

BOARD of SUPERVISORS



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

October 15, 2019

The Honorable Garrett L. Wong  
Presiding Judge  
Superior Court of California, County of San Francisco  
400 McAllister Street, Department 206  
San Francisco, CA 94102

RE: Civil Grand Jury Report - Act Now Before it is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System

Dear Judge Wong:

The Board of Supervisors' Government Audit and Oversight Committee conducted a public hearing on September 19, 2019, to review the findings and recommendations of the 2018-2019 Civil Grand Jury report, entitled "Act Now Before it is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System."

Prior to the Committee meeting, the following City Departments submitted required responses to the Civil Grand Jury:

- Office of the Mayor:  
Received September 16, 2019;
- General Manager of the San Francisco Public Utilities Commission:  
Received September 16, 2019;
- Public Utilities Commission:  
Received September 11, 2019
- Fire Commission:  
Received September 12, 2019;
- Fire Department:  
Received September 16, 2019;
- City Administrator:  
Received September 16, 2019; and
- Department of the Environment  
Received September 16, 2019.

During the September 19, 2019 meeting, the Government Audit and Oversight Committee prepared a resolution responding to the requested findings and recommendations identified in the report. The response was prepared by Resolution No. 422-19, enacted on October 11, 2019.

By this message, the Office of the Clerk of the Board of Supervisors is transmitting Resolution No. 422-19 to your attention.

If you have any questions, please contact John Carroll, Government Audit and Oversight Committee Clerk at (415) 554-4445, or via email to [john.carroll@sfgov.org](mailto:john.carroll@sfgov.org).

Sincerely,

  
f Angela Calvillo  
Clerk of the Board

c:

Sophia Kittler, Mayor's Office  
Kanishka Karunaratne Cheng, Mayor's Office  
Andres Power, Mayor's Office  
Sally Ma, Mayor's Office  
Rebecca Peacock, Mayor's Office  
Jon Givner, Office of the City Attorney  
Ben Rosenfield, City Controller  
Todd Rydstrom, Office of the Controller  
Peg Stevenson, Office of the Controller  
Tonia Lediju, Office of the Controller  
Mark de la Rosa, Office of the Controller  
Alisa Somera, Office of the Clerk of the Board  
Debra Newman, Office of the Budget and Legislative Analyst  
Severin Campbell, Office of the Budget and Legislative Analyst  
Reuben Holoher, Office of the Budget and Legislative Analyst  
Jennifer Millman Tell, Office of the Budget and Legislative Analyst  
Rasha Harvey, 2018-2019 Foreperson, San Francisco Civil Grand Jury  
Ettore Leale, 2019-2020 Foreperson, San Francisco Civil Grand Jury

Naomi M. Kelly, City Administrator, Office of the City Administrator  
Lynn Khaw, Office of the City Administrator  
Brian Strong, Office of the City Administrator  
Debbie Raphael, Director, Department of the Environment  
Peter Gallotta, Department of the Environment  
Charles Sheehan, Department of the Environment  
Jeanine Nicholson, Chief, Fire Department  
Theresa Ludwig, Fire Department  
Stephen Nakajo, President, Fire Commission  
Maureen Conefrey, Fire Commission  
Harlan L. Kelly, Jr., General Manager, San Francisco Public Utilities Commission  
Juliet Ellis, San Francisco Public Utilities Commission  
John Scarpulla, San Francisco Public Utilities Commission  
Christopher Whitmore, San Francisco Public Utilities Commission  
Ann Moller Caen, President, San Francisco Public Utilities Commission  
Donna Hood, San Francisco Public Utilities Commission



City and County of San Francisco

City Hall  
1 Dr. Carlton B. Goodlett Place  
San Francisco, CA 94102-4689

Certified Copy  
Resolution

190786

[ Board Response - Civil Grand Jury Report - Act Now Before it is Too Late:  
Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting  
Water System ]

Sponsor: Mar

Resolution responding to the Presiding Judge of the Superior Court on the findings and recommendations contained in the 2018-2019 Civil Grand Jury Report, entitled "Act Now Before it is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System;" 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. (Clerk of the Board)

10/1/2019 Board of Supervisors - ADOPTED

Ayes: 11 - Brown, Fewer, Haney, Mandelman, Mar, Peskin, Ronen, Safai, Stefani, Walton and Yee

10/11/2019 Mayor - RETURNED UNSIGNED

STATE OF CALIFORNIA  
CITY AND COUNTY OF SAN FRANCISCO

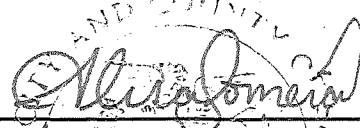
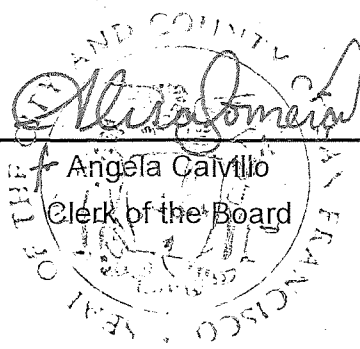
CLERK'S CERTIFICATE

I do hereby certify that the foregoing Resolution is a full, true, and correct copy of the original thereof on file in this office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City and County of San Francisco.

October 15, 2019

Date

  
\_\_\_\_\_  
Angela Gavillo  
Clerk of the Board  


1 [Board Response - Civil Grand Jury Report - Act Now Before It Is Too Late: Aggressively  
2 Expand and Enhance Our High-Pressure Emergency Firefighting Water System]

3 **Resolution responding to the Presiding Judge of the Superior Court on the findings**  
4 **and recommendations contained in the 2018-2019 Civil Grand Jury Report, entitled**  
5 **“Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure**  
6 **Emergency Firefighting Water System;” and urging the Mayor to cause the**  
7 **implementation of accepted findings and recommendations through his/her**  
8 **department heads and through the development of the annual budget.**

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

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

19 WHEREAS, Under San Francisco Administrative Code, Section 2.10(a), the Board of  
20 Supervisors must conduct a public hearing by a committee to consider a final report of the  
21 findings and recommendations submitted, and notify the current foreperson and immediate  
22 past foreperson of the civil grand jury when such hearing is scheduled; and

23 WHEREAS, In accordance with San Francisco Administrative Code, Section 2.10(b),  
24 the Controller must report to the Board of Supervisors on the implementation of  
25

1 recommendations that pertain to fiscal matters that were considered at a public hearing held  
2 by a Board of Supervisors Committee; and

3 WHEREAS, The 2018-2019 Civil Grand Jury Report, entitled "Act Now Before It Is Too  
4 Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water  
5 System" ("Report") is on file with the Clerk of the Board of Supervisors in File No. 190785,  
6 which is hereby declared to be a part of this Resolution as if set forth fully herein; and

7 WHEREAS, The Civil Grand Jury has requested that the Board of Supervisors and the  
8 Budget and Legislative Analyst respond to Finding Nos. F6, and F11, as well as  
9 Recommendation No. R3, contained in the subject Report; and

10 WHEREAS, Finding No. F6 states: "Unless the City increases funding levels, it will be  
11 several decades (i.e., after the USGS predicts one or more major earthquakes will occur)  
12 before the southern parts of the City have a high-pressure, multi-sourced, seismically safe  
13 emergency firefighting water supply;" and

14 WHEREAS, Finding No. F11 states: "The City does not have a timeline to fund and  
15 complete development of a high-pressure, multi-sourced, seismically safe emergency water  
16 supply for all parts of the City, including poor neighborhoods that historically have not been as  
17 well protected as the downtown business district and many richer neighborhoods;" and

18 WHEREAS, Recommendation No. R3 states: "The Board of Supervisors should direct  
19 the Budget and Legislative Analyst to study through an equity lens and issue a report to the  
20 Board regarding (a) which areas of the City do not have sufficient water supplies for the  
21 anticipated demand for water to fight fires following a major earthquake similar in magnitude  
22 to the 1906 earthquake, and (b) options to address the issue in both the short term and the  
23 long term. The Board should issue its request by no later than December 31, 2019, and the  
24 Budget and Legislative Analyst should complete its report by no later than  
25 December 31, 2020;" and

1           WHEREAS, The Civil Grand Jury has requested that the Board of Supervisors respond  
2 to Finding Nos. F4, and F5, as well as Recommendation Nos. R1, R2, R4, R6, R7, and R8,  
3 contained in the subject Report; and

4           WHEREAS, Finding No. F4 states: "The City's high-pressure emergency water supply  
5 system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of  
6 Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a  
7 result, these districts are not adequately protected from fires after a major earthquake;" and

8           WHEREAS, Finding No. F5 states: "A high-pressure, multi-sourced, seismically safe  
9 emergency firefighting water supply will be costly but is essential to protect the City;" and

10          WHEREAS, Recommendation No. R1 states: "By no later than December 31, 2020,  
11 the Mayor, the SFPUC, the SFFD, and Office of Resilience and Capital Planning should jointly  
12 present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight  
13 fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake;" and

14          WHEREAS, Recommendation No. R2 states: "The plan discussed in Recommendation  
15 R1 should include a detailed proposal, including financing sources, for the installation  
16 within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system  
17 for those parts of the City that don't currently have one, i.e., by no later than June 30, 2034;"  
18 and

19          WHEREAS, Recommendation No. R4 states: "As an interim measure, by no later than  
20 June 30, 2021, the City should purchase the 20 new PWSS hose tenders being requested by  
21 the SFFD, to replace and expand its currently inadequate inventory;" and

22          WHEREAS, Recommendation No. R6 states: "The SFPUC, the SFFD, and the SF  
23 Department of the Environment should study adding salt-water pump stations to improve the  
24 redundancy of water sources, especially on the west side. Findings and recommendations  
25

1 from this study should be presented to the Board of Supervisors by no later than  
2 June 30, 2021;" and

3 WHEREAS, Recommendation No. R7 states: "The SFPUC should (a) continue its  
4 efforts to complete a more detailed analysis of emergency firefighting water needs (including  
5 above-the-median needs) by neighborhood, and not just by FRA, and (b) present a completed  
6 analysis to the Board of Supervisors by no later than June 30, 2021;" and

7 WHEREAS, Recommendation No. R8 states: "By no later than June 30, 2022, the  
8 Mayor and Board of Supervisors should analyze whether to propose a separate bond for the  
9 development of a high-pressure, multi-sourced, seismically safe emergency water system for  
10 those parts of the City that don't currently have one, with a target date of completing  
11 construction by no later than June 30, 2034;" and

12 WHEREAS, In accordance with California Penal Code, Section 933.05(c), the Board of  
13 Supervisors must respond, within 90 days of receipt, to the Presiding Judge of the Superior  
14 Court on Finding Nos. F4, F5, F6, and F11, as well as Recommendation Nos. R1, R2, R3, R4,  
15 R6, R7, and R8 contained in the subject Report; now, therefore, be it

16 RESOLVED, That the Board of Supervisors reports to the Presiding Judge of the  
17 Superior Court that they agree with Finding No. F4; and, be it

18 FURTHER RESOLVED, That the Board of Supervisors reports to the Presiding Judge  
19 of the Superior Court that they agree with Finding No. F5; and, be it

20 FURTHER RESOLVED, That the Board of Supervisors reports to the Presiding Judge  
21 of the Superior Court that they agree with Finding No. F6; and, be it

22 FURTHER RESOLVED, That the Board of Supervisors reports to the Presiding Judge  
23 of the Superior Court that they agree with Finding No. F11; and, be it

24 FURTHER RESOLVED, That the Board of Supervisors reports that Recommendation  
25 No. R1 has not been implemented but will be implemented no later than December 31, 2021,

1 and urges the Mayor, the SFPUC, the SFFD, and Office of Resilience and Capital Planning to  
2 jointly present a detailed plan to the Board of Supervisors by no later than  
3 December 31, 2021; and, be it

4 FURTHER RESOLVED, That the Board of Supervisors reports that Recommendation  
5 No. R2 has not been implemented but will be implemented by December 31, 2021, and urges  
6 the Departments to include in its detailed plan a detailed proposal, including financing  
7 sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe  
8 emergency water system for those parts of the City that don't currently have one by no later  
9 than June 30, 2034; and, be it

10 FURTHER RESOLVED, That the Board of Supervisors reports that Recommendation  
11 No. R3 has not been implemented but will be implemented in the future, and Supervisor  
12 Gordon Mar will issue a request for a Budget and Legislative Analyst report no later than  
13 December 31, 2019, and will direct the Budget and Legislative Analyst to issue the completed  
14 report no later than December 31, 2020; and, be it

15 FURTHER RESOLVED, That the Board of Supervisors reports that Recommendation  
16 No. R4 will not be implemented because while funding for five hose tenders was allocated for  
17 FY2019-2020 though both local and state-level actions, implementation of the  
18 recommendation in its entirety will depend on the appropriation actions of a future Mayor and  
19 Board of Supervisors; and, be it

20 FURTHER RESOLVED, That the Board of Supervisors reports that Recommendation  
21 No. R6 has not been implemented but will be implemented in the future, and urges the  
22 completion of a study for adding a salt-water pump stations to be presented to the Board of  
23 Supervisors by no later than June 30, 2021, be it

24 FURTHER RESOLVED, That the Board of Supervisors reports that Recommendation  
25 No. R7 has not been implemented but will be implemented in the future, and urges that a



1 completed analysis be presented to the Board of Supervisors by no later than June 30, 2021;  
2 and, be it

3 FURTHER RESOLVED, That the Board of Supervisors reports that Recommendation  
4 No. R8 has not been implemented but will be implemented in the future, and will analyze by  
5 June 30, 2022, in coordination with the Mayor, whether to propose a separate bond for the  
6 development of a high-pressure, multi-sourced, seismically safe emergency water system for  
7 those parts of the City that don't currently have one, with a target date of completing  
8 construction by no later than June 30, 2034; and, be it

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



City and County of San Francisco  
Tails  
Resolution

City Hall  
1 Dr. Carlton B. Goodlett Place  
San Francisco, CA 94102-4689

File Number: 190786

Date Passed: October 01, 2019

Resolution responding to the Presiding Judge of the Superior Court on the findings and recommendations contained in the 2018-2019 Civil Grand Jury Report, entitled "Act Now Before it is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System;" 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.

