

Hazards and Climate Resilience Plan

2022 Annual Progress Report



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1 Executive Summary

The annual progress report for the Hazards and Climate Resilience Plan (HCR) provides updates on hazards and risk, capabilities, and progress towards implementing the strategies during the 2021 reporting period. The HCR serves as San Francisco's Local Hazard Mitigation Plan and was adopted by the Mayor and Board of Supervisors on June 16, 2020 and approved by the Federal Emergency Management Agency on July 22, 2020. The HCR provides a roadmap for reducing the impacts of hazards and climate change impacts before they occur.

Hazard and Risk Profile Update

Two major hazards occurred in San Francisco during 2021:

- COVID-19 Pandemic
- Inland Flooding

Capabilities Update

Changes in San Francisco's capabilities related to implementing HCR strategies, include:

- Revenue, budget, and staffing impacts from COVID-19 pandemic
- General Plan updates
- Completion of the Islais Creek Southeast Mobility and Adaptation Strategy
- Completion of the Climate Action Plan
- Port Waterfront Resilience Program

Strategy Progress Update

San Francisco has made significant progress on implementing multi-hazard HCR strategies during the second year of plan implementation:

- 32 (46%) of strategies are progressing on schedule or on-going.
- 12 (17%) of strategies have not yet started.
- 15 (22%) of strategies have started but are facing some delay
- 5 (7%) of strategies changed significantly
- 4 (6%) of strategies have been completed

- 61% of strategies are included in a budget or capital plan

Details on the progress of each strategy can be found the Appendix. Strategy accomplishments from this period include:

- Relunched the [Neighborhood Empowerment Network](#) Resilient Bayview HUB
- Secured Patient Centered Outcomes Research Institute grant for Heat and Air Quality Resilience Project
- Completed the [Islais Creek Southeast Mobility and Adaptation Strategy](#)
- Formally launched [ClimateSE](#) in partnership with the Mayor's Office
- Completion of the [Climate Action Plan](#)
- Officially launched the Port's Waterfront Resilience Program

2 Introduction

2.1 Background and Purpose

This report is the 2021 annual progress report for the Hazards and Climate Resilience Plan (HCR) that provides a roadmap for reducing the impacts of hazards and climate change impacts before they occur. The HCR serves as San Francisco's Local Hazard Mitigation Plan and was adopted by the Mayor and Board of Supervisors on June 16, 2020 and approved by the Federal Emergency Management Agency on July 22, 2020. Associated resources can be found at the following links:

- [Adopted 2020 Hazards and Climate Resilience Plan](#)
- [Summary Report](#)
- [Hazards StoryMap](#)
- [Strategy Dashboard](#) (including 2020 annual progress report dashboard)

The City has committed to maintaining the HCR and evaluating progress towards implementation in accordance with federal Hazard Mitigation Planning requirements and described in Chapter 8 and Appendix D of the HCR. This report provides an update on hazards, risks, capabilities, and strategy implementation in calendar year 2021. This update was drafted through a workshop with the Planning Team and a strategy update reporting form.

2.2 Overview of the Report

This report includes the following sections:

- 3. Hazard and Risk Profile Update:** Summarizes impacts of natural hazards that occurred in 2021.
 - 4. Capabilities Update:** Provides updates to San Francisco capabilities to implement resilience strategies.
 - 5. Strategy Update:** Describes and evaluates progress towards strategy implementation and highlights notable accomplishments.
- Appendix:** Details strategy progress from departments leading strategies.

3 Hazard and Risk Assessment Update

This section provides the hazard profile and risk assessment information for one hazard that occurred or is on-going since the last HCR Annual Update Report was drafted: COVID-19 Pandemic.

3.1 COVID-19 Pandemic

At the time of this report, the COVID-19 pandemic has been impacting the city, nation, and world for over two years. As of February, 2022, there have been over 76.4 million cases of COVID-19 in the United States, with over 900,000 deaths. The course of the pandemic nationally has been characterized by peaks and troughs, with multiple surges of outbreaks sweeping across the country spurred largely by new variants of the virus with mutations that allow it to more effectively evade some of the defenses conveyed by the highly effective vaccines developed to date, even with the authorization of boosters.

At the time of writing in February 2022, 82% of eligible San Francisco residents have completed a vaccination series. This number includes residents 5 years of age and older who received authorization for the vaccines during 2021. Additionally, 64% of eligible residents have received a booster dose that confers increased protection against the omicron variant, which currently drives the vast majority of cases.



Mass vaccination site at San Francisco City College

3.1.1 San Francisco Impacts to Date

As of February 2022, San Francisco has experienced over 111,367 reported cases of COVID-19, and 730 deaths. San Francisco has fared better than many other metropolitan areas in the management of the spread of the disease. Up-to-date information on COVID-19 public health indicators, vaccinations, cases and deaths, and testing is available at the [San Francisco's COVID-19 Data Tracker](#).

Impacts on Vulnerable Populations

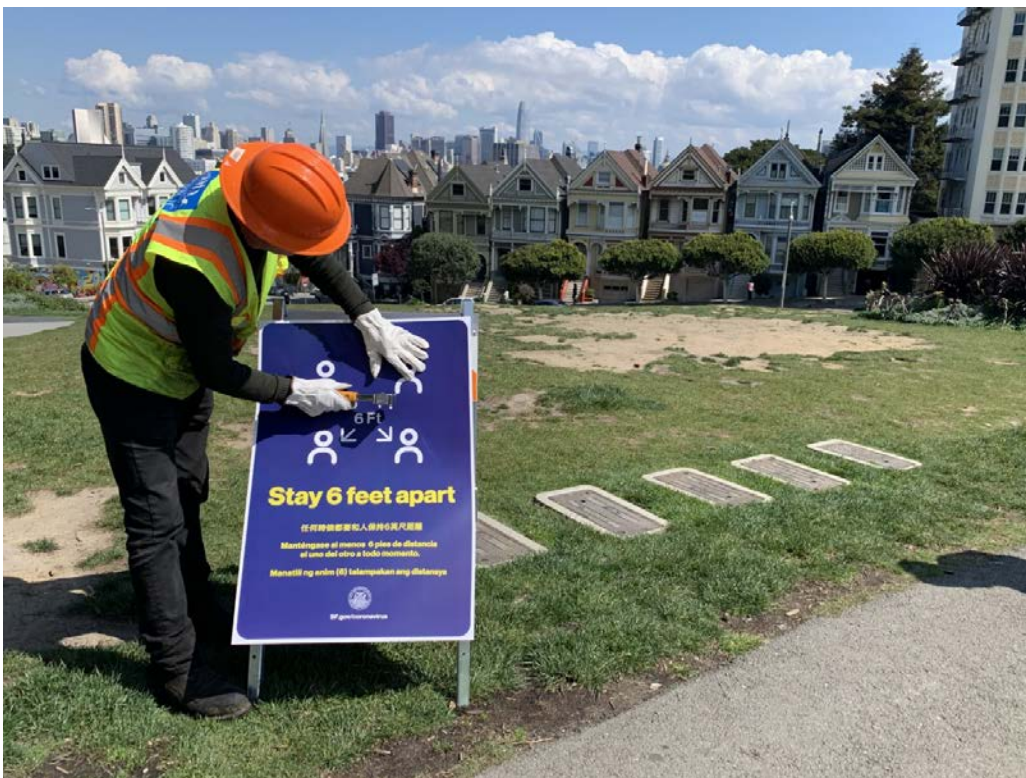
Since the start of the COVID-19 pandemic, understanding the impacts the virus can have on the community has significantly progressed. Structural oppression has led to disparities in outcomes of COVID-19 disease and deaths due to pre-disposing co-morbidities, leading to severe illness or increased transmission. In order to address these differences, in concert with the traditional medical vulnerabilities, the City of San Francisco has committed to accounting for the role that structural barriers have in putting individuals and groups at higher risk.¹

