the River and Harbor Act to determine feasibility of federally-assisted improvements to the San Francisco seawall as a storm and flood protection structure. In May 2014, the Corps kicked off a Federal Interest Determination for a project under the Continuing Authorities Program (CAP) Section 103 Shoreline Protection. This funding source is for smaller projects that result in implementation, not study. The federal spending limit is \$3 million and the cost share is 65% Federal and 35% local.

In 2010, the Port asked USACE for seawall assistance through the Water Resources and Development Act (WRDA) for maintenance and repair, liquefaction hazard mitigation, and flood protection. While the request has yet to find any success, the Port continues to actively pursue this funding option.

**Recommendation 11d:**

**The City should request an insurance premium estimate from FEMA and then compare that estimate with the funding it could acquire from FEMA for mitigation and adaptation against future flooding.**

***Recommendation will be implemented in the future.*** Staff is currently pursuing all available opportunities to work with FEMA on sea level rise mitigation measures. A FEMA sea level rise workshop specifically for the City and County of San Francisco will be conducted this September.



**Finding 12:**

**Rising sea levels is a regional problem. What one community does to protect its shorelines may have a negative impact on a neighboring community.**

Response

*Agree.*

**Recommendation 12a:**

**The City should, through its Mayor and Board of Supervisors, coordinate its efforts with other cities and organizations in the bay area by establishing a working group to address the impact of rising sea levels. This has been successfully accomplished by four counties on the east coast of Florida, as an example.**

*The recommendation has been partially implemented.* The City's Sea Level Rise Committee reached out to a number of other jurisdictions, including those in the Bay Area, to assess SLR strategies being pursued in other locations. Committee members are presenting the City's draft Guidance in a number of regional forums and are exploring regional cooperation and collaboration opportunities. SFO in particular has focused on developing regional collaboration and SFO has reached out to stakeholders and neighboring communities to begin a dialog on adaptation strategies. SFO jointly applied with San Mateo County for a climate ready grant from the State Coastal Conservancy and successfully won the grant to extend its current feasibility study to include San Bruno and Colma Creeks which empty into the bay immediately north of SFO. A working group including stakeholders from SFO, San Mateo County, BCDC, California State Coastal Conservancy, South San Francisco, San Bruno, Caltrans and SamTrans will begin meeting in August 2014 to address impacts of sea level rise on the peninsula.

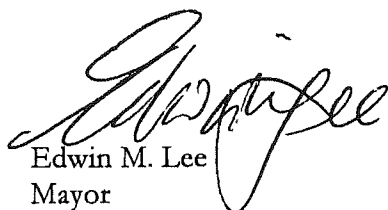
**Recommendation 12b:**

**That the City create a local working group of community citizens and stakeholders to feed into the regional group.**

*The recommendation requires further analysis.* We agree that community and stakeholder involvement in the process of adapting to sea level rise is essential. City agencies to date have spent the bulk of their time focused on technical issues such as what we know about sea level rise science, the state of the art in planning infrastructure resilience, and other technical subjects. As we get up to speed, we will turn our attention to greater involvement from communities, the private sector, and stakeholders as adaptation planning moving forward. The exact nature the outreach and involvement has not yet been determined.

Thank you again for the opportunity to comment on this Civil Grand Jury report.

Sincerely,



Edwin M. Lee  
Mayor



Naomi Kelly  
City Administrator



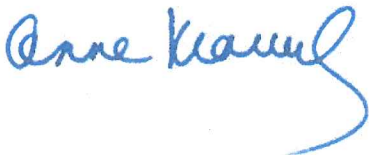
Monique Zmuda  
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Controller



Tom C. Hui  
Director  
Building Inspection



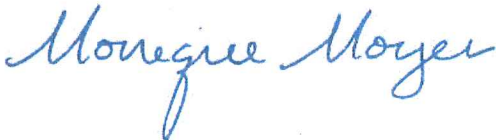
Gil Kelley  
Director of Citywide Planning  
City Planning



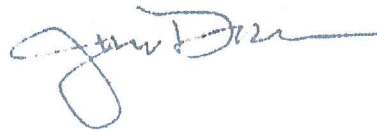
Anne Kronenberg  
Executive Director  
Emergency Management



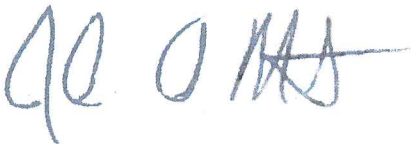
Deborah Raphael  
Director  
Environment



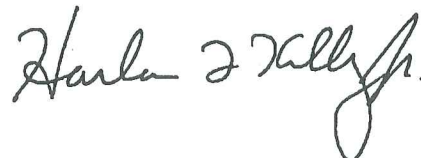
Monique Moyer  
Executive Director  
Port of San Francisco



Julia Dawson  
Deputy Director  
Financial Management & Administration  
Public Works



John L. Martin  
Airport Director  
San Francisco International Airport



Harlan L. Kelly Jr.  
General Manager  
San Francisco Public Utilities Commission.

BOARD of SUPERVISORS



City Hall  
1 Dr. Carlton B. Goodlett Place, Room 244  
San Francisco 94102-4689  
Tel. No. 554-5184  
Fax No. 554-5163  
TDD/TTY No. 554-5227

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## MEMORANDUM

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Date: June 24, 2014  
To: Honorable Members, Board of Supervisors  
From: *ACE* Angela Calvillo, Clerk of the Board  
Subject: 2013-2014 CIVIL GRAND JURY REPORT

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We are in receipt of the San Francisco Civil Grand Jury report released Wednesday, June 25, 2014, entitled: **Rising Sea Levels...At Our Doorstep** (attached).

Pursuant to California Penal Code, Sections 933 and 933.05, the Board must:

1. Respond to the report within 90 days of receipt, or no later than September 23, 2014.
2. For each finding:
  - agree with the finding or
  - disagree with the finding, wholly or partially, and explain why.
3. For each recommendation indicate:
  - that the recommendation has been implemented and a summary of how it was implemented;
  - that the recommendation has not been, but will be, implemented in the future, with a timeframe for implementation;
  - that the recommendation requires further analysis, with an explanation of the scope of the analysis and timeframe of no more than six months; or
  - that the recommendation will not be implemented because it is not warranted or reasonable, with an explanation.

Pursuant to San Francisco Administrative Code, Section 2.10, in coordination with the Committee Chair, the Clerk will schedule a public hearing before the Government Audit and Oversight Committee to allow the Board the necessary time to review and formally respond to the findings and recommendations.

The Budget and Legislative Analyst will prepare a resolution, outlining the findings and recommendations for the Committee's consideration, to be heard at the same time as the hearing on the report.

#### Attachment

- c: Honorable Cynthia Ming-mei Lee, Presiding Judge (w/o attachment)
- Mayor's Office
- Ben Rosenfield, Controller
- Jon Givner, Deputy City Attorney (w/o attachment)
- Rick Caldeira, Legislative Deputy Director
- Debra Newman, Office of the Budget and Legislative Analyst
- Severin Campbell, Office of the Budget and Legislative Analyst
- Asja Steeves, Civil Grand Jury Coordinator
- Elena Schmid, Foreperson, San Francisco Civil Grand Jury (w/o attachment)



# Rising Sea Levels



**...At Our Doorstep**

**June 2014**



**City and County of San Francisco  
Civil Grand Jury 2013-2014**

City Hall  
1 Dr. Carlton B. Goodlett Pl, San Francisco, CA 94102  
Phone 415-554-6630

MEMBERS OF THE 2013-2014  
CIVIL GRAND JURY  
CITY AND COUNTY OF SAN FRANCISCO

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Claudia O'Callaghan  
Ernestine Patterson  
Michael Skahill

## THE CIVIL GRAND JURY

The Civil Grand Jury is a government oversight panel of volunteers who serve for one year. It makes findings and recommendations resulting from its investigations.

Reports of the Civil Grand Jury do not identify individuals by name.  
Disclosure of information about individuals interviewed by the jury is prohibited.  
California Penal Code, Section 929

## STATE LAW REQUIREMENT California Penal Code, section 933.05

Each published report includes a list of those public entities that are required to respond to the Presiding Judge of the Superior Court within 60- to 90 days, as specified.

A copy must be sent to the Board of Supervisors. All responses are made available to the public.

For each finding the response must:

- 1) agree with the finding, or
- 2) disagree with it, wholly or partially, and explain why.

As to each recommendation the responding party must report that:

- 1) the recommendation has been implemented, with a summary explanation; or
- 2) the recommendation has not been implemented but will be within a set timeframe as provided; or
- 3) the recommendation requires further analysis. The officer or agency head must define what additional study is needed. The Grand Jury expects a progress report within six months; or
- 4) the recommendation will not be implemented because it is not warranted or reasonable, with an explanation.

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## ISSUE

Rising seas levels: How and where will rising sea levels most likely affect the City of San Francisco and what is the City doing to address the issue.

## SUMMARY

With each passing year the ocean and bay along the shores of San Francisco are continuing to rise. San Francisco, like other coastal cities around the world, faces a major flooding risk as a result of sea level rise. Because of global climate change, sea level rise is happening at an accelerated rate. The estimate for the San Francisco Bay area adopted by the State of California Coastal Commission, the San Francisco Bay Conservation and Development Commission (BCDC), and others is a gradual rise to 16 inches by 2050 and 55 inches by 2100.

Unlike an earthquake, which happens suddenly and unexpectedly, sea level rise occurs gradually over time. However, the flood damage that can result can be just as damaging, especially when combined with storm surges, rainfall, high winds, high tides, and increased earthquake-induced liquefaction in areas of shoreline erosion.

Is San Francisco aware of our future in this regard? Yes. Every department the Jury interviewed indicated they were keenly aware of the rising sea level threat.

Are projects in vulnerable areas, such as the Port or the Mission Bay flood zone, considering rising seas in their building or restoration plans? Treasure Island, yes. Pier 70 project, yes, the Exploratorium at the Port, no.

Is Ocean Beach proceeding with mitigation suggestions by an in-depth study? Not yet.

Can anyone buying property today in a potential flood zone expect to see property values reduced by the end of a 30-year mortgage?

We are currently at the cusp of the future in terms of sustainability. It took the Loma Prieta earthquake to awaken San Francisco to the necessity of intensified seismic retrofitting. Let's not wait for a major flooding disaster, like Hurricane Sandy on the east coast, to start addressing the serious threat of rising sea levels. The threat is real; the time to act is now.

For a start, San Francisco should, among other things, adopt a citywide comprehensive plan for adaptation to rising sea levels and amend the City's Planning and Building Codes to include provisions addressing the impacts of sea level rise.

Awareness is the beginning. Consistent plans, integrated into City policy, are vital. The following is the Jury's look into San Francisco's present and future regarding the inevitable rise of our seas.

## BACKGROUND

The Gold Rush left San Francisco Bay one-third its original size. The remaining two-thirds of the bay was filled to increase its height to just above sea level. This fill now supports our port buildings, piers, and residences (see Appendix B).

Underground streams flow through a large area of the City, evidenced by their flooding above ground during heavy rainstorms. Mission Bay, a recognized flood plain, is currently a heavily developed area, with several future projects under consideration.

Sea level rise has become a serious concern around the world, especially in coastal cities like San Francisco, New York, Boston, Sydney, London, Venice, Seattle, and Los Angeles, and it appears to be happening at an accelerated rate. Climate scientists attribute the acceleration to a number of factors, including thermal expansion and the meltdown of glaciers and the Greenland and West Antarctica ice sheets, all apparently caused by global warming. Higher sea levels can result in higher, stronger storm surges that can have a severe impact on coastal areas, including erosion, flooding, contamination of water sources, and damage to wastewater treatment plants.<sup>1</sup>

Accordingly, the Jury decided to investigate how and in what areas the City of San Francisco will most likely be affected by rising sea levels and what the City is doing to address the issue. In particular, our investigation focused on three inquiries: (1) whether the City is addressing the issue; (2) if so, what the City is doing now to address the issue; and (3) what the City should be doing now and in the near future to address the issue.