September 19, 2019 Government Audit and Oversight Committee - AMENDED, AN AMENDMENT OF THE WHOLE BEARING SAME TITLE

September 19, 2019 Government Audit and Oversight Committee - RECOMMENDED AS AMENDED

October 01, 2019 Board of Supervisors - ADOPTED

Ayes: 11 - Brown, Fewer, Haney, Mandelman, Mar, Peskin, Ronen, Safai, Stefani, Walton and Yee

File No. 190786

I hereby certify that the foregoing Resolution was ADOPTED on 10/1/2019 by the Board of Supervisors of the City and County of San Francisco.

† Angela Calvillo  
Clerk of the Board

Unsigned

London N. Breed  
Mayor

10/11/2019

Date Approved

File No. 190786

I hereby certify that the foregoing resolution, not being signed by the Mayor within the time limit as set forth in Section 3.103 of the Charter, or time waived pursuant to Board Rule 2.14.2, became effective without her approval in accordance with the provision of said Section 3.103 of the Charter or Board Rule 2.14.2.



for Angela Calvillo  
Clerk of the Board

10/11/2019

Date



San Francisco  
**Water Power Sewer**  
 Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor  
 San Francisco, CA 94102  
 T 415.554.3155  
 F 415.554.3161  
 TTY 415.554.3488

September 11, 2019

Sent via U.S. Mail and email to CGrandJury@sftc.org

The Honorable Garrett L. Wong  
 Presiding Judge  
 Superior Court of California, County of San Francisco  
 400 McAllister Street, Room 008  
 San Francisco, CA 94102-4512

Dear Judge Wong:

In accordance with Penal Code Sections 933 and 933.05, and pursuant to the request of Mr. Rasha Harvey, Foreperson of the City and County of San Francisco 2018-19 Civil Grand Jury, attached please find the response of the San Francisco Public Utilities Commission to the 2018-2019 Civil Grand Jury Report, *Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System*. At its regularly scheduled public meeting of September 10, 2019, the Commission voted to approve the attached responses by Resolution No. 19-0178.

The response of the General Manager of the San Francisco Public Utilities Commission is being sent under separate cover.

The Commission would like to thank the members of the 2018-2019 Civil Grand Jury for their service and their interest in our vital water infrastructure that supports firefighting in all communities in San Francisco.

Sincerely,

Ann Moller Caen  
 President  
 San Francisco Public Utilities Commission

cc: Harlan Kelly, SFPUC General Manager  
 Mayor London Breed

London N. Breed  
 Mayor

Ann Moller Caen  
 President

Francesca Vietor  
 Vice President

Anson Moran  
 Commissioner

Sophie Maxwell  
 Commissioner

Tim Paulson  
 Commissioner

Harlan L. Kelly, Jr.  
 General Manager

**OUR MISSION:** To provide our customers with high-quality, efficient and reliable water, power and sewer services in a manner that values environmental and community interests and sustains the resources entrusted to our care.



# PUBLIC UTILITIES COMMISSION

City and County of San Francisco

RESOLUTION NO. 19-0178

WHEREAS, On July 17, 2019, the 2018-2019 Civil Grand Jury released a report entitled, "Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System," a copy of which is on file with the Commission Secretary and has been provided to this Commission for review; and


WHEREAS, The Civil Grand Jury requires written responses from this Commission to the Report's Findings Nos. 1, 2, 4, 5, 6, 8, 9, 10, 11, 12, and 13, and Recommendations Nos. 1, 2, 6, 7, 9, and 10; and

WHEREAS, California Penal Code §933(c) requires such written responses be submitted to the Presiding Judge no later than September 15, 2019; and

WHEREAS, Attached hereto are the Commission's responses to the above stated Findings and Recommendations in the 2018-19 Civil Grand Jury Report; now, therefore be it

RESOLVED, That this Commission hereby approves the Commission's responses, attached hereto, to the relevant findings and recommendations of the July 17, 2019 Civil Grand Jury Report entitled, "Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System" and authorizes and directs the Commission President to submit the response to the Presiding Judge of the Civil Grand Jury by September 15, 2019, as required by California Penal Code §933(c).

*I hereby certify that the foregoing resolution was adopted by the Public Utilities Commission at its meeting of September 10, 2019.*



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Secretary, Public Utilities Commission

Report Title [Publication Date]	F#	Finding (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by CGJ [Response Due Date]	Finding Response (Agree/Disagree)	Finding Response Text	R# (for F#)	Recommendation (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by CGJ [Response Due Date]	Recommendation Response (Implementation)	Recommendation Response Text
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F1	Fires resulting from an earthquake represent a significant risk of widespread damage and potential loss of life in San Francisco.	President, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding		R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the Infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F1	Fires resulting from an earthquake represent a significant risk of widespread damage and potential loss of life in San Francisco.	President, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding		R2 [for F1-F6]	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2034.	President, San Francisco Public Utilities Commission [September 15, 2019]	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F2	The municipal water supply system (MWSS) is highly vulnerable to damage from a major earthquake and is not a reliable source for water supply for firefighting after a major earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, partially	The MWSS has been significantly upgraded in the last 15 years through the Water Supply Improvement Program (WSIP) initiated by the SFPUC. The goals of WSIP included to reduce vulnerability of the water system to damage from earthquakes and increase overall water system reliability. There were 35 in-city projects within the \$4.8 billion-dollar program. The WSIP was the largest capital program ever undertaken by San Francisco, and one of the largest water infrastructure programs in the nation. Additionally, it is one of the only comprehensive and strategic infrastructure programs targeted specifically at improving a water system's seismic reliability and resiliency. Additionally, it is unique because the WSIP utilized a 7.8 magnitude earthquake as its seismic level of service.	R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the Infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.

Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F2	The municipal water supply system (MWSS) is highly vulnerable to damage from a major earthquake and is not a reliable source for water supply for firefighting after a major earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, partially	The MWSS has been significantly upgraded in the last 15 years through the Water Supply Improvement Program (WSIP) initiated by the SFPUC. The goals of WSIP included to reduce vulnerability of the water system to damage from earthquakes and increase overall water system reliability. There were 35 in-city projects within the \$4.8 billion-dollar program. The WSIP was the largest capital program ever undertaken by San Francisco, and one of the largest water infrastructure programs in the nation. Additionally, it is one of the only comprehensive and strategic infrastructure programs targeted specifically at improving a water system's seismic reliability and resiliency. Additionally, it is unique because the WSIP utilized a 7.8 magnitude earthquake as its seismic Level of Service.	R2 [for F1-F6]	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2034.	President, San Francisco Public Utilities Commission [September 15, 2019]	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F4	The City's high-pressure emergency water supply system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a result, these districts are not adequately protected from fires after a major earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding	The SFPUC, SFFD, and San Francisco Public Works (SFPW) are committed to increasing fire protection throughout San Francisco. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, the three agencies have been implementing projects to improve the AWSS system's seismic reliability and range of coverage. Enhancing the AWSS range of coverage to all areas of the City would require the allocation of funds to do so. The three agencies will continue to develop and implement projects utilizing new and proven technologies that improve upon the original system design. There have been many advancements in earthquake resistant pipeline design and materials, hydrants, and seismic valves since the early 1900s, and the City intends to use the best possible technology available to meet the performance standards of the SFFD.	R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
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Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F5	A high-pressure, multi-sourced, seismically safe emergency firefighting water supply will be costly but is essential to protect the City.	President, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding	As the City considers what is essential to protect San Francisco, it is important to acknowledge our multiple, complex resilience challenges. These challenges are documented in the Resilient SF Strategy (2016) and underlie the strategic efforts of our capital investments as represented in the 10-Year Capital Plan (last updated 2019). These challenges are: Earthquakes, Sea Level Rise/Climate Change, Aging Infrastructure, Unaffordability, and Social Inequity. All of these challenges represent meaningful threats to San Franciscans, their property, and their ability to make a life in the city. In making decisions about priority investments, San Francisco must keep an eye on all of these challenges, identify the areas of greatest need across them, and make progress on all fronts simultaneously. The City has taken significant steps since 2010 to ensure that the City has a high-pressure multi-sourced, seismically safe EPWS. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, SFPUC, SFFD, SF Public Works have been implementing projects to improve the system's seismic reliability and range of coverage. The three agencies will continue to implement projects utilizing new and proven technologies that improve upon the original system design.	R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the Infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
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Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	President, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.	R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the Infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.



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Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F8	Redundancy is an important feature of an emergency firefighting water system.	President, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding		R6 [for F8-F9]	The SFPUC, the SFFD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.	President, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	SFPUC and SFFD will complete this study by June 30, 2021.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F9	Current plans to extend protections to the western part of the City do not include any high pressure water sources north of Golden Gate Park.	President, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, partially	While it is true that the SFPUC and SFFD are studying four potential water sources proposed to supply a potable EFWS on the west side of the City, which are not located north of Golden Gate Park, which by no means would reduce the proposed system's resiliency, reliability, performance, or ability to provide abundant high-pressure water for fire suppression to the Richmond District after a seismic event. San Francisco is unique in that there are 11 in-city reservoirs, with a total water capacity of approximately 413,000,000 gallons. Additionally, Lake Merced, also located within City Limits, has an additional approximately 1,000,000,000 gallons. The potable EFWS system for the Westside of San Francisco that is being developed and analyzed would provide that the new EFWS pipeline in the Sunset and Richmond Districts could be supplied from four sources of water at two locations. The first two water sources could be supplied to the EFWS pipeline via a 30,000 gallon per minute pump station in the vicinity of Lake Merced. The two sources being studied for this pump station are Lake Merced, which has a water supply of approximately one billion gallons, and a 60" seismically resilient SFPUC Hetch Hetchy Regional Water System pipeline. The proposed potable EFWS also is analyzing the inclusion of a second 30,000 gallons per minute pump station in the vicinity of the SFPUC's Sunset Reservoir that could be supplied water by two sources: (1) the 90 million gallon north basin of the Sunset Reservoir, which recently underwent a \$64 million seismic retrofit, and (2) a 54" seismically resilient SFPUC Hetch Hetchy Regional Water system pipeline.	R6 [for F8-F9]	The SFPUC, the SFFD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.	President, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	SFPUC and SFFD will complete this study by June 30, 2021.