¹ <https://www.sfcdcp.org/wp-content/uploads/2020/06/COVID19-Health-Advisory-StructurallyVulnerablePops-FINAL-06.2.2020.pdf>

COVID-19 has had significant impacts on the social vulnerability of San Francisco residents, with many of these impacts stemming from the precarious economic situation many experienced. As noted in last year’s annual progress report, impacts to the economy were pronounced. However, 2021 saw a significant rebound to the initial losses as the economy restarted, albeit with a degree of starting and stopping in line with the rise and fall of different waves of the virus.

Overall population changes

According to an analysis by the California Department of Finance for 2021, the overall state population has declined for the second time in history since its founding, largely driven by declining birth rates, decreased international migration, and increased deaths from COVID-19². The overall reduction in population, which is most significant in the San Francisco Bay Area, has been attributed to less people moving to the area rather than any new pattern of exodus, a noted pre-pandemic trend.



A sign reminds park users of social distancing to mitigate the spread of COVID-19

² <https://www.latimes.com/california/story/2021-12-18/california-population-loss>

3.2 Inland Flooding

From October 24 to 25, 2021, a moderate to high strength atmospheric river formed, originating from the Pacific Northwest, and impacted the Bay Area. The volume of rainfall led to issuance of flood warnings for numerous areas in the North Bay. There were record-breaking levels of rainfall for many cities around the entire Bay Area. Impacts from the storm included downed trees from intense wind gusts and flooding of numerous roadways.³

As with many hazard events, vulnerable populations were impacted more than others. This atmospheric river caused the recently established vehicle triage center, located at Candlestick Point, to flood, leading to the temporary relocation of site residents. Public Works was called to pump out the excess water from the site, and improvements to reduce the impact of future flooding events will be ongoing⁴.

3.3 Tsunami Hazard Map Updates

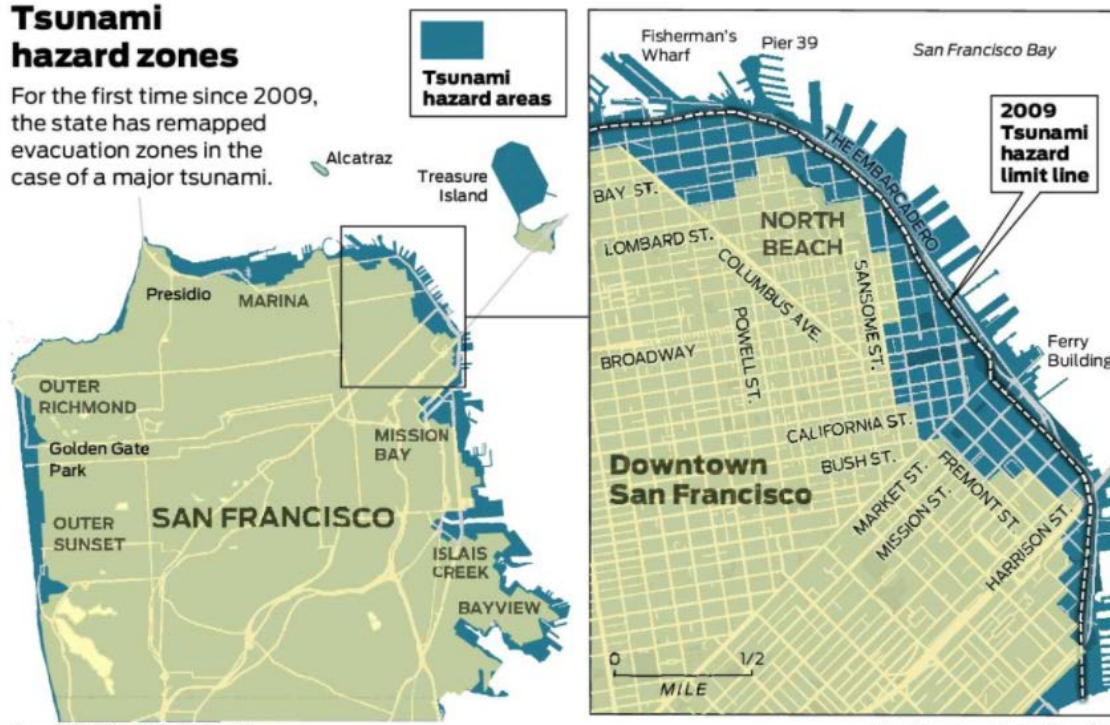
During the reporting period, the California Office of Emergency Services (CalOES) updated the proposed hazard maps for a once-in-millennium scale tsunami event in the Bay Area. This change was based on new LiDAR mapping data, which showed some low-lying areas that are susceptible to flooding now and were not considered the last time the maps were updated. Specifically, the South of Market and Sansome Street in the Financial District were highlighted as having increased vulnerability. Additionally, in North Beach, the zone has been extended from Beach Street to as far as Chestnut Street at Columbus Avenue. Images of the map that were featured in the SF Chronicle are below.

³ Atmospheric River Brings Historic Rainfall to the Bay Area (NWS):
https://www.weather.gov/mtr/AtmosphericRiver_10_24-25_2021

⁴ City Moves to Aid Those Living Outdoors as New Rainstorm Hits (The San Francisco Standard):
<https://sfstandard.com/politics/city-hall/city-moves-to-aid-those-living-outdoors-as-new-rainstorm-hits/>

Tsunami hazard zones

For the first time since 2009, the state has remapped evacuation zones in the case of a major tsunami.



Source: California Geological Survey

John Blanchard

John Blanchard / The Chronicle

Source: <https://www.sfchronicle.com/bayarea/article/Downtown-S-F-North-Beach-included-in-new-Bay-16299591.php>

4 Capability Update

Capabilities related to implementing mitigation strategies are organized into five categories: (1) Funding and Finance, (2) Public Asset Owner (3) Planning, Research, Guidance, (4) Adopt and Enforce Regulations, and (5) Deliver Community Services.

4.1 Funding and Finance

4.1.1 Revenue impact of COVID-19

While there are still significant budgetary impacts from COVID-19, as of March 31, 2022, the joint budget report projects a \$74.7M surplus for the current two-year budget. This is adjusted down from the \$131M surplus projected in the preceding six-month budget.⁵ There are still additional factors that will impact the accuracy of the forecast over the preceding years and these includes:

- Labor negotiations
- Recession risks
- Retirement contribution rate
- Covid-19 pandemic and public health response
- State and federal budget impacts
- Pending or proposed new programs or legislation

For more detailed information, review the controller report referenced in the footnotes of this document.

