

# RESILIENT SAN FRANCISCO

STRONGER TODAY, STRONGER TOMORROW.



**Stronger today,  
Stronger tomorrow.**





City and County of San Francisco  
Edwin M. Lee, Mayor

Patrick Otellini, Chief Resilience Officer

Produced with support from:





One hundred and ten years ago, San Francisco was devastated by the great earthquake and fire of 1906. In the wake of this tragedy, we began to define what it means to be a resilient city. Our ability to not only bounce back, but rather bounce forward, has been a theme and a spirit that has carried us through other challenges over the years. We stand together now to make San Francisco a city that everyone can have an opportunity to call home.

During my time as the City Administrator, I began to institutionalize resilience by launching several programs aimed at preparing our residents, buildings and infrastructure to be ready for the challenges of the next century. We are strengthening our buildings to be ready for future earthquakes; we have developed an action plan to address rising sea levels; and we are committed to housing production, protection of our residents, education, and sustainable jobs to help shore up our social fabric that makes our community thrive because of its diversity.

Resilient San Francisco was developed over the course of 18 months through a process that involved more than 186 individuals, 31 government agencies, and 56 NGO and private sector organizations. It lays out the City's resilience goals that we will continue to track and measure as we update this living document to ensure the City is working together with our communities, and continuing to work diligently toward these goals. San Francisco is a resilient city, but we must not forget what is at stake.

These challenges present opportunities to leverage our ideas, people, and culture to continue to build and protect our San Francisco for generations to come.

Mayor Edwin M. Lee



San Francisco's resilience will ultimately be defined and measured by the ability of its residents, businesses and government to quickly

respond to and effectively recover from an event. We must remember that, although earthquakes are San Francisco's most immediate identifiable threat, there are and will continue to be other environmental stresses and challenges that impact our capacity and resilience as a city and region.

Improving the City's individual systems and structures will increase the City's resilience overall. That is why resilience must be a multi-pronged strategy focused on establishing a framework by which we can ensure that the decisions we make are based on an integrated approach that will yield multiple benefits today and tomorrow.

Resilient San Francisco is about identifying our vulnerabilities, implementing strategies and programs that further the City's resilience and capacity, and tracking our overall progress and performance in meeting our identified resilience goals to ensure our accountability.

Naomi M. Kelly,  
City Administrator



San Francisco is filled with dedicated individuals working hard to make a difference. We are taking an integrated approach to resilience that will

better prepare us for the uncertainties of tomorrow. That is at the core of resilience thinking. Understanding urban resilience is like recognizing the difference between learning and education. Building resilience is an ongoing process like learning, not a milestone like a graduation or another traditional educational goal. Every day we are actively learning from our experiences, and this is a process that never stops. Resilience is something that we must constantly strive toward, a process, and this strategy provides a road map to help our City and our communities continue on a path to a more resilient future.

Patrick Otellini  
Chief Resilience Officer

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# INTRODUCTION

San Francisco has never been a sleepy town. We are no strangers to change, to reimagining, to bold vision. Since the 1906 earthquake and fire, the 110th anniversary of which this strategy commemorates, we have faced countless challenges. In the century since that disaster, San Francisco has remade itself time and time again. Our city is both a capital of innovation and a flashpoint for many of the country's most daunting urban struggles. It is a city with a long history of advocacy and acceptance, and a city that struggles with its own contemporary identity. San Francisco has never shied away from hard questions, tough tasks or complicated reality, though. Today's San Francisco is—and will be—no different.

Cities around the world are grappling with the realities of climate change and rising seas, escalating urbanization and increasingly frequent disruptions of daily life. Here in San Francisco, we are struggling with how the hazards we face—and our response to them—expose several interdependencies that we must better understand. What is 21st century San Francisco? To whom will this city be available? How can we maintain our San Francisco values and, perhaps, make them even stronger?

RESILIENT-SF is a strategy that seeks to tap into our city's trademark tenacity by laying out our most pressing challenges and demanding that City government partner with the community to make bold and lasting progress on these challenges. When we think about San Francisco, we think of a city of unwavering strength, a city that is prepared to not only respond but to recover, and a San Francisco of strong and unified neighborhoods, ready to continue reimagining, and striving for the strong and resilient San Francisco of tomorrow.

**SF@1M** The Association of Bay Area Governments projects that the population of San Francisco will grow to 1 million, and the Bay Area will grow to 7.2 million residents by 2040. This requires our planning to consider this additional capacity. But San Francisco is growing at a rate that projects 1 million residents by 2040. This idea of San Francisco at 1 million residents (or SF@1M) appears throughout this strategy, and reminds us that we need to consider adding additional capacity when needed and to look for more opportunities to take an integrated approach. We cannot just plan for our needs of today but rather must work together to plan for the needs of a growing population: SF@1M.

We face several interconnected challenges:



### EARTHQUAKES

There is a 76 percent chance the Bay Area will experience a 7.0 magnitude earthquake in the next 30 years. Even the relatively moderate and distant 1989 Loma Prieta Earthquake (6.9) caused substantial damage to our city. It is imperative to the survival of San Francisco that we continue working to prepare for and recover from the “big one.”



### CLIMATE CHANGE

The impacts of global climate change are already being felt in the form of drought and increasingly severe storm events. We must secure our city’s future through mitigation, while recognizing the likely impacts of climate change by beginning to adapt today rather than when it is too late.



### SEA LEVEL RISE

We expect a total of 66 inches of sea level rise to impact our shores by 2100. As we plan for the growth of our city, we need to adapt to this challenge that threatens not only our waterfront but also our way of life in San Francisco and regionally.



### INFRASTRUCTURE

Infrastructure is central to our daily lives—from the roads and pipes we use every day, to the larger systems, like food, social networks and housing that we rely on as lifelines. Sometimes these systems continue to operate past their intended life span, and sometimes they are inadequate altogether to meet the needs of a growing and vibrant city.



### SOCIAL INEQUITY

San Francisco embraces equality and equity in all policies, but this work is never done. Social equity and inclusiveness need to be at the core of what makes a city thrive.



### UNAFFORDABILITY

Forty-five percent of renters in San Francisco pay more than 30 percent of their household income in rent. Median home prices are continuing to rise, making it a challenge for first-time homebuyers. San Francisco is becoming out of reach for many of the people who made the city what it is today.

## OUR STRATEGY, OUR CHALLENGES AND OUR GOALS

With an eye toward both process and product, we take a long view of resilience. What will San Francisco be like with nearly 160,000 new residents? How will population growth impact the challenges we already face? What new challenges will we face, and what strengths will SF@1M add to our city by 2040? And, most importantly, how can we begin to accommodate this growth, while facing both the challenges of today and tomorrow?

We have determined four actionable goals to address those challenges. Each goal was formed from, and will be supported by, leveraging successful City department-level initiatives, as well as supporting efforts (e.g., department studies, existing projects) within each goal’s policy area:

### 1 Plan and Prepare for Tomorrow

San Francisco’s challenges build slowly and quickly, steadily and suddenly. This goal looks toward building our city’s capacity to handle today’s challenges and tomorrow’s disasters. We address land use planning and recovery planning, as well as earthquake planning and preparedness.

### 2 Mitigate, Adapt and Retrofit

We face a future with certain challenges. This goal looks to confront the pressing realities of an imminent large earthquake, a changing climate and rising seas, all while building a stronger city today.

### 3 Ensure Housing for San Franciscans Today and After a Disaster

Today’s challenges will only worsen with tomorrow’s disruptions. We must work now to ensure housing for all San Franciscans before and after a disaster. We will work to address our city’s housing and homeless crises through innovative policies, reimagining and bold action to build a stronger city for today and tomorrow.

### 4 Empower Neighbors and Neighborhoods through Improved Connections

San Francisco is a city of neighborhoods and neighbors. This goal seeks to build on the strength of our city’s character and vibrancy, by being effective governmental stewards of resilient, healthy and cohesive neighborhoods based in trust, equity and partnership.

## RESILIENCE IS ABOUT LASTING ACTION

This strategy has the power to transform San Francisco. Ultimately, though, effective implementation is paramount. Clear, actionable steps are the foundation of urban resilience, building momentum and continual support for the work we do. These goals can only be achieved if the City partners with communities to take a stand and make the hard decisions necessary to secure a better future for all San Franciscans. Some of the hallmark actions this strategy will take include...

- A new Office of Resilience and Recovery
- Create capacity to house a population expected to grow to 1 million residents by 2040.
- A disaster housing and governance plan for long-term recovery
- Launching a regional resilience design challenge
- Constructing a disaster-resilient waterfront by 2040
- Seismic retrofit of vulnerable buildings and set a higher level of safety for new buildings
- Advance Citywide adaptation planning for sea level rise

This strategy cannot fix every problem or answer every question. But it prioritizes the challenges we face, tackling them with bold goals and decisive action. As we approach SF@1M, it takes a hard look at our transportation and land use planning, our disaster and recovery planning, our climate readiness and critical neighborhood programs. Foremost, this strategy is intended to foster dialogue between San Francisco government and the community, between departments within San Francisco government, between cities in the region, between neighbors. To advance progress on these challenges, we have created a strategy consisting of:

### How to read this strategy

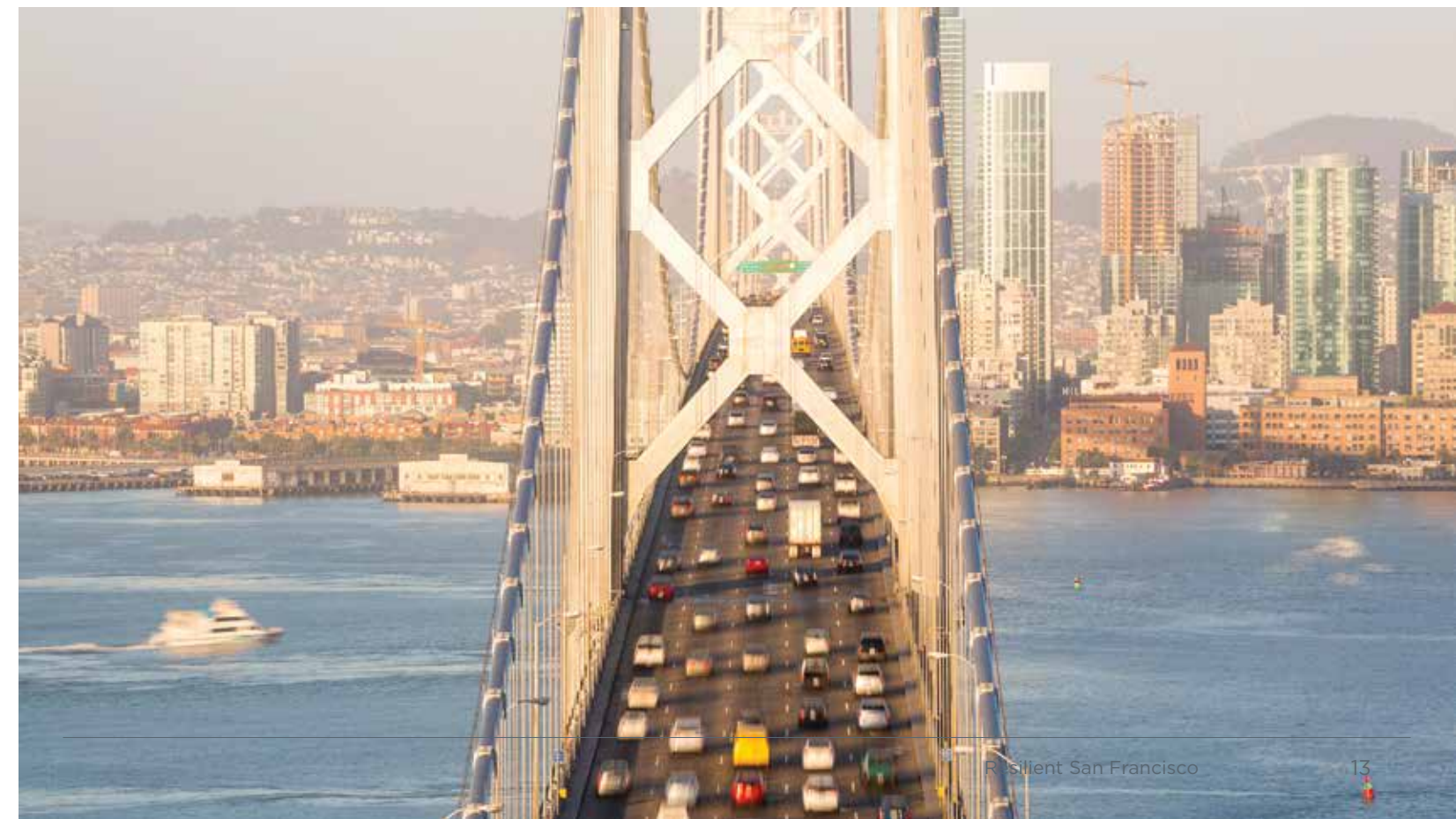
San Francisco is a world leader in innovation, in social justice advocacy, in livable and sustainable urbanism. As a city, we have a long history of coming together to fight for a better future, not only for our city but the world. Our city also sits at the precipice of great challenges. How can we face these challenges, while becoming more equitable and affordable, stronger and empowered, and also more prepared? How can we look toward San Francisco at 1 million residents, or SF@1M, as we are calling this important milestone, and not only maintain our San Francisco values, but build on them?

**Four goals** seeking to address **six key challenges** that face San Francisco—from stressors or long-term challenges to shocks or disaster events.

Each goal contains a series of **actions** aimed at making progress on the goals.

A series of **metrics** allows us to evaluate progress on the goals; and

A set of existing, supporting and new **initiatives**.

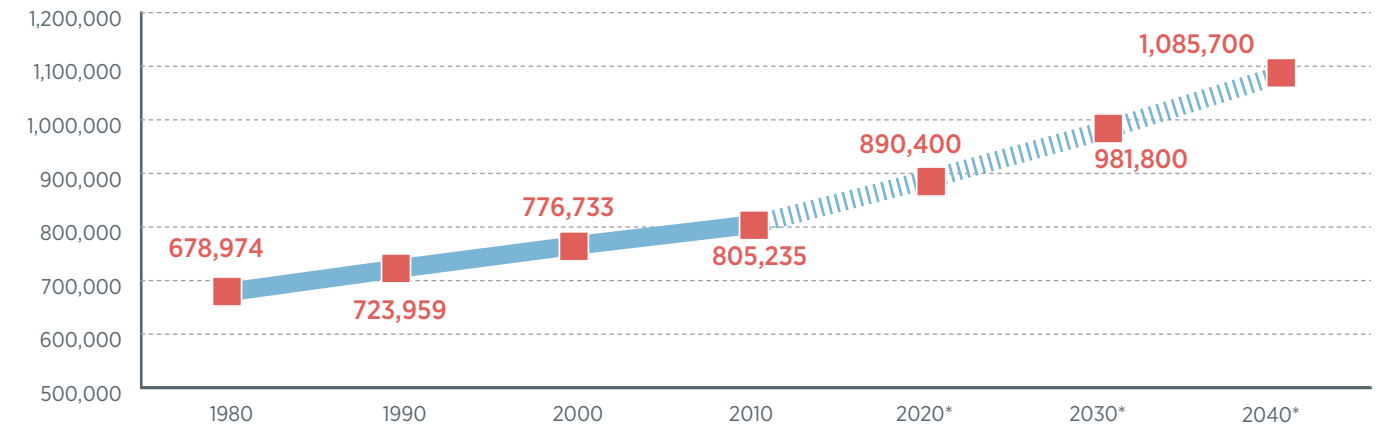




# SAN FRANCISCO IN CONTEXT:

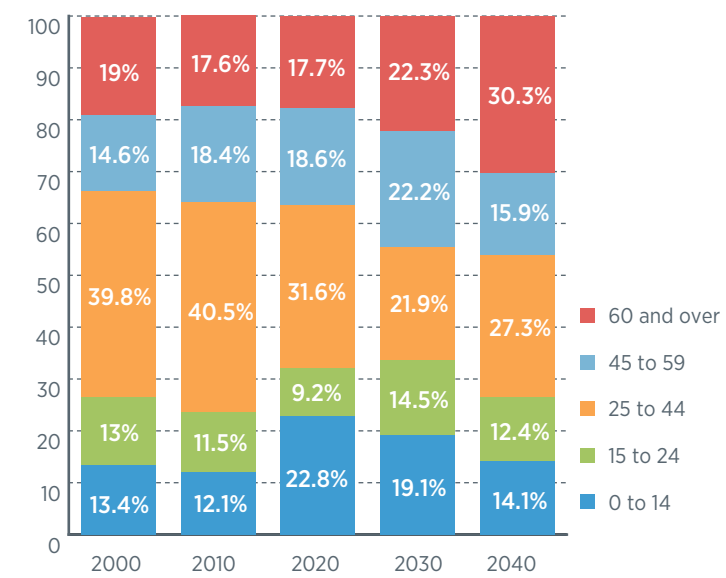


## Population Trends and Association of Bay Area Governments (ABAG) Projections, San Francisco, 1980-2040



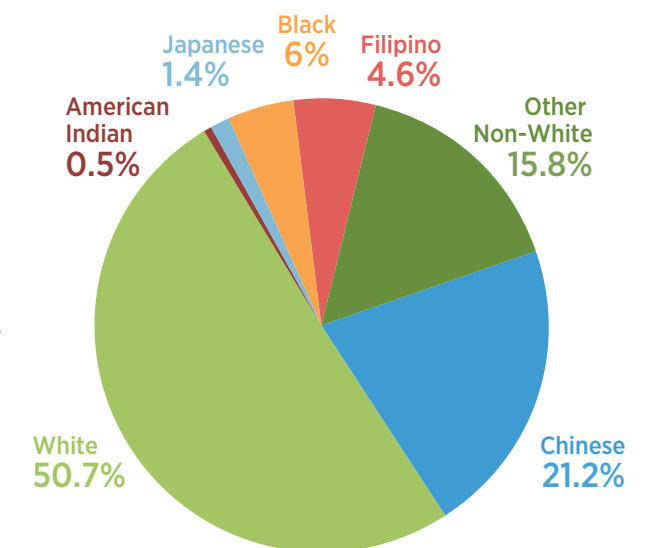
SOURCES: Census Bureau; ABAG, Projections 2013

## Population Trends and Projections by Age Groups, San Francisco, 2000-2040



SOURCES: Census Bureau; ABAG, Projections 2013

## Ethnic Composition, San Francisco, 2012



SOURCE: Census Bureau



### Household Income Standards by Household Size, 2014

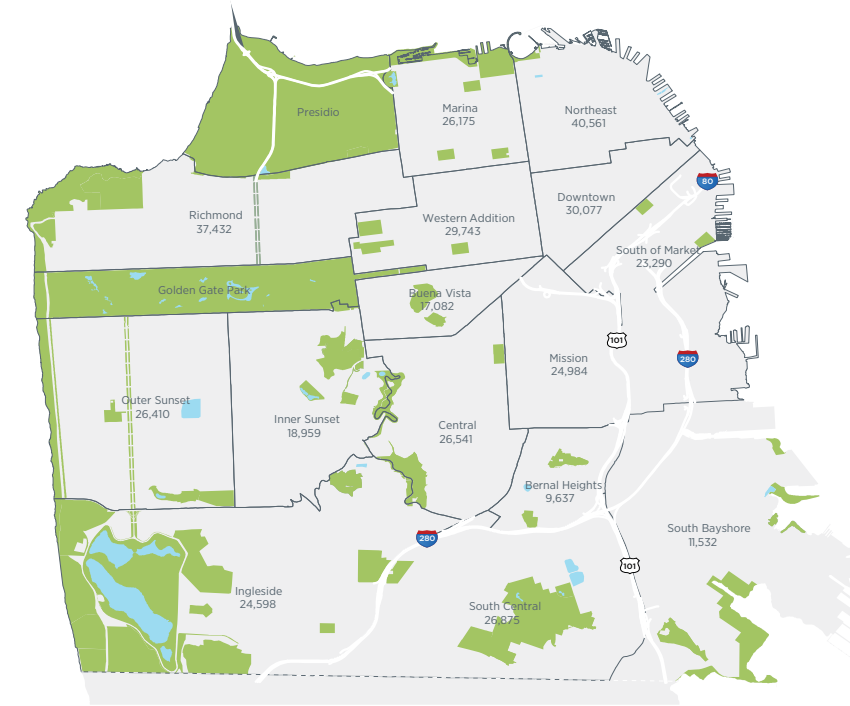
Income Categories as Percentage of Area Median Income (AMI)	Household Income by Number of Persons				
	1	2	3	4	5
Very Low (0 to 50% AMI)	\$20,400	\$23,300	\$26,200	\$29,150	\$31,450
Low (51 to 80% AMI)	\$48,225	\$55,175	\$62,075	\$68,925	\$74,450
Moderate (81 to 120% AMI)	\$71,350	\$81,575	\$91,775	\$101,950	\$110,100
Above Moderate (over 120% AMI)	\$98,550	\$112,675	\$126,725	\$140,800	\$152,050

