




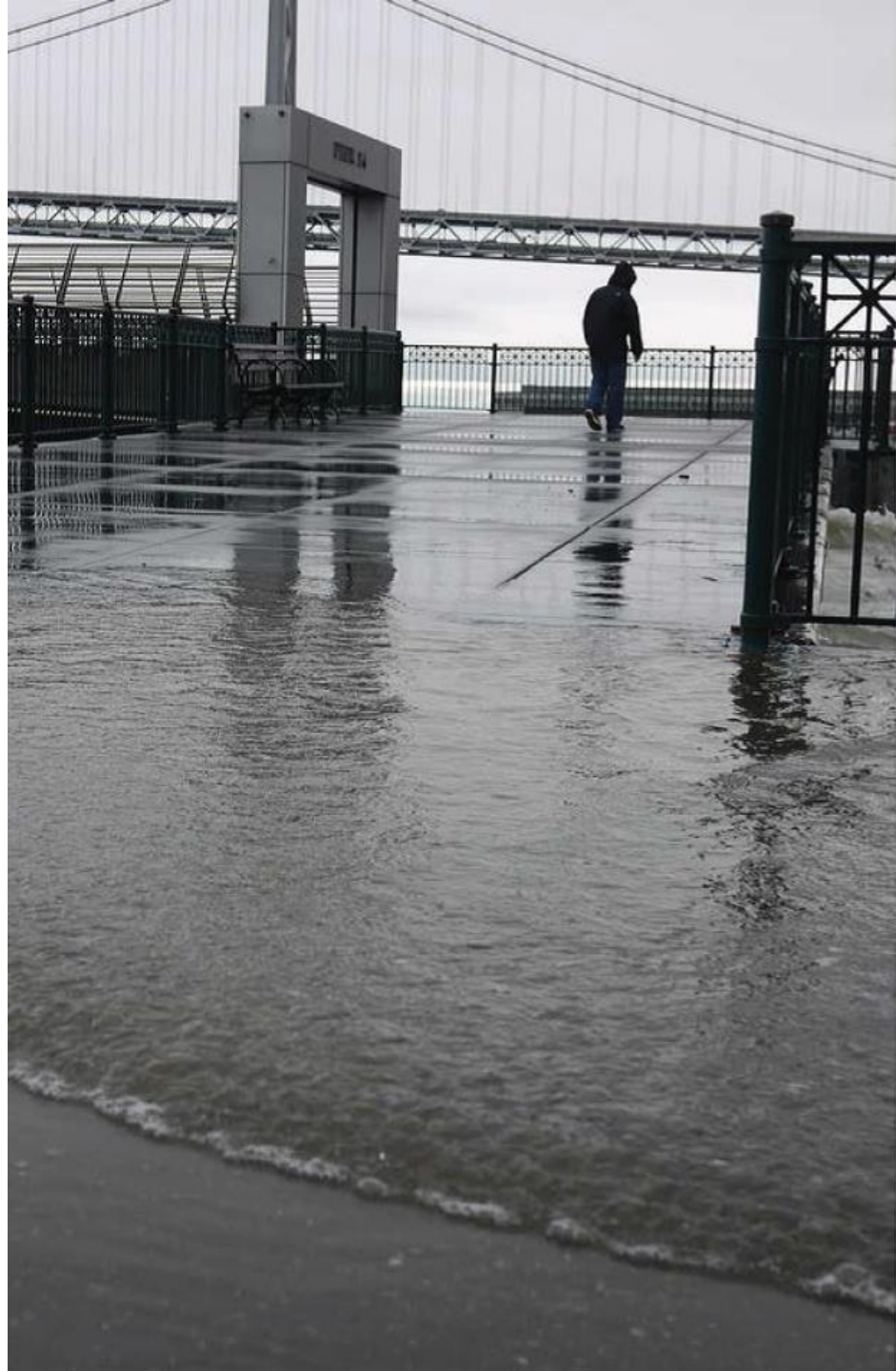
Preparing for Rain and Flooding in San Francisco

Climate Change and Your Health



San Francisco Department of Public Health • Climate and Health Program

Visit www.sfclimatehealth.org and follow @sfclimatehealth 



OBJECTIVES:

Get to Know the Facts

- What is climate change?
- How does flooding affect San Francisco?
- How does flooding affect your health?
- What can you do to prepare?

Weather vs. Climate?

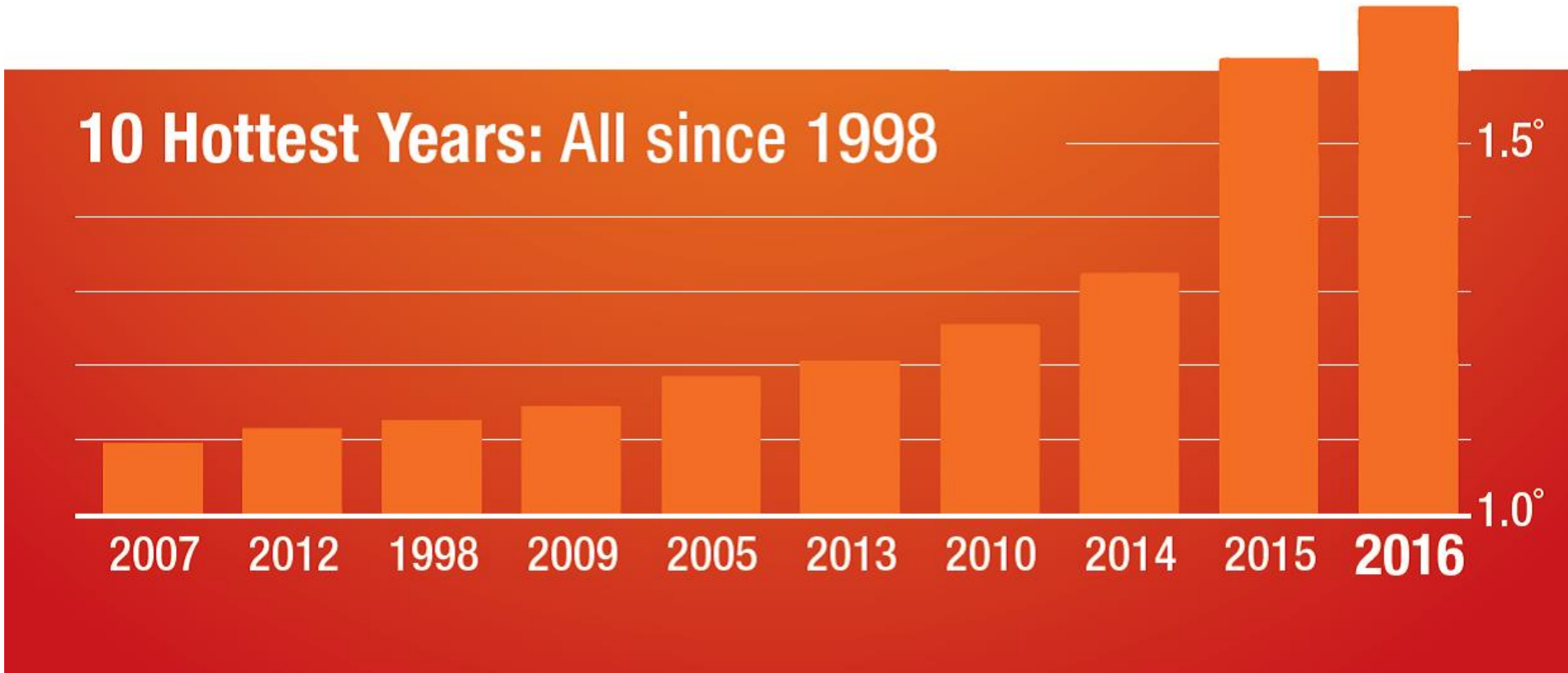
Weather

can change anytime
and varies a lot

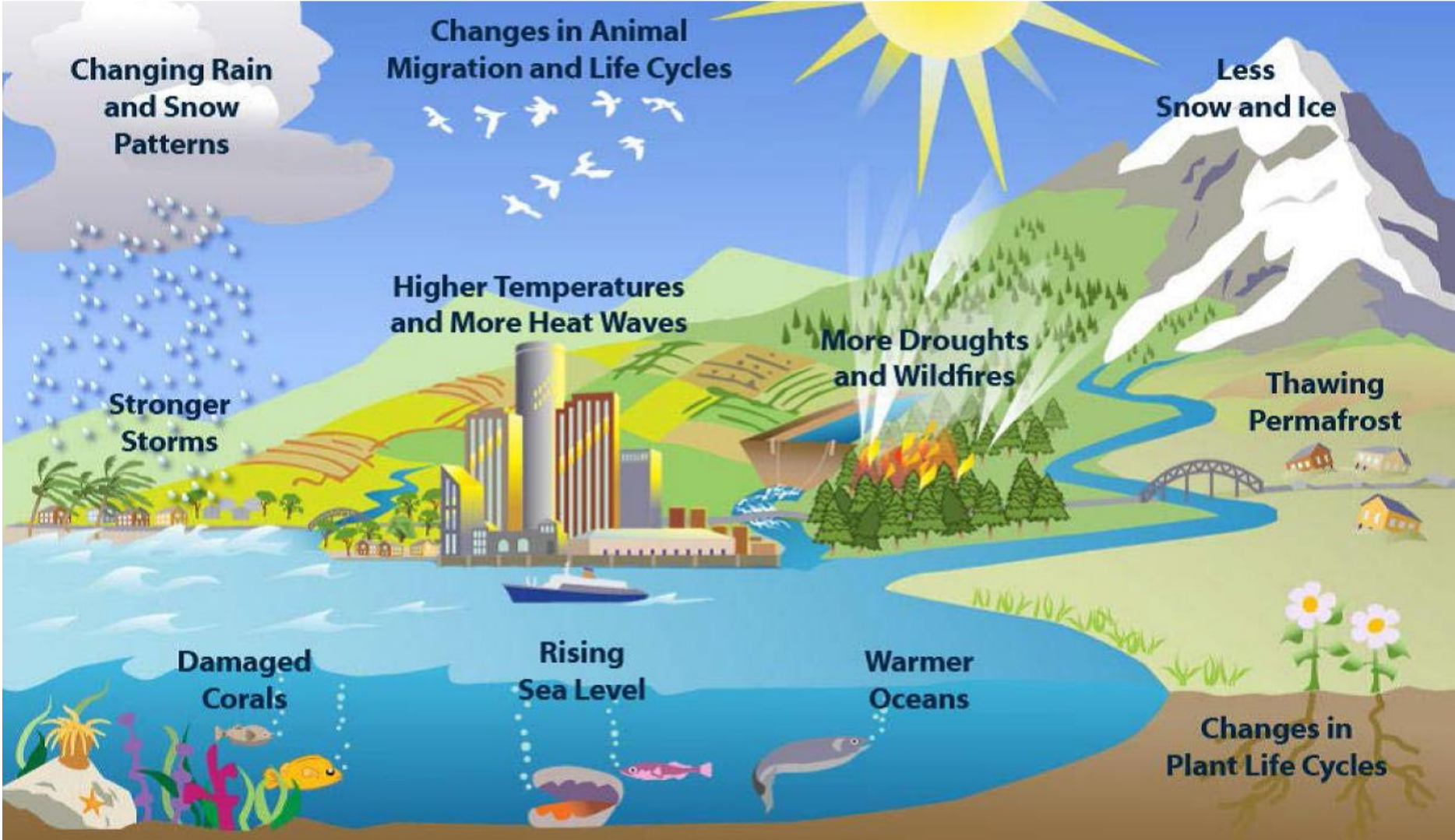
Climate

is a particular weather
pattern of a region

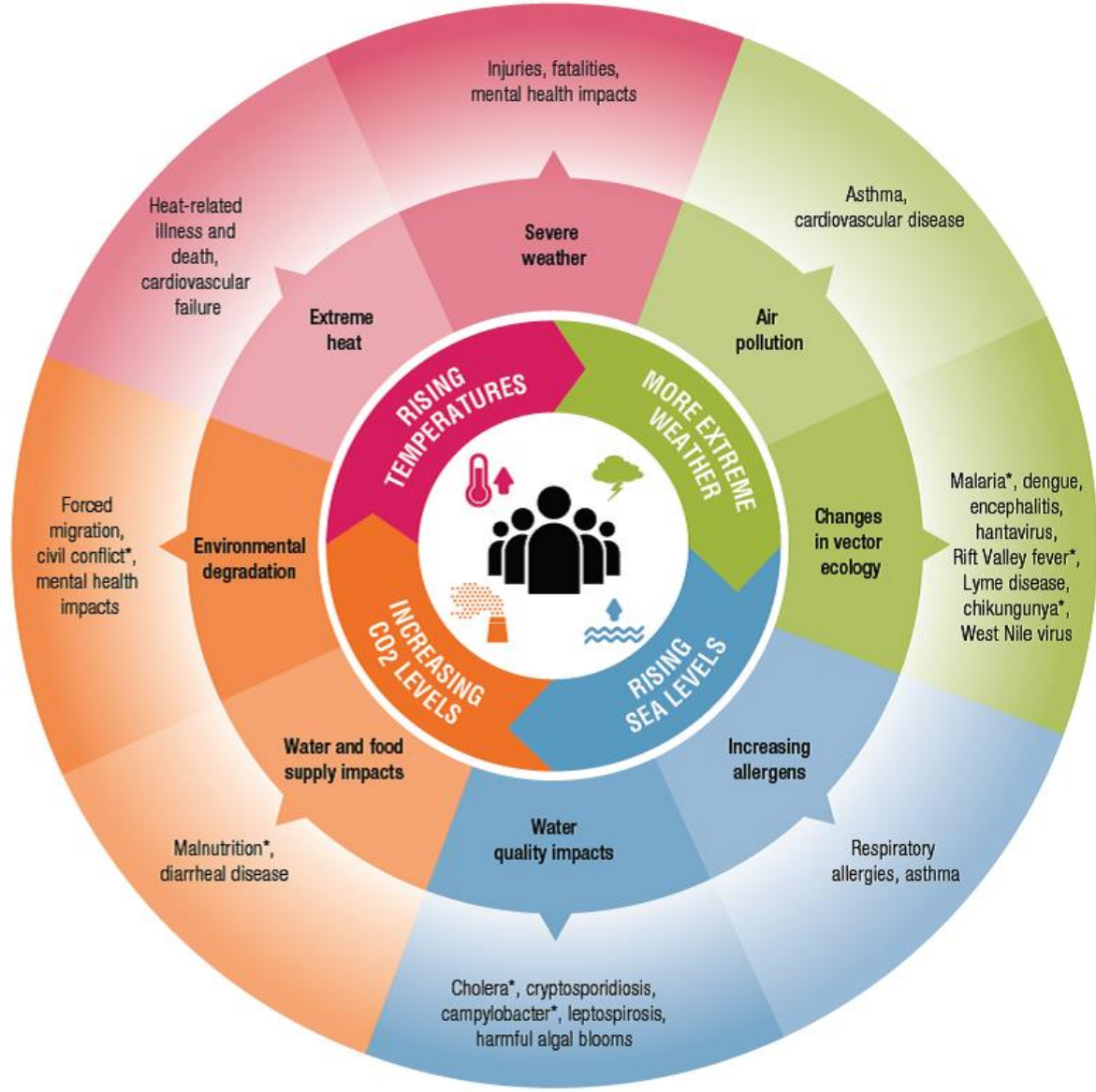
What is Climate Change?



Outcomes of Climate Change



Linking Climate Change to Health

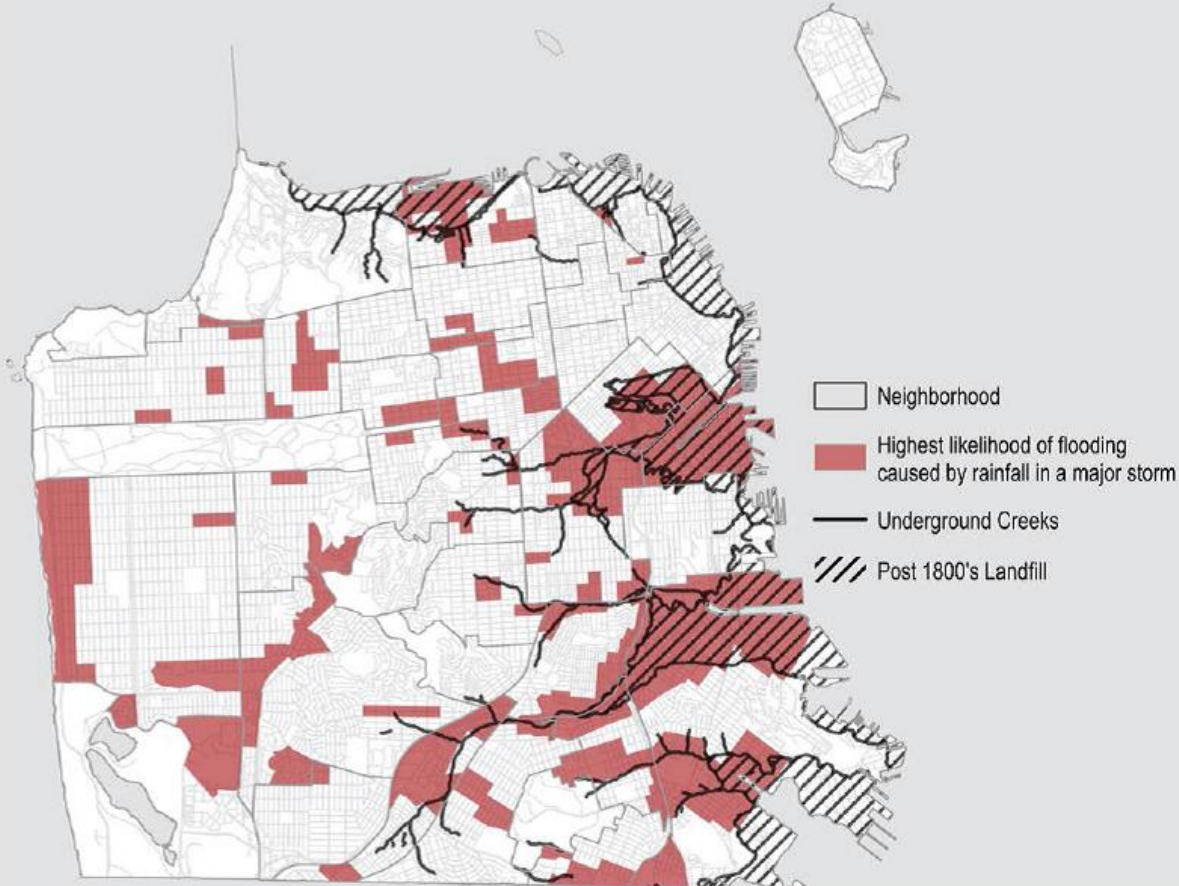


FLOODING:

Extreme Storms

- Precipitation ↗

Precipitation-related flood inundation and San Francisco Hydrography



FLOODING:

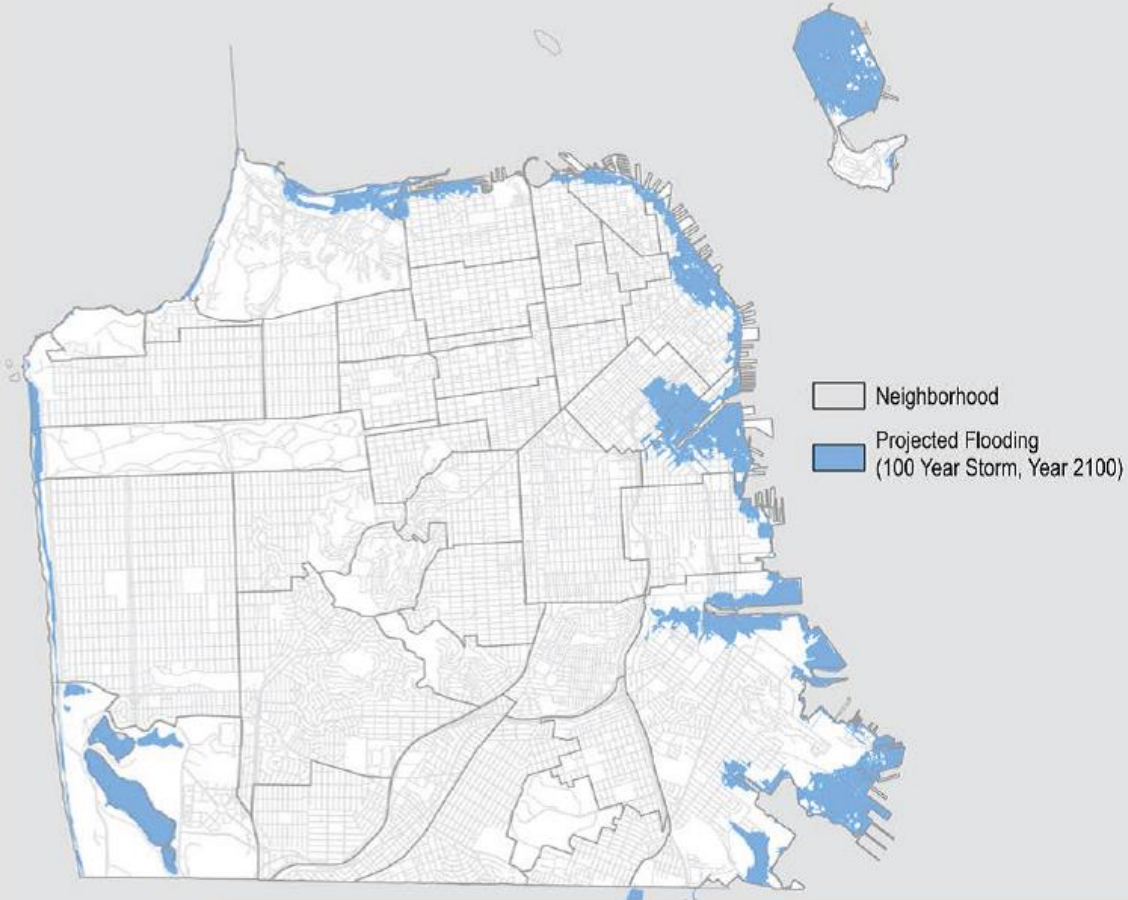
Coastal Flooding

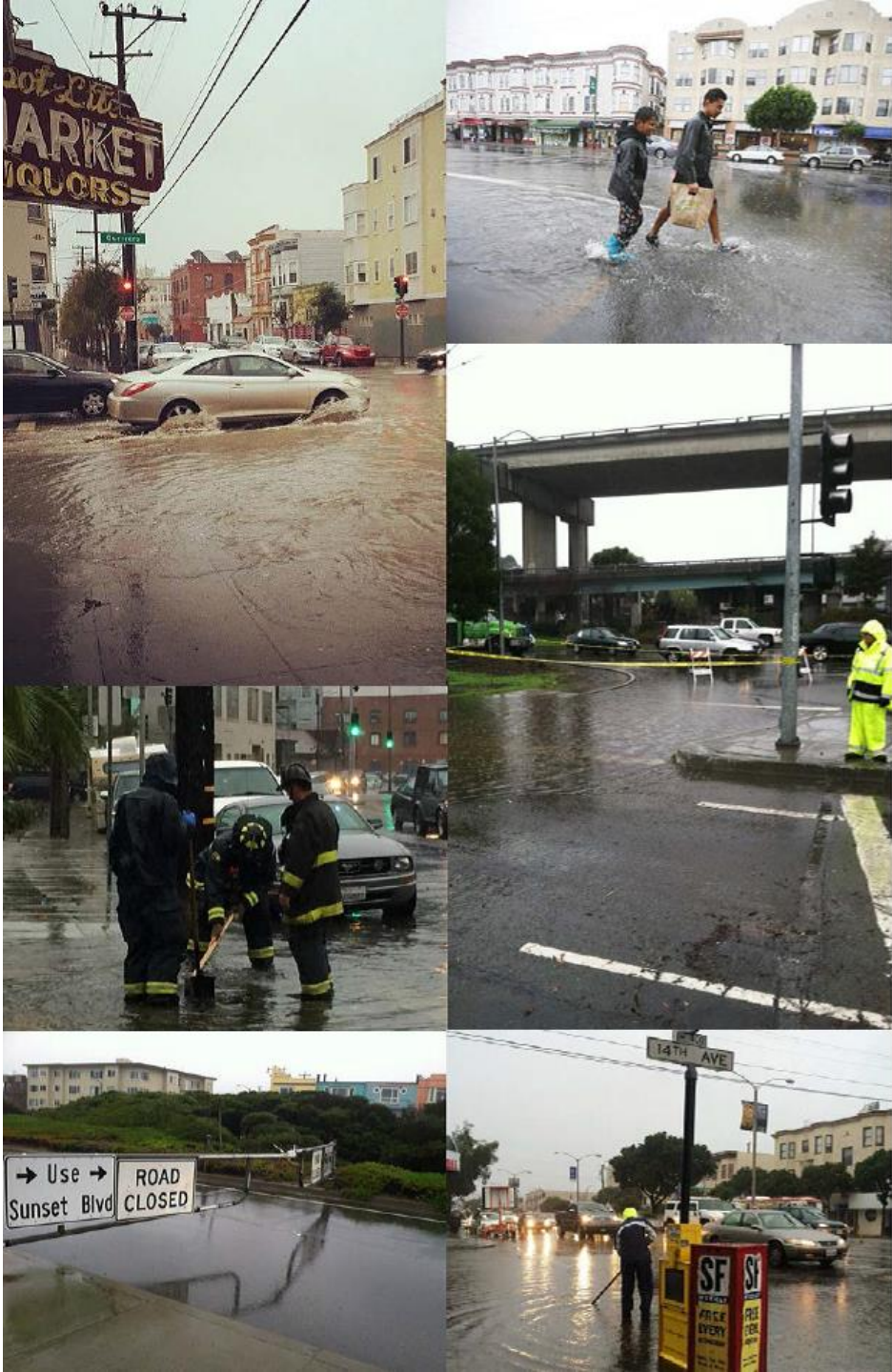
Climate Change Flood Projections

Sea Level Rise Projections	2050	2100
Most Likely	11"	36"
Upper Range	24"	66"

Sea Level Rise + Storm Surge	2050	2100
Most Likely	53"	66"
Upper Range	78"	108"

Projected Sea Level Rise + Storm Surge
Most Likely Scenario, 2100
36in Sea Level Rise + 42in Storm Surge





EXAMPLE:

December 11, 2014

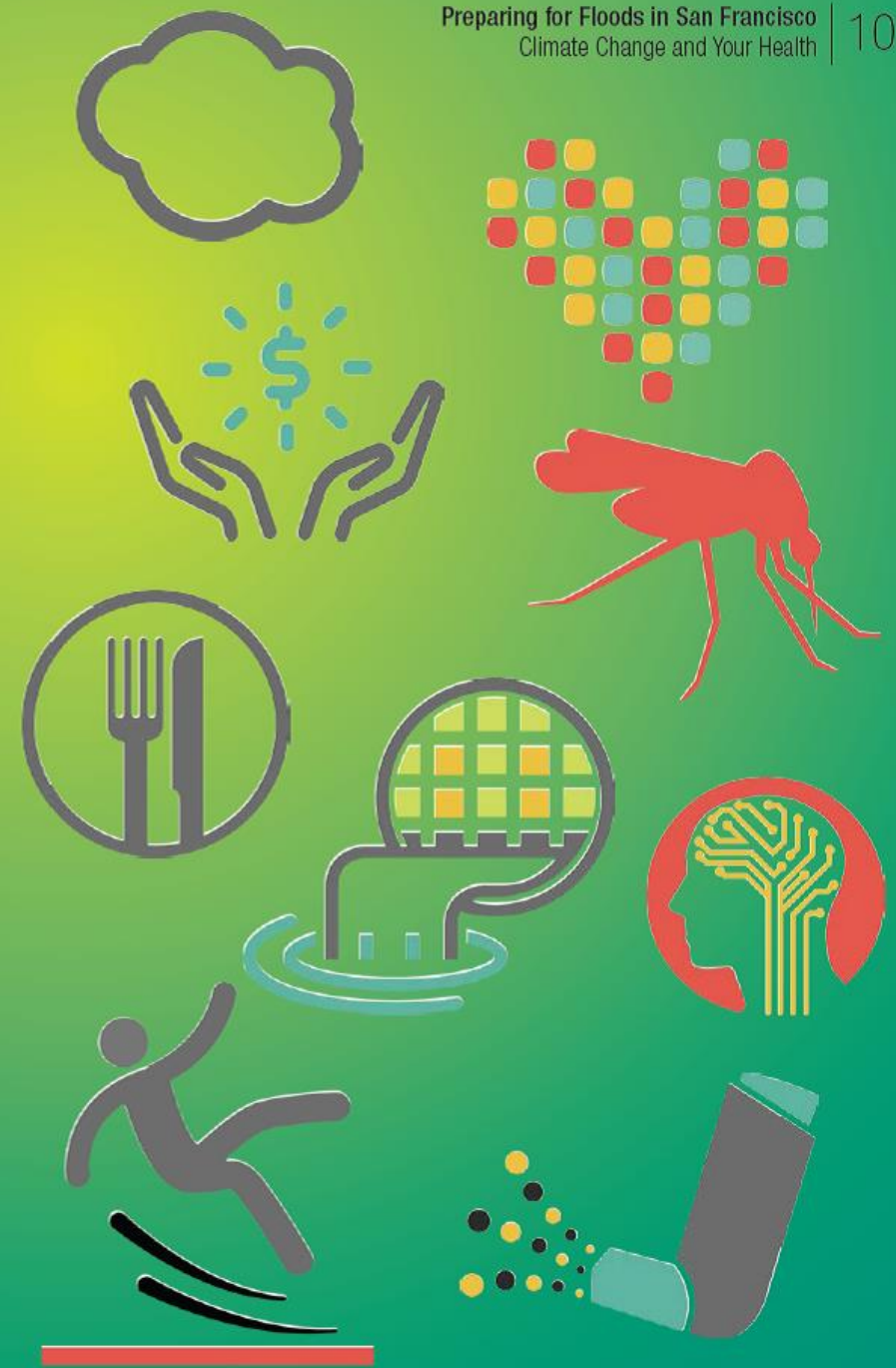
Storm Surge: **18 inches**
Precipitation: **3.4 inches**

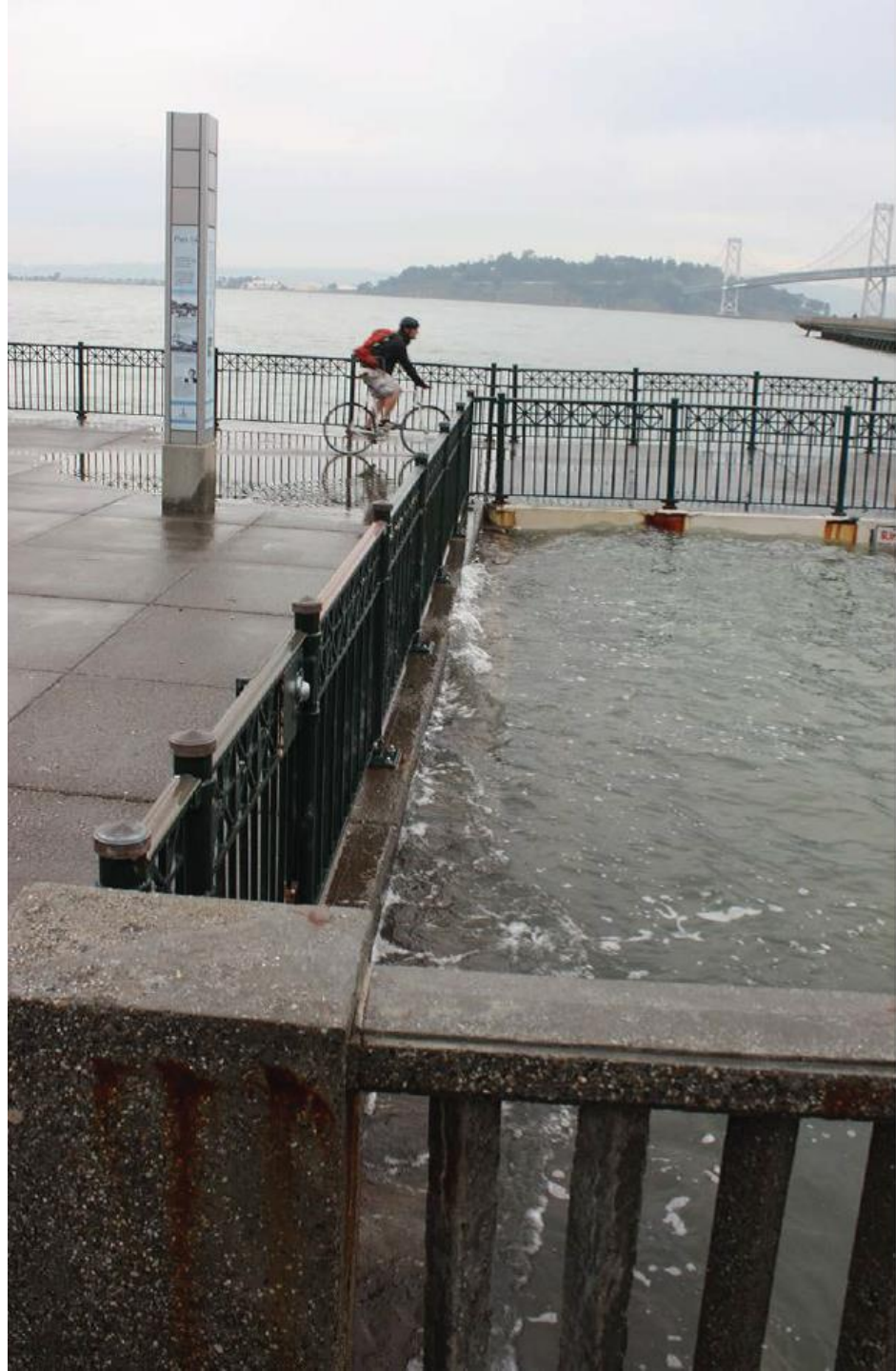
Results:

- 80,000 homes & business without power
- All SFUSD schools closed for day
- BART & MUNI delays & closures
- Nearly 300 flood inundation-related 311 calls
- Great Highway closed & traffic diverted



So how does flooding impact my health?





Injuries

Most Common:

- Blunt trauma
- Sprains
- Motor vehicle crashes
- Bike/Pedestrian injuries
- Electrocutation



Foodborne Illness

- Ocean temp ↗
- Pacific algae bloom
- Algae bloom linked to neurotoxics





Respiratory Illness

- Stormwater Intrusion / Household Dampness →
- Exposure to Mold

People living in moldy homes are...



...50% more likely to currently have asthma.



...33% more likely to have ever been diagnosed with asthma.



...50% more likely to cough.



...44% more likely to wheeze.



...52% more likely to have upper respiratory tract symptoms.



...linked to a 50% increase in the odds of having at least four colds in a year.



Water-borne Illness

- ↗ gastrointestinal problems
- Cases typically ↗ after heavy rainfall
- Direct contact with water



Vector borne Disease

- Standing water
- Mosquitos
- Rodents



Power Outages

- Electricity-dependent populations
 - Medical devices
 - Food
 - Heating / cooling
 - Elevators
 - Transportation
- CO poisoning

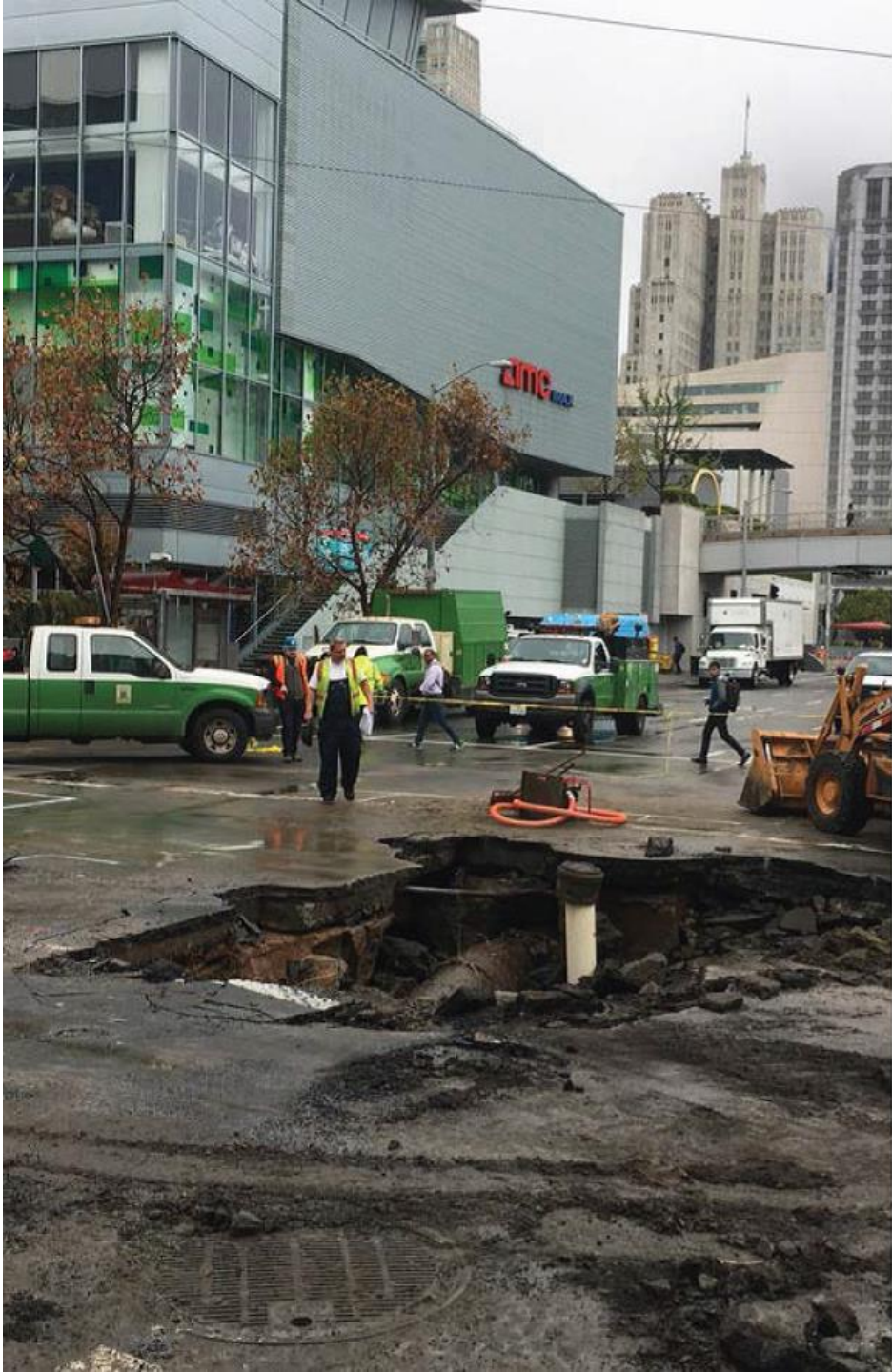




Mental Health

- Anxiety
- Depression & bipolar disorder
- Post-traumatic stress disorders
- Preparing & recovering simultaneously





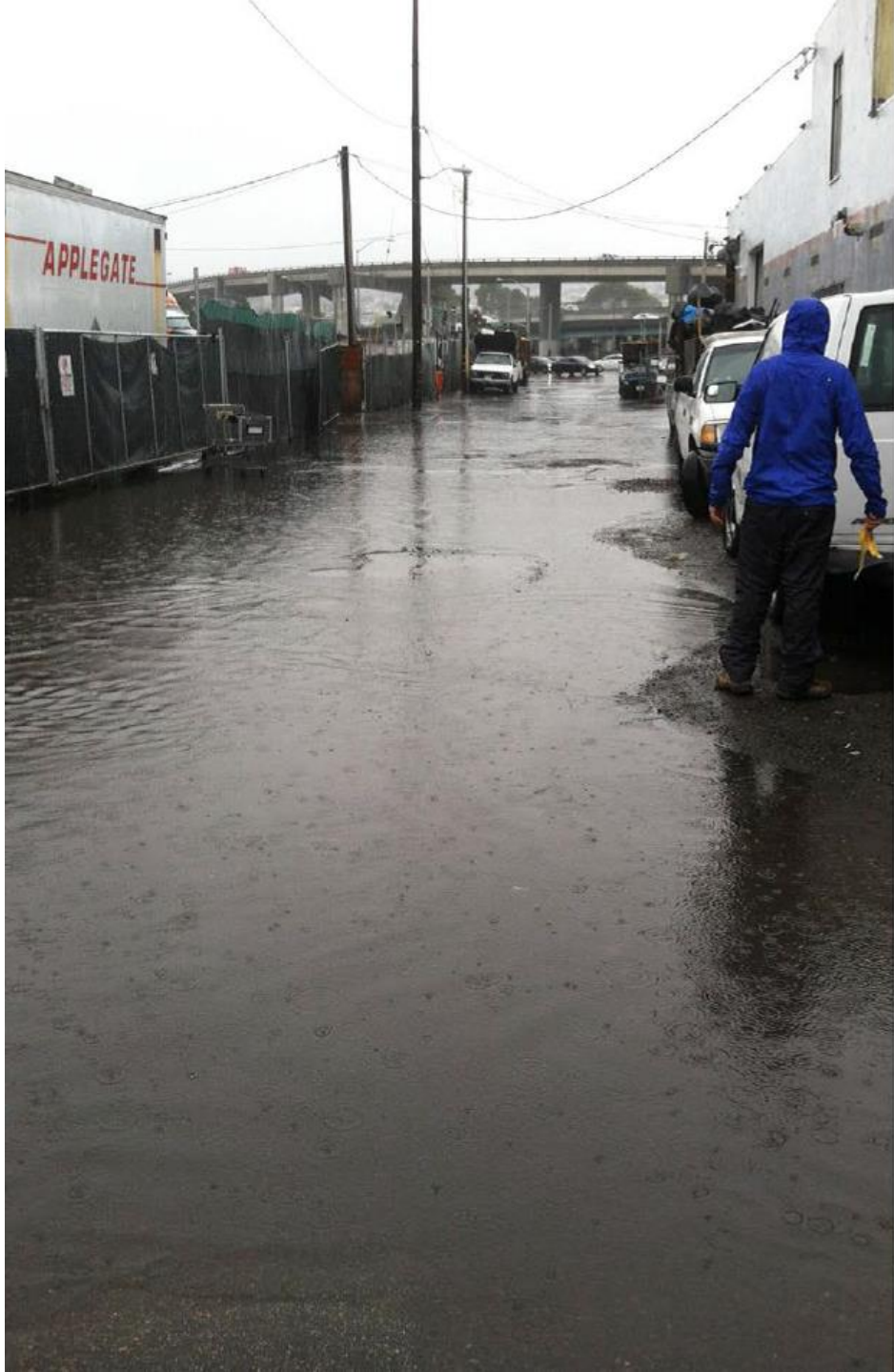
Income Loss

- Building improvements
- Replace damaged property
- Transportation delays & business closures
- School closures = pay for childcare or miss work
- Medical bills
- Ex: Sandy cost \$19 billion in private losses

Why does this matter?

“Climate change will impact all San Franciscans, though not all San Franciscans will suffer the impacts evenly.”





WHAT MAKES SOMEONE
VULNERABLE?

Exposure

- Proximity to coastal flooding
- Proximity to rainfall-related flooding
- Low lying areas



WHAT MAKES SOMEONE VULNERABLE?

Living Conditions

- Homeless population
- Housing quality
- Social isolation



WHAT MAKES SOMEONE
VULNERABLE?

Health Conditions

- Asthma
- Mental health
- Physical disabilities
- Dependency on electronic medical equipment



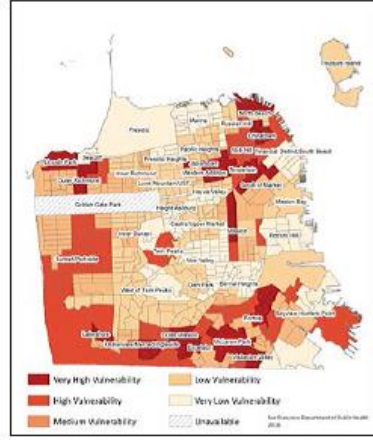
WHAT MAKES SOMEONE
VULNERABLE?

Social Vulnerability

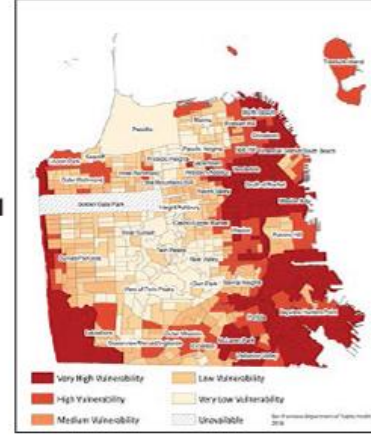
- Age
- Race
- Income
- Education
- Language
- Disabilities or Access and Functional Needs

Mapping

Health



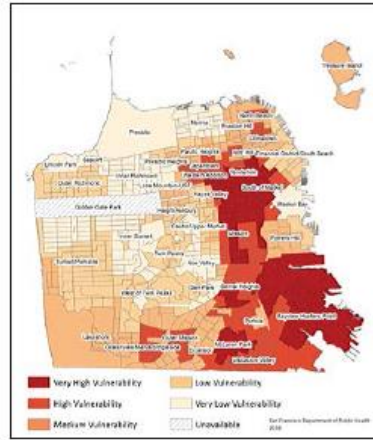
Housing



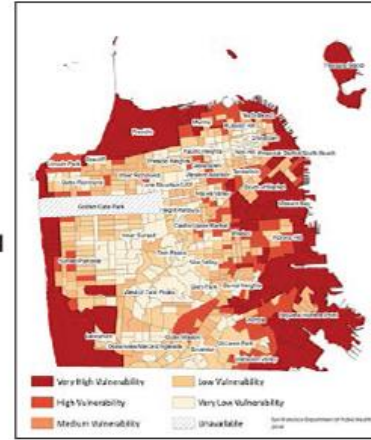
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Social

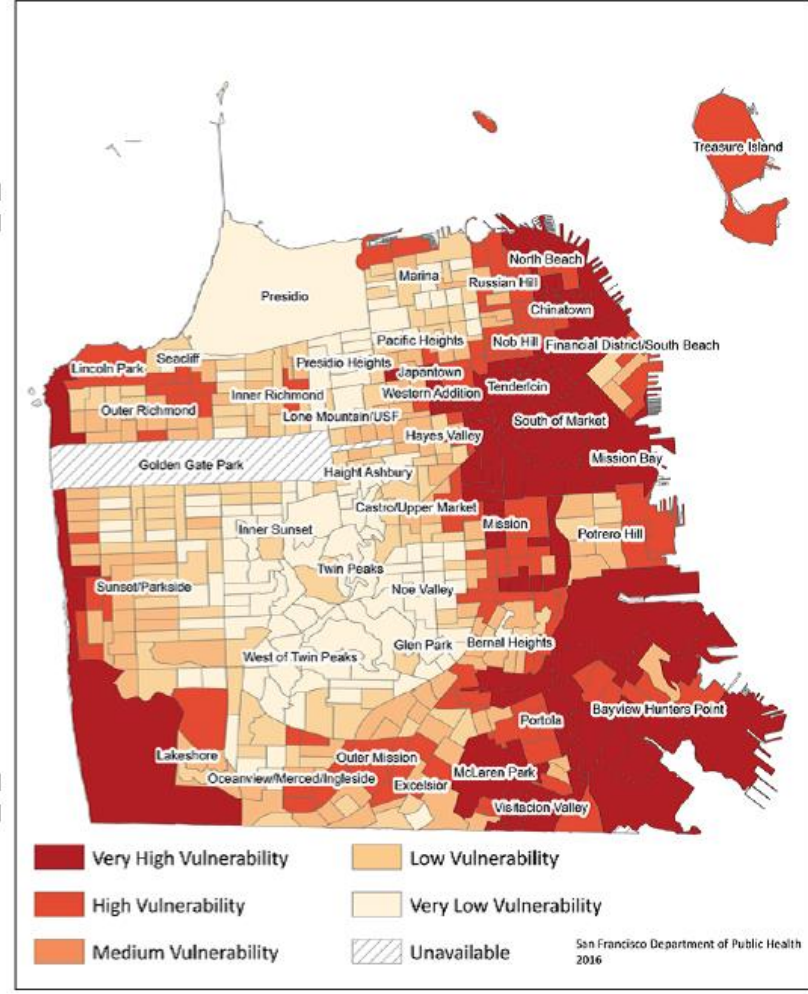


Exposure



+

=



So what can I do?

**San Franciscans!
Become climate ready!**



Get to know your neighbors



Get to know the facts



Help tackle climate change





PLAN & PREPARE:

Yourself

Make a Plan / Get a Kit /
Stay Informed

- SF72.org
- Local TV
- Local radio:
 - KGO 810
 - KCBS 740
 - KNBR 680
- AlertSF.org





PLAN & PREPARE:

Your Home

- Flood insurance
- Inspection, clear gutters & storm drains
- Move items off floor – chemicals
- Tie down/move items indoors
- Sandbags: 10 free at Kansas & Marin Streets





RESPOND:

During the storm

- Report power outages to PG&E: 1-800-743-5002
- Call 911 only for **life threatening** situations
- Call 311 for **informational** purposes
- Avoid flood waters
- No generators/BBQs inside
- No ovens as heat





RESPOND:

Power Outage

FOOD SAFETY BEFORE, DURING AND AFTER A POWER OUTAGE

Know how to keep food safe before during and after emergencies. Hurricanes, tornadoes, winter weather and other events may cause power outages. Follow these tips to help minimize food loss and reduce your risk of foodborne illness.

BEFORE PLAN AHEAD (IF YOU CAN) ...

- Put appliance thermometers in your refrigerator and freezer.
- Keep freezer **0°F** or below
- Refrigerator **40°F** or below
- Freeze containers of water and gel packs to help keep food cold if the power goes out.
- Freeze refrigerated items such as leftovers, milk, and fresh meat and poultry that you do not need immediately.
- Group foods together in the freezer to help food stay colder longer.
- If you think power will be out for an extended period of time, buy **dry or block ice** to keep the fridge or freezer cold.
- Store nonperishable foods on higher shelves to avoid flood water.

DURING WHILE THE POWER IS OUT ...

Keep the refrigerator and freezer doors closed to maintain cold temperature.

CLOSED

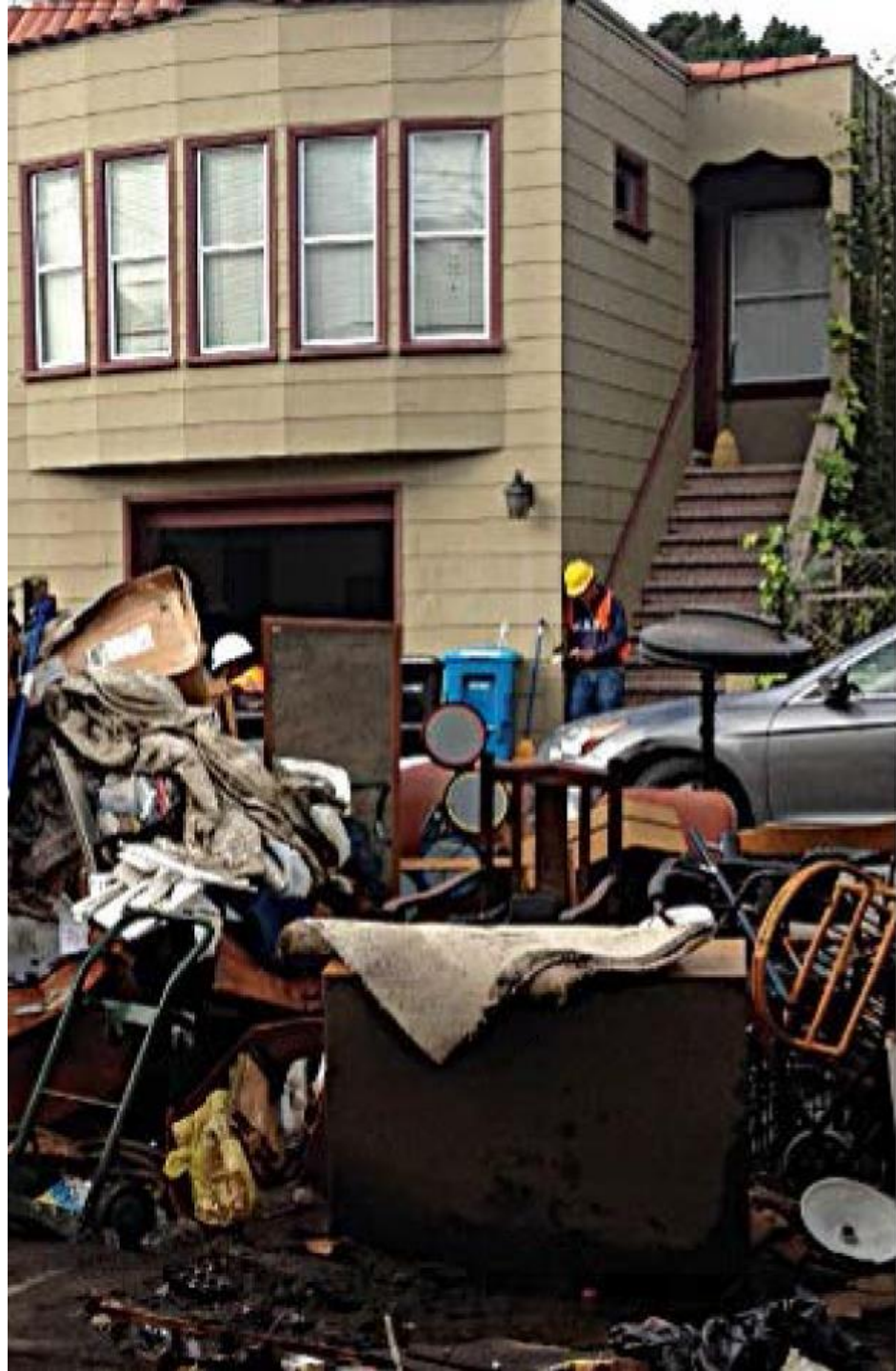
IF DOORS STAY CLOSED ...

... a full freezer will hold its temperature for	48 HOURS	24 HOURS if half-full
... a fridge will keep food safe for	4 HOURS	



Take Care

- Check on neighbors
- Acknowledge & accept feelings
- Stay informed, limit media intake



RECOVER:

Clean Up

- Check on neighbors
- Fans & dehumidifiers
- 1 cup bleach/gal of water
- Flood damage:
 - SFDPH Healthy Homes & Neighborhoods: 415-252-3805
 - rebuildingtogethersf.org
- Gas problems:
 - PG&E: 1-800-743-5000



DO YOUR PART:

Live Sustainably

The graphic features the San Francisco City and County Seal at the top. Below it, the text "SAN FRANCISCO CLIMATE ACTION" is written in a serif font. The numbers "0 50 100" are prominently displayed in large, colorful, sans-serif font. Below the numbers is a stylized tree with roots extending downwards. The graphic is divided into four quadrants, each with a specific goal and icon: "0 Zero Waste" with a green and blue recycling bin; "50 Sustainable Transit" with a bicycle; "100 Renewable Energy" with a power plug; and "ROOTS Capturing Carbon" with a tree root system. Each quadrant includes the "SAN FRANCISCO CLIMATE ACTION | 0 50 100 ROOTS" logo at the bottom.

0 Zero Waste

50 Sustainable Transit

100 Renewable Energy

ROOTS Capturing Carbon



Thank you!



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