The Jury's concern for the future of San Francisco has prompted us to engage in this investigation. Much has been discovered to be commended and much to recommend.

## DISCUSSION

Rising sea levels will be a dramatic and significant consequence of climate change in California. A tidal gauge by the Golden Gate Bridge has been measuring sea levels over the past century and indicates a rise of nearly 8 inches over that time. It will continue to rise as a result of thermal expansion of the oceans and an increase in ocean volume as land ice melts and runs off into the ocean. If development continues in areas at risk, all estimates of personal and property loss will rise. There are numerous reports on rising sea levels produced by scientists, governmental entities, and organizations on an international, national, state, and local level. These reports reiterate the science and the recommendations for individual communities. The following represent a composite of that information.

The Third National Climate Assessment report was released in May 2014. The report states,

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<sup>1</sup>See Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., 2014: *Climate Change Impacts in the United States: the Third National Climate Assessment* U.S. Global Change Research Program, 841 pp.doi:10.7930/JOZ31WJ2, Key Message 10: Sea Level rise, page 44; also see discussion in *National Geographic*, Rising Seas issue in its entirety, 9/13 and National Geographic article on sea level rise at <http://ocean.nationalgeographic.com/ocean/critical-issues-sea-level-rise/> and Union of Concerned Scientists article on sea level rise at [http://www.ucsusa.org/global\\_warming/science\\_and\\_impacts/impacts/causes-of-sea-level-rise.html](http://www.ucsusa.org/global_warming/science_and_impacts/impacts/causes-of-sea-level-rise.html)

“Nearly 5 million people in the U.S. live within 4 feet of the local high-tide level (also known as mean higher high water). In the next several decades, storm surges and high tides could combine with sea level rise and land subsidence to further increase flooding in many of these regions.”<sup>2</sup>

According to John Englander, oceanographer, consultant, author of *High Tide on Main Street*, and founder of Sea Level Institute, “[a]s sea level rises, the shoreline will move far inland, since the average global shoreline movement is estimated at more than 300 feet for each foot of vertical change in sea level.”<sup>33</sup>

According to the City’s Department of Emergency Management report, *San Francisco Hazard Mitigation Plan, December, 2008*<sup>4</sup> the following scenario will ensue: The rise of sea levels will affect the shoreline areas of the City, including Ocean Beach, the Marina, The Embarcadero, and the entire bayside edge, as well as parts of Treasure Island and flood plains; flooding from sea level rise will likely damage buildings and roads in these areas; salt water intrusion will likely cause damage to infrastructure, such as pipes and foundations; coastal flooding also presents a risk to major transportation infrastructure, especially at the Port of San Francisco and San Francisco International Airport (SFO).

A study done by the Pacific Institute concludes that no matter what policies are implemented in the future, sea level rise will inevitably change the character of San Francisco Bay. This study recommends that future development and protection be governed by sustainability. Sustainability means “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>5</sup>

The California Coastal Commission released its *Draft Sea-Level Rise Policy Guidance* in October 2013, which reports:

- The State is using National Research Council numbers of potential rise, which are: 1.5” to 12” by 2030, 4.5” to 24” by 2050, and 16.5” to 66” by 2100.
- The State will require the use of those measurements in planning.
- Coastal Development Permits (CDP) will be necessary for future development. If no time frame is provided in the application for a CDP, it will be considered to have a 75 to 100 year minimum project life.
- The CDP will include a site-specific analysis of how rising sea levels may constrain the project site.
- The Local Coastal Program (LCP) should require new development in potentially hazardous locations to include a waiver of the property owners’ right to shoreline protection or State assistance in the future.
- The report recommends maximizing protection of public access, recreation, and sensitive coastal resources (Coastal Act Chapter 3, Section 30235)

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<sup>2</sup> Melillo, Jerry M., Terese (T.C.) Richmond, and Gary W. Yohe, Eds., 2014; *Climate Change Impacts in the United States: the Third National Climate Assessment*, U. S. Global Change Research Program, 841 pp. doi: 10.7930/JOZ31WJ2, Key Message 10: Sea Level Rise, page 44

<sup>3</sup> John Englander’s blog, *Sea Level Rise is Just Four Points*, 10/31/13

<sup>4</sup> An assessment of risks posed by natural and human-caused hazards and strategies for mitigation of those risks

<sup>5</sup> See Heberger, Matthew, Heather Cooley, Eli Moore, Pablo Herrera (Pacific Institute) 2012, *The Impacts of Sea Level Rise on the San Francisco Bay*, California Energy Commission Publication No. CEC=500-2012-014

-The LCP should include an updated inventory and maps of all land uses, clearly showing areas vulnerable to sea level rise.

*The Ocean Beach Master Plan of May, 2012* is the combined effort of SPUR (San Francisco Planning and Urban Research Association) and its consultants, and involves the City of San Francisco, the State of California, the Army Corps of Engineers, and the National Park Service. It states: "Ocean Beach is 3.5 miles of beach and rugged coast from Cliff House to Fort Funston. For over 100 years, the ocean has been pushed seaward 200 feet from its natural equilibrium by roadways and development. There currently exists 10,000 feet of coastal armory (seawalls and boulders). Yet the storms of 2009-2010 caused its bluffs to recede 40 feet." The plan provides that rather than staying in a reactionary mode, the time has come for the City to begin to put into place recommendations set forth in this plan, including, in part: (1) roadway reconfiguration near the zoo and at the south end of Ocean Beach; (2) reinforcement of the Lake Merced tunnel to control wastewater; (3) creation of a natural tidelands at the south end of Ocean Beach. Some work based on the plan's recommendations has already been put in place by PUC, DPW, and the Golden Gate National Recreation Area (GGNRA.) The Ocean Beach Master Plan does not have the force of law or policy. Nevertheless it provides a compelling case for enacting a long-term policy framework for Ocean Beach.

Bay Conservation and Development Commission (BCDC), formed to oversee bay development, dredging, and fill, under the State Public Trust Doctrine, has jurisdiction over the open water and marshes of greater San Francisco Bay, portions of most creeks, rivers, and other tributaries that flow into the bay, and 100 feet landward of the mean high tide line. BCDC's jurisdiction, however, is not stationary or fixed geographically, and it will change with an encroaching shoreline due to sea level rise. Since the law confers to BCDC jurisdiction over all areas that are subject to tidal action to mean high tide and areas within 100 feet landward of the mean high tide line, BCDC's jurisdiction will necessarily extend landward as sea level rises. Currently, BCDC permits are presented for approval one at a time, which does not allow for the addressing of cumulative impact.

In October 2011, BCDC issued a report entitled, *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline*. This report addresses the potential viability of the Association of Bay Area Governments (ABAG) as a regional source of planning. ABAG includes not only BCDC, but the Metropolitan Transportation Commission, the Joint Policy Committee, and the Bay Area Air Quality Management District. According to this BCDC report, indirect effects of sea level rise are its salinity intrusion into groundwater and raising the water table along the shoreline and underground streams. An increased water table increases the risk of flooding by limiting the amount of precipitation that can infiltrate the ground. Also, a higher water table increases the risk of soil liquefaction during an earthquake (Holzer 2006)<sup>6</sup>.

Further, the report advises governments to select appropriate responses for a specific site, prioritize them, and implement them over time. Considering limited resources, planning can be mainstreamed into existing planning efforts (Luers, 2007)<sup>7</sup>. Plans can be incorporated into routine repairs and maintenance projects without incurring additional costs. One suggestion involves clustered development, which would allow development in one area of a parcel. Under

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<sup>6</sup> Holzer T., et al 2006, "Predicted Liquefaction of East Bay Fills, etc., see Bibliography

<sup>7</sup> Luers, A.L., et al. "Our changing Climate", etc., see Bibliography

this strategy, development could be allowed in flood zones, but strategically located back from the shoreline or flood zone to provide space for that shoreline to move. The report also includes the reminder that the cost of modifying structures in their design stages is considerably less than the costs of reconstruction and flood damage.

BCDC has a Rising Sea Levels working group of eight BCDC commissioners who met in July 2013 with Chevron, Union Pacific, Kaiser, PG&E, and SFO. In August 2013, they met with BART, Capitol Corridor Rail Service, East Bay Municipal Utility District (EBMUD), and the Port of Oakland. In October 2013, the group met with Bay Area Council, Bay Planning Coalition, Silicon Valley Leadership Group, East Bay Economic Development Alliance, and San Francisco Chamber of Commerce. They will be meeting next with the insurance industry. These meetings concern regional strategy for resilient shorelines.

The Jury reviewed numerous public documents that address rising sea levels, issued by numerous City departments, including the Port, the Public Utilities Commission, the San Francisco Airport, and the Department of Environment, also known as SF Environment. The Jury talked to these agencies regarding rising sea levels and how they believed it would impact the City and what they were doing to adapt. All of these agencies agreed that rising sea levels is a real and serious threat that the City needs to address. In fact, an informal committee called, “SF Adapt”, was recently formed with a subcommittee dedicated to addressing the rising sea levels issue. The full committee includes a representative from each of the following City agencies: the Port, the Public Utilities Commission, the San Francisco Airport, the Department of Environment, the Planning Department, the Recreation and Park Department, the Office of the City Administrator, Municipal Transportation Agency (MTA), and the Department of Public Works (DPW).

The Jury observed, however, that although there is no question this issue exists, the City has not yet produced a comprehensive plan for adaptation to rising sea levels.

BCDC estimates that the sea level of San Francisco Bay will rise 16 inches by 2050 and 55 inches by 2100 (see Appendix A for a list of various sea level rise predictions). Flood damage resulting from rising sea levels can be especially severe when combined with storm surges and high tides. Neither the City’s Planning Code nor the City’s Building Inspection Code contains any provisions addressing BCDC’s sea level rise projections. Neither code insists that any construction project vulnerable to future shoreline flooding be designed to be resilient to at least the 2050 sea level rise projection. Nor do they provide a plan to address long-term rising sea level issues for construction projects intended to last beyond 2050. For example, rising sea levels was not taken into consideration for the Port’s renovation of the Pier 1 building or the Ferry Building or the recently completed Exploratorium construction. However, some proposed projects in the City do take rising sea levels into consideration in their design plans (see for example, the Treasure Island development and the Pier 70 construction project discussed below under Discussion of Specific Areas).

A further example is the design process for the Port of Redwood City. Since their risk assessment revealed that sea level rise would be 1.53 feet by 2060 and there would be a 100-year flood level of +11.2 feet MLLW<sup>8</sup> by 2060, it was decided to design adaptation measures for 12.7

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<sup>8</sup> MLLW stands for mean low, low water:, which is the average of the lower of 2 low tides over a certain period of time. There are 2 low tides and 2 high tides daily.

feet MLLW by 2060.

## DISCUSSION OF SPECIFIC AREAS

### City Wastewater Plants

San Francisco has a combined sewer system that collects and treats both stormwater and wastewater effluent in the same system of sewer pipes. The system consists of large below-ground transport structures throughout the city that pump the sewage to wastewater treatment plants for treatment and eventual discharge into the bay and ocean. The City has three wastewater treatment plants: the Southeast Wastewater Treatment Plant in the Bayview district, which was built in 1952 and treats 80% of the City's wastewater flow; the Oceanside Treatment Plant on the Great Highway near the San Francisco Zoo, which was built in 1993 and treats 20% of the City's wastewater; and the North Point Weather Facility on Bay Street and The Embarcadero, which was built in 1951 and is only operated during wet weather to handle up to 150 million gallons per day of stormwater.

