



SAN FRANCISCO PLANNING DEPARTMENT

Memo to the Planning Commission

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BACKGROUND

On January 17 2013, Planning Department Staff introduced the Sustainable Development Program in an informational hearing to the Planning Commission. The Program's primary goal is to meet the City's environmental objectives through our work with the built environment. While this Program continues to grow and encompass several initiatives, the purpose of this update is specific to Eco-Districts, a key strategy within the Sustainable Development Program.

At last year's Planning Commission presentation, Staff described the Eco-District concept and the City's Eco-District typology, the purpose of the Inter-Departmental Eco-District working group, the Eco-District lecture series, the awards and grants received, and discussed forthcoming work.

The purpose of this informational hearing is to update the Commission on progress made over the last year and to outline future needs for further development. No action is required by the Commission at this time.

CURRENT PROGRESS WITH SAN FRANCISCO'S ECO-DISTRICTS

Sustainable Systems Framework

Over the last year, the Inter-Departmental Eco-District working group¹ created the Sustainable Systems Framework (draft Framework attached). The Framework is a guide for implementing measurable sustainable development projects in San Francisco. The Framework incorporates the City's existing sustainability goals/requirements² and the metrics³ used to measure them. Over the next 9 months, we will be working with the Urban Center for Computation and Data at the University of Chicago who will be analyzing and refining these metrics (scope of work attached). First, we will work to overcome the technical challenges of these datasets, namely that they come from disparate sources and are created at

¹ Formed in November 2011, the Inter-Departmental Eco-District working group (comprised of staff from SFE, OEWD, Port, DPW, MTA, OCIL, and PUC) met monthly for two years. The purpose of the group was to bring together each Department's environmental goals and requirements in order to collectively help accomplish and measure our 'sustainability' progress across the City.

² Currently, the Framework only includes existing goals and regulations defined in the legislation, plans, and programs from various city departments and further described in the References section of the Framework.

³ The Framework uses existing datasets that city agencies and departments are tracking on a regular basis. It should be noted that certain metrics are missing and gaps in the data currently exist. This is a focus area for our forthcoming work.

different scales. The key deliverable from this first phase of work is to refine these datasets to ensure that they are the appropriate set to measure the goal/regulation. The second phase of work is to produce data sets that can be 'scaled' across different sizes of districts. Future phases include placing these datasets on an open-source platform from which communities can identify their current sustainability 'status' and propose and implement solutions to help to meet and advance their district's environmental goals. Future phases also include creating a baseline from which communities can explore different projects and track the success and failure of community interventions, then possibly to create templates of effective design interventions. Department Staff is exploring funding options to proceed with these future phases of work, estimated to take approximately 2 years.

Scaling the Concept

The district-scale, or 'Eco-District' concept has been met with great support and understanding over the last year. The City's Eco-District Typology has helped communicate how the Eco-District concept could be applied given the City's different contexts. Our current work is focused now with scaling the Eco-District concept to maximize the results of sustainability projects at different scales: If an area chooses to become an Eco-District, what impact or level of participation does this designation have on an individual property, a mid, or large scale development, or an existing neighborhood?

For our Type 1 Eco-Districts⁴, we are working with developers to explore the applicability of district-scale infrastructure systems and how these systems would interact with vertical development over time. For infill development like that expected in our Type 2 Eco-Districts⁵, we are researching legislation that requires a sustainability assessment to identify the site's biggest area(s) of potential, and then possibly require improvements to realize this potential. For example, an assessment might identify that given the project proposal and the physical qualities of the site, water re-use is the best and most feasible sustainability approach for the development. The City would then require the implementation of a project component that meets the sites water re-use potential. For Type 3 Eco-Districts⁶, we are currently identifying characteristics of our existing neighborhoods that share similar traits (such as land use density, microclimate, potential risk to sea level rise etc.). Starting in February, we will be working with a consultant who will provide a menu of features that would be most suitable given these characteristics. In the spring, we will begin developing a public outreach program to engage San Francisco's existing neighborhoods in order to enhance resiliency in these communities.

Implementation

In June 2013, the Planning Department convened a Task Force as a means to engage public and private stakeholders to collaborate and advise on the first phase of Eco-District development in the Central SoMa plan area (our Type II pilot project). The Task Force released a report with recommendations and

⁴ The Type 1 Eco-District is characterized by a large amount of undeveloped land typically owned by a single property owner. This type of Eco-District maximizes efficiencies in the delivery of goods provided by infrastructure through district-scale systems.

⁵ The Type 2 Eco-District is characterized by its mix of land uses and is comprised of undeveloped, underdeveloped, and developed land owned by different property owners implementing development projects under different timeframes. This type of Eco-District focuses on aligning development timeframes to maximize opportunities to meet environmental goals.

⁶ The Type 3 Eco-District focuses on existing residential neighborhoods and their commercial corridors. Type 3 Eco-Districts are located in parts of the city that not anticipated to accommodate major growth, but through tactical urbanism can bolster distinctive character and support eco-friendly behavior.

implementation strategies as it pertains to the performance areas identified in the Sustainable Systems Framework (report attached). The Report will inform the sustainability policies that will be developed over the next few months and integrated into the Final Plan (the Draft Central SoMa Plan was published in April 2013 and included a District Sustainability Chapter that identified future work that needed to be performed in advance of policy development).

In addition, in the Report's implementation section, the Task Force recommends establishing a steering committee to formalize Eco-District organization. The broad alternatives for legal and organizational structure have already been discussed, but a final determination is needed, and then the steps necessary to put the new organization in place can begin. This work would include developing and providing political and legal sanction for the new entity, and developing the board and membership structure. These issues are both politically, legally, and logistically complex. Department Staff is looking to secure funding to hire a consultant to provide assistance in determining the best partnership structure for the Central SoMa Eco-District and to initiate the creation of this new entity.

REQUIRED COMMISSION ACTION

No action required by the Commission at this time.

Attachments

- Draft Sustainable Systems Framework
- Scope of Work: Enhancing the Sustainable Systems Framework with Smarter Use of Community-level Data
- Central SoMa Eco-District Task Force Report (including studies and technical assessments currently underway)

Sustainable Systems Performance Framework

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PRINCIPLES

PROSPEROUS
DISTRICT

EFFICIENT
DISTRICT

BIOPHILIC
DISTRICT

CONNECTED
DISTRICT

8

PERFORMANCE AREAS

ENERGY

MATERIALS
MANAGEMENT

ACCESS
+
MOBILITY

COMMUNITY
IDENTITY

EQUITABLE
DEVELOPMENT

WATER

HABITAT
+
ECOSYSTEM
FUNCTION

HEALTH
+
WELL BEING

The Sustainable Systems Performance Framework is a guide for implementing and measuring sustainable development projects in San Francisco. Using this Framework, the City will work to achieve compliance with current policy measures and legislation as well as assess the potential for new approaches. The Framework also provides a guide for private development projects in order to measure the effectiveness of private projects in the context of the Framework.

The Framework outlines four overarching principles and eight interrelated performance areas:

1. **Principles:** Provide the fundamental context for sustainable systems development;
2. **Performance Areas:** Define specific areas that must be addressed through policy development;
3. **Objectives:** The overarching goals for each policy that follows; and,
4. **Measures of Success:** The metrics by which the Principles, Performance Areas and Objectives are evaluated.

Prosperous Districts

Where people live, work, play and thrive together

A Prosperous District focuses on the creation of projects that reflect community and City goals and provide direct community benefit. Sustainable development projects seek to promote economic development through communities that are safe, equitable and engaged, support the retention and creation of local businesses and services and create new green businesses and jobs to support economic development and a sustainable San Francisco. The City’s current goals include:

Growing the Local Green Economy

The City’s projected growth of roughly 191,000 new jobs and over 101,000 new households by 2040 provides a great opportunity for sustainable economic development. A national leader in the green economy, housing innovative greentech and cleantech industries, the City is committed to promote policies and programs to support these sectors. New developments can harness San Francisco’s leadership and elevate the local, green economy by supporting green businesses, jobs, and city policies and programs.

Investing in Neighborhoods

The City’s goal of enhancing neighborhood commercial districts and supporting safe, resilient economically thriving communities ensures that local residents and businesses receive the necessary tools and assistance to succeed and grow.

Advancing Vibrant Public Realm and Enhancing Community Identity

By engaging those living, working and utilizing services through public realm improvements, public-private partnerships and local investments will strengthen civic engagement and facilitate a stronger sense of place.

Performance Areas	Objectives	Measures of Success
Equitable Development	ED.1. To ensure that neighborhood investments provide direct community benefit ED.2. To provide quality local job opportunities ED.3. To promote businesses and investments that protect and enhance the natural environment and grow the green economy	ED.1.a. Access to incentive programs ED.1.b. Excessive rent burden ED.1.c. Affordable rental housing stock ED.2.a. Employment rate ED.2.b. Worker residents ED.3.a. Green businesses ED.3.b. Green job creation
Community Identity	CI.1. To foster resilient communities through social cohesion and partnerships CI.2. To ensure safe neighborhoods CI.3. To Incentivize historic preservation	CI.1.a. Community center access CI.1.b. Neighborhood commercial zoning CI.1.c. Public art works CI.1.d. Community and cultural events CI.1.e. Community Benefits Districts CI.1.f. Likelihood of leaving San Francisco CI.1.g. Block Parties CI.2.a. Violent crimes CI.2.b. Property crimes CI.2.c. Perceived safety CI.3.a. Registered historic places/landmarks

Biophilic Districts

Where people are a part of nature

Biophilic Districts promote a coordinated and collaborative approach to enhance biodiversity and natural habitat through district-scale greening and citywide conservation and preservation efforts. New developments and public realm improvements can promote ecological sustainability by integrating green infrastructure and green streets to enhance urban habitat. Furthermore, new partnerships can be established that promote programs for eco-literacy and community stewardship. By prioritizing the preservation and restoration of sensitive habitats, species and natural resources, sustainable development can ensure a viable future for current and future generations. The City’s current goals include:

Creating Green Neighborhood Streets

The Green Connections Plan increases access to parks, open space and the waterfront, by re-envisioning City streets and paths as ‘green connectors.’ It builds on current efforts to create sustainable corridors that enhance mobility, green neighborhood streets, and improve pedestrian and bicycle access to community amenities and recreational opportunities.

Growing the City’s Street Tree Population

The Planning Department, in collaboration with the Department of Public Works and Friends of the Urban Forest, is creating a plan to promote San Francisco’s urban forest with a primary focus on street trees. The Urban Forest Plan will identify policies and strategies to proactively manage and grow the City’s street tree population. The goal of the Plan is to create an expanded, healthy and thriving urban forest now and for the future.

Greener Roofs

The City is currently exploring a comprehensive green roof policy to capture the public and private benefits associated with green roofs.

Performance Areas	Objectives	Measures of Success
Habitat and Ecosystem Function	<p>HEF.1. To preserve, restore and manage existing open space for habitat and biodiversity</p> <p>HEF.2. To increase open space and the urban forest to enhance ecosystem services</p> <p>HEF.3. To create habitat connectivity citywide</p>	<p>HEF.1.a. Natural area acres</p> <p>HEF.1.b. Sufficient management</p> <p>HEF.1.c. Stewardship coverage</p> <p>HEF.2.a. Open space (total)</p> <p>HEF.2.b. Tree canopy</p> <p>HEF.2.c. Neighborhood open space</p> <p>HEF.3.a. Wildlife habitat</p> <p>HEF.3.b. Impervious surface</p>

Efficient Districts

Where we ensure the best use of our resources

By optimizing the efficiencies of land, water, and energy, Efficient Districts promote the best use of our resources while reducing pollution and waste, and lowering the cost of maintaining and operating existing and new developments. The City's current goals include:

Reducing Greenhouse Gas Emissions (GHG)

The City's goal to reduce greenhouse gas emissions (GHG) - 50% of 1990 levels by 2030 and 80% by 2050 from all sectors, and to meet all citywide electricity needs from 100% GHG-free sources by 2030 – provides an opportunity to set a new standard for conservation and resource efficiency by establishing new partnerships to implement sustainable systems and infrastructure.

Increasing Energy Efficiency

The State of California has set a goal to require all new residential construction by 2020 and all new commercial construction by 2030 to be Net-Zero. Net-Zero energy buildings will greatly reduce the energy demand of the built environment and create more resource efficient neighborhoods. Numerous City policies support energy efficiency, including the Green Building Ordinance and the Existing Buildings Energy Performance Ordinance.

Increasing Renewable Energy Generation and Procurement

Facilitating the development of distributed renewable energy efforts, as well as providing additional options for energy users to purchase clean power, sustainable development will decrease GHG emissions and reduce the City's contribution to climate change. These actions will help the City reach its goal of 100% GHG-free electricity by 2030 and help meet the State's goal of 12,000 megawatts of statewide local renewable distributed generation by 2020.

Promoting District Scale Energy

District scale energy systems seek to extend “behind-the-meter” activities beyond a single building to a larger geographical area. Four of the City's Electricity Resource Plan recommendations seek to advance and support community scale energy systems, both privately-owned as part of new development and through increased use of City-owned infrastructure, where possible. Additionally, district energy supports greater efficiencies through new technologies such as combined heat and power systems and increases opportunities for community-based approaches to renewable energy generation.

Increasing Water Efficiency

District-scale water systems and management has the potential to increase water efficiency and reduce potable water consumption, supporting the city's Non-potable Water Program, Recycled Water Ordinance, Commercial Water Conservation Ordinance, the Residential Energy and Water Conservation Ordinance, and the Water Efficient Irrigation Ordinance. These programs seek to enhance the quality and reliability of the city's water supply through active and passive conservation and increase of non-potable water recycling, harvesting and use.

Advancing Stormwater Management

Sustainable development provides additional opportunities for development and implementation of district-scale stormwater management solutions above and beyond the projects currently triggered by the 2010 Stormwater Management Ordinance, including the reduction of stormwater runoff, water purification and the recharge of groundwater.

Achieving Zero Waste

The City has set a goal of 100% waste diversion by 2020. Waste management goals made on the district-scale will allow stakeholders to make decisions about priorities, investments, engagement and outreach to contribute to the city's zero-waste goals, and comply with requirements on recycling, composting and construction demolition debris.

