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Chasing the Twin Goals of Carbon Reduction and Racial Equity

SEEC Conference 2019

Rich Chien, SF Environment
Ammon Reagan, SF Environment
Leah Obias, Race Forward
Chris Selig, PODER

Agenda

1. Developing an inclusive and equitable zero carbon buildings roadmap for the Climate Action Strategy (Rich)

2. How we conducted a bottom-up assessment of the source of building sector emissions to improve our understanding of where they come from and what we could do to reduce them (Ammon)

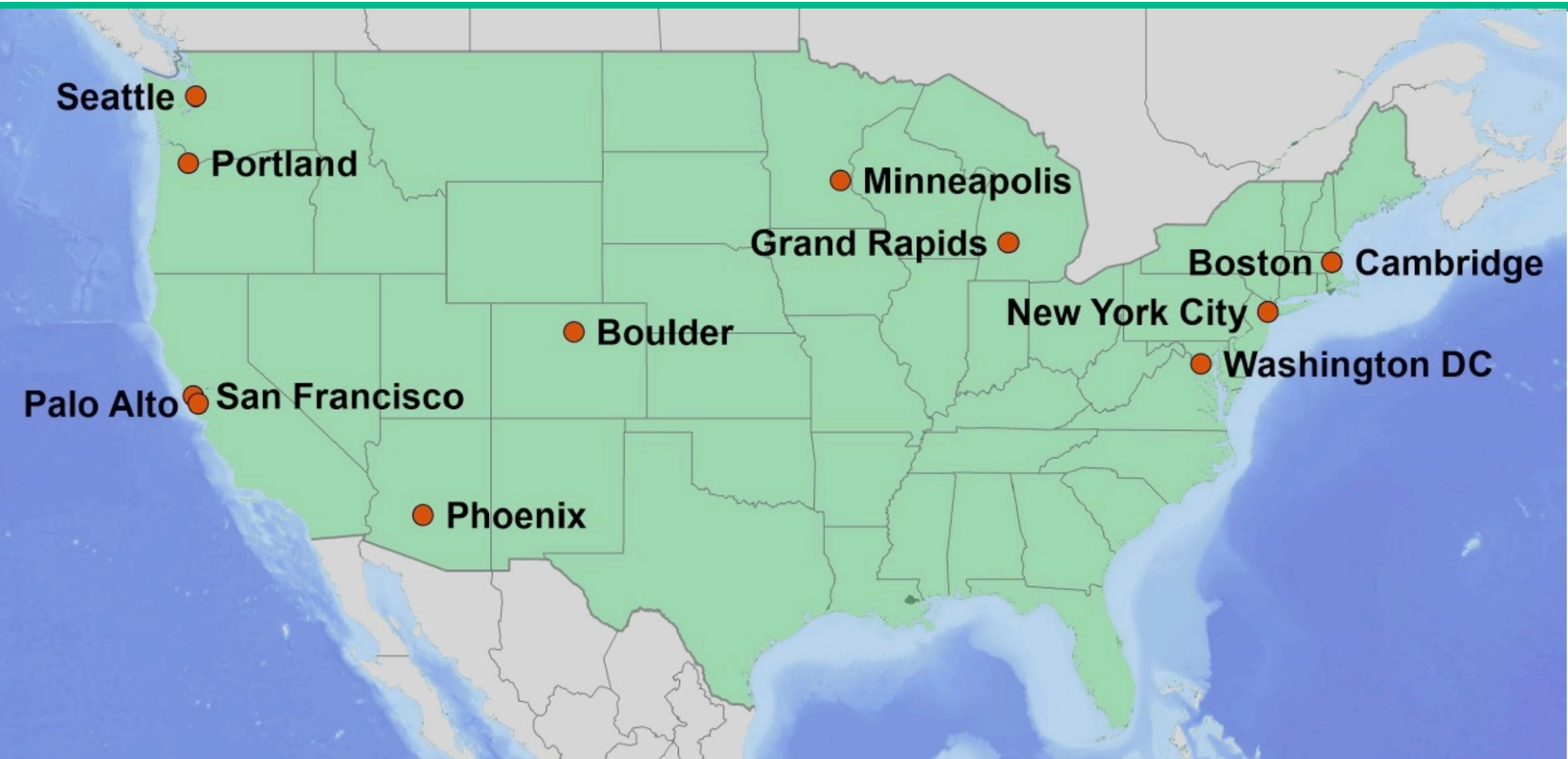
3. Introduction to tools that support community engagement and racial equity-focused building decarbonization planning (Leah)

4. How San Francisco's Anchor Partners are implementing the approach (Chris)

Net Zero Emissions by 2050

New Construction	2030
All Buildings	2050

Zero Cities Project



Project Scope and Supporting Partners

All Cities

- Develop Zero Carbon Building Roadmaps
- Identify solutions that advance racial equity
- Share learnings w/next wave cities

+

San Francisco

- Building Sector Assessment
- Residential Decarb Roadmaps (modeling and engagement tool)
- Reach Codes support
- Incorporate building actions into CAS update

architecture 2030

race forward
THE CENTER FOR RACIAL JUSTICE INNOVATION

MOVEMENT STRATEGY CENTER

nbi new buildings institute

CNCA
CARBON NEUTRAL CITIES ALLIANCE

USDN | urban sustainability directors network

RESOURCE MEDIA

Paris Agreement Compliant Climate Action Strategy

- Provide a clear roadmap of actions to reduce GHG emissions
- Evaluate inclusive benefits of actions
- Identify Clear Roles and Responsibilities
- Monitoring and Verification Plan
- Integrate Mitigation and Adaptation
- Address racial, social and economic inequities

Disproportionate Impacts of Climate Change

San Francisco Heat Vulnerability Index

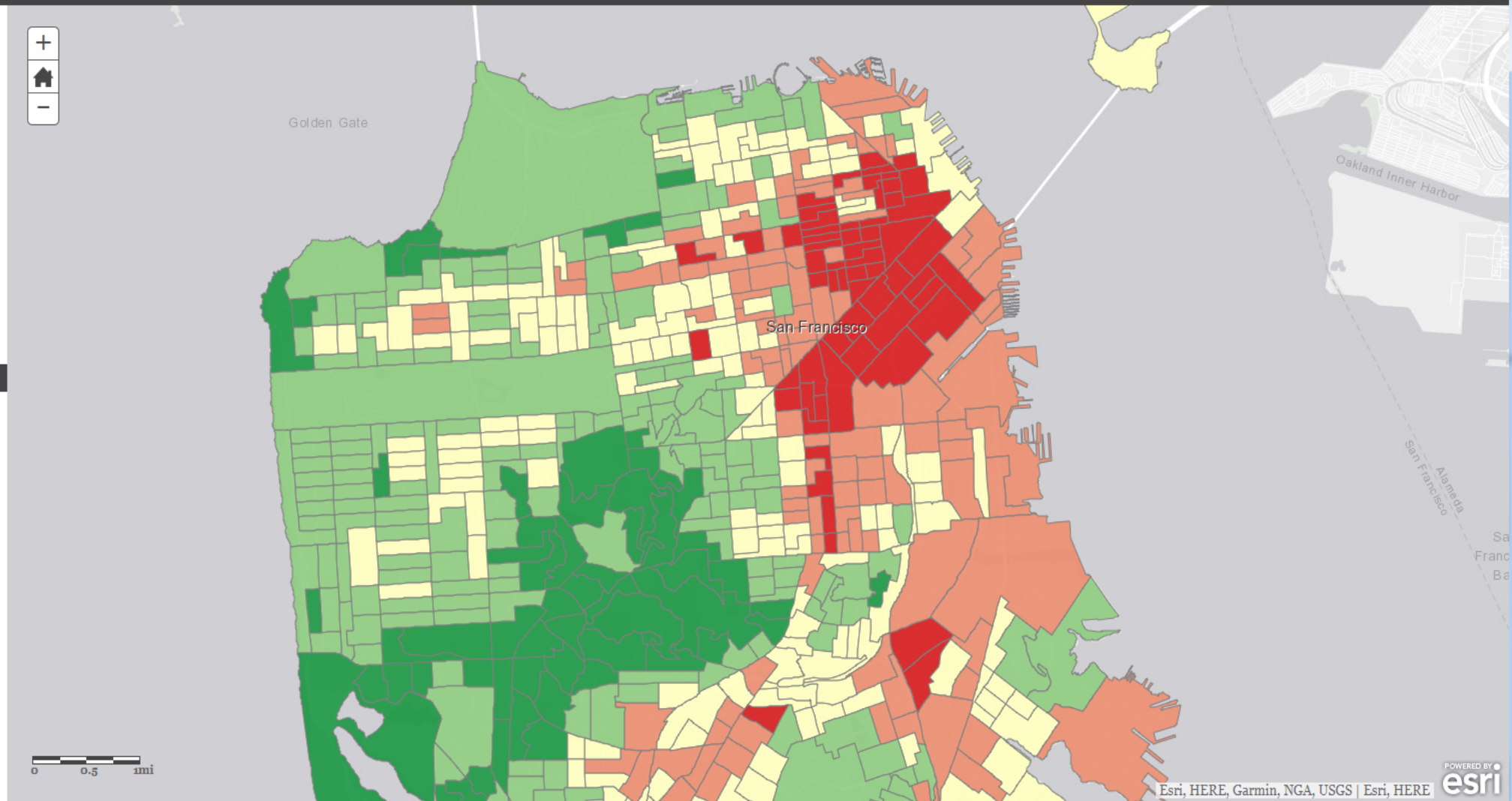
The Heat Vulnerability Index is a measure of vulnerability to adverse health effects in an extreme heat event. In addition to exposure to heat and climate conditions, many other factors, such as individual physiology, culture, local infrastructure, behavior, and social and demographic characteristics influence the risk of heat-related health impacts. To calculate the Heat Vulnerability Index, data on 21 variables identified to influence an individual or community's heat vulnerability were obtained. These indicators capture individual pre-existing conditions (asthma rates), demographic and socioeconomic factors (age, race, educational attainment, language, income, poverty, living alone, living in a nursing home), environmental exposure factors (temperature, air quality, tree density, proximity to parks/green space, living on top floor), and infrastructure conditions (building age, mobility/access to transportation, air conditioning).