These plants are particularly vulnerable to the effects of rising sea levels, as bay and ocean salt water will eventually flow into the wastewater collection systems, especially at high tide, thereby increasing the volume of wastewater requiring treatment and possibly causing flooding. Also, salt water intrusion kills the organisms that clean the wastewater and deteriorates the infrastructure of the plants. Salt water backflows have already infiltrated the City's wastewater treatment plants, both bayside and oceanside, and sea level rise will increase the intensity of that intrusion. PUC has indicated in its Sewer System Master Plan and in other documents that backflow prevention devices and local pump stations should be installed to prevent backflow intrusion into the system. To the Jury's knowledge, this has not yet been done.

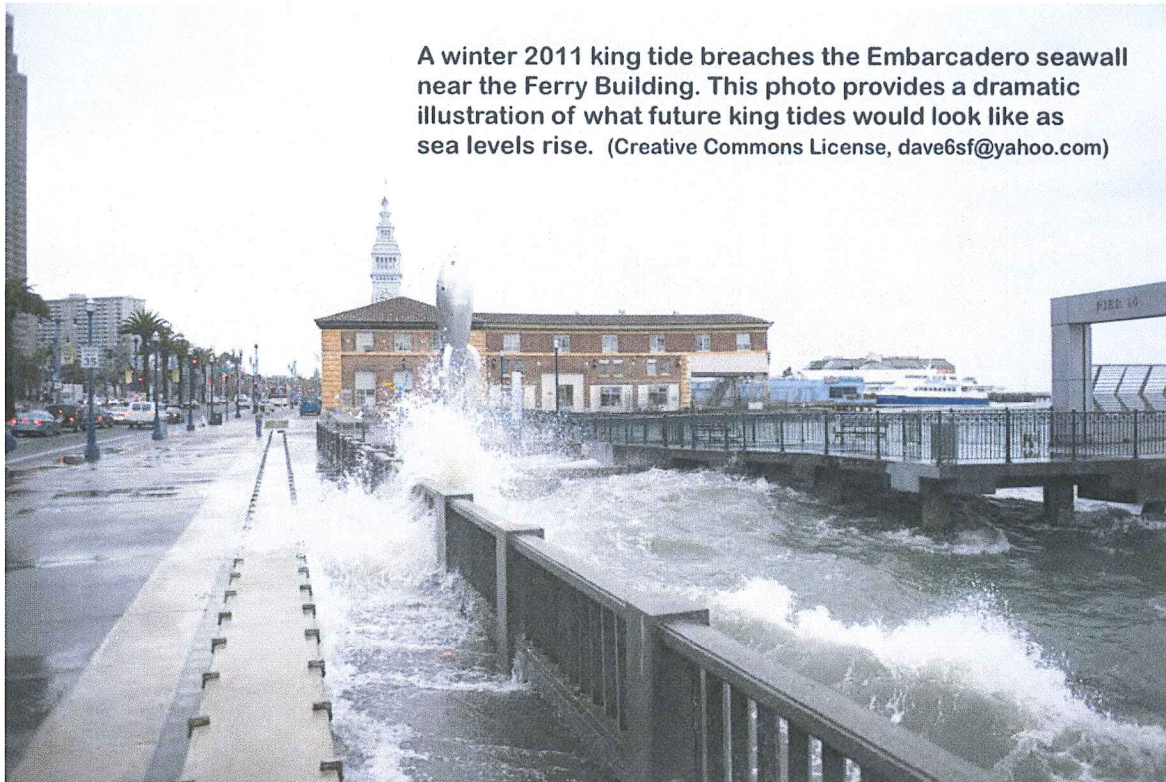
### Port of San Francisco Waterfront Area

Sea level rise presents a major threat to the 7.5 miles of the Port's waterfront that stretches along the bay from the Hyde Street pier to the north to India Basin to the south. Seasonal king tides<sup>9</sup> already overflow the City's seawall, an occurrence that might happen more regularly as a result of rising sea levels. The Port currently has an unwritten, unofficial policy requiring all new construction projects to address rising sea levels in their design plans. One example is the proposed Pier 70 project, which involves, among other things, restoration and development of the historical buildings there and development of a commercial and residential area. The project has plans to elevate a building pad to 14.5 feet to withstand a projected extreme tide of 14.4 feet at the end of this century.

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<sup>9</sup> High tides that occur when the gravitational pull of the sun and the moon are in alignment





The Port's shoreline presents unique challenges to rising sea levels. There is a section just south of the Ferry Building that frequently floods during winter storms. A winter, 2014 king tide estimated at 9 feet would have reached the surface level of many piers. Fortunately, that tide did not reach its potential and stopped at 7 feet. Many piers are old and decaying. The seawall runs under buildings, creating an accessibility problem. A Port consultant, URS Corporation, developed a map indicating the extent of inundation associated with a rise of 15 inches by 2050. (see Appendix B) The line of inundation closely resembles the shoreline of the bay prior to the Gold Rush

#### San Francisco Airport (SFO)

The average king tide from 1970 to 2012 was 9 feet. SFO is using as an adaptation guide the BCDC sea level rise projection of 16 inches by 2050 and 55 inches by 2100. SFO's wastewater treatment plant, which is about 100 feet from the bay, has had some saltwater intrusion from storms. SFO has some seawall protection, but it was designed to protect only against high waves and does not protect against rising sea levels.

San Francisco Airport (SFO) has a constant challenge in keeping its runways dry and safe for landings. During a rainstorm in February 2014, SFO was limited to one runway, postponing and canceling flights for several hours. Its wastewater plant and a City College of San Francisco school for mechanics sit on unprotected airport property north of the runways. Two creeks run landside of the airport to Highway 101. While natural tidelands would be an option for mitigation against rising seas, the consequential influx of birds would be a danger to air traffic.

According to BCDC's report of 10/6/11, *Living with a Rising Bay*, SFO would be 72% under

water with an increase of 16 inches and 93% under water with an increase of 55 inches (see Appendices C and D).

It is interesting to note that permits for any potential work on airport property, including mitigation for rising sea levels, must be obtained from U.S. Fish and Wildlife, State Fish and Wildlife, Army Corps of Engineers, BCDC, State Coastal Conservancy, FAA, and the federal Environment Protection Agency. This is in contrast to the fewer number of permits required for other city properties.

### Treasure Island

Treasure Island is undergoing a huge development project with a proposed production of up to 8,000 homes, extensive open spaces, hotels, restaurants, and retail. Appendix E shows Treasure Island project drawings of planned adaptive management strategies for protection against sea level rise.

Treasure Island has a geology of bay clay, mud, and fill, not a promising foundation for its planned development. Its development plans, however, are an example of what can be done to mitigate encroaching sea water (see Appendix E). Mud will be dynamically compacted to solid fill to prevent liquefaction. Compaction will lower the level of the island by 30 inches. The ground level will then be raised with further compacted fill to 4 feet above current sea levels. Development will sit back from the shoreline 100 feet, which given current predictions of sea level rise, may or may not be sufficient. Plans are based on projections of a 16-inch rise by 2050 and 55 1/2-inch rise by 2100. There will be a commercial facility district for funding of sea walls.

### Crissy Field

This area's newly restored wetlands may serve a dual purpose, both as a natural habitat and as flood containment. Wetlands soil and vegetation will serve to slow encroaching waters.

### Federal Concerns

The City is currently uninsured for flood damage under FEMA's National Flood Insurance Program. The City does, however, maintain its umbrella membership in the program which allows private property owners to purchase FEMA insurance. For those properties insured under this program, funds are available to mitigate against future flooding. It would be interesting for the City to request a premium estimate from FEMA and then compare that estimate with the funding it could acquire from FEMA for such mitigation and adaptation

Secretary of Housing and Urban Development, Shaun Donovan, states, "If we build smart, if we build resilience into communities, then we can live along the coast. We can do it in a way that saves lives and protects taxpayers."<sup>10</sup>

-----"San Francisco is more than a real estate opportunity. It's a precious, special, fragile place."  
Herb Caen

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<sup>10</sup> At joint press conference with NYC Mayor Bloomberg in Brooklyn, NY, CBS/AP; 8/112/13



## FINDINGS AND RECOMMENDATIONS

### Comprehensive Plan

#### Finding 1:

The City does not have a citywide comprehensive plan that addresses the rising sea level issue.

#### Recommendation 1a:

The City should prepare and adopt a risk assessment in preparation for developing a comprehensive plan regarding the rising sea level issue.

#### Recommendation 1b:

The City should adopt a citywide comprehensive plan for adaptation to rising sea levels, especially along its shores and its floodplains, which should include a provision that the plan be reviewed and reassessed every five years.

The plan should include the provision that construction projects approval should take into account the anticipated lifespan of each project and the risks faced as outlined in said plan. Special consideration should be given to those anticipated to survive for more than thirty years.

#### Recommendation 1c:

The City should build infrastructure systems that are resilient and adaptable to rising sea levels.

The City, through its planning and building departments, should require that any construction project vulnerable to future shoreline or floodplain flooding be designed to be resilient to sea level rise at the 2050 projection, e.g., 16 inches, if the construction is not expected to last longer than 2050. For construction intended to last longer than 2050, it is recommended that the City require that the project be designed to address sea level rise projections for the longer term.

#### Recommendation 1d:

The City departments that would necessarily be involved in adaptation to rising sea levels, such as Department of Public Works, Public Utilities Commission, Municipal Transportation Agency, the Port, should coordinate their projects with each other and with utility companies, such as PG&E, Comcast, and AT&T, to minimize inconvenience to the public, and to businesses, and further to avoid repetition of efforts and inefficient use of funds, labor, and time.

## Planning Code and Building Code

### Finding 2:

The City's Planning Code has no provisions addressing the impacts associated with rising sea levels. Without appropriate provisions within the City's Planning Code, there are no effective means to insure sustainable development on land vulnerable to rising sea levels.

### Recommendation 2a:

The City should amend its Planning Code to include maps showing the areas in the City that are most at risk from the impacts of sea level rise.

The Planning Code should be amended to prohibit development in said at-risk areas unless there is compliance with the provisions of the City's Building Code and the Port's Building Code (if applicable to the project) outlined in Recommendation 3 below.

The amendment should include a provision that the amended sections of the Code regarding the impact of rising sea levels be reviewed and reassessed every five years.

### Recommendation 2b:

The Planning Code should be amended to discourage permanent development in at-risk areas where public safety cannot be protected regarding the impact of rising sea levels.

### Finding 3:

The City's Building Code and the Port's Building Code have no provisions addressing the impacts associated with rising sea levels. Without appropriate provisions within the City's Building Code and the Port's Building Code, there are no effective means to control construction methods that would insure a project's resistance to the impacts of rising sea levels.

### Recommendation 3:

The City's Building Code and the Port's Building Code should be amended to include:

- (1) provisions addressing the impacts associated with sea level rise, especially when combined with sudden storm surges and king tides,
- (2) construction methods that would ensure a project's resistance to and protection from the impacts of rising sea levels, especially when combined with sudden storm surges and king tides;
- (3) amendments written to protect the most vulnerable systems, including but not necessarily limited to, electrical, telecommunications, and fire protection systems;
- (4) a provision that the sections of the Codes regarding the impact of rising sea levels should be reviewed and reassessed every five years.

Finding 4:

BCDC has the final say on any permit within its jurisdiction.

Recommendation 4:

The City should consult with BCDC at the onset of development plans within BCDC's jurisdiction to ensure equitable and efficient results without necessitating surplus expenditures and time.

Ocean Beach Master Plan

Finding 5:

A comprehensive risk assessment of Ocean Beach, with mitigation recommendations made to the City regarding rising sea levels, was completed by SPUR, with City, State of California and U.S Corps of Engineers involvement, resulting in the Ocean Beach Master Plan, dated May, 2012.

Recommendation 5:

The City should consider implementation of recommendations that are most pertinent to the City set forth in the Ocean Beach Master Plan, May 2012.

Public Utilities Commission

Finding 6:

A number of measures can be taken now by the Public Utilities Commission to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.