<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F10</p>	<p>The "reliability scores" being used by the SFPUC impart an overly optimistic impression of the protection provided.</p>	<p>President, San Francisco Public Utilities Commission [September 15, 2019]</p>	<p>Disagree, partially</p>	<p>Fire Response Areas (FRAs) were utilized by SFPUC and SFFD in the planning study CS-199. This study divided the City into areas based on those defined by the SFFD for initial alarm response and were called Fire Response Areas (FRAs). Probable fire demands were developed for each FRA using 1000 sets of fire demands generated by Charles Scawthorn, PhD using a Monte Carlo analysis of fire ignitions and fire growth using the ground motions from the design earthquake (7.8 magnitude). The fire ignitions were generated using methods similar to those used for the Community Action Plan for Seismic Safety (CAPSS) study (ATC 2010). The fire ignitions subsequently were used to develop water demands that were aggregated into the likely fire demands for each FRA. The water supplies for each FRA were developed using the reliability modeling tool GIRAFFE, developed at Cornell University by Professor Thomas D. O'Rourke. GIRAFFE performs Internal Monte Carlo analysis to damage pipes in the system for multiple scenarios. The water supplies developed by GIRAFFE were aggregated into the likely water supplies for each FRA. It should be noted that the likely water supplies for each FRA assumed no water from the City's municipal water system (MWSS), which is quite conservative and highly unlikely even after a seismic event. The reliability score for each FRA is calculated using the sum of all water supplies for each FRA and dividing it by the FRA water demand. The reliability scores do exactly that - estimate how much EFWS water will be available for firefighting demands in a given FRA. The reliability scores are not meant to represent an estimate of the fire protection for a given house, block, or blocks. Rather it is a measure of the EFWS capacity and demand. The SFPUC recognizes the need to analyze potential EFWS demands on a more detailed level, and the agency began the process of doing so.</p>	<p>R7 [for F10]</p>	<p>The SFPUC should (a) continue its efforts to complete a more detailed analysis of emergency firefighting water needs (including above-the-median needs) by neighborhood, and not just by FRA, and (b) present a completed analysis to the Board of Supervisors by no later than June 30, 2021.</p>	<p>President, San Francisco Public Utilities Commission [September 15, 2019]</p>	<p>Will be implemented</p>	<p>SFPUC and SFFD will complete this analysis by June 30, 2021.</p>
<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F11</p>	<p>The City does not have a timeline to fund and complete development of a high-pressure, multi-sourced, seismically safe emergency water supply for all parts of the City, including poor neighborhoods that historically have not been as well protected as the downtown business district and many richer neighborhoods.</p>	<p>President, San Francisco Public Utilities Commission [September 15, 2019]</p>	<p>Disagree, partially</p>	<p>The EFWS was built after the 1906 earthquake, and its location, primarily in the northeast portion of San Francisco, corresponds to the location of the majority of the city's population at that time. Since 2010, the SFPUC, SFFD, and Public Works have made critical improvements to the existing EFWS system. Expanding the EFWS prior to ensuring that the existing EFWS is resilient and reliable would have contradicted best engineering practices. The SFPUC and SFFD are developing plans that would implement a resilient, robust, and redundant potable EFWS for the Westside of San Francisco. The potable EFWS that is being developed and analyzed would propose the best method for bringing a robust and resilient high-pressure firefighting water system to the Western neighborhoods in San Francisco that is capable of providing water to the SFFD firefighters at the high-pressure needed for firefighters to combat large fires after a seismic event, and is likely to include over 14 miles of new EFWS pipelines and potentially two new pump stations likely to be supplied by four water sources. The SFPUC and SFFD's potable EFWS is being designed in a manner that allows for agility and the flexibility to add new technologies and water sources, and in a manner that allows the piping network to be extended in the future to serve additional areas.</p>					

<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F12</p>	<p>The SFPUC has not developed a number of the routine maintenance plans recommended in a 2014 report (CS-199), and has not adequately defined which AWSS valves are "critical" and therefore require increased attention.</p>	<p>President, San Francisco Public Utilities Commission (September 15, 2019)</p>	<p>Disagree, wholly</p>	<p>Since taking over maintenance responsibilities, SFPUC has completed significant maintenance activities. For example, on a monthly basis, staff from the SFPUC test both Pump Station #1 and Pump Station #2. There are 6 maintenance recommendations provided in the CS-199 study as shown below in Table 7-1 from CS-199. The SFPUC has developed several of the routine maintenance plans recommended in the report or has determined the recommended maintenance practice is not necessary (i.e. flushing of a non-potable water system).</p> <p>Maintenance Recommendations, CS, 199 Task 11 TM:  Maintenance Recommendation 1: Confirm that all AWSS assets are entered into CDD's asset management system and PM's are established  SFPUC Response: All AWSS asset locations are entered into CDD's Maximo and GIS databases. PM's are established for regular maintenance.</p> <p>Maintenance Recommendation 2: Perform Regular maintenance and testing  SFPUC Response: According to SFPUC Maximo maintenance/testing records, regular maintenance and testing is performed in accordance with maintenance plans.</p> <p>Maintenance Recommendation 3: Check, flush and repair all suction connections regularly  SFPUC Response: All suction connections were assessed 4-5 years ago. Some were cleaned as needed at that time. A high-pressure jetting machine was recently purchased, and personnel is being trained on its use.</p> <p>Maintenance Recommendation 4: Establish pipeline flushing program for AWSS  SFPUC Response: Non-potable fire-fighting water systems are not typically flushed as part of regular flushing maintenance program. However, flushing naturally occurs when the AWSS is utilized approximately 20 times per year.</p> <p>Maintenance Recommendation 5: Establish leak detection program and a pipeline leak database to monitor potential hot spots  SFPUC Response: SFPUC maintenance activities have helped reduced EFWS leakage by over 500,000 gallons per day, improving system performance while reducing water waste. A condition assessment project was implemented using Smart Ball technology. In addition, the system water supply sources are regularly monitored for water levels/filling requirements which will indicate potential leaks in the pipeline system.</p> <p>Maintenance Recommendation 6: Establish a cistern inspection, filling and testing program  SFPUC Response: A cistern inspection and testing program has been developed for implementation in 2019. In addition, a filling procedure has been established with SFPD.</p> <p>As part of the AWSS Critical Valve Exercise Program, CDD has identified 66 AWSS valves as "critical" (66 of 1,585 valves, or approximately 4 percent [source: CDD GIS]). Critical valves for AWSS were defined based on the following criteria for operational importance:</p> <ul style="list-style-type: none"> <li>• Tank bypass valves</li> <li>• Tank supply valve from higher pressure to lower pressure tank supply source</li> <li>• Closed control valves to isolate piping within an Infirm area</li> <li>• Distribution system divide gate valve, manual operation (allows higher pressure zone to feed into lower pressure zone within the distribution</li> </ul>	<p>R9 (for F12)</p>	<p>By no later than December 31, 2020 the SFPUC, with the advice and subject to the approval of the SFPD, should (a) Implement "best practices" for the maintenance of AWSS assets, and (b) redefine which AWSS valves in the system are "critical," and, therefore, require more attention and priority in the SFPUC's maintenance plans.</p>	<p>President, San Francisco Public Utilities Commission (September 15, 2019)</p>	<p>Has been implemented</p>	<p>(a) SFPUC Implements "best practices" for the maintenance of AWSS assets in collaboration with SFPD, and consistent with the terms of the Memorandum of Understanding Regarding Operation and Maintenance of San Francisco Water Supply Systems Related to Fire Suppression (MOU). SFPUC will seek SFPD's written approval for "any modifications that could compromise" the system's function as a high pressure firefighting system (MOU, page 2).  (b) The AWSS critical valves have been identified and will be exercised every year through the AWSS Critical Valve Exercise Program.</p>
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				<p>pressure zone to feed into lower pressure zone within the distribution system)</p> <ul style="list-style-type: none"> <li>• Distribution system divide gate valve, motorized operation (allows higher pressure zone to feed into lower pressure zone within the distribution system)</li> <li>• Open control valves to allow a single supply source to feed an infirm area</li> <li>• Balancing valve, TP reservoir only (allows the two TP reservoir basins to equalize in level)</li> </ul> <p>Critical Valves: These EFWS critical valves are broken down by type below. All 66 of the AWSS critical valves were exercised in 2018-2019 and will be exercised every year.</p> <p>Valve Type (# of Critical Valves per type):          Ashbury Tank By-Pass Valves (10)          Ashbury Tank Supply Valve #1 (Ashbury to Jones) (1)          Ashbury Tank Supply Valve #2 (Ashbury to Jones) (1)          Close Control Gate Valve (15)          Division Gate Valve (14)          Jones Street Tank By-Pass Valves (10)          Motorized Division Gate Valve or Motorized Line Gate Valve (6)          Open Control Gate Valve [Infirm Area] (6)          Twin Peaks East Reservoir Lead Valve [Supply, TP to Ashbury] (1)          Twin Peaks Reservoir Balancing Valve (1)          Twin Peaks West Reservoir Lead Valve [Supply, TP to Ashbury] (1)          Total AWSS Critical Valves (66)</p>						
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F13	In the 2015 MOU between the SFFD and the SFPUC, the two agencies agreed to conduct joint AWSS trainings annually, but there is no formal protocol outlining specific joint AWSS exercises or drills using hypothetical disaster scenarios, such as a major earthquake.	President, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, partially	<p>There are no formal protocol outlining specific joint AWSS exercises or drills in the MOU; however, there are multiple opportunities to train together during operation, maintenance, and construction of improvement projects for the AWSS facilities as previously described in the response to the Grand Jury questions sent in May 2019.</p> <p>The SFFD and SFPUC have had multiple field training opportunities during the maintenance and start-up testing of AWSS facilities in the last 5 years. For example, on December 20, 2018, SFFD and SFPUC personnel conducted emergency generator start-up procedures for Pump Station No. 2 (PS2). On April 5, 2018 SFPUC and SFFD performed joint-department full-scale test of AWSS Pump Station No. 1 (PS1) including pumping seawater into an isolated section of the AWSS distribution through system hydrants. On August 29, 2018, SFPUC, SFFD and DPW personnel conducted a seawater drafting drill and confirmation test from the new suction connection at Pier 50. In addition, SFFD and SFPUC periodically test different facilities to assure systems are in good working order, and to train personnel on operations and joint-agency communications. For example, a full-scale emergency exercise was performed between SFFD and SFPUC staff in January 2016 at Islais Creek, which involved the Phoenix Fireboat pumping sea water directly into an isolated section of the Jones pressure system via AWSS manifold connection. Sea water discharged from select hydrants within the isolated section of the system where pressure and flow were monitored at each discharge point.</p> <p>The SFFD uses their Disaster Response Manual and Water Supply Manual to provide guidelines for training. Training occurs throughout the year and is ongoing. In March 2018, the SFPUC sponsored a tabletop drill focused on CDD emergency response in coordination with SFFD response. Participants were asked to utilize Incident Command Structure (ICS) principles to</p>	R10 [for F13]	By no later than June 30, 2020, the 2015 MOU between the SFPUC and the SFFD should be amended to include a detailed roadmap for annual emergency response exercises, including simulated disaster and earthquake drills involving the AWSS and the PWSS.	President, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	SFFD and SFPUC will work together to amend the MOU by June 30, 2020.

				<p>respond to a hypothetical earthquake event (determine ICS, formulate specific objectives, and document findings). It is anticipated that this tabletop exercise will be repeated at least every other year, and that a larger scale simulation of post-earthquake response will be conducted within the next two years for SFFD and SFPUC joint-exercise.</p> <p>In February 2018 the SFPUC and SFFD staff convened to review the SFPUC's Division Emergency Operations Plan (DEOP), the CDD's Emergency Action Plan (EAP), and the CDD's Emergency Response Plan (ERP). The ERP overview focused on the Incident Command structure specific to CDD staff responsibilities, communication methods, critical facilities and assets, first responders for each facility (PWS and AWSS) and updated "critical facilities map" for all major pressure zones.</p>				
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2018-2019 CIVIL GRAND JURY FINDINGS, RECOMMENDATIONS, AND RESPONSES TO FINDINGS AND RECOMMENDATIONS

Report Title [Publication Date]	F#	Finding (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by CGJ [Response Due Date]	Finding Response (Agree/Disagree)	Finding Response Text	R# [for F#]	Recommendation (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by CGJ [Response Due Date]	Recommendation Response (Implementation)	Recommendation Response Text
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F1	Fires resulting from an earthquake represent a significant risk of widespread damage and potential loss of life in San Francisco.	President, San Francisco Fire Commission [September 15, 2019]	Agree with the finding		R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPU, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Fire Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F1	Fires resulting from an earthquake represent a significant risk of widespread damage and potential loss of life in San Francisco.	President, San Francisco Fire Commission [September 15, 2019]	Agree with the finding		R2 [for F1-F6]	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2034.	President, San Francisco Fire Commission [September 15, 2019]	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F2	The municipal water supply system (MWSS) is highly vulnerable to damage from a major earthquake and is not a reliable source for water supply for firefighting after a major earthquake.	President, San Francisco Fire Commission [September 15, 2019]	Disagree, partially	The MWSS has been significantly upgraded in the last 15 years through the Water Supply Improvement Program (WSIP) initiated by the SFPU. The goals of WSIP included to reduce vulnerability of the water system to damage from earthquakes and increase overall water system reliability. There were 35 in-city projects within the \$4.8 billion-dollar program. The WSIP was the largest capital program ever undertaken by San Francisco, and one of the largest water infrastructure programs in the nation. Additionally, it is one of the only comprehensive and strategic infrastructure programs targeted specifically at improving a water system's seismic reliability and resiliency. Additionally, it is unique because the WSIP utilized a 7.8 magnitude earthquake as its seismic level of service.	R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPU, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Fire Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.