Performance Areas

Objectives

Measures of Success

Water, Wastewater and Stormwater

- WA.1. To reduce potable water use and increase non-potable water use
- WA.2. To increase water efficiency
- WA.3. To reduce storm water runoff

- WA.1.a. and WA.2.a. Residential potable water consumption per capita per day
- WA.3.a. Percentage of impervious surfaces

Energy

- EN.1. To achieve a GHG-free, renewable and resilient energy system
- EN.2. To capture all cost-effective energy efficiency
- EN.3. To increase renewable energy generation and procurement

- EN.1.a. Energy consumption
- EN.1.b. Electricity supply emissions factor
- EN.2.a. Energy use intensity
- EN.2.b. Commercial/multi-family energy retrofits
- EN.2.c. Residential energy retrofits
- EN.2.d. Green buildings
- EN.3.a. Solar installations
- EN.3.b. Local renewable energy generation

Materials Management

- ZW.1. To achieve zero waste
- ZW.2. To encourage Adaptive Reuse when possible

- ZW.1.a. Solid waste diversion
- ZW.1.b. Waste composted
- ZW.1.c. Waste recycled
- ZW.1.d. Total waste collected

Connected Districts

Where we ensure easy access to our daily needs

Connected Districts achieve walkable and livable neighborhoods by enhancing connectivity for those living and working in the area to healthy natural environments and basic services and amenities. A walkable and safe public realm combined with access to affordable and reliable transportation options will provide communities the opportunity to reduce vehicle miles traveled and single-vehicle occupancy trips. By enhancing pedestrian and alternative transportation options, communities can choose to walk and bike in a more comfortable environment and promote healthier lifestyles. Access to local food, amenities and recreation not only provides enhanced health and well-being of a community, but also supports the vitality of an area. The City’s current goals include:

Reducing VMTs and Increasing Pedestrian Environmental Quality

The City set a goal to double walking, cycling and transit as a percentage of all trips by 2030, including 25% reduction in serious and fatal pedestrian injuries by 2016, and a 50% reduction by 2021. Working with the City’s Transit First policy, the City is committed to providing a faster and reliable public transit system and better conditions for cyclists and pedestrians of all age groups. Ensuring a walkable pedestrian realm, safe streets, accessible, affordable and reliable transit options, and green, complete streets will reduce miles traveled and single-vehicle occupancy trips to meet residents’ daily needs.

Improving Access to Parks and Open Space

The Green Connections Plan provides an opportunity to improve access to parks, open space and recreation areas by re-envisioning City streets and paths as ‘green connectors’. Green Connections will improve the quality of pedestrian environments and increase community access by walk and bike to city services and amenities.

Performance Areas	Objectives	Measures of Success
Health and Well-Being	<p>HWB.1. To provide access to safe and functional local recreation, parks, and natural areas</p> <p>HWB.2. To provide access to local, healthy and affordable foods</p> <p>HWB.3. To reduce exposure to indoor and outdoor environmental hazards</p>	<p>HWB.1.a. Recreation facility access</p> <p>HWB.1.b. Public recreation access score</p> <p>HWB.2.a. Farmers’ market access</p> <p>HWB.2.b. Community garden access</p> <p>HWB.2.c. Food market score</p> <p>HWB.3.a. Air Quality</p> <p>HWB.3.b. Housing health and safety violations</p> <p>HWB.3.c. Integrated Pest Management by Design</p> <p>HWB.3.d. Brownfield sites</p> <p>HWB.3.e. Leaking underground storage tanks</p>
Access and Mobility	<p>AM.1. To provide clean, affordable and reliable transportation options</p> <p>AM.2. To reduce vehicle miles traveled and achieve a reduction in single-vehicle occupancy trips</p> <p>AM.3. To ensure streets are accessible, walkable, and safe for pedestrians and non-auto modes of transportation</p>	<p>AM.1.a. Time spent walking/biking</p> <p>AM.1.b. Transit commute time</p> <p>AM.1.c. Public transit score</p> <p>AM.1.d. Bicycle network</p> <p>AM.1.e. GHG emissions from transportation</p> <p>AM.2.a. Motor vehicle access</p> <p>AM.2.b. Trips by non-auto mode</p> <p>AM.2.c. Distance (miles) traveled in private auto</p> <p>AM.3.a. Severe/fatal traffic injuries</p> <p>AM.3.b. Speed limit compliance</p> <p>AM.3.c. Traffic density</p>

References

Background Information

EcoDistricts Framework Overview. Portland Sustainability Institute, May 2013. <http://ecodistricts.org/wp-content/uploads/2013/05/Eco-Districts-Framework.pdf>

The EcoDistricts Toolkit: Assessment. Portland Sustainability Institute, December 2011.

CCSF Ordinances

Reclaimed Water Use Ordinance: Board of Supervisors Ordinance 390-9/Article 22 San Francisco Public Works Code: <http://www.sfwater.org/modules/showdocument.aspx?documentid=1294>

Residential Water Conservation Ordinance Amendments: Board of Supervisors Ordinance 0076-09/Chapter 12A of the San Francisco Housing Code: <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances09/o0076-09.pdf>

Commercial Water Conservation Ordinance Amendments: Board of Supervisors Ordinance 0077-09/Chapter 13A of the San Francisco Building Code: <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances09/o0077-09.pdf>

Water Efficient Irrigation Ordinance: Board of Supervisors Ordinance 175-91/Article 21 San Francisco Public Works Code: <http://www.sfwater.org/modules/showdocument.aspx?documentid=1295>

Stormwater Management Ordinance: Board of Supervisors Ordinance 0083-10/San Francisco Public Works Code: <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances10/o0083-10.pdf>

Mandatory Recycling and Composting Ordinance: Board of Supervisors Ordinance 100-09/Chapter 19 San Francisco Environment Code: <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances09/o0100-09.pdf>

Construction and Demolition Debris Recovery Ordinance: Board of Supervisors Ordinance 0027-06/Chapter 13 San Francisco Building Code: <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances06/o0027-06.pdf>

SF Greenhouse Gas Emissions Limits: Board of Supervisors Ordinance 0081-08/Environment Code Chapter 9. <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances08/o0081-08.pdf>

Existing Commercial Buildings Energy Performance: Board of Supervisors Ordinance 0017-11/Environment Code Chapter 20. <http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/ordinances11/o0017-11.pdf>

Programs and Reports

San Francisco 2011 Updated Electricity Resource Plan. <http://sfwater.org/index.aspx?page=71>

2011 SFPUC Municipal Benchmark Report. <http://www.sfwater.org/modules/showdocument.aspx?documentid=2938>

SF Energy Watch: <http://www.sfenvironment.org/energy/energy-efficiency/commercial-and-multifamily-properties/sf-energy-watch>

CleanPower SF: <http://www.sfwater.org/index.aspx?page=576>

Green Finance SF: https://commercial-pace.energyupgradeca.org/county/san_francisco/overview

California Long Term Energy Efficiency Strategic Plan (2008): <http://www.cpuc.ca.gov/PUC/energy/Energy+Efficiency/eesp/>

Governor's 12,000 MW Goal (2011): http://www.energy.ca.gov/renewables/renewable_links.html

City and County of San Francisco Performance Measurement: <http://sfcontroller.org/index.aspx?page=43>

The Climate Action Plan for San Francisco (2004), SFPUC/SF Environment: <http://www.sfenvironment.org/sites/default/files/fliers/files/climateactionplan.pdf>

San Francisco Mayor's Renewable Energy Task Force Recommendations Report (2012): http://www.sfenvironment.org/sites/default/files/fliers/files/sfe_re_renewableenergytaskforcerecommendation-sreport.pdf

SFPUC Strategic Sustainability Plan (2011): <http://sfwater.org/modules/showdocument.aspx?documentid=987>

SF Planning Urban Forest Program: <http://www.sf-planning.org/index.aspx?page=3166>

SFMTA Strategic Plan FY13-18: <http://www.sfmta.com/about-sfmta/sfmta-strategic-plan>

SF Environment Strategic Plan, FY2013

SF DPH Sustainable Communities Index: <http://www.sfpbes.org/resources/hia-tools/20-elements/land-use/67-sci>

SFPUC Non-potable Water Program: <http://www.sfwater.org/index.aspx?page=497>

Appendix

What is the Eco-District Program?



The Eco-District Program strengthens the local economy and creates stronger communities through the implementation of district scale sustainable development projects. Operating between building level programs and citywide policy, district scale initiatives are an important economy-of-scale approach to furthering urban sustainability; providing a practical vehicle to achieve ambitious citywide environmental goals, as well as to meet community-developed goals that are specific to the district at hand. Communities will use the Sustainable Systems Framework to shape their own environmental goals, to identify projects in their 'Eco-District' to help meet these goals, and to monitor this progress over time.

San Francisco Eco-District Typologies

San Francisco Eco-Districts provide a way of achieving ambitious sustainability goals at the neighborhood or district level. Establishment of an Eco-District brings neighbors, community institutions, businesses, city leaders and utility providers together to co-develop innovative solutions to address water use, energy conservation, waste reduction and other needs. The Planning Department has identified four types of Eco-Districts in San Francisco:

Type 1: The Blank Slate

The Type 1 Eco-District is characterized by a large amount of undeveloped land typically owned by a single property owner. Type 1 Eco-Districts enable horizontal infrastructure development to be implemented in advance of vertical development to help optimize Eco-District goals. This type of Eco-District maximizes efficiencies in the delivery of goods provided by infrastructure through district-scale systems.

Type 2: The Patchwork Quilt

The Type 2 Eco-District is characterized by its mix of land uses and is comprised of undeveloped, underdeveloped, and developed land owned by different property owners implementing development projects under different timeframes. This type of Eco-District focuses on aligning development timeframes to maximize opportunities to meet environmental goals. It also works closely with the community to build on its existing character and to integrate the physical qualities of the area as part of the character.

Type 3: The Strengthened Neighborhood

The Type 3 Eco-District focuses on existing residential neighborhoods and their commercial corridors. Type 3 Eco-Districts are located in parts of the city that are not anticipated to accommodate major growth, but through tactical urbanism can bolster distinctive character and support eco-friendly behavior.

Type 4: The Industrial Network

The Type 4 Eco-District focuses on creating stronger connections between the city's production, distribution, and repair (PDR) uses. PDR has been recognized as an important component of the city's culture, its economic stability, and the retention of its diverse labor force. Aligning these industries so that their operating and distribution systems can work more efficiently is the primary focus of the Type 4 Eco-District.

Data-Driven Urban Sustainability: Enhancing the Sustainable Systems Framework with Smarter Use of Community-level Data

A Collaboration between the Urban Center for Computing and Data, the City of San Francisco, and the City of Chicago

Matthew Gee & Charlie Catlett

Background

The EcoDistricts Framework, piloted by the City of Portland in 2009, is quickly emerging as a powerful unifying framework for urban sustainable development. With its unique focus on neighborhood-scale infrastructure projects and community-level action, it has the potential to radically alter and improve urban sustainability efforts at a time when the challenges of sustainability and urban development are increasingly acute.

With the growing adoption the EcoDistricts Framework--and widespread interest in community-based approaches to urban sustainable development--cities have come face-to-face with some challenging questions: *What is the best way to define a community and how does that definition affect the success of future actions? Where are the areas of greatest unmet needs? Which areas have the largest untapped potential for improvement, both within communities and across entire cities? How can local communities gauge the relative success of their actions? What can local communities learn from the actions taken by similar communities in their city or other cities?*

The inherent difficulty in answering these questions present real challenges to the growth and success of community-based sustainable development. However, these critical uncertainties also present an emerging opportunity to harness the power of data and computation to provide meaningful answers and actionable insights in support of urban sustainability.

Thanks to the Open Data movement, many cities are collecting, curating, and releasing rich community-level data sets that hold the key to unlocking the potential of community-based sustainability programs. With these data, cities can more intelligently define local communities, and identify those with the largest needs. With these data, community leaders can better identify areas where their community is falling behind, and focus community efforts on the most promising areas of improvement. With these data, community members can track the progress of their neighborhood in reaching its sustainability goals, and compare progress of their community to other communities in the city. Community-level data,

combined with new methods and tools for using that data to inform community action, provide an enormous opportunity to transform urban sustainable development.

The purpose of this proposal is to seize that opportunity.

Project Description

University of Chicago's **Urban Center for Computation and Data**, in partnership with the **City of San Francisco** and the **City of Chicago**, proposes a joint project to demonstrate the potential for data to inform and enhance urban sustainability efforts at the community level. Each of these two partner cities have set ambitious sustainability goals for the city to achieve over the next decade and they have recognized that community-based sustainability will play a crucial role in helping the city achieve those goals. Additionally, Chicago and San Francisco have been pioneers in developing open data infrastructure.

Using San Francisco's implementation of their new Sustainable Systems Framework (SSF) as a real-world use case, UrbanCCD will work with each of the city partners to identify and develop novel uses of community-level data.

Project Goals

The Data-driven EcoDistricts project will have three main objectives:

- **Data Discovery & Development.** Understand the possibilities and limitations of currently available data. Prepare data for analysis. Develop new tools and methods for simplifying community-level data preparation and integration. Develop use cases for how data can inform decisionmaking in each phase of the SSF process.
- **Refining Metrics and Indicators.** Precisely define metrics and indicators that are 1) possible given the data and 2) meaningful as indicators of potential community actions. Develop strong links between indicators and available data, and identify alternative indicators when appropriate.
- **Developing a Testing/Learning Framework.** Create new methods and tools for EcoDistricts and SSF cities to be able to use data to test and learn from community-level interventions, making it easier to identify successful efforts, interventions, and policies, and better understand the potential impacts of new actions on local communities.
- **Providing Summary of Learnings and Open Source Tools for Other Cities.** Ensure that the learnings, methods, and tools developed during the project are useful and usable by other cities. Create how-to documentation for replicating systems and analysis. Publish key findings.

Detailed Scope of Work

Each of the project objectives involves multiple steps. The outline of the work plan and deliverables for each objective is as follows:

Data Discovery and Development

1. Exploring, Cleaning, and Documenting Available Data

Work Description: An essential part of any data project is the dirty work of data cleaning and preparation. With the help of graduate and undergraduate volunteers from the Center for Robust Decision Making in Climate and Energy Policy, as well as the Clinic on Data Science and Public Policy, a core subset (if not all) of the 53 datasets from the San Francisco data portfolio will be explored, cleaned, and documented. This work will take place over several months and be distributed across a team, with periodic team meetings to address shared challenges and share results. A critical part of this process will be the ability for data cleaning students to ask critical questions about the data of the data provider. We will develop a system for surfacing the most important questions to the top and periodically delivering them to San Francisco for clarification.

Deliverables:

- Cleaned versions of the a core subset of the current data, if not all 53 SF datasets.
- Commented code that allows SF to replicate cleaning process on updated data.
- Metadata added to the data dictionary, flagging potential issues with each dataset, potential challenges to using that dataset going forward and if/how they resolved.
- Key summary statistics characterizing each dataset and important insights gained through the process of data exploration.