Recommendation 6:

The City should build, through the Public Utilities Commission, larger sewer pumps, sewer pipes, and sewer transport storage boxes surrounding the city in the near future to accommodate king tides, sudden surges, and sea level rise.

Finding 7:

Salt water backflows have already infiltrated the City's wastewater treatment plants, both in the Bayside and Oceanside plants. Salt water kills organisms in the system that clean wastewater and damages wastewater treatment equipment. As a result of sea level rise, bay and ocean saltwater backflow into the wastewater treatment systems will dramatically increase, causing serious problems for the wastewater treatment processes.

Recommendation 7:

The City should, as an interim measure, retrofit outfalls in the wastewater treatment system with backflow prevention devices to prevent salt water intrusion into the collection systems resulting

from high tides, sudden surges, and rising sea level. Local pump stations should also be installed to raise the flow to sewer discharge structures with higher elevations.

Finding 8:

The Southeast Wastewater Treatment Plant (Bayside), built in 1952, is aging and needs restoration.

Recommendation 8:

The City should retrofit the Southeast Wastewater Treatment Plant to accommodate future king tides, sudden surges, and sea level rise.

San Francisco Airport

Finding 9:

The San Francisco Airport (SFO) is located slightly above sea level and therefore vulnerable to flooding from heavy rainfall, king tides, and rising sea levels. A number of measures can be taken now by SFO to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.

Recommendation 9a:

SFO should increase the height of its existing seawalls along its runways to accommodate rising sea levels.

Recommendation 9b:

SFO should continue to improve measures to eliminate standing water on its runways to ensure they remain sufficiently above sea level.

Recommendation 9c:

The northern section of SFO should be analyzed by airport engineers to determine how best to protect its wastewater treatment plant and other infrastructure in that section from sea level rise (e.g. construction of sea walls).

The Port of San Francisco

Finding 10:

The Port of San Francisco is built on landfill, and its seawall lies beneath many buildings along the bay. Many piers are in poor condition. A number of measures can be taken now by the Port to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.

Recommendation 10a:

The Port should begin planning and create a timeline for construction of flood control barriers in the low spots along the edges of the piers to prevent waterfront flooding associated with sea level rise.

Recommendation 10b:

To assist with the cost of protective measures to address sea level rise, the Port Commission should establish a reserve fund as part of its leasing policy whereby a surcharge is assessed as part of the rent or as a separate line item in each lease.

City Adaptation Funds

Finding 11:

The City has not set aside funds for the cost of adaptation to sea level rise.

Recommendation 11a:

The City should start a reserve fund for adaptation for rising sea levels, a portion of which could be obtained from a surcharge on development planned for areas vulnerable to said eventuality.

Recommendation 11b:

The City should assess costs of both implementation of adaptation strategies and potential losses from failing to do so.

Recommendation 11c:

The City should explore applying for grants offered by Congress' Pre-Disaster Mitigation Program. Receipt of grants is based upon risk assessments indicating that potential savings would exceed the cost of implementation.

The City should explore available matching funds from the Army Corps of Engineers and other federal sources.

Recommendation 11d:

The City should request an insurance premium estimate from FEMA and then compare that estimate with the funding it could acquire from FEMA for mitigation and adaptation against future flooding.

## Regional Issues

### Finding 12:

Rising sea levels is a regional problem. What one community does to protect its shorelines may have a negative impact on a neighboring community.

### Recommendation 12a:

The City should, through its Mayor and Board of Supervisors, coordinate its efforts with other cities and organizations in the bay area by establishing a working group to address the impact of rising sea levels. This has been successfully accomplished by four counties on the east coast of Florida, as an example.

### Recommendation 12b:

That the City create a local working group of community citizens and stakeholders to feed into the regional group.

## RESPONSE MATRIX

FINDINGS	RECOMMENDATIONS	RESPONSE REQUIRED
<p><u>Comprehensive Plan</u></p> <p>Finding 1</p> <p>The City does not have a citywide comprehensive plan that addresses the rising sea level issue.</p>	<p>Recommendation 1a</p> <p>The City should prepare and adopt a risk assessment in preparation for developing its comprehensive plan regarding the rising sea level issue</p> <p>Recommendation 1b</p> <p>The City should adopt a citywide comprehensive plan for adaptation to rising sea levels, especially along its shores and its floodplains.</p> <p>Said plan should include the provision that construction projects' approval should take into account the anticipated lifespan of each project and the risks faced as outlined in said plan. Special consideration should be given to those anticipated to survive for more than 30 years.</p> <p>Said plan should include a provision that the plan be reviewed and reassessed every 5 years.</p> <p>Recommendation 1c:</p> <p>The City should build infrastructure systems that are resilient and adaptable to rising sea levels.</p> <p>That the City, through its planning and building departments, require that any construction project vulnerable to future shoreline or floodplain flooding be designed to be resilient to sea level rise at the 2050 projection, e.g., 16 inches if the construction is not expected to last longer than 2050. For construction intended to last longer than 2050, that the City require that the project be designed to address sea level rise projections for the longer term.</p>	<p>Mayor or Mayor's Designated Agency Board of Supervisors DPW Dept. of Environment Dept. of Emergency Management Planning Port PUC</p>



FINDINGS	RECOMMENDATIONS	RESPONSE REQUIRED
	<p>Recommendation 1d:</p> <p>That City departments that would necessarily be involved in adaptation to rising sea levels, such as Department of Public Works, Public Utilities Commission, Municipal Transportation Agency, the Port, coordinate their projects with each other and with utility companies, such as PG&amp;E, Comcast, and AT&amp;T, to minimize inconvenience to the public, and to businesses, and to further avoid repetition of efforts and inefficient use of funds, labor, and time.</p>	
<p><u>Planning Code and Building Code</u></p> <p>Finding 2:</p> <p>The City's Planning Code has no provisions addressing the impacts associated with rising sea levels. Without appropriate provisions within the City's Planning Code, there are no effective means to insure sustainable development on land vulnerable to rising sea levels.</p>	<p>Recommendation 2a:</p> <p>The Planning Code should be amended to include maps showing the areas in the City that are most at risk from the impacts of sea level rise.</p> <p>The Planning Code should be amended to prohibit development in said at-risk areas unless there is compliance with the provisions of the City's Building Code and the Port's Building Code (if applicable to the project) outlined in Recommendations 3a and 3b.</p> <p>The Planning Code should include a provision that the amended sections of the Code regarding the impact of rising sea levels be reviewed and reassessed every 5 years.</p>	<p>Board of Supervisors Planning</p>
	<p>Recommendation 2b:</p> <p>The Planning Code should be amended to discourage permanent development in at risk areas where public safety cannot be protected.</p>	
<p>Finding 3:</p> <p>The City's Building Code and the Port's Building Code have no provisions</p>	<p>Recommendation 3:</p> <p>The City's Building Code and the Port's Building Code should be amended to include:</p>	<p>Board of Supervisors DBI Planning Port</p>

FINDINGS	RECOMMENDATIONS	RESPONSE REQUIRED
addressing the impacts associated with rising sea levels. Without appropriate provisions within the city's Building Code and the Port's Building Code, there are no effective means to control construction methods that would insure a project's resistance to the impacts of rising sea levels.	<p>(1) provisions addressing the impacts associated with sea level rise, especially when combined with storm surges and king tides;</p> <p>(2) construction methods that would ensure a project's resistance to and protection from the impacts of rising sea levels, especially when combined with sudden storm surges and king tides;</p> <p>(3) amendments written to protect the most vulnerable systems, including but not necessarily limited to, electrical, telecommunications, and fire protection systems;</p> <p>(4) provisions relating to rising sea levels be reviewed and reassessed every five years.</p>	
<p>Finding 4:</p> <p>BCDC has the final say on any permit within its jurisdiction.</p>	<p>Recommendation 4:</p> <p>The City should consult with BCDC at the onset of development plans within BCDC's jurisdiction to ensure equitable and efficient results without necessitating surplus expenditures and time.</p>	<p>Mayor Planning Port</p>
<p><u>Ocean Beach Master Plan</u></p> <p>Finding 5:</p> <p>A comprehensive risk assessment of Ocean Beach, with mitigation recommendations made to the City regarding rising sea levels, was completed by SPUR, with City, State of California and U.S Corps of Engineers involvement, resulting in the Ocean Beach Master Plan, dated May, 2012.</p>	<p>Recommendation 5:</p> <p>The City should consider implementation of recommendations that are most pertinent to the City, as set forth in the Ocean Beach Master Plan of May 2012.</p>	<p>Mayor or Mayor's Designated Agency Board of Supervisors</p>

FINDINGS	RECOMMENDATIONS	RESPONSE REQUIRED
<p><u>Public Utilities Commission</u></p> <p>Finding 6:</p> <p>A number of measures can be taken now by the Public Utilities Commission to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.</p>	<p>Recommendation 6:</p> <p>The Public Utilities Commission should build larger sewer pumps, sewer pipes, and sewer transport storage boxes surrounding the city in the near future to accommodate king tides, sudden surges, and sea level rise.</p>	<p>PUC</p>
<p>Finding 7:</p> <p>Salt water backflows have already infiltrated the City's wastewater treatment plants, both in the Bayside and Oceanside plants. Salt water kills organisms in the system that clean wastewater. Salt water also damages wastewater treatment equipment. As a result of sea level rise, bay and ocean saltwater backflow into the wastewater treatment systems will dramatically increase, causing serious problems for the wastewater treatment processes.</p>	<p>Recommendation 7:</p> <p>As an interim measure, the City should retrofit outfalls in the wastewater treatment system with backflow prevention devices to prevent salt water intrusion into the collection systems resulting from high tides, sudden surges, and rising sea level. Local pump stations should also be installed to raise the flow to sewer discharge structures with higher elevations.</p>	<p>PUC</p>
<p>Finding 8:</p> <p>The Southeast Wastewater Treatment Plant, built in 1952, is aging and needs restoration.</p>	<p>Recommendation 8:</p> <p>The Southeast Wastewater Treatment Plant should be retrofitted to accommodate future king tides, sudden surges, and sea level rise.</p>	<p>PUC</p>

FINDINGS	RECOMMENDATIONS	RESPONSE REQUIRED
<p><u>San Francisco Airport</u></p> <p>Finding 9:</p> <p>The San Francisco airport (SFO) is located slightly above sea level and therefore vulnerable to flooding from heavy rainfall, king tides, and rising sea levels. A number of measures can be taken now by SFO to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.</p>	<p>Recommendation 9a:</p> <p>SFO should increase the height of its existing seawalls along its runways to accommodate rising sea levels.</p> <p>Recommendation 9b:</p> <p>SFO should continue to improve measures to eliminate standing water on its runways to ensure they remain sufficiently above sea level.</p> <p>Recommendation 9c:</p> <p>The northern section of SFO should be analyzed by airport engineers to determine how best to protect its wastewater treatment plant and other infrastructure in that section from sea level rise.</p>	<p>SFO</p>
<p><u>The Port of San Francisco</u></p> <p>Finding 10:</p> <p>The Port of San Francisco is built on landfill, and its seawall lies beneath many buildings along the bay. Many piers are in poor condition. A number of measures can be taken now by the Port to minimize the impact of sea level rise, especially when combined with future king tides and sudden surges.</p>	<p>Recommendation 10a:</p> <p>The Port should begin planning and creating a timeline for construction of flood control barriers in the low spots along the edges of the piers to prevent waterfront flooding associated with sea level rise.</p> <p>Recommendation 10b:</p> <p>To assist with the cost of protective measures to address sea level rise, the Port Commission should establish a reserve fund as part of its leasing policy whereby a surcharge is assessed as part of the rent or as a separate line item in each lease.</p>	<p>Port</p>