2018-2019 CIVIL GRAND JURY FINDINGS, RECOMMENDATIONS, AND RESPONSES TO FINDINGS AND RECOMMENDATIONS

<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F2</p>	<p>The municipal water supply system (MWSS) is highly vulnerable to damage from a major earthquake and is not a reliable source for water supply for firefighting after a major earthquake.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Disagree, partially</p>	<p>The MWSS has been significantly upgraded in the last 15 years through the Water Supply Improvement Program (WSIP) initiated by the SFPUC. The goals of WSIP included to reduce vulnerability of the water system to damage from earthquakes and increase overall water system reliability. There were 35 in-city projects within the \$4.8 billion-dollar program. The WSIP was the largest capital program ever undertaken by San Francisco, and one of the largest water infrastructure programs in the nation. Additionally, it is one of the only comprehensive and strategic infrastructure programs targeted specifically at improving a water system's seismic reliability and resiliency. Additionally, it is unique because the WSIP utilized a 7.8 magnitude earthquake as its seismic level of service.</p>	<p>R2 [for F1-F6]</p>	<p>The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2034.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Requires further analysis</p>	<p>The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resiliency; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F3</p>	<p>Approximately 30 cisterns have recently been added with funds from ESER bonds, but cisterns only have up to about an hour of water supply and thus do not provide sufficient water for fighting fires following a major earthquake.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Agree with the finding</p>	<p>Cisterns serve as one of many important tools for use by the SFPD in response to a disaster. Cistern locations are strategically located in the City in the event of a major conflagration to assist as a "Demarcation Line" on some of the City's major thoroughfares. This was realized after the 1906 earthquake. With work accomplished through the ESER bond program, cisterns have been seismically improved throughout the City and the overall number of cisterns has increased to approximately 230, providing the Fire Department access to millions of gallons of water in an emergency.</p>	<p>R1 [for F1-F6]</p>	<p>By no later than December 31, 2020, the Mayor, the SFPUC, the SFPD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Will be implemented</p>	<p>Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.</p>
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2018-2019 CIVIL GRAND JURY FINDINGS, RECOMMENDATIONS, AND RESPONSES TO FINDINGS AND RECOMMENDATIONS

Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F4	The City's high-pressure emergency water supply system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a result, these districts are not adequately protected from fires after a major earthquake.	President, San Francisco Fire Commission [September 15, 2019]	Agree with the finding	The SFPUC, SFFD, and San Francisco Public Works (SFPW) are committed to increasing fire protection throughout San Francisco. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, the three agencies have been implementing projects to improve the AWSS system's seismic reliability and range of coverage. Enhancing the AWSS range of coverage to all areas of the City would require the allocation of funds to do so. The three agencies will continue to develop and implement projects utilizing new and proven technologies that improve upon the original system design. There have been many advancements in earthquake resistant pipeline design and materials, hydrants, and seismic valves since the early 1900s, and the City intends to use the best possible technology available to meet the performance standards of the SFFD.	R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Fire Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
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2018-2019 CIVIL GRAND JURY FINDINGS, RECOMMENDATIONS, AND RESPONSES TO FINDINGS AND RECOMMENDATIONS

Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F5	A high-pressure, multi-sourced, seismically safe emergency firefighting water supply will be costly but is essential to protect the City.	President, San Francisco Fire Commission [September 15, 2019]	Agree with the finding	As the City considers what is essential to protect San Francisco, it is important to acknowledge our multiple, complex resilience challenges. These challenges are documented in the Resilient SF strategy (2016) and underlie the strategic efforts of our capital investments as represented in the 10-Year Capital Plan (last updated 2019). These challenges are: Earthquakes, Sea Level Rise/Climate Change, Aging Infrastructure, Unaffordability, and Social Inequity. All of these challenges represent meaningful threats to San Franciscans, their property, and their ability to make a life in the city. In making decisions about priority investments, San Francisco must keep an eye on all of these challenges, identify the areas of greatest need across them, and make progress on all fronts simultaneously. The City has taken significant steps since 2010 to ensure that the City has a high-pressure multi-sourced, seismically safe EFWS. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, SFPUC, SFFD, SF Public Works have been implementing projects to improve the system's seismic reliability and range of coverage. The three agencies will continue to implement projects utilizing new and proven technologies that improve upon the original system design.	R1 [for F1-F6] By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Fire Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
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Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	President, San Francisco Fire Commission [September 15, 2019]	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.	R1 [for F1-F6] By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	President, San Francisco Fire Commission [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.

2018-2019 CIVIL GRAND JURY FINDINGS, RECOMMENDATIONS, AND RESPONSES TO FINDINGS AND RECOMMENDATIONS

<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F6</p>	<p>Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Disagree, wholly</p>	<p>Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.</p>	<p>R2 [for F1-F6]</p>	<p>The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2034.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Requires further analysis</p>	<p>The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F6</p>	<p>Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Disagree, wholly</p>	<p>Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.</p>	<p>R4 [for F6-F7]</p>	<p>As interim measure, by no later than June 30, 2021, the City should purchase the 20 new PWSS hose tenders being requested by the SFFD, to replace and expand its currently inadequate inventory.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Requires further analysis</p>	<p>The Fire Department has been allocated funding to purchase five units through funds from the FY19-20 City budget and an allocation from the State. The Department is currently working with the Office of Contract Administration to develop a multi-year term contract for hose tenders so in the case that additional funding is secured in future years, the Department will be able to reduce the amount of time for procurement of the apparatus. Each hose tender cost \$1 million each, and we need to weigh purchase of additional hose tenders to other budget request and priority.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F7</p>	<p>The existing Portable Water Supply System (PWSS) inventory is inadequate. Investing in more PWSS hose tenders would provide a relatively quick, cost-effective interim means to improve protection of the southern and western parts of the City until a high-pressure, multi-sourced, seismically safe emergency water supply can be developed in those areas.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Agree with the finding</p>	<p>The Fire Department has been allocated funding to purchase five units through funds from the FY19-20 City budget and an allocation from the State. While the Department currently has five older hose tenders spread-out throughout the City, these new units are much more modern and provide the Department with a number of operational benefits, including the following: the capability of pumping and drafting water from any water source; extending the current AWSS system infrastructure; carrying 6,000 feet of hose for deployment; a 5,500 gallon per minute (GPM) on-board water pump and a 3,000 GPM portable submersible water pump; on-board monitor with a 525 foot reach; and four wheel drive. In addition, the Department has been successful in advocating and receiving Federal grant funds to assist with purchasing various PWSS equipment (valves, hose, ramps, etc.), and will continue to advocate for alternative sources of funding to increase the inventory of PWSS equipment.</p>	<p>R4 [for F6-F7]</p>	<p>As interim measure, by no later than June 30, 2021, the City should purchase the 20 new PWSS hose tenders being requested by the SFFD, to replace and expand its currently inadequate inventory.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Requires further analysis</p>	<p>The Fire Department has been allocated funding to purchase five units through funds from the FY19-20 City budget and an allocation from the State. The Department is currently working with the Office of Contract Administration to develop a multi-year term contract for hose tenders so in the case that additional funding is secured in future years, the Department will be able to reduce the amount of time for procurement of the apparatus. Each hose tender cost \$1 million each, and we need to weigh purchase of additional hose tenders to other budget request and priority.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F8</p>	<p>Redundancy is an important feature of an emergency firefighting water system.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Agree with the finding</p>		<p>R6 [for F8-F9]</p>	<p>The SFPUC, the SFFD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Will be implemented</p>	<p>SFPUC and SFFD will complete this study by June 30, 2021.</p>

2018-2019 CIVIL GRAND JURY FINDINGS, RECOMMENDATIONS, AND RESPONSES TO FINDINGS AND RECOMMENDATIONS

<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F9</p>	<p>Current plans to extend protections to the western part of the City do not include any high-pressure water sources north of Golden Gate Park.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Disagree, partially</p>	<p>While it is true that the SFPUC and SFFD are studying four potential water sources proposed to supply a potable EFWS on the west side of the City, which are not located north of Golden Gate Park, which by no means would reduce the proposed system's resiliency, reliability, performance, or ability to provide abundant high-pressure water for fire suppression to the Richmond District after a seismic event. San Francisco is unique in that there are 11 in-city reservoirs, with a total water capacity of approximately 413,000,000 gallons. Additionally, Lake Merced, also located within City Limits, has an additional approximately 1,000,000,000 gallons. The potable EFWS system for the Westside of San Francisco that is being developed and analyzed would provide that the new EFWS pipeline in the Sunset and Richmond Districts could be supplied from four sources of water at two locations. The first two water sources could be supplied to the EFWS pipeline via a 30,000 gallon per minute pump station in the vicinity of Lake Merced. The two sources being studied for this pump station are Lake Merced, which has a water supply of approximately one billion gallons, and a 60" seismically resilient SFPUC Hetch Hetchy Regional Water System pipeline. The proposed potable EFWS also is analyzing the inclusion of a second 30,000 gallons per minute pump station in the vicinity of the SFPUC's Sunset Reservoir that could be supplied water by two sources: (1) the 90 million gallon north basin of the Sunset Reservoir, which recently underwent a \$64 million seismic retrofit, and (2) a 54" seismically resilient SFPUC Hetch Hetchy Regional Water system pipeline.</p>	<p>R6 [for F8-F9]</p>	<p>The SFPUC, the SFFD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Will be implemented</p>	<p>SFPUC and SFFD will complete this study by June 30, 2021.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F10</p>	<p>The "reliability scores" being used by the SFPUC impart an overly optimistic impression of the protection provided.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Disagree, partially</p>	<p>Fire Response Areas (FRAs) were utilized by SFPUC and SFFD in the planning study CS-199. This study divided the City into areas based on those defined by the SFFD for initial alarm response and were called Fire Response Areas (FRAs). Probable fire demands were developed for each FRA using 1000 sets of fire demands generated by Charles Scawthorn, PhD using a Monte Carlo analysis of fire ignitions and fire growth using the ground motions from the design earthquake (7.8 magnitude). The fire ignitions were generated using methods similar to those used for the Community Action Plan for Seismic Safety (CAPSS) study (ATC 2010). The fire ignitions subsequently were used to develop water demands that were aggregated into the likely fire demands for each FRA. The water supplies for each FRA were developed using the reliability modeling tool GIRAFFE, developed at Cornell University by Professor Thomas D. O'Rourke. GIRAFFE performs Internal Monte Carlo analysis to damage pipes in the system for multiple scenarios. The water supplies developed by GIRAFFE were aggregated into the likely water supplies for each FRA. It should be noted that the likely water supplies for each FRA assumed no water from the City's municipal water system (MWSS), which is quite conservative and highly unlikely even after a seismic event. The reliability score for each FRA is calculated using the sum of all water supplies for each FRA and dividing it by the FRA water demand. The reliability scores do exactly that - estimate how much EFWS water will be available for firefighting demands in a given FRA. The reliability scores are not meant to represent an estimate of the fire protection for a given house, block, or blocks. Rather it is a measure of the EFWS capacity and demand. The SFPUC recognizes the need to analyze potential EFWS demands on a more detailed level, and the agency began the process of doing so.</p>					