LEGEND

Heat Vulnerability

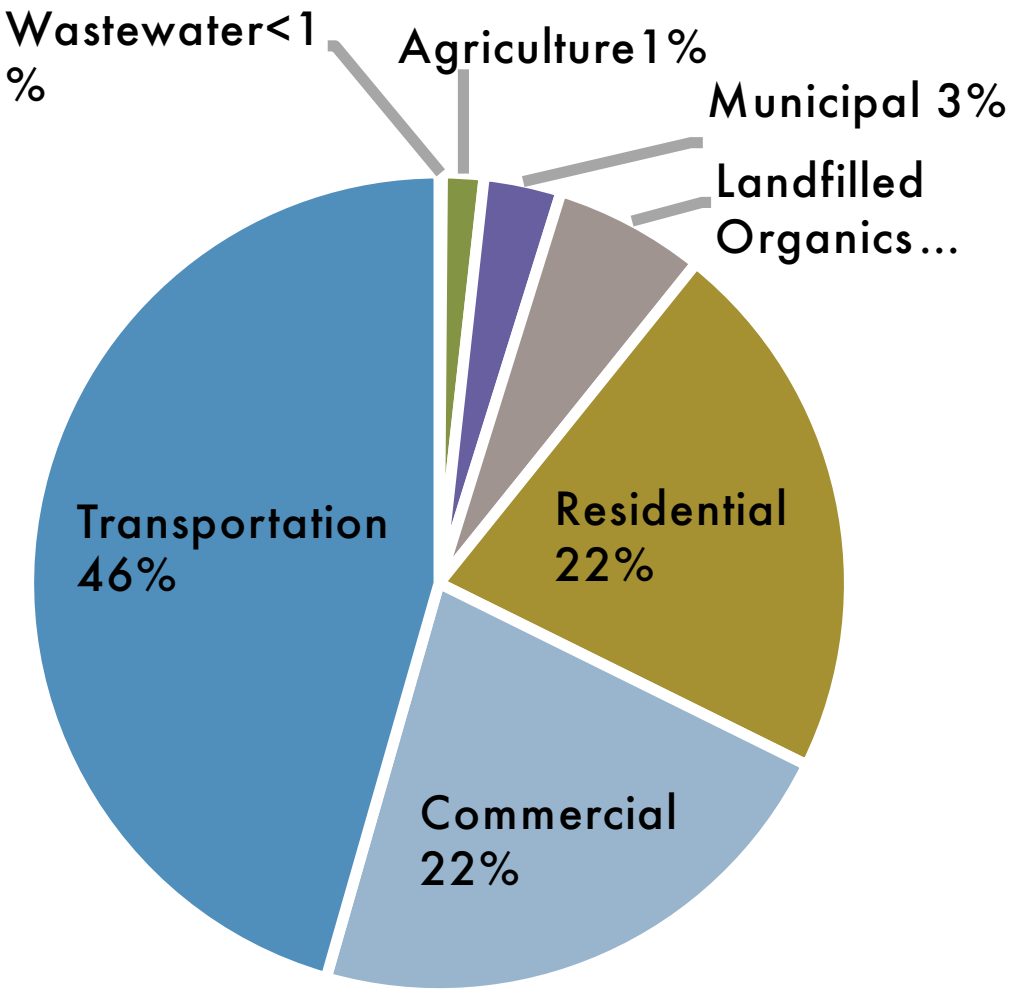
Heat Vulnerability Score

- High
- Medium-High
- Medium
- Low-Medium
- Low

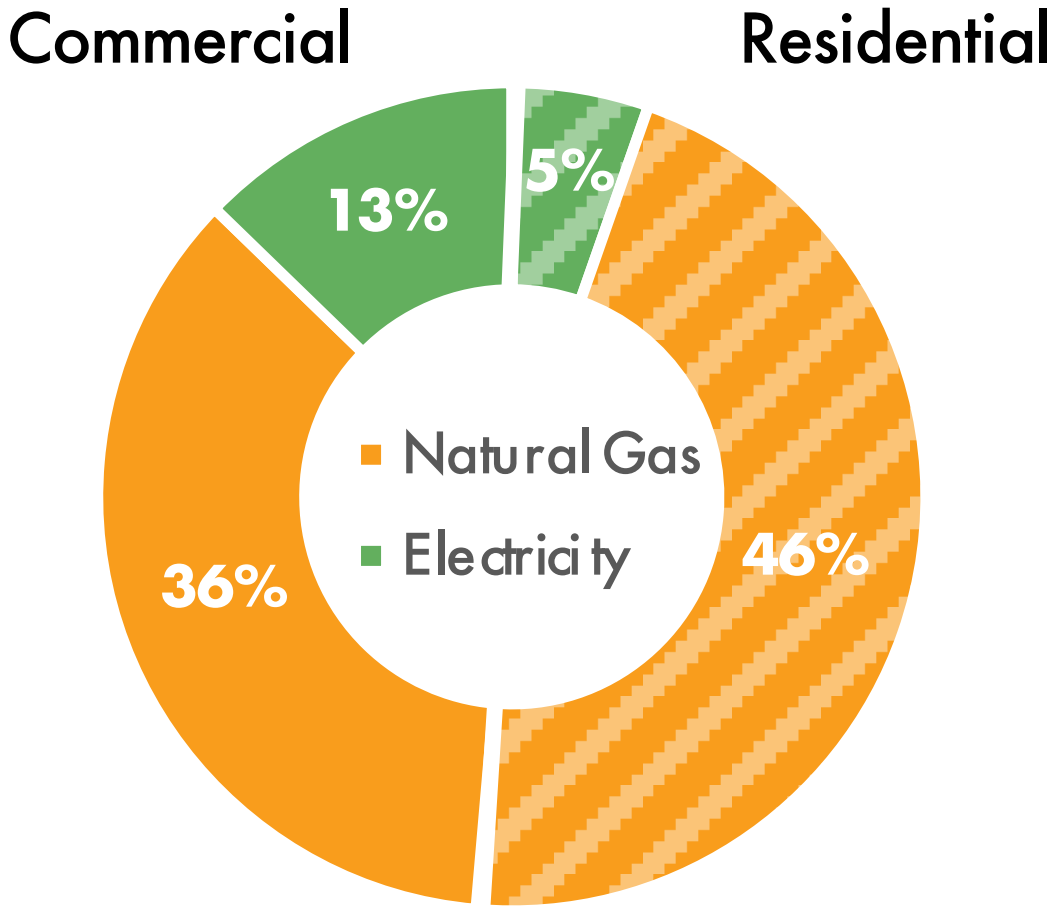


City Emissions and Buildings

CITYWIDE



BUILDINGS



Zero Emissions Buildings in 3 Steps

1. Energy efficiency
2. Supply renewable electricity
3. Electrify appliances

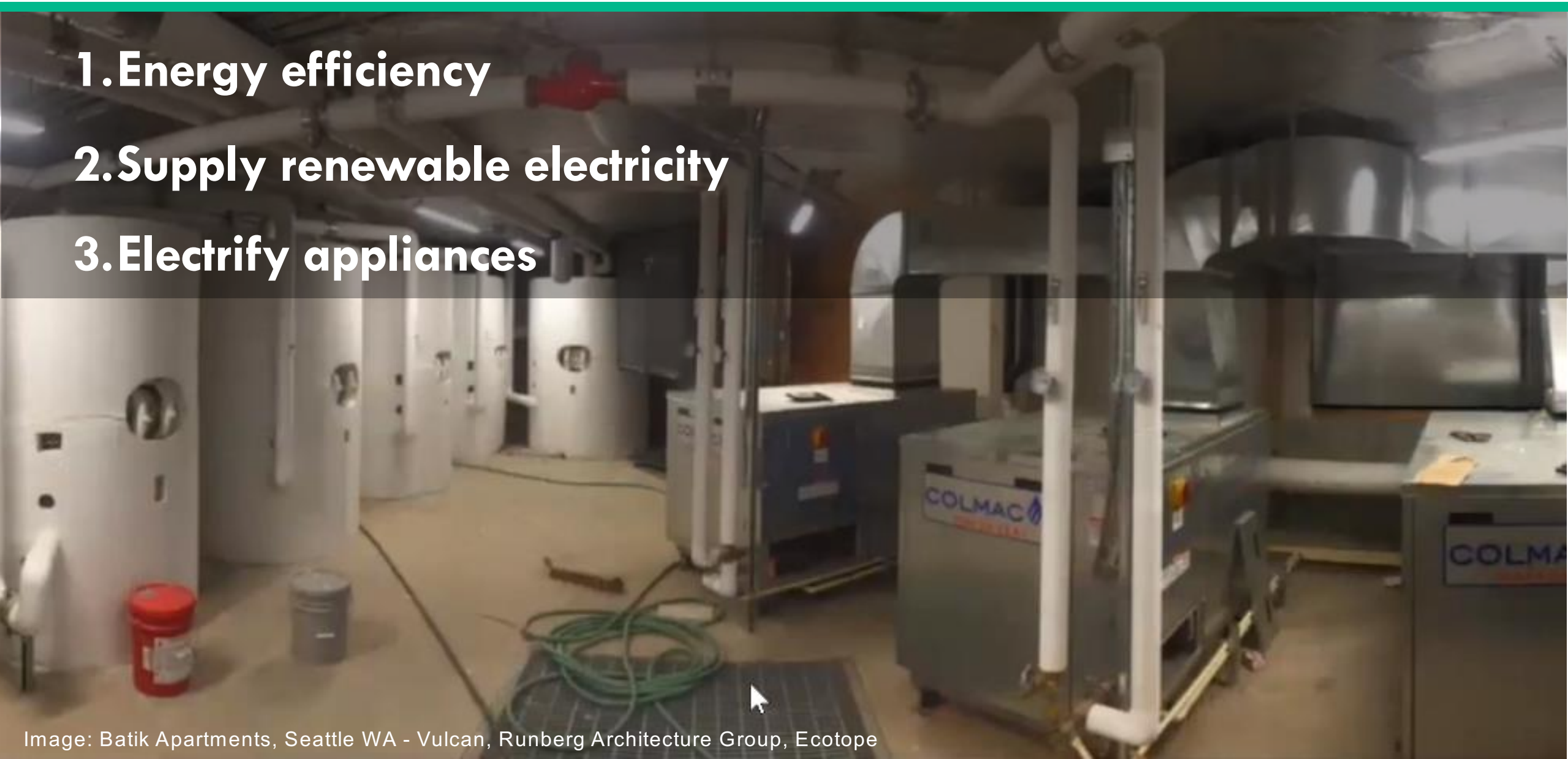
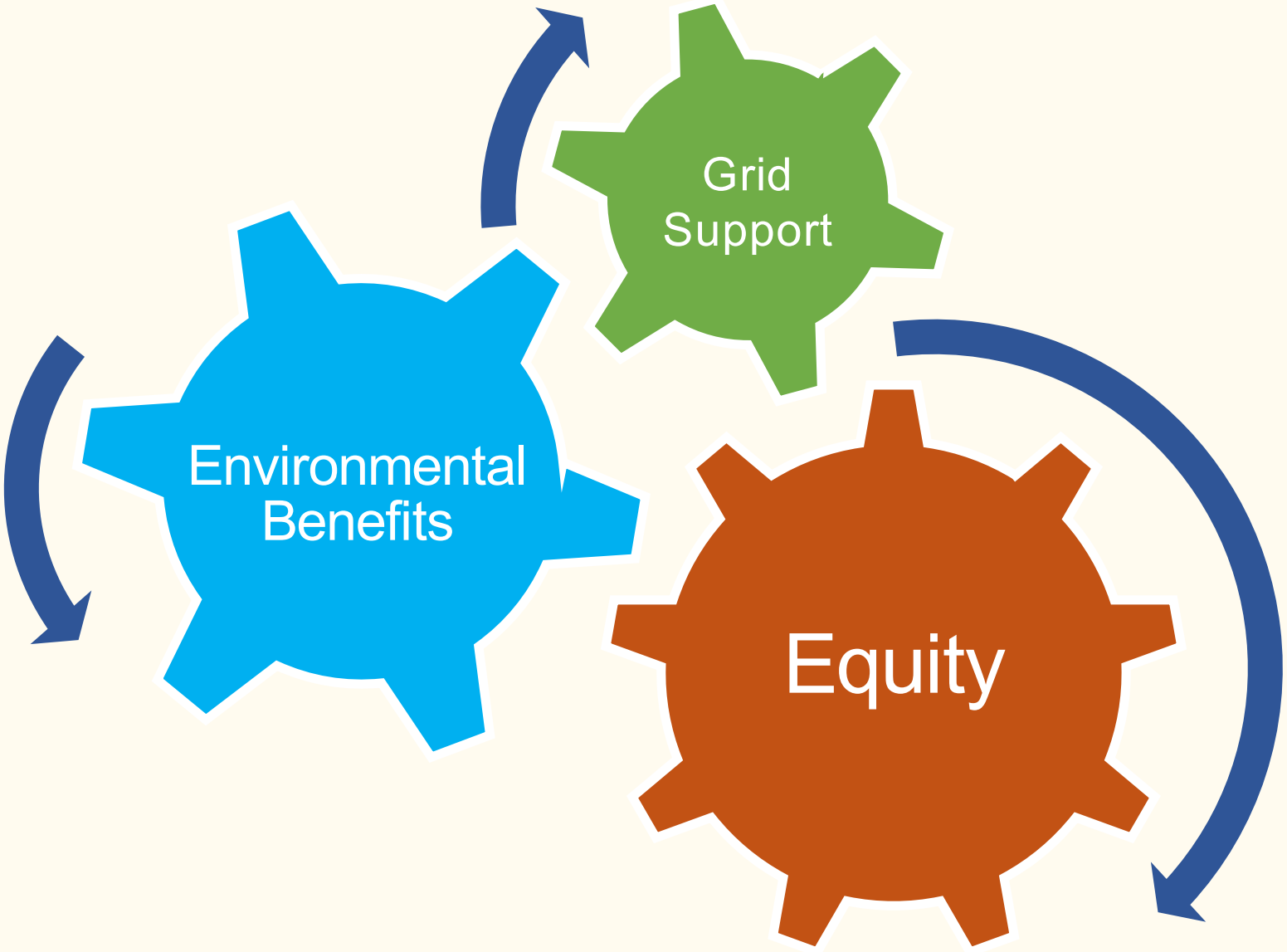


Image: Batik Apartments, Seattle WA - Vulcan, Runberg Architecture Group, Ecotope

Beneficial Electrification



Affordable Housing is Leading the Way

Casa Adelante: TNDC/CCDC, Mithun, YA Studio, Association for Energy Affordability

What About Everyone Else?

- Housing and Energy Affordability
- Displacement and Gentrification
- Address Unequal Burdens of Climate Actions including Electrification
- Equitable Distribution of Direct Benefits and Co-benefits
- Access to Economic and Job Opportunities

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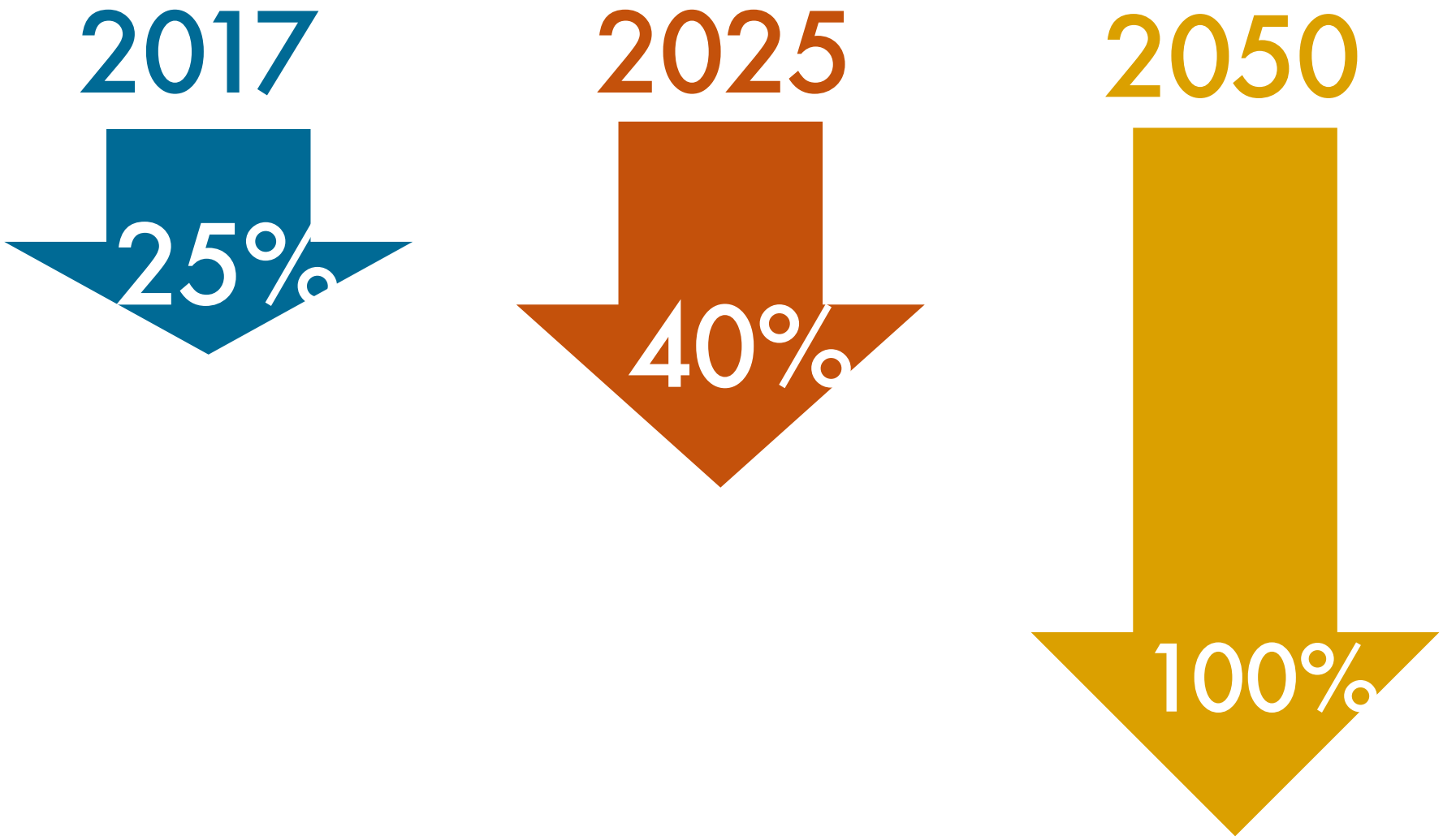
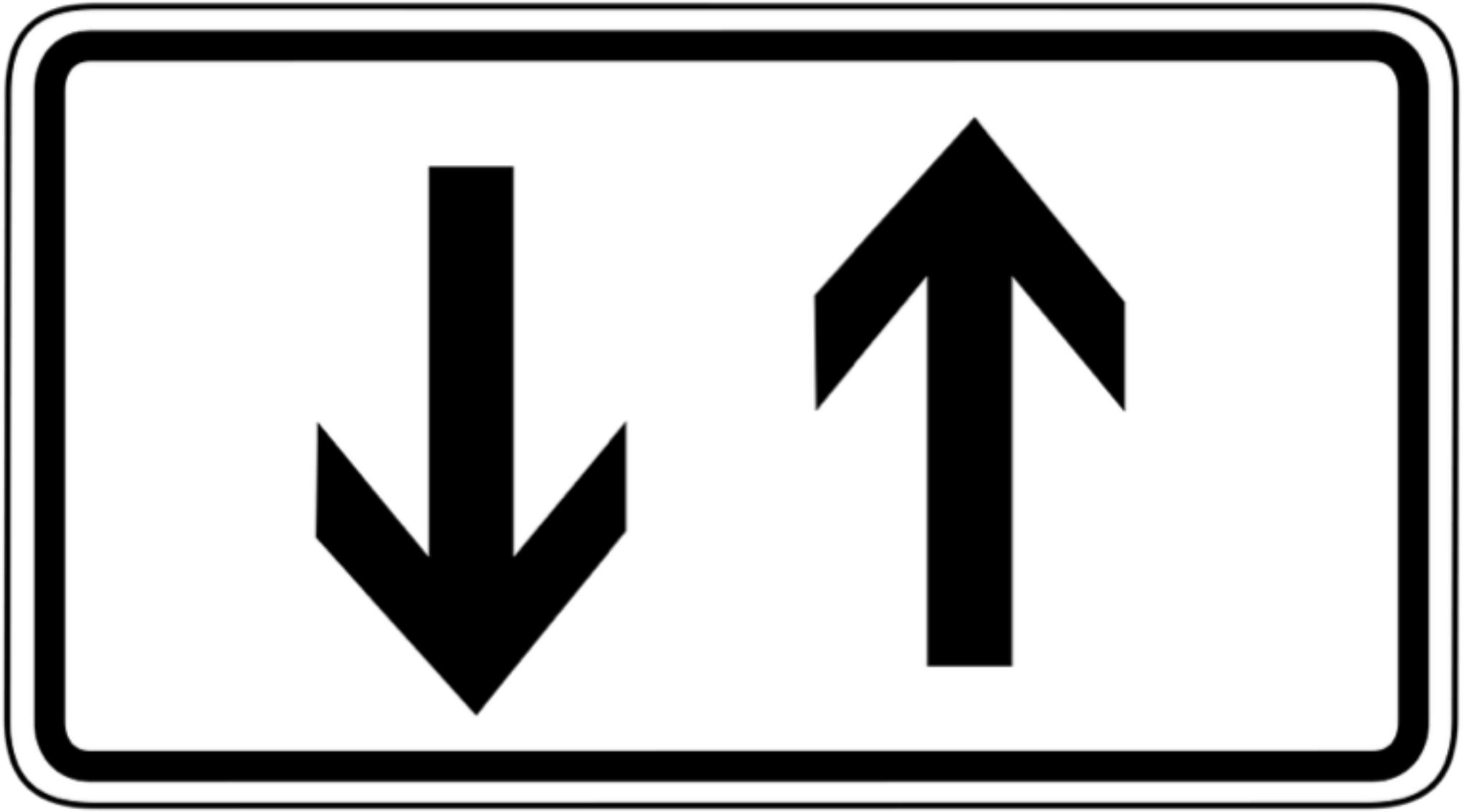
Baseline Assessment and Emissions Modeling

Ammon Reagan

Modeling Emissions to Meet Goals



Bottom-Up Approach



Two Functionalities

- Baseline Assessment
- Emissions Projection

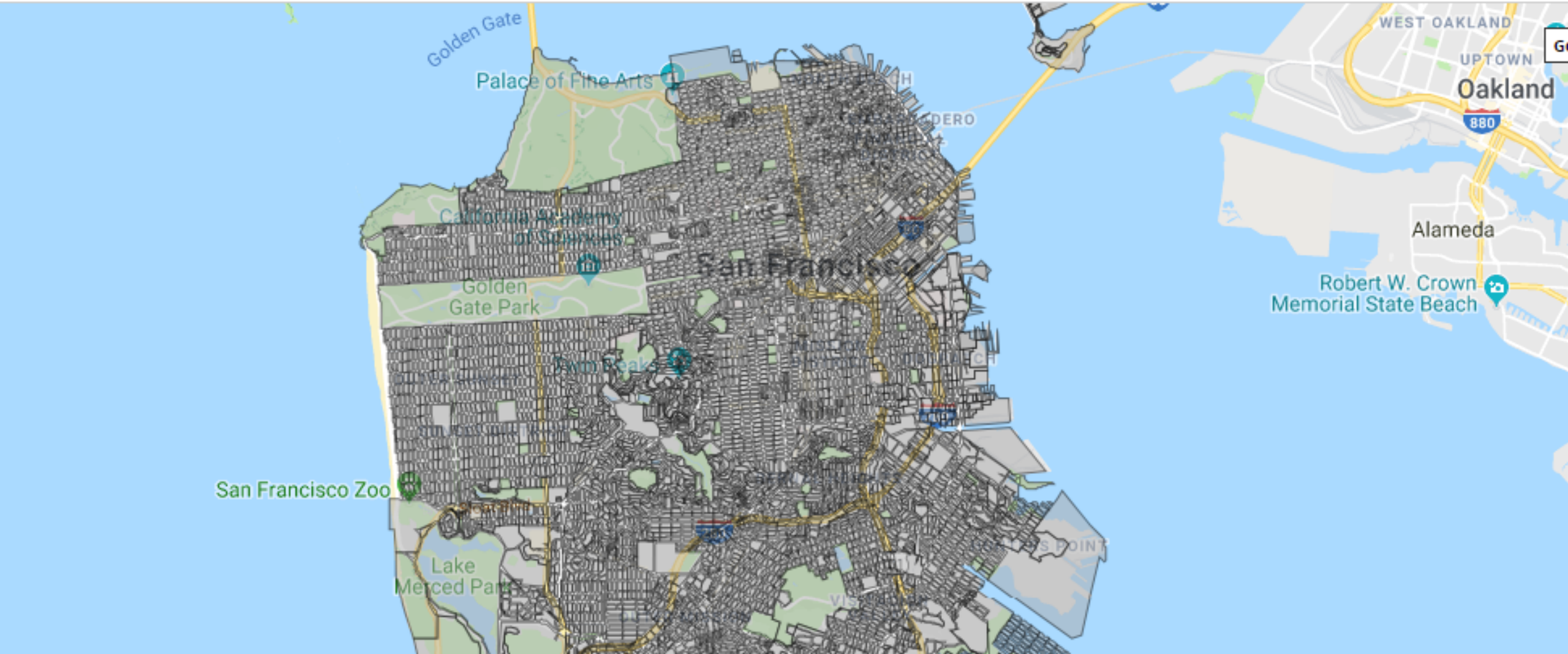
Methodology

San Francisco Building Stock from Public Data

San Francisco Assessor Blocks

Based on San Francisco Assessor Blocks

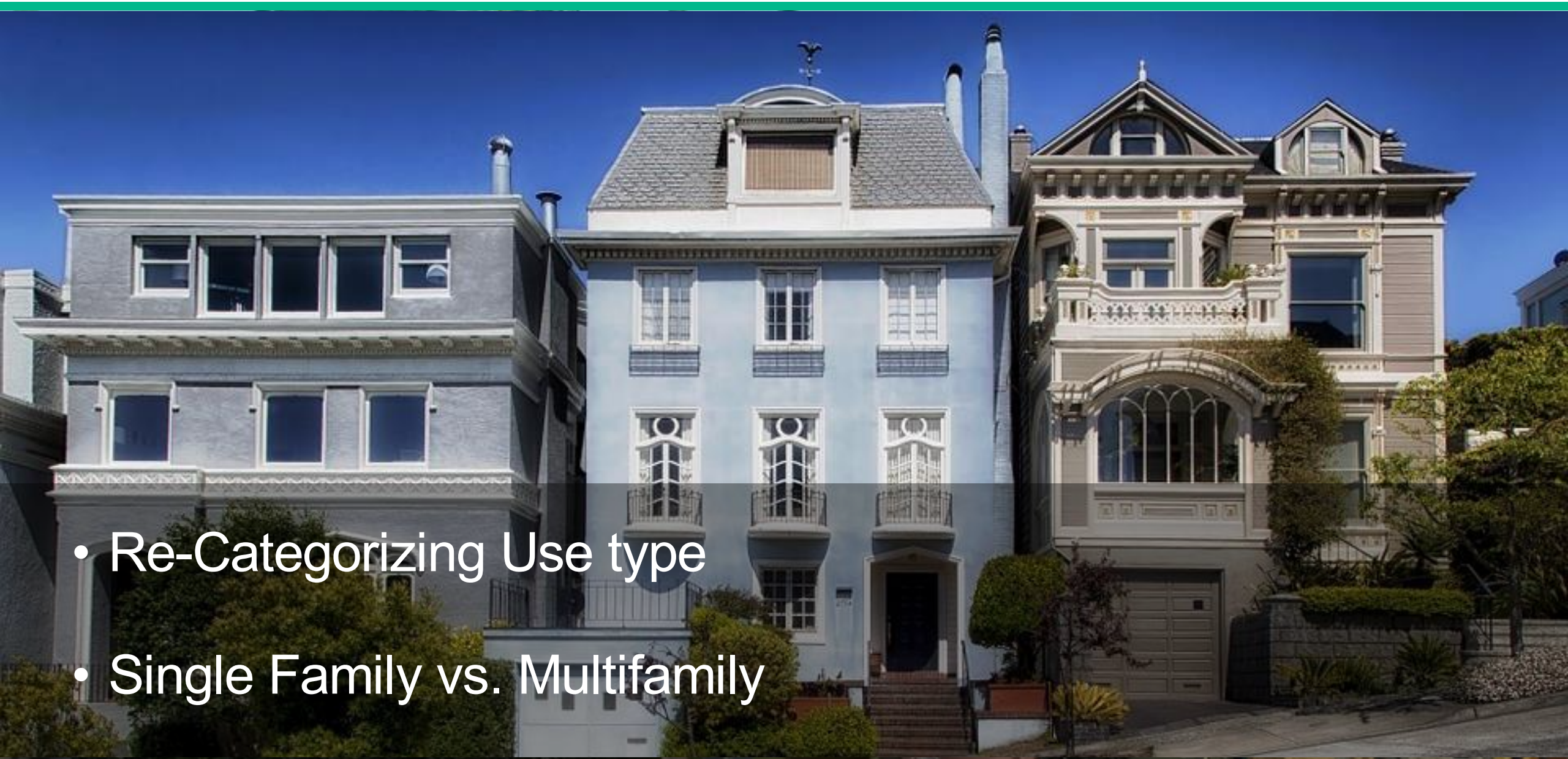
Find in this Dataset



Data Cleaning

- Owner Record vs Building Record
- Mixed-Use Buildings

Data Cleaning and Categorization



- Re-Categorizing Use type
- Single Family vs. Multifamily

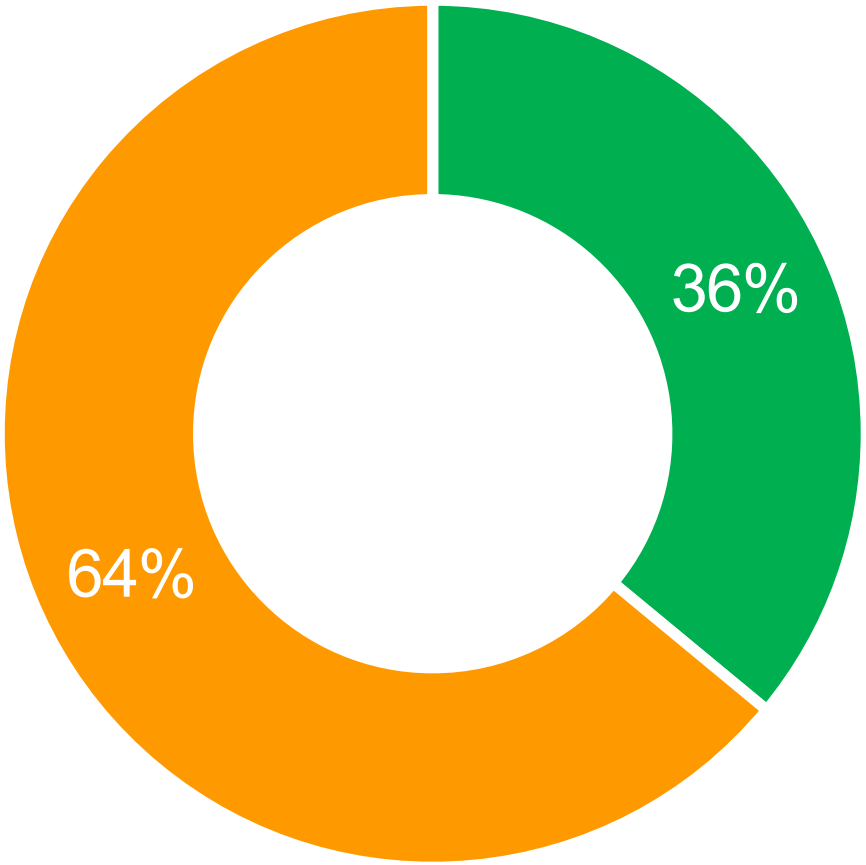
Calculating Building Energy Use – EUI

Calculating Building Energy Use – Fuel Split

Calculating Building Emissions From Multiple Utilities

Split Model into Two Paths

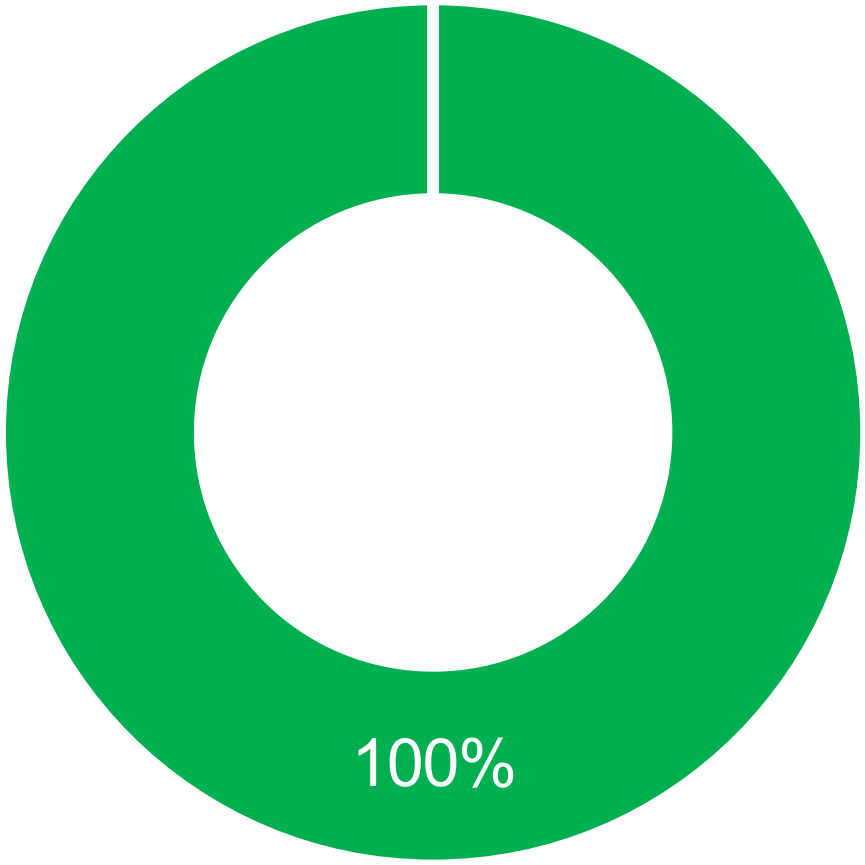
Base Electricity Content



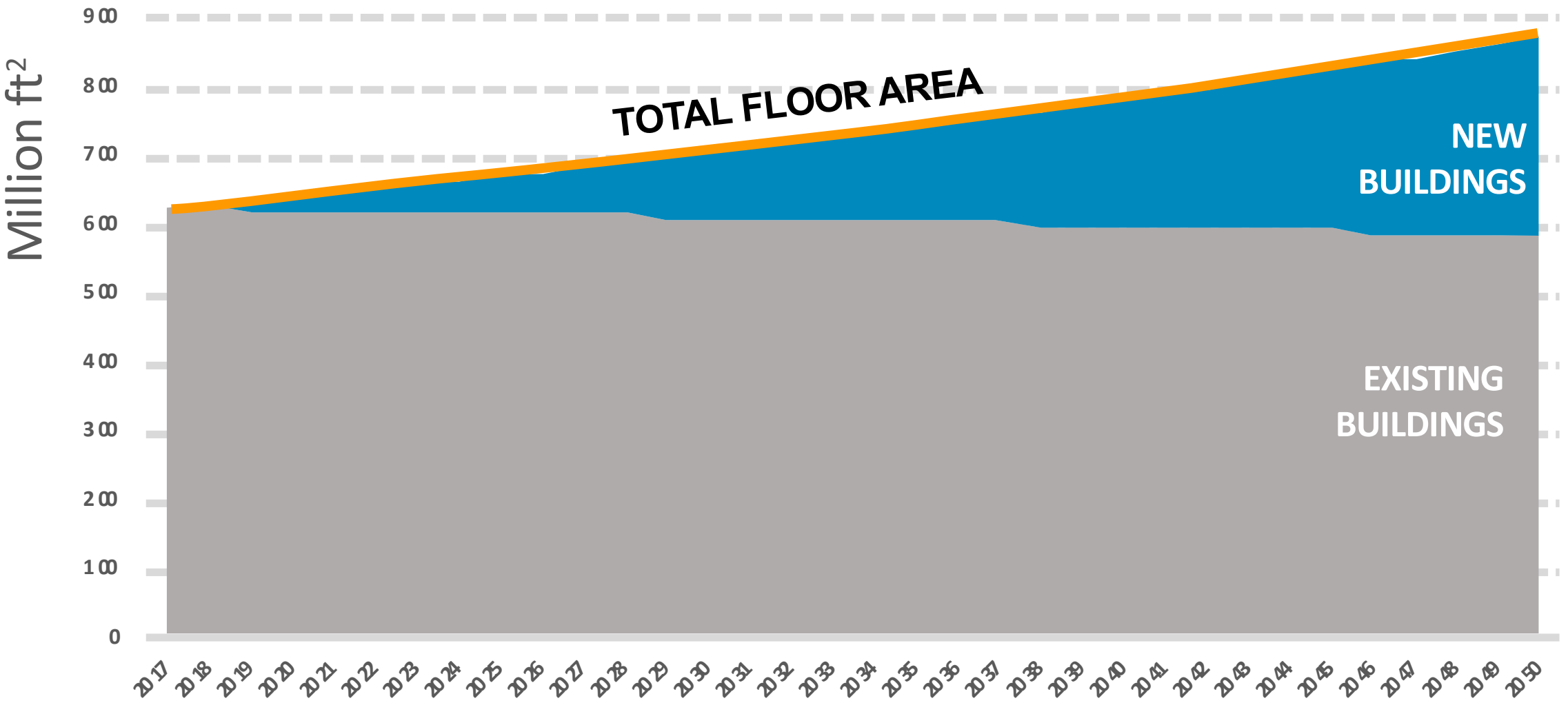
Not GHG Free

GHG Free

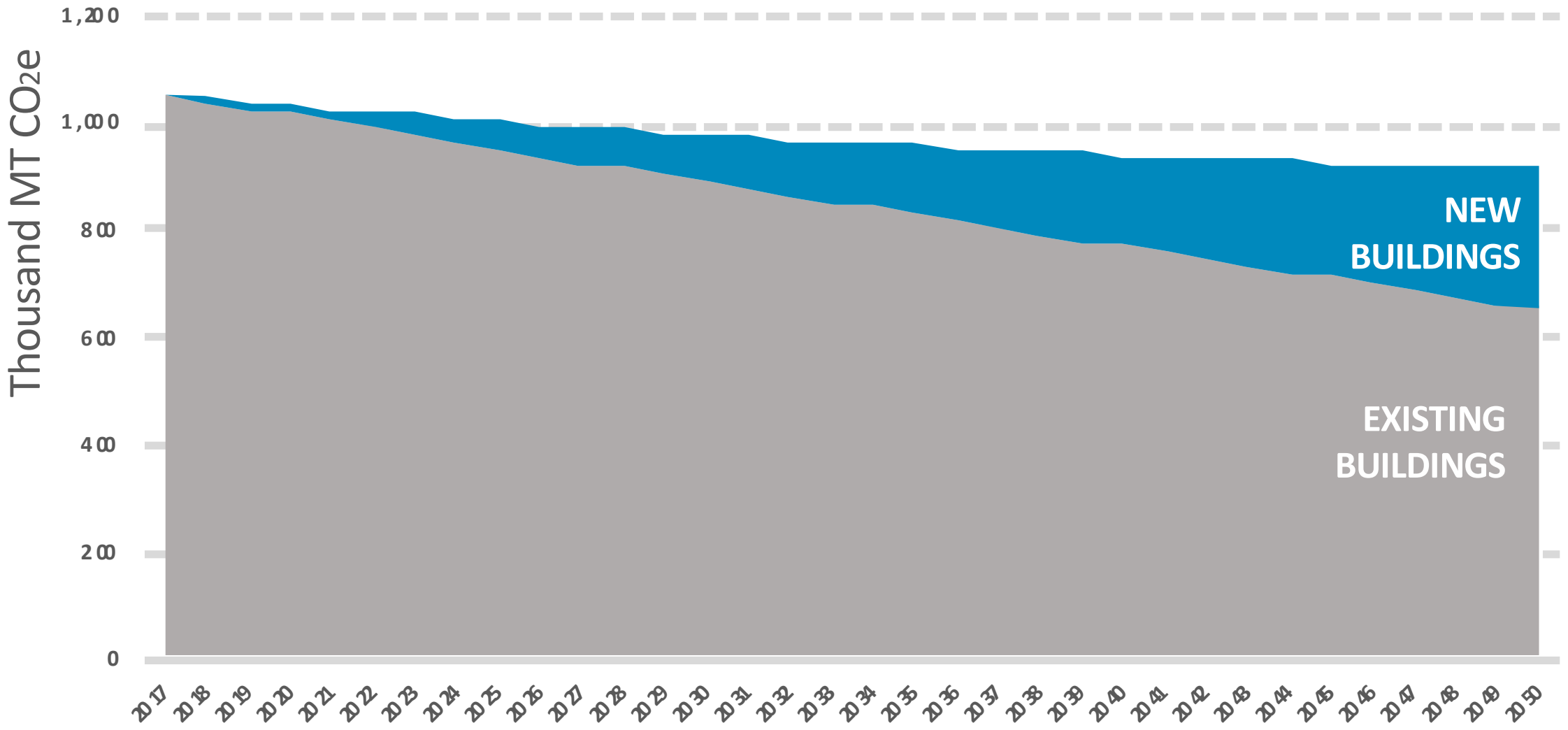
100% Renewable Electricity Content



Projecting Floor Area

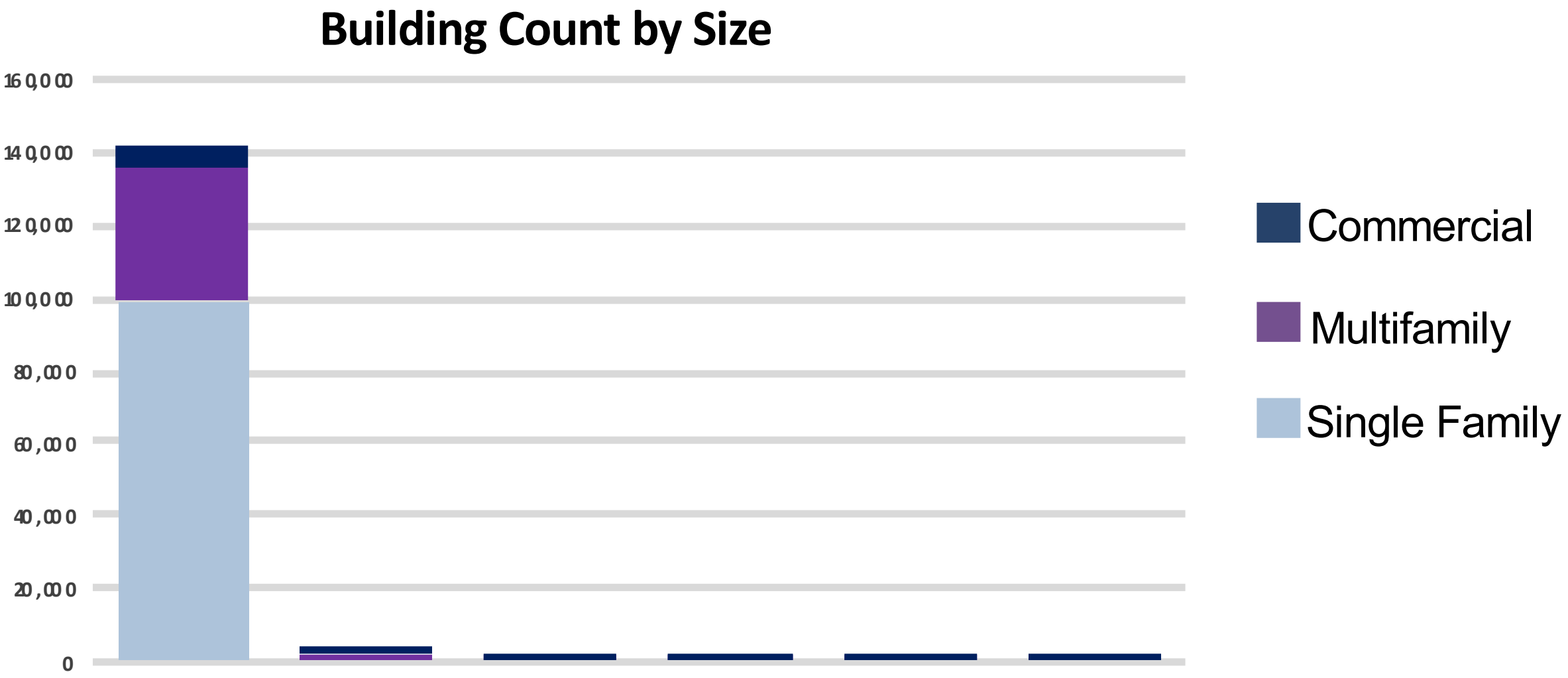


Projecting Future Emissions



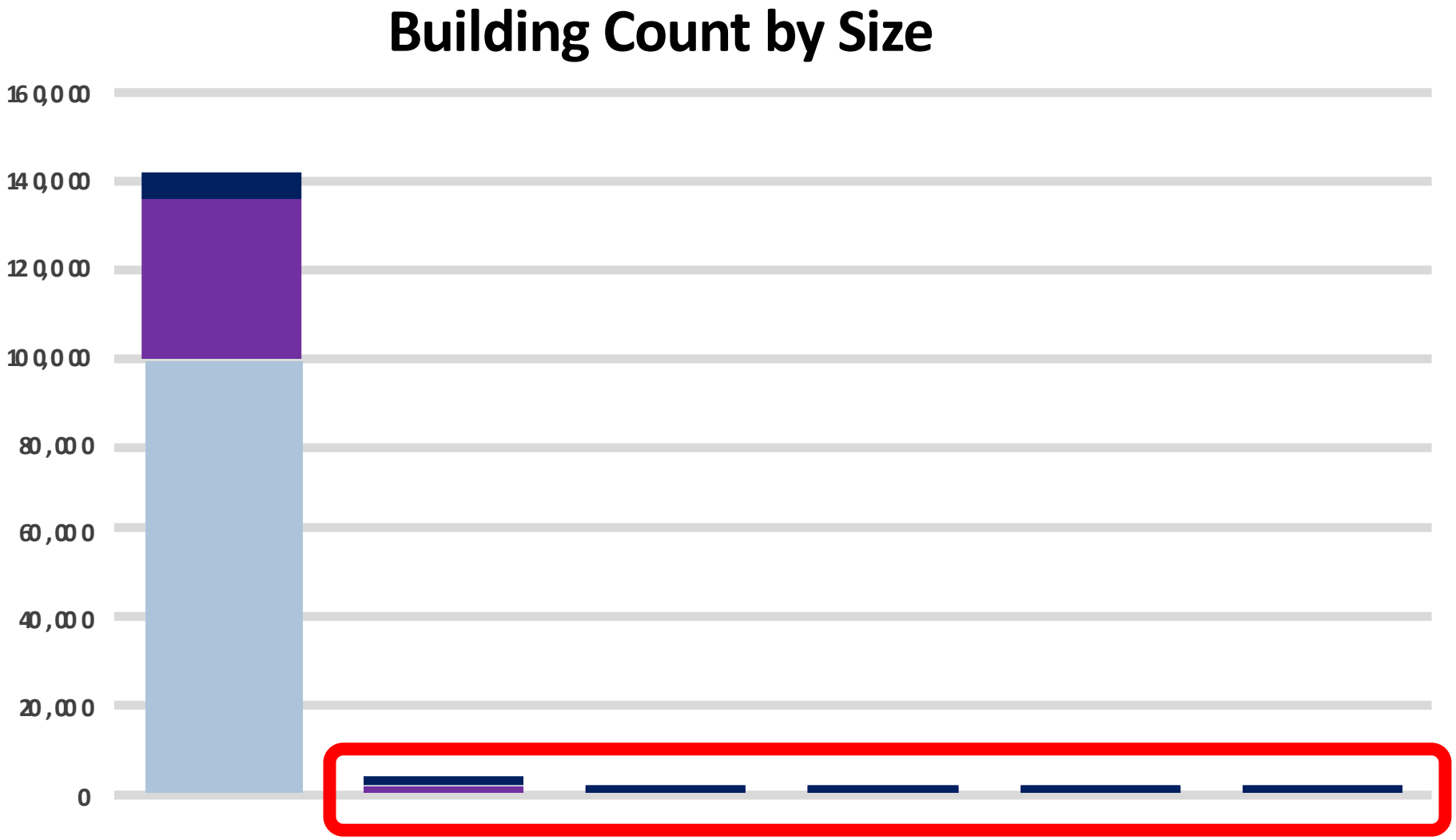
Key Findings from Baseline Analysis

GHG Emissions Breakdown



Building Size	0-20k ft2	20-50k ft2	50-75k ft2	75-100K ft2	100-200K ft2	200K+ ft2
Building Count	143,435	1,760	354	187	295	300

GHG Emissions Breakdown

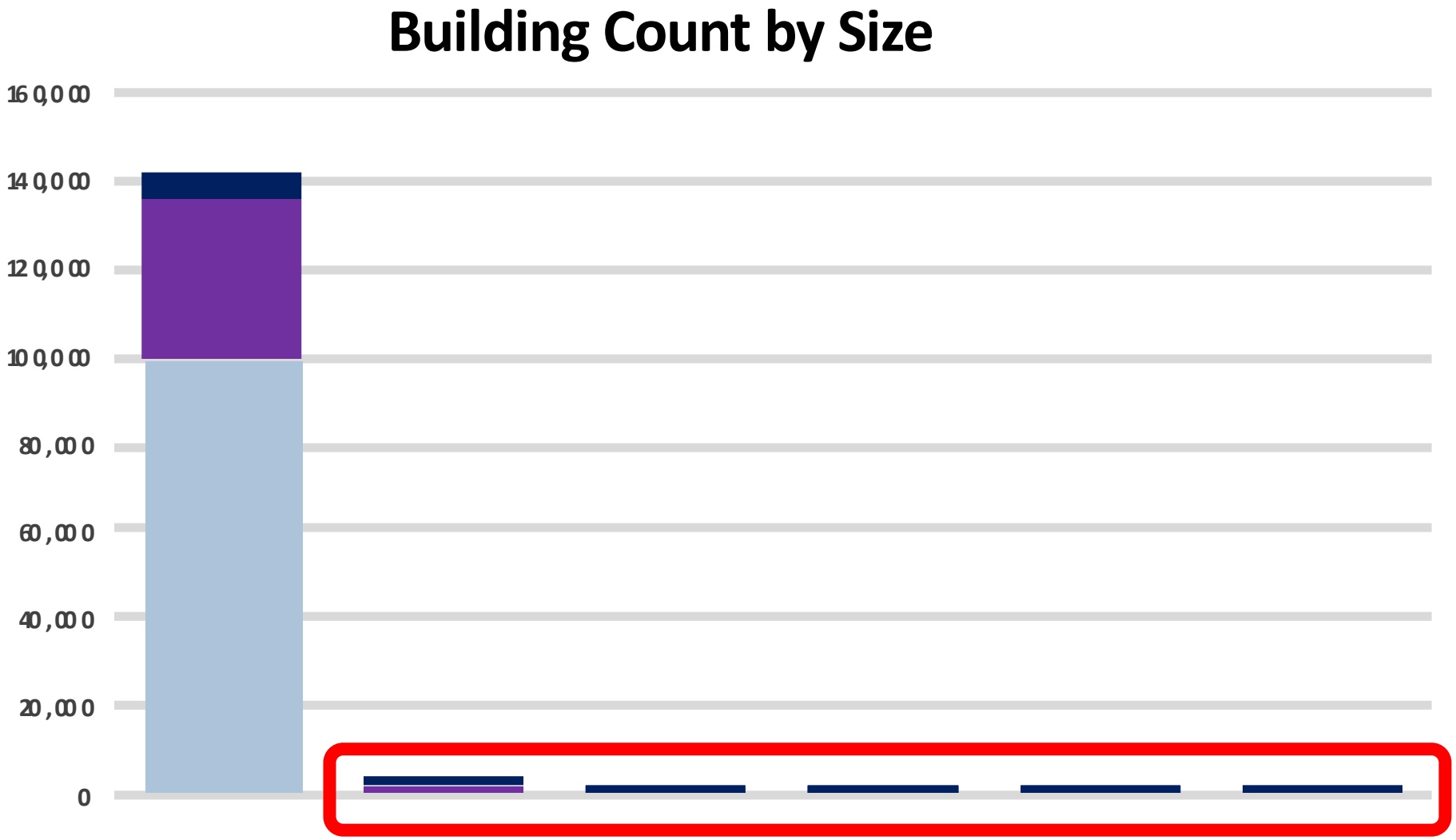


Building Size	0-20k ft2	20-50k ft2	50-75k ft2	75-100K ft2	100-200K ft2	200K+ ft2
Building Count	143,435	1,760	354	187	295	300

2%

Of buildings

GHG Emissions Breakdown



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Building Count	143,435	1,760	354	187	295	300

2%

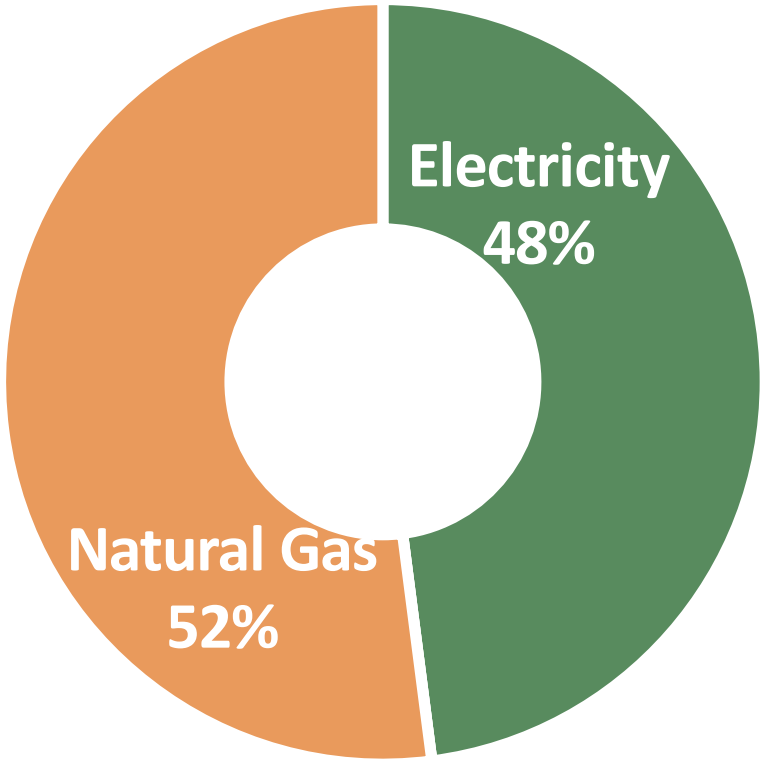
Of buildings

53%

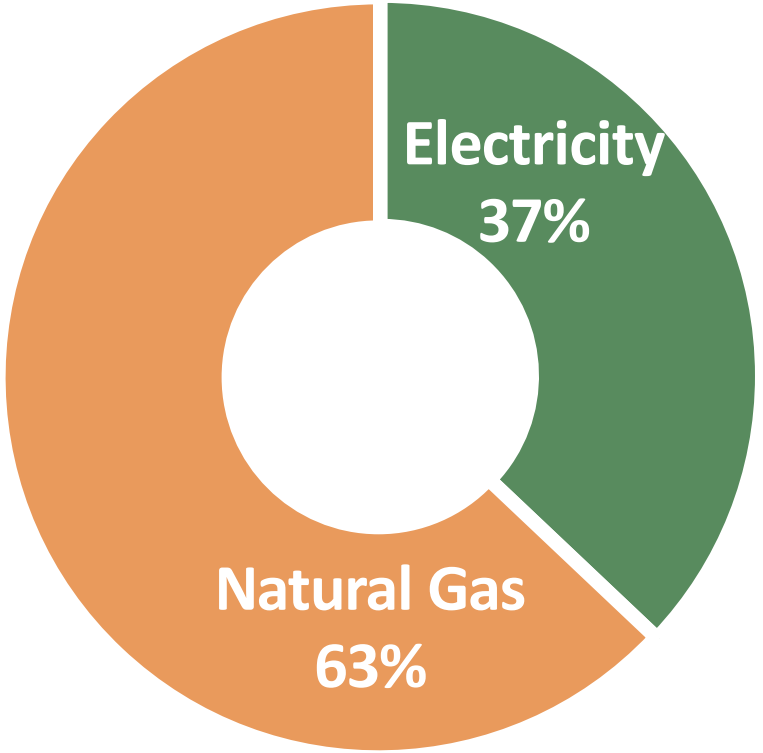
Of Emissions

Reducing Natural Gas is Key

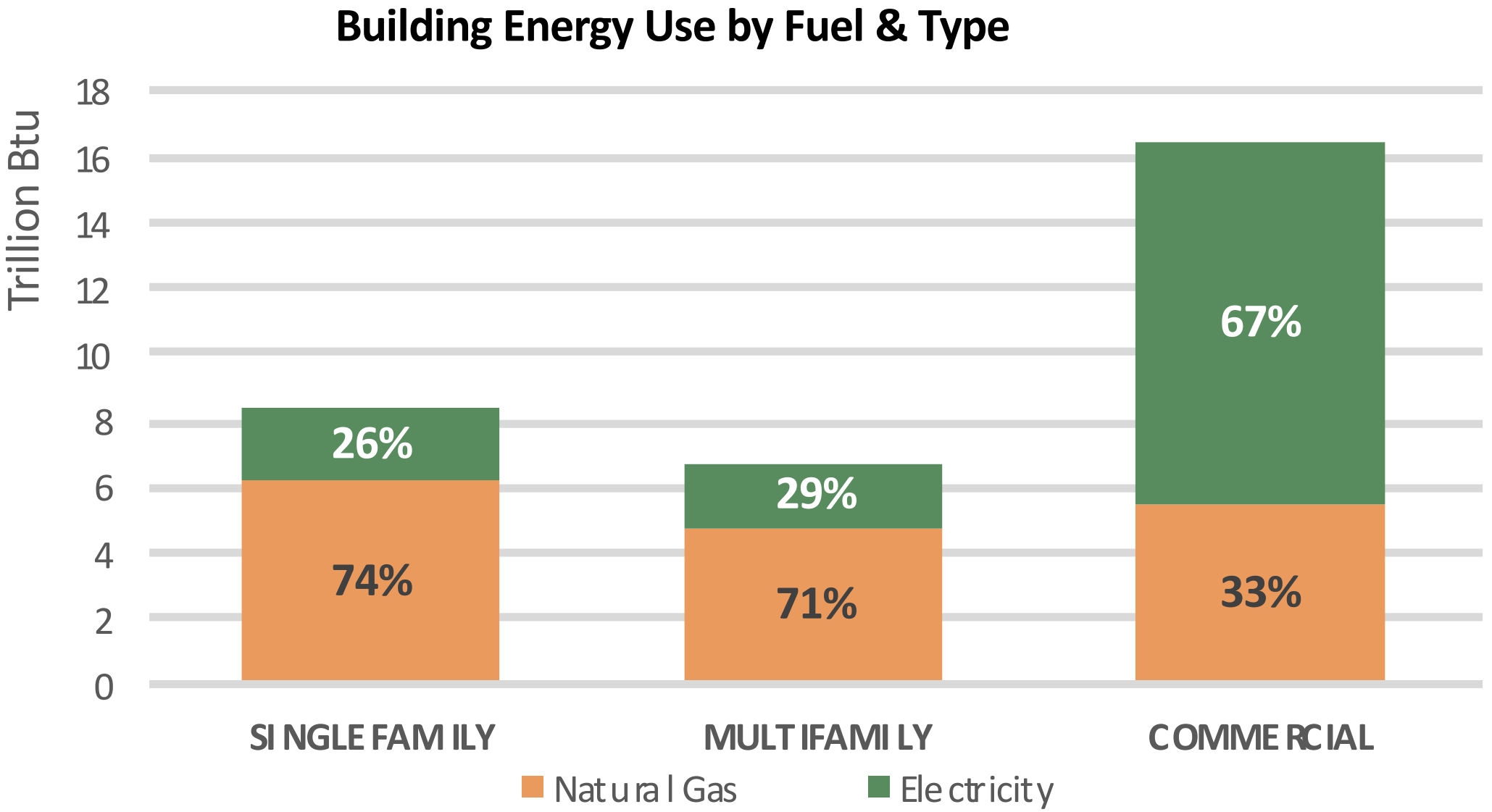
Energy Consumption



GHG Emissions



Residential Sector Natural Gas Usage



Modeling Policy Impact

Control Building Inputs

Apply Policy to Building Interaction Rate

- Design & Construction
- Point of Sale
- Point of Lease/Rental
- Building Renovation
- Major Systems Replacement
- Building Resilience Upgrade

Accounting for Equity

Thank you!

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Equity Assessment Tool

Purpose – Equity Assessment Tool

Audience:

City staff + community partners

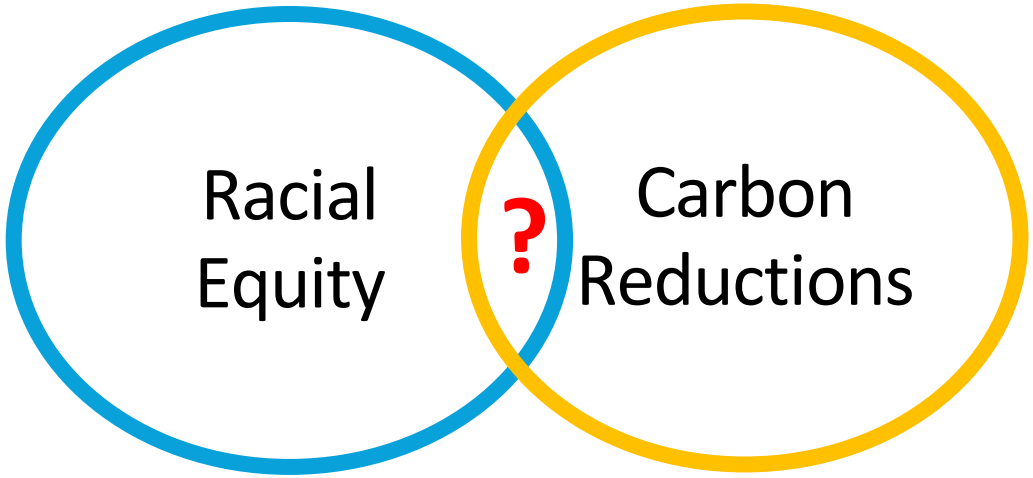
Purpose:

1. Illuminate intersection of racial equity and carbon reductions in built environment
2. Provide “Twin Goals” framework
3. Provide sample equity metrics
4. Provide guidance for evaluating Zero City strategies

Twin Goals

How do we advance both of the co-equal goals at the same time?

Twin Goals



Where do these issues intersect?

Sample Equity Metrics

1. Energy Cost Burden on People of Color
2. Economic Prosperity – Wealth, Jobs, Business
3. Exposure to Health Risk (asthma, lead, mold)
4. Exposure to Enviro Risk (flooding, pollution)
5. Gentrification and Displacement
6. Urban Heat Island

Guidance – City-Specific Metrics

- Work together
  - Learning and discovery
  - Partnership
- Develop City-Specific metrics and analysis
  - Review sample metrics
  - Discuss local circumstance
  - Review City-Specific Supplement (local data resources)
  - Hone ideas for city-specific metrics

Guidance – Evaluate Strategies

Work together

Evaluate Potential Roadmap Strategies

Use X-Y axis tool

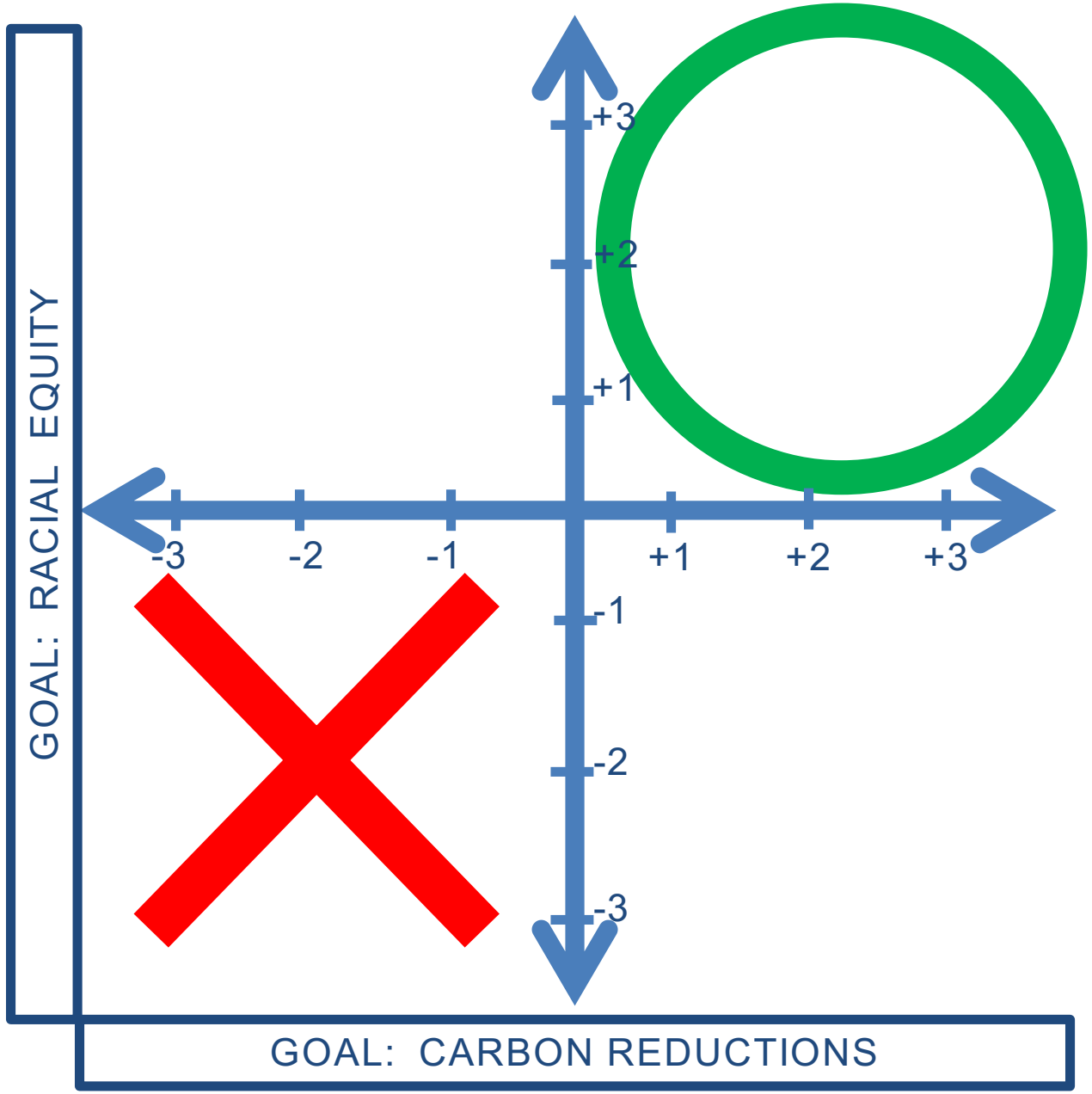
For each strategy - explore potential impacts on twin goals

- Use sample metrics (immediately)
- Use city-specific metrics (later)

What changes in our approach would produce more progress on twin goals?

Evaluate potential Roadmap Strategies.

How will your work advance the twin goals?



Thank you

Leah Obias

Director of Policy and Strategy

Race Forward

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Community Engagement & Climate Justice

Working Together for Building Electrification

PODER & Emerald Cities Anchor Partner Work

- Introduction
- Climate Justice
- Community Engagement
- Listening Pairs

Chris Selig, PhD, PODER Advisory Board Member
Independent Consultant
Sustaining All Life