FINDINGS	RECOMMENDATIONS	RESPONSE REQUIRED
<p><u>City Adaptation Funds</u></p> <p>Finding 11:</p> <p>The City has not set aside funds for the cost of adaptation to sea level rise.</p>	<p>Recommendation 11a:</p> <p>The City should start a reserve fund for adaptation for rising sea levels, a portion of which could be obtained from a surcharge on development planned for areas vulnerable to said eventuality.</p> <p>Recommendation 11b:</p> <p>The City should assess costs of both implementation of adaptation strategies and potential losses from failing to do so.</p> <p>Recommendation 11c:</p> <p>The City should explore applying for grants offered by Congress' Pre-Disaster Mitigation Program. Receipt of grants is based upon risk assessments that indicate that potential savings exceed the cost of implementation.</p> <p>The City should explore available matching funds from the Army Corps of Engineers and other federal sources.</p> <p>Recommendation 11d:</p> <p>The City should request an insurance premium estimate from FEMA and then compare that estimate with the funding it could acquire from FEMA for mitigation and adaptation against future flooding.</p>	<p>Mayor Board of Supervisors City Administrator Controller</p>

FINDINGS	RECOMMENDATIONS	RESPONSE REQUIRED
<p><u>Regional Problem</u></p> <p>Finding 12:</p> <p>Rising sea levels is a regional problem. What one community does to protect its shorelines may have a negative impact on a neighboring community. This has been successfully accomplished by four counties on the east coast of Florida, as an example.</p>	<p>Recommendation 12a:</p> <p>The City, through its Mayor and Board of Supervisors, should coordinate its efforts with other cities and organizations in the bay area by establishing a regional working group to address the impact of rising sea levels.</p> <p>Recommendation 12b:</p> <p>The City should create a local working group of community citizens and stakeholders to feed into the regional group.</p>	<p>Mayor Board of Supervisors Planning</p>

## **METHODOLOGY**

The Jury conducted over a dozen interviews of personnel of City agencies and non-City agencies and reviewed numerous documents issued by these agencies to determine what the City is doing to address rising sea levels. Numerous scientific reports and studies regarding global climate change and sea level rise were reviewed, including those listed in this report's bibliography. The Jury also attended a number of panel discussions on the issue and took personal tours of SFO, the Oceanside Wastewater Treatment Plant, Ocean Beach, Treasure Island, the Port piers, and adjacent areas along the Port waterfront.



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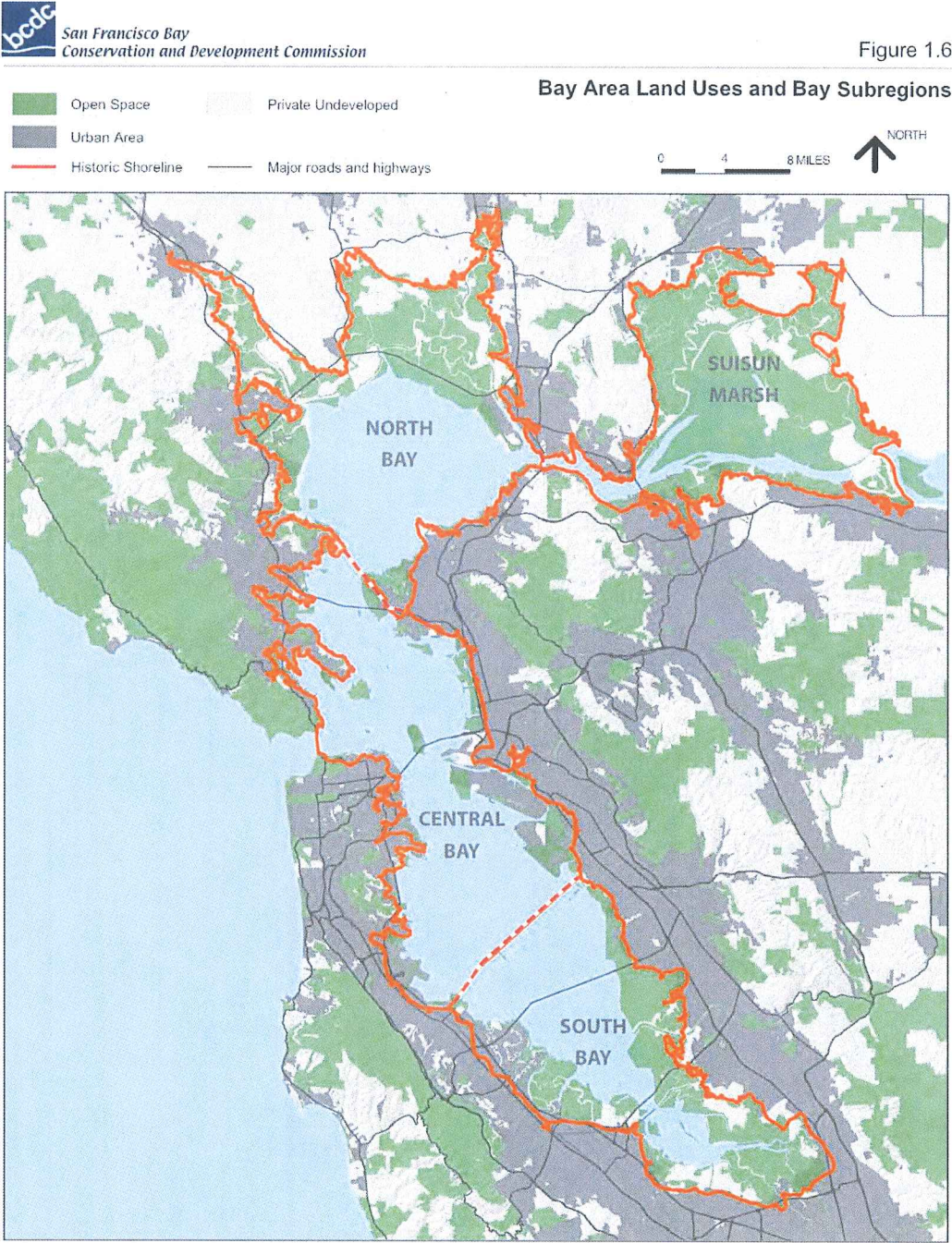
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## APPENDIX A

### Sea Level Rise Projections

	<u>2050</u>	<u>2100</u>
BCDC (Bay Conservation & Development Commission)	16"	55"
CA Climate Action	10" – 17"	17" – 31"
SPUR (San Francisco Planning & Urban Research Assoc.)	16"	55"
IPCC (Int'l Governmental Panel on Climate Change)	6.7" – 16.6"	11" – 38"
NOAA (Nat'l Oceanic & Atmospheric Assoc.)		78"
USACOE (Army Corps of Engineers)		60"
USGS (U.S. Geological Survey)		60"
Pacific Institute		60"
SFPUC SF Public Utilities Commission	16"	25" – 70"
National Research Council (State of CA using)	4.68" – 24"	16.56" – 65.76"
ISB (Gov. Schwarzenegger's Independent Science Board)		55"

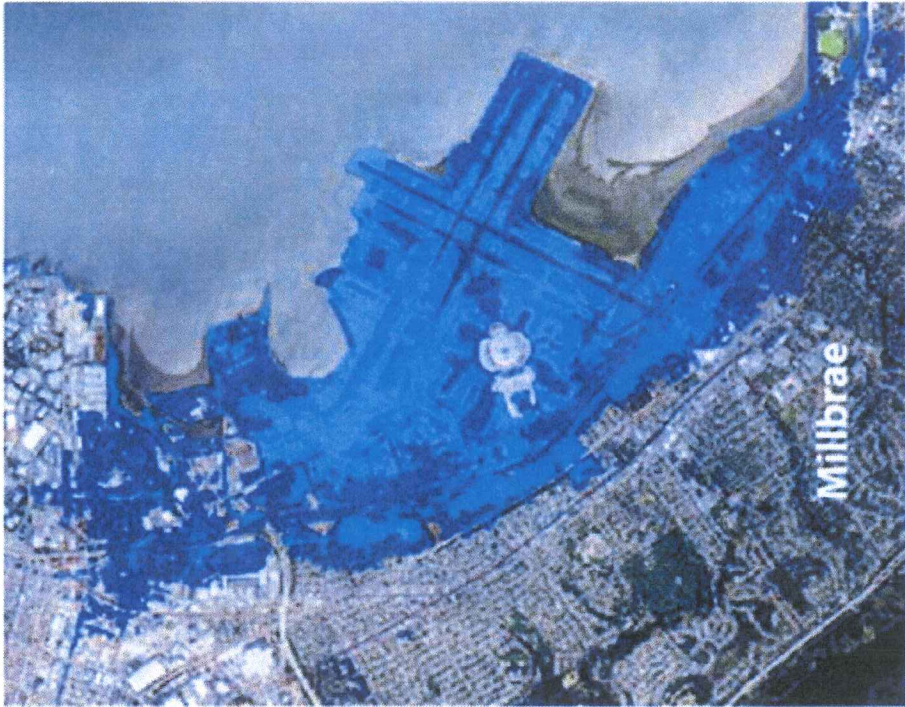
APPENDIX B



SOURCE: Urban and open space (GreenInfo 2004); Regions (EcoAtlas 2009)



APPENDIX C



SFO  
San Francisco  
International  
Airport

bcdc  
San Francisco Bay  
Conservation and Development Commission

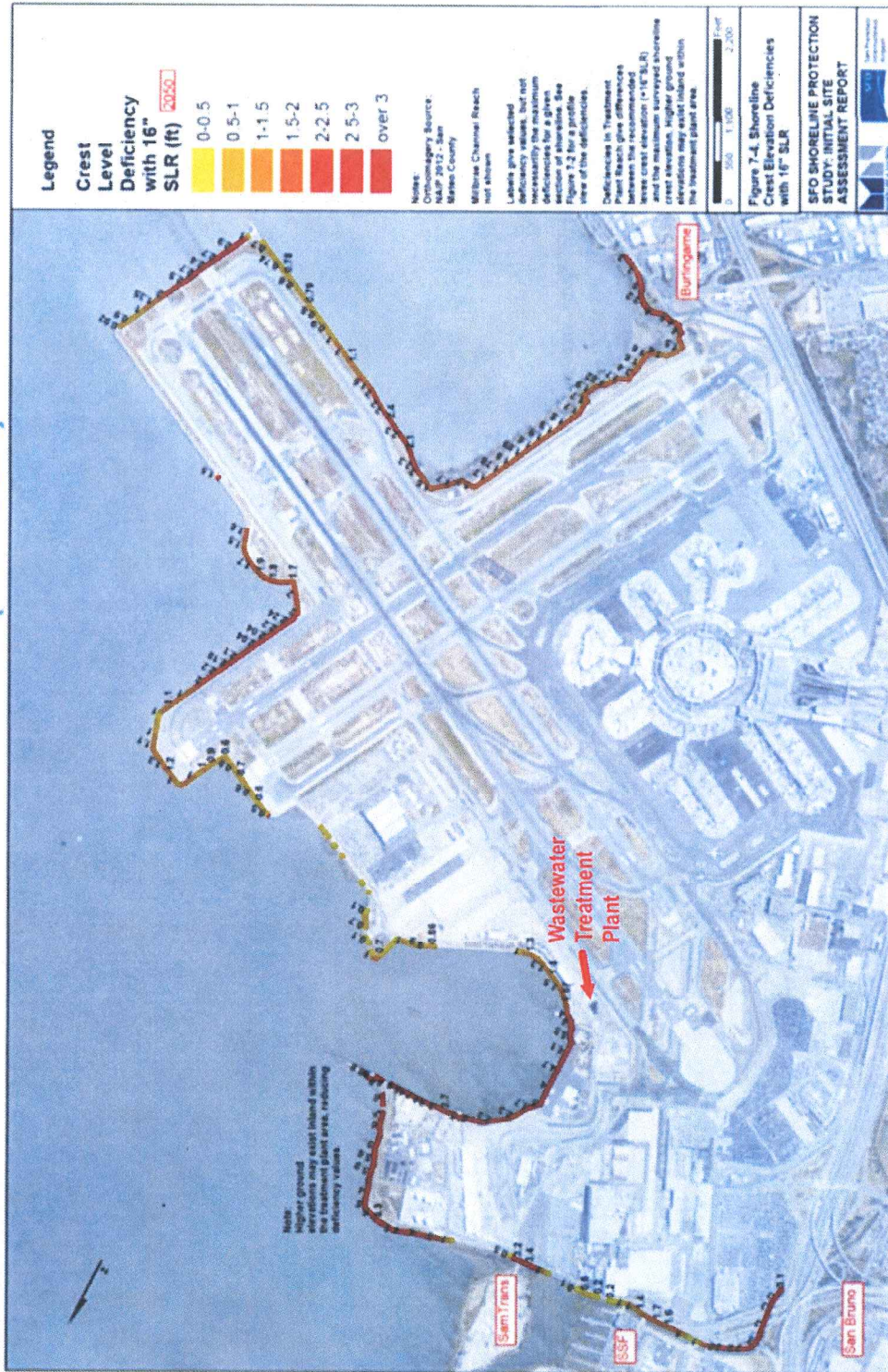
- Area vulnerable to an approximate 16 inch sea level rise
- Area vulnerable to an approximate 55 inch sea level rise