2018-2019 CIVIL GRAND JURY FINDINGS, RECOMMENDATIONS, AND RESPONSES TO FINDINGS AND RECOMMENDATIONS

<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F11</p>	<p>The City does not have a timeline to fund and complete development of a high-pressure, multi-sourced, seismically safe emergency water supply for all parts of the City, including poor neighborhoods that historically have not been as well protected as the downtown business district and many richer neighborhoods.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Disagree, partially</p>	<p>The EFWS was built after the 1906 earthquake, and its location, primarily in the northeast portion of San Francisco, corresponds to the location of the majority of the city's population at that time. Since 2010, the SFPUC, SFFD, and Public Works have made critical improvements to the existing EFWS system. Expanding the EFWS prior to ensuring that the existing EFWS is resilient and reliable would have contradicted best engineering practices. The SFPUC and SFFD are developing plans that would implement a resilient, robust, and redundant potable EFWS for the Westside of San Francisco. The potable EFWS that is being developed and analyzed would propose the best method for bringing a robust and resilient high-pressure firefighting water system to the Western neighborhoods in San Francisco that is capable of providing water to the SFFD firefighters at the high-pressure needed for firefighters to combat large fires after a seismic event, and is likely to include over 14 miles of new EFWS pipelines and potentially two new pump stations likely to be supplied by four water sources. The SFPUC and SFFD's potable EFWS is being designed in a manner that allows for agility and the flexibility to add new technologies and water sources, and in a manner that allows the piping network to be extended in the future to serve additional areas.</p>					
<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>						<p>R9 [for F12]</p>	<p>By no later than December 31, 2020 the SFPUC, with the advice and subject to the approval of the SFFD, should (a) implement "best practices" for the maintenance of AWSS assets, and (b) redefine which AWSS valves in the system are "critical," and, therefore, require more attention and priority in the SFPUC's maintenance plans.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Has been implemented</p>	<p>(a) SFPUC implements "best practices" for the maintenance of AWSS assets in collaboration with SFFD, and consistent with the terms of the Memorandum of Understanding Regarding Operation and Maintenance of San Francisco Water Supply Systems Related to Fire Suppression (MOU), SFPUC will seek SFFD's written approval for "any modifications that could compromise" the system's function as a high pressure firefighting system (MOU, page 2). (b) The AWSS critical valves have been identified and will be exercised every year through the AWSS Critical Valve Exercise Program.</p>
<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>						<p>R10 [for F13]</p>	<p>By no later than June 30, 2020, the 2015 MOU between the SFPUC and the SFFD should be amended to include a detailed roadmap for annual emergency response exercises, including simulated disaster and earthquake drills involving the AWSS and the PWSS.</p>	<p>President, San Francisco Fire Commission [September 15, 2019]</p>	<p>Will be implemented</p>	<p>The Fire Department conducts weekly hose/hose tender drills that it rotates through companies throughout the City. The Fire Department will work with the SFPUC to have them in attendance and participate in these drills. SFFD will also commit to working with the PUC to enhance the scope and frequency of trainings in the future for improved collaboration. SFFD and SFPUC will work together to amend the MOU by June 30, 2020.</p>



September 16, 2019

The Honorable Garrett L. Wong  
Presiding Judge, Superior Court of California, County of San Francisco  
400 McAllister Street, Room 008  
San Francisco, CA 94102-4512

Dear Judge Wong,

In accordance with Penal Code 933 and 933.05, the following is in response to the 2018-2019 Civil Grand Jury Report, *Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System*. We would like to thank the members of the 2018-2019 Civil Grand Jury for their interest in disaster preparedness and in improving the resiliency of our critical public safety infrastructure to provide robust emergency firefighting to all communities in San Francisco.

San Francisco continues to improve our City's resiliency each day through our ongoing investments in public infrastructure and equipment. Our Capital Planning Program coordinates much of these investments by conducting strategic long-term planning across major programs and projects, including the Emergency Firefighting Water System and Earthquake Safety and Emergency Response (ESER). The ESER bonds approved by voters in 2010 and 2014 have funded improvements to cisterns, pipelines, and critical public facilities that improve the City's ability to respond in emergencies and to fight fires. In addition, through the City's annual budgeting process, we will continue weighing resources to improve public safety and the operational readiness and emergency response capabilities of our departments. For example, our most recently adopted FY 2019-20 budget includes funding for five new hose tenders to replace and enhance the Fire Department's aging equipment.

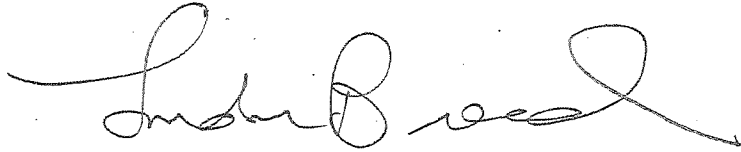
In March 2020, the voters of San Francisco will once again vote on a new \$628.5 million ESER bond measure. Included in the proposal is an investment of an additional \$153.5 million for the Emergency Firefighting Water System.

We appreciate the opportunity to comment on the Civil Grand Jury report findings and recommendations. Moving forward, and as appropriate, the City plans to analyze many of the recommendations as part of our next 10-Year Capital Plan.

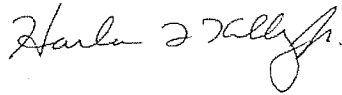
**A detailed response from the Mayor's Office, City Administrator's Office, Fire Department, Public Utilities Commission, and the Department of the Environment is attached.**

Each signatory prepared its own responses and is able to respond to questions related to its respective part of the report.

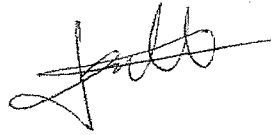
Sincerely,



London N. Breed  
Mayor



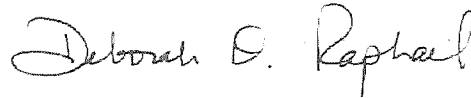
Harlan L. Kelly Jr.  
General Manager, Public Utilities Commission



Jeanine Nicholson  
Chief, Fire Department



Naomi Kelly  
City Administrator



Deborah Raphael  
Director, Department of the Environment

Report Title (Publication Date)	FR	Finding (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by CGJ (Response Due Date)	Finding Response (Agree/Disagree)	Finding Response Text	FR (for FR)	Recommendation (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by CGJ (Response Due Date)	Recommendation Response (Implementation)	Recommendation Response Text
Act Now Before it is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F4	The City's high-pressure emergency water supply system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a result, these districts are not adequately protected from fires after a major earthquake.	Mayor (September 15, 2019)	Agree with the finding	The SFPUC, SFFD, and San Francisco Public Works (SFPW) are committed to increasing fire protection throughout San Francisco. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, the three agencies have been implementing projects to improve the AWSS system's seismic reliability and range of coverage. Enhancing the AWSS range of coverage to all areas of the City would require the allocation of funds to do so. The three agencies will continue to develop and implement projects utilizing new and proven technologies that improve upon the original system design. There have been many advancements in earthquake resistant pipeline design and materials, hydrants, and seismic valves since the early 1900s, and the City intends to use the best possible technology available to meet the performance standards of the SFPD.	R1 (for FR1-F4)	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	Mayor (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
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Act Now Before it is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F5	A high-pressure, multi-sourced, seismically safe emergency firefighting water supply will be costly but is essential to protect the City.	Mayor (September 15, 2019)	Agree with the finding	As the City considers what is essential to protect San Francisco, it is important to acknowledge our multiple, complex resilience challenges. These challenges are documented in the Resilient SF Strategy (2016) and underlie the strategic efforts of our capital investments as represented in the 10-Year Capital Plan (last updated 2019). These challenges are: Earthquakes, Sea Level Rise/Climate Change, Aging Infrastructure, Unaffordability, and Social Inequality. All of these challenges represent meaningful threats to San Franciscans, their property, and their ability to make a life in the city. In making decisions about priority investments, San Francisco must keep an eye on all of these challenges, identify the areas of greatest need across them, and make progress on all fronts simultaneously. The City has taken significant steps since 2010 to ensure that the City has a high-pressure multi-sourced, seismically safe EPWS. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, SFPUC, SFFD, SFP Public Works have been implementing projects to improve the system's seismic reliability and range of coverage. The three agencies will continue to implement projects utilizing new and proven technologies that improve upon the original system design.	R1 (for FR1-F4)	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	Mayor (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
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Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	Mayor (September 15, 2019)	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWWSS have yet to be made.	R1 (for F1-F6)	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	Mayor (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.30, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
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Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F11	The City does not have a timeline to fund and complete development of a high-pressure, multi-sourced, seismically safe emergency water supply for all parts of the City, including poor neighborhoods that historically have not been as well protected as the downtown business districts and many other neighborhoods.	Mayor (September 15, 2019)	Disagree, partially	The EPWS was built after the 1906 earthquake, and its location, primarily in the northeast portion of San Francisco, corresponds to the location of the majority of the city's population at that time. Since 2010, the SFPUC, SFPD, and Public Works have made critical improvements to the existing EPWS system. Expanding the EPWS prior to ensuring that the existing EPWS is resilient and reliable would have contradicted best engineering practices. The SFPUC and SFPD are developing plans that would implement a resilient, robust, and redundant potable EPWS for the Westside of San Francisco. The potable EPWS that is being developed and analyzed would propose the best method for bringing a robust and resilient high-pressure firefighting water system to the Western neighborhoods in San Francisco that is capable of providing water to the SFPD firefighters at the high-pressure needed for firefighters to combat large fires after a seismic event, and is likely to include over 14 miles of new EPWS pipelines and potentially two new pump stations likely to be supplied by four water sources. The SFPUC and SFPD's potable EPWS is being designed in a manner that allows for agility and the flexibility to add new technologies and water sources, and in a manner that allows the piping network to be extended in the future to serve additional areas.	R6 (for F5, F6, F11)	By no later than June 30, 2022, the Mayor and the Board of Supervisors should analyze whether to propose a separate bond for the development of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, with a target date of completing construction by no later than June 30, 2024.	Mayor (September 15, 2019)	Will be implemented	The analysis will be performed as part of the City's 10-Year Capital Plan development process. The next full update to the Capital Plan will be submitted to the Mayor and Board not later than March 1, 2021, for approval no later than May 1, 2021.



Report Title [Publication Date]	RF	Finding (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by CGU [Response Due Date]	Finding Response (Agree/Disagree)	Finding Response Text	RF [For]	Recommendation (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by CGU [Response Due Date]	Recommendation Response (Implementation)	Recommendation Response Text
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F1	Fires resulting from an earthquake represent a significant risk of widespread damage and potential loss of life in San Francisco.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding		R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1900-magnitude (7.8) earthquake.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Will be Implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.30, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F1	Fires resulting from an earthquake represent a significant risk of widespread damage and potential loss of life in San Francisco.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding		R2 [for F1-F6]	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2024.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process includes public safety and balance planning funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F2	The municipal water supply system (MWSS) is highly vulnerable to damage from a major earthquake and is not a reliable source for water supply for firefighting after a major earthquake.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, partially	The MWSS has been significantly upgraded in the last 15 years through the Water Supply Improvement Program (WSIP) initiated by the SFPUC. The goal of WSIP included to reduce vulnerability of the water system to damage from earthquakes and increase overall water system reliability. There were 35 in-city projects within the \$4.8 billion-dollar program. The WSIP was the largest capital program ever undertaken by San Francisco, and one of the largest water infrastructure programs in the nation. Additionally, it is one of the only comprehensive and strategic infrastructure programs targeted specifically at improving a water system's seismic reliability and resiliency. Additionally, it is unique because the WSIP utilized a 7.8 magnitude earthquake as its seismic level of service.	R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1900-magnitude (7.8) earthquake.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Will be Implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.30, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
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Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F4	The City's high-pressure emergency water supply system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a result, these districts are not adequately protected from fires after a major earthquake.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding	The SFPUC, SFFD, and San Francisco Public Works (SFPW) are committed to increasing fire protection throughout San Francisco. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, the three agencies have been implementing projects to improve the AWSS system's seismic reliability and range of coverage. Enhancing the AWSS range of coverage to all areas of the City would require the allocation of funds to do so. The three agencies will continue to develop and implement projects utilizing new and proven technologies that improve upon the original system design. There have been many advancements in earthquake resistant pipeline design and materials, hydrants, and seismic valves since the early 1900s, and the City intends to use the best possible technology available to meet the performance standards of the SFPD.	R1 [for F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1900-magnitude (7.8) earthquake.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Will be Implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.30, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.

Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F4	The City's high-pressure emergency water supply system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a result, these districts are not adequately protected from fires after a major earthquake.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Agree with the finding	The SFPUUC, SFPD, and San Francisco Public Works (SFPW) are committed to increasing fire protection throughout San Francisco. Since the passage of the First Earthquake Safety and Emergency Response Bond in 2010, the three agencies have been implementing projects to improve the AWSS system's seismic reliability and range of coverage. Enhancing the AWSS range of coverage to all areas of the City would require the allocation of funds to do so. The three agencies will continue to develop and implement projects utilizing new and proven technologies that improve upon the original system design. There have been many advancements in earthquake resistant pipeline design and materials, hydrants, and seismic valves since the early 1900s, and the City intends to use the best possible technology available to meet the performance standards of the SFPD.	R2 (for F1-F6)	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2024.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F5	A high-pressure, multi-sourced, seismically safe emergency firefighting water supply will be costly but is essential to protect the City.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Agree with the finding	As the City considers what is essential to protect San Francisco, it is important to acknowledge our multiple, complex resilience challenges. These challenges are documented in the Resilient SF strategy (2016) and underlie the strategic efforts of our capital investments as represented in the 10-Year Capital Plan (last updated 2019). These challenges are: Earthquakes, Sea Level Rise/Climate Change, Aging Infrastructure, Unaffordability, and Social Inequality. All of these challenges represent meaningful threats to San Franciscans, their property, and their ability to make a life in the city. In making decisions about priority investments, San Francisco must keep an eye on all of these challenges, identify the areas of greatest need across them, and make progress on all fronts simultaneously. The City has taken significant steps since 2010 to ensure that the City has a high-pressure multi-sourced, seismically safe EPWS. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, SFPUC, SFPD, SF Public Works have been implementing projects to improve the system's seismic reliability and range of coverage. The three agencies will continue to implement projects utilizing new and proven technologies that improve upon the original system design.	R4 (for F1-F6)	By no later than December 31, 2020, the Mayor, the SFPUC, the SFPD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1900-magnitude (7.8) earthquake.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F5	A high-pressure, multi-sourced, seismically safe emergency firefighting water supply will be costly but is essential to protect the City.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Agree with the finding	As the City considers what is essential to protect San Francisco, it is important to acknowledge our multiple, complex resilience challenges. These challenges are documented in the Resilient SF strategy (2016) and underlie the strategic efforts of our capital investments as represented in the 10-Year Capital Plan (last updated 2019). These challenges are: Earthquakes, Sea Level Rise/Climate Change, Aging Infrastructure, Unaffordability, and Social Inequality. All of these challenges represent meaningful threats to San Franciscans, their property, and their ability to make a life in the city. In making decisions about priority investments, San Francisco must keep an eye on all of these challenges, identify the areas of greatest need across them, and make progress on all fronts simultaneously. The City has taken significant steps since 2010 to ensure that the City has a high-pressure multi-sourced, seismically safe EPWS. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, SFPUC, SFPD, SF Public Works have been implementing projects to improve the system's seismic reliability and range of coverage. The three agencies will continue to implement projects utilizing new and proven technologies that improve upon the original system design.	R2 (for F1-F6)	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2024.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.	R1 (for F1-F6)	By no later than December 31, 2020, the Mayor, the SFPUC, the SFPD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1900-magnitude (7.8) earthquake.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.	R2 (for F1-F6)	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2024.	General Manager, San Francisco Public Utilities Commission (September 15, 2019)	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.

Act Now Before It's Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F8	Redundancy is an important feature of an emergency firefighting water system.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Agree with the finding		R6 [for F8-F9]	The SFPUC, the SFFD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	SFPUC and SFFD will complete this study by June 30, 2021.
Act Now Before It's Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F9	Current plans to extend protections to the western part of the City do not include any high-pressure water sources north of Golden Gate Park.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, partially	While it is true that the SFPUC and SFFD are studying four potential water sources proposed to supply a potable EPWS on the west side of the City, which are not located north of Golden Gate Park, which by no means would reduce the proposed system's resiliency, reliability, performance, or ability to provide abundant high-pressure water for fire suppression to the Richmond District after a seismic event, San Francisco is unique in that there are 11 in-city reservoirs, with a total water capacity of approximately 413,000,000 gallons. Additionally, Lake Merced, also located within City Limits, has an additional approximately 1,000,000,000 gallons. The potable EPWS system for the Westside of San Francisco that is being developed and analyzed would provide that the new EPWS pipeline in the Sunset and Richmond Districts could be supplied from four sources of water at two locations. The first two water sources could be supplied to the EPWS pipeline via a 30,000 gallon per minute pump station in the vicinity of Lake Merced. The two sources being studied for this pump station are Lake Merced, which has a water supply of approximately one billion gallons, and a 60" vertically resilient SFPUC Hensch Hatchery Regional Water System pipeline. The proposed potable EPWS also is analyzing the inclusion of a second 30,000 gallons per minute pump	R6 [for F8-F9]	The SFPUC, the SFFD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	SFPUC and SFFD will complete this study by June 30, 2021.
Act Now Before It's Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F10	The "reliability scores" being used by the SFPUC impart an overly optimistic impression of the protection provided.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, partially	Fire Response Areas (FRAs) were utilized by SFPUC and SFFD in the planning study CS-199. This study divided the City into areas based on those defined by the SFFD for initial alarm response and were called Fire Response Areas (FRAs). Probable fire demands were developed for each FRA using 1000 sets of fire demands generated by Charles Seavern, PhD using a Monte Carlo analysis of fire ignitions and fire growth using the ground motions from the design earthquake (7.8 magnitude). The fire ignitions were generated using methods similar to those used for the Community Action Plan for Seismic Safety (CAPSS) study (ATC 2010). The fire ignitions subsequently were used to develop water demands that were aggregated into the likely fire demands for each FRA. The water supplies for each FRA were developed using the reliability modeling tool GIRAFFE, developed at Cornell University by Professor Thomas D. O'Rourke. GIRAFFE performs internal Monte Carlo analysis to damage pipes in the system for multiple scenarios. The water supplies developed by GIRAFFE were aggregated into the likely water supplies for each FRA. It should be noted that the likely water supplies for each FRA assumed no water from the City's municipal water system (MWS), which is quite conservative and highly unlikely even after a seismic event. The	R7 [for F10]	The SFPUC should (a) continue its efforts to complete a more detailed analysis of emergency firefighting water needs (including above the median needs) by neighborhood, and not just by FRA, and (b) present a completed analysis to the Board of Supervisors by no later than June 30, 2021.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Will be implemented	SFPUC and SFFD will complete this analysis by June 30, 2021.
Act Now Before It's Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F11	The City does not have a timeline to fund and complete development of a high-pressure, multi-sourced, seismically safe emergency water supply for all parts of the City, including poor neighborhoods that historically have not been as well protected as the downtown business district and many richer neighborhoods.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, partially	The EPWS was built after the 1906 earthquake, and its location, primarily in the northeast portion of San Francisco, corresponds to the location of the majority of the city's population at that time. Since 2010, the SFPUC, SFFD, and Public Works have made critical improvements to the existing EPWS system. Expanding the EPWS prior to ensuring that the existing EPWS is resilient and reliable would have contradicted best engineering practices. The SFPUC and SFFD are developing plans that would implement a resilient, robust, and redundant potable EPWS for the Westside of San Francisco. The potable EPWS that is being developed and analyzed would propose the best method for bringing a robust and resilient high-pressure firefighting water system to the Western neighborhoods in San Francisco that is capable of providing water to the SFFD firefighters at the high-pressure needed for firefighters to combat large fires after a seismic event, and is likely to include over 14 miles of new EPWS pipelines and potentially two new pump stations likely to be supplied by four water sources. The SFPUC and SFFD's potable EPWS is being designed in a manner that allows for agility and the flexibility to add new technologies and water sources, and in a manner that allows the piping network to be extended in the future to serve additional areas.					
Act Now Before It's Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F12	The SFPUC has not developed a number of the routine maintenance plans recommended in a 2014 report (CS-199), and has not adequately defined which AWSV valves are "critical" and therefore require increased attention.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Disagree, wholly	Since taking over maintenance responsibilities, SFPUC has completed significant maintenance activities. For example, on a monthly basis, staff from the SFPUC test both Pump Station #1 and Pump Station #2. There are 6 maintenance recommendations provided in the CS-199 study as shown below in Table 7-1 from CS-199. The SFPUC has developed several of the routine maintenance plans recommended in the report or has determined the recommended maintenance practice is not necessary (i.e. flushing of a non-potable water system). Maintenance Recommendations, CS 199 Task 11 TM: Maintenance Recommendation 1: Confirm that all AWSV assets are entered into CDD's asset management system and PM's are established SFPUC Response: All AWSV asset locations are entered into CDD's Maatmo and GIS databases. PM's are established for regular maintenance. Maintenance Recommendation 2: Perform Regular maintenance and testing SFPUC Response: According to SFPUC Maatmo maintenance/testing records, regular maintenance and testing is performed in accordance with maintenance plans. Maintenance Recommendation 3: Check, flush	R9 [for F12]	By no later than December 31, 2020 the SFPUC with the advice and subject to the approval of the SFFD, should (a) implement "best practices" for the maintenance of AWSV assets, and (b) redefine which AWSV valves in the system are "critical," and, therefore, require more attention and priority in the SFPUC's maintenance plans.	General Manager, San Francisco Public Utilities Commission [September 15, 2019]	Has been implemented	(a) SFPUC implements "best practices" for the maintenance of AWSV assets in collaboration with SFFD, and consistent with the terms of the Memorandum of Understanding Regarding Operation and Maintenance of San Francisco Water Supply Systems Related to Fire Suppression (MOU). SFPUC will seek SFFD's written approval for "any modifications that could compromise" the system's function as a high pressure firefighting system (MOU, page 2). (b) The AWSV critical valves have been identified and will be exercised every year through the AWSV Critical Valve Exercise Program.

<p>Act Now Before It's Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]</p>	<p>F13</p>	<p>In the 2015 MOU between the SFPD and the SFPUC, the two agencies agreed to conduct joint AWSS trainings annually, but there is no formal protocol outlining specific joint AWSS exercises or drills using hypothetical disaster scenarios, such as a major earthquake.</p>	<p>General Manager, San Francisco Public Utilities Commission [September 15, 2019]</p>	<p>Disagree, partially</p>	<p>There are no formal protocol outlining specific joint AWSS exercises or drills in the MOU; however, there are multiple opportunities to train together during operation, maintenance, and construction of improvement projects for the AWSS facilities as previously described in the response to the Grand Jury questions sent in May 2019.</p> <p>The SFPD and SFPUC have had multiple field training opportunities during the maintenance and start-up testing of AWSS facilities in the last 5 years. For example, on December 20, 2018, SFPD and SFPUC personnel conducted emergency generator start-up procedures for Pump Station No. 2 (PS2). On April 5, 2018 SFPUC and SFPD performed joint department full-scale test of AWSS Pump Station No. 1 (PS1) including pumping seawater into an isolated section of the AWSS distribution through system hydrants. On August 29, 2018, SFPUC, SFPD and DPW personnel conducted a seawater drafting drill and confirmation test from the new suction connection at Pier 50. In addition, SFPD and SFPUC periodically test different facilities to assure systems are in good working order, and to train personnel on operations and joint-agency communications. For example, a full-scale emergency exercise was performed between SFPD and SFPUC staff in January 2016</p>	<p>R10 [for F13]</p>	<p>By no later than June 30, 2020, the 2015 MOU between the SFPUC and the SFPD should be amended to include a detailed roadmap for annual emergency response exercises, including simulated disaster and earthquake drills involving the AWSS and the PWS.</p>	<p>General Manager, San Francisco Public Utilities Commission [September 15, 2019]</p>	<p>Will be Implemented</p>	<p>SFPD and SFPUC will work together to amend the MOU by June 30, 2020.</p>
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Report Title [Publication Date]	#	Finding (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by GGJ [Response Due Date]	Finding Response (Agree/Disagree)	Finding Response Text	RI [or RI #]	Recommendation (text may be duplicated due to spanning and multiple respondent effects)	Respondent Assigned by GGJ [Response Due Date]	Recommendation Response (Implementation)	Recommendation Response Text
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F1	Fires resulting from an earthquake represent a significant risk of widespread damage and potential loss of life in San Francisco.	Chief, San Francisco Fire Department (September 15, 2019)	Agree with the finding		R1 [or F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	Chief, San Francisco Fire Department (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F1	Fires resulting from an earthquake represent a significant risk of widespread damage and potential loss of life in San Francisco.	Chief, San Francisco Fire Department (September 15, 2019)	Agree with the finding		R2 [or F1-F6]	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2024.	Chief, San Francisco Fire Department (September 15, 2019)	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F2	The municipal water supply system (MWSS) is highly vulnerable to damage from a major earthquake and is not a reliable source for water supply for firefighting after a major earthquake.	Chief, San Francisco Fire Department (September 15, 2019)	Disagree, partially	The MWSS has been significantly upgraded in the last 15 years through the Water Supply Improvement Program (WSIP) initiated by the SFPUC. The goal of WSIP included to reduce vulnerability of the water system to damage from earthquakes and increase overall water system reliability. There were 85 in-city projects within the \$4.8 billion-dollar program. The WSIP was the largest capital program ever undertaken by San Francisco, and one of the largest water infrastructure programs in the nation. Additionally, it is one of the only comprehensive and strategic infrastructure programs targeted specifically at improving a water system's seismic reliability and resiliency. Additionally, it is unique because the WSIP utilized a 7.8 magnitude earthquake as its seismic level of service.	R1 [or F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	Chief, San Francisco Fire Department (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F2	The municipal water supply system (MWSS) is highly vulnerable to damage from a major earthquake and is not a reliable source for water supply for firefighting after a major earthquake.	Chief, San Francisco Fire Department (September 15, 2019)	Disagree, partially	The MWSS has been significantly upgraded in the last 15 years through the Water Supply Improvement Program (WSIP) initiated by the SFPUC. The goal of WSIP included to reduce vulnerability of the water system to damage from earthquakes and increase overall water system reliability. There were 35 in-city projects within the \$4.8 billion-dollar program. The WSIP was the largest capital program ever undertaken by San Francisco, and one of the largest water infrastructure programs in the nation. Additionally, it is one of the only comprehensive and strategic infrastructure programs targeted specifically at improving a water system's seismic reliability and resiliency. Additionally, it is unique because the WSIP utilized a 7.8 magnitude earthquake as its seismic level of service.	R2 [or F1-F6]	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2024.	Chief, San Francisco Fire Department (September 15, 2019)	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F3	Approximately 30 cisterns have recently been added with funds from ESER bonds, but cisterns only have up to about an hour of water supply and thus do not provide sufficient water for fighting fires following a major earthquake.	Chief, San Francisco Fire Department (September 15, 2019)	Agree with the finding	Cisterns serve as one of many important tools for use by the SFFD in response to a disaster. Cistern locations are strategically located in the City in the event of a major configuration to assist as a "Demarcation Line" on some of the City's major thoroughfares. This was realized after the 1906 earthquake. With work accomplished through the ESER bond program, cisterns have been seismically improved throughout the City and the overall number of cisterns has increased to approximately 230, providing the Fire Department access to millions of gallons of water in an emergency.	R1 [or F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	Chief, San Francisco Fire Department (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.

