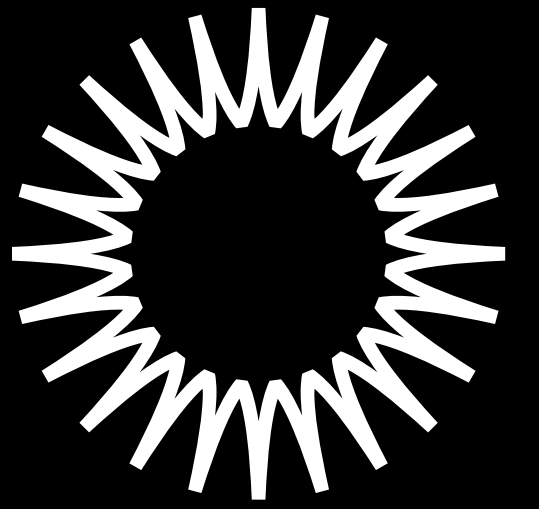

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Ideas + Action for a Better City

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#ScaledUpSustainability

AMPLIFYING SUSTAINABILITY AT THE NEIGHBORHOOD SCALE

LISA FISHER, SUSTAINABLE CITY TEAM LEAD

FEBRUARY 2017 @ SPUR, SAN FRANCISCO

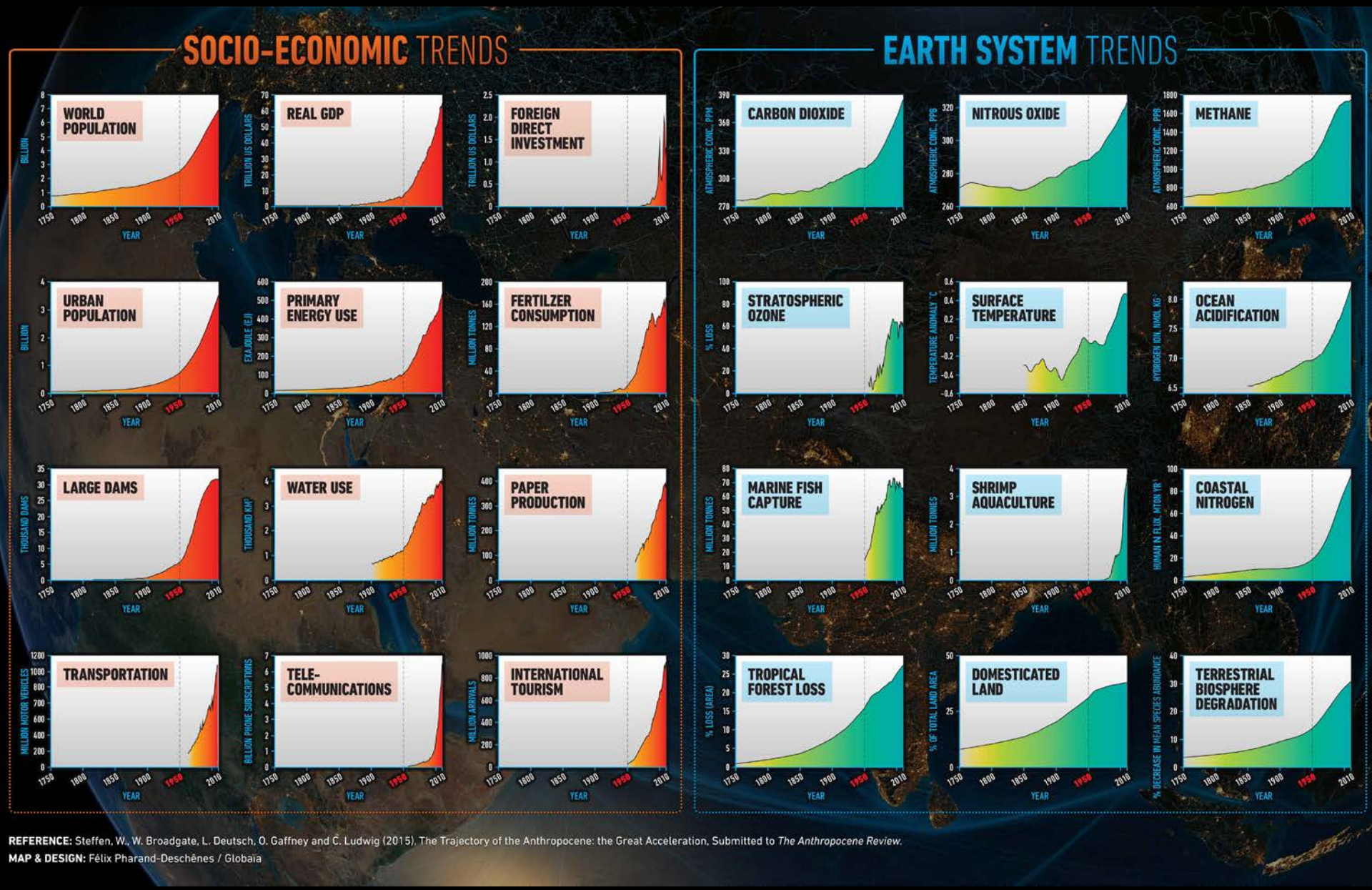
San Francisco Planning

PREPARE YOURSELF...

1. EMPHATIC WHY WE CARE
2. DISTRICT-SCALE PLANNING LENS
3. SAN FRANCISCO'S APPROACH
4. CENTRAL SOMA


+½ OF THE WORLD'S POPULATION LIVES IN CITIES, 2/3 BY 2050
HOW WE BUILD THEM IS PARAMOUNT: TRANSFORMATIVE DISRUPTION

ACCELERATING GLOBAL TRENDS



REFERENCE: Steffen, W., W. Broadgate, L. Deutsch, O. Gaffney and C. Ludwig (2015), The Trajectory of the Anthropocene: the Great Acceleration, Submitted to *The Anthropocene Review*.

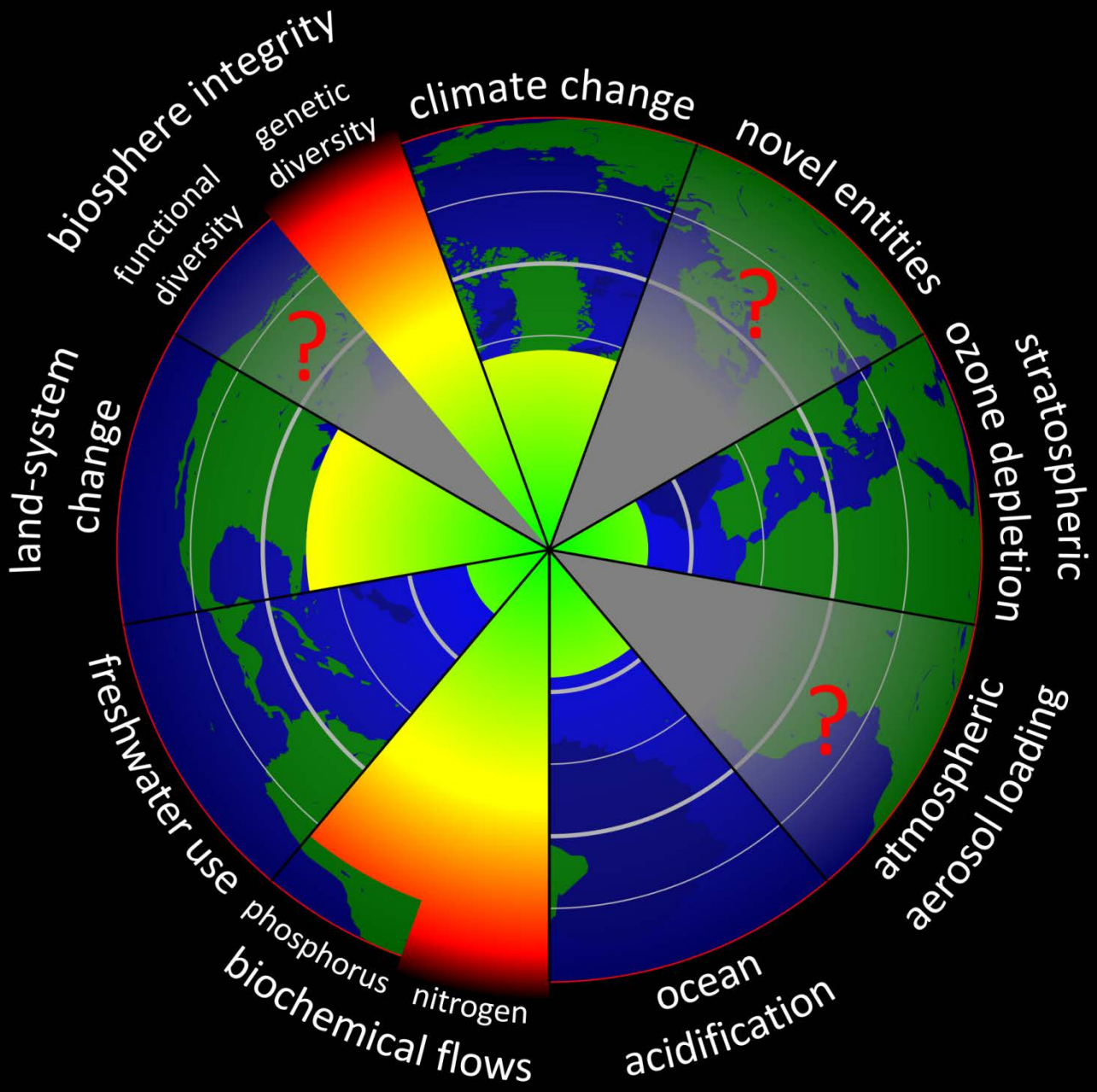
MAP & DESIGN: Félix Pharand-Deschênes / Globaïa

PLANETARY BOUNDARIES

UN-SUSTAINABLE TRAJECTORY

WHAT'S OUR INDIVIDUAL AND COLLECTIVE ROLE IN REDIRECTING?

DOING LESS BAD DOESN'T CUT IT



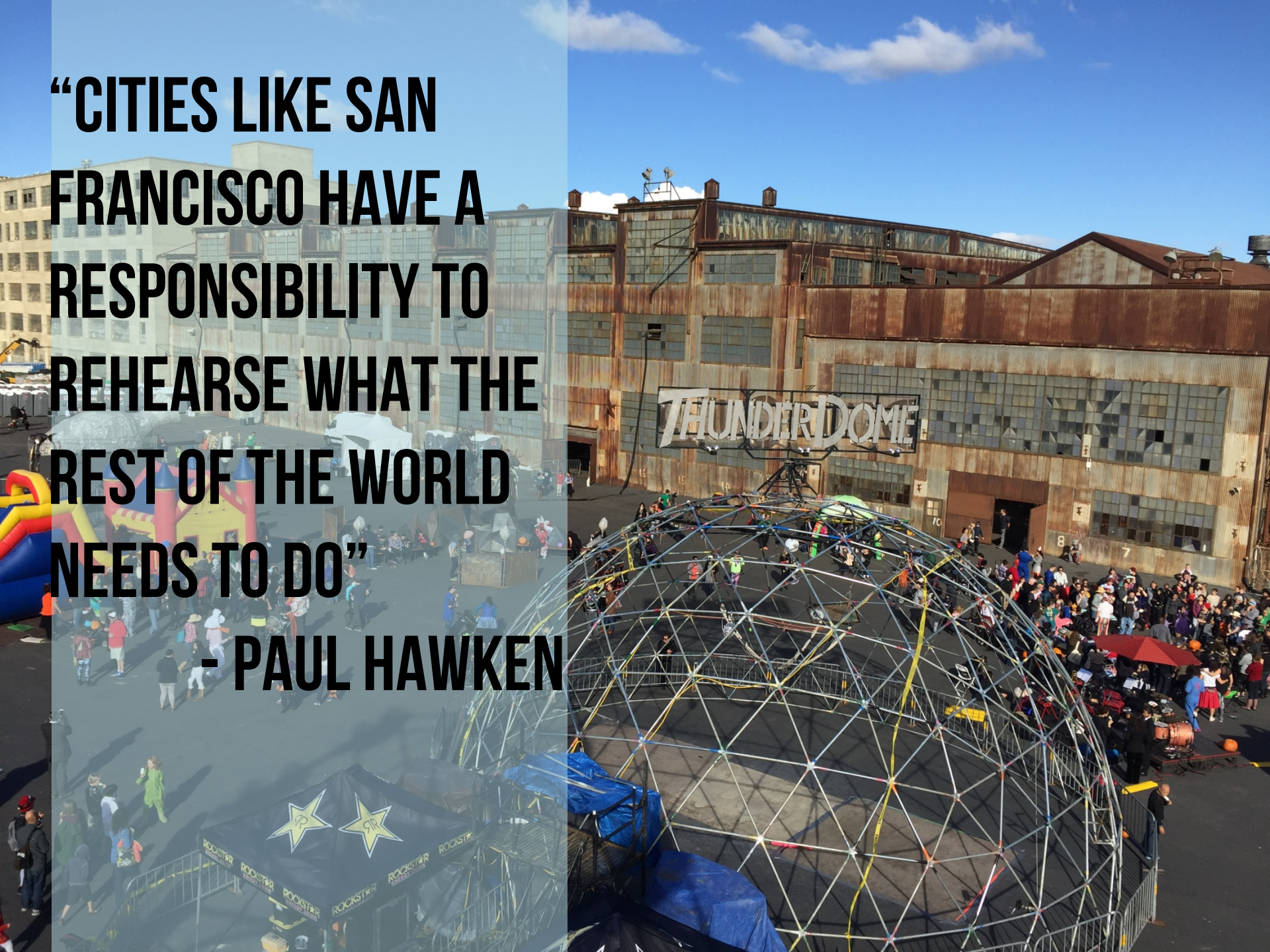
HEARTBREAKING

"AN ENDLESS NUMBER OF GREEN BUILDINGS DOESN'T MAKE A SUSTAINABLE CITY."

-JAN GEHL

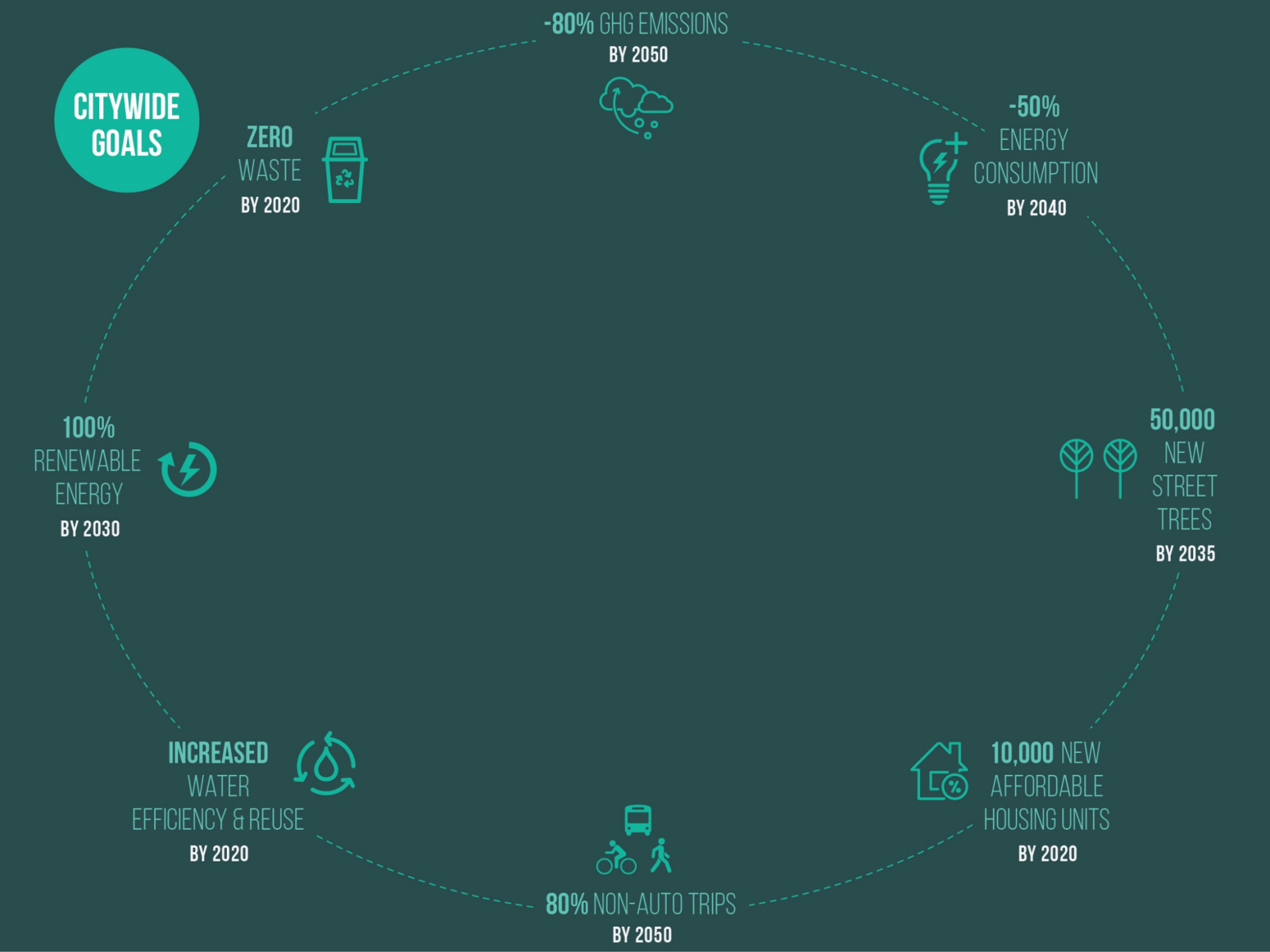

PEOPLE MAKE CITIES
HEALTHY, VIBRANT,
AND JUST CITIES
NURTURE HAPPY,
ENGAGED CITIZENS

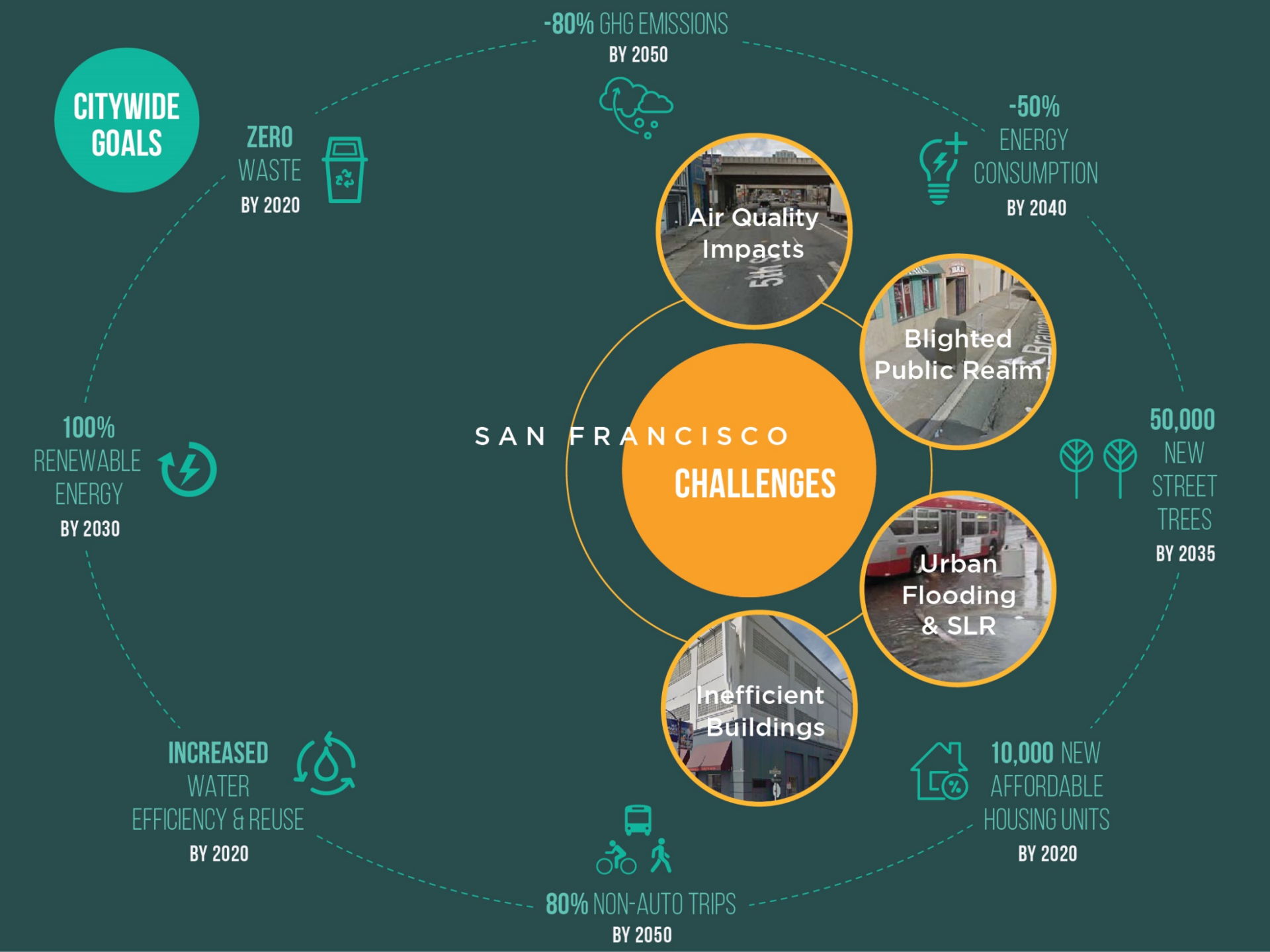

flood
storm drain
green infrastructure
permeable pavement
Test
Your
Design
Groundwater
THE WORLD'S SHAPED BY THOSE THAT SHOW UP
- D. RAPHAEL



"CITIES LIKE SAN FRANCISCO HAVE A RESPONSIBILITY TO REHEARSE WHAT THE REST OF THE WORLD NEEDS TO DO"

- PAUL HAWKEN


CITYWIDE GOALS
-80% GHG EMISSIONS
BY 2050
-50% ENERGY CONSUMPTION
BY 2040
50,000 NEW STREET TREES
BY 2035
10,000 NEW AFFORDABLE HOUSING UNITS
BY 2020
80% NON-AUTO TRIPS
BY 2050
INCREASED WATER EFFICIENCY & REUSE
BY 2020
100% RENEWABLE ENERGY
BY 2030
ZERO WASTE
BY 2020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SAN FRANCISCO
CHALLENGES
Air Quality Impacts
Blighted Public Realm
Urban Flooding & SLR
Inefficient Buildings


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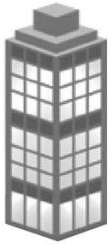
SAN FRANCISCO
OPPORTUNITIES
CHALLENGES
Soul & Character
Air Quality Impacts
Blighted Public Realm
Urban Flooding & SLR
Inefficient Buildings
Robust Markets
Density & Proximity
Multi-Modal Transport

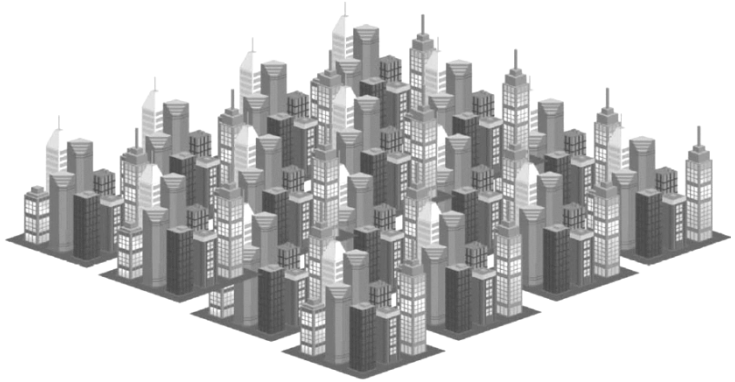

HOW ARE WE GOING
TO GET THERE?

SCALES OF INFLUENCE



BUILDING

NEIGHBORHOOD / DISTRICT



CITY

BUILD ON ROBUST EXISTING BUILDING-SCALE REQUIREMENTS

45-70%
+energy efficient

15%
rooftop solar

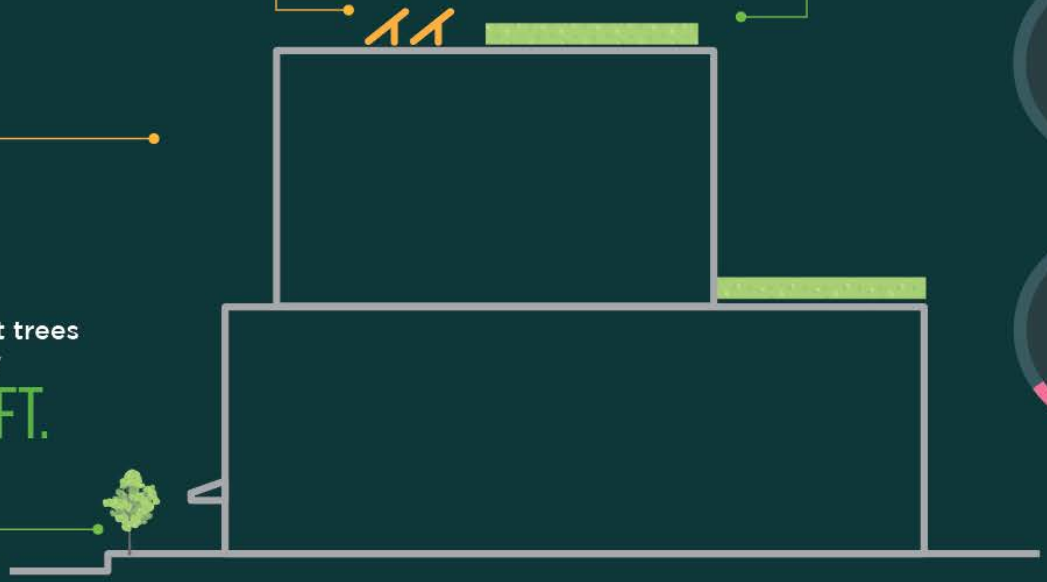
30%
living rooftop

60%
0- to low-emitting materials

25%
volume/peak flow stormwater reduction

65%
construction debris recycling

street trees every **20 FT.**



3%
EV-ready off-street parking spaces

3-STREAM
chutes & collection

100%
non-potable water use for landscaping, toilet flushing, cooling
(250,000SF+)

LINK TO CITY-WIDE IMPERATIVES

SAN FRANCISCO CLIMATE ACTION

0 50 100 ROOTS

Zero Waste

Send nothing to landfill.

50% Clean Transportation

Take half your trips by bus or bike.

100% Renewable Energy

Choose power from renewable resources.

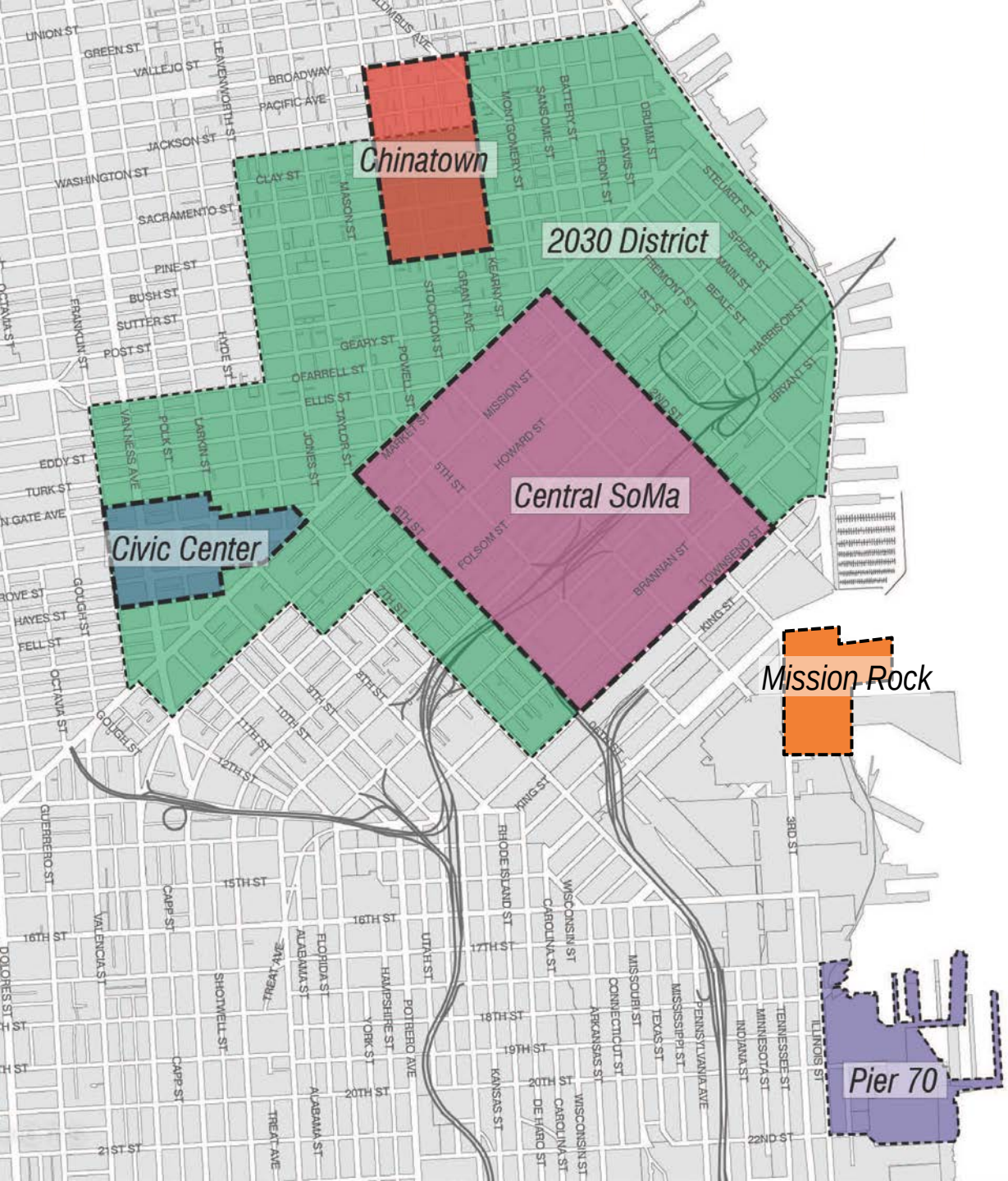
Roots

Heal the planet.

MAXIMIZE PERFORMANCE & EFFICIENCY THROUGH DISTRICT EFFORTS

Districts provide an important scale to accelerate urban regeneration — small enough to innovate and big enough to make a significant impact on the growth of cities

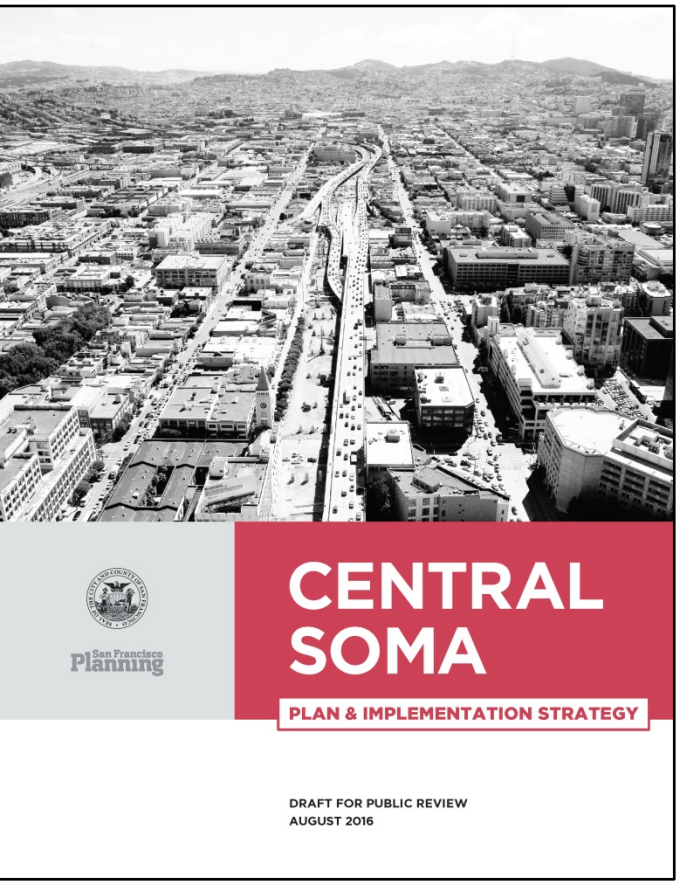
EcoDistricts

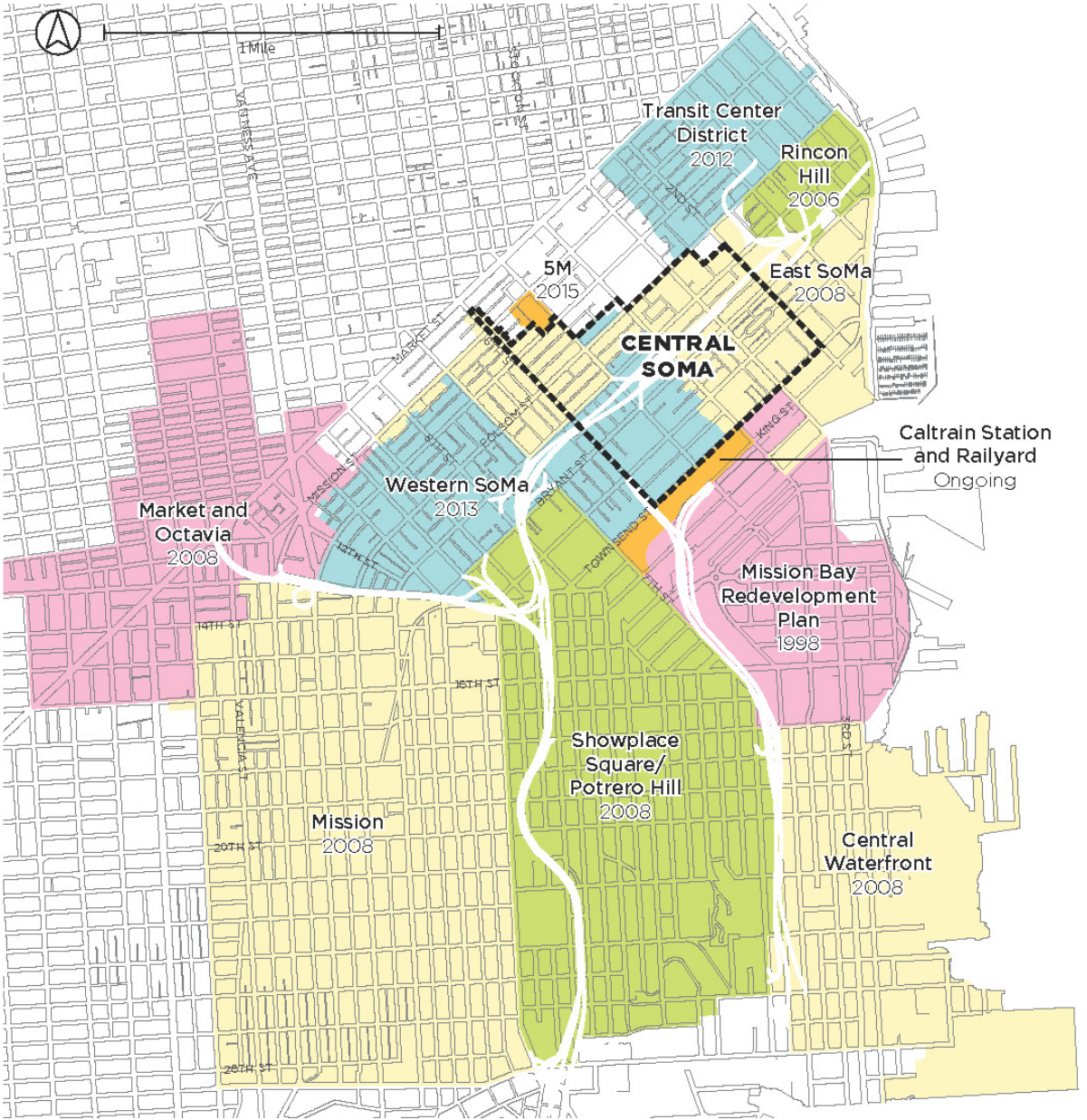


SAN FRANCISCO "ECO-DISTRICTS"

- Intentionally sustainable neighborhoods
- Exceed City goals & requirements
- Beyond building scale
- Measureable baselines & targets
- Partnerships: community, developers, utilities and public agencies

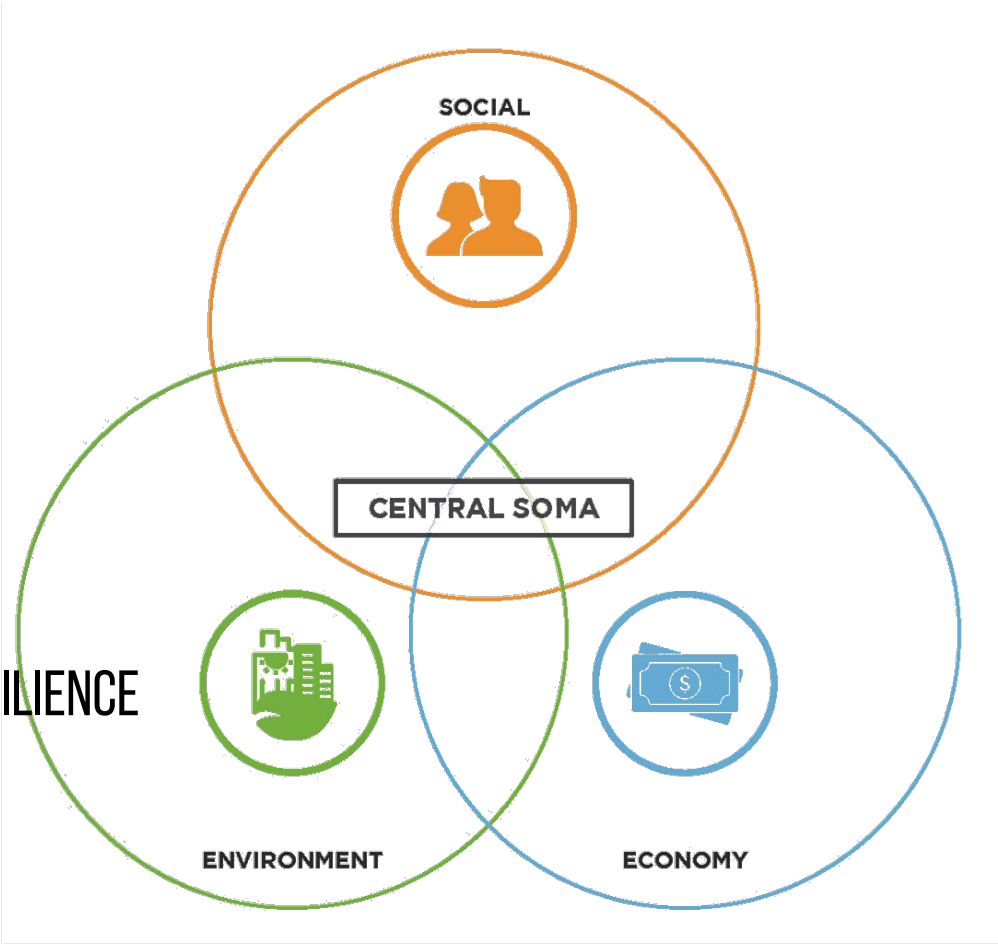
CENTRAL SOMA: **DRAFT PLAN**



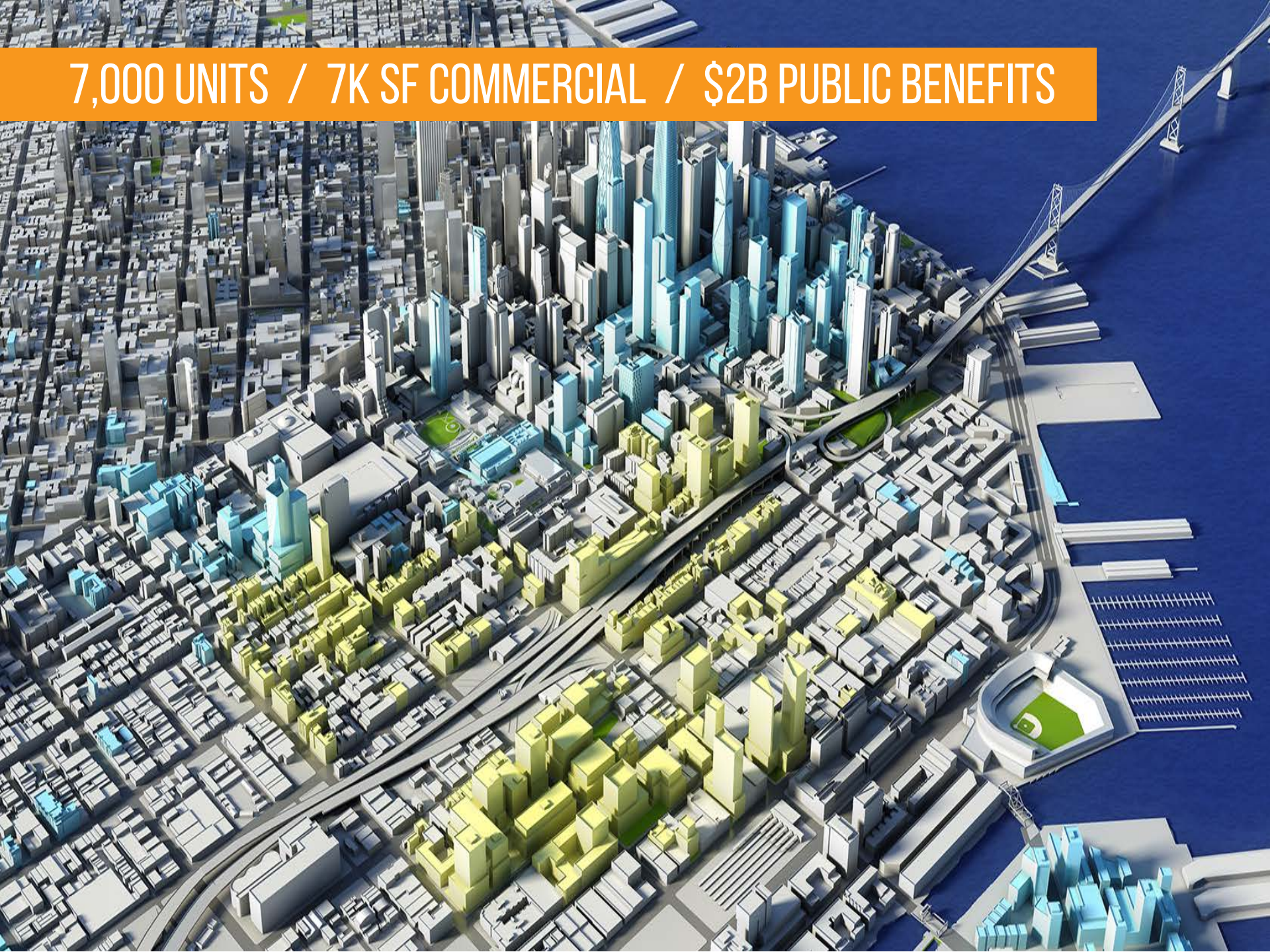


CENTRAL SOMA: **A TRULY SUSTAINABLE NEIGHBORHOOD**

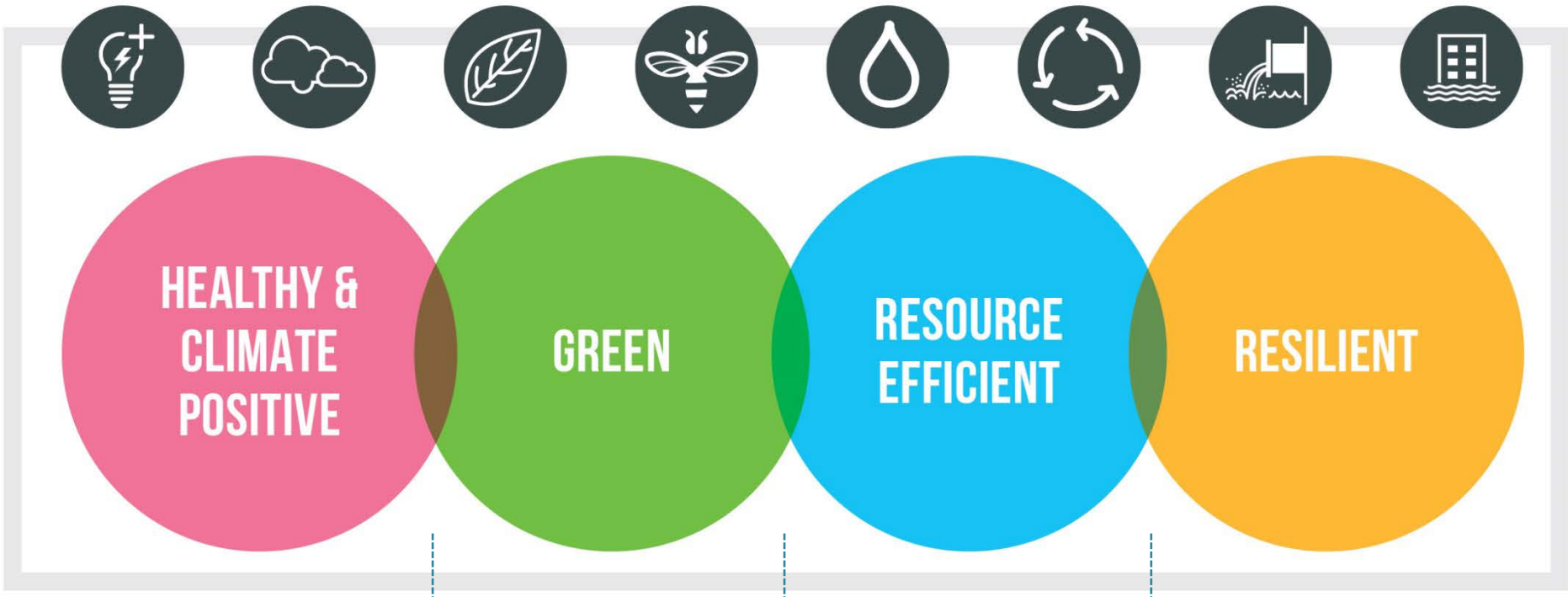
1. JOBS & HOUSING
2. RESIDENTIAL DIVERSITY
3. LIVELY & DIVERSE JOBS CENTER
4. SAFE & CONVENIENT TRANSPORTATION
   (PRIORITIZES WALKING, BICYCLING & TRANSIT)
5. ABUNDANCE OF PARKS & RECREATION
6. ENVIRONMENTAL SUSTAINABILITY & RESILIENCE
7. CULTURAL HERITAGE PRESERVATION
8. ENHANCED CHARACTER
   (ARCHITECTURE & URBAN DESIGN)



7,000 UNITS / 7K SF COMMERCIAL / $2B PUBLIC BENEFITS



CENTRAL SOMA ECO-DISTRICT GOALS AND TARGETS [BY 2040]



- 100% renewable (GHG-free) electricity
- Fossil-free bldgs & mobility options
- Optimum indoor / outdoor air quality

- >20 acres "green" roofs
- >22 blocks "green" streets
- >5 acres "green" open space

- Max energy & water efficiency
- 300%+ solar gen
- 2/3 new SF = NP water service
- Zero waste

- 100% flood & seismic-safe structures & sidewalks

SUCCESS: 100% GHG-FREE ELECTRICITY

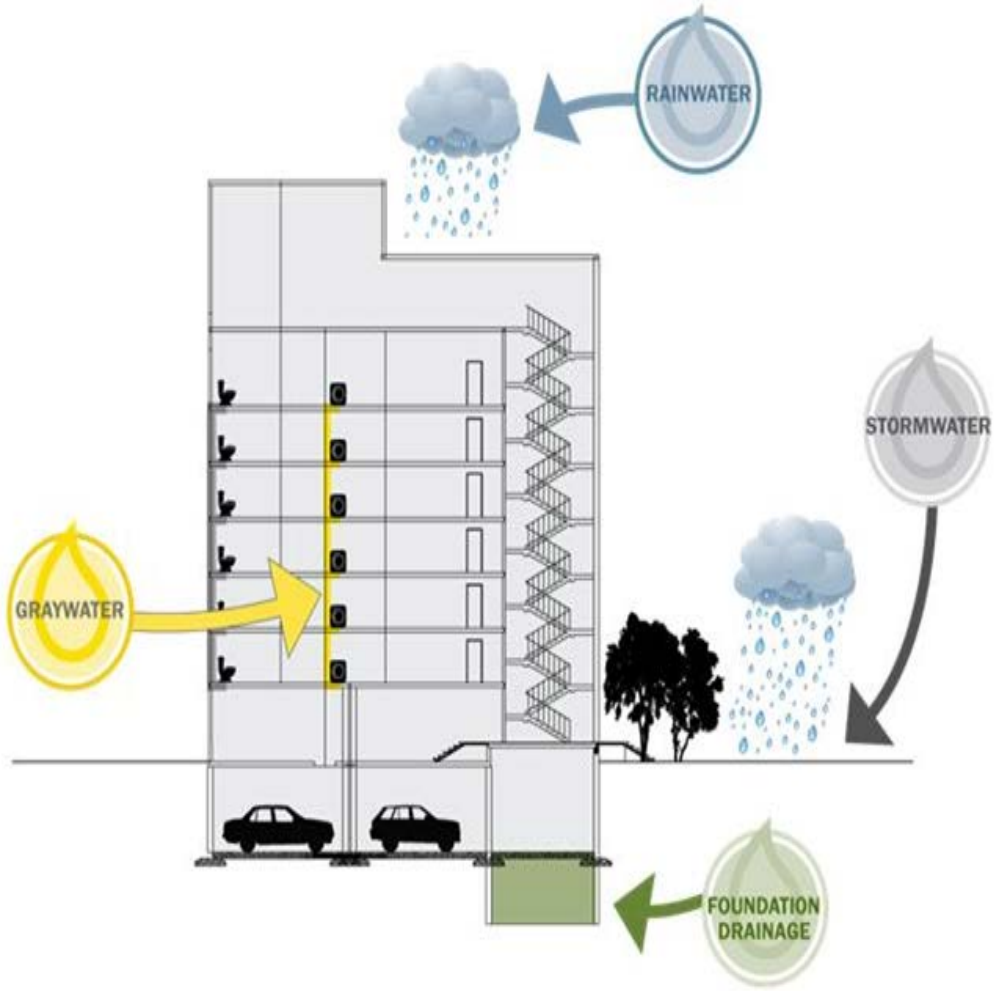
MAXIMUM EFFICIENCY + ONSITE RENEWABLES (MIN 15%) + "GREEN" POWER PURCHASE

+

+

SUCCESS: REQUIRED WATER RECYCLING

PROJECTS >250K SF, PARKS + OPEN SPACES, STREET CLEANING, FLOODING

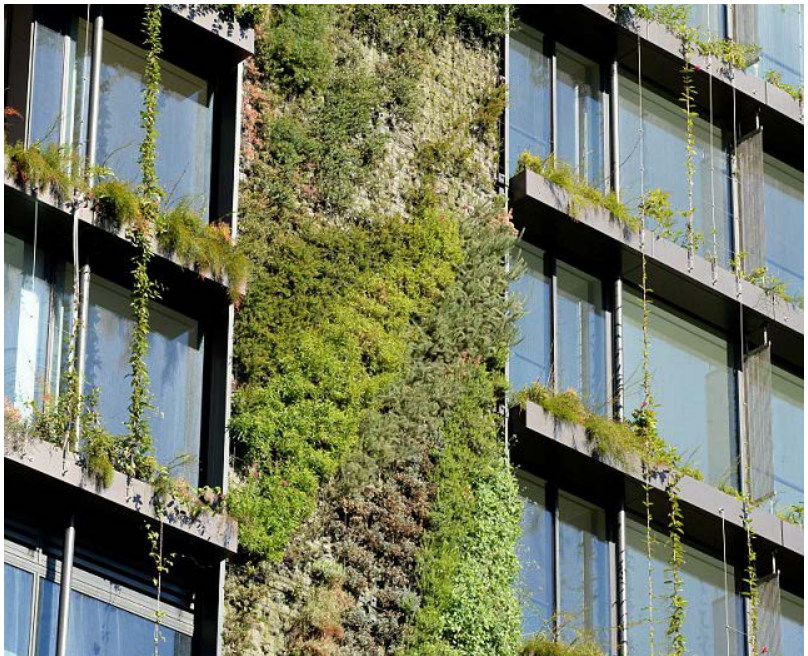


SUCCESS: BETTER ROOFS = 50% GREEN + 15% SOLAR

SUPPORT INNOVATIVE DESIGNS FOR HABITAT, ENERGY, OPEN SPACE, URBAN AG, STORMWATER

OPPORTUNITY: ENABLE & INSPIRE INNOVATION

- ALL-ELECTRIC BUILDINGS
- POLLUTION FILTERING BUILDING SKINS
- LIVING / GREEN WALLS AND FACADES
- VACUUM WASTE
- 3-STREAM PUBLIC LITTER BINS
- *YOUR IDEAS?*

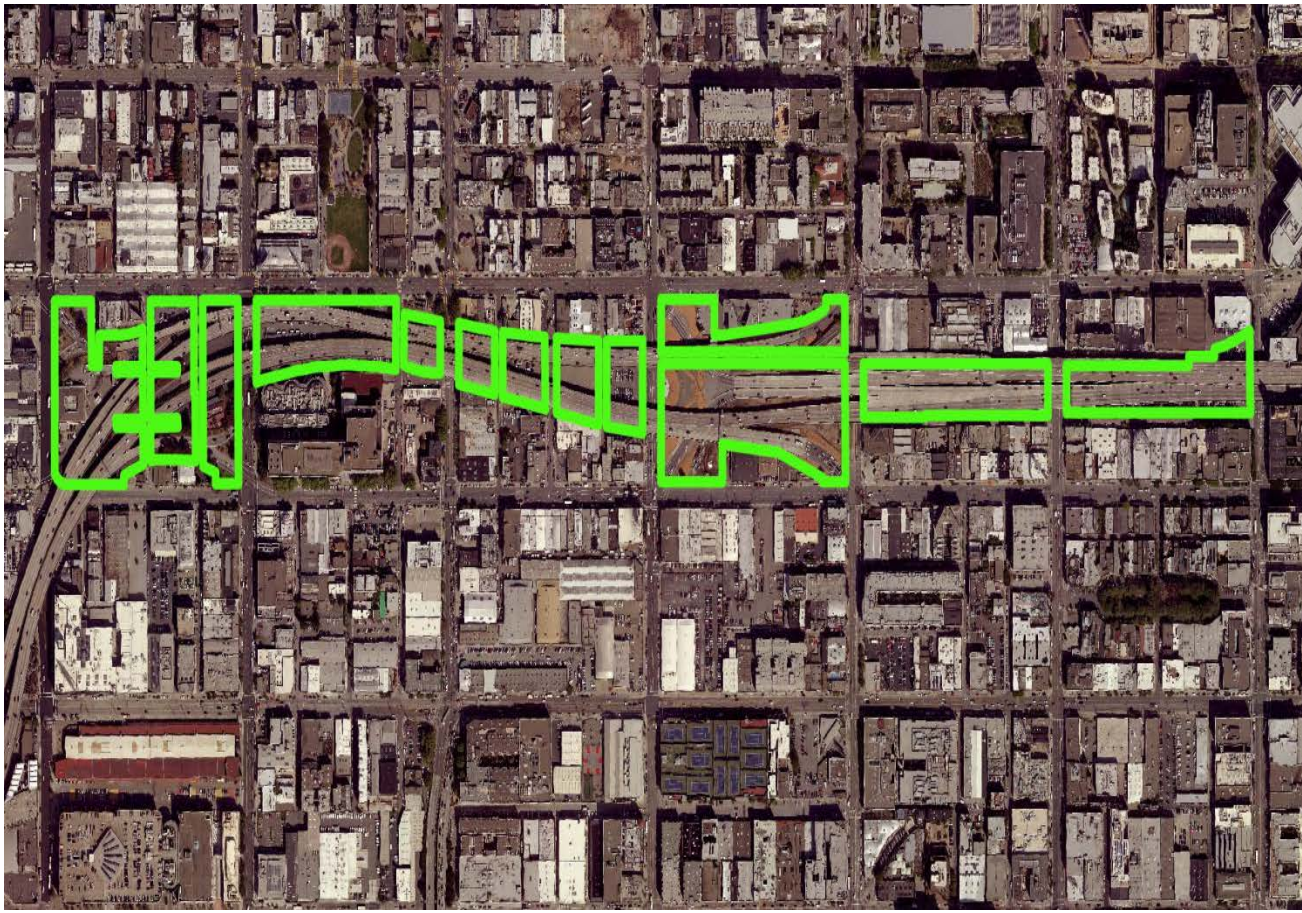


OPPORTUNITY: DISTRICT UTILITIES

NON-POTABLE WATER, ENERGY, MICRO GRIDS

OPPORTUNITY: MAJOR ELEVATED HIGHWAY DIVISION

RECREATION, AIR QUALITY IMPROVEMENTS, SAFETY, LIGHTING & ART, GREENING, STORMWATER



OPPORTUNITY: ZERO WASTE & LITTER ABATEMENT

PUBLIC & PRIVATE OPEN SPACES, SIDEWALKS, STREETS

OPPORTUNITY: ENGAGE PROJECT TEAMS, CITY STAFF & COMMUNITY

"ECO-DISTRICT" GUIDEBOOK / WEBSITE

- ONE-STOP ACCESS TO ALL CITY REGULATIONS
- LOCAL & GLOBAL BEST PRACTICES
- TECHNICAL & FINANCIAL RESOURCES
- COMMUNITY BUILDING

SUSTAINABLE CITY:

WORKING AT THE CITY, NEIGHBORHOOD, AND BUILDING SCALE TO ACHIEVE A VIBRANT, REGENERATIVE, AND ADAPTIVE URBAN ENVIRONMENT.

San Francisco Planning

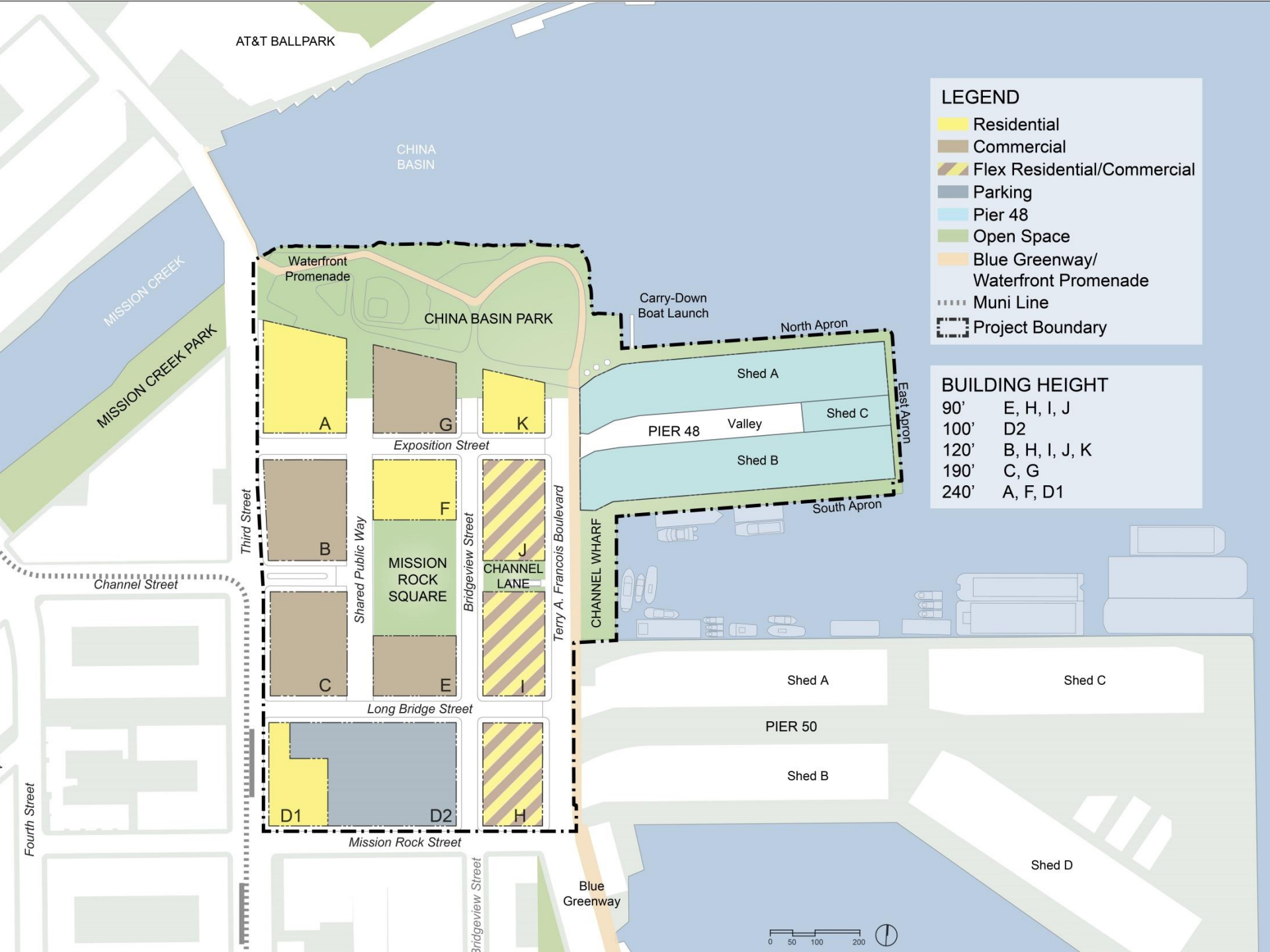
www.sf-planning.org/sustainable-development

THANK YOU

Lisa Fisher
Sustainable City Team Lead
lisa.fisher@sfgov.org

MISSION ROCK™

PORT OF SAN FRANCISCO


AT&T BALLPARK
CHINA BASIN
MISSION CREEK
MISSION CREEK PARK
Waterfront Promenade
CHINA BASIN PARK
Carry-Down Boat Launch
North Apron
Shed A
East Apron
Shed C
PIER 48
Valley
Shed B
South Apron
A
G
K
Exposition Street
F
B
J
CHANNEL LANE
MISSION ROCK SQUARE
Third Street
Shared Public Way
Bridgeview Street
Terry A. Francois Boulevard
CHANNEL WHARF
Channel Street
C
E
I
Long Bridge Street
D1
D2
H
Mission Rock Street
Fourth Street
Blue Greenway
Shed A
Shed C
PIER 50
Shed B
Shed D
0 50 100 200
LEGEND
Residential
Commercial
Flex Residential/Commercial
Parking
Pier 48
Open Space
Blue Greenway/ Waterfront Promenade
Muni Line
Project Boundary
BUILDING HEIGHT
90’ E, H, I, J
100’ D2
120’ B, H, I, J, K
190’ C, G
240’ A, F, D1

Site Target Goals

Resilience

Site Elevation Meets

2100

Projection For Sea Level Rise

Water

Meet

100%

Of non-potable water demand with non-potable sources

Waste

75%

Construction Waste Diversion

5% -10%

Increase In Occupant Waste Diversion

Transportation

20%

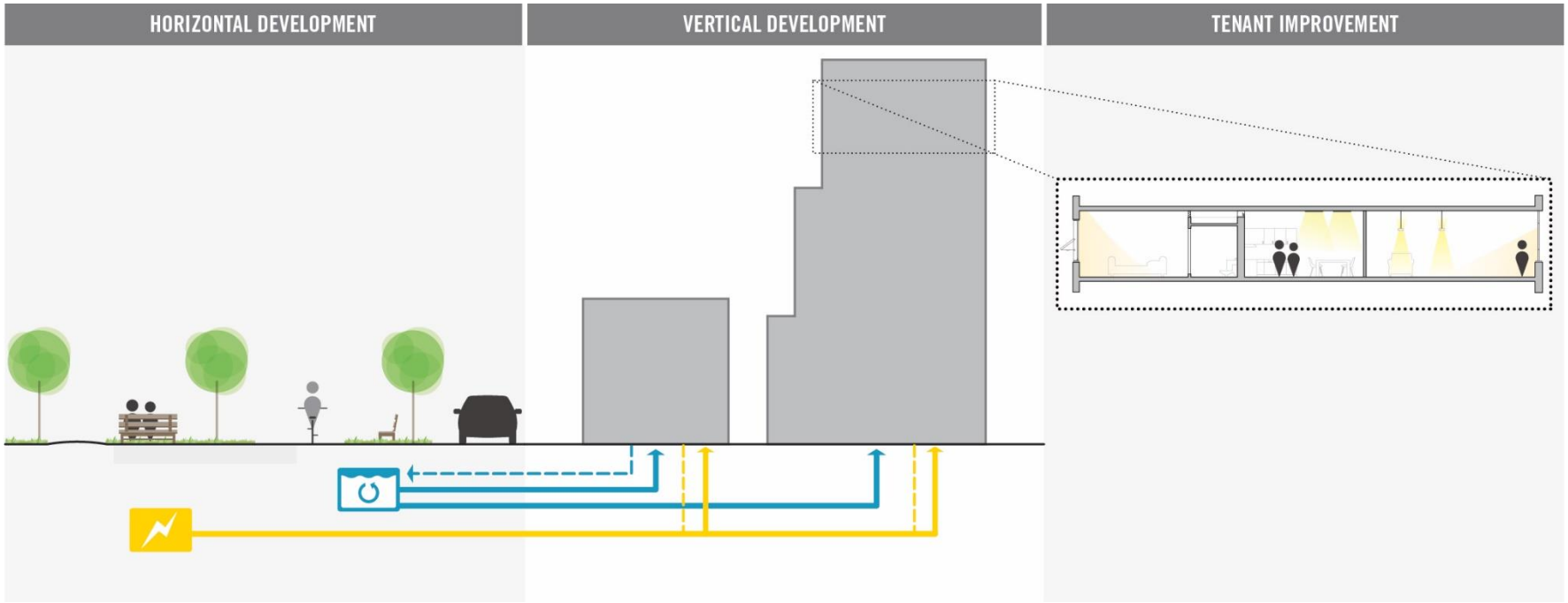
Reduction In Transportation-related Carbon Emissions

Energy

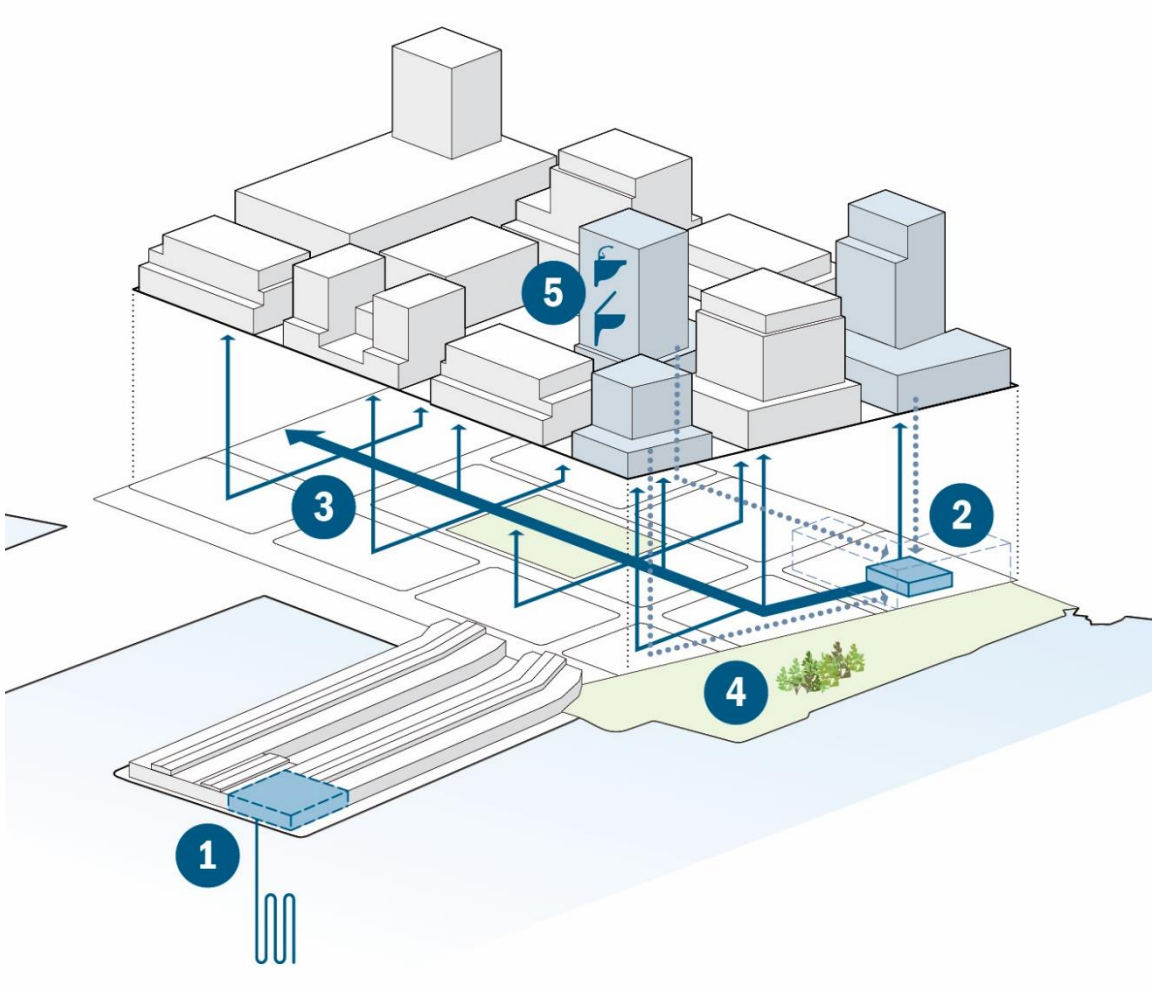
100%

Of Building Energy Demand Met With Renewable Energy Sources

Development Breakdown



Water Summary

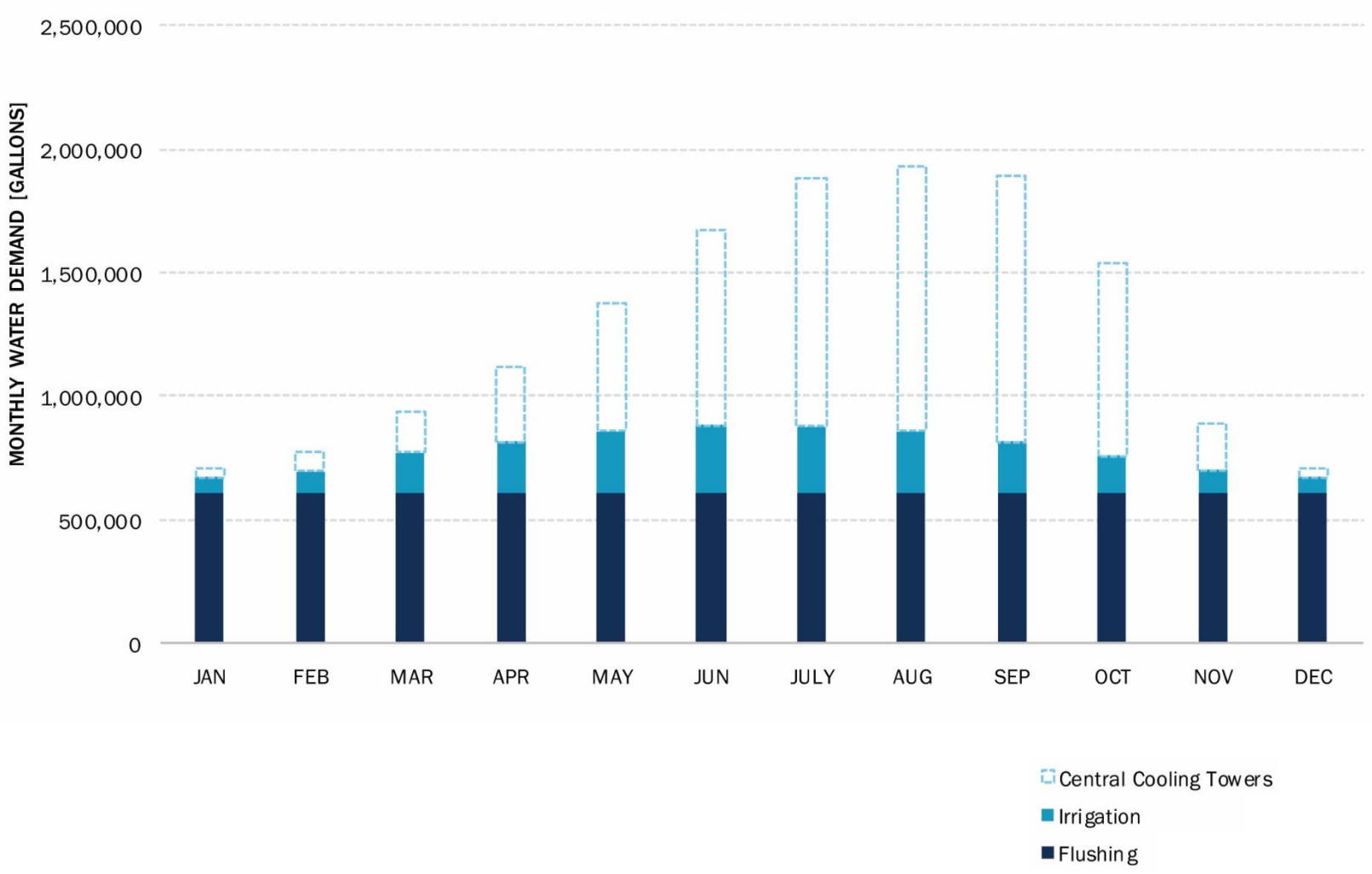


1. The anticipated bay source cooling connection will reduce site-wide water demand by more than 6 million gallons/year
2. Buildings A, K, and F collect greywater and send it to a graywater treatment plant
3. Anticipated central greywater treatment provides recycled water to meet 100% of flushing and irrigation demands of the entire site. Recycled water is distributed to buildings using “purple pipe”
4. Drought tolerant vegetation and efficient irrigation will minimize irrigation demand
5. Efficient Fixture and equipment will reduce domestic and process water demand

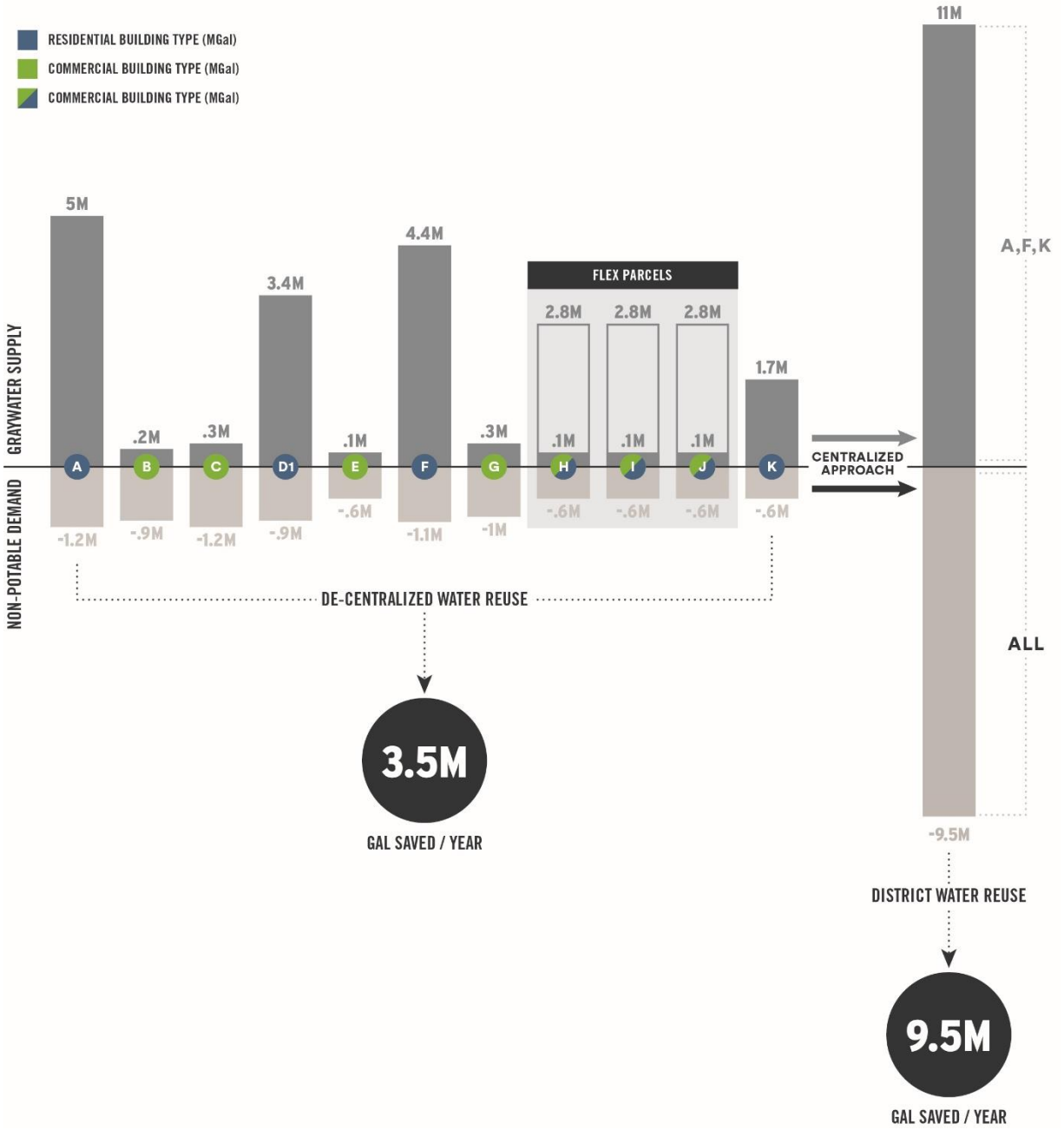
Greywater Collection and Reclaimed Water Distribution

atelier ten

Monthly Reclaimed Water Demand



Annual Non-Potable Water Balance



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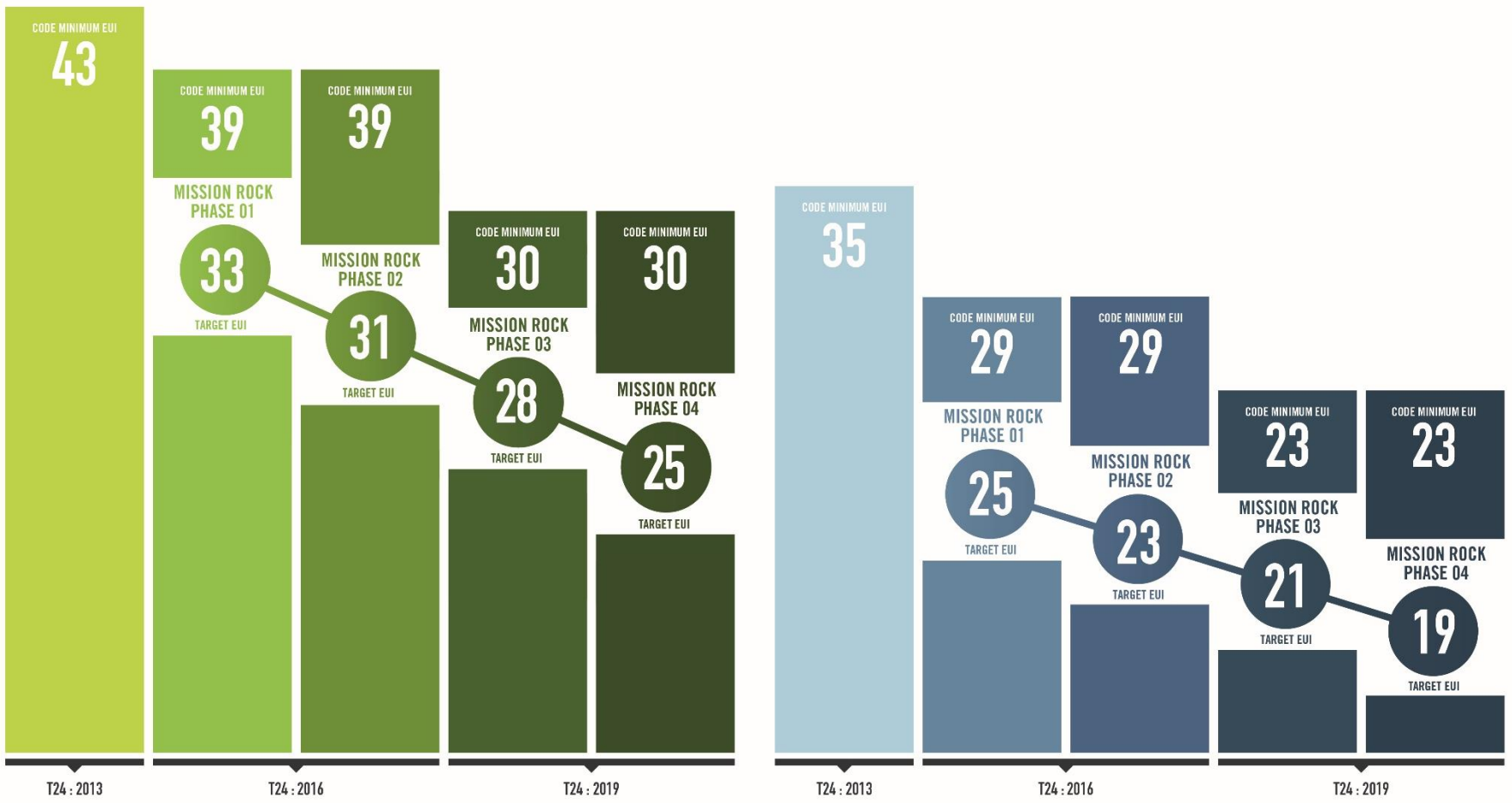
Building EUI



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Transit Context

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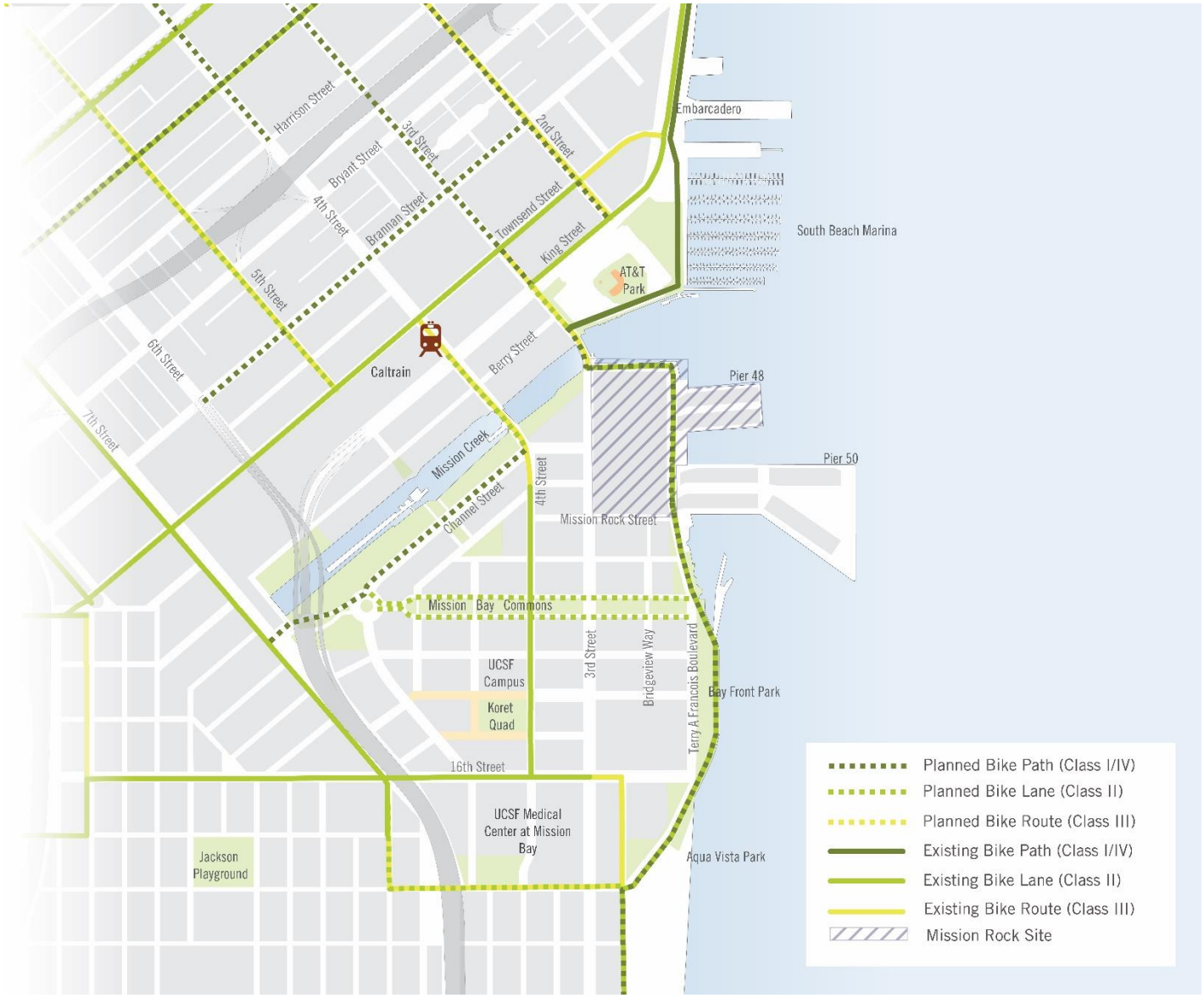
Bike Network



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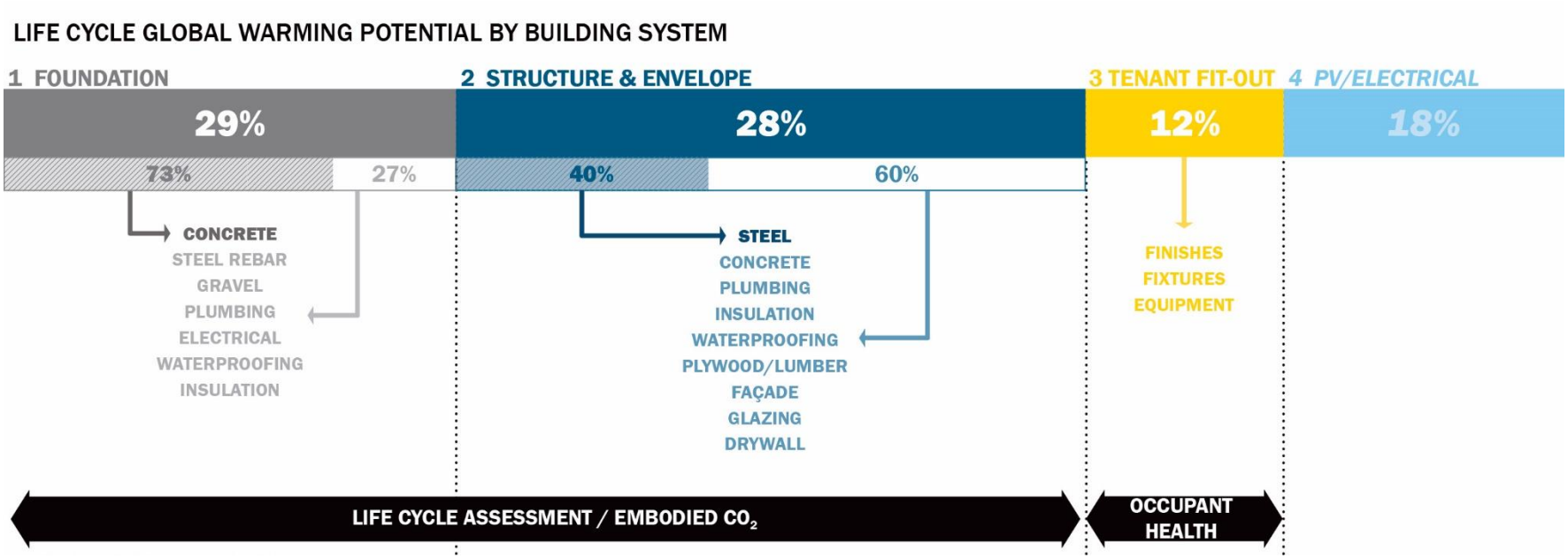
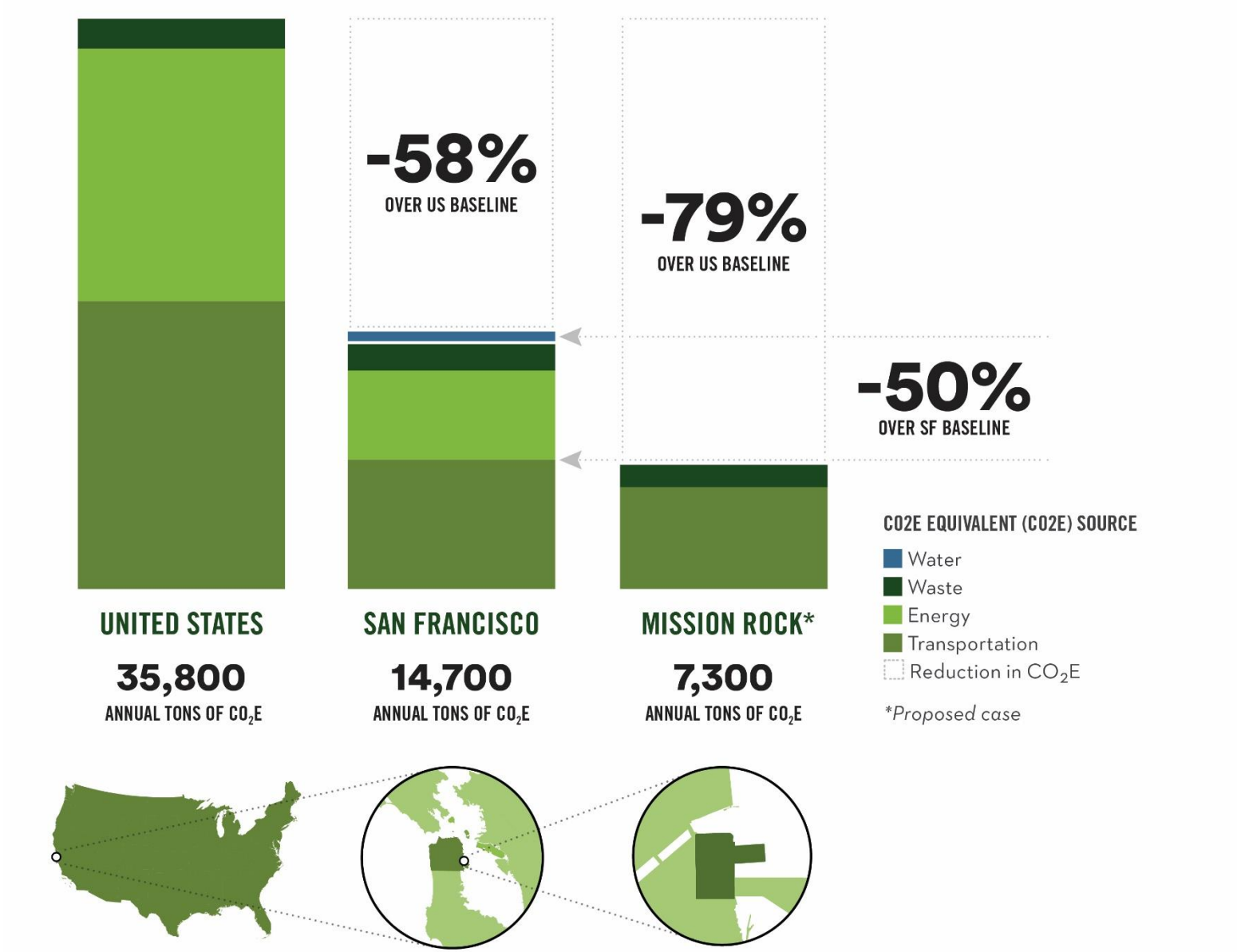
Materials

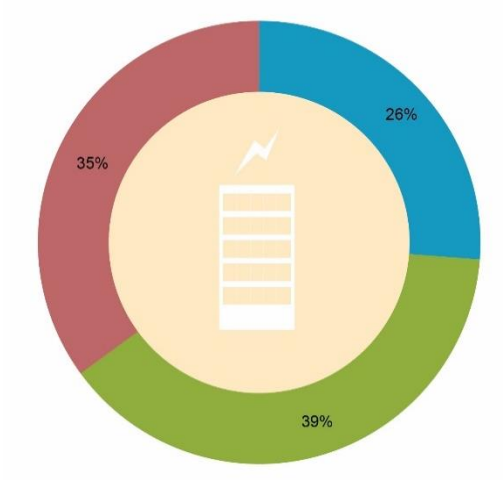

LIFE CYCLE GLOBAL WARMING POTENTIAL BY BUILDING SYSTEM
1 FOUNDATION
2 STRUCTURE & ENVELOPE
3 TENANT FIT-OUT
4 PV/ELECTRICAL
29%
28%
12%
18%
73%
27%
40%
60%
CONCRETE
STEEL REBAR
GRAVEL
PLUMBING
ELECTRICAL
WATERPROOFING
INSULATION
STEEL
CONCRETE
PLUMBING
INSULATION
WATERPROOFING
PLYWOOD/LUMBER
FAÇADE
GLAZING
DRYWALL
FINISHES
FIXTURES
EQUIPMENT
LIFE CYCLE ASSESSMENT / EMBODIED CO_2
OCCUPANT HEALTH

Greenhouse Gas Emissions

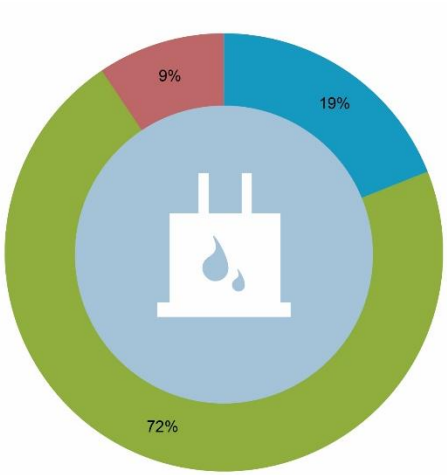


atelier ten

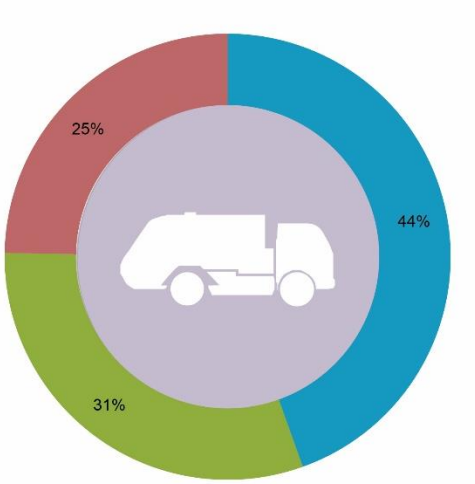
Greenhouse Gas Emissions by End Use



ENERGY

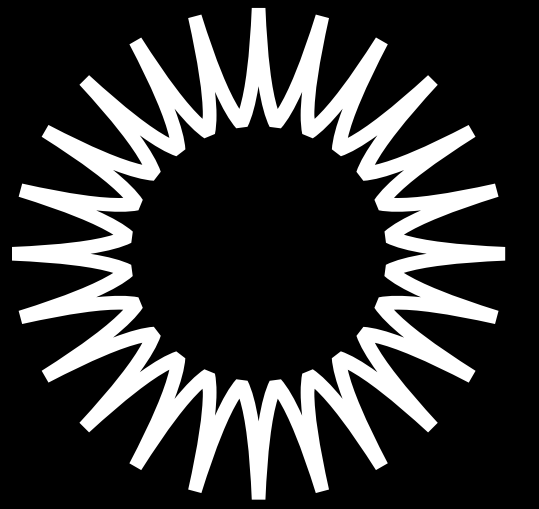


WATER



WASTE

Commercial
Residential
Retail



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