# APPENDIX D

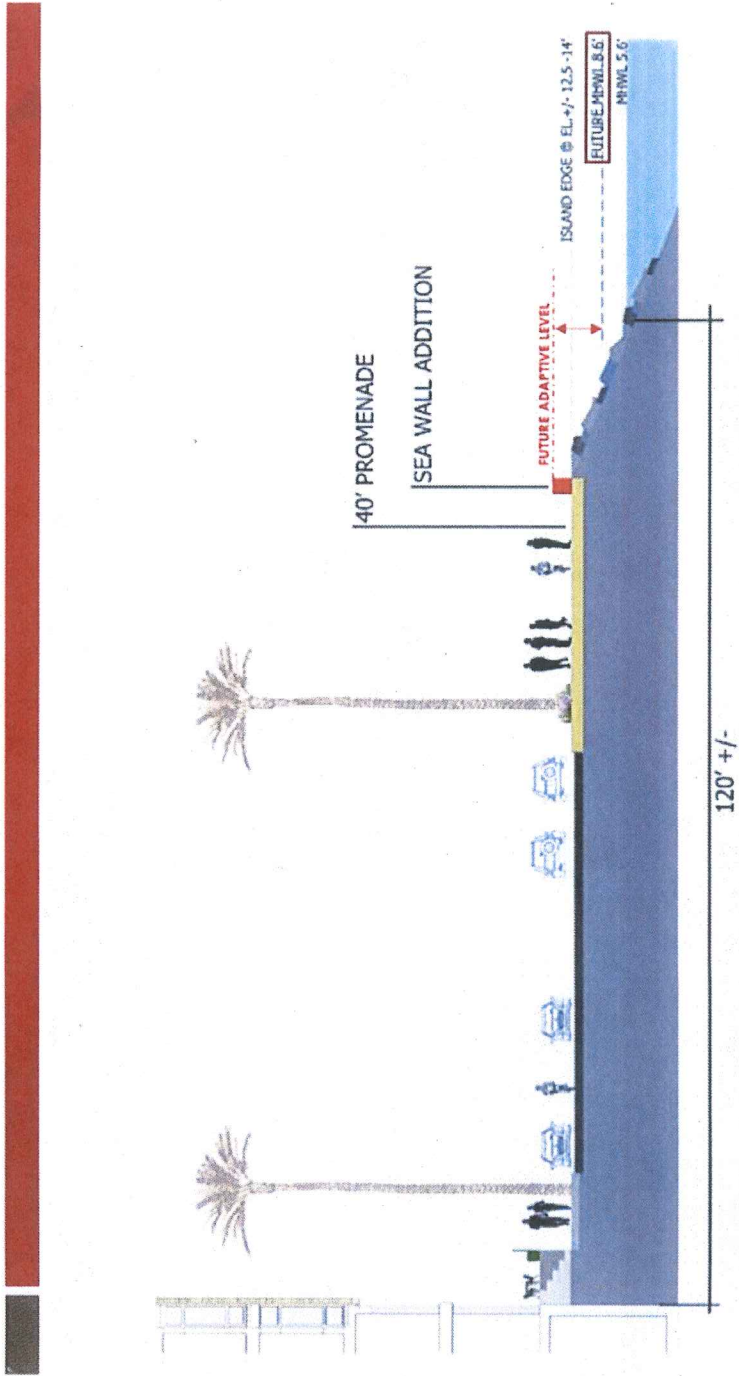


## Deficiencies – 2050 (16" SLR)





# Sea Level Rise – Adaptive Strategies



## Major, Erica

---

**From:** Major, Erica  
**Sent:** Monday, August 25, 2014 9:57 AM  
**To:** Raphael, Deborah (ENV)  
**Subject:** RE: Response Reminder - Civil Grand Jury Report: Rising Sea Levels...At Our Doorstep

Hello Debbie:

Thank you for your prompt response! The Clerk of the Board is in receipt of your consolidated response for the above stated. To find an updated status of File No. 140792 please see link below:

<https://sfgov.legistar.com/LegislationDetail.aspx?ID=1830501&GUID=076DE566-9717-44DB-A8AF-A382F631139F&Options=ID|Text|&Search=140792>

Could you please send an update as to who would be representing your department for the tentative hearing for September 11<sup>th</sup> at 11 a.m.?

### Erica Major

**Assistant Committee Clerk**

Board of Supervisors

1 Dr. Carlton B. Goodlett Place, City Hall, Room 244 San Francisco, CA 94102

Phone: (415) 554-4441 | Fax: (415) 554-5163

---

**From:** Raphael, Deborah (ENV)  
**Sent:** Sunday, August 24, 2014 7:08 PM  
**To:** Major, Erica  
**Cc:** Rodriguez, Guillermo (ENV); Miller, Angela (ENV); Jackson, Ryan (ENV)  
**Subject:** RE: Response Reminder - Civil Grand Jury Report: Rising Sea Levels...At Our Doorstep

Erica,  
We will circle back with you early next week.  
Sincerely,  
Debbie Raphael

---

**From:** Major, Erica  
**Sent:** Friday, August 22, 2014 3:12 PM  
**To:** Guerra, Antonio; Nuru, Mohammed; Raphael, Deborah (ENV); Kronenberg, Anne; Rahaim, John (CPC); Moyer, Monique (PRT); Kelly, Jr, Harlan (PUC); Hui, Tom (DBI); Kelly, Naomi (ADM); Rosenfield, Ben (CON); John L Martin  
**Cc:** Steeves, Asja (CON); Lee, Frank W; Rodriguez, Guillermo (ENV); Ellis, Juliet (PUC); Jayin, Carolyn (DBI); Rodgers, AnMarie (CPC); Starr, Aaron (CPC); Forbes, Elaine (PRT); Strawn, William (DBI); Cathy Widener; Zmuda, Monique (CON); Stevenson, Peg  
**Subject:** Response Reminder - Civil Grand Jury Report: Rising Sea Levels...At Our Doorstep

Greetings All:

I'm following up on the email sent below requesting a copy of your Civil Grand Jury response for "Rising Sea Levels...At Our Doorstep." To date we haven't received a response for your department to be included with the Board's legislative file. *Please submit your required response by August 24, 2014, via email or hand deliver a copy to the Clerk of the Board (City Hall, Room 244), Attn: Government Audit and Oversight Clerk.*

We anticipate the Board holding a committee hearing sometime in September and will update you as the date approaches. As a reminder, a representative from your department will be required to attend the Committee hearing to present your department's response and answer questions raised. *Please submit the name of the department representative who will be handling this matter and attending the hearing.*

Please feel free to contact me if you have any questions. Thank you.

## **Erica Major**

### **Assistant Committee Clerk**

Board of Supervisors

1 Dr. Carlton B. Goodlett Place, City Hall, Room 244 San Francisco, CA 94102

Phone: (415) 554-4441 | Fax: (415) 554-5163

---

**From:** Miller, Alisa

**Sent:** Thursday, June 26, 2014 3:32 PM

**To:** Guerra, Antonio; Nuru, Mohammed (DPW); Raphael, Deborah (ENV); Kronenberg, Anne; Rahaim, John (CPC); Moyer, Monique (PRT); Kelly, Jr, Harlan (PUC); Hui, Tom (DBI); Martin, John (SFO) (AIR); Kelly, Naomi (ADM); Rosenfield, Ben (CON)

**Cc:** Steeves, Asja (CON); Lee, Frank (DPW); Rodriguez, Guillermo (ENV); Rodgers, AnMarie (CPC); Starr, Aaron (CPC); Forbes, Elaine (PRT); Ellis, Juliet (PUC); Strawn, William (DBI); Jayin, Carolyn (DBI); Widener, Cathy (AIR); Zmuda, Monique (CON); Stevenson, Peg

**Subject:** Civil Grand Jury Report: Rising Sea Levels

Hello all,

Within 60 days your department is required to respond to the 2013-2014 Civil Grand Jury Report, entitled "Rising Sea Levels... At Our Doorstep" (attached).

Please make sure to email/deliver a copy of your department's response to the Office of the Clerk of the Board, Attn: Government Audit and Oversight Clerk, no later than August 24, 2014 (the date department responses are due to the Presiding Judge of the Civil Grand Jury). Your response will be included in the Board of Supervisors legislative file for their consideration at the GAO Committee hearing on this matter.

A representative from your department will be required to attend the Committee hearing to present your department's response and answer questions raised. Please submit the name of the department representative who will be handling this matter and attending the hearing.

If you have any questions, please don't hesitate to call or email me. Thank you.

## **Alisa Miller**

Assistant Clerk

San Francisco Board of Supervisors

1 Dr. Carlton B. Goodlett Place, Room 244

San Francisco, CA 94102

415.554.4447 direct | 415.554.5163 fax

[alisa.miller@sfgov.org](mailto:alisa.miller@sfgov.org)

Click [HERE](#) to complete a Board of Supervisors Customer Service Satisfaction form.

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**Disclosures:** Personal information that is provided in communications to the Board of Supervisors is subject to disclosure under the California Public Records Act and the San Francisco Sunshine Ordinance. Personal information provided will not be redacted.

Members of the public are not required to provide personal identifying information when they communicate with the Board of Supervisors and its committees. All written or oral communications that members of the public submit to the Clerk's Office regarding pending legislation or hearings will be made available to all members of the public for inspection and copying. The Clerk's Office does not redact any information from these submissions. This means that personal information—including names, phone numbers, addresses and similar information that a member of the public elects to submit to the Board and its committees—may appear on the Board of Supervisors website or in other public documents that members of the public may inspect or copy.



## Major, Erica

---

**From:** Major, Erica  
**Sent:** Monday, August 25, 2014 9:53 AM  
**To:** Cathy Widener  
**Subject:** RE: Response Reminder - Civil Grand Jury Report: Rising Sea Levels...At Our Doorstep

Hello Cathy:

Thank you for your prompt response and an update on your department representative. The Clerk of the Board is in receipt of your consolidated response for the above stated. To find an updated status of File No. 140792 please see link below:

<https://sfgov.legistar.com/LegislationDetail.aspx?ID=1830501&GUID=076DE566-9717-44DB-A8AF-A382F631139F&Options=ID|Text|&Search=140792>

### Erica Major

Assistant Committee Clerk

Board of Supervisors

1 Dr. Carlton B. Goodlett Place, City Hall, Room 244 San Francisco, CA 94102

Phone: (415) 554-4441 | Fax: (415) 554-5163

---

**From:** Cathy Widener [mailto:Cathy.Widener@fliesfo.com]  
**Sent:** Friday, August 22, 2014 5:06 PM  
**To:** Major, Erica  
**Subject:** Fwd: Response Reminder - Civil Grand Jury Report: Rising Sea Levels...At Our Doorstep

Erica: The Airport will be represented at this hearing by Joe Birrer, Chief Engineer, SFO and myself. As Antonio indicated, our follow-up has been submitted to the Mayor's office for inclusion in the city-wide response. Please let me know if you need anything else.