2. Linking data and Developing Custom Geographies for

Work Description: The Sustainable Systems Framework requires community-level data from a variety of sources that can be aggregated to arbitrary geographies. Building on a current initiative at UrbanCCD lead by the former CIO of the City of Chicago Brett Goldstein, this phase of the project will further develop and test an open-source toolkit developed to take in city data from a variety of sources, combining it, and then extracting aggregations of it for user-defined geographies. This is going to be an important part of making the Sustainable Systems Framework happen, and is not something that any existing GIS system is well designed to do. This tool is still under development, but even in its current form can simplify the difficult task of combining and querying disparate datasets much simpler.

Deliverables:

- Beta version of an open-source tool for digesting and linking the data from disparate city-wide datasets to easily replace
- Linked data with the ability to make custom queries based on arbitrary geographies

Refining Metrics and Indicators

A central feature of San Francisco's implementation of the Sustainable Systems Framework is the connection between city-level objectives and metrics, and community-level indicators. The success of San Francisco's program depends critically on the precision and usefulness of the metrics and indicators, and often, the most useful metrics require creative thinking, sophisticated modeling, subject-matter expertise, and real-world trials.¹ UrbanCCD will draw from its deep bench of subject-matter experts to ensure that each indicator is measuring what we think it is measuring and has a meaningful connection to human action. The steps for assessing the metrics and indicators are as follows:

1. Complete initial feasibility assessment for each indicator given the available data. With the cleaned data, we will do a first pass analysis of each metric, ensuring that it is possible to generate given the limitations of the data. We will also quantify the variability in the measure over time, and its sensitivity to historical shocks. The goal of this analysis will be to weed out measures that are either too noisy due to measurement error or natural variability, or so invariant over time that they may not serve as good indicators of community action.
2. Collect expert feedback on current metrics and solicit suggestions for alternative measures. With a deep bench of demographers, economists, sociologists, and energy experts, UrbanCCD has the ability to get expert feedback on the limitations of each proposed metric.
3. Develop necessary transformations or combinations of the to maximize relevance to local communities. Many of the metrics may need to be modified, combined, or transformed in some way in order to provide community members with relevant information on the impact of their action.
4. Discuss potential uses of the data to inform each of the 4 phases of the EcoDistricts process. (optional). If San Francisco wants to follow a similar overall process to that used by

¹ For example, UrbanCCD is currently assisting with the City of Chicago Neighborhood Energy Behavior Change Competition. As part of the competition, we've had to define a metric that allows for the City to rank citizens and buildings by their energy savings. We first demonstrated that the previously defined metric of year-over-year changes in energy use was a poor measure of actual behavior change because it can be confounded by a host of environmental factors. Instead, we developed a more sophisticated methodology that adjusts for temperature, building characteristics, and family size so that we're comparing apples to apples.

EcoDistricts, data has the potential to inform, improve, and accelerate decision making at multiple stages of the EcoDistricts process: 1) District Formation; 2) District Assessment; 3) Project Feasibility and Development; 4) District Management. If it is relevant

Deliverables:

- Feasibility rating on each proposed metric, along with characterizations of variability, fidelity, and interpretability.
- List of expert-recommended additional/alternative metrics.
- Specification for any necessary metric/indicator transformations.
- Brief writeup on potential uses for data in the four phases of the EcoDistricts process.

Developing a Testing/Learning Framework

Description: Much of the promise of community-based sustainable development lies in the ability to test the success of community-level interventions so that individuals, communities, and the city can learn over time what works and what doesn't. This kind of impact evaluation can be incredibly valuable, or completely uninformative depending on how interventions are designed, implemented, and analyzed. For this objective, UrbanCCD will work to develop useful templates to community leaders in the design and implementation of interventions in order to maximize both success and learning. Additionally, UrbanCCD will develop new methods for policy learning across heterogeneous communities that take measured outcomes and use novel applications of machine learning techniques like reinforcement learning to help local communities compare across potential actions and identify the best action for their community.

Deliverables:

- Field-guide for local communities to set up actions for testing and learning.
- Research paper on ML methods for urban sustainable development.
- Simplified version of technical documentation.
- Beta version of an open-source toolkit for easy implementation of learning methods for community-level interventions using existing city data infrastructure.

Providing Summary of Learnings and Open Source Tools for Other Cities

Description: Given the number of cities adopting community-based urban sustainable development initiatives, there's enormous value in sharing the tools, methods, and insights

gained through the course of the project. We hope to make it as easy as possible for other cities to replicate the model developed in San Francisco.

Deliverables:

- Summary report of lessons learned
- Bundle of previous deliverables for “Data-Driven Sustainability In-a-Box”
- Presentation to multi-city group of sustainability representatives

Project Timeline

2014 9-month Project Timeline

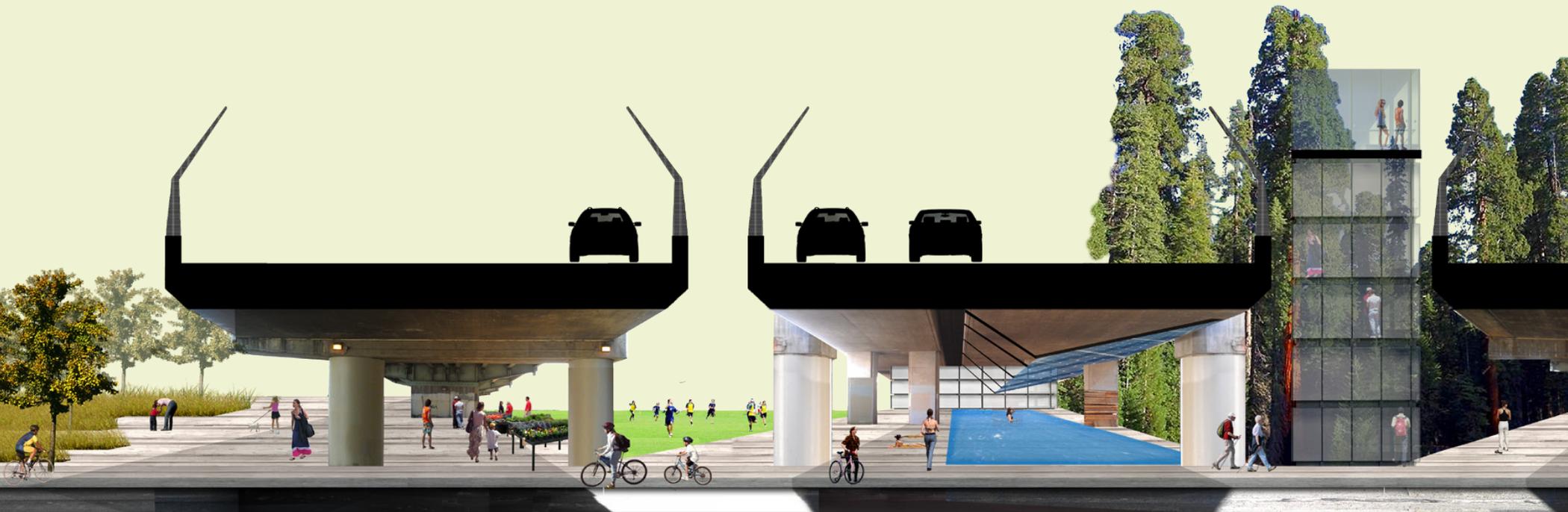
	Jan	Feb	Mar	April	May	June	July	Aug	Sept
Data Discovery and Development	●	●	●	●					
Refining Metrics and Indicators			●	●	●	●			
Develop Testing and Learning Framework					●	●	●	●	
Transition to AECOM / Summary of Learnings for other Cities						●	●	●	●



CENTRAL SOMA ECO-DISTRICT

**Task Force
Recommendations**

NOVEMBER 2013





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Eco-District Vision

Welcome to the Central SoMa Eco-District (CSED). It is the year 2099, many decades since our foundation. We are stepping into the 22nd century confident and prepared, recognizing the leadership role we have played in the global response to environmental change. We have been teaching, learning and adapting as we linked with the other 1000 plus Eco-Districts now in full operation around the globe.

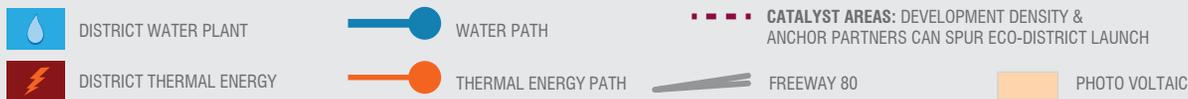
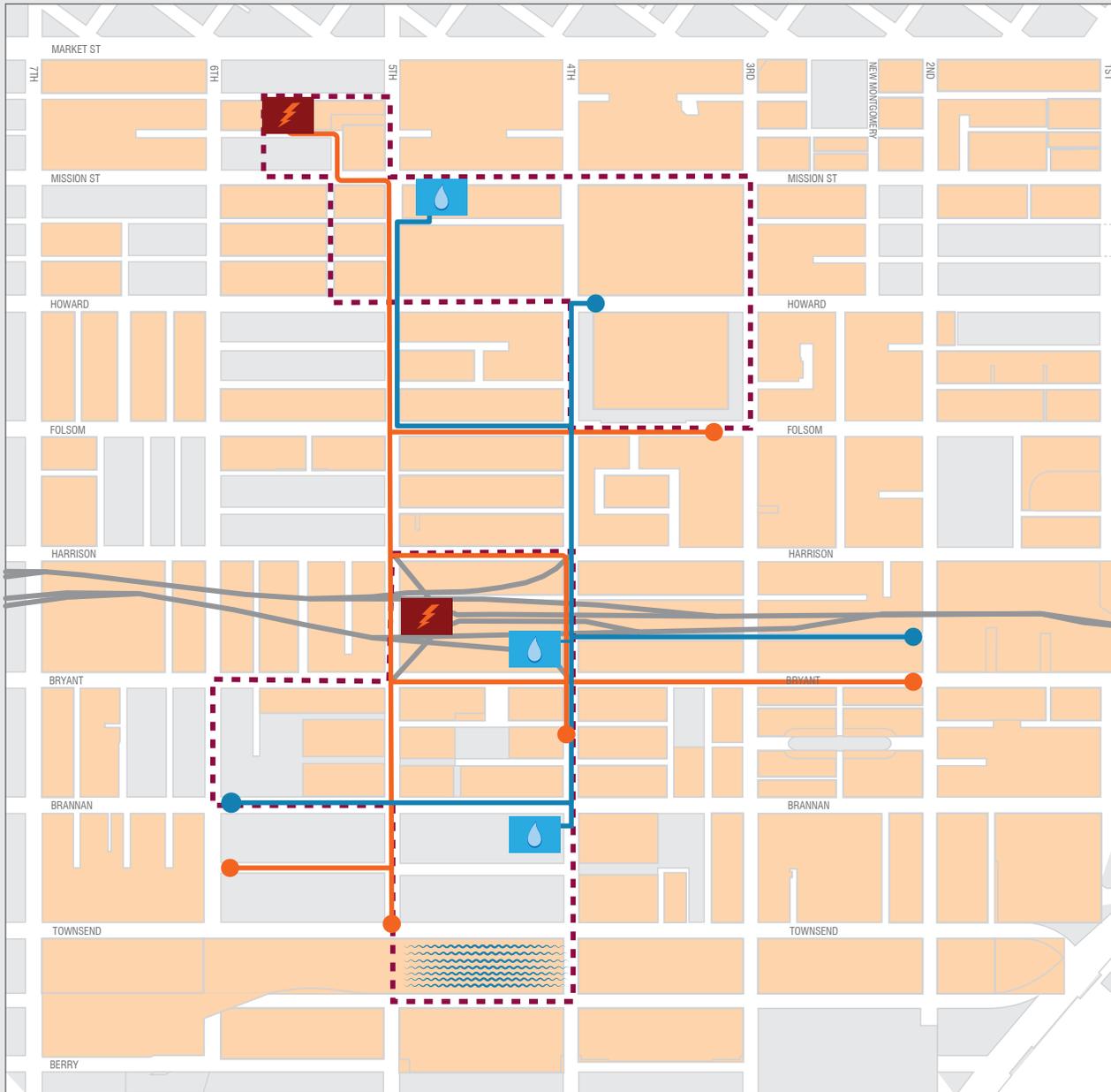
This neighborhood has seen waves of change incubated here starting well before CSED started but things rapidly accelerated after its foundation. Urban citizens looking for connection, community and creative frontiers flocked here. As the urban form grew vertically the neighborhood began to develop a genuine ecological characteristic that spread like pollen in the wind. The loci for gathering emerged in the streets, cafes, nightspots and think-tanks. An architectural style that has been called “Ecological Era” has pinned its roots to northern Europe but the well-known fact is that it achieved its pinnacle in this district.

With higher temperatures pounding many of the US cities and rising sea levels forcing population densities to shift, CSED remains a nucleus of calm in the storm. The interwoven and closed-loop system's for waste, water, urban food production

and energy allow for continued economic innovation through transformative real estate structures and game-changing innovation cycles.

Our Mission:

- To leverage capital investments in the area to create an infrastructure system that supports community and ecological institutions,
- To showcase this unique place, this dynamic boundary condition that draws the best from downtown & Central City,
- ...and to communicate who we are and where we are heading to the world from one of the most visible parts of the city - the eyes are on us from the I80, Moscone & Market Street.



Vision: Future Ready Systems

Leading the way for San Francisco in adopting sustainable infrastructure

- Building community and connecting people

This Eco-District supports social structures and builds social capital through festivals, block parties and other community building activities. It creates ‘one’ neighborhood by re-connecting both sides of the freeway. It builds on the essential quality of the neighborhood - a place where histories, movements and people collide, a place defined by change.

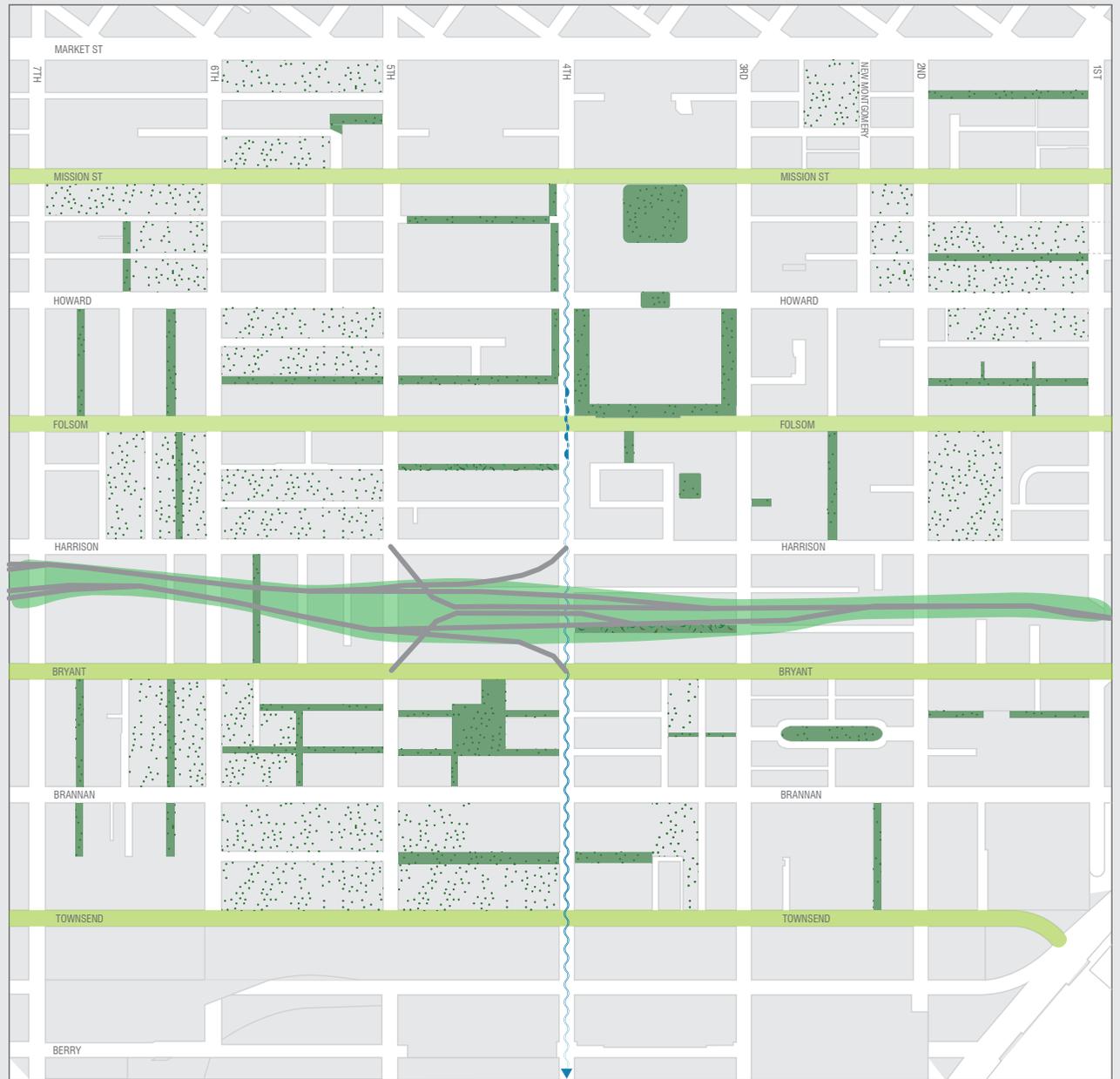
- A Future-Ready Neighborhood

This Eco-District is a model of a 21st Century neighborhood complete with future-ready infrastructure systems including district water, community-scale energy, and renewable infrastructure. As a result, this Eco-District is well positioned for the built environments demands of the 22nd Century.

Vision: Ecological Landscapes

Adopting comprehensive ecological greening and sustainable landscapes

This Eco-District merges the area's physical characteristics and creative spirit to create landscapes that are truly interactive. Public and private investments are leveraged to provide ecological amenities such as agriculture, parklets, and place-defining green walls.



 GREEN ALLEYS SCATTERED THROUGHOUT THE DISTRICT CREATE DIVERSE EXPERIENCES

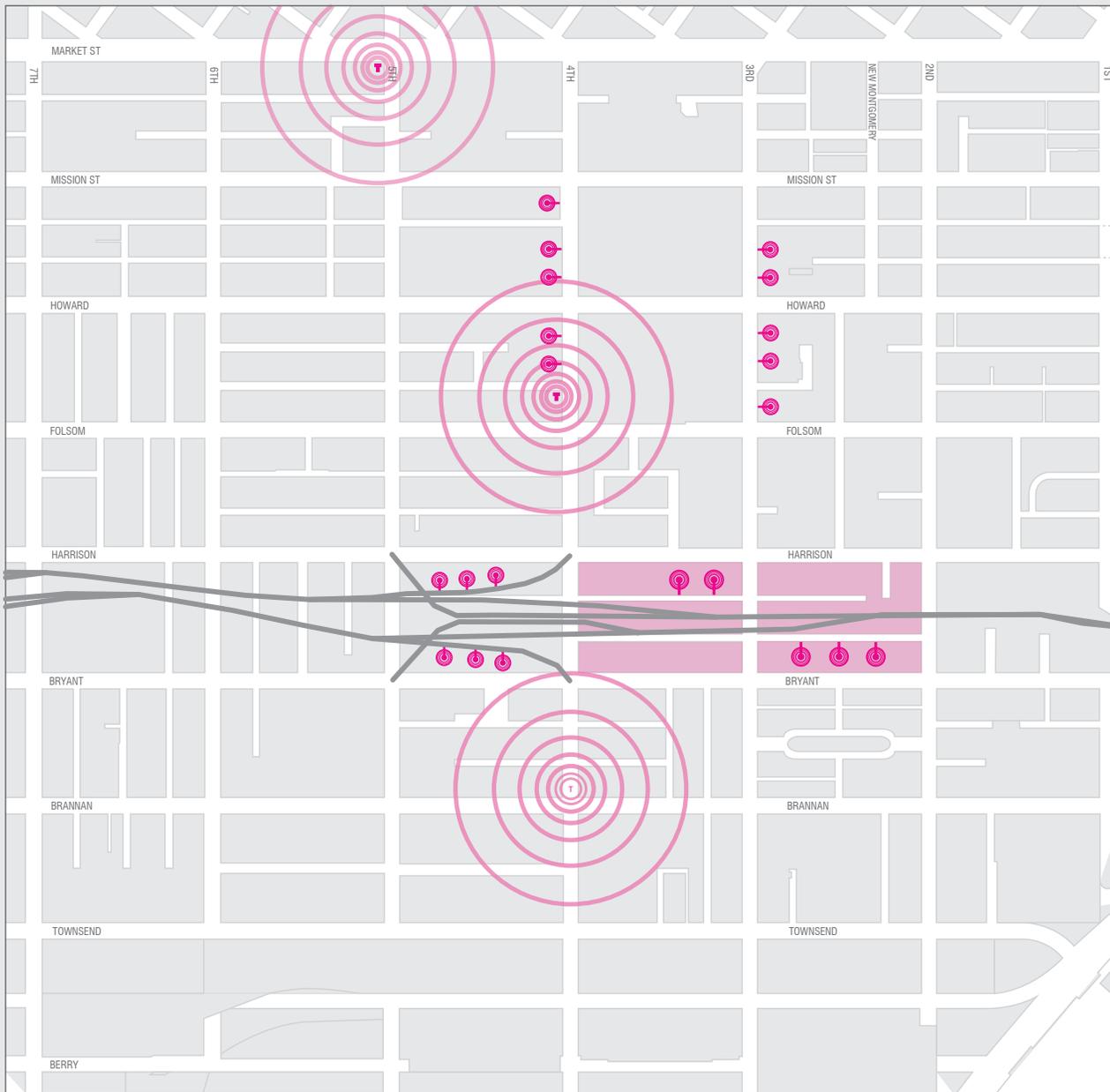
 GREEN ALLEYS CREATE DIVERSE EXPERIENCES

 GREEN BAND
THE LOW LINE CREATIVE ECOLOGICAL
LANDSCAPE UNDER THE FREEWAY

 SYMBOLLIC HAYES CREEK

 GREEN STREETS
DEFINE THE DISTRICT

 FREEWAY 80



Vision: Identity and Branding

A place where new ideas come to succeed

This Eco-District communicates its distinct identity – through monumental public art integrated with ecological systems, through social innovation, and through creative applications in infrastructure development and public realm design. The area’s community identifies with this area and communicates its strong identity and strength across the city and abroad.

Executive Summary

The City of San Francisco is creating an Eco-District pilot in the Central SoMa plan area to encourage innovative district-scale sustainable development projects in an important part of the City slated for major reinvestment over the coming 10–20 years. An Eco-District calls for a new model of public-private partnership that emphasizes district-scale organization between the City, utility providers and community stakeholders and the rigorous application of integrated sustainability performance metrics to guide investments in the areas of building development, infrastructure and community action and program delivery.

In June 2013, the Planning Department convened a task force as a means to engage key public and private stakeholders to collaborate and advise the project during the first phase of Eco-District development: the district organization phase. This level of stakeholder coordination and investment during the early phase of Eco-District development is required for success, as it provides clarity in the areas of organizational structures (relationships between district stakeholders and the city), potential project selection, shared goals, and potential sources of funding. Specific objectives for the task force included:

- Establishing shared short and long term goals
- Identifying potential sustainability projects appropriate for Central SoMa
- Identifying potential implementation measures
- Exploring partnership structures to provide both short term and long term oversight and management

The Central SoMa Eco-District formation task force was comprised of approximately 30 stakeholders representing public agencies and private organizations including representatives from city agencies, utility providers, neighborhood groups, and non-profits, property managers, real-estate

developers, architects, engineers and designers. Rob Bennett of EcoDistricts, and Robert Gamble of the PFM Group facilitated all meetings.

Three working groups were formed to develop recommendations according to 9 performance areas; energy, water, materials management, habitat and ecosystem function, equitable development, health and well-being, community building, access and mobility, and economic development.

The working groups were asked to address the following five tasks:

1. Develop an over arching vision and brief narrative for the Central SoMa Eco-District: What is the big idea and opportunity?
2. Develop intent, goals and objectives for each Eco-District performance area,
3. Identify the key project opportunity for each performance area,
4. Identify partnership, policy, and financing issues associated with proposed projects, and
5. Identify key metrics/targets to guide Eco-District performance over time.

Based on this work, the Task Force made the following recommendations and proposed implementation strategies:

PERFORMANCE AREA	RECOMMENDATION	IMPLEMENTATION STRATEGY
1. Equitable Development	1.1 Promote Equity and Local Opportunity	1.1a Establish a locally-based employment program with specific focus on low and medium income workers, to be incorporated into Eco-District project development.
2. Economic Development	2.1 Enhance Local Economic Development	2.1a Establish an incentive program for supporting local businesses and services.
	2.2 Create a Resilient Central SoMa	2.2a Incentivize the implementation of community-scale energy systems.
		2.2b Support non-potable water reuse at the building and district-scale.
		2.2c Implement a comprehensive stormwater management infrastructure system.
3. Community Building	3.1 Foster the creation of new community driven initiatives	3.1a Develop an assessment tool that engages community members to identify high value community assets and that outlines strategies to enhance them over time.
	3.2 Create an Innovation District	3.2a Implement projects under and around the freeway that integrate infrastructure systems.
4. Energy	4.1 Establish a Net Zero Energy District	4.1a Prioritize energy efficiency in existing and new developments.
		4.1b Encourage community-scale clean energy systems in areas with intensive infill capacity and anticipated growth.
		4.1c Develop incentives to encourage the implementation of community-scale clean energy projects
		4.1d Explore the potential of renewable energy generation and procurement
5. Water	5.1 Create a district where only non-potable water is used for non-potable uses.	5.1a Prioritize water efficient fixtures in existing and new developments.
		5.1b Maximize non-potable water infrastructure.
		5.1c Integrate stormwater infrastructure in the public realm and in development projects in the plan area.

PERFORMANCE AREA	RECOMMENDATION	IMPLEMENTATION STRATEGY
6. Waste	6.1 Strive for a Zero Waste District	6.1a Establish a waste pilot program specific to the Central SoMa Eco-District.
7. Habitat and Eco-System Function	7.1 Expand and Enhance Habitat and Eco-System Function	7.1a Optimize ecological urban interactivity.
8. Access and Mobility	8.1 Reduce Emissions from Transportation	8.1a Create A Safer Environment for Pedestrians and Cyclists through Streetscape Improvements.
9. Health and Well-Being	9.1 Leverage Eco-District Projects to Promote Public Health and Well-Being	9.1a Partner with the Department of Public Health to monitor community health over time.
		9.1b Extend the Downtown POPOS requirement into Central SoMa with additional performance requirements.
		9.1c Increase community access to urban agriculture.
	9.2 Activate Rooftops	
10. Eco-District Implementation	<p>10.1 Establish a Steering Committee to Formalize the Eco-District Organization</p> <p>10.2 Identify Short, Medium and Long Term Goals to Facilitate Eco-District Implementation</p>	<p>Potential implementation strategies suggested by the Task Force included:</p> <p>Short-term (0-2 years):</p> <ul style="list-style-type: none"> • Present the Task Force report to the Board of Supervisors and relevant City Commissions. • Establish a steering committee that identifies, manages, and measures Eco-District goals, partnerships, and projects. The Planning Department should provide staff to serve on the committee. <p>Mid-term (2-5 years):</p> <ul style="list-style-type: none"> • Establish a non-profit entity to provide long-term Eco-District support and oversight. <p>Long-Term (5-20 years):</p> <ul style="list-style-type: none"> • Project Implementation and performance monitoring.

PROJECTS IN THE PLAN AREA

MOSCONE EXPANSION

The Moscone Center renovation project, a partnership with the San Francisco Tourism Improvement District, will fund a \$56 million renovation to upgrade energy systems in the City-owned convention center. The 433,000 square foot expansion will provide an estimated 3,407 new construction jobs and 3,400 permanent new jobs through 2018.

THE CENTRAL SUBWAY PROJECT

The SFMTA Central Subway Project will construct a new 1.7 mile extension of Muni's T Third Line. The Central Subway Project is the second phase of the Third Street Light Rail Transit Project. Four new stations will be built along the alignment, the southern two of which are in the Plan Area. The project has completed its full funding agreements with the Federal Transit Administration. Construction of the subway tunnel and stations commenced in 2012 and will continue through 2017. The subway is slated to open to the public in 2019.

YERBA BUENA GARDENS

The dissolution of Redevelopment requires the creation of a new ownership and management structures for Yerba Buena Gardens. Because of the overlap of geography and stakeholders, this transition creates an opportunity for partnerships and new projects.

CALTRAIN DOWNTOWN EXTENSION

The Caltrain Extension Project extends Caltrain 1.3 miles from Fourth and King to the new Transbay Transit Center at First and Mission. The Expenditure Plan specifies that the downtown rail extension and the terminal, known as the Transit Center Building, are to be built as a single integrated project and is expected to be completed in 2017.

About the Central SoMa Plan

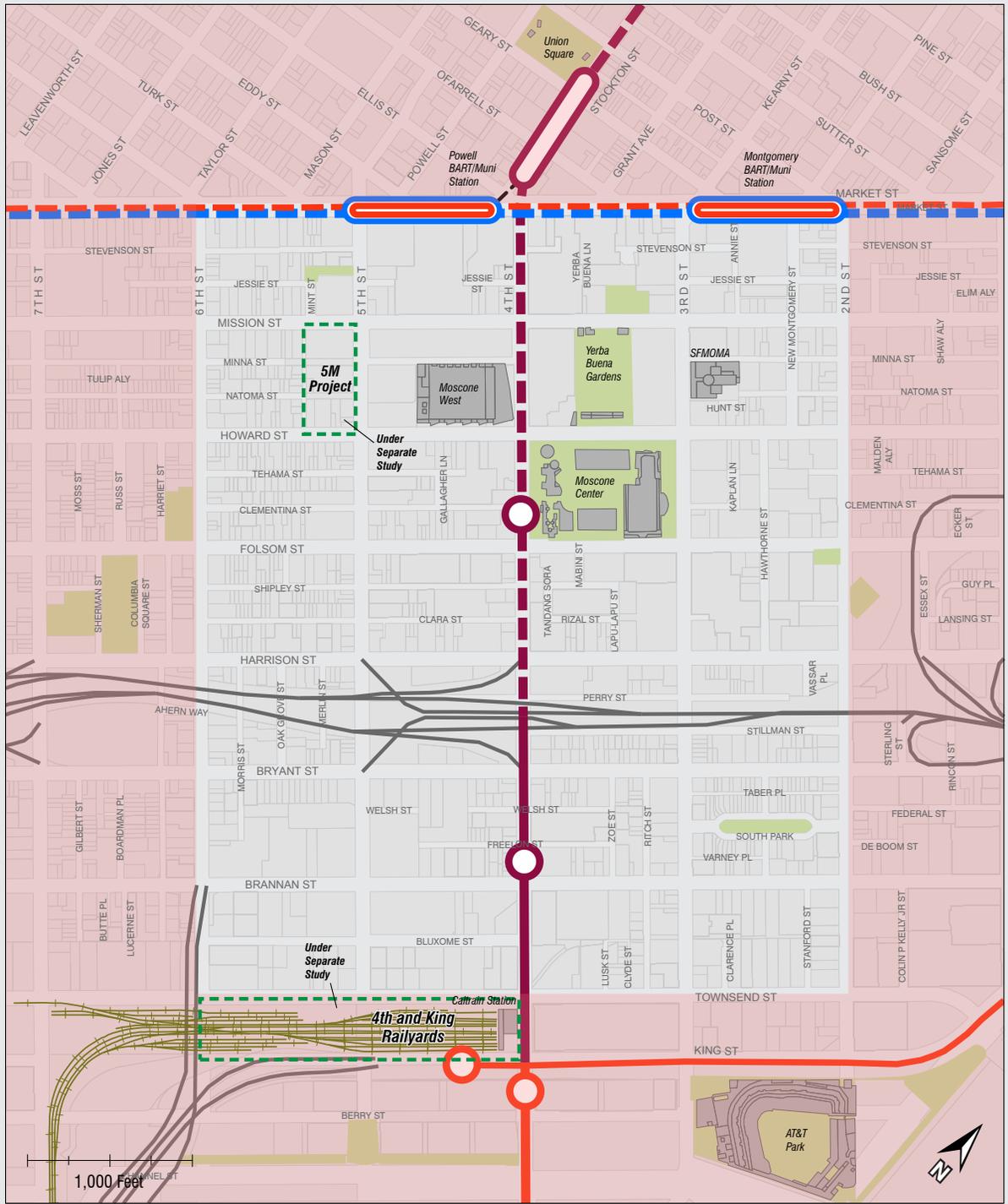
The “Central SoMa” Plan Area is a 24 square block area south of Market Street, from Market Street to Townsend, and from 2nd Street to 6th Street that notably includes the CalTrain station, a freeway and the Moscone Convention Center. This once-industrial area is now positioned to become a growing center of the city's and region's high-tech industry. With the construction of the Central Subway (scheduled to begin operation in 2019), undeveloped or underdeveloped parcels in the area offer significant development opportunity. The Central SoMa Plan will propose rezoning this area for dense, transit-oriented, mixed-use growth and hopes to capitalize on rezoning to incorporate district-level energy and water infrastructure.

Currently, the City's Planning Department has been charged with creating an Area Plan and has successfully developed an integrated community vision for the plan area. These proposed changes are based on a synthesis of community input, past and current land use efforts, and an analysis of long-range regional, citywide and neighborhood needs. Significant up-zoning from low-intensity industrial to high density commercial and residential is also currently proposed for the area. The expectation is that up-zoning will enable development of job space, which is in high demand in this part of town, and other supporting uses that

benefit SoMa. Additionally, public realm improvements and the expansion of the subway line will also help to promote building improvements. The pace of that change will depend on the economy; yet, any requirements placed into the plan now will be realized over time.

For more information about the Central SoMa Plan, please visit:

<http://centralsoma.sfplanning.org>



CENTRAL SOMA PLAN AREA

- Caltrain
 - BART
 - Muni
 - Central Subway
- Solid lines represent surface rail, dashed lines represent subway.

Central SoMa Area Plan in Relation to the Central SoMa Eco-District

Development in Central SoMa will generate a variety of public revenues (e.g. property taxes, sales taxes, real estate transfer taxes) to support proposed capital and program improvements in the Plan Area. The Central SoMa Plan proposes to apply a development impact fee program similar to the existing Eastern Neighborhoods development impact fee program. Based on draft fee levels, development is projected to generate approximately \$130-200 million towards public realm, open space, and community facilities within the Plan Area.

The Inter-departmental Plan Implementation Committee (IPIC) and the Eastern Neighborhoods Community Advisory Committee both work to allocate funds that come in through development impact fees to support public improvements identified by planning efforts. By California law, impact fees must be calculated according to the nexus between the demands for new facilities and the costs to construct those facilities. Many of the Eco-District projects recommended by the task force would not be covered by that nexus. However, certain Eco-District projects that were recommended by the task force specifically are intended to augment streetscape and open space improvements proposed in the draft Central SoMa Plan. The Planning Department will implement

these projects to the extent that it is feasible under various implementation programs, and the public revenue that will be generated by new development.

It is likely that new funding mechanisms will be required to support certain, more costly Eco-District projects. A cornerstone of Eco-Districts is that projects create new opportunities for public-private partnerships. Certain projects cannot fit within the Central SoMa Plan's implementation strategies, such as projects that require multiple ownership models. These projects require new vehicles for implementation, and require innovative mechanisms for funding. Funding mechanisms that involve public-private partnerships (such as business improvement districts, community benefit districts, and local improvement districts) will likely be required to provide resources to the Eco-District. Because financing/partnerships options will vary depending on the type and scope of the project, these cannot be determined at this time, although the Task Force did consider a spectrum of alternatives that could be used to support a variety of projects.

Many Eco-District projects will not be funded through the development impact fee established by the Plan, but rather will require new funding vehicles for implementation.

Recommendations

1. Equitable Development

Recommendation 1.1:

Promote Equity and Local Opportunity

Promote Eco-District projects that reflect community goals and provide direct community benefit. Economic benefits associated with Eco-District projects should be fairly deployed to benefit the diverse range of Central SoMa communities and the decision making process surrounding Eco-District development should include diverse stakeholder involvement.

Implementation 1.1a:

Establish a locally-based employment program with specific focus on low and medium income workers, to be incorporated into Eco-District project development

Any new job opportunities associated with Eco-District projects (which could range from construction & maintenance jobs to project management or community outreach coordination) should be given priority to economically disadvantaged community members. Eco-District employment programs should be more effective than the First Source Hiring Program. The Program must not impose local hiring obligation on tenants that outweigh the commercial benefits

of a tenant choosing to locate themselves in the district however, and should be applied to new and existing buildings alike.

EXISTING CONDITIONS*

AVERAGE CHILD CARE COSTS AS A PROPORTION OF FAMILY BUDGET

San Francisco: 12%
Central SoMa: 15%

PROPORTION OF HOUSEHOLDS WHOSE GROSS RENT IS 50% OR MORE OF THEIR HOUSEHOLD INCOME

San Francisco: 20%
Central SoMa: 24%

PROPORTION LIVING AT OR BELOW 200% OF THE CENSUS POVERTY THRESHOLD

San Francisco: 26%
Central SoMa: 31%

DISTRIBUTION OF BUSINESSES

The plan area contains 15% of the City's minority and women owned local business enterprises and 8% of the City's green businesses, which is significant considering that the plan area only makes up roughly 1% of the City's land area

*San Francisco Department of Public Health. Sustainable Communities Health Assessment: Central Corridor Plan. November 30, 2012

TASK FORCE SUPPORTS THE FOLLOWING RELATED CENTRAL SOMA PLAN GOALS AND PRINCIPLES

PLAN GOAL 3:

Maintain the area's vibrant economic and physical diversity

FUNDING DISTRICT WIDE IMPROVEMENTS PRINCIPLE 1:

Utilize the benefits of density to help fund a robust set of public improvements in the Plan Area, requiring new development to contribute towards community facilities and amenities

FUNDING DISTRICT WIDE IMPROVEMENTS PRINCIPLE 2:

Implement "value capture" strategies, where parcels who receive significant value through the rezoning contribute towards community needs accordingly

FUNDING DISTRICT WIDE IMPROVEMENTS PRINCIPLE 4:

Explore new and innovative funding mechanisms to support community improvement projects

2. Economic Development

Recommendation 2.1: Enhance Local Economic Development

Eco-District projects and activities should spur economic development in Central SoMa, benefiting both public and private sectors. Projects should support the creation of new green businesses and jobs, and should ultimately improve land value.

Implementation 2.1a: Establish an incentive program for supporting local businesses and services

To promote the retention of local businesses and services, an incentive program should be established to support the procurement of goods and services from locally-based businesses and organizations.

Recommendation 2.2: Create a Resilient Central SoMa

The ability of infrastructure to deliver services in a continuous manner will reduce the economic consequences associated with disaster events (loss in business activity, public expenditures on repair and reconstruction). Reducing these risks will make Central SoMa more attractive for businesses and tenants, promoting additional private investment in the Plan Area. District resilience will also contribute towards the economic vitality of the city, by increasing public-sector revenue opportunities through increased property tax revenue, and

by mitigating the risk of public spending caused by infrastructure disruption.

City agencies, in partnership with public and private stakeholders, should leverage their financing tools to ease the implementation of resilient infrastructure systems. City agencies should participate in technical assessments currently underway that support the development of resilient infrastructure in Central SoMa.

Implementation 2.2a: Incentivize the implementation of community-scale energy systems

Implementation 2.2b: Support non-potable water reuse at the building and district-scale

Implementation 2.2c: Implement a comprehensive stormwater management infrastructure system



NOAA viewer showing estimated effects of 60" in sea level rise. The boundary of the plan area is outlined in green. (Source - www.csc.noaa.gov)

EXISTING CONDITIONS*

At full build-out, the Central SoMa Plan's proposed changes could increase the City's property tax base by over \$1 billion, as buildings are constructed and sold or rented. Other revenues contribute an additional \$135 million. During the 30-year life of the Plan, the City's General Fund could receive almost \$1.15 billion, or an average of about \$38 million per year.

Employment rates (% employed)
San Francisco: 93%
Central SoMa: 95%

*San Francisco Department of Public Health. Sustainable Communities Health Assessment: Central Corridor Plan. November 30, 2012

3. Community Building

Recommendation 3.1:

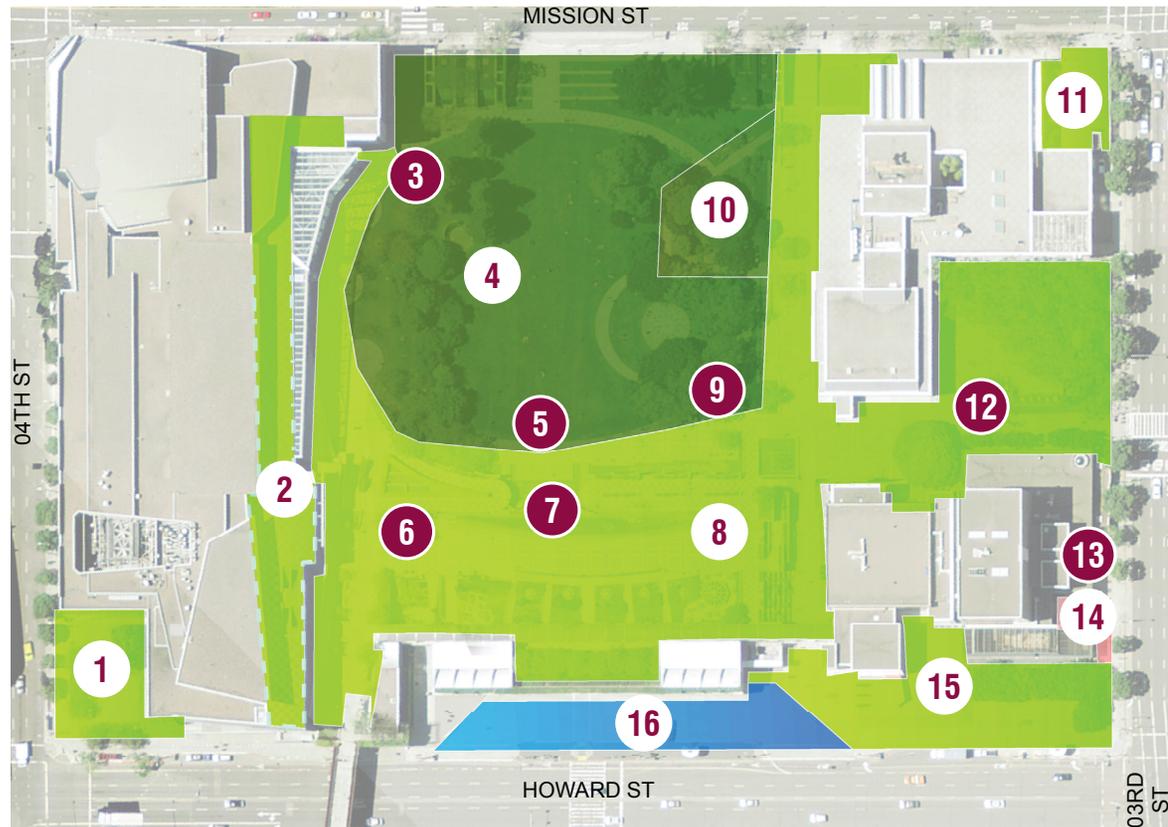
Foster the creation of new community driven initiatives

The Eco-District should enhance the built environment and social character of Central SoMa. Through ‘bottom-up’ stewardship, Eco-District projects and activities should provide direct community benefit.

Implementation 3.1a:

Develop an assessment tool that engages community members to identify high value community assets and that outlines strategies to enhance them over time

This tool should use readily available up-to-date data that can easily be mapped and weigh particular uses according to environmental and social benefit as a means to identify the most and least beneficial uses. Community-driven assessment efforts should be used to inform Eco-District project development.



Central SoMa Neighborhood Earthview / City Block 3723 (Draft) (Courtesy of TODCO)

ID NO.	USE	WEIGHT	AREA (SQ. FT.)	ECO-SOCIAL SCORE
1	POPO Plaza Substantial Landscape/Use	1	7,770.2	7,770.2
2	Private Commercial Open Space	2	17,268.9	34,537.8
3	Public Art	8	NA	800.0
4	Public Park	6	81,673.4	490,040.4
5	Community/Civic Icon	10	NA	1,000.0
6	Public Art	8	NA	800.0
7	Community/Civic Icon	10	NA	1,000.0
8	POPO Plaza Substantial Landscape/Use	1	115,646.5	115,646.5
9	Public Art	8	NA	800.0

ID NO.	USE	WEIGHT	AREA (SQ. FT.)	ECO-SOCIAL SCORE
10	Maintained Habitat	10	8,910.6	89,105.7
11	POPO Plaza Substantial Landscape/Use	0.1	4,076.6	407.7
12	Public Art	8	NA	800.0
13	POPO Parklet	6	NA	600.0
14	Loading/Service	0	1,403.1	0.0
15	POPO Plaza Minimal Landscape/Use	0.1	17,685.4	1,768.5
16	Private Transit Facility	6	11,635.0	69,810.0
TOTAL				814,886.8
Per Acre Eco-social Score =		814887	x 2.5E-5 =	18.7

TASK FORCE SUPPORTS THE FOLLOWING RELATED CENTRAL SOMA PLAN GOALS AND PRINCIPLES

HISTORIC RESOURCE AND SOCIAL HERITAGE PRINCIPLE 1:

Historic Resources Should be Retained and Protected For the Enjoyment of Future Generations and to Maintain the Rich Diversity of the Built Environment.

HISTORIC RESOURCE AND SOCIAL HERITAGE PRINCIPLE 2:

Incentivize Retention of Contextual and Non-Priority Buildings and Encourage architectural Expression and innovation in adding to Such Buildings.

HISTORIC RESOURCE AND SOCIAL HERITAGE PRINCIPLE 3:

Support and Enhance Social Heritage Resources within the Central SoMa Plan Area.

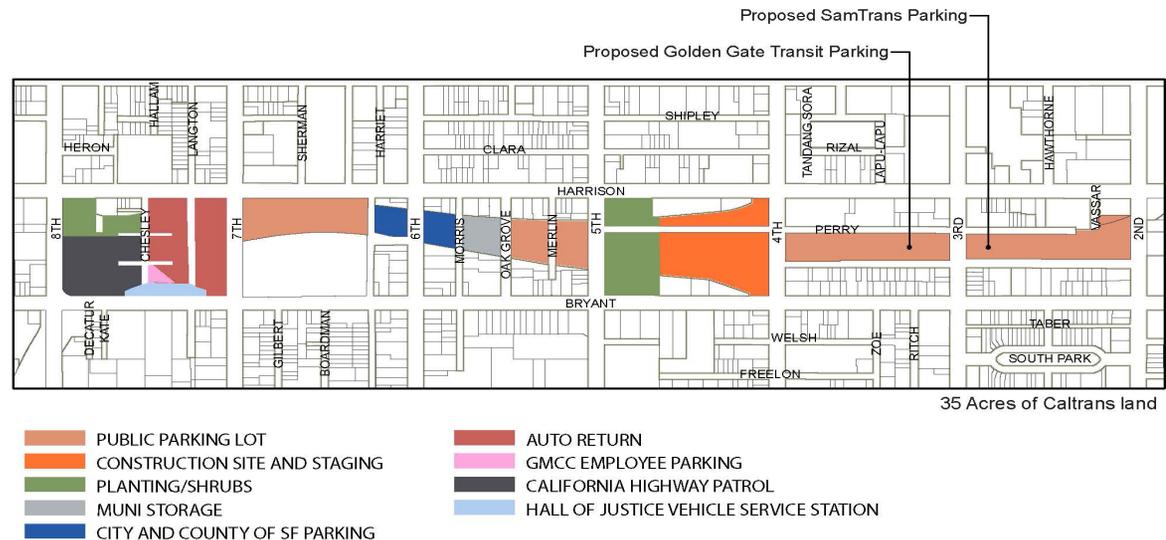
Recommendation 3.2: Create an Innovation District

As a pilot Eco-District, Central SoMa should showcase the current momentum in San Francisco around sustainability. By highlighting the entrepreneurial benefits of dignified job creation, quality of the environment, and creative capacity, Eco-District projects and activities should be utilized to showcase innovation in sustainable design, to educate the public on sustainable behavior, and to highlight the benefits of

resilient, resource efficient urban areas. There is an enormous opportunity to showcase emerging technologies that can be used to maximize resource efficiency on a district scale. Projects may include: using the area under and around the freeway to host Eco-District projects and activities, emphasizing Eco-District “gateways” to display sustainable systems, integrating active and passive stormwater management systems into public realm design, and using the proposed new open space between 5th and 4th Streets and Bryant and Brannan Streets to host Eco-District related projects and activities.

Implementation 3.2a: Implement Projects Under and Around the Freeway that Integrate Infrastructure Systems

The land underneath and around the freeway should be activated with productive uses to diminish its negative impact on the community. This land is located in a relatively centralized location and as a result provides an opportunity to host community-scale energy and/or recycled water hosting facilities. The task force supports proposed Central SoMa Plan strategies to lessen the negative aspects of the freeway, and recommends more ambitious actions such as integrating infrastructure that would help to decrease the environmental impact of Central SoMa while creating new public open space.



Map of current uses of Caltrans owned parcels under the freeway, from 8th street to 2nd street (Courtesy of TODCO)

TASK FORCE SUPPORTS THE FOLLOWING RELATED CENTRAL SOMA PLAN GOAL

GOAL 5:

Create a Model of Sustainable Growth

URBAN DESIGN PRINCIPLE 5:

Height limits should be appropriate for the central city location and transit access, and should serve to diminish the dominant presence of the freeway in the neighborhood.

OPEN SPACE IMPLEMENTATION STRATEGY 2.3:

Use public art, lighting, and other amenities to improve the pedestrian experience along 5th, 4th, and 3rd streets beneath the elevated freeway.

4. Energy

Recommendation 4.1: Establish a Net Zero Energy District

The Central SoMa Eco-District can help meet San Francisco's goals to reduce GHG emissions from electricity and natural gas use by maximizing efficiency, increasing renewable energy generation and procurement, and promoting efficient community-scale energy systems. Shared utility infrastructure projects (e.g. district heating and cooling and micro-grid approaches) can generate significant life-cycle cost and resource savings and related GHG reductions if applicable legal, timing, and financial issues can be brought into alignment.

The City's many existing programs (technical assistance, incentives and rebates, and accessible financing) can be focused and applied at scale within the Eco-District context.

Implementation 4.1a: Prioritize energy efficiency in existing and new developments

Energy efficiency should be prioritized in the Central SoMa Eco-District as it is the most cost effective way to control and reduce energy consumption in buildings and lower carbon emissions across the district. Existing City programs aimed to 'go beyond code' in energy efficiency in

residential and commercial buildings should be applied at scale and aggressively pursued within the Central SoMa Eco-District. Relevant city agencies and utility providers should encourage and support such energy efficiency initiatives.

Implementation 4.1b: Encourage Community-Scale Clean Energy Systems in Areas with Intensive Infill Capacity and Anticipated Growth

The development of community-scale energy systems should be explored throughout Central SoMa, particularly in areas with high-growth potential. Concentrated development is a critical



NRG San Francisco current service area. There was some discussion during task-force meetings regarding the possible expansion of NRG's service area to provide services for proposed development in the northern portion of the Central Corridor (Photo-www.NRGthermal.com)

component in project feasibility. Projects could include district heating and cooling, and local renewable energy systems. Types of projects require significant analysis by city agencies, and collaboration between multiple property owners and real estate developers to sort out issues regarding timing of construction, and sharing the cost of connective elements and facilities, financing, and organizational structures.

Implementation 4.1c:
Develop Incentives to Encourage the Implementation of Community-Scale Clean Energy Projects

The development of incentives (financial or otherwise) should be explored to encourage the implementation of community-scale energy resources. Certain shared energy systems may be difficult to implement in situations that involve crossing property lines or public rights-of-way. Because the development of such systems may require sophisticated collaboration between multiple property developers/owners operating with different development time frames, it can be a challenge to get all parties involved to contribute their time and resources as needed.

The Task Force suggests the development of incentives to encourage shared systems, or other multi-ownership leveraged projects in Central SoMa. Incentives must be advantageous, saving the developer time and/or money, to be effective in this case. Possible incentive programs could be structured to provide building owners/property

developers with technical/financial assistance, or allow increased height or massing, or a streamlined regulatory process specifically catered to “cut the red tape” for projects that contribute to the development of community-scale energy or other shared utilities in Central SoMa. Further study and assessment is needed to determine the most effective type of incentive programs. Technical assistance and guidelines could also help developers implement or take part in district-scale systems. In addition to developing incentives, a group consisting of developers and engineers need to study more closely what the options are for community-scale energy systems and map out a path to implement them.

Implementation 4.1d:
Explore the potential of renewable energy generation and procurement

Renewable energy generation is another key strategy that can greatly reduce GHG emissions from energy consumption in Central SoMa. Renewable energy generation (solar, wind, etc.), ideally combined with a comprehensive approach to identifying and implementing efficiency, can be delivered on an individual building scale, or potentially on a district scale, although anything beyond a single building requires more careful regulatory analysis and collaboration between relevant stakeholders. On an individual building scale, new buildings could incorporate renewable energy generation primarily for on-site use. On a district scale, renewable energy sources could be used to provide clean energy to multiple properties.

SAN FRANCISCO'S ENERGY PERFORMANCE GOALS

CITY GHG REDUCTION GOAL: REDUCE OVERALL GHG EMISSIONS TO 50% OF 1990 LEVELS BY 2030 AND 80% BY 2050,

MEET ALL CITYWIDE ELECTRICITY NEEDS FROM 100% GHG FREE SOURCES BY 2030.

Energy efficiency should be prioritized in the Central SoMa Plan Area as it is the most cost effective way to control and reduce energy consumption in buildings and lower carbon emissions across the community.

Community-scale energy systems/projects can help meet net zero goals at the district level.

EXISTING CONDITIONS*

ANNUAL RESIDENTIAL NATURAL GAS USE

San Francisco: 186 therms/capita
Central SoMa: 66 therms/capita

The average Central SoMa resident uses 1/3 the natural gas of the average San Franciscan. This may be due to smaller and/or more efficient housing units.

ANNUAL RESIDENTIAL ELECTRICITY USE

San Francisco: 1,762 kwh/capita
Central SoMa: 2,416 kwh/capita

The average Central SoMa resident uses 37% more electricity than the average San Franciscan. This may be due to smaller households (for example, a household typically has 1 refrigerator, regardless of whether there are 1 or 4 members of that household, so the household with only 1 resident has a higher electricity demand per capita) and higher “plug loads”, primarily electronics.

LOCAL RENEWABLE ENERGY GENERATION

Rooftop solar generation provides local renewable energy in Central SoMa as indicated below. Additionally, a portion of the GHG-free energy provided to the Moscone Center and other SFPUC customers in Central SoMa is supplied by in-City renewable sources:

COMMERCIAL SOLAR INSTALLATIONS:

There are 5 commercial solar installations, totaling 67.5 kW, in Central SoMa (out of 209 com-

mercial installations across the entire city, totaling 6.93 MW), and one 675 kW municipal installation at Moscone convention center. The number of systems in Central SoMa is limited due to the likelihood of shading from tall and mixed building heights, as well as the location of PG&E’s downtown mesh network which limits ability to interconnect solar to the distribution grid in the northern half of Central SoMa.

RESIDENTIAL SOLAR INSTALLATIONS:

There are 2 residential solar installations, totaling 9.2 kW, on homes in Central SoMa (out of 3,802 in the entire city, totaling 11.53 MW; this number in Central SoMa itself is likely small due to the lower number of single-family homes in the district compared to other neighborhoods, as well as the likelihood of shading from tall and mixed building heights, and the presence of PG&E’s downtown mesh network which limits ability to interconnect solar to the distribution grid in the northern half of Central SoMa. Most of the residential installations are thus concentrated in the southern half of SoMa.

*Renewable energy data provided by San Francisco Department of the Environment

5. Water

Recommendation 5.1:

Create a district where only non-potable water is used for non-potable uses

Implementation 5.1a:

Prioritize water efficient fixtures in existing and new developments

Water efficiency should be prioritized in the Central SoMa Eco-District, as it is throughout San Francisco, since it is the most cost effective way to control and reduce water use in buildings. Existing City programs aimed to maximize water efficiency in residential and commercial buildings (audits, incentives and rebates) should be applied at scale and aggressively pursued.

Implementation 5.1b:

Maximize non-potable water infrastructure

The Central SoMa Eco-District is within a designated recycled water use area identified in the Recycled Water Ordinance. As such, all new development in the area that meets the threshold for ordinance compliance should be expected to install dual-plumbing to facilitate the future use of recycled water (or other approved non-potable source) for toilet/urinal flushing, irrigation, and cooling applications. In addition, projects that do not meet the ordinance compliance threshold but still have substantial non-potable demands should be encouraged to install dual-plumbing.

New development may be designed to include non-potable reuse systems that collect and treat alternate water sources for non-potable purposes, as opposed to directing this water directly into the sewer system. These buildings should be encouraged to use alternate water sources, such as rainwater, stormwater, graywater, blackwater, and foundation drainage (nuisance groundwater extracted to maintain the structural integrity of a

building) for non-potable purposes, rather than directing it to the sewer system.

The Central SoMa plan area resides at the base of Hayes Creek and is therefore naturally saturated with groundwater. This physical characteristic creates an opportunity to diversify the area's water sources. Since the foundations of some existing and proposed buildings, and parts of the Central

Subway line, are or will be below the area's water table, there is an opportunity to collect, treat, and reuse this water for non-potable purposes.

Foundation drainage could have additional synergies with other district-scale sustainability projects. For example, companies providing shared heating and cooling (such as NRG) could use collected foundation drainage from other buildings to



Using the space under the freeway for stormwater collection and filtration was one idea proposed in the SWA 2012 Summer Program.

support operations that would otherwise require potable water. Foundation drainage should be explored throughout Central SoMa, especially for new development, and along the Central Subway line.

Implementation 5.1c:
Enhance the Integration of Stormwater Infrastructure into the Public Realm

Where appropriate, green stormwater infrastructure is encouraged to be incorporated into the design of streets public right-of-ways and public open-space throughout Central SoMa. The Central SoMa Plan includes district-wide streetscape redesign, the creation of new open-spaces, and improvements to open-space. While new development projects must meet the SFPUC stormwater management requirements, enhanced integration of green stormwater infrastructure is encouraged within the public realm design throughout Central SoMa to help further reduce wet weather flows to the sewer system, while also benefiting biodiversity and showcasing sustainable urban design practices.

SFPUC WATER INITIATIVES

COMMERCIAL WATER CONSERVATION ORDINANCE

This ordinance requires properties to repair plumbing leaks and replace inefficient plumbing fixtures including toilets, urinals, faucets, and showerheads with high-efficiency models. Retrofits for commercial properties are required by 2017 or upon major improvements.

RESIDENTIAL ENERGY AND WATER CONSERVATION ORDINANCE

This ordinance requires properties to repair plumbing leaks and replace inefficient plumbing fixtures including toilets, faucets, and showerheads with high-efficiency models. Residential retrofits are required upon sale of the property or at the time of major improvements.

NON-POTABLE WATER PROGRAM

Large retail water users that choose to implement on-site treatment and use of non-potable water generated and/or collected at their own facilities are subject to this ordinance. Non-potable water includes, but is not limited to, rainwater, graywater, foundation drainage, and blackwater.

RECYCLED WATER ORDINANCE

Projects located in the City's designated recycled water use areas are required to install recycled water systems for irrigation, cooling, and/or toilet and urinal flushing. New construction, subdivisions, or major alterations with a total cumulative area of 40,000 square feet or more, and any new, modified, or existing irrigated areas of 10,000 square feet or more are required to comply with this ordinance. In a mixed-used residential building where a recycled water system is installed, any restaurant or other retail food-handling establishment must be supplied by a separate potable water system to ensure public health and safety.

WATER EFFICIENT IRRIGATION ORDINANCE

To ensure the efficient use of water for the City's landscapes, all projects with 1,000 square feet or more of new or modified landscape area are required to comply with this ordinance. Projects must design, install, and maintain efficient irrigation systems, utilize low water-use plantings, and calculate a water budget.

STORMWATER MANAGEMENT ORDINANCE

To protect the water quality of San Francisco Bay and the Pacific Ocean, and to enhance the function of the City's sewer systems, the Stormwater Management Ordinance requires all new and redevelopment projects that disturb 5,000 square feet or more of ground surface, or surface over water, to comply with the Stormwater Design Guidelines and manage a portion of their stormwater on-site. Ground surface disturbance is measured cumulatively across the development project.

6. Materials Management

Recommendation 6.1: Strive for a Zero Waste District

Zero waste and optimized material management should be achieved in Central SoMa. San Francisco is currently diverting 80% of its waste from the landfill. The City is currently exploring waste management opportunities in order to meet the goal of zero waste by 2020. The Eco-District should explore legislation that helps to reduce waste generation in the area and develop a waste management strategy (or combination of strategies) to optimize the efficiencies by which the plan area disposes and manages waste. This strategy should allow stakeholders to make decisions about priorities, investments, engagement and outreach to contribute to the City's zero-waste goals, and demonstrate waste management solutions that can be replicated on a city-wide scale.

Implementation 6.1a: Establish a waste pilot program specific to the Central SoMa Eco-District

A waste management pilot program should be established in the Central SoMa Eco-District that supports the City's efforts to achieve zero waste by 2020. Once a program is developed, its principles should be integrated into all projects in the area. A Central SoMa waste reduction strategy could function as a pilot that could have the potential to be replicated in other areas of the city. The task force discussed several specific projects that could be

used in tandem with a waste pilot program. Several of these projects could be well assisted by new developments if incorporated into the design of new buildings in the plan area. Projects included:

- Tri-sorter community trash bins (landfill, compost, recycling) placed on streets throughout the district,
- A waste vacuum collection system specifically for the Yerba Buena/Moscone Central Subway stations,
- A waste logistic strategy that takes into account the distribution system associated with moving waste/ material in and out of the district,
- Coordinating with the city and Recology on creating a zero-waste facility in the area, and
- Incorporating anaerobic digestion within community-scale energy infrastructure.

7. Habitat & Eco-System Function

Recommendation 7.1: Expand and Enhance Habitat and Eco-System Function

Central SoMa has the potential to increase and improve its biodiversity and urban forest through the creation of new open-space, and increased landscaping on sidewalks, streets, rooftops, and in alleys. Landscaping (including street trees) throughout the district will support wildlife and habitat connectivity in a dense and rapidly

developing urban environment. This recommendation supports existing projects in the City including Green Connections and the Urban Forest Plans, both of which promote nature-friendly urban design. The task force supports both the Central SoMa Plan (chapter 5) and the draft TODCO Central SOMA Plan proposals for open-space improvements. Additionally, new development should be encouraged to implement projects that support habitat and eco-system function that might extend the length of the block, rather than along the property line of the new development.

EXISTING CONDITIONS

DISTRIBUTION OF OPEN SPACES AND NATURAL AREAS (% OF LAND AREA THAT IS OPEN SPACE)

San Francisco: 22.8%
Central SoMa: 4.7%

NUMBER OF TREES FOUR METERS TALL OR HIGHER

San Francisco: 7.0
Central SoMa: 1.6

PROPORTION OF GROUND COVERED WITH IMPERVIOUS SURFACES

San Francisco: 63.5%
Central SoMa: 89.8%

PROPORTION OF HOUSEHOLDS WITH 1/4 MILE ACCESS TO A COMMUNITY GARDEN

San Francisco: 26%
Central SoMa: 16%

Implementation 7.1a:
Optimize ecological urban interactivity

Develop metrics for eco-system function (i.e. % increase in pollinator species, biodiversity index, square feet of productive habitat), track the metrics, and adjust systems to optimize ecological urban interactivity. Implementing green stormwater infrastructure is one of the primary opportunities here. Emphasize living walls that are integrated with a non-potable water reuse system to maximize the visual effects of the merging of ecology in the urban environment while minimizing water use.

8. Access & Mobility

Recommendation 8.1:
Reduce Emissions from Transportation

Roughly half of the city’s greenhouse gas (GHG) emissions come from the transportation sector. The Task Force recommends incentivizing forms of transportation that will help to reduce the emission of GHG’s in the plan area. The Central SoMa Plan (and numerous other city plans and policies) aims to improve pedestrian, transit and cycling conditions, and to discourage private automobile reliance. The Task Force supports the Central SoMa Plan’s proposals to widen sidewalks, augment bike and transit lanes and as necessary, reduce the number of lanes for private vehicles throughout the Plan Area. The Task Force also supports the Central SoMa Plan’s proposals to

increase density, as supporting transit- oriented mixed use development will help decrease private automobile reliance. To encourage non-auto modes of transportation in Central SoMa, the Task Force recommends district-wide shared bicycle programs and facilities, which is supported already by the planned introduction of a public bicycle sharing program throughout downtown and the plan area.

TASK FORCE SUPPORTS THE FOLLOWING RELATED CENTRAL SOMA PLAN GOALS

LANE REDUCTION FOR PRIVATE VEHICLES (SPECIFICALLY ON FOLSOM, HOWARD, BRANNAN, 3RD, 4TH, HARRISON AND BRYANT STREETS)

WIDEN SIDEWALKS ON MAJOR STREETS TO MEET BETTER STREETS PLAN STANDARDS

SFMTA GOALS

DOUBLE WALKING, CYCLING AND TRANSIT AS A PERCENTAGE OF ALL TRIPS BY 2030

25% REDUCTION IN SERIOUS AND FATAL PEDESTRIAN INJURIES BY 2016, 50% REDUCTION BY 2021

Implementation 8.1a:
Create A Safer Environment for Pedestrians and Cyclists through Streetscape Improvements

The Planning Department and community organizations should continue their effort to create safer streets in the Central SoMa for bicyclists and pedestrians. The Task Force supports the Central SoMa Plan proposals to make safer streets for pedestrians and cyclists, as described in detail in chapter 7, Streetscape and Circulation.

9. Health & Well-Being

Recommendation 9.1:
Leverage Eco-District Projects to Promote Public Health and Well-Being

Eco-District projects can broadly enhance community health through social, ecological and built conditions, and should aim to mitigate specific community public health concerns. The Task Force identified many strategies that could be utilized to improve the public health of Central SoMa communities. Specific projects that were proposed include the following:

Implementation 9.1a:
Partner with the Department of Public Health to monitor community health over time

In April of 2013, the Department of Public Health conducted a Sustainable Communities Health Assessment of the Central SoMa Plan Area. The Sustainable Community Index assessment for the

Central SoMa has provided very specific health-related data that has informed the Central SoMa planning process, and should be used to inform future Eco-District principles, objectives, and strategies.

Implementation 9.1b:
Extend the Downtown POPOS requirement into Central SoMa with additional performance requirements.

The Downtown (Planning Code Section 138) requirement for all non-residential development to provide publicly accessible open-space (POPOS) should be expanded into Central SoMa.

Implementation 9.1c:
Increase community access to urban agriculture

Access to urban agriculture space should be enhanced throughout Central SoMa. The draft TODCO Central SOMA plan proposes new community gardens, which includes objectives that seek to quadruple such space within 20 years. Urban agriculture could be provided in many forms; in POPOS, new-open spaces, and on building rooftops. Increased access to urban agriculture should also enhance habitat in Central SoMa.

Recommendation 9.2:
Activate Rooftops

Rooftop space in Central SoMa should be activated with uses more productive than mechanical heating and cooling equipment. Task Force

EXISTING CONDITIONS

PROPORTION OF POPULATION LIVING IN AREAS WITH A PM 2.5 CONCENTRATION OF 10 UG/M3 OR MORE

San Francisco: 1.2%
Central SoMa: 13.3%

PROPORTION OF POPULATION EXPOSED TO AN AVERAGE DAY/NIGHT OUTDOOR NOISE LEVEL >60DB

San Francisco: 70%
Central SoMa: 97.50%

AVERAGE ANNUAL SEVERE/FATAL TRAFFIC INJURIES PER 100 ROADWAY MILES

San Francisco: 21
Central SoMa: 70

PERCENT OF DRIVERS EXCEEDING THE SPEED LIMIT BY 5 MILES PER HOUR OR MORE

San Francisco: 18%
Central SoMa: 22%

HOUSEHOLDS LIVING WITHIN 150 METERS OF A DESIGNATED TRUCK ROUTE

San Francisco: 44%
Central SoMa: 100%

MOBILITY CONDITIONS

PROPORTION OF HOUSEHOLDS WITHOUT A MOTOR VEHICLE

San Francisco: 29%
Central SoMa: 40%

PROPORTION OF TRIPS MADE BY WALKING, BIKING OR TRANSIT (NON-AUTO MODES)

San Francisco: 51%
Central SoMa: 82%

RATIO OF BICYCLE PATH AND LANE MILES TO ALL ROAD MILES

San Francisco: 0.1 (109.5 mi.)
Central SoMa: 0.37 (7.0 mi.)

PROPORTION OF HOUSEHOLDS WITHIN 1/2 MILE OF A FARMER'S MARKET

San Francisco: 41%
Central SoMa: 52%

Flat terrain and easy access to transit, job centers, and retail make the rapidly growing South of Market neighborhood an ideal location for non-auto modes of transportation. This is reflected in the lower than average rate of car ownership and high rate of walking, biking, and transit use within Central SoMa. Unfortunately these residents who are utilizing more sustainable modes of transportation face increased exposure to environmental hazards from automobile traffic, including air pollution, noise, and injury, due to close proximity to free-ways and the fast moving arterials that carry cars on and off the freeways. One-hundred percent of residents in the Central SoMa Plan area live within 150 meters of a truck route, the rate of severe and fatal traffic injuries is more than three times the City average, and the area has some of the highest air and noise pollution exposure in the City.

members agreed that such space provides a great opportunity to host more productive uses, and should be capitalized on wherever possible to improve the environmental and social quality of Central SoMa. Since rooftops can be difficult to access, developers could be given the option to contribute to the development of these projects off site, but within the area if deemed more suitable. Uses for rooftops could include:

- Urban Agriculture
- Open space (e.g. in the form of POPOS)
- Solar energy installations
- Ecological habitat

TASK FORCE SUPPORTS THE FOLLOWING RELATED CENTRAL SOMA PLAN GOALS

OPEN SPACE PRINCIPLE 3:

Ensure That New Private Development augments the Open Space Network with New Publicly accessible Privately-Owned Public Open Spaces.

OPEN SPACE IMPLEMENTATION STRATEGY 3.1:

Require new non-residential development to provide publicly- accessible open space.

OPEN SPACE IMPLEMENTATION STRATEGY 3.2:

Ensure that privately-owned public spaces have clearly marked and convenient means of public access.

EXISTING CONDITIONS*

PUBLIC HEALTH CONCERNS

ASTHMA HOSPITALIZATION RATE PER 10,000*

San Francisco: 8.9
Central SoMa: 15.4

DIABETES HOSPITALIZATION RATE PER 10,000

San Francisco: 12.1
Central SoMa: 22.7

CHRONIC OBSTRUCTIVE PULMONARY DISEASE HOSPITALIZATION RATE PER 10,000

San Francisco: 11.4
Central SoMa: 34.7

HEART FAILURE HOSPITALIZATION RATE PER 10,000

San Francisco: 30.3
Central SoMa: 72

HOSPITALIZATION RATE FOR ALCOHOL ABUSE PER 10,000

San Francisco: 7.9
Central SoMa: 27.1

LOW BIRTH WEIGHT BIRTHS (% OF LIVE BIRTHS THAT ARE LOW BIRTH WEIGHT)

San Francisco: 7%
Central SoMa: 11%

COMMUNITY ACCESS TO AMENITIES

DISTRIBUTION OF OPEN SPACES AND NATURAL AREAS (% OF LAND AREA THAT IS OPEN SPACE)

San Francisco: 22.8%
Central SoMa: 4.7%

PROPORTION OF POPULATION WITHIN 1/4 MILE OF A RECREATION FACILITY

San Francisco: 47%
Central SoMa: 29%

PROPORTION OF HOUSEHOLDS WITHIN 1/4 MILE ACCESS TO A COMMUNITY GARDEN

San Francisco: 26%
Central SoMa: 16%

PROPORTION OF HOUSEHOLDS WITHIN 1/2 MILE OF A FARMER'S MARKET

San Francisco: 41%
Central SoMa: 52%

* San Francisco Department of Public Health. Sustainable Communities Health Assessment: Central Corridor Plan. November 30, 2012

10. Implementation

The Central SoMa Eco-District is still in the first phase of Eco-District development, the District Organization phase. The District Organization phase involved engaging and organizing public and private district stakeholders to work together and share initial ideas. This early stage of stakeholder engagement was made possible through the Central SoMa Eco-District Formation Task Force, and the recommendations in this document represent initial ideas from that Task Force regarding potential goals, strategies, projects and implementation measures.