SOURCE: Department of Housing and Urban Development (HUD)

### Income Distribution, San Francisco, 2012

Characteristic	Very Low	Low	Moderate	Above Moderate
	(<50% of median)	(50 to 80% of median)	(80 to 120% of median)	(>120% of median)
All SF Households	27.9%	14.8%	18.8%	38.5%
Median Income for SF, 2012	\$73,802			

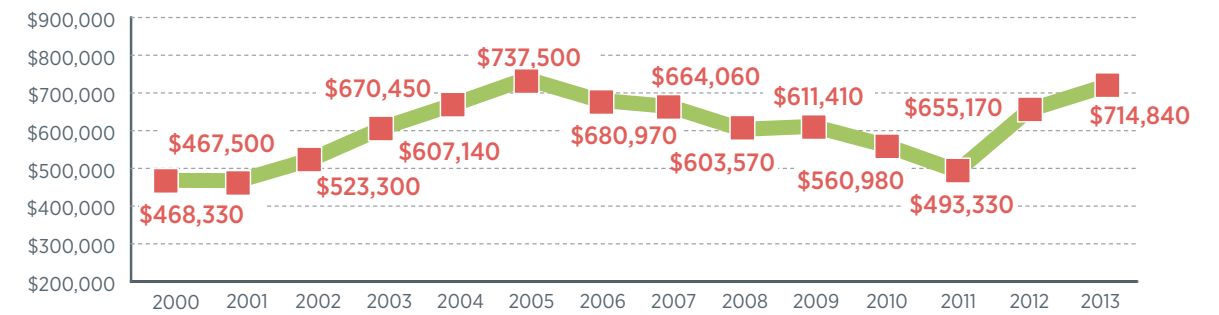
SOURCE: Census Bureau, 2012



### Housing Stock by Planning District, 2013

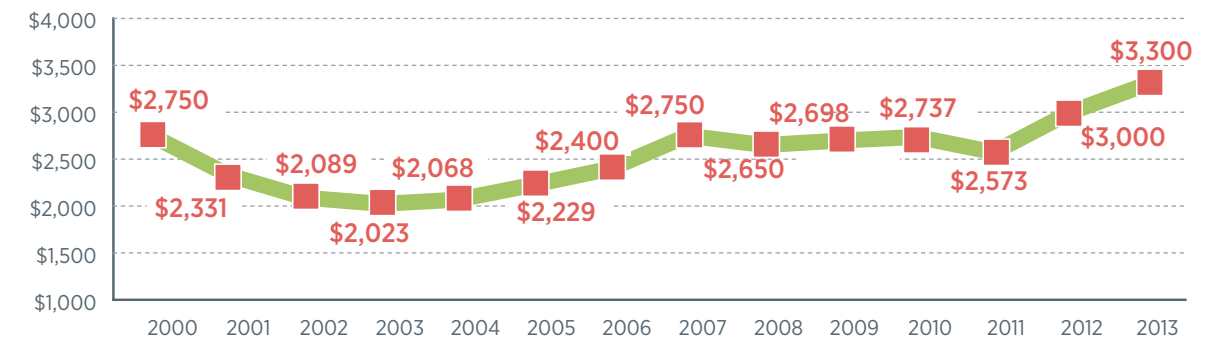
SOURCE: Department of Building Inspection, SF Planning

### Housing Price Trends, San Francisco, 2000-2013



SOURCE: California Association of Realtors; figures in current dollars

### Average Monthly Rental Rates, San Francisco, 2000-2013



SOURCE: Zillow.com, RentsSF.com, Zilpy.com

## THE REGION

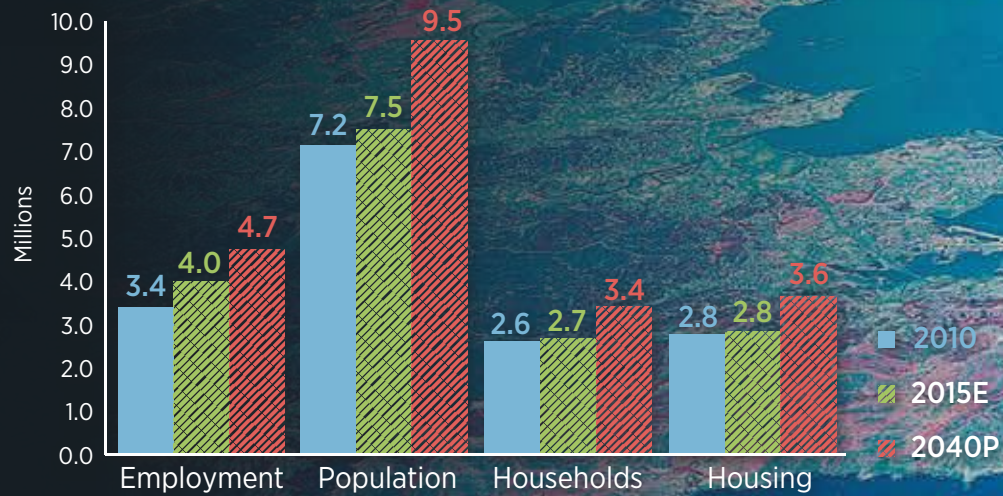
**Growth of 1.3 million jobs** between 2010 and 2040. Almost half of those jobs—over 600,000—were added between 2010 and 2015.

**An increase of 2.4 million people** between 2010 and 2040. Almost one-fourth of the projected growth occurred between 2010 and 2015.

**An increase of 783,000 households.** Only 13 percent of that increase occurred between 2010 and 2015, but the pace of household growth will increase as the population ages.

**An additional 823,000 housing units.** Only 8 percent of this growth had occurred by 2015, highlighting the need for a focused effort to expand housing production to meet the needs of our broad range of household types. Of the 823,000 projected units, about 39,600 come from the increment of units added to the Regional Housing Control Total to meet the legal settlement agreement.

Employment, Population, Household and Housing 2040 Projections and Base Year



Source: ABAG from California Department of Finance, California Employment Development Department, U.S. Census Bureau and in-house analysis.

Between 2010 and 2040, the region is projected to grow from 3.4 million jobs and 7.2 million people to 4.7 million jobs and a population of 9.5 million. We estimate this will result in almost 3.6 million households and demand for more than 3.6 million housing units. The forecast projects:

## RESILIENCE FOR SAN FRANCISCO

Resilience describes the capacity of individuals, communities, institutions, businesses and systems within a city to survive, adapt and grow, no matter what kinds of chronic stresses and acute shocks they experience. Approaching challenges through the lens of resilience helps cities better serve their residents today and plan for the longer term. Resilience demands moving beyond reaction through proactive planning. The approach calls for considering problems systematically, seeking out departmental and conceptual relationships from which solutions can be more completely developed, and bridging the practice gaps between social justice, sustainability, disaster recovery and other areas.

### Resilience is Process-Oriented

For San Francisco, resilience is as much about process as about product. Our desire is to build a strong culture of resilience, a culture where varied challenges are approached strategically—both through bold goal-setting and in an integrated manner, where co-benefits and comprehensive solutions are identified and implemented through stakeholder collaboration. This strategy seeks to institutionalize and embed this culture within our City government and our neighborhoods. It will serve as the ongoing centerpiece of an interdepartmental dialogue and an extensive, yearlong community workshop process, all through a new Office of Resilience and Recovery under the Office of the City Administrator.

### Stronger Today, Stronger Tomorrow

For San Francisco, resilience begins with questions concerning recovery, but it certainly does not stop there. Today's weaknesses will become tomorrow's disasters. Disasters are not the disruptions that knock us down, but rather they are born from long-standing crises that keep us from getting back up again. This demands that we ask: Are we strong today? And, in the ways we are not, how can we begin to address these weaknesses today, before they become tomorrow's disruptions? We know an earthquake is coming, and we know climate change will bring strong and lasting changes to our way of life here in San Francisco. We know that a robust economy still exists in a boom and bust cycle. These facts, these questions, and the knowledge that SF@1M is just around the corner, pose a challenge—a challenge to think more comprehensively, to consider integrating ideas, partners and departments more closely, and to plan for a stronger today and a stronger tomorrow. This is our San Francisco baseline for understanding and implementing resilience.





## AN INTEGRATED APPROACH

At all stages of the resilience-building process, our focus is on taking an integrated approach. An integrated approach looks at systems and linkages—specifically, it requires thinking about relationships between departments, between the government and residents, between the public sector and academia, between the public and private sectors, between problems. We are looking for co-benefits—moments when one solution, or a set of solutions, contributes to progress on multiple problems. We look past silos, trying to find connections and redundancies. We look outside the normal processes and ask: How can we do this better?



## CREATING OUR RESILIENCE STRATEGY

One Hundred Resilient Cities (100RC)—Pioneered by The Rockefeller Foundation—kicked off in 2013, connecting cities around the world to the funding necessary to hire a Chief Resilience Officer, as well as the technical assistance necessary to advance resilience. San Francisco was one of the cities selected in the first round of the 100RC initiative, and over the course of the last 18 months, we have met and worked with more than 30 government agencies, and over 50 community-based organizations and private sector partners, to develop an actionable strategy aimed at understanding and then advancing urban resilience in San Francisco and regionally.

These working groups leveraged expertise, while building relationships and beginning a new chapter in the dialogue around resilience in San Francisco. Workshops with our partners, community groups and City officials allowed experts within individual fields, departments and policy areas to add their understanding of resilience and the needs of the City to the process. These workshops were the beginning of an iterative process; stakeholders were engaged at the various steps of translating the content of the meetings into the strategy itself.

The City has also collaborated with and learned from other participating cities around the world, from Rotterdam and Christchurch to cities closer to home, like Los Angeles, Oakland and Berkeley. These cities approach resilience-building in their own context, but all cities have common threads of doing what we can now to help us face an uncertain future. Working together helps us find new and more creative solutions to address the challenges each city faces.

### **A Call to Community-Led Action**

Now is the time to act! This strategy and its implementation have the power to transform San Francisco—not just in what we do but in how we do it. Ultimately, though, this strategy lives and dies on the work that can and will be done. Clear, actionable steps forward are the foundation of urban resilience, building momentum and continual support for the work we all share. Each of these goals can only be met if the City works hand in hand with our community to take a stand and make the hard decisions necessary to secure a better future for all San Franciscans as we approach SF@1M. These are the indicators of progress that will guide the implementation of this work.

### **The Office of Resilience and Recovery**

With the launch of this strategy comes the founding of a new office within the San Francisco City Administrator’s Office—the Office of Resilience and Recovery. This office will be charged with managing the city’s ongoing resilience challenge, and with championing our city’s earthquake preparedness and recovery work. This challenge involves working across departments and agencies to determine and continue clear action, to build the narrative around resilience internally, and to find connection points with ongoing strategic planning and comprehensive planning processes.

### **Accountability and Transparency—Annual Strategy Updates**

With the launch of this strategy and the formation of the Office of Resilience and Recovery, we are partnering with Neighborland, a platform for collaboration, and Appallicious, a data collection company, to launch a citywide, neighborhood by neighborhood, community engagement process. We will present the strategy to community leaders, as well as members of the public, to workshop it, to improve upon it, to add to it and to tell us what we missed or should do differently. Additionally, the ORR will update the strategy annually, in order to measure the progress the City is making toward its bold goals. These processes will form an even stronger strategy, working with the community and our partners within government, to advance and build a strong culture of resilience in San Francisco.



GOAL 1

# PLAN AND PREPARE FOR TOMORROW

ACTIONS:

To meet this goal, we will:

1. **Prepare** Today for San Francisco's Recovery
2. **Advance** Innovations in Earthquake Preparedness
3. **Invest** in Infrastructure and Transportation for Our Growing City



## Introduction

For San Francisco, challenges are opportunities. By planning and preparing for tomorrow, we build a stronger and more resilient city today—one ready for SF@1M, and ready for any crisis ahead. Each improvement we plan, and each one we make, from earthquakes to our housing stock and urban form, and to our infrastructure and transportation, transforms San Francisco into a more flexible and dynamic city for today and tomorrow.

San Francisco has always been a city living on the edge—on the edge of the next global innovation; on the edge of social change and reinvention; and on the edge of peril, from earthquakes. With an uncertain global future, marked by a changing climate, growing unaffordability and inequality, and the certainty of a powerful earthquake, San Francisco is ready to take decisive and bold actions to maintain our most important values, while building the stronger, more equitable and prepared San Francisco.

The U.S. Geological Survey (USGS) estimates we have a 72 percent chance of a 6.7 magnitude or greater earthquake in the next 29 years. The population of San Francisco is growing at a rate of 10,000 new residents a year. At the same time, median rent has doubled in the last five years. Like cities all over the world, San Francisco is struggling with both chronic, day-to-day challenges and the threat of large-scale disasters. The time to act is now, because today's weaknesses are tomorrow's disasters.

The Central Subway Project will construct a modern, efficient light-rail line that will improve public transportation in San Francisco. This new 1.7-mile extension of Muni's T Third Line will provide direct connections to major retail, sporting and cultural venues, while efficiently transporting people to jobs, educational opportunities and other amenities throughout the city.



We must continue to improve services, while thoughtfully planning for the San Francisco of tomorrow. To become resilient, we must foster a culture within government that considers the interaction between long-range planning, recovery planning and the day-to-day work in neighborhoods. We must ready ourselves for earthquakes by planning for response, mitigation and recovery. And finally, we must build a more sustainable and livable city. This chapter seeks to leverage existing actions and continue the emerging strategic dialogue among city leaders, which the Office of Resilience and Recovery hopes to help build. Integration is vital to the work of resilience—searching cooperatively for co-benefits whenever and wherever possible, thinking strategically about short- and long-term problem solving, and always considering multiple hazards.

### KEY INDICATORS:

#### To measure progress, San Francisco will:

- Complete a long-term disaster recovery governance plan by 2018.
- Train 2,000 Neighborhood Emergency Response Team members by 2018.
- Create a post-earthquake building re-occupancy tool by 2017.
- Build and develop a more robust preparedness culture focused on training all levels of city management—not just emergency managers—on response protocols and actions.
- Invest in infrastructure that increases mobility capacity and usage, while decreasing the distance to essential services.

A multiagency post-earthquake inspection exercise took place at City Hall during an already scheduled building evacuation exercise where inspectors practiced response protocols. More of this kind of training will better prepare us for future disasters.

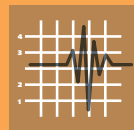


# ACTION 1 Prepare Today for San Francisco's Recovery

The keys to an effective recovery from disaster are careful planning today, a quick and robust response after the disaster, and a prepared community—always. Tomorrow's recovery will only be as strong as today's San Francisco. This action seeks to achieve preparedness, while planning beyond disaster response, building a San Francisco prepared to recover from any disruption.

**ASPIRATION:** San Francisco's recovery starts the moment disaster strikes.

**CHALLENGES ADDRESSED:**



EARTHQUAKES



SOCIAL INEQUITY



UNAFFORDABILITY



INFRASTRUCTURE

**INITIATIVE 1.1**

## Build Community Readiness through Education and Technology

When disaster strikes, San Franciscans must join together to begin the recovery process. To facilitate this through preparedness, the San Francisco Department of Emergency Management (DEM) has developed a next-generation preparation and community-building platform called "SF72." SF72 builds on other services DEM already offers, like AlertSF, which allows community members to receive alerts regarding emergencies disrupting vehicular/pedestrian traffic, watches and warnings for tsunamis, flooding and Citywide post-disaster information. These services and platforms have the capacity to build community, while fostering a culture of preparedness.

**SF72** SF72 helps residents become more prepared, connects them and can serve as a post-disaster information hub. With tools like these, as well as DEM's regular exercises and communication with the public—regarding everything from a winter storm to a gas leak downtown to a Giant's game—San Francisco can begin to build a deep-seated culture of preparedness.



AlertSF is a text-based notification system for San Francisco's residents and visitors. AlertSF will send alerts regarding emergencies disrupting vehicular/pedestrian traffic, watches and warnings for tsunamis, flooding

and Citywide post-disaster information to your registered wireless devices and email accounts.



**Above:** Community members and City agencies prepare through activations using the Incident Command System (ICS). SF-Prepared provides valuable training to assist the finance and administration branch when using ICS in a disaster.

**Right:** San Francisco's organized response to the Rim Fire contributed to protection of the City's water supply that comes from the Hetch Hetchy Reservoir.



**INITIATIVE 1.2**

**Ensure Effective City Operations during Response and Recovery**

The ability to continue with financial operations is a critical component to ensuring an effective post-disaster response. Under the Office of the Controller, SF-Prepared is helping San Francisco and other Bay Area cities to plan for an effective Citywide recovery through the financial and administrative tools needed for emergency response and recovery. San Francisco government agencies will leverage SF-Prepared to continue financial operations during a disaster or other disruption. We need to continue to implement SF-Prepared within the city's day-to-day operations, including the training of all city departmental CFOs in post-disaster cost-recovery processes.

**The value of being prepared**

Being financially prepared for a disaster will help you restore your short- and long-term financial position when a disaster occurs. Disasters can have a substantial, adverse impact on local governments. Below are some statistics on financial impacts of the Rim Fire and Loma Prieta Earthquake.

**RIM FIRE**



In 2013, the Rim Fire burned over 250,000 acres—the third-largest wildfire in California history. Infrastructure and other property of the San Francisco Public Utilities Commission, which operates the Hetch Hetchy Regional Water System, were severely damaged. The fire caused over \$70 million in damages and other losses to local governments. As of April 2015:

- \$70 MILLION** Total Federal disaster assistance to State and local government
- \$31.5 MILLION** Total estimated losses to the City and County of San Francisco (CCSF)
- \$3.5 MILLION (to date)** Approved insurance claims for CCSF assets
- \$5.1 MILLION (to date)** Total eligible Federal and State disaster assistance received by the CCSF
- \$8.6 MILLION (to date)** Total costs recovered by the CCSF



- \$1.3 BILLION (1989 value)** Total estimated losses to State and local assets within the CCSF
- \$165.7 MILLION (actuals claimed, 1989-2001)** Total Federal and State disaster assistance claimed by the CCSF
- \$164.7 MILLION (actuals received, 1989-2001)** Total Federal and State disaster assistance received by the CCSF

**Date of closeout, all CCSF claims—December 18, 2001**



**LOMA PRIETA EARTHQUAKE**

On October 17, 1989, the magnitude-6.9 Loma Prieta Earthquake shook for 15 seconds, resulting in approximately \$6 billion in damages (in 1989 dollars).

INITIATIVE 1.3

## Increase Training for Neighborhood Emergency Response Teams

*“Beginning with ourselves, we will be prepared and work as an individual or together as emergency response teams to assist our families and neighbors in time of disaster, and to be prepared to make decisions that do **the Most Good for the Most People.**”*

—NERT Mission statement



In the coming year, Neighborhood Emergency Response Teams (NERT) aim to have 2,000 additional residents sign up for training or renew their existing certifications. By 2025, NERT plans to grow the number of trained residents overall by 30 percent. The new Office of Resilience and Recovery will provide additional support to the SFFD-NERT by partnering in a Citywide outreach campaign to help inform more residents about this free training opportunity. NERT will also further leverage the Office of Civic Innovation’s Startup in Residence Program (STIR) to help develop a streamlined, web-based registration process, freeing up staff to spend more time on program development and community outreach.

NERT is a free training program for individuals, neighborhood groups and community-based organizations run by the San Francisco Fire Department. The program teaches community members the basics of personal preparedness, as well as the hands-on disaster skills necessary to assist the Fire Department in responding to all levels of emergencies. The program was born of proven necessity. During the magnitude-6.9 1989 Loma Prieta Earthquake, which shook a significant portion of the Marina District to the ground, San Franciscans immediately took to the streets to help their neighbors. This program, with its 27,000 residents trained since 1990, builds on that tradition of neighbors helping neighbors.

INTEGRATION



### Build a More Complete First Response After a Disaster



The Department of Public Health (DPH) will continue to work with NERT to train volunteers on psychological first aid, building a more comprehensive response after a disaster. After a disaster, many members of our community will be in crisis. To build back quickly, and stronger, our neighbors will need a helping hand to get back on their feet. With this in mind, in 2015 DPH worked with the

nonprofit San Francisco Community Agencies Responding to Disasters (SFCARD) to develop a Psychological First Aid Training curriculum that was piloted as a Train the Trainers Psychological First Aid Training for NERT volunteers. This training will roll out to new neighborhoods in the coming months as part of a comprehensive outreach program.

“As an immigrant, San Francisco represents a safe harbor—a place where diversity and differences are not seen as challenges, but rather assets that strengthen the community.”