Introductions

- Name
- Where you live and work
- One reason you care about the climate

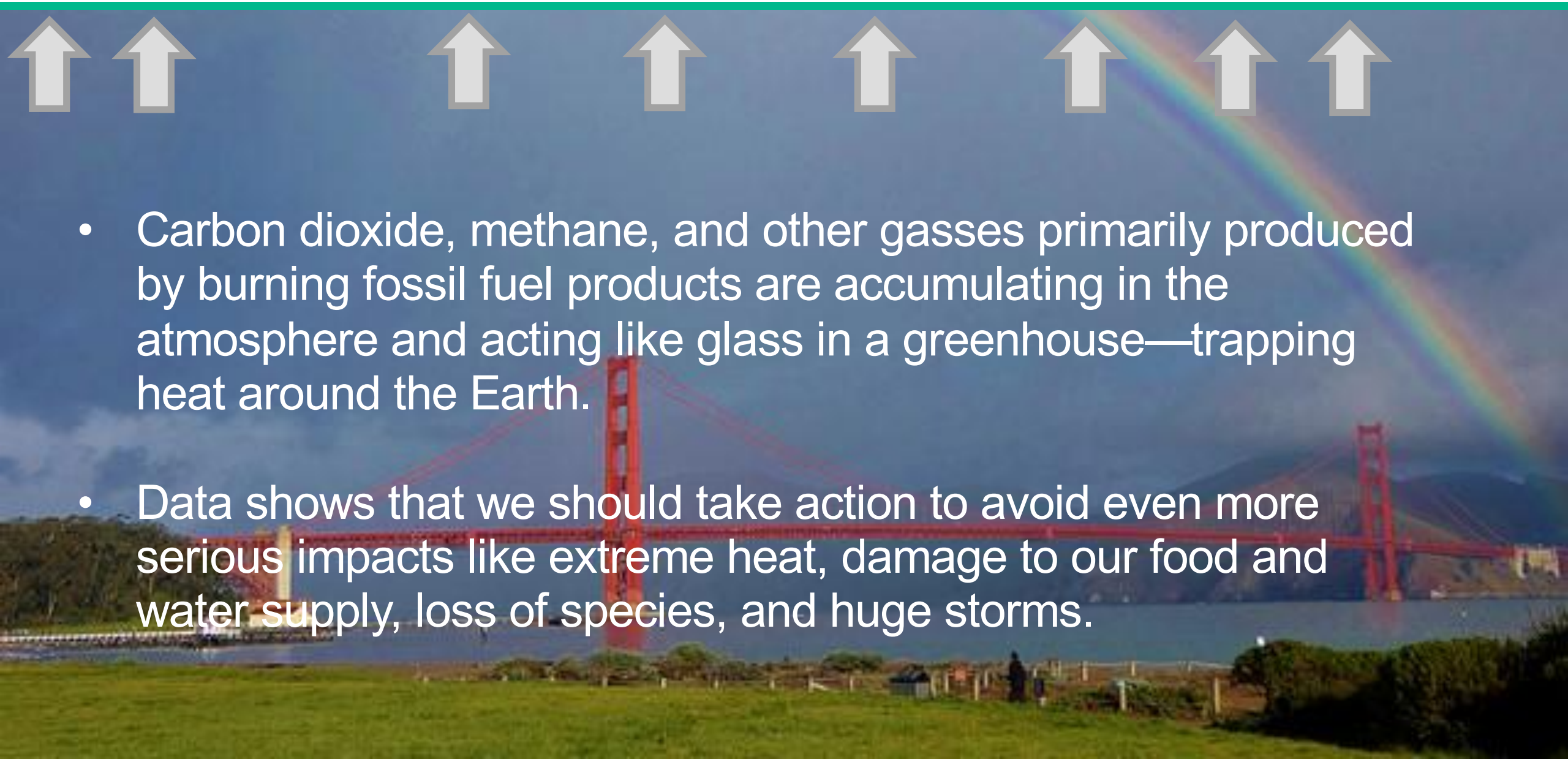
People Organizing To Demand Environmental & Economic Rights (PODER)

PODER's organizes with Latino immigrant families and youth to put into practice people-powered solutions that are locally based, community led and environmentally just. We nurture everyday people's leadership, regenerate culture, and build community power. We organize in San Francisco and forge alliances to achieve transformational change.

Emerald Cities Collaborative

ECC is a national nonprofit organization working to create high-road -- sustainable, just and inclusive -- local economies. Our local and national partners bring resources and expertise from the community, labor, business and government sectors. We're headquartered in Washington, D.C., and work in Emerald Cities nationwide.

Why Climate



- Carbon dioxide, methane, and other gasses primarily produced by burning fossil fuel products are accumulating in the atmosphere and acting like glass in a greenhouse—trapping heat around the Earth.

- Data shows that we should take action to avoid even more serious impacts like extreme heat, damage to our food and water supply, loss of species, and huge storms.

Why Climate

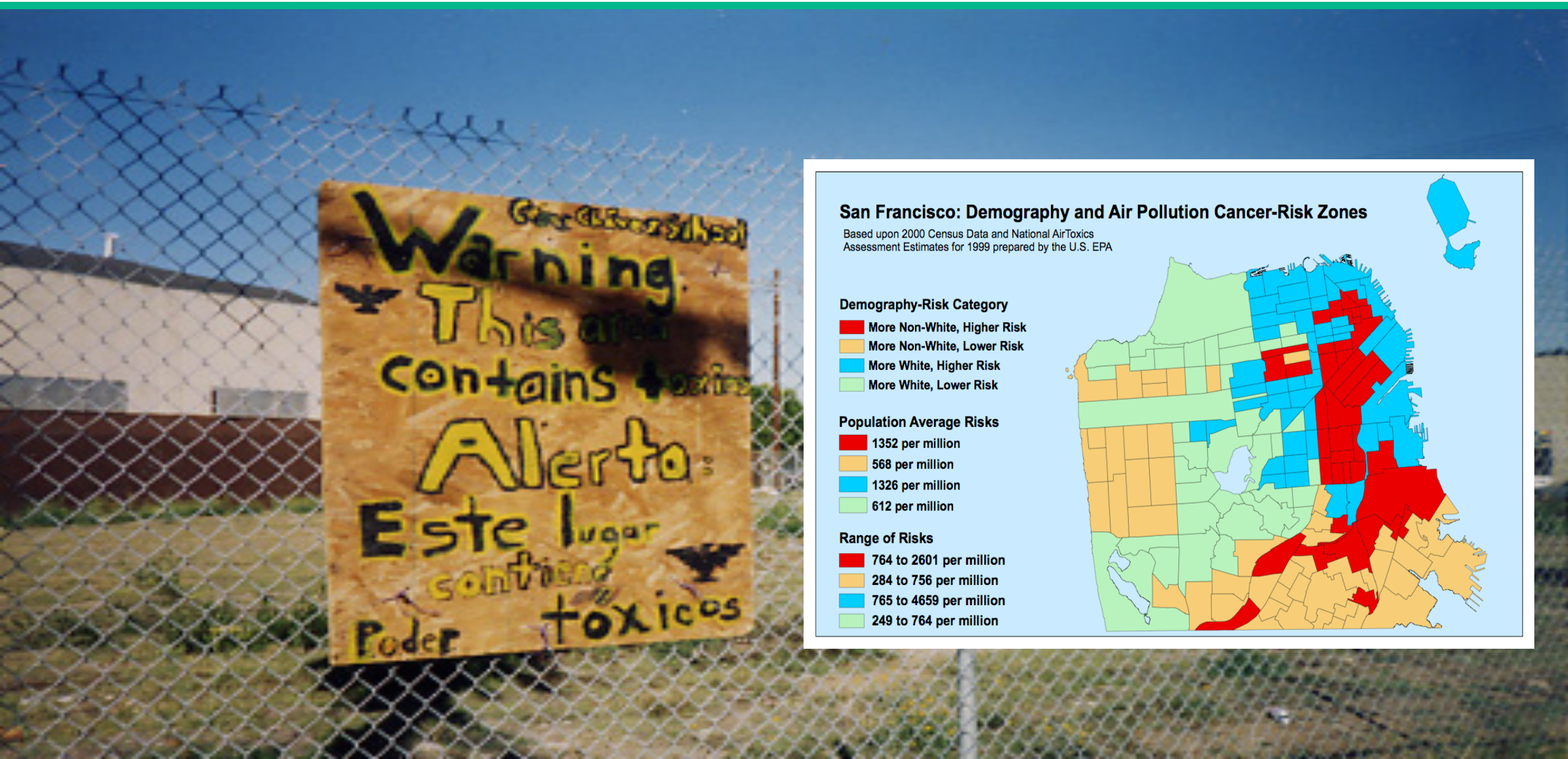
The time to act is now.

Climate Justice

"Communities of color are hit first and worst."

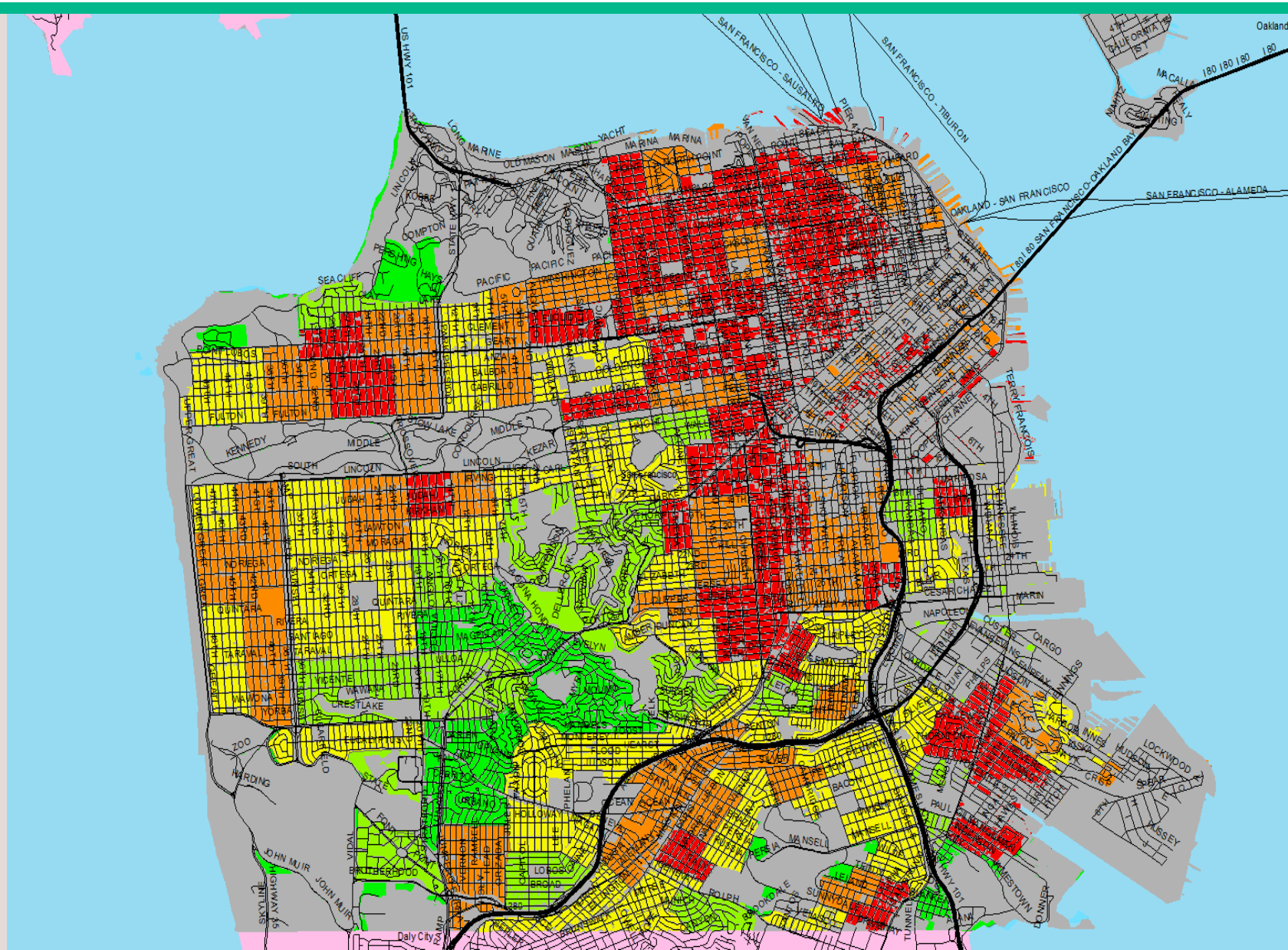
Manuel Pastor

Climate Justice



Environmental Racism

Climate Vulnerability



Environmental Justice Approach

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, ethnicity, national origin, or income in the development, implementation and enforcement of environmental laws, regulations, and policies.

Jemez Principles

1. Be Inclusive
2. Emphasize Bottom-Up Organizing
3. Let People Speak for Themselves
4. Work together In solidarity and Mutuality
5. Build Just Relationships Among Ourselves
6. Commitment to Self Transformation

Organizational Mapping and Outreach

Listening

- Climate justice takes working together.
- We need to come up with new ideas.
- Getting listened to helps people come up with new ideas.

Listening Pair Guidelines

1. Each person gets a turn.
2. The listener - looks warm, kind, pleased and like you like the person. Listen.
3. The person being listened to - you can change your mind. Feelings are welcome.
4. Choose who will be listened to first.
5. Have someone time.

Resources

- Jemez Principles
- Sustaining All Life
- California Environmental Justice Alliance
- Climate Justice Alliance
- Indigenous Environmental Network

Thank you!

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