Thank you.

Cathy

---

Cathy Widener  
SFO | Government Affairs Manager  
650-821-5023

Begin forwarded message:

**From:** "Major, Erica" <[erica.major@sfgov.org](mailto:erica.major@sfgov.org)>  
**To:** "Antonio Guerra" <[Antonio.Guerra@sfgov.org](mailto:Antonio.Guerra@sfgov.org)>, "Mohammed Nuru" <[Mohammed.Nuru@sfdpw.org](mailto:Mohammed.Nuru@sfdpw.org)>, "Raphael, Deborah (ENV)" <[deborah.raphael@sfgov.org](mailto:deborah.raphael@sfgov.org)>, "Anne Kronenberg" <[Anne.Kronenberg@sfgov.org](mailto:Anne.Kronenberg@sfgov.org)>, "John Rahaim" <[John.Rahaim@sfgov.org](mailto:John.Rahaim@sfgov.org)>, "Monique Moyer" <[Monique.Moyer@sfport.com](mailto:Monique.Moyer@sfport.com)>, "Harlan Kelly Jr" <[HKelly@sfgov.org](mailto:HKelly@sfgov.org)>, "Tom C. Hui" <[Tom.Hui@sfgov.org](mailto:Tom.Hui@sfgov.org)>, "Naomi Kelly" <[Naomi.Kelly@sfgov.org](mailto:Naomi.Kelly@sfgov.org)>, "Ben Rosenfield" <[Ben.Rosenfield@sfgov.org](mailto:Ben.Rosenfield@sfgov.org)>, "John L Martin" <[John.Martin@fliesfo.com](mailto:John.Martin@fliesfo.com)>  
**Cc:** "Asja Steeves" <[Asja.Steeves@sfgov.org](mailto:Asja.Steeves@sfgov.org)>, "Frank W Lee" <[Frank.W.Lee@sfdpw.org](mailto:Frank.W.Lee@sfdpw.org)>, "Guillermo Rodriguez" <[Guillermo.Rodriguez@sfgov.org](mailto:Guillermo.Rodriguez@sfgov.org)>, "Juliet Ellis" <[JEllis@sfgov.org](mailto:JEllis@sfgov.org)>

"Carolyn Jayin" <[Carolyn.Jayin@sfgov.org](mailto:Carolyn.Jayin@sfgov.org)>, "AnMarie Rodgers" <[AnMarie.Rodgers@sfgov.org](mailto:AnMarie.Rodgers@sfgov.org)>, "Aaron Starr" <[Aaron.Starr@sfgov.org](mailto:Aaron.Starr@sfgov.org)>, "Elaine Forbes" <[Elaine.Forbes@sfport.com](mailto:Elaine.Forbes@sfport.com)>, "William Strawn" <[william.strawn@sfgov.org](mailto:william.strawn@sfgov.org)>, "Cathy Widener" <[Cathy.Widener@flysfo.com](mailto:Cathy.Widener@flysfo.com)>, "Monique Zmuda" <[Monique.Zmuda@sfgov.org](mailto:Monique.Zmuda@sfgov.org)>, "Peg Stevenson" <[Peg.Stevenson@sfgov.org](mailto:Peg.Stevenson@sfgov.org)>

**Subject: Response Reminder - Civil Grand Jury Report: Rising Sea Levels...At Our Doorstep**

Greetings All:

I'm following up on the email sent below requesting a copy of your Civil Grand Jury response for "Rising Sea Levels...At Our Doorstep." To date we haven't received a response for your department to be included with the Board's legislative file. Please submit your required response by August 24, 2014, via email or hand deliver a copy to the Clerk of the Board (City Hall, Room 244), Attn: Government Audit and Oversight Clerk.

We anticipate the Board holding a committee hearing sometime in September and will update you as the date approaches. As a reminder, a representative from your department will be required to attend the Committee hearing to present your department's response and answer questions raised. Please submit the name of the department representative who will be handling this matter and attending the hearing.

Please feel free to contact me if you have any questions. Thank you.

Erica Major  
Assistant Committee Clerk  
Board of Supervisors  
1 Dr. Carlton B. Goodlett Place, City Hall, Room 244 San Francisco, CA 94102  
Phone: (415) 554-4441 | Fax: (415) 554-5163

From: Miller, Alisa  
Sent: Thursday, June 26, 2014 3:32 PM  
To: Guerra, Antonio; Nuru, Mohammed (DPW); Raphael, Deborah (ENV); Kronenberg, Anne; Rahaim, John (CPC); Moyer, Monique (PRT); Kelly, Jr, Harlan (PUC); Hui, Tom (DBI); Martin, John (SFO) (AIR); Kelly, Naomi (ADM); Rosenfield, Ben (CON)  
Cc: Steeves, Asja (CON); Lee, Frank (DPW); Rodriguez, Guillermo (ENV); Rodgers, AnMarie (CPC); Starr, Aaron (CPC); Forbes, Elaine (PRT); Ellis, Juliet (PUC); Strawn, William (DBI); Jayin, Carolyn (DBI); Widener, Cathy (AIR); Zmuda, Monique (CON); Stevenson, Peg  
Subject: Civil Grand Jury Report: Rising Sea Levels

Hello all,

Within 60 days your department is required to respond to the 2013-2014 Civil Grand Jury Report, entitled "Rising Sea Levels... At Our Doorstep" (attached).

Please make sure to email/deliver a copy of your department's response to the Office of the Clerk of the Board, Attn: Government Audit and Oversight Clerk, no later than August 24, 2014 (the date department responses are due to the Presiding Judge of the Civil Grand Jury). Your response will be included in the Board of Supervisors legislative file for their consideration at the GAO Committee hearing on this matter.

A representative from your department will be required to attend the Committee hearing to present your department's response and answer questions raised. Please submit the name of the department representative who will be handling this matter and attending the hearing.

If you have any questions, please don't hesitate to call or email me. Thank you.

Alisa Miller  
Assistant Clerk  
San Francisco Board of Supervisors  
1 Dr. Carlton B. Goodlett Place, Room 244  
San Francisco, CA 94102  
415.554.4447 direct | 415.554.5163 fax  
[alisa.miller@sfgov.org](mailto:alisa.miller@sfgov.org) <<mailto:alisa.miller@sfgov.org>>

Click HERE <<http://www.sfbos.org/index.aspx?page=104>> to complete a Board of Supervisors Customer Service Satisfaction form.

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## Major, Erica

---

**From:** Major, Erica  
**Sent:** Monday, August 25, 2014 9:49 AM  
**To:** Guerra, Antonio  
**Subject:** RE: City Response to the Civil Grand Jury Report on Rising Sea Levels

Hi Antonio:

The Clerk of the Board is in receipt of your consolidated response for the above stated. To find an updated status of File No. 140792 please see link below:

<https://sfgov.legistar.com/LegislationDetail.aspx?ID=1830501&GUID=076DE566-9717-44DB-A8AF-A382F631139F&Options=ID|Text|&Search=140792>

### Erica Major

#### Assistant Committee Clerk

Board of Supervisors

1 Dr. Carlton B. Goodlett Place, City Hall, Room 244 San Francisco, CA 94102

Phone: (415) 554-4441 | Fax: (415) 554-5163

---

**From:** Guerra, Antonio  
**Sent:** Friday, August 22, 2014 5:06 PM  
**To:** [pkilkenny@sftc.org](mailto:pkilkenny@sftc.org); Major, Erica  
**Cc:** Means, Kirk (DBI); Strawn, William (DBI); Roche, Anna (PUC); [craig.raaphael@sfmta.com](mailto:craig.raaphael@sfmta.com); Zamora, Francis; Alden, Amiee (ECD); Schaffer, Edie; Kern, Chris (CPC); Revilla, Nohemy (PUC); Rosalyn Yu; Julian Potter; Prasad, Uday (PRT); Dhapa, Iqbalbhai; Aldhafari, Bassam; Sweiss, Fuad; Shrestha, Bimayendra; Rodriguez, Guillermo (ENV); Martin, Michael (MYR); Strong, Brian; Stevenson, Peg; Eisele, Lauren (PRT); Lee, Frank W; Otellini, Patrick (ADM); Howard, Kate (MYR); Shauna Rose; Steeves, Asja (CON); Kim, Roger (MYR); Behar, David (PUC)  
**Subject:** City Response to the Civil Grand Jury Report on Rising Sea Levels

Good afternoon,

Pursuant to Penal Code sections 933 and 933.05, the following is the official City and County of San Francisco response to the 2013-2014 Civil Grand Jury report, *Rising Sea Levels... At Our Doorstep*.

Attached is the consolidated reply of the Office of the Mayor and the following departments: City Planning, Building Inspection, Emergency Management, Environment, Office of the City Administrator, Office of the Controller, Port of San Francisco, Public Works, San Francisco International Airport, and San Francisco Public Utilities Commission.

Please let me know if you have any questions.

### Antonio Guerra

Fiscal and Policy Analyst

Mayor's Office of Public Policy and Finance

City Hall, Room 288

1 Dr. Carlton B. Goodlett Place

San Francisco, CA 94102

P: (415) 554-6617 F: (415) 554-6158

## Major, Erica

---

**From:** Major, Erica  
**Sent:** Friday, August 22, 2014 3:12 PM  
**To:** Guerra, Antonio; Nuru, Mohammed (DPW); Raphael, Deborah (ENV); Kronenberg, Anne; Rahaim, John (CPC); Moyer, Monique (PRT); Kelly, Jr, Harlan (PUC); Hui, Tom (DBI); Kelly, Naomi (ADM); Rosenfield, Ben (CON); John L Martin  
**Cc:** Steeves, Asja (CON); Lee, Frank W; Rodriguez, Guillermo (ENV); Ellis, Juliet (PUC); Jayin, Carolyn (DBI); Rodgers, AnMarie (CPC); Starr, Aaron (CPC); Forbes, Elaine (PRT); Strawn, William (DBI); Cathy Widener; Zmuda, Monique (CON); Stevenson, Peg  
**Subject:** Response Reminder - Civil Grand Jury Report: Rising Sea Levels...At Our Doorstep  
**Attachments:** REPORT Rising Sea Levels.pdf  
**Categories:** 140792

Greetings All:

I'm following up on the email sent below requesting a copy of your Civil Grand Jury response for "Rising Sea Levels...At Our Doorstep." To date we haven't received a response for your department to be included with the Board's legislative file. *Please submit your required response by August 24, 2014, via email or hand deliver a copy to the Clerk of the Board (City Hall, Room 244), Attn: Government Audit and Oversight Clerk.*

We anticipate the Board holding a committee hearing sometime in September and will update you as the date approaches. As a reminder, a representative from your department will be required to attend the Committee hearing to present your department's response and answer questions raised. *Please submit the name of the department representative who will be handling this matter and attending the hearing.*

Please feel free to contact me if you have any questions. Thank you.