The process involved with the District organization phase has set the stage for subsequent phases of Eco-District development. Subsequent phases of Eco-District development will involve a District Assessment phase, a Project Feasibility phase, a Project Development phase, and a District Monitoring phase. The District Assessment phase determines the most effective project priorities for the district. The Project Feasibility and Development phases will involve an in-depth feasibility analysis of identified projects and strategies to guide the implementation of projects. The District Monitoring phase will involve ongoing monitoring of projects to understand and measure environmental, social and economic impacts.

Successful implementation of the Central SoMa Eco-District strategies will require an over arching organizational entity to provide long-term

oversight. The organizational entity will facilitate the identification and prioritization of projects, help coordinate projects and secure financing, and oversee long-term management and oversight. This organizational entity should have strong representation from Central SoMa businesses, residents, property owners and community organizations.

Although a non-profit organization entity was decided by the Task Force as the most appropriate for Eco-District oversight, the task force explored and analyzed the pros and cons of many other types of organizational structures. These included expanding and adapting an existing Community Benefits District (CBD), and establishing a new Joint Powers Authority (JPA). Both have characteristics that detracted from their suitability as Eco-District organizational structures. CBD's do not have capital financing ability, JPA's are governmentally-based, so it is not clear how community groups would be involved, and establishing a JPA is a complicated and lengthy process. Because Eco-District projects have not yet been formally proposed for implementation, it is inappropriate to officially determine what type of organization would be best suited to manage them. Based on the analysis of oversight structures so far, a non-profit is considered at this time to be the most appropriate organizational entity because:

- Non-profits are defined by mission and not geography, a structure best positioned to encompass the unique nature of Eco-Districts,

- A non-profit has the capacity for oversight of the wide range of ideas associated with the Eco-District (job creation to district energy),
- A non-profit could easily expand on the initiatives currently being pursued by the various CBD's in and around the area, and could create a new assessment district,
- With a non-profit, representatives of all stakeholders may be involved, from community organizations to city agencies, and could share a common "seat at the table,"
- Non-profits provide an organizational structure that is broad and flexible enough to accommodate a wide range of potential Eco-District projects, programs, and financing needs.

An Eco-District non-profit organization (or similar), could be responsible for: prioritizing Eco-District projects, programs and initiatives, facilitating the identification of Eco-District projects, programs and initiatives, and leading and overseeing required financing, management, and maintenance activities required to implement identified projects.

Successful implementation of the Central SoMa Eco-District recommendations require an over arching organization to provide long-term oversight.

Eco-District projects can generally be organized into the following categories:

1. Public property projects including right-of-way projects and other projects on publicly owned property (reducing lanes for private vehicles, highway & street greening, bike-shares, multi-purpose trash bins, green infrastructure systems),
2. Private development projects such as green roofs and energy retrofits,
3. Projects leveraging the involvement of multiple public and private properties such as district energy and non-potable water reuse projects.

All project categories have near term (establishment phase, pilot projects), mid-term (expansion phase), and long-term (optimization phase) potential. Each project category requires different strategies for implementation, and requires different sources of financing. Individual development projects can be implemented and monitored by a single private entity, while public right-of-way projects can be implemented by a public agency or CBD. Multi-ownership projects are more complicated to implement and require significant collaboration between public and private entities. Although financing strategies were discussed by the Task Force, there are no specific recommendations at this time. Financing options will vary depending on the category and scope of the project. Careful analysis is required for each type of project. However, it is expected that a variety of

funding mechanisms can be “dovetailed” through the formation of a non-profit organizational entity that could provide Eco-District oversight and financing capabilities.

Recommendation 10.1: **Establish a Steering Committee to Formalize the Eco-District Organization**

The long term strategy for the Eco-District involves the establishment of an organizational partnership structure that will provide on-going support, coordination and oversight on all aspects of the Eco-District. This organizational entity should have very strong representation from local stakeholders. Multiple organizations working together would have the added benefit of using multiple financing tools to achieve shared goals set for the Eco-District. Starting in January 2014, the Task Force recommends the establishment of a steering committee. The steering committee should identify the best organization model for Eco-District implementation. This organization will identify, manage and measure Eco-District goals, partnerships and projects. It should consist of community organizations, local residents, businesses, and property owners, staff from city agencies (Planning Department, Department of Environment, SFPUC, MTA/CTA), and utility providers. Organization responsibilities should include:

- Overseeing the development of an Eco-District roadmap to guide project implementation,

- Securing commitments from district partners to agree to meet long-range Eco-District performance goals and metrics (using the Eco-District Framework as a guide),
- Engaging a broader community of in-district stakeholders to promote transparency, inclusion and diversity, helping to guide project scoping and delivery (including guiding policy and financing decisions), and
- Tracking annual progress.

The Planning Department should provide staff support via the inter-departmental Eco-Districts working group to make sure Central SoMa and city-wide policies and city investments are optimized to meet Central SoMa Eco-District goals and project priorities.

Recommendation 10.2: **Identify Short, Medium and Long Term Goals to Facilitate Eco-District Implementation**

To facilitate Eco-District implementation, short-term, mid-term, and long-term goals regarding project implementation should be established, including identifying projects appropriate for each phase, and establishing appropriate organizational structures to guide implementation during each phase. Projects that can be completed within existing cost, technology & permitting constraints should be started immediately to kick start Eco-District implementation. These anchor projects will help to bring immediate public awareness to the Eco-District, and could serve as leverage for

additional funding. Based on Task Force meetings, these projects could include public art installations, urban agriculture activities, green-roofs and streetscape improvements. District energy and water strategies should be explored to align with proposed development time frames. Additional short term activities could also include a series of community charrettes (possibly with SPUR as a sponsor), and TODCO leading a community asset mapping and project identification report (which could potentially be funded in part by city and/or foundation grants).

Potential implementation strategies suggested by the Task Force included:

Short-term (0–2 years):

- Present the Task Force report to the Board of Supervisors and relevant City Commissions.
- Establish a Steering Committee that identifies, manages, and measures Eco-District goals, partnerships, and projects. The Planning Department should provide staff to serve on the committee.

Mid-term (2–5 years):

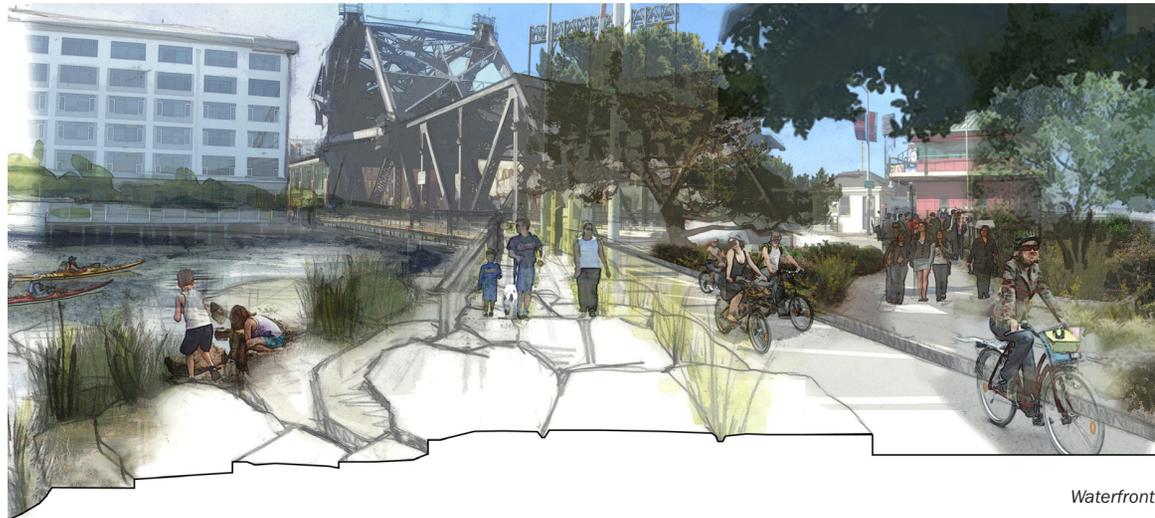
- Establish a non-profit entity to provide long-term Eco-District support and oversight.

Long-Term (5–20 years):

- Project Implementation and performance monitoring.



Highway Underpass



Waterfront

Establishing and implementing the vision of a Central SoMa Eco-District. Ideas proposed in the SWA 2012 Summer Program.

Appendix

Studies and Technical Assessments Currently Underway in Central SoMa

State Historic Preservation Grant: Historic Preservation in Eco-Districts

In October 2012 the Planning Department received a green-communities grant from the California Office of Historic Preservation (OHP) to explore ways to integrate historic preservation into the creation of Eco-Districts in San Francisco. The OHP grant provided two unique opportunities for this pilot Eco-District – broader integration of inherently sustainable historic preservation policies to support Eco-District goals and objectives, and second, to consider innovative approaches to address concepts of community identity, adaptive reuse, and materials management as part of the draft Central SoMa Plan. The report will include a summary of existing preservation policies and processes for review of projects involving historic resources, articulate goals of preservation in the context of Central SoMa's planned growth and Eco-District, and detail specific recommendations for new and/or revised preservation policies and practices.

*Lead City Agency: Planning
Completion Date: Fall 2013*

Rockefeller Foundation Re.Invest Initiative Technical Assistance Award: Study of District-Scale Water Opportunities in the Central Corridor

This is a two-year initiative that started in August 2013 that will focus is district-scale water in the Central Corridor plan area. The study will calculate how much water (including stormwater) can be recycled for district use with and without current constraints. This will inform strategies to reduce water consumption, and will explore the feasibility of district-scale water strategies, including whether a district-scale approach provides greater water consumption savings than building-scale approaches. The study will also explore delivery mechanisms and financing options.

*Lead City Agency: Planning
Completion Date (expected): Winter 2014*

Environmental Protection Agency (EPA) Technical Assistance Award: District-Scale Energy Planning in the Central Corridor and Transbay

The EPA will help San Francisco determine how to integrate community-scale energy systems into the urban development process, how to determine which sites are best suited for hosting energy generating facilities, and how to create supportive partnerships, financing, and policies using the Central Corridor Plan Area and Transbay Redevelopment Area as case studies.

*Lead City Agency: Planning
Completion Date: Winter 2013*

**California Energy Commission Grant:
Community Integrated Renewable Energy
(CIRE) in the Central Corridor and Transbay**

Awarded in June 2013, this study will assess the feasibility of integrating renewable energy at the community scale, including for example district heating and cooling, renewable electricity, waste-derived biogas, geothermal heat pumps, regenerative braking energy from public transportation, demand response, and smart distribution technology to serve multiple community members outside of a single-owner campus environment.

It will identify community-specific renewable energy development opportunities along with tools and methodologies needed for implementation. This study supports California's energy and environmental goals and will recommend actions to help achieve the State's long-term vision and analyze the economic and environmental benefits that could result both locally and statewide.

Lead City Agency: San Francisco Department of Environment

Completion Date: Spring 2015

Appendix

Potential Financing Tools and Partnership Structures

Since the scope and focus of the Central Corridor Eco-District's infrastructure investment is not determined yet, it is not possible to recommend a set of likely financial tools. However, it is possible to suggest in broad and schematic terms a set of financing tools that will be available as the scope becomes more clear. First of all, it is reasonable to expect that the infrastructure investments will be premised on the development of public-private partnerships, and therefore the financing will rest on a dovetailing of public and private financing. Among the public financing tools that may be used, in combination with private investment are the following:

Mello Roos (Community Facilities District)

Landowners and residents within a prescribed boundary can vote (2/3rds required) to create a tax surcharge to support investment in public infrastructure and to support operating costs of public services. Mello Roos bonds are a well-understood credit within the municipal bond market.

Special Assessment District

The Board of Supervisors can create a district in which an assessment is tied to a public benefit to be created from that assessment. While not as

flexible in their structure as Mello Roos, they have been used extensively in California to support public infrastructure development.

Certificates of Participation

These are asset-backed bonds issued by the City and County for public purposes. They do not require a public vote. The process for allocation of these bonds is highly competitive, and typically require creation of revenues in excess of that needed to support the debt.

Infrastructure Financing District

This permits the utilization of future growth in assessed value to be used to support debt issuance or operating costs for public purposes within a specific boundary. Creation of the district requires a landowner and resident vote like Mello Roos. Legislation creating this instrument is currently under consideration by the State legislature and may be modified.

501c3 Bonds

Non-profits are authorized to issue tax-exempt debt. To the extent that there are credit-worthy non-profit partners within the Central Corridor,

these entities may be enlisted as partners that could support infrastructure investment.

General Obligation Bonds

These are the City's highest form of credit, and as such, are typically only used for the highest priority projects. Expenditures from general obligation bonds may be widely dispersed geographically, and therefore some portion may be available for use within the Central Corridor.

Existing developer payments for various public purposes do provide a potential revenue stream but are likely committed to existing projects. Further investigation may be needed to determine whether some portion of these revenues could be used to support infrastructure investment utilizing the tools noted above.

The above list of tools is not intended to be exhaustive, but provides a starting point for future consideration of how to utilize public financing to establish public-private partnerships in the Central Corridor.

At the core of the question of how to build strong public-private partnerships is the issue of how to structure the complex web of relationships between public and private stakeholders. There

are many possible models for this structure. The Task Force considered a range of these choices, including the following:

Existing public sector organizations

For example, the Department of City Planning itself could assume the role as the convener and manager of the public-private partnerships, in a continuation of its current role. Government organizations have the advantage of being stable over long periods, of having access to capital and operating funds, and of being able to avoid creating new overhead costs. The potential downside for a government entity is the perception that it is not transparent, is external to the community, and that its decision-making capacity is bound up in bureaucracy. One variant on this model would be the legislative creation of a separate organization focused solely on the Eco-District. This type of organization would have the potential of avoiding some of the issues associated with existing government agencies.

Existing Community Organizations

For example the existing Yerba Buena CBD overlaps substantially with the Central Corridor in its constituencies and physical boundary. It brings

established credibility and capacity to a new set of challenges and activities. It may be inherently less stable than a government organization and could be pressed beyond its capacity with broader responsibilities.

New Non-profit Organization

Non-profits are defined by their mission, not by physical boundaries. This could be an advantage for Central Corridor given its potentially broad sphere of influence. A new non-profit could provide a “big tent” for inclusion of the broad set of stake-holders that will be needed for the Eco-District to achieve its objectives. A new organization will be challenged to raise sufficient funds and to meet its operating needs, and will be burdened by unshared overhead costs. The structuring of its board will be a critical issue. It may make sense to “incubate” a new non-profit under the aegis of an existing organization.

Given all of these considerations, the Task Force reached consensus that a non-profit provided many of the critical advantages needed for success of the Central Corridor, particularly its ability to convene diverse interests, and to forge public-private alliances.

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