4.2 Public Asset Owner

No significant changes to the City's Public Asset Owner capabilities.

⁵<https://sfcontroller.org/sites/default/files/Documents/Budget/March%20Update%20FINAL.pdf>

4.3 Planning, Research, and Guidance

4.3.1 General Plan Updates

The San Francisco Planning Department is updating the City's General Plan. The General Plan creates a roadmap for the City's growth and change over time. It consists of goals and policies that will help the City address topics such as racial and social equity, housing, mobility, safety, climate resilience, environmental justice, and land use. While no amendments to the General Plan were adopted in 2021, progress was made in the following areas:

- California law to update the Housing Element every eight years: This update to the element is focused on housing policies centered on racial and social equity, in addition to State mandated goals of Affirmatively Furthering Fair Housing and ensuring sufficient sites and zoning to meet Regional Housing Needs Allocation (RHNA) requirements, with anticipated completion and adoption of the General Plan Amendment in 2023.
- California State Senate Bill (SB) 379 (Jackson, 2016): This bill ensures consistency between the Community Safety Element and the City's Local Hazard Mitigation Plan (2020 HCR); The Safety Element Update will incorporate additional and stronger policies regarding climate mitigation, adaptation, and resilience to multiple hazards, including seismic, slope instability, flooding, wildland and urban fires, poor air quality, extreme weather, and pandemic. Completion and adoption of the General Plan Amendment is anticipated in 2022.
- Environmental Justice Framework: The San Francisco Planning Department is developing an Environmental Justice Framework that will integrate environmental justice throughout the General Plan in accordance with SB 1000 requirements and Office of Planning and Research (OPR) General Plan Guidelines. The Environmental Justice Framework will also include a map of Environmental Justice Communities. Completion and adoption of this Framework is anticipated in 2022.
- Transportation Element Update: The San Francisco Planning Department is also updating the Transportation Element. The update anticipates completion and adoption of the General Plan Amendment in 2025. In addition to addressing statutory requirements (for example, correlation with land use, existing and

proposed transportation networks, Complete Streets), the update will include policies related to salient transportation issues in San Francisco, such as parking and curb management, emerging mobility services and technologies.

- Planning Commission and Historic Preservation Commission Resolutions: These resolutions will incorporate racial and social equity into the General Plan, with a focus on American Indian communities, Black communities, and communities of color.
- Climate Action Plan Updates: The General Plan will strive to closely coordinate with the City’s Climate Action Plan updates.

The following table outlines progress for these updates so far as well as their expected adoption timelines:

<i>General Plan Updates underway</i>	
Amendments to:	Date
Housing Element	Started process; expected adoption date: 2023
Transportation Element	Started process; expected adoption date: 2025
Safety Element	Started process pursuant to SB 379; expected adoption as the “Safety and Resilience Element” date: 2022
Environmental Justice framework	Started process pursuant to SB 1000; expected adoption date: 2022
General Plan Amendments related to the Port's Waterfront Plan update	Started process; expected adoption date: 2022

4.3.2 Climate Action Plan

Released in Fall of 2021, the 2021 San Francisco Climate Action Plan charts a pathway to achieve net-zero greenhouse gas (GHG) emissions and works toward addressing racial and social equity, public health, economic recovery, resilience, and providing safe and affordable housing to all. In addition to the HCR, the Climate Action Plan represents a concerted effort on the City’s behalf to better integrate both climate mitigation and adaptation to create a resilient San Francisco.

4.3.3 Islais Creek Southeast Mobility and Adaptation Strategy

The [Islais Creek Southeast Mobility and Adaptation Strategy \(ISCMAS\)](#) is a two-year community planning process in the Islais Creek area that developed actionable strategies to address sea level rise and coastal flood risk with a robust public engagement process. The Islais Creek Southeast Mobility and Adaptation Strategy sets a long-range vision for the Islais Creek shoreline, asset-specific solutions for public infrastructure, and a prioritized funding and implementation strategy that increases the resilience of the community and provides improved transportation networks and new open space. The strategy was published in August 2021.

4.3.4 Port Waterfront Resilience Program

The [Waterfront Resilience Program](#) is an SF Port led interagency providing a comprehensive response to the multi-hazard threats posed to San Francisco's waterfront with a particular focus on threats from earthquakes and sea-level rise. Particularly, this program will focus on aligning with other city-wide efforts and ensuring that the community has a central role in guiding the vision of the waterfront for many years to come. The geographic areas of focus are the Embarcadero Seawall, Islais Creek/Bayview, and Mission Creek/Mission Bay areas. In 2021, the Waterfront Resilience Program made significant progress towards waterfront adaptation and hazard reduction. Key milestones included:

- Developed **seismic measures and recommendations for flood risk reduction** guidelines.
- Identified and selected a set of **Early Projects** that could be undertaken in the next 10 years prioritize life safety and emergency response, and address urgent risk findings. The Early Projects will use Proposition A funds and other sources to advance projects to pre-design starting in 2022.
- Scoped and pre-designed the San Francisco **Living Seawall Project** to collect data on the performance of ecological enhancements of a potential new seawall.
- Prepared to formulate longer-term geographically-focused **Adaptation Strategies**. The Northern Waterfront geographic alternatives development and Southern Waterfront synthesis of previous studies have been ongoing throughout the period. Waterfront-wide adaptation strategies development kicked off in 2022.

- Secured a federal waiver for an additional \$10M and 4.2 years to complete the United States Army Corps of Engineers (USACE) **Waterfront Coastal Flood Study**. Work on the Study restarted in early 2022 with identifying the proposed program, and Study completion is expected by the end of 2025.
- **Continued public outreach and engagement.** Port staff co-hosted events with community-based organizations and presentations at standing community meetings. Staff continued on-going outreach to community-based organizations and restarted in-person outreach events at farmer’s markets, street fairs, and walking tours.

4.4 Adopt and Enforce Regulations

No Changes.

4.5 Deliver Community Services

No Changes.

5 Strategy Update

5.1 Summary of Strategy Progress

San Francisco has made significant progress on implementing the HCR strategies. Figure 5.1 shows that 32, or 46% of reported strategies are progressing on schedule / on-going. 12 (17%) of reported strategies have not yet started. 15 (22%) of reported strategies have started but are facing some delay. Many of the explanations provided related to the intense focus of staff on COVID-19 response and recovery efforts during this reporting period. 5 (7%) of the reported strategies have changed significantly since the report was drafted. 4 (6%) of the strategies have been completed. Finally, three strategies have been removed from the plan or cancelled. Details on the progress of each individual strategy can be found in Appendix A.