—Michael Liao

Chinatown Disaster Preparedness Committee  
NICOS Chinese Health Coalition and NERT leader



INITIATIVE 1.4

## Expand Access to Health Facilities and Services for Our Most in Need

The City will invest \$350 million to expand access to mental health services for San Franciscans, including the homeless, and seismically upgrade and strengthen the City's public health care facilities and emergency medical response infrastructure to ensure their viability after a major earthquake. Specifically, the funds will be spent on additional earthquake safety upgrades to the San Francisco General Hospital, on neighborhood health clinics, on expanding services at homeless shelters, and on retrofitting Fire Department and ambulance facilities.

This work builds on existing efforts to repair and strengthen our City's health care and emergency medical services infrastructure, as outlined in the City's 10-Year Capital Plan. Protecting public health, expanding mental health and



homeless services, and improving community safety in the event of an emergency are major focal points for aiding in our City's recovery. By upgrading these health and safety facilities, San Francisco can help protect our residents, neighborhoods and small businesses.

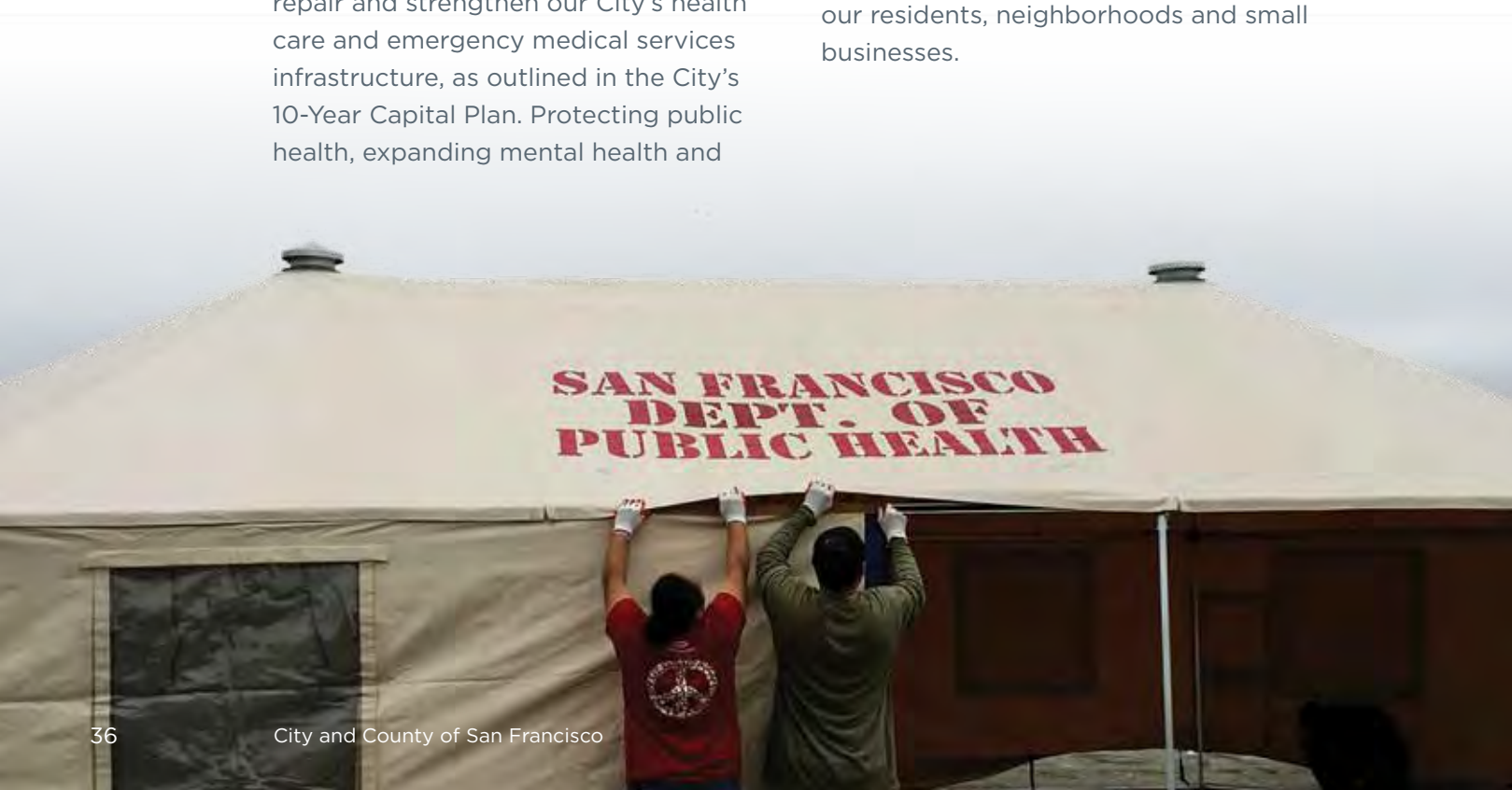


INITIATIVE 1.5

## Develop a Long-Term Recovery Governance Plan

Most major urban areas have established emergency response protocols. After a disaster, however, cities often have problems bridging the gap between response and long-term recovery. By 2018, San Francisco will create a long-term plan that lays out both a vision and goals aimed at effective and inclusive governance, cost recovery, strategic partnerships, data collection and overall planning for the City.

This governance and cost-recovery strategic plan will assess the City's current policies, procedures, authorities and tools, identifying what works, what's missing and what needs to be modified. The aim is to best position the City to fully and quickly recover its eligible post-disaster expenses. Post-disaster cost recovery is complex and spans far beyond the Federal Emergency Management Agency's Public Assistance Program, including interaction with over 50 different funding sources. City operations are also a complex matter day to day. This plan aims to ensure San Franciscans have the services they need as they get back on their feet.



INITIATIVE 1.6

## Actively Coordinate for Recovery with Our Private and Public Utilities

The Office of Resilience and Recovery will partner with the San Francisco Lifelines Council to continue to study the geographic “choke point” areas, where infrastructure restoration is more challenging because of heavy concentration and interdependency. The Lifelines Council will also continue to enhance the coordination of disaster planning and preparedness efforts among lifeline providers—those that supply the City with its most critical services (e.g., water, electricity and internet). At the same time, the Lifelines Council will continue to advance mitigation efforts that could collectively improve lifeline system performance in the City after future disasters. When the City Administrator’s Office initiated The Lifelines Council in 2009, it started an important dialogue.

The Lifelines Council is made up of both private and public utility providers, first responders and senior public sector officials, who together work to ensure that our City and the region can recover quickly from unexpected disruptions. The Office of Resilience and Recovery will help the Council as it looks to complete implementation of its Five-Year Plan, including the efforts listed above, by 2019.



The San Francisco Lifelines Council coordinates City response and recovery with our private sector utility providers.

*“Lifelines are the systems and facilities that provide services vital to the function of an industrialized society, and are important to the emergency response and recovery after a natural disaster. These systems and facilities include communication, electric power, liquid fuel, natural gas, transportation (airports, highways, ports, rail and transit), water and wastewater.”*

-American Society of Civil Engineering Technical Council on Lifeline Earthquake Engineering (TCLEE), 2009



FEATURED PROJECT

## Lifelines Council Interdependency Study



In 2014, the Lifelines Council released an interdependency study that used the 1906 earthquake to understand what our utility restoration timelines would look like if faced with a similarly seismic event. Importantly, the study highlights where and how City systems are dependent upon one another—such as the power that supplies the movement of water throughout the City—and lays out a five-year action plan for the City to better address system interdependencies

# ACTION 2 Advance Innovations in Earthquake Preparedness

The Bay Area is the intersection of some of the world’s top minds and talent, yet we face the risk of an earthquake every day. The natural result is a city that is constantly seeking new ways to think about, and protect us from, the risks that earthquakes pose to our homes, businesses and our communities. San Francisco will continue to embrace our proud tradition of inviting that innovation to flourish here to help protect us from these uncertainties as we approach SF@1M.

**ASPIRATION:** Advance earthquake preparedness through robust seismic mitigation, as well as community-based, intentional planning.

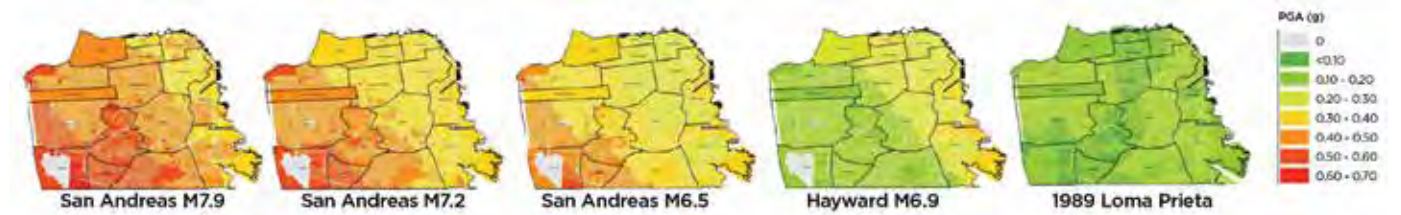
**CHALLENGES ADDRESSED:**

-  EARTHQUAKES
-  SOCIAL INEQUITY
-  UNAFFORDABILITY
-  INFRASTRUCTURE

**INITIATIVE 1.7**

## Continue the Earthquake Safety Implementation Program

The Office of Resilience and Recovery will oversee and advance the 30-year, 50-task Earthquake Safety Implementation Program (ESIP), a comprehensive plan to address the City’s most pressing earthquake risks. ESIP, as it did with 2013’s Mandatory Soft Story Retrofit Program, works directly with community members to develop earthquake risk reduction public policy.



## CAPSS Background



In the aftermath of the 1989 Loma Prieta Earthquake, the City launched the Community Action Plan for Seismic Safety (CAPSS) initiative. CAPSS provided City agencies and policymakers with a community-driven plan to reduce future earthquake risks in existing, privately owned buildings, and to develop repair and rebuilding guidelines to expedite recovery. Over the course of 10 years, the CAPSS project team—along with an advisory panel of over 60 stakeholders, community leaders, professional

experts and City staff—met regularly to review and discuss the best methods to mitigate the potential for loss of life and property damage resulting from four potential earthquake scenarios. CAPSS built consensus around timelines for retrofitting, taking into account community feedback and feasibility. And it worked with the engineering community to reach a consensus on what types of damage would result from an expected earthquake to help level set the policy that is required to prepare the City for the next major earthquake.

Ground-shaking scenarios used in the CAPSS initiative.



The Applied Technology Council (ATC) is a nonprofit, tax-exempt corporation established in 1973 through the efforts of the Structural Engineers Association of California. ATC's mission is to develop and promote state-of-the-art, user-friendly engineering resources and applications for use in mitigating the effects of natural disasters and other hazards on the built environment. ATC also identifies and encourages needed research, and develops consensus opinions on structural engineering issues in a nonproprietary format. ATC thereby fulfills a unique role in funded information transfer.



**INTEGRATION**



**ESIP and the Applied Technology Council**

Strong and well-established partnerships with the engineering and design communities are essential in advancing earthquake innovation. The City has partnered with the nonprofit Applied Technology Council (ATC) for more than a decade on building codes and earthquake-related policies, including the CAPSS study. ATC works with ESIP to take a broad, community-focused approach, bringing together a diverse group of stakeholders to form community advisory panels, which help ensure that the City's seismic policies are representative of local concerns and needs. ESIP and ATC will examine seismic performance standards and policy recommendations focused on non-ductile concrete buildings, the earthquake readiness of our City's commercial cores, among other areas of research.



**INITIATIVE 1.8**

**Mitigate Earthquake Risk through the Building Code**

Damage to privately owned buildings is one of the greatest hazards resulting from a major earthquake. To build new buildings better and to prepare our existing homes, offices, shops and other structures for an earthquake, we need to reform our building code to require higher standards for building safety and post-earthquake reoccupancy. ESIP will work with a coalition of City officials, design professionals and community members to amend the San Francisco Building Code by 2018 to require higher standards for new buildings, considering not only basic safety, but also post-disaster usage and occupancy.

Building codes exist to set the minimum standard for buildings in a city. San Francisco, like many cities in California, has a long history of progressively amending the code to respond to local needs and pressing challenges.

Developing sound policies that address both earthquake risk and the building code's real-life impact on San Franciscans requires a combination of expert-led technical development and community input. Tenant displacement, parking issues and financing options, in addition to earthquake damage risk reduction, were all considered when previous code changes were adopted. New code advancements will follow this tradition.



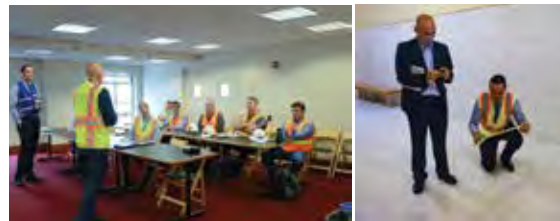
The 181 Fremont Tower was designed to significantly exceed code standards and is expected to be reoccupiable directly after a large earthquake.

INITIATIVE 1.9

## Streamline the Process to Quickly Re-occupy Our Buildings

The Office of Resilience and Recovery, The Department of Building Inspection (DBI), Public Works (PW) and Emergency Management will collaborate with the Mayor’s Office of Civic Innovation to build a post-earthquake building inspection tool, speeding up the building inspection and permitting process following an earthquake. Developed as part of the Startup in Residence Program (STIR), this tool will enable buildings to be quickly assessed, and then repaired and reoccupied, getting residents back in their homes easier and sooner. It builds off an existing and long-used paper process, called ATC-20, a rapid, in-field inspection tool that categorizes buildings with the familiar red, yellow and green tags. The tool, which will be ready for testing next year, will help San Francisco get back on its feet quickly—allowing for fast data collection, as well as tracking of citywide damage.

INTEGRATION



In 2015, these departments held a joint exercise with the Office of the City Administrator and the Office of the Controller. This exercise simulated a massive earthquake striking San Francisco City Hall, with a full evacuation of the building and a mock-damage building inspection. This exercise built on the training of DBI and DPW staff. These experiences are critical to improving processes and procedures and to not only building an institutional culture of preparedness but also testing and improving processes and procedures. The Office of Resilience and Recovery will work with the relevant departments to hold additional exercises.



*“The ATC-20-1 field manual, published by the Applied Technology Council (ATC), is a concise, easy-to-use field reference document that professionals trained in the methodology set forth in ATC-20, Procedures for Postearthquake Safety Evaluation of Buildings, can take into damaged areas for safety evaluation of buildings.”*

# Moderate Shaking Expected

Event PLAYBACK 1989\_LomaPrieta\_M6.9  
OriginTime Mon Oct 16 22:04:00 PDT 1989  
Epicenter is 9 miles (15 km) NE of Santa Cruz

Remaining Time

# 15

FEATURED PROJECT

## Statewide Early Earthquake Warning System

The U.S. Geological Survey (USGS)—along with the University of California-Berkeley, the Gordon and Betty Moore Foundation, the Governor’s Office of Emergency Services and others—is developing a groundbreaking earthquake early-warning system called ShakeAlert for the West Coast of the United States. This technology detects the first wave sent out by an earthquake, which causes no ground motion but can nonetheless be detected and reported back to users, warning them vital seconds ahead of an earthquake. The technology is already being tested with San Francisco and other cities throughout California. It is critical that we advance this technology further here in San Francisco, and build on the statewide and regional network to create a more earthquake prepared California.

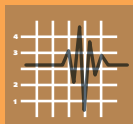


# ACTION 3 Invest in Infrastructure and Transportation for Our Growing City

Building a strong city for tomorrow involves more than planning for disasters. We must consider the urban planning, transportation planning and infrastructure upgrading that is necessary for SF@1M. We must build a stronger city today to face whatever comes tomorrow.

**ASPIRATION:** To become a city working to improve life for today's San Franciscans, while also building readiness and quality of life for tomorrow's 10,000 new San Franciscans.

**CHALLENGES ADDRESSED:**



EARTHQUAKES



SOCIAL INEQUITY



UNAFFORDABILITY



INFRASTRUCTURE



SEA LEVEL RISE

**INITIATIVE 1.10**

## Implement San Francisco 2050



The San Francisco Planning Department released its five-year work plan in 2015. The plan put forward strategies for short-term actions and long-term results, honing in on four key challenges and aspirations for San Francisco: remaining an equitable and inclusive city; access and mobility; resiliency and long-term sustainability; and placemaking. The plan approaches these key challenges and aspirations through five strategic place-based initiatives:

- The Heart of San Francisco—seeking to inspire design for our city’s public realm;
- A Resilient Waterfront—considering access to and growth along the waterfront, and the threat of sea level rise;
- Next Generation SF—seeking to shape and connect the growth in Southeast San Francisco;
- A City of Neighborhoods—looking at the diverse and distinct character of our City’s neighborhoods; and
- Bridging the Bay—collaborating across the Bay to develop a shared vision.

The five-year work program closely aligns with the goals of this strategy, building a strategic vision for San Francisco’s future, considering the threats we face and the reality of growth as we look to SF@1M. The Office of Resilience and Recovery will support the Planning Department to integrate the work of stakeholders into this process.

INTEGRATION



Plan Bay Area is a long-range regional transportation, land-use, and housing strategy approved in 2013. The plan was created by the Association of Bay Area Governments and the Metropolitan Transportation Commission, responding to 2008’s Senate Bill 375, which calls on each of the state’s 18 metropolitan areas to develop a Sustainable Communities Strategy to accommodate future population growth and reduce greenhouse gas emissions. Working in collaboration with cities and counties, the Plan boasts initiatives to expand housing and transportation choices, create healthier communities and build a stronger regional economy by 2040.



INITIATIVE 1.11

## Develop a 50-year Long-Range Transportation Vision

An interdepartmental steering committee will develop a 50-year Long-Range Transportation Vision to inform future transportation studies and investment plans, ensuring that land use, transportation and economic development in San Francisco are coordinated, consider long-range implications and inform regional planning efforts on behalf of San Francisco.

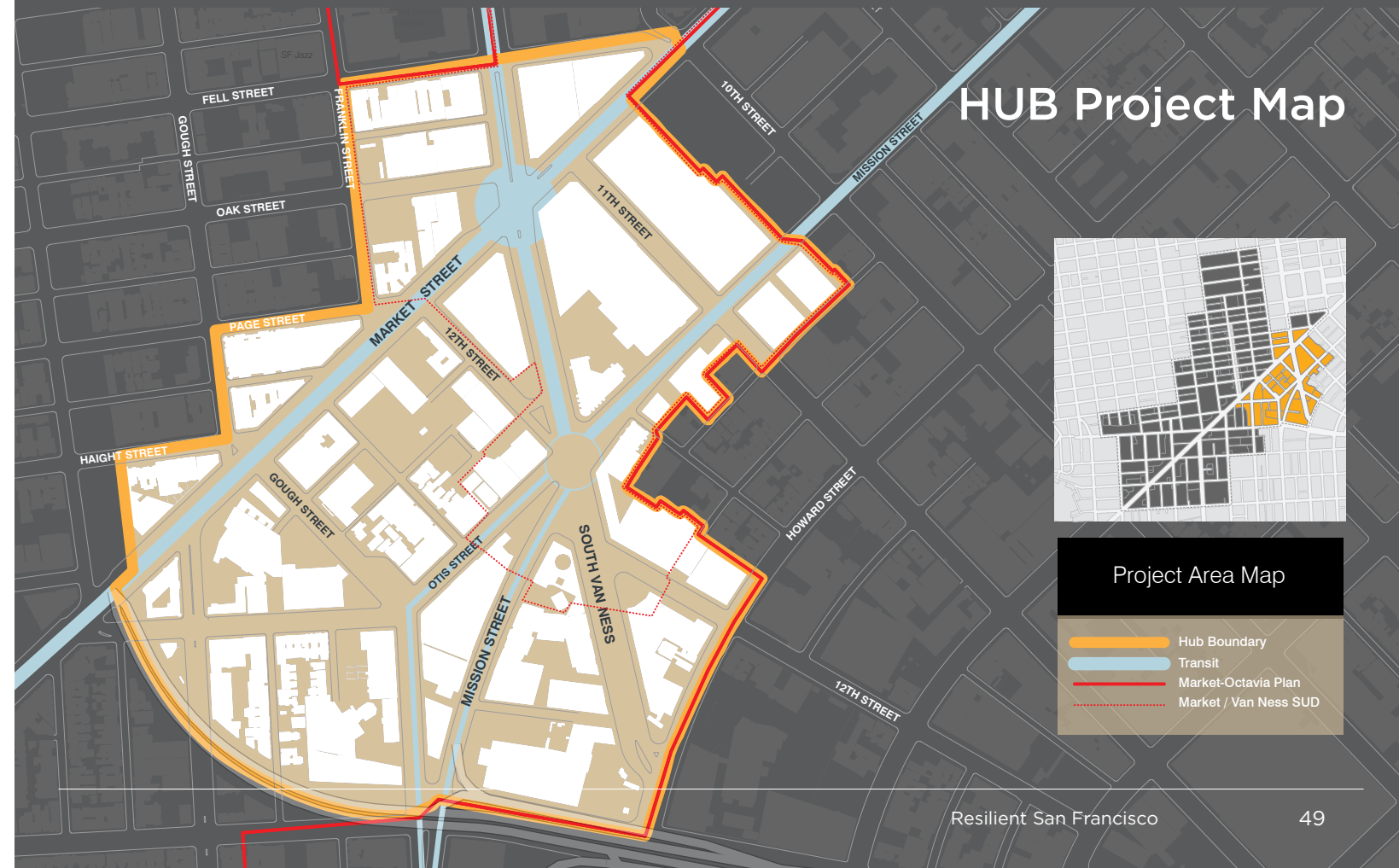
Our aging infrastructure makes the challenge of growth more acute. The Transportation Vision seeks to ensure that all neighborhoods are more connected, that we address new and growing neighborhoods and job centers, and that we carefully consider and work to address the impacts that displacement and lack of affordability will continue to have on quality of life. Specifically, this process considers investment choices the City will be making, such as regional connections via BART, Caltrain, future High Speed Rail, improvements in local transportation, state of good repair and capacity expansion, and others.