## Erica Major

### Assistant Committee Clerk

Board of Supervisors

1 Dr. Carlton B. Goodlett Place, City Hall, Room 244 San Francisco, CA 94102

Phone: (415) 554-4441 | Fax: (415) 554-5163

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**From:** Miller, Alisa  
**Sent:** Thursday, June 26, 2014 3:32 PM  
**To:** Guerra, Antonio; Nuru, Mohammed (DPW); Raphael, Deborah (ENV); Kronenberg, Anne; Rahaim, John (CPC); Moyer, Monique (PRT); Kelly, Jr, Harlan (PUC); Hui, Tom (DBI); Martin, John (SFO) (AIR); Kelly, Naomi (ADM); Rosenfield, Ben (CON)  
**Cc:** Steeves, Asja (CON); Lee, Frank (DPW); Rodriguez, Guillermo (ENV); Rodgers, AnMarie (CPC); Starr, Aaron (CPC); Forbes, Elaine (PRT); Ellis, Juliet (PUC); Strawn, William (DBI); Jayin, Carolyn (DBI); Widener, Cathy (AIR); Zmuda, Monique (CON); Stevenson, Peg  
**Subject:** Civil Grand Jury Report: Rising Sea Levels

Hello all,

Within 60 days your department is required to respond to the 2013-2014 Civil Grand Jury Report, entitled "Rising Sea Levels... At Our Doorstep" (attached).

Please make sure to email/deliver a copy of your department's response to the Office of the Clerk of the Board, Attn: Government Audit and Oversight Clerk, no later than August 24, 2014 (the date department responses are due to the

Presiding Judge of the Civil Grand Jury). Your response will be included in the Board of Supervisors legislative file for their consideration at the GAO Committee hearing on this matter.

A representative from your department will be required to attend the Committee hearing to present your department's response and answer questions raised. Please submit the name of the department representative who will be handling this matter and attending the hearing.

If you have any questions, please don't hesitate to call or email me. Thank you.

*Alisa Miller*

Assistant Clerk

San Francisco Board of Supervisors

1 Dr. Carlton B. Goodlett Place, Room 244

San Francisco, CA 94102

415.554.4447 direct | 415.554.5163 fax

[alisa.miller@sfgov.org](mailto:alisa.miller@sfgov.org)

Click [HERE](#) to complete a Board of Supervisors Customer Service Satisfaction form.

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**From:** Kronenberg, Anne  
**Sent:** Tuesday, July 01, 2014 3:27 PM  
**To:** Miller, Alisa; Guerra, Antonio; Nuru, Mohammed (DPW); Raphael, Deborah (ENV); Rahaim, John (CPC); Moyer, Monique (PRT); Kelly, Jr, Harlan (PUC); Hui, Tom (DBI); John L Martin; Kelly, Naomi (ADM); Rosenfield, Ben (CON)  
**Cc:** Steeves, Asja (CON); Lee, Frank (DPW); Rodriguez, Guillermo (ENV); Rodgers, AnMarie (CPC); Starr, Aaron (CPC); Forbes, Elaine (PRT); Ellis, Juliet (PUC); Strawn, William (DBI); Jayin, Carolyn (DBI); Cathy Widener; Zmuda, Monique (CON); Stevenson, Peg; Alden, Amiee (ECD); Ebarle, David (ECD); Lee, William (ECD)  
**Subject:** RE: Civil Grand Jury Report: Rising Seal Levels

Amiee Alden will coordinate the response for DEM. anne

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**From:** Miller, Alisa  
**Sent:** Thursday, June 26, 2014 3:31 PM  
**To:** Guerra, Antonio; Nuru, Mohammed (DPW); Raphael, Deborah (ENV); Kronenberg, Anne; Rahaim, John (CPC); Moyer, Monique (PRT); Kelly, Jr, Harlan (PUC); Hui, Tom (DBI); Martin, John (SFO) (AIR); Kelly, Naomi (ADM); Rosenfield, Ben (CON)  
**Cc:** Steeves, Asja (CON); Lee, Frank (DPW); Rodriguez, Guillermo (ENV); Rodgers, AnMarie (CPC); Starr, Aaron (CPC); Forbes, Elaine (PRT); Ellis, Juliet (PUC); Strawn, William (DBI); Jayin, Carolyn (DBI); Widener, Cathy (AIR); Zmuda, Monique (CON); Stevenson, Peg  
**Subject:** Civil Grand Jury Report: Rising Seal Levels

Hello all,

Within 60 days your department is required to respond to the 2013-2014 Civil Grand Jury Report, entitled "Rising Sea Levels... At Our Doorstep" (attached).

Please make sure to email/deliver a copy of your department's response to the Office of the Clerk of the Board, Attn: Government Audit and Oversight Clerk, no later than August 24, 2014 (the date department responses are due to the Presiding Judge of the Civil Grand Jury). Your response will be included in the Board of Supervisors legislative file for their consideration at the GAO Committee hearing on this matter.

A representative from your department will be required to attend the Committee hearing to present your department's response and answer questions raised. Please submit the name of the department representative who will be handling this matter and attending the hearing.

If you have any questions, please don't hesitate to call or email me. Thank you.

*Alisa Miller*

Assistant Clerk  
San Francisco Board of Supervisors  
1 Dr. Carlton B. Goodlett Place, Room 244  
San Francisco, CA 94102  
415.554.4447 direct | 415.554.5163 fax  
[alisa.miller@sfgov.org](mailto:alisa.miller@sfgov.org)

Click [HERE](#) to complete a Board of Supervisors Customer Service Satisfaction form.

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**From:** Kelly Jr, Harlan [HKelly@sfgov.org]  
**Sent:** Tuesday, July 01, 2014 12:25 PM  
**To:** Guerra, Antonio; Guerra, Antonio; Nuru, Mohammed (DPW); Raphael, Deborah (ENV); Kronenberg, Anne; Rahaim, John (CPC); Moyer, Monique (PRT); Hui, Tom (DBI); John L Martin; Kelly, Naomi (ADM); Rosenfield, Ben (CON); Zmuda, Monique (CON); Miller, Alisa; Howard, Kate (MYR); Kim, Roger (MYR); Ellis, Juliet (PUC); Carlin, Michael (PUC)  
**Subject:** SFPUC's coordinator for Response to Civil Grand Jury Report: Rising Sea Levels

Please note that David Behar, Climate Program Director (415-554-3221, [DBehar@sfgov.org](mailto:DBehar@sfgov.org)) will serve as the point person from the SFPUC for the consolidated response. Mr. Behar will provide any necessary input to the Committee; attend the meeting on July 11, and hearing; and keep me and the senior management team fully advised. Thank you,

Harlan L. Kelly, Jr.  
General Manager  
San Francisco Public Utilities Commission

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**From:** Guerra, Antonio [mailto:antonio.guerra@sfgov.org]  
**Sent:** Tuesday, July 01, 2014 11:33 AM  
**To:** Guerra, Antonio; Nuru, Mohammed; Raphael, Deborah; Kronenberg, Anne; Rahaim, John; Moyer, Monique; Kelly Jr, Harlan; Hui, Tom C.; Martin, John L; Kelly, Naomi; Rosenfield, Ben; Zmuda, Monique  
**Cc:** Behar, David; Kim, Roger; Howard, Kate  
**Subject:** FW: Civil Grand Jury Report: Rising Sea Levels

Good morning,

Roger Kim and I will be coordinating this response on behalf of the Mayor's Office. In order to present a "citywide comprehensive plan that addresses the rising sea level issue," (finding 1,) there will be one consolidated City response back to the Civil Grand Jury.

A group response will be drafted through the SF Adapt Sea Level Rise Committee and we would like to call a meeting on July 11th. At this meeting, we plan to discuss the report, our response, and the steps necessary to finalize a response by August 24th.

On initial review, five findings and recommendations are directed to a single department. The PUC is required to respond to items 6, 7, and 8. The Airport is the respondent for item 9 and the Port for item 10. For the other findings and recommendations, we will assign a respondent who will work with Roger to draft a group response.

Please let us know whom from your Departments we should coordinate with as we prepare this response.

Thank you,

**Antonio Guerra**  
Fiscal and Policy Analyst  
Mayor's Office of Public Policy and Finance  
City Hall, Room 288  
1 Dr. Carlton B. Goodlett Place  
San Francisco, CA 94102  
P: (415) 554-6617 F: (415) 554-6158

**From:** Miller, Alisa  
**Sent:** Thursday, June 26, 2014 3:19 PM  
**To:** BOS-Supervisors  
**Cc:** BOS-Legislative Aides; Calvillo, Angela (BOS); Caldeira, Rick (BOS); Nevin, Peggy  
**Subject:** Civil Grand Jury Report: Rising Sea Levels  
**Attachments:** COB to BOS Memo and Report 06.24.14.pdf

Supervisors,

As you may know, the 2013-2014 Civil Grand Jury released their report, entitled "**Rising Sea Levels... At Our Doorstep.**" Attached please find the Clerk of the Board's official transmittal to you, with an explanation of next steps pursuant to the California Penal Code.

A hearing will be held at the Government Audit and Oversight Committee within the next 90 days in order to formulate the Board's official response to the findings and recommendations.

*Alisa Miller*

Assistant Clerk  
San Francisco Board of Supervisors  
1 Dr. Carlton B. Goodlett Place, Room 244  
San Francisco, CA 94102  
415.554.4447 direct | 415.554.5163 fax  
[alisa.miller@sfgov.org](mailto:alisa.miller@sfgov.org)

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**From:** Miller, Alisa  
**Sent:** Thursday, June 26, 2014 3:32 PM  
**To:** Guerra, Antonio; Nuru, Mohammed (DPW); Raphael, Deborah (ENV); Kronenberg, Anne; Rahaim, John (CPC); Moyer, Monique (PRT); Kelly, Jr, Harlan (PUC); Hui, Tom (DBI); Martin, John (SFO) (AIR); Kelly, Naomi (ADM); Rosenfield, Ben (CON)  
**Cc:** Steeves, Asja (CON); Lee, Frank (DPW); Rodriguez, Guillermo (ENV); Rodgers, AnMarie (CPC); Starr, Aaron (CPC); Forbes, Elaine (PRT); Ellis, Juliet (PUC); Strawn, William (DBI); Jayin, Carolyn (DBI); Widener, Cathy (AIR); Zmuda, Monique (CON); Stevenson, Peg  
**Subject:** Civil Grand Jury Report: Rising Seal Levels  
**Attachments:** REPORT Rising Sea Levels.pdf

Hello all,

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If you have any questions, please don't hesitate to call or email me. Thank you.

*Alisa Miller*

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San Francisco, CA 94102  
415.554.4447 direct | 415.554.5163 fax  
[alisa.miller@sfgov.org](mailto:alisa.miller@sfgov.org)

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# Introduction Form

By a Member of the Board of Supervisors or the Mayor

Time stamp  
or meeting date

I hereby submit the following item for introduction (select only one):

- ☒ 1. For reference to Committee. (An Ordinance, Resolution, Motion, or Charter Amendment)
- ☐ 2. Request for next printed agenda Without Reference to Committee.
- ☐ 3. Request for hearing on a subject matter at Committee.
- ☐ 4. Request for letter beginning "Supervisor [ ] inquires"
- ☐ 5. City Attorney request.
- ☐ 6. Call File No. [ ] from Committee.
- ☐ 7. Budget Analyst request (attach written motion).
- ☐ 8. Substitute Legislation File No. [ ]
- ☐ 9. Reactivate File No. [ ]
- ☐ 10. Question(s) submitted for Mayoral Appearance before the BOS on [ ]

Please check the appropriate boxes. The proposed legislation should be forwarded to the following:

- ☐ Small Business Commission    ☐ Youth Commission    ☐ Ethics Commission
- ☐ Planning Commission    ☐ Building Inspection Commission

**Note: For the Imperative Agenda (a resolution not on the printed agenda), use a Imperative Form.**

**Sponsor(s):**

Clerk of the Board

**Subject:**

Board Response - Civil Grand Jury - Rising Sea Levels...At Our Doorstep

**The text is listed below or attached:**

Resolution responding to the Presiding Judge of the Superior Court on the findings and recommendations contained in the 2013-2014 Civil Grand Jury Report, entitled "Rising Sea Levels...At Our Doorstep;" and urging the Mayor to cause the implementation of accepted findings and recommendations through his/her department heads and through the development of the annual budget.

Signature of Sponsoring Supervisor: 

For Clerk's Use Only: