San Francisco Planning

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EXECUTIVE SUMMARY
SUSTAINABLE NEIGHBORHOODS
HEARING DATE: JANUARY 9, 2020

Date:	December 23, 2019
Case No.:	2019-023145CWP
Project:	**San Francisco Sustainable Neighborhoods Program**
Staff Contact:	Lisa Fisher 415-575-8715, lisa.fisher@sfgov.org
Reviewed by:	Adam Varat, 415-558-6405, adam.varat@sfgov.org
Recommendation:	**Informational**

BACKGROUND

San Francisco has a strong history of initiating, strengthening, and implementing policies that support sustainability. Today's global climate crisis expands the need and scope of this work to help reduce global heating through greenhouse gas emissions reductions (mitigation) and protect the city and its people from the unavoidable impacts of climate change (adaptation). Although numerous City plans, policies, and regulations support these aims, they are often distributed across multiple documents and City codes. This current regulatory reality can result in missed opportunities for projects to increase the effectiveness, efficiency, and benefits of their investments to sustainability, resilience, climate—as well as support equity, affordability, housing, financial, and other challenges. Likewise, it can be difficult for individual project sponsors and decision makers to connect design and construction decisions to the attainment of citywide goals, like achieving a net-zero city by 2050 per the 2016 Paris Climate Accords. In today's complex world, additions and evolutions to our built environment are either part of these needed solutions or costly future retrofits.

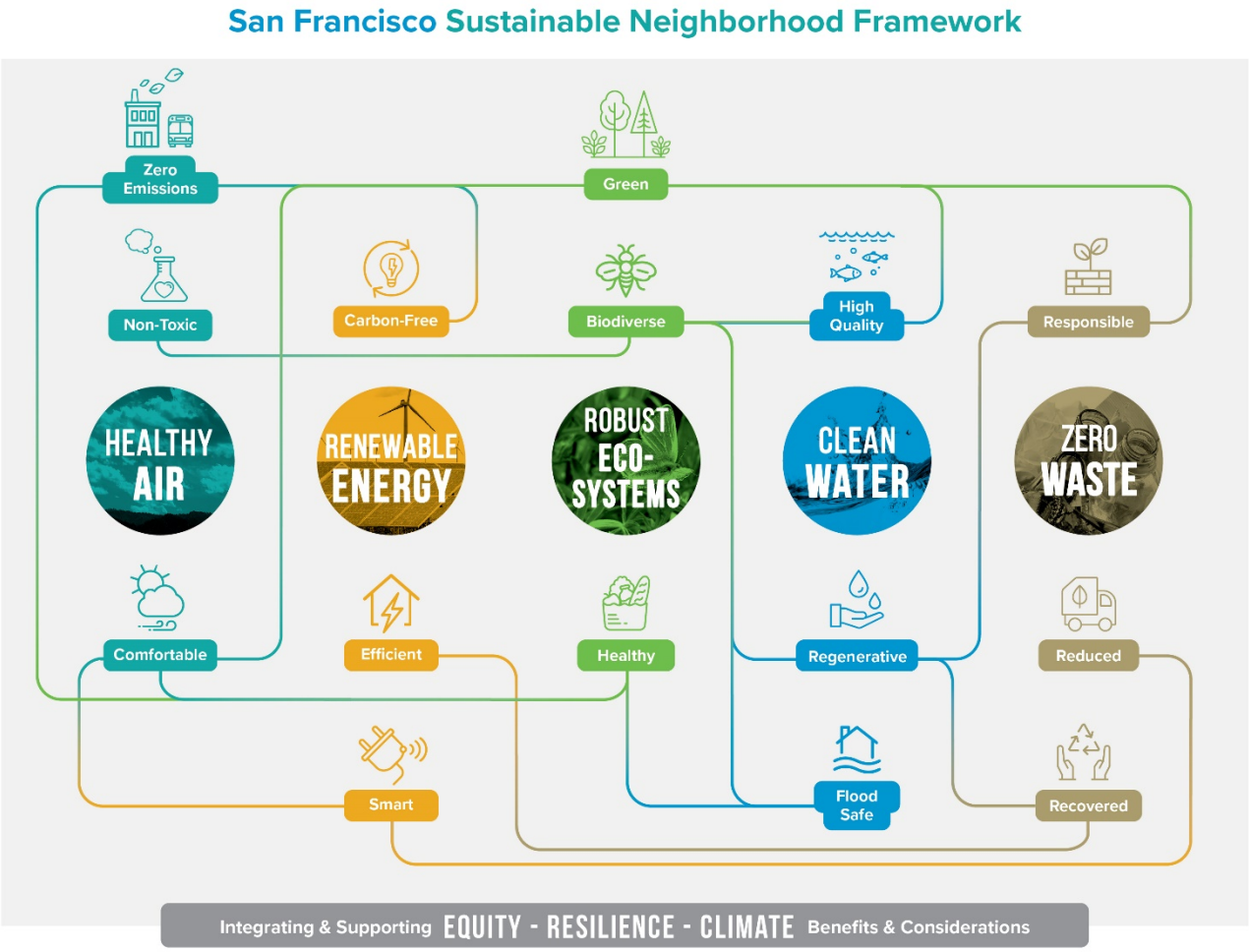
The Sustainable Neighborhood Program has been particularly inspired by the opportunities and challenges presented in area planning, as well as the myriad of design, review, and approval processes associated with major development projects and their agreements. San Francisco Planning initiated, and has been leading, the Program's development in collaboration with fellow agencies over the past few years. It has evolved through our "eco-district" work (e.g., Central SoMa Area Plan, Mission Rock, etc.), the Sustainable Systems Framework, and global best practices. The Program is intended as a comprehensive approach to amplifying environmental performance, quality of life, and community co-benefits in any scale plan or project.

Sustainable Neighborhood Program Summary

The Program is comprised of four main elements or tools: a vision framework; program summary; road map/project worksheets; and online guide. It aims to synthesize sustainability, climate, and resilience initiatives and regulations across City agencies in order to enable public and private investments in the built environment to achieve net-positive projects that support broader citywide initiatives.

The Framework is centered on five goals for any project or neighborhood to achieve (healthy air, renewable energy, clean water, robust ecosystems, and zero waste) through the pursuit of 15 sub-targets (see diagram nelow). Its development employed five guiding principles: people-centered, built on best practices, effective & efficient, compelling & easy-to-use, and flexible/scalable. The Framework also embeds three critical imperatives to be considered and supported throughout any strategy or combination thereof:

- **Equity.** Adopting more sustainable practices can help address health and prosperity disparities faced by communities of color. Sustainability strategies should be pursued with thoughtful procedural, structural, and distributional considerations and explicitly intend to benefit vulnerable populations.
- **Climate.** Well-designed sustainability strategies/actions can help minimize climate change by eliminating carbon emissions. Per the City's Climate Action framework, this includes co-benefits to renewable energy, sustainable mobility, zero waste, and carbon sequestration. Likewise, by following the dynamic framework, inadvertent increases to greenhouse gas emissions can be avoided.
- **Resilience.** Resilient communities include people, buildings, and infrastructure that can withstand and recover from severe shocks and slower-to-accumulate stressors. As the effects of climate change are already here, investing in resilience today protects against current challenges (often while reducing energy and operational expenses) while reducing costly future repairs.



As a platform, the overall **Sustainable Neighborhood Framework** and tools seek to:

- Provide a bold vision and set of priorities for sustainable development throughout the City
- Identify and leverage system-based approaches to achieving one target in a way that benefits others
- Help identify opportunities, constraints, best practices, and potential partnerships for success
- Advance equity and climate resilience through the thoughtful, integrated, and innovative pursuit of environmental sustainability regulations
- Streamline (not add to) inter-agency review by providing a consistent platform for iterative design and decision making with project sponsors around environmental sustainability topics

Specifically, the **Sustainable Neighborhood Road Map** (see below) is a set of five worksheets, one for each goal. Each table is organized around the three targets relevant to that goal. The columns summarize core approaches or pathways through which the project can achieve results (vertical vs. horizontal decisions), key existing regulations (at the time of publication), specific objectives the City urges the project to achieve by build-out (non-binding but driven by existing or anticipated citywide goals, policies, and/or regulations), and a suite of recommended strategies. As the road map strives to set inspiring targets but not be prescriptive about how a project may achieve them, especially important for quickly evolving technologies, the strategy sets are merely a starting place.

[GOAL 1]

ENSURE NON-TOXIC & COMFORTABLE AIR INDOORS & OUT

EQUITY

OPPORTUNITIES: Reduced health impacts of cumulative indoor & outdoor air pollution (respiratory and cardiovascular) and associated hospital visits; increased co-benefits from just transition & infrastructure investments (solar)

CONSIDERATIONS: access to sustainable transportation & EV charging, potential disproportionate cost implications (esp. for renters) and climate justice burdens

RESILIENCE

OPPORTUNITIES: Ensure occupants can shelter in place during extreme heat and poor air quality days, support local climate-smart manufacturers remaining in business, reduce operations expenses that help community stabilization

CONSIDERATIONS: pressure of increased renewable electricity demands on systems and markets, increased use of air conditioning and related GHG

CLIMATE

OPPORTUNITIES: Eliminated GHG emissions from building systems, materials, and operations; increased renewable energy demand; reduced displacement of GHG emissions to communities where materials are produced or transported

CONSIDERATIONS: Potential for electric vehicle prevalence to increase VMT and congestion, potential unknown impacts of new technologies and materials

TARGETS	APPROACHES	EXISTING REQUIREMENTS	ENHANCEMENTS *(CITY COMMITMENTS)*	BEST-PRACTICE STRATEGY DIRECTORY
ZERO-EMISSION environments	LAND USE	/ Proximity of density to transit	/ On-site grocery & childcare	Design ground-floor space to appeal to tenants that provide needed neighborhood services
	SYSTEMS & OPERATIONS	/ All-electric preferred [GBC '20]	/ *100% fossil-fuel free heating, cooling, hot water, appliances* / *100% renewable energy (see Energy)*	Use building or development-scale electric heat pump systems
				Specify all-electric appliances free of chemical refrigerants
				Eliminate delivery and passenger idling, providing plug-in areas for refrigerated delivery trucks
	CONSTRUCTION PRACTICES	/ Construction air filtration [GBC]	/ 100% diesel-free generators	Eliminate diesel emissions from generators
				Require construction equipment to use clean fuels and minimize idling
	MATERIAL SELECTION	/ GHG Emissions checklist [CEQA]	/ 50% local sourcing	Source at least 50% of construction materials from <500 miles
				Source recycled materials and/or materials manufactured with renewable energy
	SUSTAINABLE TRIPS	/ Transportation Demand Management / Sidewalk widening, bike racks [BSP, PC]	/ Bike parking space per bedroom / 10% Class 1 spaces fit cargo bikes	Design bike parking areas scalable to 1 stall per bedroom
				Design flexible spaces for telecommuting or onsite co-working for occupants
				Coordinate with adjacent bicycle network design and construction
	ELECTRIC VEHICLES	/ 100% EV-ready off-street parking [EC] / EV chargers @ 5% of spaces [EC]	/ Off-street, public EV charging stations / Zero-emission public realm & open space	Design at least 50% of off-street parking spaces to service electric vehicles and bicycles
				Use manual and/or electric powered landscape maintenance equipment
100% NON-TOXIC interiors	MATERIAL SELECTION	/ Low-emitting materials [GBC/LEED]	/ Zero-VOC interior materials	Specify carbon-smart insulation (wood, straw, clay-straw, hemp, cork, sheep's wool, etc.)
				Use formaldehyde-free wood products and glues
	AIR FILTRATION	/ High-quality air filtration [Art 38]	/ 100% of occupants can remain during unhealthy air quality events	Implement energy recovery ventilators and passive ventilation
				Use HVAC systems that can adjust filter levels to manage wildfire smoke
COMFORTABLE micro-climates	PASSIVE EXTERIOR COOLING	/ optional LEED point	/ X% open space area contains heat respite / Minimum 1 living walls along open spaces	Integrate permanent and flexible shading (tree canopies, screens, PV panels) on roofs and open spaces
				Specify cool and high-albedo unit pavers

Sustainable Neighborhood Framework [23 December 2019 draft]

RECENT PROCESS & PILOTS

Neighborhood- or district-sized developments are often an ideal scale for maximizing the effectiveness and efficiency of environmental sustainability and climate resilience aims. In late 2017/early 2018, the Potrero Power Station and Balboa Reservoir projects were invited to help pilot the Sustainable Neighborhood Framework beta during in their developments. Leading up to and throughout these processes, Planning convened separate content working sessions with SF Environment, SFPUC, the Mayor's Office, OEWD, and SPUR. Both projects were provided an overview presentation and a customized Road Map. In practice, the development teams have been using the road maps to determine project-specific goals and the standards and guidelines (required) and considerations (recommendations) included in their approval documents. The comprehensive five-page Road Map lives as a compendium in the design standard's appendix. Throughout, the project sponsor and City family teams have worked with Planning staff in an iterative process to use and refine the framework to inspire best project outcomes.

NEXT STEPS

Planning Department staff look forward to hearing discussion and suggestions from the Planning Commission. Over the next months, we aim to: finish the pilots with Potrero Power Station and Balboa Reservoir; conduct stakeholder workshops with designers, developers, environmental groups; and refine the contents and evolve the spreadsheet-based tools into dynamic online formats. We propose to return to the Planning Commission in the summer with a resolution for action.

REQUIRED COMMISSION ACTION

Planning staff brings this item as information for the Commission to consider and provide guidance on how to best leverage this Planning Department tool to best support environmental sustainability, resilience, climate, and equity aims.

RECOMMENDATION: INFORMATIONAL

Attachments:

none

SUSTAINABLE NEIGHBORHOOD PROGRAM
OVERVIEW

INFORMATIONAL HEARING

San Francisco Planning

Lisa Fisher

Resilience & Sustainability Lead
Citywide Planning Division

January 9, 2020

PRESENTATION ELEMENTS

1. Climate Challenge Overview
2. Proactive Climate Resilience in San Francisco
3. Sustainable Neighborhood Program & Tools
4. Next Steps

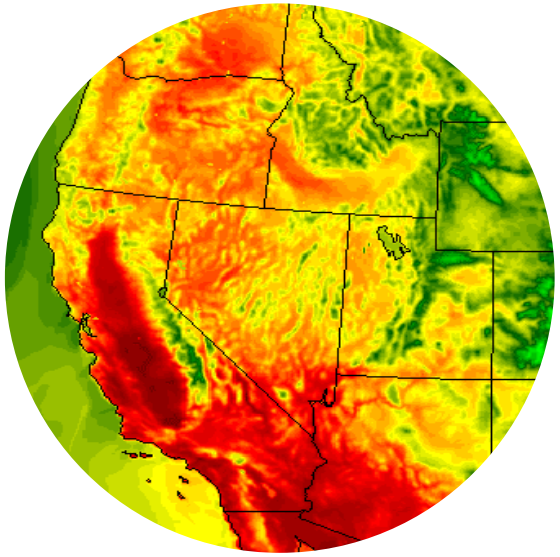

CLIMATE CHALLENGE
OVERVIEW

THE GLOBAL CLIMATE CRISIS **HAS HIT HOME**

Drought & Wildfire

Poor Air Quality

Sea Level Rise & Flooding



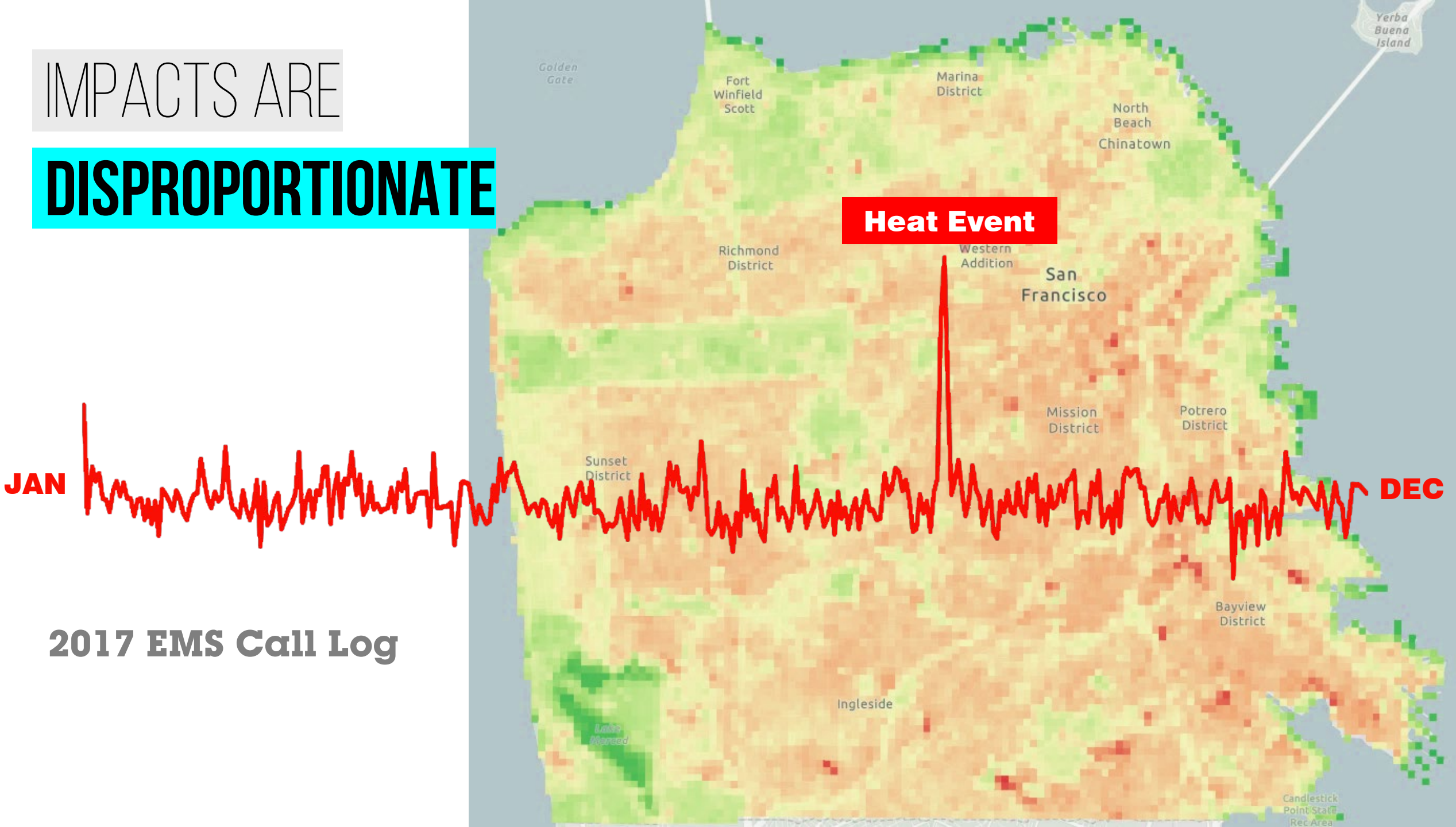
Extreme Heat

ALONGSIDE OTHER CHALLENGES & **CURRENT CITY PRIORITIES**

- Housing & community stabilization
- Equity & environmental justice
- Public health & safety
- Responsive & smart public investment

IMPACTS ARE

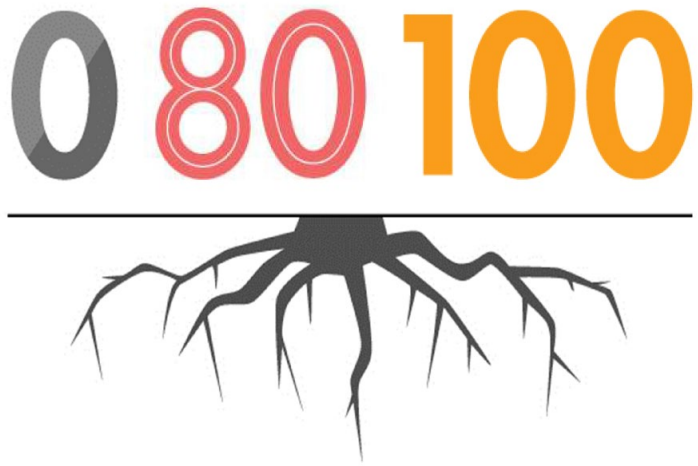
DISPROPORTIONATE

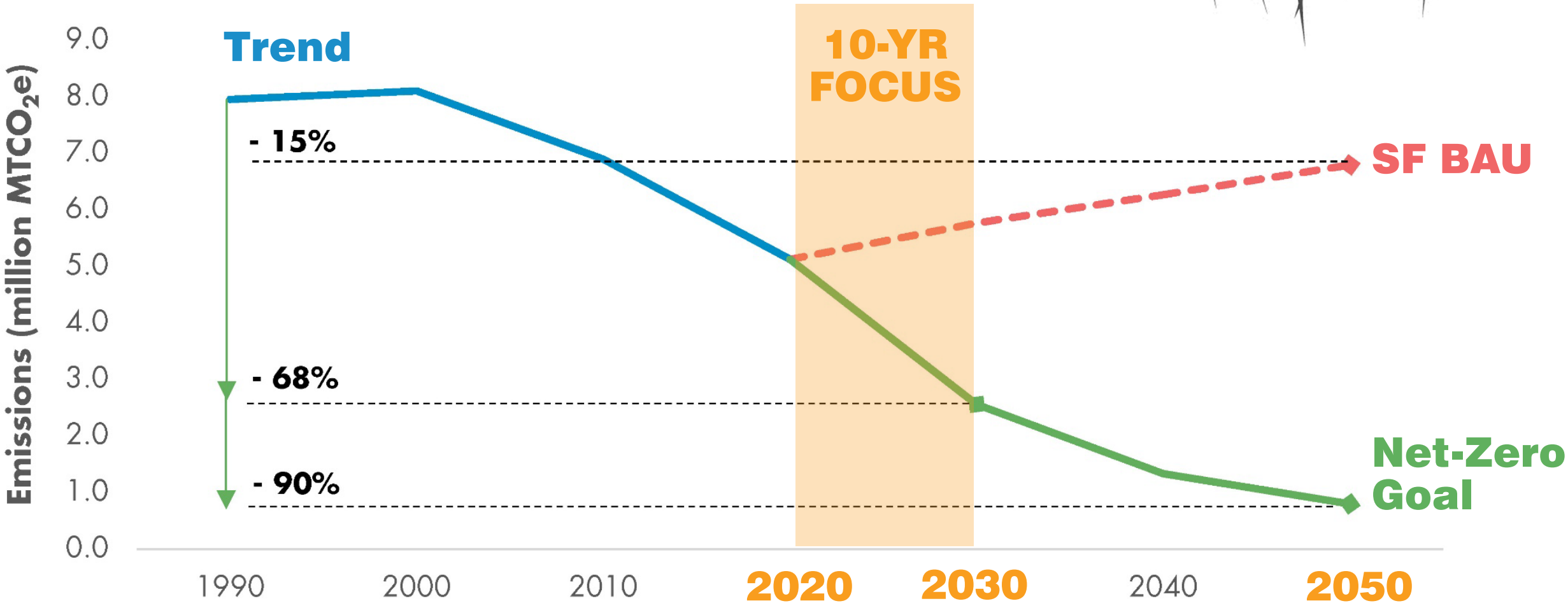


2017 EMS Call Log

CONTINUED EMISSION REDUCTIONS

ARE NOT A GIVEN

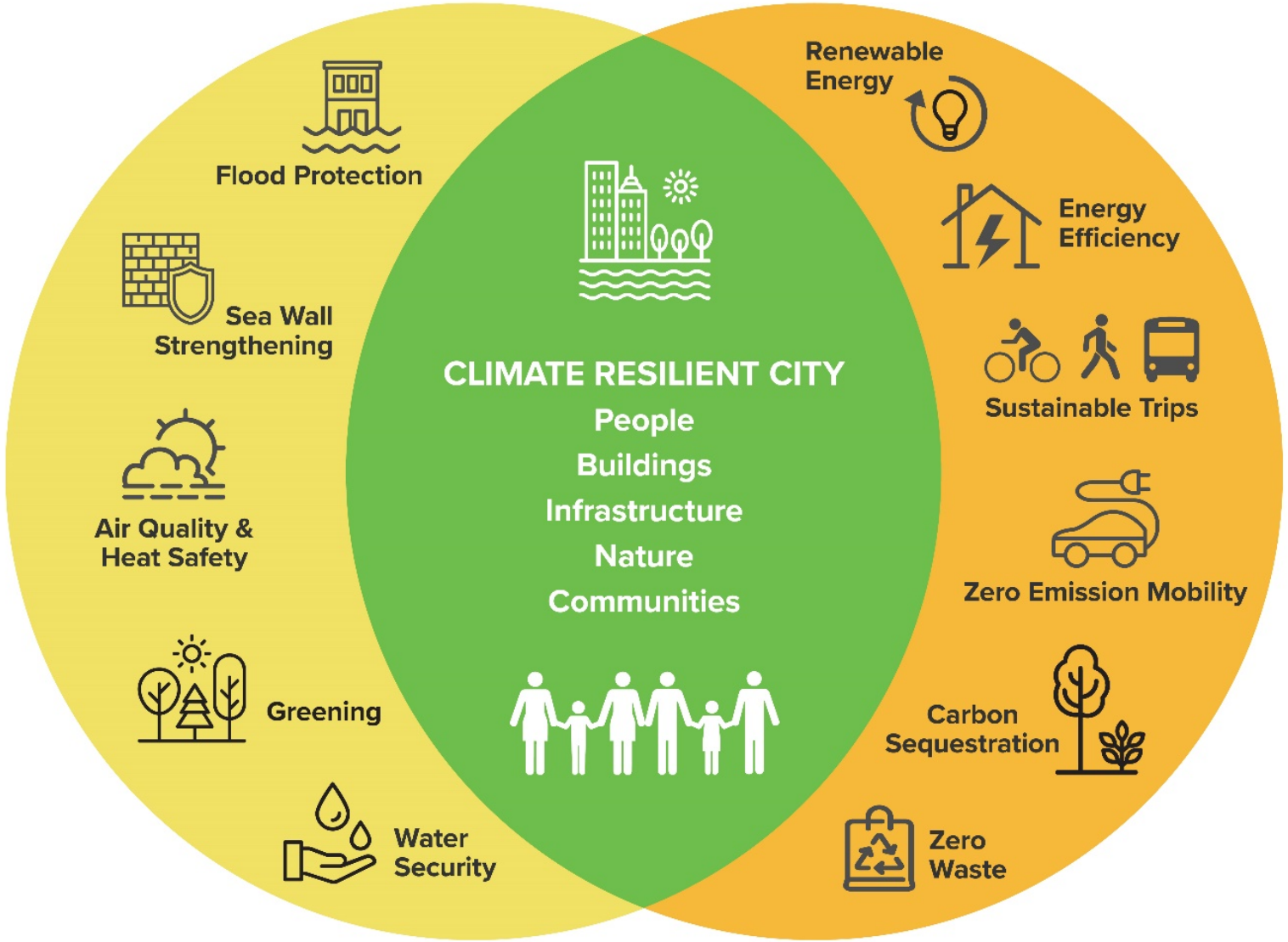




CLIMATE RESILIENCE

SAN FRANCISCO PRO-ACTION

CHARTING A HOLISTIC & COORDINATED VIEW FOR ACTION



CLIMATE ADAPTATION

Safeguard for Current & Future Hazards: PROTECT

CLIMATE MITIGATION

Eliminate & Capture Emissions: DRAWDOWN

INTER-AGENCY EFFORTS: **PLANS & PROJECTS**

Waterfront Resilience Program / Flood Study

Sea Level Rise Vulnerability & Consequences Assessment

Major Development Projects (SNF pilots)

PLANNING DEPARTMENT'S AVENUES OF SUPPORT & ACTION

Early Interface

Entitlements, PPAs, CEQA, DAs & General Plan referrals

Integrated Planning & Partnerships

Area & community plans, IPIC engagement, inter-agency, General Plan updates

Tools

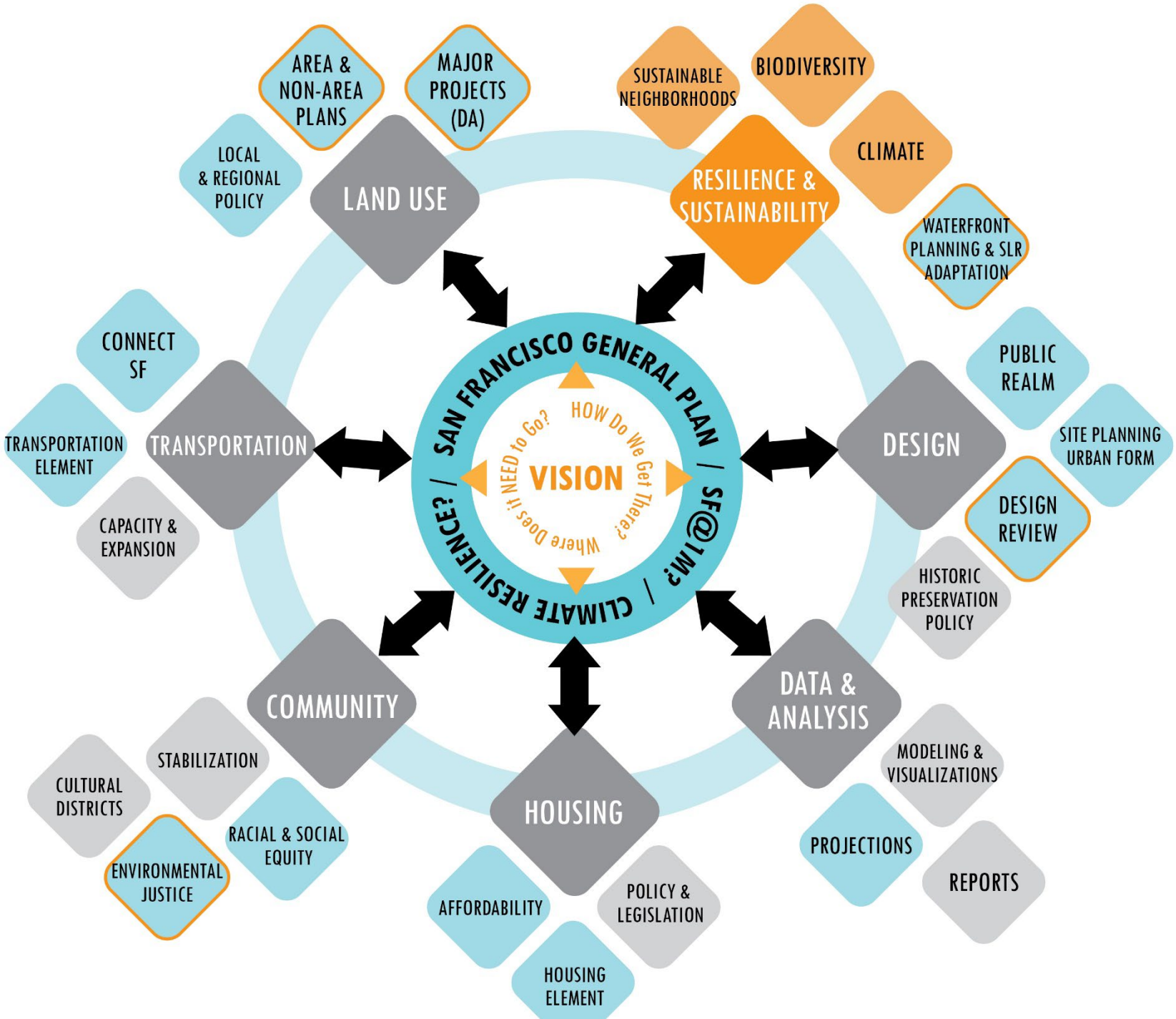
Planning Code, PIM, Better Roofs, Better Streets, UDGs, TDM, SFPlantFinder, **Sustainable Neighborhood FW**

Design Review

Inter-agency / disciplinary: urban design & architecture, open space & streetscapes

CITYWIDE DIVISION

WORK PROGRAM & INTEGRATION



LEGEND

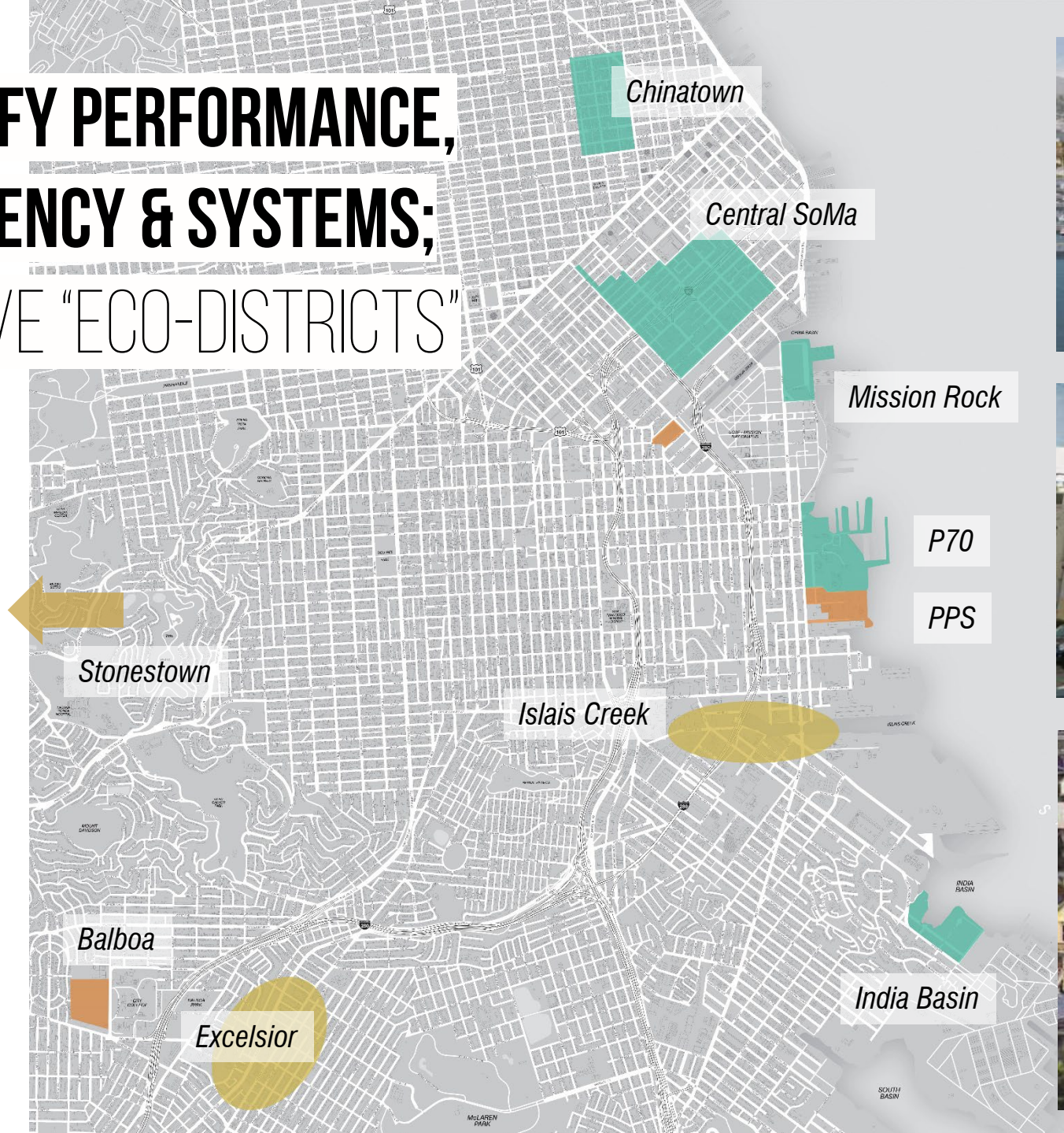
- Key Work Plan Elements
- Focus Integration to Date
- Existing Integration
- Integration Opportunity

SUSTAINABLE NEIGHBORHOOD

PROGRAM & TOOLS

AMPLIFY PERFORMANCE, EFFICIENCY & SYSTEMS;

EVOLVE "ECO-DISTRICTS"



LEGEND

- Completed
- Current pilots
- Potential

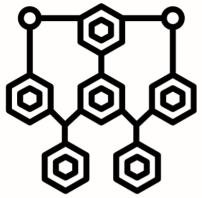
MAXIMIZE CO-BENEFITS OF INVESTMENTS

WHILE MEETING NEEDS & REGULATIONS

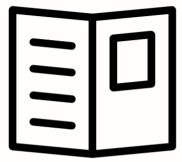
Stormwater Management / Flood Protection

Valencia Green Gateway

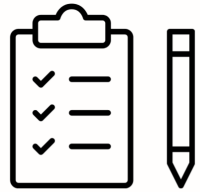
PROGRAM ELEMENTS **& GUIDING PRINCIPLES**



Vision Framework



Program Summary

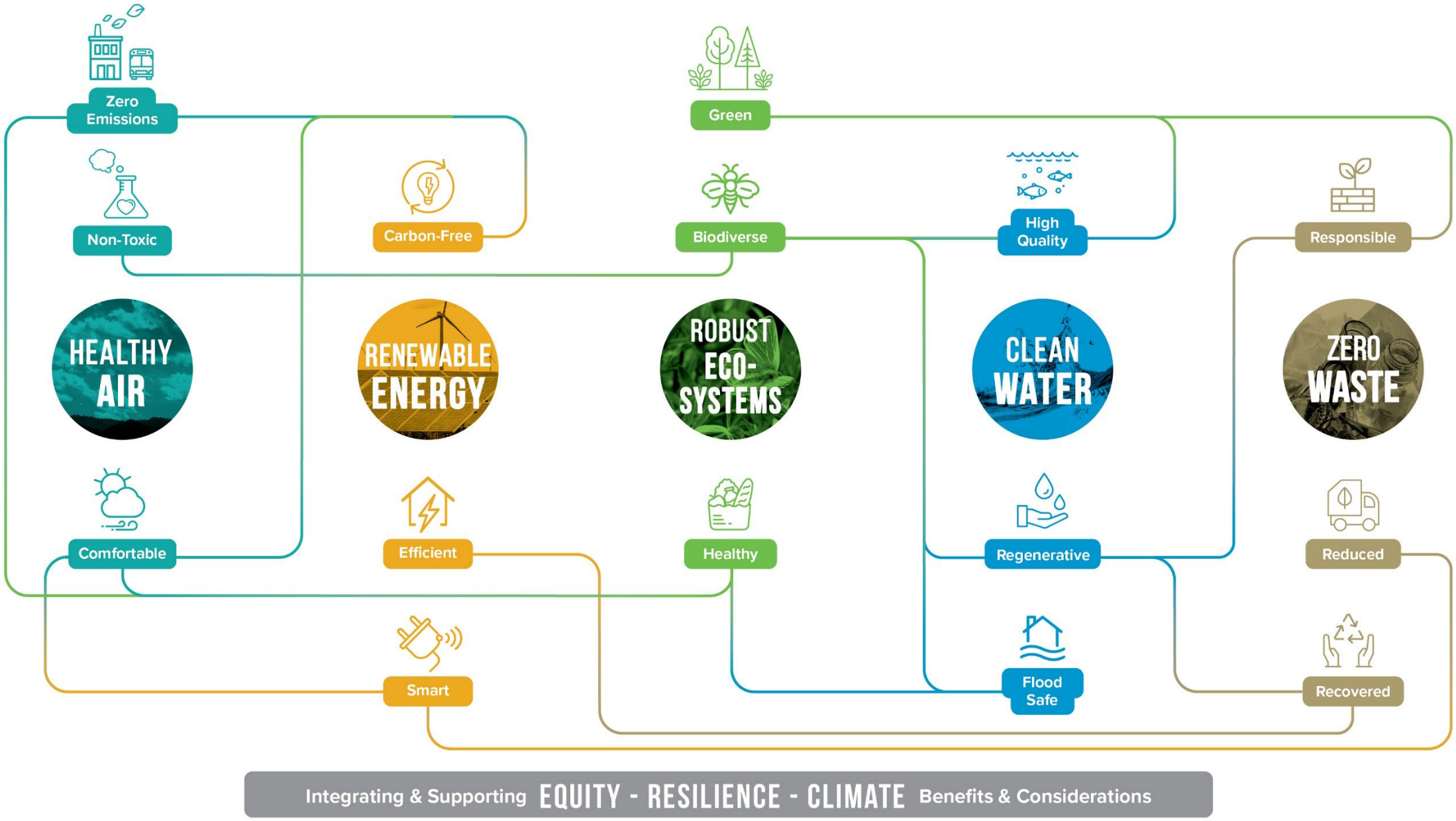


Project Road Map / Worksheet

Online Guide

- People-centered & compelling
- Built on best practices
- Effective & efficient
- Compelling & easy-to-use
- Flexible & scalable

VISION FRAMEWORK: INTER-CONNECTED GOALS & TARGETS



PROGRAM SUMMARY: WHAT, WHY, HOW + USER GUIDE

San Francisco **Sustainable Neighborhood Program**

WHAT>

Introduction

The Sustainable Neighborhood Program is a comprehensive approach and set of tools to **amplify environmental performance, quality of life, and community co-benefits** (equity, affordability, quality of life) in any scale plan or project. Comprehensive yet streamlined, it synthesizes years of sustainability, climate, and resilience advancements across City agencies and best enable public and private investments in the built environment to support important citywide goals.

WHY>

Purpose

San Francisco's bold commitment to help reduce global heating by achieving a **zero-emission city by 2050** requires thoughtful and urgent action by 2030. To achieve this ambitious (but essential) goal while accommodating population and economic growth, it's essential that every new building or major renovation is part of the solution rather than a costly future retrofit. Thus the Program aims to maximize synergies between sometimes siloed topics to maximize outcomes and efficiencies.

Value & Benefits

The Planning Department's unique early interface with project sponsors and stakeholders, and frequent role as inter-agency convener, positions the agency to support and motivate innovative and integrated sustainability measures. The Sustainable Neighborhood Program:

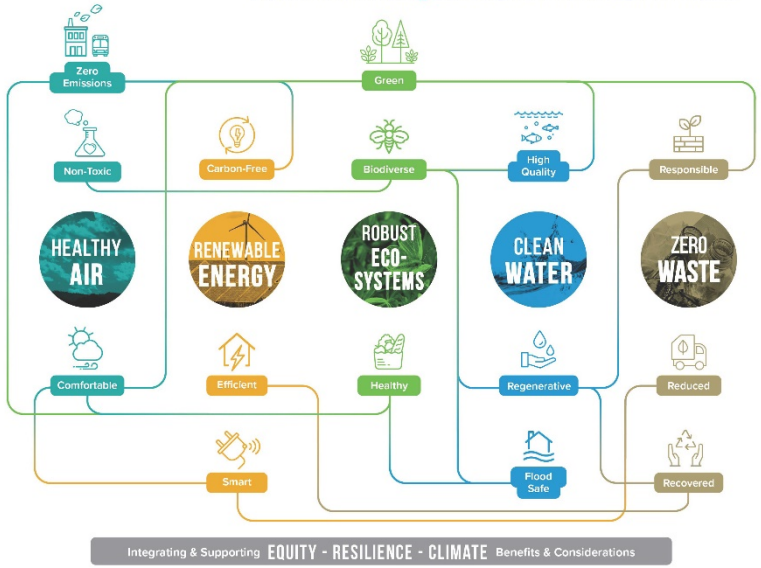
- Clarifies 5 environmental goals that align with priorities like housing, mobility, open space, affordability, and community empowerment.
- Embeds and advances equity, resilience, and climate imperatives across topics.
- Leverages City, community, and private-sector actions for maximum co-benefits.
- Provides a consistent platform for multi-party review, engagement, and decision making.
- Helps identify opportunities, constraints, best practices, and potential partnerships for success—within and beyond individual site boundaries.
- Supports consistent and regular monitoring and reporting.

EVERY NEW BUILDING OR MAJOR RENOVATION CAN BE PART OF OUR EQUITY, RESILIENCE & CLIMATE SOLUTIONS

Sustainable Neighborhood FRAMEWORK

HOW>>

The Program's key organizing tool, designed in concert with fellow agencies and global best practices, provides a comprehensive yet streamlined vision: **5 GOALS** for any project or neighborhood. By employing **3 DRIVING PRINCIPLES** it enables all users (City staff, project sponsors/owners, designers, and community members) to drive bold action. **[1] PEOPLE-CENTRIC** because community-based solutions enhance sustainability while building collective social impact. **[2] DYNAMIC SYSTEMS and SCALE AGNOSTIC** consider and connect strategies beyond site boundaries and across goals to maximize co-benefits while meeting individual requirements. **[3] FLEXIBLE** to recognize today's technologies and project realities evolve quickly, so clear targets can be met through endless options.



The development and implementation of Sustainable Neighborhood Framework embeds **3 CRITICAL IMPERATIVES** to be considered and supported throughout any suite of strategies that meet the **15 TARGETS AND 5 GOALS**:

Equity

Adopting more sustainable practices can help address the health and prosperity disparities historically and currently faced by communities of color. To do so, sustainability strategies/actions should be pursued with thoughtful procedural, structural, and distributional considerations and explicitly intend to benefit vulnerable populations.

Climate

Well-designed sustainability strategies/actions should help minimize climate change by eliminating carbon emissions. Per the City's Climate Action framework, this includes co-benefits to renewable energy, sustainable mobility, zero waste, and carbon sequestration. Likewise, by following the dynamic framework, inadvertent impacts to mitigation efforts can be avoided.

Resilience

Resilient communities include people, buildings, and infrastructure that can withstand and recover from severe shocks and slower-to-accumulate stressors. As the effects of climate change are already here, investing in resilience today protects from current challenges (often while reducing energy and operational expenses) and reduces costly future repairs.

ROAD MAP / WORKSHEET: CONSISTENT BASE FOR ITERATIVE PROCESS

[GOAL 1]

ENSURE NON-TOXIC & COMFORTABLE AIR INDOORS & OUT

EQUITY

OPPORTUNITIES: Reduced health impacts of cumulative indoor & outdoor air pollution (respiratory and cardiovascular) and associated hospital visits; increased co-benefits from just transition & infrastructure investments (solar)

CONSIDERATIONS: access to sustainable transportation & EV charging, potential disproportionate cost implications (esp. for renters) and climate justice burdens

RESILIENCE

OPPORTUNITIES: Ensure occupants can shelter in place during extreme heat and poor air quality days, support local climate-smart manufacturers remaining in business, reduce operations expenses that help community stabilization

CONSIDERATIONS: pressure of increased renewable electricity demands on systems and markets, increased use of air conditioning and related GHG

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CONSIDERATIONS: Potential for electric vehicle prevalence to increase VMT and congestion, potential unknown impacts of new technologies and materials

TARGETS	APPROACHES	EXISTING REQUIREMENTS	ENHANCEMENTS *(CITY COMMITMENTS)*	BEST-PRACTICE STRATEGY DIRECTORY
ZERO-EMISSION environments	LAND USE	/ Proximity of density to transit	/ On-site grocery & childcare	Design ground-floor space to appeal to tenants that provide needed neighborhood services
	SYSTEMS & OPERATIONS	/ All-electric preferred [GBC '20]	/ *100% fossil-fuel free heating, cooling, hot water, appliances* / *100% renewable energy (see Energy)*	Use building or development-scale electric heat pump systems
				Specify all-electric appliances free of chemical refrigerants
				Eliminate delivery and passenger idling, providing plug-in areas for refrigerated delivery trucks
	CONSTRUCTION PRACTICES	/ Construction air filtration [GBC]	/ 100% diesel-free generators	Eliminate diesel emissions from generators
				Require construction equipment to use clean fuels and minimize idling
	MATERIAL SELECTION	/ GHG Emissions checklist [CEQA]	/ 50% local sourcing	Source at least 50% of construction materials from <500 miles
				Source recycled materials and/or materials manufactured with renewable energy
	SUSTAINABLE TRIPS	/ Transportation Demand Management / Sidewalk widening, bike racks [BSP, PC]	/ Bike parking space per bedroom / 10% Class 1 spaces fit cargo bikes	Design bike parking areas scalable to 1 stall per bedroom
				Design flexible spaces for telecommuting or onsite co-working for occupants
				Coordinate with adjacent bicycle network design and construction
	ELECTRIC VEHICLES	/ 100% EV-ready off-street parking [EC] / EV chargers @ 5% of spaces [EC]	/ Off-street, public EV charging stations / Zero-emission public realm & open space	Design at least 50% of off-street parking spaces to service electric vehicles and bicycles
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100% NON-TOXIC interiors	MATERIAL SELECTION	/ Low-emitting materials [GBC/LEED]	/ Zero-VOC interior materials	Specify carbon-smart insulation (wood, straw, clay-straw, hemp, cork, sheep's wool, etc.)
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				Use HVAC systems that can adjust filter levels to manage wildfire smoke

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	AIR FILTRATION	/ High-quality air filtration [Art 38]	/ 100% of occupants can remain during [illegible] events	Implement energy recovery ventilators and passive ventilation Use HVAC systems that can adjust filter levels to manage wildfire smoke

Project Targets

Project-Specific Strategies

ROAD MAP SUMMARY:

MARKET/OCTAVIA EXAMPLE

GOALS	TARGETS	EXISTING REQUIREMENTS	PLAN POLICY RECOMMENDATIONS (*City Policy* & ***Plan Area Regulations***)
	Zero Emission	– Bike parking by unit [PC] – 100% EV ready parking [GBC]	– Bike parking by bedroom, scaled for cargo bikes
	Non-Toxic	– Low-emitting materials [GBC]	– Zero-emitting materials
	Comfortable	– High-quality air filtration [Art 38]	– Shading & living walls
	Efficient	– Reduce energy use [Title 24/GBC]	– *All-electric buildings & systems*
	Carbon Free	– 15% roof area solar PV or thermal [GBC] – All-electric preferred development [GBC]	– **15% roof area solar PV or thermal** – GHG-free (renewable) energy purchase
	Smart Operations		– Smart systems & plug loads
	Green	– 30% Living Roof alternative [PC]	– **50% living roof** – *Plantings equivalent to 25% of site area*
	Biodiverse		– *100% climate appropriate species* – *50% minimum local and California natives*
	Healthy	– Bird Safe Buildings [PC]	– Non-toxic landscaping practices – Access to healthy & affordable food
	Regenerative	– Non-potable water for flushing & irrigation [Art 12C]	– *Non-potable water for cooling & street cleaning*
	Flood Safe	– Stormwater/urban flood disclosure [PolC]	– *Build to 100-yr storm + SLR elevations*
	High Quality	– Slow & reduce stormwater runoff [SMO]	– *Prioritize green infrastructure*
	Responsible	– LEED points [GBC]	– Sustainable, low-carbon materials
	Reduced Waste	– Recycling & composting (buildings)	– Recycling & composting (open spaces)
	Recovered/Reused	– Construction waste diversion (65%)	– Construction waste diversion (75%) – *Maximum deconstruction / re-use*

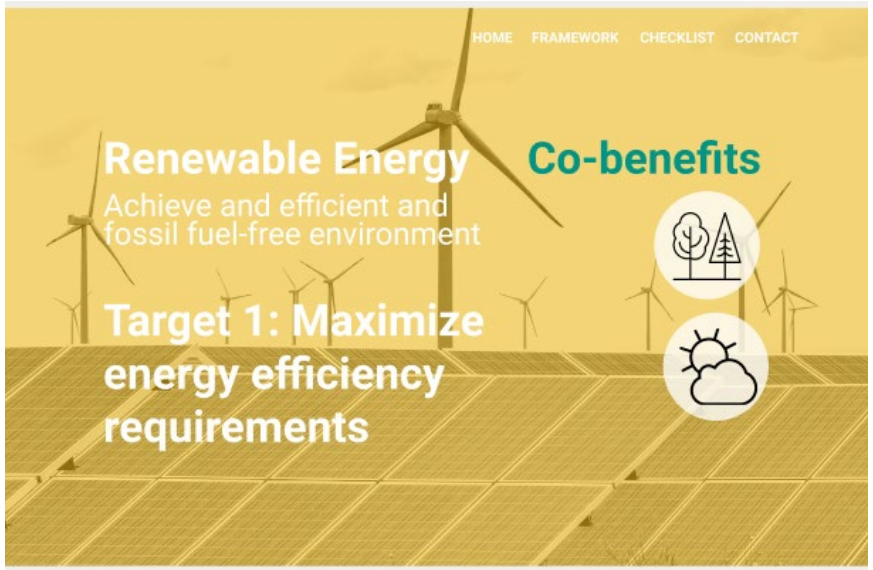
ONLINE GUIDE [DRAFT]: DYNAMIC PORTAL TO REGS & RESOURCES

Sourcing all energy needs from renewable sources is the most effective way to reach our goal of a **zero emission city**. It also creates job opportunities in the green economy and

Equity

Opportunities: healthier air; lower utility costs, improved indoor comfort through responsive smart systems; minimized rate volatility; retain energy revenue in the local economy; provide renters equal access to energy efficiency upgrades; increase job opportunities for energy upgrade work

Considerations: avoid passing upfront retrofit costs to residents; limited triggers/funding for existing building retrofits; explore opportunities for community-owned solar



The San Francisco Green Building Code requires new construction to reduce energy use by 5%, 3% for major renovations or 2% for core and shell projects.

With a few tweaks you can achieve much more!

Solar Orientation

Orient your buildings to reduce solar gain in summer and increase in winter (and for energy generation!)

>Orient the longest facade east to west
> Use skylights for passive heating
>Natural ventilation

Envelope

Minimize Energy loss through maximum insulation, window quality, and building envelope construction

>Use high performace windows
>Ensure tighter and better insulated building envelopes

NEXT STEPS

- / Commission feedback
- / Pilot wrap-ups
- / Engagement
- / Refinements
- / Return to Commission (resolution) & launch

San Francisco Planning

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