<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F3</p>	<p>Approximately 30 districts have recently been added with funds from ESER bonds, but districts only have up to about an hour of water supply and thus do not provide sufficient water for fighting fires following a major earthquake.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Agree with the finding</p>	<p>Districts serve as one of many important tools for use by the SFFD in response to a disaster. District locations are strategically located in the City in the event of a major configuration to assist as a "Demarcation Line" on some of The City's major thoroughfares. This was realized after the 1906 earthquake. With work accomplished through the ESER bond program, districts have been substantially improved throughout the City and the overall number of districts has increased to approximately 230, providing the Fire Department access to millions of gallons of water in an emergency.</p>	<p>R2 (for F1-F4)</p>	<p>The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2024.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Requires further analysis</p>	<p>The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are based: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F4</p>	<p>The City's high-pressure emergency water supply system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a result, these districts are not adequately protected from fires after a major earthquake.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Agree with the finding</p>	<p>The SFFUC, SFFD, and San Francisco Public Works (SFPW) are committed to increasing fire protection throughout San Francisco. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, the three agencies have been implementing projects to improve the AWSS system's seismic reliability and range of coverage. Enhancing the AWSS range of coverage to all areas of the City would require the allocation of funds to do so. The three agencies will continue to develop and implement projects utilizing new and proven technologies that improve upon the original system design. There have been many advancements in earthquake resistant pipeline design and materials, hydrants, and seismic valves since the early 1900s, and the City intends to use the best possible technology available to meet the performance standards of the SFFD.</p>	<p>R1 (for F1-F4)</p>	<p>By no later than December 31, 2020, the Mayor, the SFFUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Will be implemented</p>	<p>Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F4</p>	<p>The City's high-pressure emergency water supply system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a result, these districts are not adequately protected from fires after a major earthquake.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Agree with the finding</p>	<p>The SFFUC, SFFD, and San Francisco Public Works (SFPW) are committed to increasing fire protection throughout San Francisco. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, the three agencies have been implementing projects to improve the AWSS system's seismic reliability and range of coverage. Enhancing the AWSS range of coverage to all areas of the City would require the allocation of funds to do so. The three agencies will continue to develop and implement projects utilizing new and proven technologies that improve upon the original system design. There have been many advancements in earthquake resistant pipeline design and materials, hydrants, and seismic valves since the early 1900s, and the City intends to use the best possible technology available to meet the performance standards of the SFFD.</p>	<p>R2 (for F1-F4)</p>	<p>The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2024.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Requires further analysis</p>	<p>The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are based: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F4</p>	<p>The City's high-pressure emergency water supply system, known as the Auxiliary Water Supply System (AWSS), does not cover large parts of Supervisorial Districts 1, 4, 7 and 11, roughly one-third of the City's developed area. As a result, these districts are not adequately protected from fires after a major earthquake.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Agree with the finding</p>	<p>The SFFUC, SFFD, and San Francisco Public Works (SFPW) are committed to increasing fire protection throughout San Francisco. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, the three agencies have been implementing projects to improve the AWSS system's seismic reliability and range of coverage. Enhancing the AWSS range of coverage to all areas of the City would require the allocation of funds to do so. The three agencies will continue to develop and implement projects utilizing new and proven technologies that improve upon the original system design. There have been many advancements in earthquake resistant pipeline design and materials, hydrants, and seismic valves since the early 1900s, and the City intends to use the best possible technology available to meet the performance standards of the SFFD.</p>	<p>R5 (for F4)</p>	<p>The SFFD should strategically locate the majority of the PWS hose tenders in areas that at present only have low-pressure hydrants and/or cisterns.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Will be implemented</p>	<p>The Department is currently finalizing specifications for these units, after which they will go out to bid through the City's procurement processes before construction. It is anticipated the Department will take receipt of these units in the second half of 2020/early 2021. These hose tenders are a heavy-duty apparatus designed to be able to be deployed and moved throughout the City depending on need, giving the Department needed operational flexibility in its response.</p>
<p>Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F5</p>	<p>A high-pressure, multi-sourced, seismically safe emergency firefighting water supply will be costly but is essential to protect the City.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Agree with the finding</p>	<p>As the City considers what's essential to protect San Francisco, it is important to acknowledge our multiple, complex resilience challenges. These challenges are documented in the Resilient SF strategy (2018) and underlie the strategic efforts of our capital investments as represented in the 10-Year Capital Plan (last updated 2019). These challenges are: Earthquakes, Sea Level Rise/Climate Change, Aging Infrastructure, Unaffordability, and Social Inequity. All of these challenges represent meaningful threats to San Franciscans, their property, and their ability to make a life in the city. In making decisions about priority investments, San Francisco must keep an eye on all of these challenges, identify the areas of greatest need across them, and make progress on all fronts simultaneously. The City has taken significant steps since 2010 to ensure that the City has a high-pressure multi-sourced, seismically safe EPWS. Since the passage of the first Earthquake Safety and Emergency Response Bond in 2010, SFFUC, SFFD, SFPW Public Works have been implementing projects to improve the system's seismic reliability and range of coverage. The three agencies will continue to implement projects utilizing new and proven technologies that improve upon the original system design.</p>	<p>R1 (for F1-F4)</p>	<p>By no later than December 31, 2020, the Mayor, the SFFUC, the SFFD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Will be implemented</p>	<p>Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.</p>

Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F5	A high-pressure, multi-sourced, seismically safe emergency firefighting water supply will be costly but is essential to protect the City.	Chief, San Francisco Fire Department (September 15, 2019)	Agree with the finding	As the City considers what is essential to protect San Francisco, it is important to acknowledge our multiple, complex resilience challenges. These challenges are documented in the Resilient SF Strategy (2014) and underlie the strategic efforts of our capital investments as represented in the 10-Year Capital Plan (last updated 2019). These challenges are: Earthquakes, Sea Level Rise/Climate Change, Aging Infrastructure, Unaffordability, and Social Inequality. All of these challenges represent meaningful threats to San Franciscans, their property, and their ability to make a life in the city. In making decisions about priority investments, San Francisco must keep an eye on all of these challenges, identify the areas of greatest need across them, and make progress on all fronts simultaneously. The City has taken significant steps since 2010 to ensure that the City has a high-pressure multi-sourced, seismically safe EWS. Since the passage of the First Earthquake Safety and Emergency Response Bond in 2010, SFPUC, SFPD, SF Public Works have been implementing projects to improve the system's seismic reliability and range of coverage. The three agencies will continue to implement projects utilizing new and proven technologies that improve upon the original system design.	R2 (for F1-F6)	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one. I.e., by no later than June 30, 2024.	Chief, San Francisco Fire Department (September 15, 2019)	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	Chief, San Francisco Fire Department (September 15, 2019)	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.	R1 (for F1-F6)	By no later than December 31, 2020, the Mayor, the SFPUC, the SFPD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	Chief, San Francisco Fire Department (September 15, 2019)	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 2.30, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's simulation to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	Chief, San Francisco Fire Department (September 15, 2019)	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.	R2 (for F1-F6)	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one. I.e., by no later than June 30, 2024.	Chief, San Francisco Fire Department (September 15, 2019)	Requires further analysis	The commitment of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	Chief, San Francisco Fire Department (September 15, 2019)	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSS have yet to be made.	R4 (for F6-F7)	As interim measure, by no later than June 30, 2021, the City should purchase the 20 new PWSS hose tenders being requested by the SFPD, to replace and expand its currently inadequate inventory.	Chief, San Francisco Fire Department (September 15, 2019)	Requires further analysis	The Fire Department has been allocated funding to purchase five units through funds from the P119-20 City Budget and an allocation from the State. The Department is currently working with the Office of Contract Administration to develop a multi-year term contract for hose tenders so in the case that additional funding is secured in future years, the Department will be able to reduce the amount of time for procurement of the apparatus. Each hose tender cost \$1 million each, and we need to weigh purchase of additional hose tenders to other budget request and priority.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F7	The existing Portable Water Supply System (PWSS) inventory is inadequate. Investing in more PWSS hose tenders would provide a relatively quick, cost-effective interim means to improve protection of the southern and western parts of the City until a high-pressure, multi-sourced, seismically safe emergency water supply can be developed in those areas.	Chief, San Francisco Fire Department (September 15, 2019)	Agree with the finding	The Fire Department has been allocated funding to purchase five units through funds from the P119-20 City budget and an allocation from the State. While the Department currently has five older hose tenders spread-out throughout the City, these new units are much more modern and provide the Department with a number of operational benefits, including the following: the capability of pumping and drafting water from any water source; extending the current AWSS system infrastructure; carrying 6,000 feet of hose for deployment; a 5,500-gallon-per-minute (GPM) on-board water pump and a 3,000 GPM portable submersible water pump; on-board monitor with a 525 foot reach; and four wheel drive. In addition, the Department has been successful in advocating and receiving Federal grant funds to assist with purchasing various PWSS equipment (valves, hose, ramps, etc.), and will continue to advocate for alternative sources of funding to increase the inventory of PWSS equipment.	R4 (for F6-F7)	As interim measure, by no later than June 30, 2021, the City should purchase the 20 new PWSS hose tenders being requested by the SFPD, to replace and expand its currently inadequate inventory.	Chief, San Francisco Fire Department (September 15, 2019)	Requires further analysis	The Fire Department has been allocated funding to purchase five units through funds from the P119-20 City Budget and an allocation from the State. The Department is currently working with the Office of Contract Administration to develop a multi-year term contract for hose tenders so in the case that additional funding is secured in future years, the Department will be able to reduce the amount of time for procurement of the apparatus. Each hose tender cost \$1 million each, and we need to weigh purchase of additional hose tenders to other budget request and priority.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)	F8	Redundancy is an important feature of an emergency firefighting water system.	Chief, San Francisco Fire Department (September 15, 2019)	Agree with the finding		R6 (for F8-F9)	The SFPUC, the SFPD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.	Chief, San Francisco Fire Department (September 15, 2019)	Will be implemented	SFPUC and SFPD will complete this study by June 30, 2021.

<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F9</p>	<p>Current plans to extend protections to the western part of the City do not include any high-pressure water sources north of Golden Gate Park.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Disagree, partially</p>	<p>While it is true that the SFPUUC and SFDD are studying four potential water sources proposed to supply a potable EFWS on the west side of the City, which are not located north of Golden Gate Park, which by no means would reduce the proposed system's resiliency, reliability, performance, or ability to provide abundant high-pressure water for fire suppression to the Richmond District after a seismic event, San Francisco is unique in that there are 11 in-city reservoirs, with a total water capacity of approximately 413,000,000 gallons. Additionally, Lake Merced, also located within City Limits, has an additional approximately 1,000,000,000 gallons. The potable EFWS system for the Westside of San Francisco that is being developed and analyzed would provide that the new EFWS pipeline in the Sunset and Richmond Districts could be supplied from four sources of water at two locations. The first two water sources could be supplied to the EFWS pipeline via a 30,000 gallon per minute pump station in the vicinity of Lake Merced. The two sources being studied for this pump station are Lake Merced, which has a water supply of approximately one billion gallons, and a 60" seismically resilient SFPUUC Hestch Hestch Regional Water System pipeline. The proposed potable EFWS also is analyzing the inclusion of a second 30,000 gallons per minute pump</p>	<p>R6 [for F9-F9]</p>	<p>The SFPUUC, the SFDD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Will be implemented</p>	<p>SFPUUC and SFDD will complete this study by June 30, 2021.</p>
<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F10</p>	<p>The "reliability scores" being used by the SFPUUC impart an overly optimistic impression of the protection provided.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Disagree, partially</p>	<p>Fire Response Areas (FRAs) were utilized by SFPUUC and SFDD in the planning study CS-189. This study divided the City into areas based on those defined by the SFDD for fire response and were called Fire Response Areas (FRAs). Probable fire demands were developed for each FRA using 1000 sets of fire demands generated by Charles Schwab, PhD using a Monte Carlo analysis of fire ignitions and fire growth using the ground motions from the design earthquake (7.8 magnitude). The fire ignitions were generated using methods similar to those used for the Community Action Plan for Seismic Safety (CAPSS) study (ATC 2010). The fire ignitions subsequently were used to develop water demands that were aggregated into the likely fire demands for each FRA. The water supplies for each FRA were developed using the reliability modeling tool GIRAFFE, developed at Cornell University by Professor Thomas O. O'Rourke. GIRAFFE performs internal Monte Carlo analysis to damage pipes in the system for multiple scenarios. The water supplies developed by GIRAFFE were aggregated into the likely water supplies for each FRA. It should be noted that the likely water supplies for each FRA assumed no water from the City's municipal water system (MWSS), which is quite conservative and highly unlikely even after a seismic event. The</p>	<p>R7 [for F10]</p>	<p>The SFPUUC should (a) continue its efforts to complete a more detailed analysis of emergency firefighting water needs (including above-the-median needs) by neighborhood, and not just by FRA, and (b) present a completed analysis to the Board of Supervisors by no later than June 30, 2021.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Will be implemented</p>	<p>SFPUUC and SFDD will complete this analysis by June 30, 2021.</p>
<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F11</p>	<p>The City does not have a timeline to fund and complete development of a high-pressure, multi-sourced, seismically safe emergency water supply for all parts of the City, including poor neighborhoods that historically have not been as well protected as the downtown business district and many other neighborhoods.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Disagree, partially</p>	<p>The EFWS was built after the 1906 earthquake, and its location, primarily in the northeast portion of San Francisco, corresponds to the location of the majority of the city's population at that time. Since 2010, the SFPUUC, SFDD, and Public Works have made critical improvements to the existing EFWS system. Expanding the EFWS prior to ensuring that the existing EFWS is resilient and reliable would have contradicted best engineering practices. The SFPUUC and SFDD are developing plans that would implement a resilient, robust, and redundant potable EFWS for the Westside of San Francisco. The potable EFWS that is being developed and analyzed would provide the best method for bringing a robust and resilient high-pressure firefighting water system to the Western neighborhoods in San Francisco that is capable of providing water to the SFDD firefighters at the high-pressure needed for firefighters to combat large fires after a seismic event, and is likely to include over 14 miles of new EFWS pipelines and potentially two new pump stations likely to be supplied by four water sources. The SFPUUC and SFDD's potable EFWS is being designed in a manner that allows for agility and the flexibility to add new technologies and water sources, and in a manner that allows the piping network to be extended in the future to serve additional areas.</p>					
<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>	<p>F13</p>	<p>In the 2015 MOU between the SFDD and the SFPUUC, the two agencies agreed to conduct joint AWSS trainings annually, but there is no formal protocol outlining specific joint AWSS exercises or drills using hypothetical disaster scenarios, such as a major earthquake.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Disagree, partially</p>	<p>There are no formal protocol outlining specific joint AWSS exercises or drills in the MOU; however, there are multiple opportunities to train together during operation, maintenance, and construction of improvement projects for the AWSS facilities as previously described in the response to the Grand Jury questions sent in May 2019. The SFDD and SFPUUC have had multiple field training opportunities during the maintenance and start-up testing of AWSS facilities in the last 5 years. For example, on December 20, 2018, SFDD and SFPUUC personnel conducted emergency generator start-up procedures for Pump Station No. 2 (PS2). On April 5, 2018 SFPUUC and SFDD performed joint-department full-scale test of AWSS Pump Station No. 1 (PS1) including pumping seawater into an isolated section of the AWSS distribution through system hydrants. On August 29, 2018, SFPUUC, SFDD and DPW personnel conducted a seawater drafting drill and confirmation test from the new suction connection at Pier 50. In addition, SFDD and SFPUUC periodically test different facilities to assure systems are in good working order, and to train personnel on operations and joint-agency communications. For example, a full-scale emergency exercise was performed between SFDD and SFPUUC staff in January 2016.</p>	<p>R10 [for F13]</p>	<p>By no later than June 30, 2020, the 2015 MOU between the SFPUUC and the SFDD should be amended to include a detailed roadmap for annual emergency response exercises, including simulated disaster and earthquake drills involving the AWSS and the PWSS.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Will be implemented</p>	<p>The Fire Department conducts weekly hose/hose tender drills that it rotates through companies throughout the City. The Fire Department will work with the SFPUUC to have them in attendance and participate in these drills. SFDD will also commit to working with the PUUC to enhance the scope and frequency of trainings in the future for improved collaboration. SFDD and SFPUUC will work together to amend the MOU by June 30, 2020.</p>
<p>Act Now Before It is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System (July 17, 2019)</p>						<p>R9 [for F12]</p>	<p>By no later than December 31, 2020 the SFPUUC, with the advice and subject to the approval of the SFDD, should (a) implement "best practices" for the maintenance of AWSS assets, and (b) reduce which AWSS valves in the system are "critical," and, therefore, require more attention and priority in the SFPUUC's maintenance plans.</p>	<p>Chief, San Francisco Fire Department (September 15, 2019)</p>	<p>Has been implemented</p>	<p>(a) SFPUUC implements "best practices" for the maintenance of AWSS assets in collaboration with SFDD, and consistent with the terms of the Memorandum of Understanding Regarding Operation and Maintenance of San Francisco Water Supply Systems Related to Fire Suppression (MOU). SFPUUC will seek SFDD's written approval for "any modifications that could compromise" the system's function as a high pressure firefighting system (MOU, page 2). (b) The AWSS critical valves have been identified and will be exercised every year through the AWSS Critical Valve Exercise Program.</p>



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Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	City Administrator [September 15, 2019]	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSSS have yet to be made.	R1 [or F1-F6]	By no later than December 31, 2020, the Mayor, the SFPUC, the SFPD, and the Office of Resilience and Capital Planning should jointly present to the Board of Supervisors a detailed plan to ensure the City is well prepared to fight fires in all parts of San Francisco in the event of a 1906-magnitude (7.8) earthquake.	City Administrator [September 15, 2019]	Will be implemented	Ensuring that San Francisco has the infrastructure and resources to be well prepared to fight fires in all parts of San Francisco is something that will be a focus of the next 10-Year Capital Plan. Per Administrative Code 3.20, that Plan must be submitted to the Mayor and Board no later than March 1 of each odd-numbered year for approval no later than May 1. The requested presentation would be delivered as part of that Plan's submission to enable holistic planning across San Francisco's resilience challenges. Updates available on this timeline would be included. The City cannot discuss the project and timeline until the ESER 2020 plan passes. For this reason, the City will sync this recommendation with the Capital Plan, and push back the timeline to December 31, 2021.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	City Administrator [September 15, 2019]	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSSS have yet to be made.	R2 [or F1-F6]	The plan discussed in Recommendation R1 should include a detailed proposal, including financing sources, for the installation within 15 years of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, i.e., by no later than June 30, 2034.	City Administrator [September 15, 2019]	Requires further analysis	The commitments of sources for specific uses on specific timelines for San Francisco's public infrastructure is the work of the 10-Year Capital Plan. The plan discussed in Recommendation 1 will be acknowledged in the Capital Plan, and based on analysis, will be done on the capital plan timeline. The capital planning process gathers, documents, and balances planned funding for needs across the public infrastructure portfolio and across San Francisco's resilience challenges. The Capital Plan has longstanding funding principles to guide the prioritization of public infrastructure investments. These investments are tiered: (1) address legal and/or regulatory mandates; (2) ensure public safety and enhance resilience; (3) preserve assets and promote sustainability; (4) advance planned and programmatic needs; and (5) promote economic development. In the next 10-Year Capital Plan and those that follow, the City will continue to analyze priority projects and programs and identify sources to advance those priorities. Committing to entirely funding a single program out of context and without regard for the trade-offs of that commitment would be out of step with the City's longstanding and highly regarded capital planning process and likely create significant vulnerabilities elsewhere in the portfolio.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F6	Unless the City increases funding levels, it will be several decades (i.e., after the USGS predicts one or more major earthquakes will occur) before the southern parts of the City have a high-pressure, multi-sourced, seismically safe emergency firefighting water supply.	City Administrator [September 15, 2019]	Disagree, wholly	Decisions about programming and funding levels of future ESER bonds and other complementary sources that could support the expansion of the AWSSS have yet to be made.	R8 [or F1-F6]	By no later than June 30, 2022, the Mayor and the Board of Supervisors should analyze whether to propose a separate bond for the development of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, with a target date of completing construction by no later than June 30, 2034.	City Administrator [September 15, 2019]	Will be implemented	The analysis will be performed as part of the City's 10-Year Capital Plan development process. The next full update to the Capital Plan will be submitted to the Mayor and Board not later than March 1, 2021, for approval no later than May 1, 2021.
Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 17, 2019]	F11	The City does not have a timeline to fund and complete development of a high-pressure, multi-sourced, seismically safe emergency water supply for all parts of the City, including poor neighborhoods that historically have not been as well protected as the downtown business district and many other richer neighborhoods.	City Administrator [September 15, 2019]	Disagree, partially	The EFWS was built after the 1906 earthquake, and its location, primarily in the northeast portion of San Francisco, corresponds to the location of the majority of the city's population at that time. Since 2010, the SFPUC, SFPD, and Public Works have made critical improvements to the existing EFWS system. Expanding the EFWS prior to ensuring that the existing EFWS is resilient and reliable would have contradicted best engineering practices. The SFPUC and SFPD are developing plans that would implement a resilient, robust, and redundant potable EFWS for the Westside of San Francisco. The potable EFWS that is being developed and analyzed would propose the best method for bringing a robust and resilient high-pressure firefighting water system to the Western neighborhoods in San Francisco that is capable of providing water to the SFPD firefighters at the high-pressure needed for firefighters to combat large fires after a seismic event, and is likely to include over 14 miles of new EFWS pipelines and potentially two new pump stations, likely to be supplied by four water sources. The SFPUC and SFPD's potable EFWS is being designed in a manner that allows for agility and the flexibility to add new technologies and water sources, and in a manner that allows the piping network to be extended in the future to serve additional areas.	R8 [or F5, F6, F11]	By no later than June 30, 2022, the Mayor and the Board of Supervisors should analyze whether to propose a separate bond for the development of a high-pressure, multi-sourced, seismically safe emergency water system for those parts of the City that don't currently have one, with a target date of completing construction by no later than June 30, 2034.	City Administrator [September 15, 2019]	Will be implemented	The analysis will be performed as part of the City's 10-Year Capital Plan development process. The next full update to the Capital Plan will be submitted to the Mayor and Board not later than March 1, 2021, for approval no later than May 1, 2021.

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Act Now Before It Is Too Late: Aggressively Expand and Enhance Our High-Pressure Emergency Firefighting Water System [July 27, 2019]						R6 [for FR-F9]	The SFPUC, the SFPD and the SF Department of the Environment should study adding salt-water pump stations to improve the redundancy of water sources, especially on the west side. Findings and recommendations from this study should be presented to the Board of Supervisors by no later than June 30, 2021.	Director, San Francisco Department of the Environment [September 15, 2019]	Will not be implemented because it is not warranted or reasonable	Not applicable to the San Francisco Department of the Environment