Strategy Status ● Progressing on schedule ● Delayed (Provide explanation) ● Not yet started ● Modified significantly ● Completed

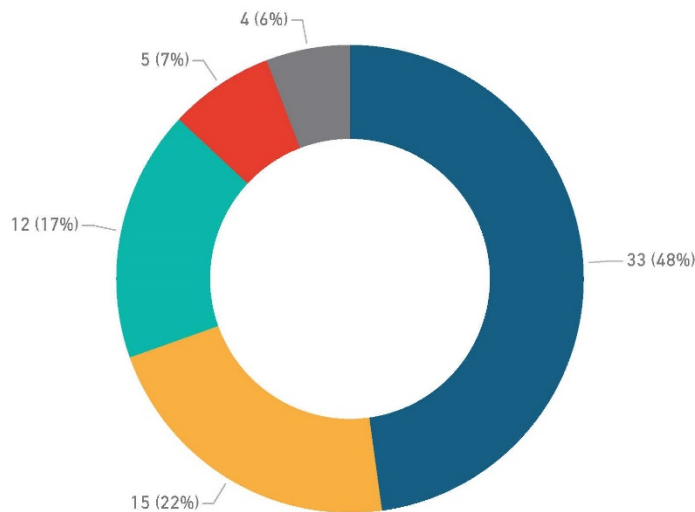


Figure 5.1: Strategy Implementation Status

Another indicator of progress towards implementation is the inclusion of the strategies in budgets and capital plans. As Figure 5.2 illustrates, nearly half of the HCR strategies are integrated into budgets or capital plans.

Strategy Integrated in Budget or Capital Plan? ● Yes ● No

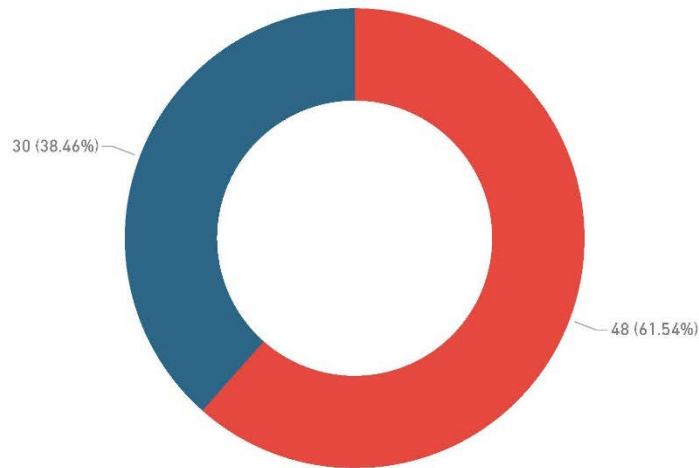


Figure 5.2: Strategy Integration in Budget or Capital Plan

5.2 Accomplishments

Below are notable accomplishments during the 2021 reporting period including reference to the HCR Chapter or strategy number.

- Integrated HCR strategies into other City policy documents (Chapter 08)
 - The Climate Action Plan was completed. This policy document has many synergies with HCR strategies and ongoing efforts for HCR implementation.
 - The FY 2022-31 Year Capital Plan was adopted by the Board and Mayor in late April, 2021. The Capital Plan calls for \$38 Billion dollars of investment and includes several HCR strategies, such as seismic retrofits, Ocean Beach climate adaptation, as well as affordable housing production and preservation.
- Mobilized resources citywide to support COVID-19 resilience and recovery:

- Focused support for the health and recovery of vulnerable populations, including with accessible testing, vaccine distribution, and economic relief (C-4.04).
- Made Progress on the [Heat and Air Quality Resilience Project](#) to coordinate the implementation of extreme heat and air quality adaptation strategies. The project is advancing strategies related to emergency response, existing buildings, green infrastructure, and community readiness. (B-3.01, B-3.02, C-5.04, C-5.05, C-5.15, C-5.19)
- Completed assessments of City-owned concrete buildings using Hazard Mitigation Grant Program (HMGP) funding (B-1.07)
- Completed [ISCMAS](#) assessment and report (IN-2.01)
- Completion of San Francisco Airport (SFO) strategy to upgrade the sewer system in line with projected increased demand for airport services (IN-1.03.01)
- Completion of ORCP strategy creating communications strategy for citywide climate efforts (C-5.17)

5.3 Conclusions

As the COVID-19 pandemic moves into its second year, increasing resilience remains a clear priority in all areas for the City and County of San Francisco, as we balance capacity in light of the endemic stage of the disease. Working towards the collaborative implementation of the strategies in this plan while keeping a focus on integrating equity first and foremost will be key in realizing the vision that this plan sets for the city's work.

Substantial steps forward can be seen in progress on the more complex, interdepartmental strategies such as the Ocean Beach Adaptation Project, ICSMAS, and the Waterfront Resilience Program that have been supported by broader efforts to align climate resilience work in the City.

However, as we have seen over the course of the last year, it will take commitment of increased resources and a concerted effort to grow the capacity of implementing agencies to scale up efforts enough to meet the heightened danger from hazards that the climate crisis poses.

Appendix: Strategy Progress Tables

List of Acronyms

ADM	Office of the City Administrator
BOS	San Francisco Board of Supervisors
CBOs	Community Based Organizations
DAAS	Department of Disability and Aging Services
DBI	Department of Building Inspection
DEM	Department of Emergency Management
DPH	Department of Public Health
HSA	Human Services Agency of San Francisco
MOD	Mayor's Office on Disability
MOHCD	Mayor's Office of Housing and Community Development
NEN	Neighborhood Empowerment Network
OEWD	Office of Economic and Workforce Development
ORCP	Office of Resilience and Capital Planning
Planning	San Francisco Planning Department
Port	Port of San Francisco
Public Works	San Francisco Public Works
RPD	San Francisco Recreation & Parks Department
SFDT	San Francisco Department of Technology
SFE	San Francisco Department of Environment
SFFD	San Francisco Fire Department
SFMTA	San Francisco Municipal Transportation Agency
SFPL	San Francisco Public Library
SFO	San Francisco International Airport
SFPUC	San Francisco Public Utilities Commission

DOMAIN: RESILIENT INFRASTRUCTURE (IN)

Primary Hazard Group: Geological

IN-1.01	Conduct a seismic assessment of critical City assets along the Southern Waterfront	
LEAD: Port	PROGRESS IN 2021: The consolidated report was completed in 2021. Presentation of results and next steps is going through internal review process before further implementation	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

IN-1.02	Conduct a research project for earthquake mitigation of marine structure piles	
LEAD: Port	PROGRESS IN 2021: Completion of NIST Grant application.	
STATUS: Modified significantly	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): National Institute of Science and Technology (NIST) research grant application is in process. The proposal includes funding for experimental testing. The Port is still willing to provide review and guidance on the project but has not committed to funding the ongoing research.	

IN-1.03.01	Develop technologies, systems, and capacity to treat sanitary sewage at SFO	
LEAD: SFO	PROGRESS IN 2021: Project was completed in line with expectations for Spring 2021.	
STATUS: Completed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Project completed on schedule.	

IN-1.03.02	Develop redundant and resilient electrical power capacity and distribution at SFO	
LEAD: SFO	PROGRESS IN 2021: The airport has successfully installed several high voltage control units that automate the transfer of power from SFO's redundant sub stations. If one is lost, the controls switch to the alternate substation.	
STATUS: Modified significantly	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): The airport projects have been delayed or cancelled due to the impact of COVID-19 on airport revenues. This strategy is currently under review for inclusion in the SFO Capital Plan and will be considered in light of a complete portfolio of potential projects.	

IN-1.04	Conduct a Risk and Resilience Assessment and Emergency Response Plan for the City's water infrastructure system	
LEAD: SFPUC	PROGRESS IN 2021: Compliance was achieved in 2020.	
STATUS: Completed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Next date for America's Water Infrastructure Act of 2018 (AWIA) compliance is in 2024. It will include updated Emergency Response Plan (ERP) and updated Risk and Resiliency Assessment (RRA)	

IN-1.05		Complete the Lifelines Restoration Performance Project and implement recommendations
LEAD: ORCP	PROGRESS IN 2021: ORCP convened two subsequent meetings following the production of the restoration report in 2020. ORCP is continuing to implement recommendations from the report. Specifically, the Port has completed a Multi-Hazard Risk Assessment from these recommendations and is beginning to work on early projects that address seismic issues along seawall.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

IN-1.06		Increase the resilience of the Municipal Fiber Optic Network
LEAD: DT	PROGRESS IN 2021: Some marginal improvements to fiber redundancy were made. However, a lack of adequate funding and staffing has prevented the effort scaling further.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY):	

IN-1.07		Increase the resilience of the 911 Radio System
LEAD: DT	PROGRESS IN 2021: DT upgraded the radio system with an additional radio site. However, a lack of adequate funding and staffing has prevented the effort from scaling further.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY):	

IN-1.08	Implement multi-hazard mitigation improvements for harbor dock infrastructure	
LEAD: Port / RPD	PROGRESS IN 2021: No notable progress this reporting period has been made as this strategy has been cancelled as originally conceived.	
STATUS: Cancelled	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): This strategy was moved into the Port's Waterfront Resilience Program. This change represents a shift to a more holistic approach to coastal flood defense for the City.	

IN-1.09	Develop a hazard mitigation and emergency response evacuation plan for SF Zoo	
LEAD: SF Zoo / RPD	PROGRESS IN 2021: There was no notable progress this reporting period.	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): This project has not started due to staff engagement on high priority issues during this reporting period, including COVID-19 response and recovery.	

IN-1.10	Implement the East Harbor Renovation Project	
LEAD: Port / RPD	PROGRESS IN 2021: RPD signed the final settlement agreement in March 2021. Draft Feasibility Study was submitted to the Water Board. Conceptual planning to start in late 2022	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

Note: Removed from HCR

IN-1.11	Implement San Francisco Metropolitan Transportation Agency (SFMTA) Security Strategy	
LEAD: SFMTA	PROGRESS IN 2021: Removed from HCR	
STATUS: Removed from HCR	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Removed from HCR	

DOMAIN: RESILIENT INFRASTRUCTURE (IN)

Primary Hazard Group: Weather-Related

IN-2.01		Develop projects to address flooding around Islais Creek
LEAD: Planning	PROGRESS IN 2021: The Islais Creek Southeast Mobility and Adaptation Strategy was submitted to Caltrans (August 2021), in fulfillment of all grant obligations. The Strategy is a long-range vision for the Islais Creek shoreline and district to protect transportation infrastructure and jobs, enhance shoreline open space access and habitat, and nurture community resilience in adjoining neighborhoods.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

IN-2.02		Develop a process to move utilities from under pier structures
LEAD: Port	PROGRESS IN 2021: Internal consideration of the strategy has led to the conclusion that movement of utilities from under deck of piers and wharves would be required only for large development projects or reconstruction of piers and wharves. Other, smaller tenant improvements cannot support the cost of moving the utilities above deck. The Port will develop guidance with this position this year (2022).	
STATUS: Modified significantly	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Consideration of the issue has led to revising the strategy and reserving it for large developments or pier/wharf reconstruction. The expense of moving the utilities above deck has been compared to rents generated and does not appear economically feasible for many types of tenant improvement projects.	

IN-2.03		Continue to implement the Ocean Beach Master Plan
LEAD: SFPUC	PROGRESS IN 2021: The project team completed 65% design, a Draft Environmental Impact Report (DEIR) was released, and a Draft Coastal Development Permit (CDP) was submitted. Currently, the team is working to integrate comments on DEIR and CDP.	
STATUS: Delayed (Provide explanation)	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Project complexities, multiple and complex comments on DEIR and CDP, and lack of cross-agency funding are still unresolved.	

IN-2.04		Adapt shoreline parks to sea level rise and salt water intrusion, using marshes and plant diversity	
LEAD: RPD		PROGRESS IN 2021: Missing Data	
STATUS: Missing Data		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-2.05		Assess the current stormwater catchment potential of open space managed by the Recreation and Parks Department	
LEAD: RPD		PROGRESS IN 2021: Missing Data	
STATUS: Missing Data		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-2.06		Expand the StreetTreeSF Climate Resilient Tree Planting Initiative	
LEAD: Public Works		PROGRESS IN 2021: Missing Data	
STATUS: Missing Data		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-2.07		Complete the Extreme Precipitation Study	
LEAD: SFPUC		PROGRESS IN 2021: Future modeling has been translated. Additional stakeholder meeting completed.	
STATUS: Delayed		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Slow progress with partner agencies in reviewing data and translation of the data took longer than expected.	

IN-2.08		Complete a comprehensive assessment of combined flood risks for San Francisco	
LEAD: SFPUC		PROGRESS IN 2021: Missing Data	
STATUS: Missing Data		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-2.09		Participate in US Army Corps of Engineers (USACE)/Port Flood Study	
LEAD: Port		PROGRESS IN 2021: Secured waiver for study, updated hydraulics modeling and economic damages for future without project; incorporated seismic damages language into Water Resources Development Act (WRDA).	
STATUS: Delayed		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): A waiver required for the study due to cost, schedule, and complexity was granted. Federal funding, waiver decision from United States Army Corps of Engineers (USACE) headquarters, and USACE decision to move study to a new district and team necessitated a period of time to bring the new team up to speed.	

IN-2.10		Explore increasing tree canopy and shade structures in parks	
LEAD: RPD		PROGRESS IN 2021: Missing Data	
STATUS: Missing Data		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-2.11		Assess current plant palettes and tree canopy needs to increase consideration of future climate conditions in the selection options	
LEAD: RPD		PROGRESS IN 2021: Missing Data	
STATUS: Missing Data		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-2.12	Diversify water supply options year-round by improving the use of new water sources and drought management	
LEAD: SFPUC	PROGRESS IN 2021: SFPUC continued work to implement alternative water supply program projects.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

IN-2.13	Continue to conserve and monitor water use by capital projects	
LEAD: Public Works	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-2.14	Develop a Long-term Vulnerability Assessment and Adaptation Plan for the Hetch Hetchy Regional Water System	
LEAD: SFPUC	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data.	

IN-2.15	Implement a Coastal Multimodal Resilience Strategy	
LEAD: SFMTA	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-2.16	Strengthen citywide efforts to conserve, restore, and steward biodiversity	
LEAD: SFE	PROGRESS IN 2021: The Healthy Ecosystems Chapter of the Climate Action Plan, which contains 7 strategies and 32 supporting actions to create a biodiverse, carbon-sequestering, resilient city, was completed.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

DOMAIN: RESILIENT INFRASTRUCTURE (IN)

Primary Hazard Group: Combustion-Related

IN-3.01		Complete studies, analysis, and capital projects to improve and expand the Emergency Firefighting Water System (EFWS)
LEAD: SFPUC	PROGRESS IN 2021: In December 2021, the SFPUC and SFFD submitted to the Board of Supervisors a study titled, “Emergency Firefighting Water System 2050 Planning Study”. This study uses modeled post-earthquake fire demands in San Francisco to develop a conceptual citywide EFWS proposal. This conceptual proposal includes new EFWS pipelines and additional EFWS water sources. Additionally, construction is beginning on the pipelines for Phase 1 of the Westside Potable EFWS. There is funding available to complete Phase 1 of the Westside Potable EFWS from the 2020 ESER Bond. However, there is not currently funding to complete the rest of the conceptual plan from the aforementioned study.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

IN-3.02		Improve the capacity of the Portable Water Supply System to fight fires following earthquakes and other large urban fires
LEAD: SFFD	PROGRESS IN 2021: During this reporting period a comprehensive planning study was completed to assess improvements needed for increased future demand. Additionally, progress was made on projects funded by previous bond measures.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY):	

IN-3.03		Continue to mitigate wildfire hazards in SFPUC owned-watersheds to protect source water quality and minimize risk to SFPUC water and power infrastructure.
LEAD: SFPUC	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-3.04	Improve fire prevention in recreation areas	
LEAD: RPD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

DOMAIN: RESILIENT INFRASTRUCTURE (IN)

Primary Hazard Group: All Hazards

IN-5.01	Conduct a system-wide, multi-hazard vulnerability and operational assessment for Muni	
LEAD: SFMTA	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-5.02	Reduce seismic and flood risk along three miles of the San Francisco Waterfront from Fisherman's Wharf to Mission Creek	
LEAD: Port	PROGRESS IN 2021: Initial Embarcadero Geographic Strategies and Early Projects identified. Due to the breadth of the effort, some projects will be completed on schedule, and some will be delayed.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Planning process to develop long term adaptation strategies and identify early projects took longer than anticipated due to complexity of multi-agency implications. Overall complexity is very high, many different facilities, conditions, stakeholders, infrastructure owners, and regulators. Need currently exceeds existing funding allocation.	

IN-5.03	Continue to advance Sewer System Improvement Program (SSIP) projects to meet level of service objectives	
LEAD: SFPUC	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-5.04		Implement the Pipe Replacement Prioritization Program
LEAD: SFPUC	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-5.05		Continue to improve power distribution infrastructure to support new development and increase resilience
LEAD: SFPUC	<p>PROGRESS IN 2021:</p> <p>Progress has been made on constructing the Bay Corridor Transmission Distribution Project (BCTD), with energization expected Summer 2022. SFPUC Power Enterprise worked with master developers on the design and construction of new underground electric distribution infrastructure and facilities that the SFPUC will own, operate, and maintain. Infrastructure will deliver 100% renewable and carbon free Hetch Hetchy hydropower. Additionally, SFPUC has established a strategic distribution investment planning team responsible for identifying opportunities to plan and construct SFPUC-controlled electric distribution infrastructure. The group is now commissioning an outside engineering study to identify specific investment opportunities beyond the BCTD.</p> <p>In 2021, the SFPUC completed a 100-kilowatt solar electric project adding to our renewable energy generating capacity portfolio. These projects provide power directly to their host buildings as part of the Hetch Hetchy Power program’s electricity service.</p>	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

IN-5.06		Enhance flood and earthquake resilience of regional dams and ancillary facilities
LEAD: SFPUC	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

IN-5.07		Develop a Citywide Climate Resilience Framework
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LEAD: ORCP	PROGRESS IN 2021: Staff drafted outline, including best practice research and establishing precedents. Staff started writing sections for final framework.
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A

Note: Removed from HCR

IN-5.08	Implement SFMTA Communications and IT Strategy
LEAD: SFMTA	PROGRESS IN 2021: Removed from HCR
STATUS: Removed from HCR	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Removed from HCR

Note: Missing Data

IN-5.09	Implement SFMTA Asset Management and State of Good Repair Strategy
LEAD: SFMTA	PROGRESS IN 2021: Missing Data
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data

IN-5.10	Implement SFMTA Transit Fixed Guideway Strategy
LEAD: SFMTA	PROGRESS IN 2021: Missing Data
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data

DOMAIN: RESILIENT BUILDINGS (B)

Primary Hazard Group: Geological

B-1.01	Assess and seismically retrofit municipal buildings	
LEAD: ORCP	<p>PROGRESS IN 2021: Ingleside police station completed its seismic renovation conceptual design; however, construction is not planned until 2023. Fireboat station No. 35 is completed and open for operations. Seismic retrofits and other renovations for Chinatown Health Center is programmed for the 2023 Public Health Bond, conditionally based on if the measure passes. Planning is completed, but additional funding is needed for construction document development.</p> <p>African American Cultural Center and Mission Cultural Center for Latino Arts seismic retrofit work was funded through the FY22 Recovery Stimulus program. The Capital Planning Commission funded seismic safety planning work at each of the three City owned shelters (260 Golden Gate, 525 5th St, and 1001 Polk). Golden Gate family shelter is on the critical path to complete a concept phase estimate by December 2022 for the PHS Bond in November 2023. With 525 5th and Polk shelters completing concept phase estimates by December 2023 for the Affordable Housing Bond in November 2024.</p>	
STATUS: Progressing on Schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY):	

B-1.02	Develop an earthquake risk improvement program for non-structural components of municipal buildings	
LEAD: ORCP	<p>PROGRESS IN 2021: No notable progress this reporting period</p>	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Strategy has not been moved forward due to other competing priorities.	

B-1.03	Develop a voluntary program for seismic retrofits of one- to four-unit wood frame, soft-story buildings	
LEAD: ORCP	<p>PROGRESS IN 2021: No notable progress this reporting period.</p>	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Strategy has not been moved forward due to other competing priorities.	

B-1.04	Implement the Tall Building Strategy to address seismic vulnerability of buildings taller than 250 feet	
LEAD: ORCP	PROGRESS IN 2021: Recommendations from the tall building study have formally been moved to the tall buildings executive panel for further implementation. During the reporting period, a report has been commissioned to advance the development of performance-based earthquake design standards. Currently, the city is working on developing these standards for city-owned buildings. Draft legislation has been developed to require enrollment of buildings into the Building Occupancy Resumption Program (BORP), but it has not been submitted. Many actions have been wrapped into an existing contract with a structural engineer and will commence following the development of the concrete building safety program.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

B-1.05	Extend and improve the Building Occupancy Resumption Program (BORP)	
LEAD: ORCP	PROGRESS IN 2021: No notable progress during the reporting period.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): This strategy has been delayed due to reduced staffing capacity with partner agencies.	

B-1.06	Complete the Mandatory Soft-Story Retrofit Program (pre-1978 buildings with 5+ units and 2+ stories)	
LEAD: DBI	PROGRESS IN 2021: As February 2022, 99% of eligible buildings have submitted a permit, but only 85% of those buildings are in compliance after the deadline. DBI is redoubling efforts on enforcement to move the remaining 800 buildings into compliance.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

B-1.07		Develop a program to screen, evaluate, and retrofit non-ductile concrete and older steel buildings
LEAD: ORCP	PROGRESS IN 2021: A contractor was retained to develop and assist with the overall project development. Progress was made on refining the comprehensive concrete building database. Additionally, in partnership with the structural engineering firm, ORCP moved forward on program design elements. The structural engineering firm was also able to begin work on identifying potential retrofit standards for future identified buildings.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

B-1.08		Implement the SFMTA Parking Strategy
LEAD: SFMTA	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

DOMAIN: RESILIENT BUILDINGS (B)

Primary Hazard Group: Weather-Related

B-2.01	Develop multi-hazard resilience design guidelines for municipal buildings	
LEAD: ORCP	PROGRESS IN 2021: This strategy was identified as a high priority action for the next 6 to12 months, and staff have submitted a budget request to secure contractor support.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): COVID-19 disruptions have still been a challenge.	

B-2.02	Review the Guidance for incorporating sea level rise into capital planning	
LEAD: ORCP	PROGRESS IN 2021: The Sea Level Rise Capital Planning Guidance was updated during the reporting period. The guidance will be expanded in the future to include citywide design guidance.	
STATUS: Completed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

B-2.03	Develop a program to analyze, identify, and evaluate properties at risk of stormwater flooding	
LEAD: SFPUC	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

B-2.04	Implement floodproofing and elevation projects for properties at risk of stormwater flooding citywide	
LEAD: SFPUC	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

DOMAIN: RESILIENT BUILDINGS (B)

Primary Hazard Group: Fire-Related

B-3.01		Study emergency clean air and cooling capacity at key community facilities
LEAD: DPH	PROGRESS IN 2021: Respite centers were opened during extreme heat and wildfire smoke events. Emergency Response Implementation Team met Spring 2021 with Clean Air/Cooling as an agenda item. City scoped a possible FEMA application. Conducted post-event interviews with the Pacific Northwest following the catastrophic heat wave they experienced in June 2021.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): This project is part of the Heat and Air Quality Resilience Project (HAQR) and was delayed due to capacity issues within the Department of Public Health and the Department of Emergency Management. There was work done Summer 2021 to open weather relief centers, but operationalization of a comprehensive policy has not occurred. There is tension between short-term and medium- and long-term policymaking. Generally, there are many improvements that can be made to the implementation of weather relief centers including more effective communication of their availability prior to an event.	

B-3.02		Increase privately-owned building weatherization rates
LEAD: SFE	PROGRESS IN 2021: 43 individual home retrofits received rebates from the Bay Area Regional Energy Network (BayREN) consisting of: roof insulation, wall insulation, and/or building envelope air sealing in calendar year 2021.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

B-3.03		Support increased building electrification (fuel switching) and mechanical upgrades
LEAD: SFE	PROGRESS IN 2021: 45 measures consisting of energy efficient mechanical system and/or electrification projects were completed using BayREN rebates in 2021.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY):	

DOMAIN: RESILIENT BUILDINGS (B)

Primary Hazard Group: All Hazards

B-5.01		Amend the capital improvement program for transportation facilities to consider hazard mitigation opportunities	
LEAD: SFMTA		PROGRESS IN 2021: Missing Data	
STATUS: Missing Data		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

B-5.02		Install solar and storage systems at critical facilities	
LEAD: SFE, Public Works, others		PROGRESS IN 2021: The Municipal Green Building Task Force approved the draft update to Chapter 7 of the Environment Code. One substantive change to Chapter 7 is for new construction or major renovation of critical community institutions (for example, public safety facilities, health clinics, community centers, libraries, and emergency management facilities) to install photovoltaic and battery storage to sustain emergency energy loads. Additionally, Kezar Pavilion will be retrofitted with solar + storage to act as a critical facility.	
STATUS: Modified significantly		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

B-5.03		Secure a resilient public safety training facility for San Francisco Fire Department (SFFD)	
LEAD: SFFD		PROGRESS IN 2021: A property has been identified and secured for the facility. Design work has also seen progress in parallel with these efforts.	
STATUS: Progressing on schedule		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

B-5.04	Increase resilience and operation efficiency of maintenance yards	
LEAD: Public Works	PROGRESS IN 2021: Additional funds were requested to move the project forward, but this request is pending. During the reporting period, parking restriping drawings were developed for the entire upper and lower yards.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Project was delayed because of limited capital planning funding.	

B-5.05	Explore options to use Recreation Centers as public respite facilities	
LEAD: RPD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

B-5.06	Develop comprehensive and coordinated code amendments for multi-hazard resilience of private development	
LEAD: Planning	PROGRESS IN 2021: Process has been identified to integrate code amendments; however, this work has not yet started due to staffing and capacity limitations and competing priority projects.	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

DOMAIN: RESILIENT COMMUNITY (C)

Primary Hazard Group: Geological

C-1.01		Address seismic retrofit needs within San Francisco's affordable housing stock
LEAD: MOHCD	PROGRESS IN 2021: Continued progress has been made within both the Small Sites Program and the Housing Preservation Program (larger rehabilitation sites), in completing required and voluntary seismic upgrades.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Financing and permitting have continued to be challenges during 2021. Additionally, the capacity of property owners to complete this work, and relocate residents (when required) has been a challenge. Lastly, as COVID-19 restrictions eased somewhat during certain periods of 2021, the lack of contractors, labor, and materials have become challenges.	

C-1.02		Develop a downtown resilience strategy
LEAD: ORCP	PROGRESS IN 2021: We have received word that we were accepted for the FEMA HMGP grant we applied for. However, the funds have not been encumbered so the work has not begun.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Changes in staffing and capacity within ORCP has been a challenge leading to a delay in the implementation of this project	

C-1.03		Improve San Francisco's implementation of the State Safety Assessment Program
LEAD: ORCP	PROGRESS IN 2021: Pursuing the next steps from the exercise carried out in 2020 will be the focus of future progress on this strategy. However, key staff losses at DBI have prevented the work from moving forward during this reporting period.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

C-1.04		Develop a post hazard Open for Business campaign	
LEAD: OEWD	PROGRESS IN 2021: Missing Data		
STATUS: Missing Data		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-1.05		Continue to meet housing production goals	
LEAD: MOHCD	PROGRESS IN 2021: Projects delayed by COVID and other factors were completed in 2021 on target.		
STATUS: Progressing on schedule		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Financing and permitting continued to be challenges during 2021. However, State funding was received for certain key projects in late 2021.	