The Transportation Vision will inform some of San Francisco’s biggest policy questions. It will advance transportation improvements aimed at addressing congestion, getting ahead of fast growth and its impact on our city, and recognize the need to improve transit capacity. The Steering Committee is represented by the Mayor’s Office of Transportation Policy, SFCTA, SFMTA, SF Planning, and the Office of Economic and Workforce Development.

FEATURED PROJECT

## The Hub—Linking Transit and Affordable Housing

From the 1880s through the 1950s, the area of San Francisco near the intersections of Market Street with Valencia, Haight and Gough streets was a distinct, well-known neighborhood called the “Market Street Hub,” or simply “The Hub.” The name was likely derived from the convergence of streetcar lines carrying people from outlying neighborhoods to downtown San Francisco. As we look to SF@1M, areas of the city like The Hub, where a deliberate choice has been made to ensure that the area’s growth supports the City’s goals for housing, transportation, the public realm and the arts, will be critical.



INITIATIVE 1.12

## Continue Building and Rebuilding Infrastructure



San Francisco is committed to continually improving its infrastructure, knowing that it is essential to both the pressures of a growing city and the disruptions of emergencies large and small. The \$32 billion FY 2016-2025 Capital Plan continues San Francisco’s commitment to protecting its regional and Citywide infrastructural assets with large-scale improvements to the water delivery and wastewater systems, and the San Francisco International Airport. These efforts are critical to prepare our City for a strong earthquake and to increase our ability to handle the day-to-day challenges of a growing city.

In 2006, after decades of underfunding infrastructure, the City created its first Citywide, comprehensive, 10-year Capital Plan. The City has since received over \$3 billion in voter-approved bonds for (1) earthquake safety and emergency response facilities, including a new Level 1 Trauma Center Hospital at the SFGH campus, a new Public Safety Building, and new Medical Examiner and Crime Lab facilities; (2) transportation, road and street structure enhancements to improve public transit, pedestrian, bike, and vehicle mobility and safety; (3) park and open space improvements to address failing infrastructure, trees, restrooms and related facilities; and (4) bonds to fund additional low- and moderate-income housing.



Credit: Terence Huey



SUPPORTING INITIATIVE 1.13

## Continue to Push for Livable Streets

As the city grows and continues to serve as a job hub for the region, we must push for more livable and safer streets, with the goal of zero traffic fatalities by 2024. Vision Zero SF is the City’s road safety policy that will build safety and livability into our streets, protecting our city’s 1 million residents. Every year in San Francisco, about 30 people lose their lives while traveling on city streets, and over 200 more are seriously injured. These deaths and injuries are unacceptable and preventable. In 2014, the City committed to build better and safer streets, to educate the public on traffic safety, to enforce traffic laws and to adopt policy changes that save lives. Vision Zero SF will become increasingly critical as the City moves closer to SF@1M. That’s why we must continue the work to create a culture that prioritizes traffic safety and ensures that mistakes on our roads don’t end in serious injuries or death.



GOAL 2

# RETROFIT, MITIGATE AND ADAPT

ACTIONS:

To meet this goal, we will:

1. **Retrofit** Our Remaining Seismically Dangerous Buildings
2. **Retrofit** and Rebuild Seismically Hazardous Infrastructure
3. **Mitigate** Climate Change Locally
4. **Adapt** San Francisco to Climate Change

## Introduction

To build the San Francisco of the future, we must address our City's vulnerabilities today. From retrofitting seismically weak buildings to mitigating the emission of greenhouse gases, to adapting to the reality of rising seas and a changing climate, there is much we must do to achieve the goal of a sustainable future.

Our City has a proud history of tackling major challenges head-on. And our response to climate change and the ever-present threat of a large earthquake is no exception. But as we look forward to SF@1M, how can we build a better and more prepared San Francisco? How can we help our City handle the challenges of today and, at the same time, prepare for the challenges of tomorrow?

### KEY INDICATORS

#### To measure progress, San Francisco will:

- Retrofit the homes of 180,000 San Franciscans by 2025.
- Reach our greenhouse gas reduction goals by 2025, through zero waste, 50 percent of all trips on sustainable transportation and 100 percent renewable sources of energy.
- Complete a disaster-resilient waterfront by 2040.

“Among all of its greatness, San Francisco leads the world in seismic safety policy; always has. Earthquake science and engineering were born here, and the Bay Area community has never stopped delivering pace-setting advances. Many of the key ideas about community resilience coalesced here, and the programs that resulted are setting the standard for communities worldwide. For an earthquake engineer like me, there is no better place to practice, learn, invent, and create solutions and policies that improve the safety and well-being of the people everywhere.”



- Chris Poland, Chair, NEHRP ACEHR Co-Chair,  
SPUR Resilient Cities Initiative

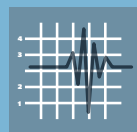


# ACTION 1 Retrofit Our Remaining Seismically Dangerous Buildings

San Francisco has long understood the need to strengthen seismically vulnerable buildings. In the face of critical day-to-day challenges, we must build on this legacy and continue to upgrade buildings to become more resistant to earthquakes. Not all earthquake-prone buildings are the same. Some are vulnerable based on characteristics indicative of a particular construction type, while others are vulnerable because they house particularly sensitive or mission-critical occupancies. Some are owned publicly, some privately, which means there is no one-size-fits-all approach to retrofitting dangerous buildings. It requires a dynamic and thoughtful approach. San Francisco will continue to lead the country with our seismic mitigation programs.

**ASPIRATION:** Reduce or fully mitigate earthquakes' damage to our City's public and privately held buildings.

**CHALLENGES ADDRESSED:**



EARTHQUAKES



SOCIAL INEQUITY



UNAFFORDABILITY

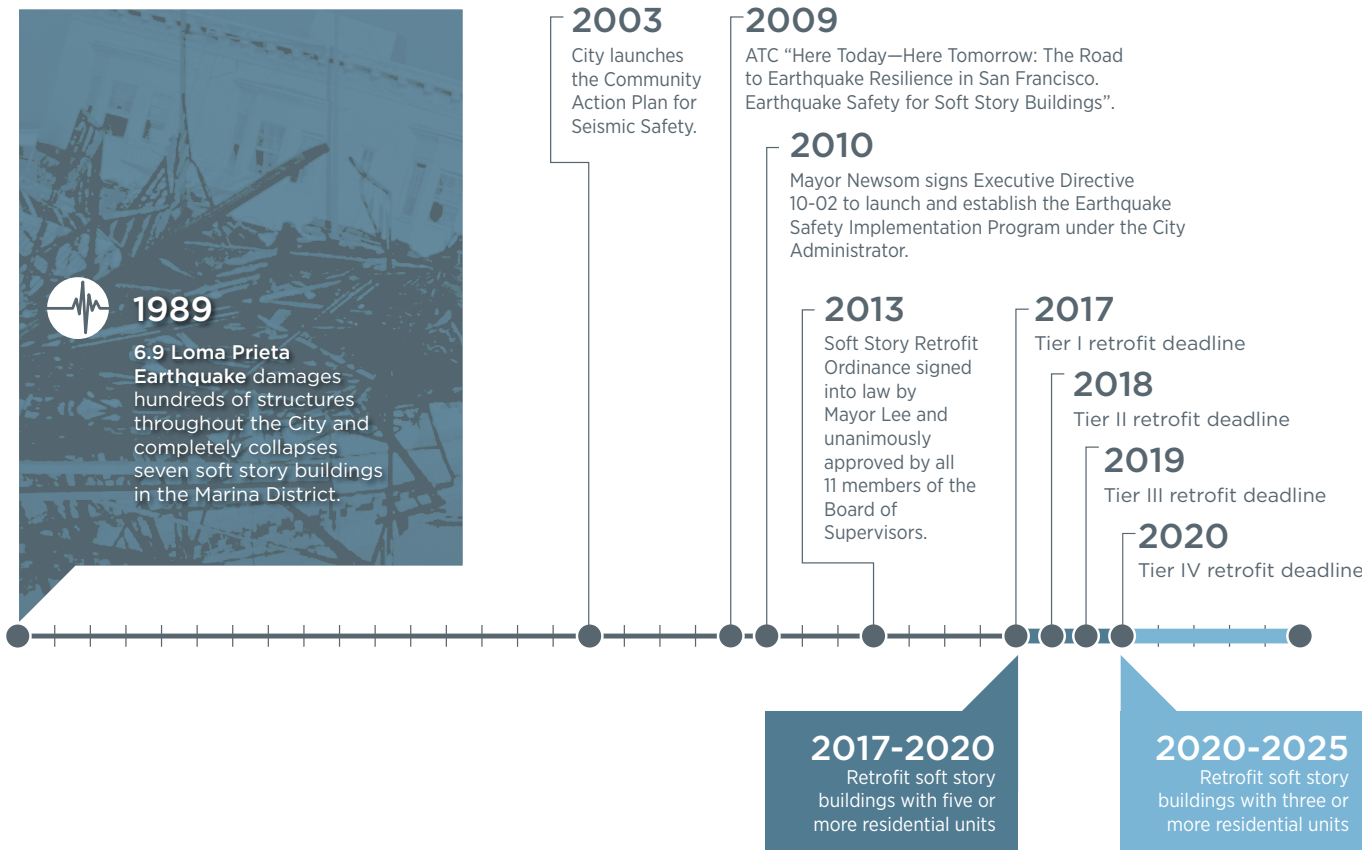
INITIATIVE 2.1

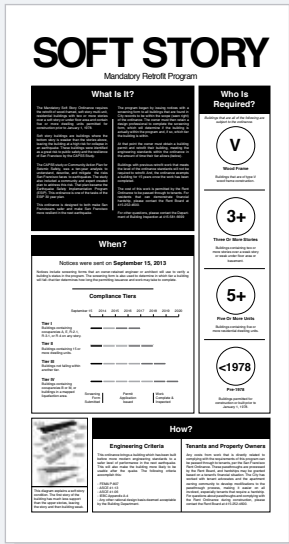
## Continue to Retrofit Our Soft Story Residential Buildings

In 2017, the Earthquake Safety Implementation Program (ESIP) will build on its existing Mandatory Soft Story Retrofit Program by mandating that all older three- and four-unit, wood-framed, soft story residential buildings be retrofitted by 2025. Retrofitting these buildings will improve safety for as many as 180,000 San Franciscans, while continuing to protect rent-controlled and affordable housing, vulnerable San Franciscans and community-serving small businesses.



Credit: Homer Yim





FEATURED PROJECT

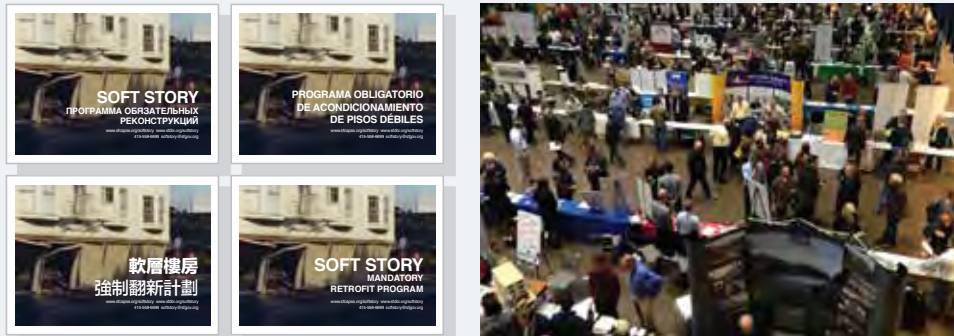
# The Mandatory Soft Story Retrofit Program

In 2013, the Mayor and the Board of Supervisors unanimously approved legislation requiring the retrofit of 5,000 of San Francisco’s most seismically vulnerable buildings. These buildings—two-plus-story, wood-framed structures built before 1978 that contain five or more residential units—are all “soft story” buildings. Soft story buildings contain large openings on the ground level, either from garage openings or from large windows for neighborhood-serving businesses. These large openings leave soft story buildings susceptible to severe damage, or even collapse, in the event of an earthquake.



Soft story buildings, which house roughly 180,000 San Franciscans, make up a significant portion of our City’s rent-controlled housing stock, and contain many beloved, neighborhood-serving businesses. The Mandatory Soft Story Retrofit Program, administered between the ESIP and the Department of Building Inspection, hosted a comprehensive and culturally competent outreach program, with customer service-based technical and financial assistance. These efforts included an Earthquake Retrofit Fair, trailing legislation aimed at easing renter and landlord compliance, and a series of informational mailers. The program currently boasts a near 100 percent compliance rate.

San Francisco took a holistic approach by working with a broad coalition of stakeholders who ultimately developed a successful program to protect our residents.



Older non-ductile concrete buildings were constructed using more brittle material, making them hazardous in an earthquake.

INITIATIVE 2.2

# Evaluate and Retrofit Our Non-Ductile Concrete Buildings

ESIP will call for the evaluation of all non-ductile concrete buildings starting in 2020. And it will call for retrofitting these buildings by 2030. Non-ductile concrete buildings were built before modern building codes, leaving them susceptible to extreme damage or even collapse in the event of an earthquake. Many non-ductile concrete buildings have high occupancies; in a modeled repeat of the 1906 earthquake, a large proportion of the deaths and serious injuries were attributed to the collapse of non-ductile concrete buildings. The Concrete Coalition at the Earthquake Engineering Research Institute estimates there are 3,200 of these buildings in San Francisco. ESIP is currently working with the Applied Technologies Council (ATC), as seen in Chapter 1 of this Strategy, to determine collapse prevention retrofit criteria.

INTEGRATION



The cities of San Francisco and Los Angeles have been working together to address the unique needs of urban areas facing earthquake risk. The San Francisco Earthquake Safety Implementation Program consulted with LA Mayor Eric Garcetti’s office in the 12 months leading up to their release of Resilience By Design—LA’s roadmap for earthquake resilience.



INITIATIVE 2.3

## Retrofit Our Most Hazardous Publicly Owned Buildings

Under the City Administrator, the Capital Planning Program reviews and prioritizes 10-Year Capital Plan projects and coordinates funding. The City and County of San Francisco have completed over 200 earthquake-related improvements, including total replacements of public facilities in the nearly 27 years since the Loma Prieta Earthquake struck on October 17, 1989. We must continue this work in the coming years as we prepare our City for the next major earthquake. The program upgrades range from small but critical pump stations and transmission mains to large-scale, essential facilities like police and fire stations, and the 911 Emergency Operations Center. The 10-year Capital Plan also prioritizes retrofits for signature properties, such as the San Francisco General Hospital Level 1 Trauma Center Hospital, Public Safety Building, City Hall; the Ferry Building; the Main Library; the Veteran's War Memorial and Opera buildings, Academy of Sciences, Asian Art and DeYoung Museums; and the International Terminal, Terminal 2 and the Main Control Tower at SFO.



Originally completed in 1932, the War Memorial Veterans Building was where President Harry S. Truman and other heads of state signed the United Nations Charter in 1945. Through OneSF, this historic resource underwent a seismic retrofit, systems were upgraded to be more energy-efficient, and safety features like sprinkler and fire alarm systems were added.



FEATURED PROJECT

## San Francisco General Hospital Level 1 Trauma Center

San Francisco General Hospital's Level 1 Trauma Center was constructed using a seismic base-isolated foundation, making it one of the most earthquake-resistant buildings in the nation. During an earthquake, the base isolators under the building can slide 30 inches in any direction, greatly reducing movement of the building. This technology is the best way to ensure the hospital can remain operational after a significant seismic event. Reducing 3,000 tons of steel from the structure, combined with the material and energy conserved in not having to perform extensive repairs or replace the building after an earthquake, earned the trauma center an *Innovation in Design* credit toward its LEED certification. It is estimated that our isolated building design represents a savings of about \$10 million, compared to a fixed-base structural frame.



## INITIATIVE 2.4

## The Retrofund: Expand Financing Programs That Build Resilience

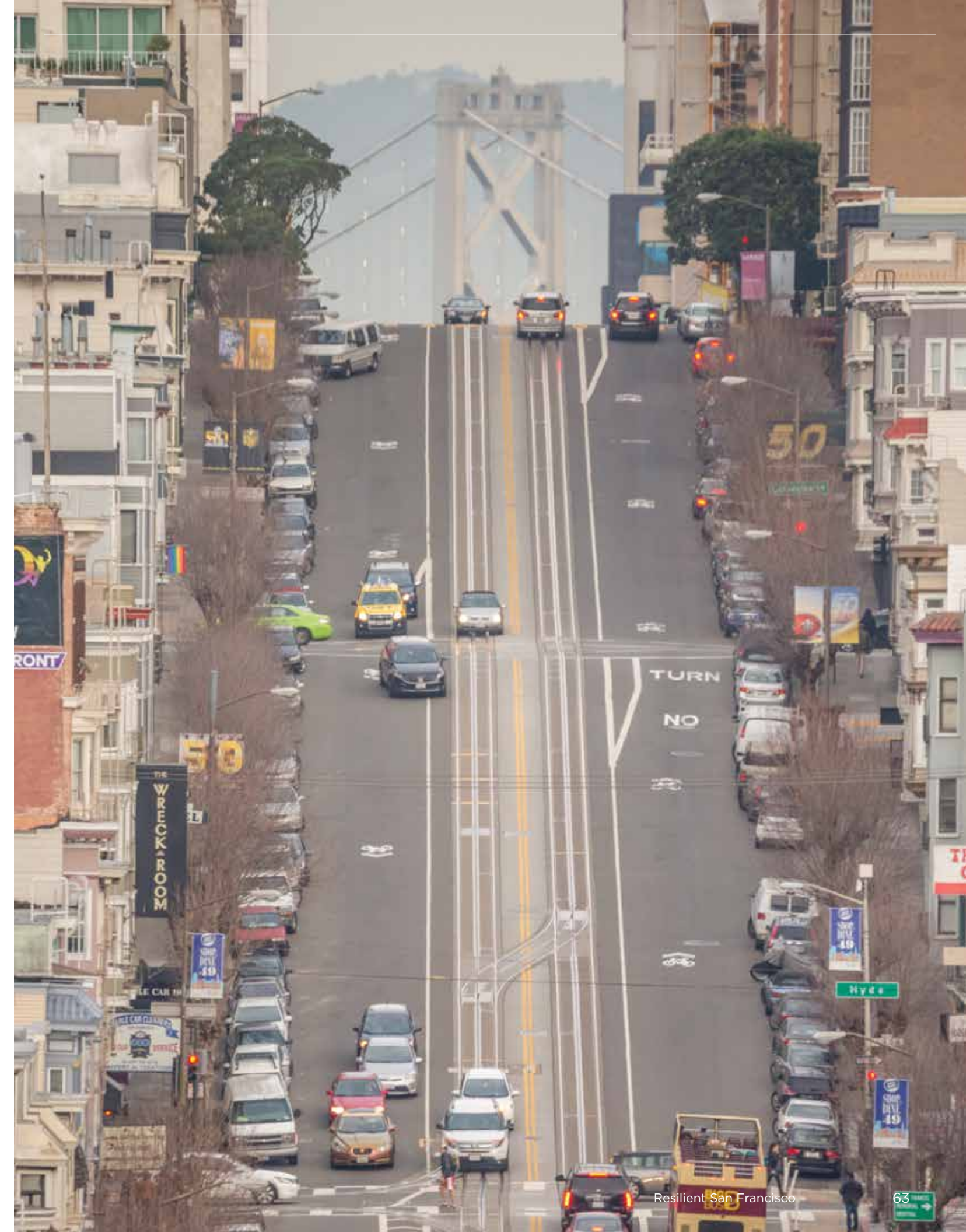
The City recently expanded its Property Assessed Clean Energy (PACE) Program to create a

new financing initiative to help property owners make seismic and environmentally conscious building improvements. One property at a time, this program will make our city a greener and safer community. Program benefits include:



- 100 percent financing of hard and soft costs
- Financing for seismic retrofits and seismic strengthening
- Energy-efficiency, water conservation and renewable energy projects may be financed
- Expansions of the program are being made to include disabled access improvements for commercial storefronts
- Competitive fixed rates and repayment terms of up to 30 years
- Approval based on the property's equity, not the applicant's credit score
- Financing is tied to the property and can be transferred to a new owner upon sale
- Property owner keeps any applicable federal/state rebates and/or tax credits
- Payments are made through the property's tax bill as a special assessment

After an extensive selection process, the City partnered with AllianceNRG to provide fixed rate loans. Borrowers are required to comply with the Mandatory Soft Story Retrofit program.