C-1.06	Develop a public outreach campaign and wayfinding plan for tsunami awareness and evacuation procedures	
LEAD: DEM	PROGRESS IN 2021: No notable progress in this reporting period. Staff was fully engaged on high priority COVID-19 response and recovery efforts during this reporting period.	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

C-1.07	Assess vertical evacuation options in high-hazard areas and guidance for large-building refuges	
LEAD: DBI, DEM	PROGRESS IN 2021: No notable progress in this reporting period. Staff was fully engaged on high priority COVID-19 response and recovery efforts during this reporting period.	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

DOMAIN: RESILIENT COMMUNITY (C)

Primary Hazard Group: Weather-Related

C-2.01	Conduct groundwater data collection and modeling to better understand the shallow groundwater response to sea level rise, including liquefaction risks.
LEAD: ORCP	PROGRESS IN 2021: DPH representatives (Environmental Health, Policy, Climate) met with WRP leadership to scope actions. This will also be supported by the Environmental Justice Framework (Planning) process.
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A

DOMAIN: RESILIENT COMMUNITIES (C)

Primary Hazard Group: Biological & Toxic

C-4.01	Expand household hazardous waste collection efforts	
LEAD: SFE	PROGRESS IN 2021: In 2021, there was a 5% decrease in the number of residents who use the Household Hazardous Waste (HHW) Home Collection Service, following the substantial increase in use of this service in 2020—an increase possibly due to the Shelter In Place requirements. There also was a 5% decrease in total weight collected through all HHW Programs in 2021.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY):	

C-4.02	Replace mercury-containing lighting in preschools and daycare centers	
LEAD: SFE	PROGRESS IN 2021: No notable progress this reporting period.	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): This strategy relies on SFE obtaining outside grant funding to pilot replacement of mercury-containing lighting in SF preschools. No grant applications were submitted in 2021.	

C-4.03	Explore toxins abatement workforce development programs	
LEAD: OEWD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-4.04		Improve citywide resilience to pandemics and infectious diseases	
LEAD: DPH		PROGRESS IN 2021: Responding to a global epidemic as successfully as San Francisco did, our city is more resilient to pandemics as we ever have been. From a response planning perspective, DPH and our Communicable Disease Branch has information and lessons learned that will be incorporated into emergency response plans moving forward.	
STATUS: Progressing on schedule		EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Building resiliency while actively responding to a public health emergency is always challenging. The City was in response mode and thinking about how to document lessons learned in real time while constantly putting out fires was not always a priority. We captured as much as we could during and after action reports, which continue to happen today.	

DOMAIN: RESILIENT COMMUNITIES (C)

Primary Hazard Group: All Hazards

C-5.01	Identify and create Clean Air/Cooling Hub (CACH) Public Respite Facilities	
LEAD: ORCP	PROGRESS IN 2021: Due to numerous capacity issues resulting from on-going COVID-19 response and other subsequent hazards. The HAQR emergency response team has not been able to move forward and work on this important issue.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

C-5.02	Develop a Homelessness Disaster Response Plan	
LEAD: HSH	PROGRESS IN 2021: HSH completed work with the Technical Assistance Collaborative (TAC) and submitted a final HSH Continuity of Operations (COOP) plan to the Department of Emergency Management that reflects lessons learned from the response to COVID-19. pandemic. Foundation for the department's Disaster Response.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): No delays encountered in 2021.	

C-5.03	Support volunteer emergency preparedness, response, and recovery programs including the Neighborhood Emergency Response Team (NERT) and Auxiliary Law Enforcement Response Team (ALERT).	
LEAD: SFFD	PROGRESS IN 2021: Specifically, during 2021, the fire department focused on increasing recertification training for current volunteers. The SFFD also used NERT volunteers to robustly supporting the citywide COVID-19 response efforts with trained DSW volunteers filling many needs.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): The SFFD is still looking to elevate this program and its effective reach at the City level to be recognized for the important work and potential that this program brings to resilience. Increases in budget for NERT are needed to expand staffing and capacity.	

C-5.04	Create a program to coordinate existing City programs providing in-home and resident-facing services related to hazard and climate resilience	
LEAD: DPH	PROGRESS IN 2021: No notable progress this reporting period.	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): This activity is possible through the HAQR initiative but does not yet have financial or political support.	

C-5.05	Develop a Preparedness Equipment Purchase Program to direct and fund the purchase of climate preparedness equipment	
LEAD: DPH	PROGRESS IN 2021: No notable progress this reporting period.	
STATUS: Not yet started	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): The COVID-19 pandemic delayed the development of this effort.	

C-5.06	Expand the Neighborhood Empowerment Network (NEN) Empowered Communities Program (ECP) to additional neighborhoods	
LEAD: NEN	PROGRESS IN 2021: NEN's Empowered Communities Program is building in the lessons learned from the COVID-19 pandemic and assessments completed on its HUB and Neighborfest programs to advance the capacity of the initiative to increase the overall resilience of participating communities. The program will expand to include Districts 8 and 2 with possible expansion to additional vulnerable communities such as the Tenderloin and SOMA.	
STATUS: progressing on Schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

C-5.07	Perform gap analysis of vulnerable populations (i.e., Access and Functional Needs) and available City services	
LEAD: MOD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

DOMAIN: RESILIENT COMMUNITIES (C)

Primary Hazard Group: All Hazards

C-5.08	Develop a community-based capacity building initiative	
LEAD: MOD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY):	

C-5.09	Establish an evacuation strategy for people with Access and Functional Needs	
LEAD: DAAS	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-5.10	Continue Small Business Continuity of Operations (COOP) Assistance	
LEAD: OEWD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-5.11	Support the Small Business Development Center (SBDC)	
LEAD: OEWD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-5.12	Establish disaster relief funding and small business resilience fund	
LEAD: OEWD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-5.13	Expand layoff outplacement services	
LEAD: OEWD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-5.14	Expand Women’s Entrepreneurship Fund	
LEAD: OEWD	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-5.15	Study the overlap between vulnerable populations and vulnerable buildings	
LEAD: DPH	PROGRESS IN 2021: This strategy has been rolled into HAQR Research Initiatives.	
STATUS: Progressing on Schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): We have been successful at getting stakeholders organized to plan interventions but have not yet been able to transition to the implementation stage.	

C-5.16	Develop and manage a system for hazard and climate resilience data	
LEAD: ORCP	PROGRESS IN 2021: This strategy scope was modified to better reflect changing priorities and best way to achieve broader objectives for analyzing and disseminating information on climate and hazards.	
STATUS: Modified significantly	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Strategy has shifted to specifically indicate progress on HCR. This will coordinate closely with other departments to ensure citywide data needs are met.	

C-5.17	Develop a communications strategy for citywide climate resilience efforts	
LEAD: ORCP	PROGRESS IN 2021: Consultant contract and change order were executed.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

C-5.18	Improve San Francisco's climate health research capacity	
LEAD: DPH	PROGRESS IN 2021: Funded a Climate and Health Epidemiologist to join the climate and Health Program. Worked with UCSF to secure two research opportunities: PCORI grant for community preferences and an effort with Brightline Defense Project to measure SRO Air Quality. We will also be implementing a grant for Urban Heat Island research.	
STATUS: Progressing on schedule	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

C-5.19	Develop and implement a Centralized Air Quality and Extreme Heat Preparedness campaign	
LEAD: DPH	PROGRESS IN 2021: No notable progress during the reporting period.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): N/A	

C-5.20	Implement SFMTA's Traffic Signals Strategy	
LEAD: SFMTA	PROGRESS IN 2021: Missing Data	
STATUS: Missing Data	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): Missing Data	

C-5.21	Improve and prepare behavioral health services for hazard events	
LEAD: DPH	PROGRESS IN 2021: No notable progress during this reporting period.	
STATUS: Delayed	EXPLANATION (IF DELAYED OR MODIFIED SIGNIFICANTLY): COVID-19 has reduced the capacity to pursue the effort over this reporting period	