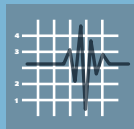


# ACTION 2 Retrofit and Rebuild Seismically Hazardous Infrastructure

Infrastructure is our city’s backbone, and the effectiveness of our response to, and recovery from, a large earthquake depends on it. From our drinking water delivery system to our firefighting water supplies, to our police and fire stations—these systems play a critical role in the day-to-day life of San Franciscans and will become critical lifelines after a disaster. This action calls for an investment in evaluating, upgrading and rebuilding critical city systems.

**ASPIRATION:** A city that has the infrastructure in place to face daily challenges while preparing to face the great challenges of responding to and recovering from an unexpected earthquake or storm.

**CHALLENGES ADDRESSED:**



EARTHQUAKES



SEA LEVEL RISE



INFRASTRUCTURE

**INITIATIVE 2.5**

## Strengthen Our Emergency Facilities and Shorten Response Times



In June 2014, San Francisco voters approved the \$400 million Earthquake Safety and Emergency Response Bond (ESER 2014)

to continue to pay for repairs and improvements that will allow San Francisco to quickly respond to a major earthquake or disaster. The first phase of the program, ESER 2010, was approved by voters in June 2010. In the years to come, the City will continue to make improvements to neighborhood firehouses and upgrade our emergency firefighting water system. The Public Safety Building, with funding from ESER 2010, opened in April 2015. This bond, and the work of our City’s Capital Planning effort, OneSF, is aimed at improving service both for today and in the years ahead.

Built to modern seismic standards, the new Public Safety Building was designed to operate for up to 96 hours off the grid, allowing leadership to promptly and efficiently respond after a disaster.





INITIATIVE 2.6

## Repair, Upgrade and Protect Our Sewer Systems

The San Francisco Public Utilities Commission’s (SFPUC) Sewer System Improvement Project (SSIP) is a 20-year, multibillion-dollar Citywide investment in upgrading our aging sewer infrastructure. Costly emergency and routine repairs are not sufficient to keep pace with our 100-year-old, seismically vulnerable system, and the longer upgrades are delayed, the more expensive they become. For example, we should update our sewer system to withstand intense rainstorms, which occur with greater frequency as a result of climate change. Sewer system upgrades like this are essential to the overall vitality of our City’s public health, the environment and our ability to recovery after a disaster.

SUPPORTING INITIATIVE 2.7

## Water System Improvement Program

With the completion of the Sutro Reservoir Retrofit Program in 2015, San Francisco finalized its \$4.8 billion Water System Improvement Program (WSIP). WSIP was a multi-year capital program to upgrade the San Francisco Public Utilities Commission’s regional and local water systems, enhancing the agency’s ability to provide reliable, affordable, high-quality drinking water in an environmentally sustainable manner to 2.6 million people in the Bay Area. The program, which has increased safety and daily service, consisted of 83 projects—35 local projects within San Francisco and 48 regional projects spread over seven counties.



Photo courtesy of the San Francisco Public Utilities Commission.

Photo courtesy of the San Francisco Public Utilities Commission.

INITIATIVE 2.8

## Repair, Expand and Improve Auxiliary and Portable Water Supply Systems

The Auxiliary Water Supply System, an independent high-pressure system dedicated to fire protection, will be improved and expanded. Built seven years after the earthquake and fire of 1906, this one-of-a-kind system has the ability to deliver water at much higher pressures and use unlimited water from the Bay. The auxiliary system is our last line of defense in a fire after an earthquake. The system is also used by the San Francisco Fire Department to increase service capacity in response m, providing critical firefighting water to areas in need.

INTEGRATION



The Lifelines Council

New underground infrastructure is being installed by SFPUC to support portable hose connections. Rather than block city streets with the large hoses needed to provide protection against the conflagration of post-earthquake fires, the infrastructure will allow water to flow underground. This work is informed by the Lifelines Council initiative aimed at improving the resilience of our priority access routes.

SUPPORTING INITIATIVE 2.9

## Earthquake Vulnerability Study of the Northern Waterfront Seawall

As part of the Port of San Francisco’s effort to improve waterfront resiliency, we will undertake an Earthquake Vulnerability Study of the Northern Waterfront Seawall. The study is a component of the Port’s effort to improve resiliency of the waterfront. The Northern Waterfront Seawall, or Great Seawall, stabilizes over three miles of historic waterfront and hundreds of acres of filled land stretching from Fisherman’s Wharf to Mission Creek. This area includes significant Port and City assets, such as the Historic Piers, Ferry Building, Embarcadero Promenade and roadway, Ferry & Cruise Terminals, BART Transbay Tube, MUNI light rail and utility infrastructure. The high-level study, which is nearly complete, will assess earthquake vulnerability, predict damage and economic impacts from a range of earthquake events, develop conceptual mitigation alternatives, and make recommendations for further action and study. This information will inform the Port’s Strategic Plan, as well as its efforts to improve lifeline resiliency, and respond to climate change and sea level rise.



Credit Dave Rauenbuehler

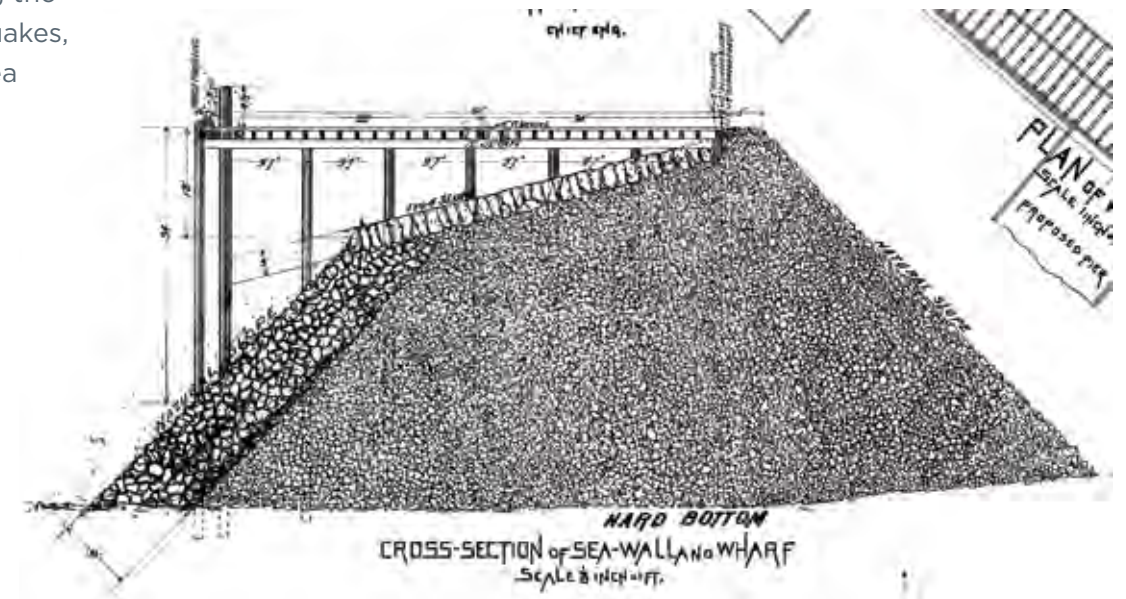


Credit Dave Rauenbuehler

INTEGRATION



The Port of San Francisco, The Earthquake Safety Implementation Program and the Sea Level Rise Coordinating Committee, through the Public Works and Planning Departments, are working in concert to build a truly resilient waterfront, weighing all variables, including the impacts of earthquakes, liquefaction and sea level rise.



Credit Dave Rauenbuehler



Credit Dave Rauenbuehler

# ACTION 3 Lead the World in Greenhouse Gas Mitigation

San Francisco has dramatically reduced its greenhouse gas emissions. The City's carbon footprint is now 14.5 percent below 1990 levels, even though our economy and population have grown considerably.

And yet, we are committed to doing even better. San Francisco's Climate Action Strategy shows how the City can reduce its greenhouse gas emissions to 25 percent below 1990 levels by 2017 and 40 percent below by 2025. In San Francisco, we know that climate change is real, and we are focused on not only preparing for its effects, but mitigating our City's impacts on the global environment. The initiatives below will help San Francisco achieve its ambitious climate goals.

**ASPIRATION:** To meet our climate mitigation goals in new and innovative ways.

**CHALLENGES ADDRESSED:**



CLIMATE CHANGE



INFRASTRUCTURE



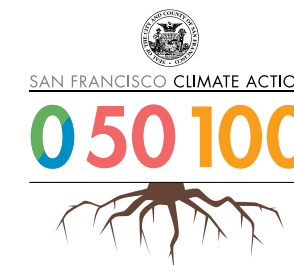
Credit Larry Strong



**INITIATIVE 2.10**

## 0 50 100 Roots Program

San Francisco's formula for reaching our greenhouse gas emissions reduction goals by 2025 is "0, 50 and 100": zero waste, 50 percent sustainable trips and 100 percent renewable energy. The San Francisco Department of the Environment, the Mayor's Office, the Board of Supervisors and City departments are working together to reach these vital goals.



**INTEGRATION**



**0 50 100 Roots Across City Departments**

Strategic partnerships are the foundation of the 0 50 100 Roots initiative. The SFPUC's CleanPowerSF program, San Francisco Environment's mandatory composting and recycling program, the San Francisco MTA's MUNI Forward program and a number of other efforts across departments help us reach these goals every day. And San Francisco's approach to mitigating carbon emissions will continue to be a collaborative one.

## INITIATIVE 2.11

## Actively Plan for Climate Change at Every City Department

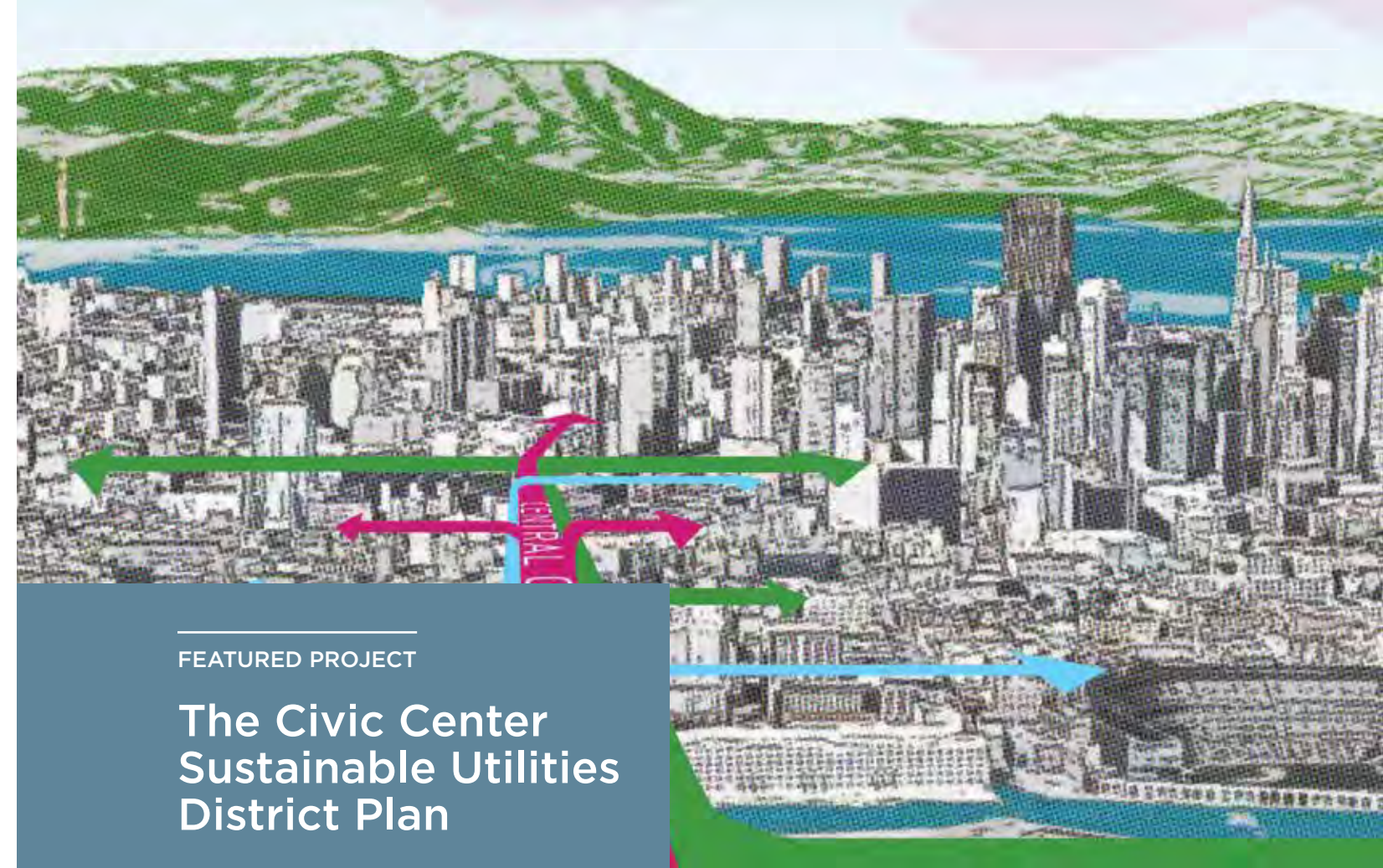
If you don't measure it, you can't mitigate it. That's why San Francisco requires every City department to track and report greenhouse gas emissions in annual Departmental Climate Action Plans. Departments look at vehicle fuel and building energy usage, water usage and employee practices related to waste, transportation and purchasing. This process helps departments identify how to improve operations, reduce their carbon footprints and address climate change.

The San Francisco Environment engages City departments in the climate action planning process by providing data and best practices on environmental policies to departmental climate liaisons. These climate liaisons then conduct outreach and education to spearhead organizational change.

## INITIATIVE 2.12

## Fund Innovative Emission Reduction

Through the San Francisco Carbon Fund, the City offsets municipal travel-related greenhouse gas emissions by investing in projects that reduce emissions within the City and County of San Francisco. Conferences and conventions in San Francisco may also contribute to the fund to offset event-related emissions. For example, the City currently invests approximately 13 percent of employee airfare related to City business in greenhouse gas-reducing projects, such as the creation of new urban parks and community gardens, the planting of trees and drought-resistant vegetation, and the restoration of native habitats and corridors. The Fund has already made a huge difference across our city, financing projects that have improved neighborhood walkability, created new community gathering spaces, reduced stormwater runoff and erosion, and sequestered carbon.



## FEATURED PROJECT

## The Civic Center Sustainable Utilities District Plan

San Francisco's historic Beaux Arts Civic Center is the seat of San Francisco's City government and home to its major cultural institutions. Visited daily by thousands, it serves both as a busy neighborhood park and as a staging ground for major City events, such as parades, demonstrations and festivals. The Civic Center Sustainable Utilities District Plan presents a long-term vision for promoting sustainability within this high-visibility area, while also bolstering its resilience to climate change, drought and catastrophic events.

### The District Plan aims to:

- Reduce potable water consumption, and treat and reuse water on-site;
- Generate electricity on-site using green technology;
- Support an appealing public realm;
- Incorporate emergency readiness into site planning activities; and
- Provide education and outreach on sustainability concepts.

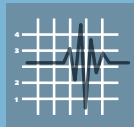
The core of the District Plan is the development of district-scale sustainable utilities systems that would collect, treat, and reuse wastewater and nuisance groundwater. Energy generated from solar panels and waste materials would feed an energy loop that would allow for water and energy savings, and a dramatically reduced impact on the environment. On-site stormwater management strategies would reduce the burden on the City's sewer system, while improving the appearance and function of public streets, sidewalks and other outdoor spaces.

# ACTION 4 Adapt San Francisco to Climate Change

While we advance mitigation efforts, we must also continue to adapt San Francisco to the realities of a changing climate. Sea level rise threatens our waterfront, and intense storms and flooding are occurring with greater frequency, as are days of extreme heat. Decisive action is needed.

**ASPIRATION:** Commence adaptation planning today across sectors and departments.

**CHALLENGES ADDRESSED:**



EARTHQUAKES



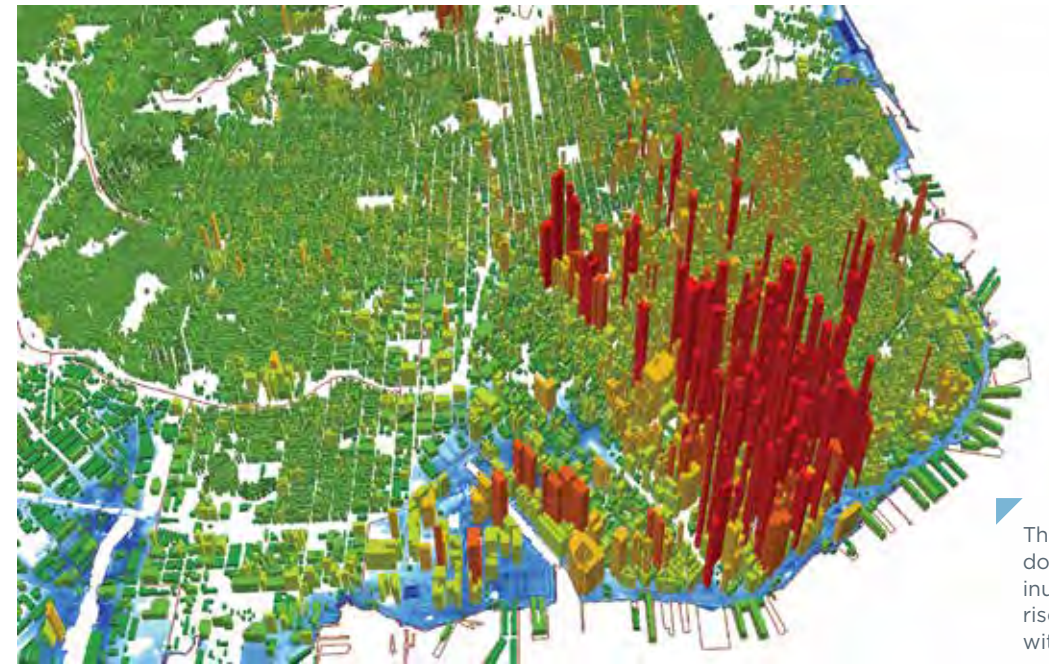
CLIMATE CHANGE



SEA LEVEL RISE



INFRASTRUCTURE



Three-dimensional view of downtown with 108-inch inundation, which shows sea level rise expected by 2100, combined with a 100-year storm.

**INITIATIVE 2.13**

## Develop a Sea Level Rise Adaptation Plan



Early this year, the City released its Sea Level Rise (SLR) Action Plan. Building on significant and collaborative prior work, it defines an overarching vision, while putting forth key objectives for SLR planning in San Francisco. It summarizes current climate science, reviews relevant policies and regulations, and estimates the cost of inaction. It also identifies data gaps and establishes an aggressive framework for further assessment, adaptation planning and implementation. Among other key steps, the Action Plan calls for the Planning Department to develop a comprehensive Citywide adaptation plan by summer 2018.



**INTEGRATION**

This action plan was accelerated in partnership with Risk Management Solutions (RMS) and funding support from 100 Resilient Cities, a 100RC Platform Partner. RMS provided sea level rise modeling expertise, and helped the City complete an exposure analysis of both public and private assets in the City and County of San Francisco.



**INTEGRATION** 

The Bay Area Resilient by Design Challenge was spearheaded by the City and County of San Francisco, in collaboration with many Bay Area local governments, regional agencies, research institutions, and non-government organizations. Managing partners include: Bay Conservation and Development Commission, Association of Bay Area Governments, Coastal Conservancy, Bay Area Regional Collaborative, SPUR, San Francisco, Estuary Institute, City of San Francisco Planning Dept. and Chief Resilience Officers of Berkeley, Oakland, and San Francisco, and the City of San Jose.

**INITIATIVE 2.14**

**Launch Regional Waterfront Design Challenge**



The Bay Area **Resilient by Design Challenge** is a public-private partnership that seeks to pool the talents of the best minds of our region -- experts in ecology, technology, design and social activism -- to

protect and enhance the most vulnerable communities along the Bay's natural built shoreline. Selected teams will conduct intensive research of existing conditions, challenges and opportunities, and will then work with local government, nonprofit and private sector leaders, and community stakeholders to develop design solutions that will help communities adapt to and prepare for the impacts of climate change, such as flooding and drought. This effort will launch on April 18, 2016, in conjunction with the release of this strategy.



Credit Dave Rauenebuehler

**SUPPORTING INITIATIVE 2.15**

**Promote Community Health Through Preparing for Climate Change**

Changes occurring in San Francisco's climate are affecting our health and will have even greater impacts in the future. The San Francisco Department of Public Health's (SFPDH) Climate and Health Program is helping to understand these impacts and prepare the health department and communities for the health risks. The Climate and Health team uses cross-sector collaboration to assess climate trends, define disease burden, develop interventions and evaluate the effects of climate change. The program has developed plans to address climate change related changes in extreme weather (heat, storms and flooding) and has also created a Climate and Health Profile for the City with a Community Resiliency Indicator System. SFPDH is currently drafting a Climate and Health Adaptation Plan and a five year strategy on activities to implement this Plan, including monitoring and evaluation of adaptations to reduce the negative health impacts of climate change within the jurisdiction of the health department.

**INTEGRATION** 

**Stronger Housing, Safer Communities**



In 2015, the Association of Bay Area Governments (ABAG) and the Bay Conservation and Development Commission (BCDC) completed a comprehensive, Bay Area-wide study of both the structural and social components of vulnerability to flooding, ground shaking, and liquefaction. The study also outlines strategies to address specific vulnerabilities, aimed at providing an action plan for the Bay Area's 101 jurisdictions. The analysis was conducted with a focus on housing, and considered the many other factors in addition to housing integrity that influence a resident's ability to stay in a home, including impacts to infrastructure and availability of utilities, availability of jobs, and access to resources that fulfill daily needs, such as grocery stores and medical facilities.





SUPPORTING INITIATIVE 2.16

## Support Urban Watershed Planning

The Urban Watershed Assessment (UWA) looks at our City’s eight urban watersheds through the evaluation-based lens used by the SFPUC to plan the City’s Sewer System Improvement Program (SSIP), the City’s 20-year, multibillion-dollar effort to improve the collections portion of our combined sewer system. Weighing the unique characteristics of each of the City’s eight urban watersheds, such as soil type, underlying geology, age of infrastructure and urban development patterns, the watershed assessment promotes progressive solutions. UWA recommendations will include a blend of innovative green (rain gardens, permeable pavement, bioswales) and traditional grey (tunnels, pump stations, upstream conveyance pipes) infrastructure projects, incentive programs and policies to meet our sewer system challenges. The recommendations will shape the next generation of sewer improvements to provide a compliant, reliable, resilient and flexible system that can respond to catastrophic events, manage stormwater and flooding, adapt to climate change, and provide community benefits and environmental sustainability.

Urban watershed planning builds on the capacity of our existing watersheds and diversifies our water supply, providing multiple reliable water sources.



Photo courtesy of the San Francisco Public Utilities Commission.



Photo courtesy of the San Francisco Public Utilities Commission.

FEATURED PROJECT

## Energy Assurance—San Francisco Solar + Storage for Resiliency

With support from the U.S. Department of Energy Sunshot Initiative and the Solar Market Pathways Program, San Francisco is planning for emergency backup power systems that will contribute to the City’s Climate Action goals by using on-site solar energy. The systems will also provide an emergency source of energy during a disaster by having on-site energy storage. This project evaluates both the technical and financial feasibility of identifying priority sites, determining critical power needs, sizing the system for maximum benefit, and exploring cost and financing models. This process will be implemented through the creation of “disaster preparedness zones,” including critical power linkages in key disaster response facilities such as city buildings, recreations centers, libraries and others buildings.



Credit LUMINALT

## FEATURED ACTION

## Adapt Our Transportation System

Our transportation system is a critical lifeline for our City's families and workers. But potential future impacts from climate change pose a significant risk to San Francisco's public transit system, its critical assets and facilities, and the broader transportation system. In recent years, the San Francisco Municipal Transportation Agency (SFMTA) has been focused on making San Francisco's multimodal transportation system stronger in the face of both current and future climate impacts, such as sea level rise and coastal storms. This work builds on SFMTA's long history as a national leader in reducing greenhouse gas emissions. SFMTA's Sustainability Program is working with colleagues throughout the agency, and partner departments in the city and region, to increase the resiliency of the transportation system and to advance an array of climate adaptation projects.

**SFMTA is working to update its Climate Action Strategy, which will include:**

- a new climate adaptation section;
- a sea level rise vulnerability assessment to identify systemwide vulnerabilities;
- a capital planning and resiliency/sustainability pilot project that aims to ensure transportation investments take into account climate change; and
- an El Niño/Winter Weather Plan to guide SFMTA operations in the event of coastal flooding and storm impacts.

These four pioneering projects will ultimately help increase the resiliency of the transportation system against future climate impacts.



“I love San Francisco because it embraces sustainability, creativity and people from all over the world—and all walks of life. It has always been the home to those dreaming of a better world, and inventing the path to get there. Its whimsical topography, fresh salty air and water all around are a joy to experience on foot, bike or surfboard. And our tolerant, diverse, curious and environmentally minded community makes it a great place to raise kids!”

—Laura Tam  
Sustainable Development Policy Director, SPUR

GOAL 3

# ENSURE HOUSING FOR SAN FRANCISCANS TODAY AND AFTER A DISASTER

ACTIONS:

To meet this goal, we will:

1. **Build** a Strong Housing Recovery Starting Today
2. **Enhance** Systems to Rapidly House San Franciscans
3. **Strengthen** Housing Now to Better Prepare Us for Tomorrow

## Introduction

Eighty-five thousand residential units could be permanently lost in an earthquake. After a disaster, we will need to scale up the existing processes we use to house our residents in need. This impact can be reduced if we position the resources we need to improve these systems today. The 1906 earthquake and fire destroyed more than 28,000 buildings and left 225,000 people homeless. Disasters complicate existing challenges in a way that can hinder long-term recovery. As we plan for SF@1M, we need to think about access to housing that is both affordable and can withstand a major disaster. That's why the City is focused on protecting housing for all San Franciscans now—to help us be stronger and more prepared for the uncertainties of the future.

### KEY INDICATORS:

To measure progress, San Francisco will:

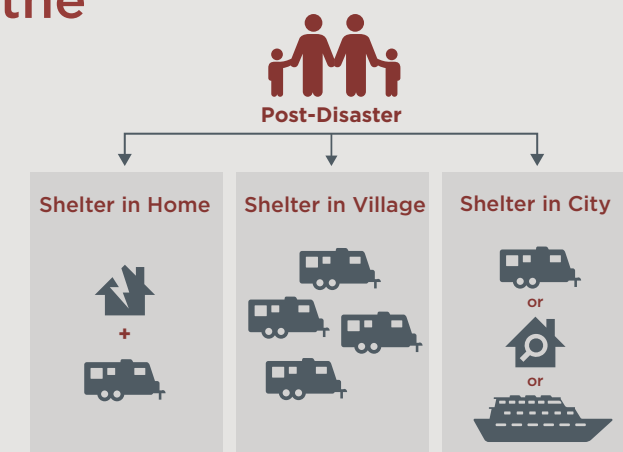
- Create the capacity to house 95 percent of our residents in the City after a disaster.
- Improve new and existing systems to house 8,000 homeless San Franciscans by 2020.
- Produce 30,000 housing units by 2020, of which 30 percent will be permanently affordable and 50 percent will be middle-income housing.
- Create capacity to house a population expected to grow to 1 million residents by 2040.

The tools and systems we use to feed, care for and house our residents today will need to scale up after a disaster.



## Potential damage to residential units in a 7.2 earthquake on the San Andreas Fault

<b>335,000</b>	Total Units
<b>120,000</b>	Usable, Light Damage
<b>130,000</b>	Usable, Moderate Damage
<b>74,000</b>	Repairable, Cannot Be Occupied
<b>11,000</b>	Not Repairable



A robust and inclusive housing recovery after a major disaster starts with keeping residents in their homes or getting them back home as quickly as possible.

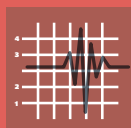


# ACTION 1 Build a Strong Housing Recovery Starting Today

A magnitude-7.2 earthquake on the San Andreas Fault has the potential to damage or destroy more than 100,000 residential buildings in San Francisco and displace hundreds of thousands of residents. San Francisco will build a strong housing recovery plan aimed at getting our residents back in their homes safely and quickly, and keeping 95 percent of our residents in San Francisco.

**ASPIRATION:** A successful post-disaster housing transition and recovery that will keep 95 percent of our residents in San Francisco.

**CHALLENGES ADDRESSED:**



EARTHQUAKES



SOCIAL INEQUITY



UNAFFORDABILITY

**INITIATIVE 3.1**

## Establish a Post-Disaster Interim Housing Strategy

**Keep San Franciscans in San Francisco after a Disaster**

The Office of Resilience and Recovery, in partnership with the Department of Emergency Management, will expand the City’s All-Hazards Response and Restoration Plan, detailing the coordination, roles and responsibilities of responding agencies, and how the City will work with state and federal partners during an emergency. After an interdepartmental community engagement process, the strategy will be released in 2018.

It is critical to recovery that we keep our residents in the City after a major disaster. We must therefore create a thorough and dynamic plan to provide temporary shelters, keeping residents in the City, while quickly enabling building owners to make repairs. Speedy repairs will allow residents to return to their homes as quickly as possible. We have developed a three-point strategy to ensure a quick, effective and inclusive housing recovery:

**Shelter in Home**

The best outcome for residents after a disaster is the ability to remain in their homes. Residential units will likely be damaged, so this may take the form of mobile housing units on or close to the site of the homes or living in a relatively safe, though damaged, unit. Through a Shelter First Repair Program, repairs can be made quickly with the goal of reoccupying the homes as soon as possible. Special attention should be paid to the multifamily structures that house approximately 70 percent of San Franciscans.

**Shelter in Village**

If residents remaining in their homes or on the site of their homes is not possible, the next best option is to shelter in village, where the residents live temporarily in a new location within the neighborhood. This causes minimal disruption to the residents’ lives as their unit is repaired, while maintaining work, school, local amenities and neighborhood relationships—facilitating a speedy recovery.

**Shelter in City**

Our top priority is keeping San Franciscans in their city. If it is not possible for residents to remain in their home or their neighborhood, this strategy would keep them in the city at shelter and housing sites. This will minimize economic damage, facilitate rebuilding and help prevent one of the most destructive ills of post-disaster cities—population loss.

**INITIATIVE 3.2**

## Create a Disaster Recovery Case Management Program and Database

The Office of Resilience and Recovery, in partnership with the Department of Public Health and the Human Services Agency, will form a Disaster Recovery Case Management Program. The program will develop a comprehensive and user-friendly database to help case managers provide assistance through close cooperation with organizations currently serving vulnerable populations. This program will also maintain a Citizens Advisory Recovery Committee to establish an appropriate database platform, oversee the program, and serve as an advisory and oversight body during San Francisco’s recovery. After a disaster, typically only 80 percent of those needing assistance will be able to navigate the process easily, 15 percent will require more case management and 5 percent will require detailed assistance. Because of unique challenges and issues faced by many of San Francisco’s most vulnerable residents, this program, which launches in 2017, becomes all the more critical to our recovery.



## Learning from Network Cities: New Orleans

To help facilitate the rebuilding of the Broadmoor neighborhood in New Orleans after Hurricane Katrina, the Broadmoor Development Corporation created its own database. Under the leadership of Howard Roark, interns and students built a Salesforce platform for cataloging the needs of the community’s 7,000 residents. With the database, Roark could detail for

donors where their money was going and get them in touch with the residents they were helping. It also allowed Roark to track outstanding repairs so, for example, when a plumber stopped by, that person could be directed to jobs that needed attention.

“We are working to empower the leadership of local nonprofits, so their organizations can continue to provide critical services after a disaster.”

—Brian Whitlow and Elaine Tokolahi  
San Francisco Community Agencies Responding to Disaster (SF CARD)



**INITIATIVE 3.3**

## Establish a Citizens Advisory Recovery Committee

San Francisco will establish a Citizens Advisory Recovery Committee (Recover-SF) to provide a much-needed connection between the city government and vulnerable populations served by assistance programs during recovery. This committee will be composed of representatives from service provider organizations, leadership from vulnerable population communities and City representatives. San Francisco will push to establish Recover-SF in 2016, as it will be instrumental in the development of the Disaster Recovery Case Management Program and database, in the planning of interim and transitional housing for vulnerable populations, in ensuring that information flows to communities and in ensuring the City receives feedback. Establishing Recover-SF now will help ensure our equitable, complete and speedy recovery tomorrow.

**SUPPORTING INITIATIVE 3.4**

## Shelter-in-Place Health Impact Assessment



In 2015, the San Francisco Department of Public Health completed its health impact assessment of sheltering in place, examining the

health impacts of remaining in one’s home after a major earthquake. This assessment helps the Office of Resilience and Recovery work with its partners to establish recovery planning for the City, and to better understand the health impacts of living in a damaged unit as repairs are conducted following a disaster.



**INITIATIVE 3.5**

## Quickly Repair and Reoccupy Our Housing Stock After a Disaster

In 2017, the Office of Resilience and Recovery will launch a program modeled after New York City’s Rapid Repairs Initiative under the FEMA STEP pilot program. New York’s Rapid Repairs Initiative facilitated basic and temporary repairs to homes, therefore allowed residents to quickly return to their homes after Hurricane Sandy. San Francisco’s ability to quickly reoccupy our housing will help the City accelerate its recovery by sourcing appropriate funding that can be reimbursed by the federal government. This can be accomplished by prenegotiating with qualified contractors and by easing or waiving habitability standards as needed.

The Office of Resilience and Recovery, in partnership with community groups and organizations, such as the Voluntary Organizations Active in Disasters (VOADs), will initiate a culturally competent and multilingual outreach campaign. This communications campaign will utilize multiple channels and networks to explain programs and encourage enrollment, as well as provide program materials and enrollment assistance.

Building the capacity now to quickly repair our housing will significantly accelerate recovery after a disaster.



**INTEGRATION**

### Interim/Transitional Disaster Housing Framework: A Harvard Kennedy School and City of San Francisco Partnership



The Interim/Transitional Disaster Housing Framework is a theoretical and analytical plan created in consultation with the City by students, faculty and fellows of the Harvard Kennedy School. The Framework was written to assist the Office of Resilience and Recovery, and its partners, in planning for transitional housing needs in a post-disaster setting.

As the team carried out its research and analysis, it was tasked with maintaining the integrity of the City’s top priorities around repopulation and rebuilding after a large-scale disaster. They prioritized interim housing units’ proximity to the original residence, then to the neighborhood, and then, if neither option is available, somewhere within the City. The team also focused on rethinking and defining vulnerable populations, with a particular emphasis on identifying and addressing unmet needs. Finally, the team created scalable, flexible options that allow the City and individual neighborhoods to choose the right solutions for themselves and to feel included in the process.

“Increased mitigation and planning for our long-term recovery is critical in preserving our beautiful, vibrant and diverse city.”

—Mary Comerio,  
Professor, UC Berkeley  
Author, “Disaster Hits Home:  
New Policy for Urban Housing Recovery”



# ACTION 2 Enhance Systems to Rapidly House San Franciscans

Thousands of our residents could be homeless after a major earthquake. The systems we use now give us a blueprint for scaling up the systems we use today to house homeless San Franciscans. Additionally, homeless residents will be disproportionately impacted by a disruption or disaster. In December 2015, Mayor Edwin M. Lee announced a plan to create a new Department to End Homelessness (not yet formally named). Bringing social services and housing resources under a single department provides focus and the ability to innovate, as we test and develop ways to quickly house our residents now, and after a major disaster.

**ASPIRATION:** End chronic homelessness in San Francisco.

**CHALLENGES ADDRESSED:**



SOCIAL INEQUITY



UNAFFORDABILITY



**INITIATIVE 3.6**

## Leverage Navigation Centers for Post-Disaster Triage

During a long-term recovery from a major disaster, systems we use today to help place homeless residents into more permanent housing can scale up to serve a spontaneous population that may find itself without a home. Working with the San Francisco Interfaith Council, Mayor Lee opened the first Navigation Center in March 2015, supported by a \$3 million donation from the San Francisco Interfaith Council. The Navigation Center provides homeless San Franciscans with room, board and support services, including help securing stable employment, public benefits and permanent housing. The pilot location at 1950 Mission Street features a common courtyard, storage for belongings, meals, showers and laundry, and dormitory accommodations for 75 clients and their pets. These centers will target difficult-to-serve homeless residents, often with psychological barriers to using traditional shelters, and has helped nearly 400 San Franciscans find alternatives to living on the street.



Public Works made renovations to the Navigation Center site prior to its opening.





INITIATIVE 3.7

## Rapidly Rehouse Homeless San Franciscans Today and After a Disaster

The Department to End Homelessness (not yet formally named) will continue to use the Rapid Rehousing (RRH) subsidy program to provide short-term rental subsidy and support services to house homeless San Francisco families. This includes an enhanced “need-based” RRH subsidy for families who have a verified need to remain in the City and are considered among the hardest to rehouse. These populations include families with incomes less than 30 percent of the Area Median Income (AMI), victims of domestic violence and children with special needs and other complex cases that require additional care. RRH has proven to be successful, with 90 to 95 percent of the families remaining stably housed after the subsidy concludes. Innovative systems like this can be scaled up after a disaster to help house San Franciscans.

FEATURED PROJECT

## Project Homeless Connect



Developing large-scale service delivery methods now will help us after a disaster. Project Homeless Connect (PHC) links the most vulnerable San Franciscans to vital resources throughout the City. At PHC’s one-stop shop events, and at its office every day, the project makes it easier to obtain vital services, including medical, dental and vision care, and employment assistance. By mobilizing City and community agencies, as well as thousands of volunteers, the project is able to ensure that participants receive holistic care in a dignified setting. In December 2015 alone, PHC connected 1,330 individuals with services through 917 volunteers.

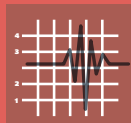


# ACTION 3 Strengthen Housing Now to Better Prepare Us for Tomorrow

Housing remains one of the greatest challenges our City faces. We are a rapidly growing city—approaching SF@1M—with new residents pressuring our existing housing stock, while demanding new housing units. The initiatives that support this action build on the ongoing efforts within the Mayor’s Office of Housing and the City to address our City’s housing crisis. The Office of Resilience and Recovery will support these actions through community education and the incorporation of these programs, and the issues they address, in recovery and disaster mitigation planning.

**ASPIRATION:** San Francisco will increase our supply of housing, while helping our most vulnerable residents stay in their homes.

### CHALLENGES ADDRESSED:



EARTHQUAKES



SOCIAL INEQUITY



UNAFFORDABILITY



INFRASTRUCTURE

Credit: Dave Rauenbuehler

### INITIATIVE 3.8

## Promote Neighborhood Affordability



The Mayor’s Office of Housing will continue to scale up the Affordable Housing Preservation & Neighborhood Stabilization Program. This program allows for more buildings to be rehabilitated and permanently stabilized as deed-restricted to households earning up to 120 percent of the Area Median Income (AMI), to include very low-, low- and more middle-income San Franciscans. This program also includes active encouragement of new development to preserve buildings housing tenants at risk of displacement through the City’s Inclusionary Housing Program, which currently requires developers to contribute to new affordable housing alongside their market-rate development.

INITIATIVE 3.9

## Fund the Construction of Affordable Housing

The City will launch a Housing Affordability Fund to leverage limited public dollars for housing, bringing financial, employer and other sources of capital to support efficient and timely site acquisition for affordable-housing construction, or the preservation of exiting at-risk affordable rental buildings. Given the steady decline in federal and state funding for affordable housing, the loss of redevelopment agencies and the increasing cost of producing affordable housing in San Francisco, it is clear that our existing funding streams are still not enough. This fund builds on the work of the Housing Trust Fund, the most aggressive local funding stream for affordable housing in California.



Credit: Kirsti Itameri



INITIATIVE 3.10

## Expand Access to Affordable Housing

The City will allow developers to “dial up” their current inclusionary requirements by providing a greater percentage or number of below-market-rate units at a higher AMI target, with ownership units priced up to 120 percent of AMI and rental units priced up to 90 percent. This allows for more middle-income residents—such as teachers, police officers and firefighters—to access affordable housing. This diverse approach may also carry with it the benefit of maximizing the number of affordable units on the site.

INITIATIVE 3.11

## Make New Developments More Affordable

The City will continue to develop an Affordable Housing Bonus Program, paving the way for construction of more affordable-housing units in San Francisco neighborhoods. In close coordination with members of the community, projects considered under this program will not demolish any existing residential units, will consider open space and other community amenities, and will receive a high level of review and authorization. This program provides incentives for developers to include more affordable housing for very low-, low-, moderate- and middle-income households, building diverse affordability into our neighborhoods and strengthening our housing stock.



INITIATIVE 3.12

## Revive San Francisco's Public Housing



The HOPE SF Initiative seeks to transform four of San Francisco's most distressed public housing sites into vibrant, thriving communities through holistic revitalization. In 2006, the City convened a taskforce, representing diverse perspectives, to develop a set of principles that would

become the HOPE SF Initiative. This initiative has eight guiding visions, helping ensure a positive outcome for all residents:

- Ensure No Loss of Public Housing
- Create an Economically Integrated Community
- Maximize the Creation of New Affordable Housing
- Involve Residents in the Highest Levels of Participation in the Entire Project
- Provide Economic Opportunities through the Rebuilding Process
- Integrate Process with Neighborhood Improvement Revitalization Plans
- Create Environmentally Sustainable and Accessible Communities
- Build a Strong Sense of Community

“San Francisco is a vibrant community with a pioneering spirit. We live in that wonderful tension of innovation and inclusivity. I’m proud to call our City my home!”

—Michael Pappas  
SF Interfaith Council



INITIATIVE 3.13

## Continue the Rental Assistance Demonstration Program



The Rental Assistance Demonstration (RAD) program, supported by the U.S. Department of Housing and Urban Development, seeks to preserve public housing by providing local housing authorities with access to a more stable funding source, so they can make needed repairs to their properties. The RAD program will allow San Francisco's Housing

Authority to access, for the first time, resources such as debt financing and low-income housing tax credits. These resources will help the housing authority complete its significant rehabilitation program and preserve the long-term viability of units. In addition to improvements, all buildings will have tenant engagement services and access to neighborhood resources. The plan will also provide for rigorous tenant protections and a right of return for residents who may need to move temporarily while their units are rehabilitated.

The U.S. Congress—which funds public housing—has not provided local housing agencies with enough money for capital repairs. In San Francisco, public housing has more than \$270 million in deferred capital repairs. This initiative green-lights over \$500 million of repairs over the next three years for more than 4,500 distressed San Francisco Housing Authority units. Thirty-five hundred of the apartments will be rehabilitated as a portfolio, and converted to new ownership and property management by community-based, nonprofit affordable-housing developers. The City is providing over \$50 million toward the effort, which is in addition to the City funds dedicated to the HOPE SF work. On its own, it would take the San Francisco Housing Authority over 50 years to provide the kind of capital improvements that will now occur within three years.

GOAL 4

# EMPOWER NEIGHBORHOODS THROUGH IMPROVED CONNECTIONS

ACTIONS:

To meet this goal, we will:

1. **Build** Strong, Healthy and Connected Neighborhoods
3. **Improve** Access to San Francisco Government
3. **Establish** the Office of Resilience and Recovery

## Introduction

San Francisco is a city of neighborhoods—each with its own distinct character, culture and challenges. This is key to the City’s identity and strength; protecting and empowering our neighborhoods is key to ensuring the City’s resilience. San Francisco will empower neighborhoods by connecting them to new resources, improving their access to and trust in City services, and creating meaningful connections with each other.

Actions in this chapter harness what it means for residents and businesses to better connect to their City government and to each other. We need to replace inefficient systems with innovative solutions that empower San Franciscans. Better connectivity between the community and San Francisco government will allow us to strengthen existing bonds and forge new ones. These trusted relationships are essential to building strong neighborhoods. The Office of Resilience and Recovery will lead a Citywide effort to help strengthen our neighborhoods, prepare them for future disruptions, and enable them to connect better to each other and the services they need today.

### KEY INDICATORS:

#### To measure progress, San Francisco will:

- Establish the Office of Resilience and Recovery under the City Administrator.
- Implement a modern user interface for all government services, with the goal of 90 percent of permitting done online by 2025.
- Launch community-level asset mapping in 29 San Francisco neighborhoods within 12 months.
- Reach 40,000 San Franciscans through a coordinated outreach process within 12 months.

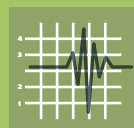


# ACTION 1 Build Strong, Healthy and Connected Neighborhoods

Both the day-to-day success of our City and our ability to recover after a disruption depend on the strength of our neighborhoods. A strong neighborhood is a connected and healthy neighborhood, so we are looking to empower neighborhoods today to build a more affordable, more inclusive and ultimately more resilient city tomorrow.

**ASPIRATION:** Build the neighborhoods of our City, fostering resilience and readiness to respond to disruptions and recover quickly.

**CHALLENGES ADDRESSED:**



EARTHQUAKES



SOCIAL INEQUITY



UNAFFORDABILITY



INFRASTRUCTURE



**INITIATIVE 4.1**

## Reimagine Public Libraries as Community Spaces

The Office of Resilience and Recovery will partner with the San Francisco Public Libraries (SFPL) to conduct community outreach meetings at the City's 29 libraries, building on the work already being done in the libraries to reimagine these neighborhood spaces as gathering sites. In 2014, with the completion of the North Beach branch rebuild project, the SFPL, in partnership with Friends of the San Francisco Public Library, completed its Branch Library Improvement Program, a multiyear, voter-approved upgrade of all library branches. Improvements included increased Internet connectivity, added community spaces and seismic retrofitting. The libraries moved from being places to sit in silence to places to gather, to learn and to grow as a neighborhood. ORR will work with the SFPL to continue developing this pilot program to build empowered and more connected communities.





INITIATIVE 4.2

## Enhance Trust in Our Public Safety Officials



Trust in public safety officials is essential during times of stress and uncertainty. When disaster strikes, effective response and recovery requires a strong trust and bond

with our City's first responders. Police officers, fire fighters and EMS, building inspectors, health inspectors and others will be on the front lines of San Francisco's response. This approach encompasses actions aimed at helping the departments cope with the needs of a growing and changing City that is approaching SF@1M.

INITIATIVE 4.3

## Forge Partnerships to Empower Neighborhoods

The Office of Resilience and Recovery will work closely with the Invest in Neighborhoods program, run by the Office of Economic and Workforce Development, to identify and build partnerships that advance the goals of this strategy. Invest in Neighborhoods works to strengthen and revitalize neighborhood commercial districts around the City by marshaling and deploying resources from City departments and nonprofit partners. This includes services such as loan programs, façade improvement grants and technical assistance for small businesses, leveraging City services to help small businesses thrive, increase neighborhood quality of life, improve overall physical conditions and, in turn, build community capacity.

Every neighborhood commercial district has its own unique needs, opportunities and challenges. Invest in Neighborhoods aims to deploy the specific services and resources that are most needed in each district, building stronger neighborhoods through strategic investment in each community's core commercial corridor. By helping the City think holistically about a neighborhood's needs, Invest in Neighborhoods makes important connections to support strong and resilient neighborhood corridors.



INTEGRATION



### Healthy Communities, Healthy Businesses

Healthy Retail SF is a long-standing partnership that advances both public health and neighborhood core development. Healthy Retail SF promotes and makes available the consumption of healthy, fresh and affordable food by encouraging small corner stores to become healthy food retailers. The program provides concentrated and tailored technical assistance to business owners to increase healthy food options, which helps not only their business but the entire community.



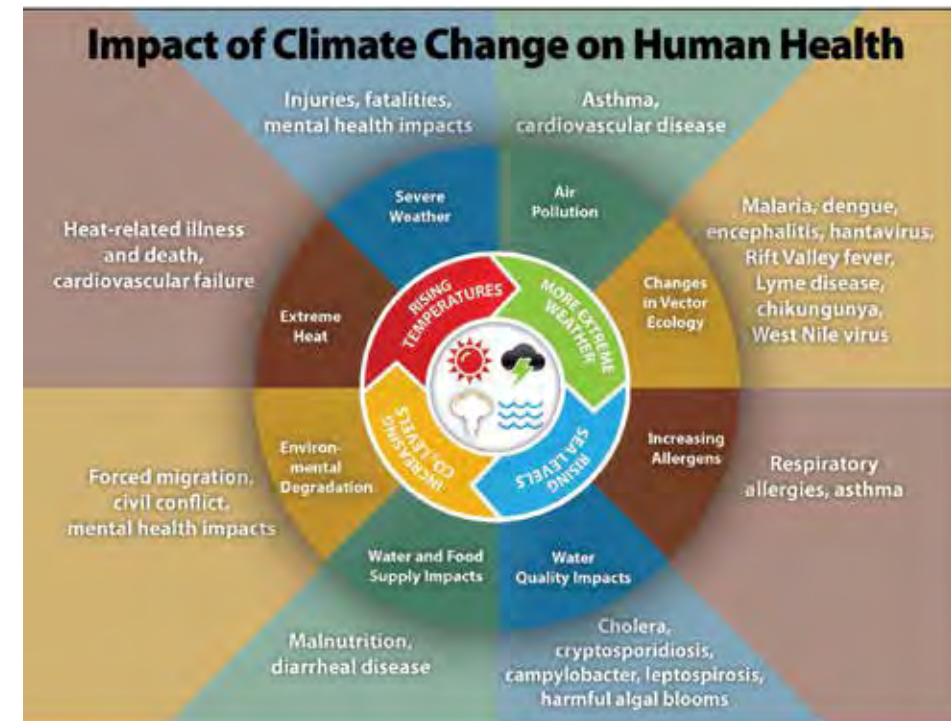




INITIATIVE 4.4

## Promote Neighborhood Environmental Health Education

The Office of Resilience and Recovery, through its community engagement process, will help the Department of Public Health advance disaster recovery and climate change-related health education in our neighborhoods. Education increases our community's overall health and connectedness. It helps build awareness that will lead to the community's ability to respond to climate change, including extreme heat, extreme cold, flooding from storms and air quality challenges. This work seeks to reach vulnerable populations and the organizations that serve those populations.



INITIATIVE 4.5

## Build Capacity in Community-Based Health Organizations

To improve the post-disaster response capacity of neighborhood-serving community-based health organizations (CBOs), the Department of Public Health conducts training and provides technical assistance on continuity of operations planning for contracted San Francisco CBOs. The Office of Resilience and Recovery will work to support this activity during its 2016-17 community engagement process.



INITIATIVE 4.6

## Empower Neighborhoods through Increased Capacity

The City will continue to partner with neighborhood and community leaders to empower individuals and their communities to build stronger, more connected and more resilient neighborhoods. The Neighborhood Empowerment Network (NEN) is a City partnership program with a coalition of residents, neighborhood organizations, nonprofits and faith-based institutions. Its mission is to empower residents through partnership and outreach, leveraging community assets to strengthen residents and their neighborhoods. NEN gives voice to communities and increases their capacity through events, resources and its annual NEN Awards, which honor valued community leaders.

FEATURED PROJECT

## Bayview Neighborhood Support Center

In times of crisis, communities lean on trusted institutions, service providers and faith-based organizations in their neighborhood or community. Community trust is critical, as those in need may not be as willing to engage with an outside institution that is unfamiliar with the community. Building empowered and resilient neighborhoods means leveraging existing community support channels, rather than creating competing or redundant organizations.

Established in 2006 with a grant from the San Francisco Foundation, Providence Baptist Church and Foundation is an example of this kind of neighborhood-embedded organization. The Church partners with the San Francisco Community Agencies Responding to Disasters (SF CARD) to train staff and prepare the Church to become an anchor in its community for those in need. The Providence Foundation leveraged this training to build on the services offered at its 125-bed shelter to help homeless men in the community. This effort has expanded into additional facilities, such as a family shelter, a women’s shelter and a storage facility to keep belongings secure. Now the shelter guests can go to job interviews or get the services they need without worrying about the safety of their belongings. As an institution partnering with the City, the Bayview Neighborhood Support Center is also in a position to help provide support to neighborhood residents after a disaster.

“We are working to build a culture of preparedness in our neighborhood to help support us through good times and bad.”

—GL Hodge  
Providence Baptist Church





INITIATIVE 4.7

## Learning from Bayview: Community Asset Mapping



The Office of Resilience and Recovery, in partnership with Appallicious, will make a comprehensive data visualization platform tailored to daily and situational resilience.

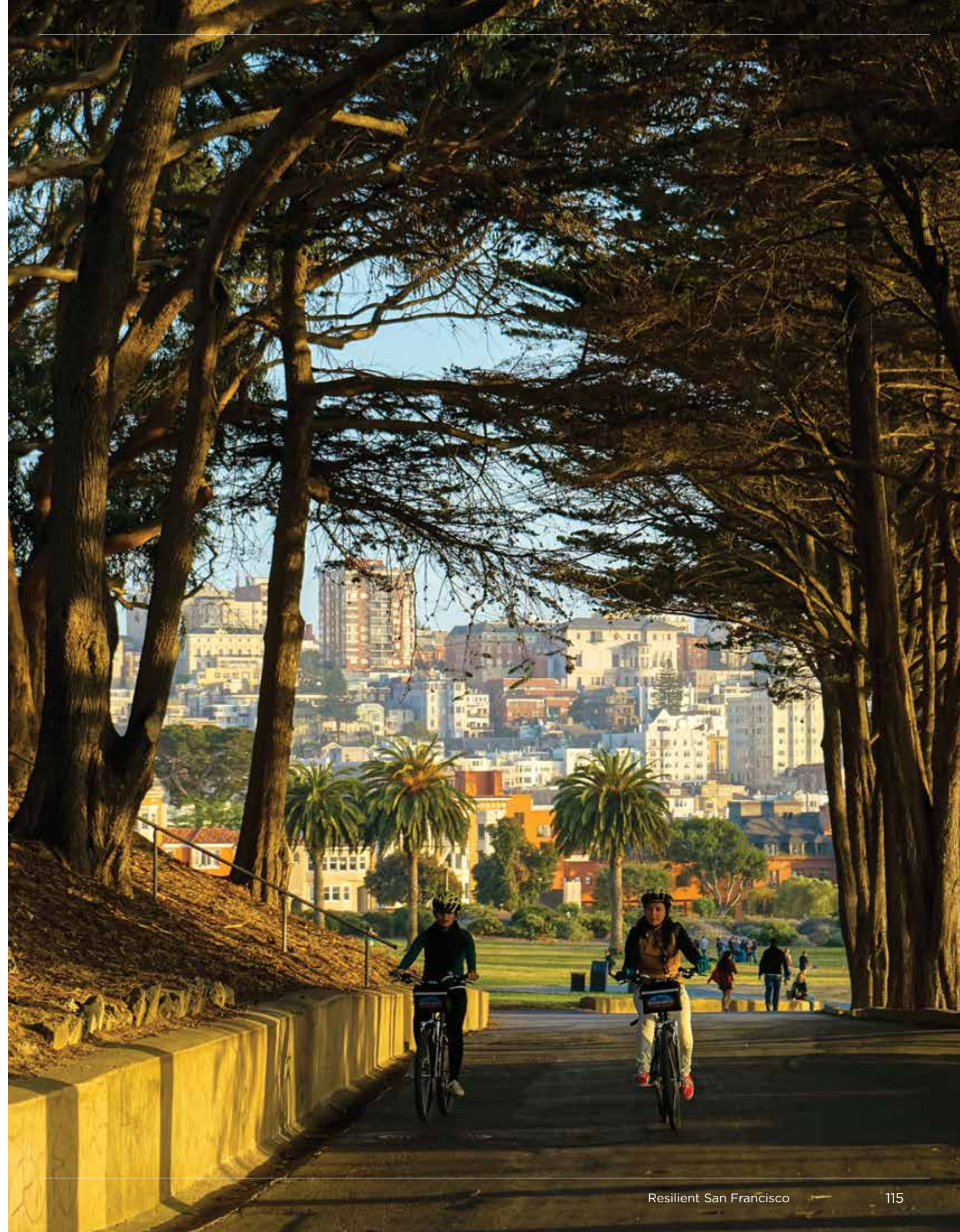


Called the Community Resilience Platform, it will be available in all San Francisco neighborhoods. In 2014, a cohort of concerned Bayview residents worked closely with City staff and Appallicious to develop San Francisco's first daily-use Digital Community Resilience Platform. Through an extensive research and discovery process, the neighborhood identified its assets, vulnerabilities and critical stakeholders. The residents continue to use this tool to build a stronger community one day at a time, one task at a time, one crisis at a time. ORR and Appallicious will pilot a new community-level dashboard in 29 neighborhoods as part of ORR's strategic outreach partnership with the San Francisco Public Libraries.



“Our vibrant neighborhoods, committed community organizations and resilient spirit are what make this a unique and amazing place.”

- **Andrea Zusmaan**  
The San Francisco Foundation



# ACTION 2 Improve Access to San Francisco Government

In good times and bad, residents and businesses must be able to rely on City services for support. Both residents and businesses feel the impacts of impeded access to City services. Improving this access will provide higher compliance, greater transparency and improved efficiency. San Francisco will continue to streamline and improve the ways in which residents and businesses interact with the City, making what is confusing, unclear or arduous quicker, more usable and more accessible to San Franciscans.

**ASPIRATION:** Simple, effective and inclusive services accessible to all San Franciscans, meeting needs today and after a disaster.

**CHALLENGES ADDRESSED:**

-  EARTHQUAKES
-  SOCIAL INEQUITY
-  UNAFFORDABILITY
-  INFRASTRUCTURE



**INITIATIVE 4.8**

## Develop a Public Digital Service Strategy

The Digital Service Strategy is a commitment to create a better service experience for residents, visitors and businesses. Through strategic redesign, the City can build digital services that are accessible and easy to use. The City should build products that improve the consumer experience by emphasizing iterative design principles and user feedback. Key to realizing this shared vision will be assembling a digital services team of modern web technology experts and developing a culture that seeks to constantly improve services. In the coming years, the City will strategically transform service delivery by changing the ways we build and manage digital products. The City hopes to redefine its relationship with residents and visitors by becoming more responsive, and by providing accessible, easy-to-use services.



San Francisco is improving the ways in which our residents connect to the services they need.

INITIATIVE 4.9

## Receive and Issue Permits Electronically

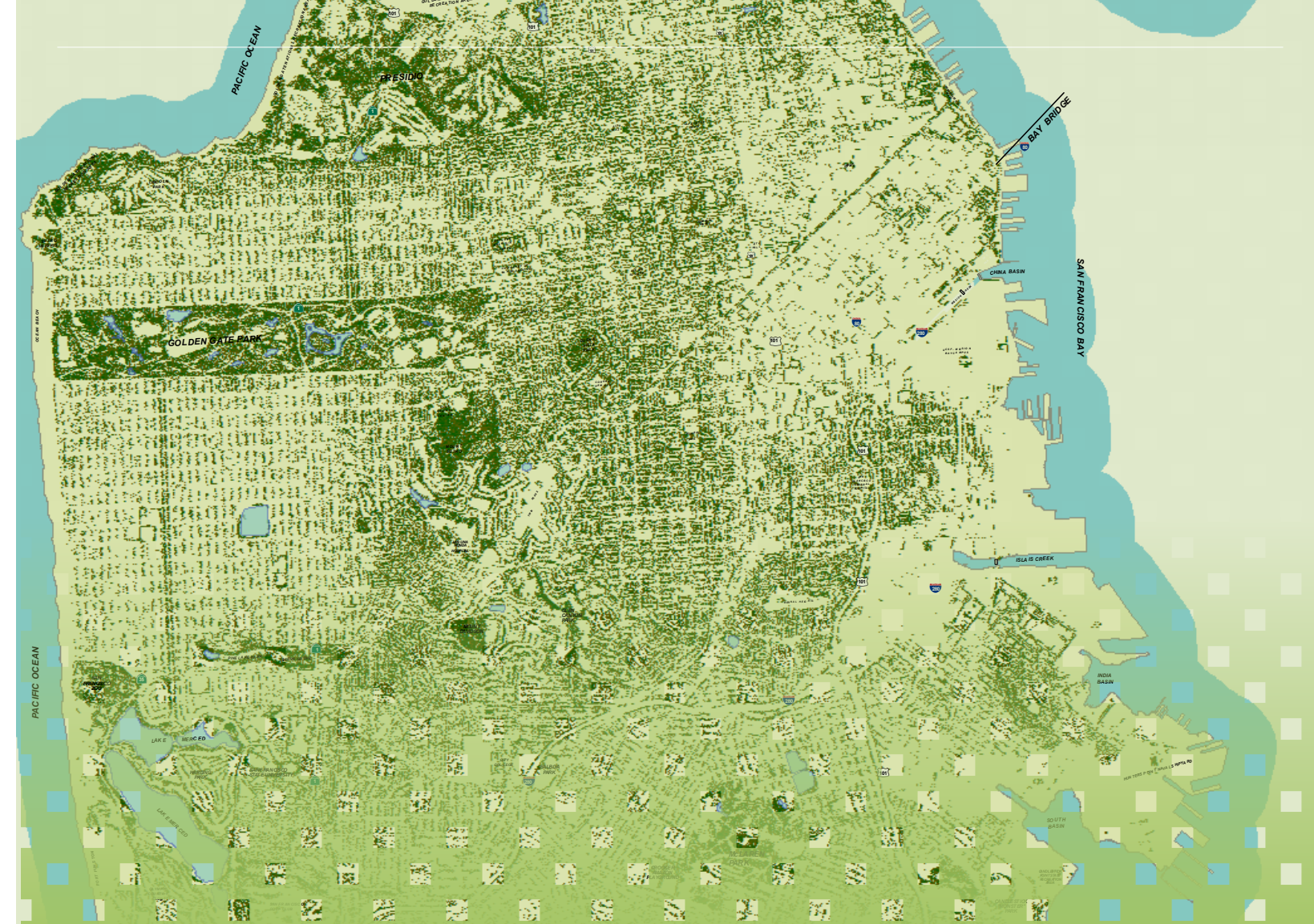
To use public resources efficiently, to get housing built faster and to ready San Francisco for a quick and effective recovery, the City will put together an electronic permitting plan by 2018 and implement the program by 2020. Outdated permit processes result in inefficient and lengthy wait times, coupled with redundant review procedures, often confusing the applicant as to which step is next in the process. Residents and businesses need to have a clear picture of what is required from start to finish in any permit process. San Francisco has always been a hub of innovation. There is a powerful opportunity to embrace technology, and to provide transparency and efficiency with the implementation of an online electronic permitting system.



INTEGRATION



City processes are becoming more digitally streamlined, allowing for better service now and a speedy recovery after a major disaster, because the systems can be supported from remote locations. After a disaster, in light of our interim housing goals of retaining 95 percent of our population and housing those residents largely in their homes or neighborhoods, we will need a fast, flexible and effective permitting system that meets user needs. This system provides benefits now and builds a stronger tomorrow.



FEATURED PROJECT

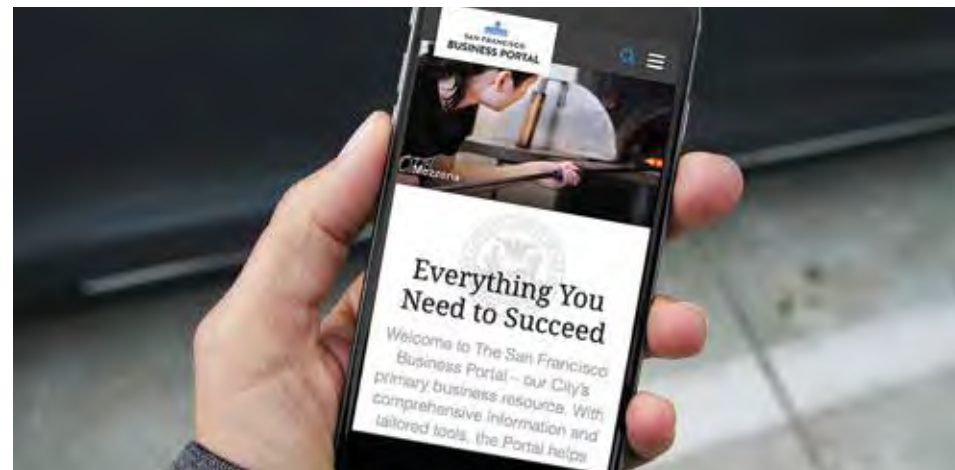
## Use Data to Empower Residents

The SF Indicator Project is a neighborhood-level data system that measures how San Francisco performs in eight indicia of a healthy, equitable community. The goal of this project is to support collaboration, planning, decision making and advocacy for social and physical environments that meet the needs of all residents. This tool builds the capacity of individuals to understand the performance of their neighborhood in the face of multiple challenges and various strengths, including air quality, access to transit and active housing permit violations. The Indicator Project builds the level of service that government can and should provide to residents as they work in their neighborhoods, conduct their lives and make daily decisions.

Breaking down data by neighborhood empowers communities at a scale that can better meet their planning needs.

## FEATURED PROJECT

## Business Portal: Build Capacity through Efficiency



The day-to-day success of our City, as well as its recovery after a disaster, depends on the success of small businesses. Streamlining outdated and duplicative systems, the San Francisco Business Portal consolidates information on more than 400 permits and licenses available to small businesses. Some examples of forms that are accessible in the Business Portal include the Business Registration form from the Treasurer and Tax Collector required of every business, the Permit to Operate from the Department of Public Health for all restaurants, and the Dog Walking permit from Animal Care and Control for any dog walker with four or more dogs. Small businesses in San Francisco face challenges that, in the event of an unexpected disruption, make them vulnerable. By easing the uncertainty in the process of starting a new business, the City can help build a more resilient economy. This Portal serves as an in-operation model for the work that is to come. A joint project of the Department of Technology, Office of Economic and Workforce Development and Office of Small Business, in partnership with the design firm Tomorrow Partners, the San Francisco Business Portal advances Mayor Lee's goal of using technology to make government more responsive and effective to the needs of residents and entrepreneurs.



# ACTION 3 Establish the Office of Resilience and Recovery

The City Administrator’s Office will establish an Office of Resilience and Recovery (ORR) with the launch of this strategy on April 18, 2016, further institutionalizing resilience in San Francisco. Working interdepartmentally and closely with the public, this office will spearhead implementation of this strategy. San Francisco has a long history of bold goal setting, forward-thinking leadership and decisive action, as well as protecting its neighborhoods. This office, by executing the work of this strategy, will be another voice looking toward San Francisco’s future. The new ORR will directly oversee the City’s 30-year Earthquake Safety Implementation Program, manage the City’s Lifelines Council and take the lead on developing a housing recovery strategy aimed at preparing for our recovery before disaster strikes.

**ASPIRATION:** Create an office in City government that promotes resilience and holds the City accountable for meeting this strategy’s goals with community support.

**CHALLENGES ADDRESSED:**

-  EARTHQUAKES
-  SOCIAL INEQUITY
-  UNAFFORDABILITY
-  CLIMATE CHANGE
-  INFRASTRUCTURE
-  SEA LEVEL RISE

INITIATIVE 4.10

## Monitor Progress on Realizing Resilience Goals



One of ORR’s two primary tasks will be facilitating an ongoing conversation around our resilience goals, aimed at ensuring that all departments have the tools they need to help the City meet these goals. Within the first six months, this office will develop a tracking methodology to ensure that this process is effective, efficient and transparent, providing accountability to all departments and divisions that play a role in meeting these goals. This tracking methodology will help us measure progress in a tangible and easily accessible manner. The primary focus of this effort will be collaboration, focusing our City partners around an integrated approach to achieve our goals and develop new ones. ORR will update the strategy annually in order to measure the progress the City is making toward its bold goals. These processes will form an even stronger strategy, working with the community and our partners within government to advance and build a strong culture of resilience in San Francisco.

INITIATIVE 4.11

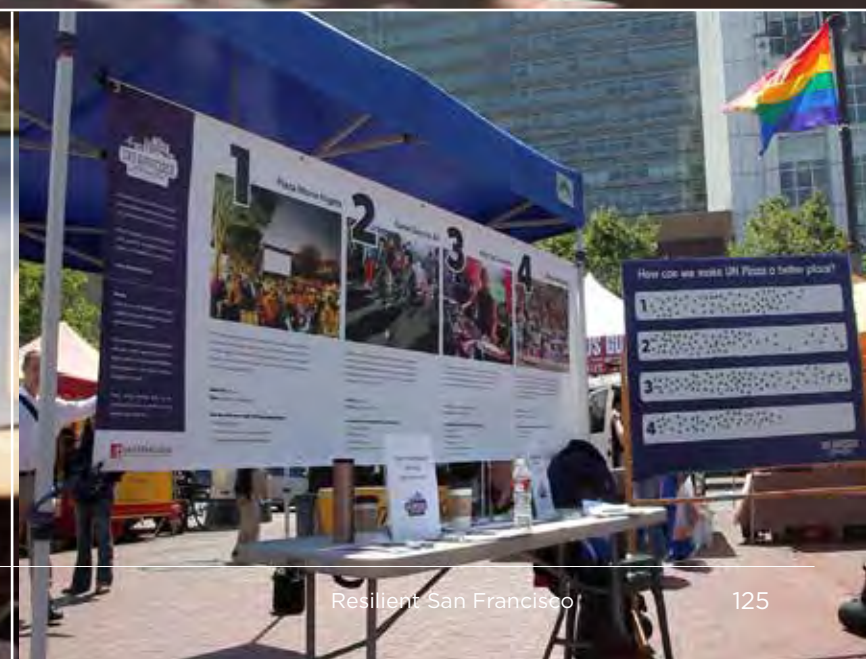
## Launch a Collaborative Community Process

The ORR's other principal task is an extensive community process. Rather than bring the strategy to the community as an end product, our approach will be to engage in a yearlong dialogue with San Francisco's neighborhoods. During the strategy's formation, dozens of conversations were held with community groups and neighborhood leaders; we will continue to build on that dialogue, aimed at achieving a community action strategy as part of the broader resilience strategy.

In many ways, this process has already begun. Our community engagement efforts arise from continuing partnerships with City departments, programs and efforts underway in the community, building on long-standing conversations and seeking to advance our City's current and new resilience goals.

The Office of Resilience and Recovery will work with the following partners to conduct community meetings at San Francisco's 29 public library branches beginning in 2016 and wrapping up in 2017.

- Office of the City Administrator
- The Port of San Francisco
- San Francisco Public Library
- San Francisco Fire Department NERT
- Department of Emergency Management
- Planning Department
- Department of Public Health
- San Francisco Municipal Transportation Agency
- San Francisco Public Utilities Commission
- San Francisco Public Works
- Office of Civic Engagement
- Human Services Agency
- Department of Building Inspection







INITIATIVE 4.12

## Build Partnerships to Advance Resilience

Many partner organizations assisted with the creation of this resilience strategy, including Risk Management Solutions (RMS), a 100 Resilient Cities Platform Partner. Based in the Bay Area, RMS completed an economic impact assessment of sea level rise. City government cannot do this alone. We need the ability to tap into the expertise of the private sector, while still acting in the best interests of and on behalf of the communities we serve. We will build on this collaboration with RMS by securing strategic partnerships that allow us to empower our communities and advance resilience.

### Neighborland

Neighborland is a communications platform that empowers city agencies to collaborate with neighborhood residents to identify real-world problems and find solutions. Their technology will help build an inclusive, accessible, integrated and participatory tool for communication and coordination between San Francisco government departments and residents. Leveraging their experience working with civic organizations throughout the U.S., including city agencies, universities, foundations and local nonprofits, Neighborland’s participatory planning design tools will help us reach as many residents as possible. This tool will go live and begin use in San Francisco neighborhoods in mid- to late 2016 as part of our collaborative community process.



Appallicious is an open data visualization company that helps government better serve its citizens. Its data visualization and analysis products will allow neighborhoods to identify assets, resources and vulnerabilities so that government agencies, businesses and community-based organizations can collaborate on identifying opportunities, building capacity and addressing weaknesses to create more empowered neighborhoods. This tool will go live beginning in mid- to late 2016 as part of our collaborative community process.



RMS is a risk-modeling company with the mission to create a more resilient and sustainable global society through a better understanding of catastrophic events. A partner with San Francisco for more than a decade, RMS provided modeling expertise regarding San Francisco’s exposure to sea level rise for both public and private assets as part of the strategy development process in conjunction with 100 Resilient Cities.

### Regional and Statewide Partnerships

Achieving resilience in San Francisco will require state and regional action. The Office of Resilience and Recovery will work with the resilience offices in our neighboring cities of Oakland and Berkeley, our regional partners in ABAG and our statewide partners’ resilience office in Los Angeles to strengthen existing relationships and form new ones. San Francisco is not alone in forming a resilience strategy—three other California cities, Los Angeles, Oakland and Berkeley, have resilience programs. In addition, the Association of Bay Area Governments, our region’s planning agency, has a resilience program. A critical piece of this work will be building on those relationships to create a more resilient San Francisco, a more resilient Bay Area and a more resilient California.

## GOAL 1: PLAN AND PREPARE FOR TOMORROW

Initiative Task	Involved Parties/Initiative Website
1.1 Build Community Readiness through Education and Technology	SF72/Department of Emergency Management <a href="http://www.sf72.org">www.sf72.org</a>
1.2 Ensure Effective City Operations during Response and Recovery	Controller's Office <a href="http://sfcontroller.org/emergency-financial-preparedness-local-government">http://sfcontroller.org/emergency-financial-preparedness-local-government</a>
1.3 Increase Training for Neighborhood Emergency Response Teams	NERT (San Francisco Fire Department) <a href="http://sf-fire.org/neighborhood-emergency-response-team-nert">http://sf-fire.org/neighborhood-emergency-response-team-nert</a>
1.4 Expand Access to Health Facilities and Services for Our Most in Need	Department of Public Health/Capital Planning <a href="https://www.sfdph.org/">https://www.sfdph.org/</a>
1.5 Develop a Long-Term Recovery Governance Plan	Office of Resilience and Recovery <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
1.6 Actively Coordinate for Recovery with Our Private and Public Utilities	Office of Resilience and Recovery/Lifelines Council <a href="http://sfgov.org/lifelines/">http://sfgov.org/lifelines/</a>
1.7 Continue the Earthquake Safety Implementation Program	Office of Resilience and Recovery <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
1.8 Mitigate Earthquake Risk through the Building Code	Office of Resilience and Recovery/Earthquake Safety Implementation Program <a href="http://sfgov.org/esip/">http://sfgov.org/esip/</a>
1.9 Streamline the Process to Quickly Reoccupy Our Buildings	Office of Resilience and Recovery/Department of Building Inspection/Public Works/Department of Public Health <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
1.10 Implement San Francisco 2050	Planning Department <a href="http://sf-planning.org/">http://sf-planning.org/</a>
1.11 Develop a Comprehensive 50-year Transportation Vision	Mayor's Office, San Francisco County Transportation Authority, San Francisco Municipal Transit Agency, Planning Department, and Office of Economic and Workforce Development <a href="https://www.sfmta.com/">https://www.sfmta.com/</a>
1.12 Continue Building and Upgrading Infrastructure	Capital Planning <a href="http://onesanfrancisco.org/">http://onesanfrancisco.org/</a>
1.13 Continue to Push for Livable Streets	Mayor's Office, San Francisco Municipal Transit Agency, Public Works <a href="https://www.sfmta.com/about-sfmta/organization/divisions-and-units/livable-streets">https://www.sfmta.com/about-sfmta/organization/divisions-and-units/livable-streets</a>

## GOAL 2: RETROFIT, MITIGATE AND ADAPT

Initiative Task	Involved Parties/Initiative Website
2.1 Continue to Retrofit Our City's Soft Story Residential Buildings	Office of Resilience and Recovery/Earthquake Safety Implementation Program <a href="http://sfgov.org/esip/">http://sfgov.org/esip/</a>
2.2 Evaluate and Retrofit Our City's Non-Ductile Concrete Buildings	Office of Resilience and Recovery/Earthquake Safety Implementation Program <a href="http://sfgov.org/esip/">http://sfgov.org/esip/</a>
2.3 Retrofit Our Most Hazardous Publicly Owned Buildings	Capital Planning/Public Works <a href="http://onesanfrancisco.org/">http://onesanfrancisco.org/</a>
2.4 The Retrofund: Expand Financing Programs That Build Resilience	Office of Resilience and Recovery/Earthquake Safety Implementation Program <a href="http://sfgov.org/esip/">http://sfgov.org/esip/</a>
2.5 Strengthen Our Emergency Facilities and Shorten Response Times	Capital Planning/Department of Emergency Management/San Francisco Fire Department/San Francisco Police Department <a href="http://onesanfrancisco.org/">http://onesanfrancisco.org/</a>
2.6 Repair, Upgrade and Protect Our Sewer Systems	San Francisco Public Utilities Commission/Capital Planning <a href="http://www.sfwater.org/">http://www.sfwater.org/</a>
2.7 Water System Improvement Program	San Francisco Public Utilities Commission/Capital Planning <a href="http://www.sfwater.org/">http://www.sfwater.org/</a>
2.8 Repair, Expand and Improve Auxiliary and Portable Water Supply Systems	San Francisco Public Utilities Commission/Capital Planning/San Francisco Fire Department <a href="http://www.sfwater.org/">http://www.sfwater.org/</a>
2.9 Earthquake Vulnerability Study of the Northern Waterfront Seawall	Port of San Francisco/Office of Resilience and Recovery <a href="http://sfport.com/">http://sfport.com/</a>
2.10 O 50 100 Roots Program	SF Environment <a href="http://sfenvironment.org/video/san-franciscos-climate-action">http://sfenvironment.org/video/san-franciscos-climate-action</a>
2.11 Actively Plan for Climate Change at Every City Department	SF Environment <a href="http://sfenvironment.org/">http://sfenvironment.org/</a>
2.12 Fund Innovative Emission Reduction	SF Environment <a href="http://sfenvironment.org/">http://sfenvironment.org/</a>
2.13 Develop a Sea Level Rise Adaptation Plan	Sea Level Rise Coordinating Committee <a href="http://sf-planning.org/">http://sf-planning.org/</a>
2.14 Launch Regional Waterfront Design Challenge	Rebuild by Design/Office of Resilience and Recovery/Planning <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
2.15 Promote Community Health through Preparing for Climate Change	Department of Public Health <a href="https://www.sfdph.org/">https://www.sfdph.org/</a>
2.16 Support Urban Watershed Planning	Urban Watershed Assessment/San Francisco Public Utilities Commission <a href="http://www.sfwater.org/">http://www.sfwater.org/</a>

### GOAL 3: ENSURE HOUSING FOR SAN FRANCISCANS TODAY AND AFTER A DISASTER

Initiative Task	Involved Parties/Initiative Website
3.1 Establish a Post-Disaster Interim Housing Strategy	Office of Resilience and Recovery/Department of Emergency Management <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
3.2 Create a Disaster Recovery Case Management Program and Database	Office of Resilience and Recovery/Department of Public Health/Human Services Agency <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
3.3 Establish a Citizens Advisory Recovery Committee	Office of Resilience and Recovery <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
3.4 Shelter in Place Health Impact Assessment	Department of Public Health <a href="https://www.sfdph.org/">https://www.sfdph.org/</a>
3.5 Quickly Repair and Reoccupy Our Housing Stock After a Disaster	Office of Resilience and Recovery <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
3.6 Leverage Navigation Centers for Post-Disaster Triage	Department to End Homelessness <a href="http://navigationcentersf.org/">http://navigationcentersf.org/</a>
3.7 Rapidly Rehouse San Franciscans Today and After a Disaster	Department to End Homelessness <a href="http://www.sfmayor.org/">http://www.sfmayor.org/</a>
3.8 Promote Neighborhood Affordability	Mayor's Office of Housing <a href="http://sfmohcd.org/">http://sfmohcd.org/</a>
3.9 Fund the Construction of Affordable Housing	Mayor's Office of Housing <a href="http://sfmohcd.org/">http://sfmohcd.org/</a>
3.10 Expand Access to Affordable Housing	Mayor's Office of Housing <a href="http://sfmohcd.org/">http://sfmohcd.org/</a>
3.11 Make New Developments More Affordable	Mayor's Office of Housing <a href="http://sfmohcd.org/">http://sfmohcd.org/</a>
3.12 Revive San Francisco's Public Housing	Mayor's Office of Housing <a href="http://sfmohcd.org/">http://sfmohcd.org/</a>
3.13 Continue the Rental Assistance Demonstration Program	HOPE SF/U.S. Department of Housing and Urban Development <a href="http://www.hope-sf.org/">http://www.hope-sf.org/</a>

### GOAL 4: EMPOWER NEIGHBORHOODS THROUGH IMPROVED CONNECTIONS

Initiative Task	Involved Parties/Initiative Website
4.1 Reimagine Public Libraries as Community Spaces	Office of Resilience and Recovery/San Francisco Public Library <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
4.2 Enhance Trust in Our Public Safety Officials	San Francisco Police Department <a href="http://sanfranciscopolice.org/">http://sanfranciscopolice.org/</a>
4.3 Forge Partnerships to Empower Neighborhoods	Office of Resilience and Recovery/Office of Workforce and Economic Development <a href="http://oewd.org/neighborhoods">http://oewd.org/neighborhoods</a>
4.4 Promote Neighborhood Environmental Health Education	Office of Resilience and Recovery/Department of Public Health <a href="https://www.sfdph.org/">https://www.sfdph.org/</a>
4.5 Build Capacity in Community-Based Healthy Organizations	Department of Public Health <a href="https://www.sfdph.org/">https://www.sfdph.org/</a>
4.6 Empower Neighborhoods through Increased Capacity	Neighborhood Empowerment Network <a href="http://empowersf.org/">http://empowersf.org/</a>
4.7 Learning from Bayview: Community Asset Mapping	Office of Resilience and Recovery <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
4.8 Develop a Public Digital Service Strategy	Committee on Information Technology <a href="http://sfcoit.org/">http://sfcoit.org/</a>
4.9 Receive and Issue Permits Electronically	Committee on Information Technology <a href="http://sfcoit.org/">http://sfcoit.org/</a>
4.10 Monitor Progress on Realizing Resilience Goals	Office of Resilience and Recovery <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
4.11 Launch a Collaborative Community Process	Office of Resilience and Recovery <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>
4.12 Build Partnerships to Advance Resilience	Office of Resilience and Recovery <a href="http://sfgov.org/resilientsf">http://sfgov.org/resilientsf</a>

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