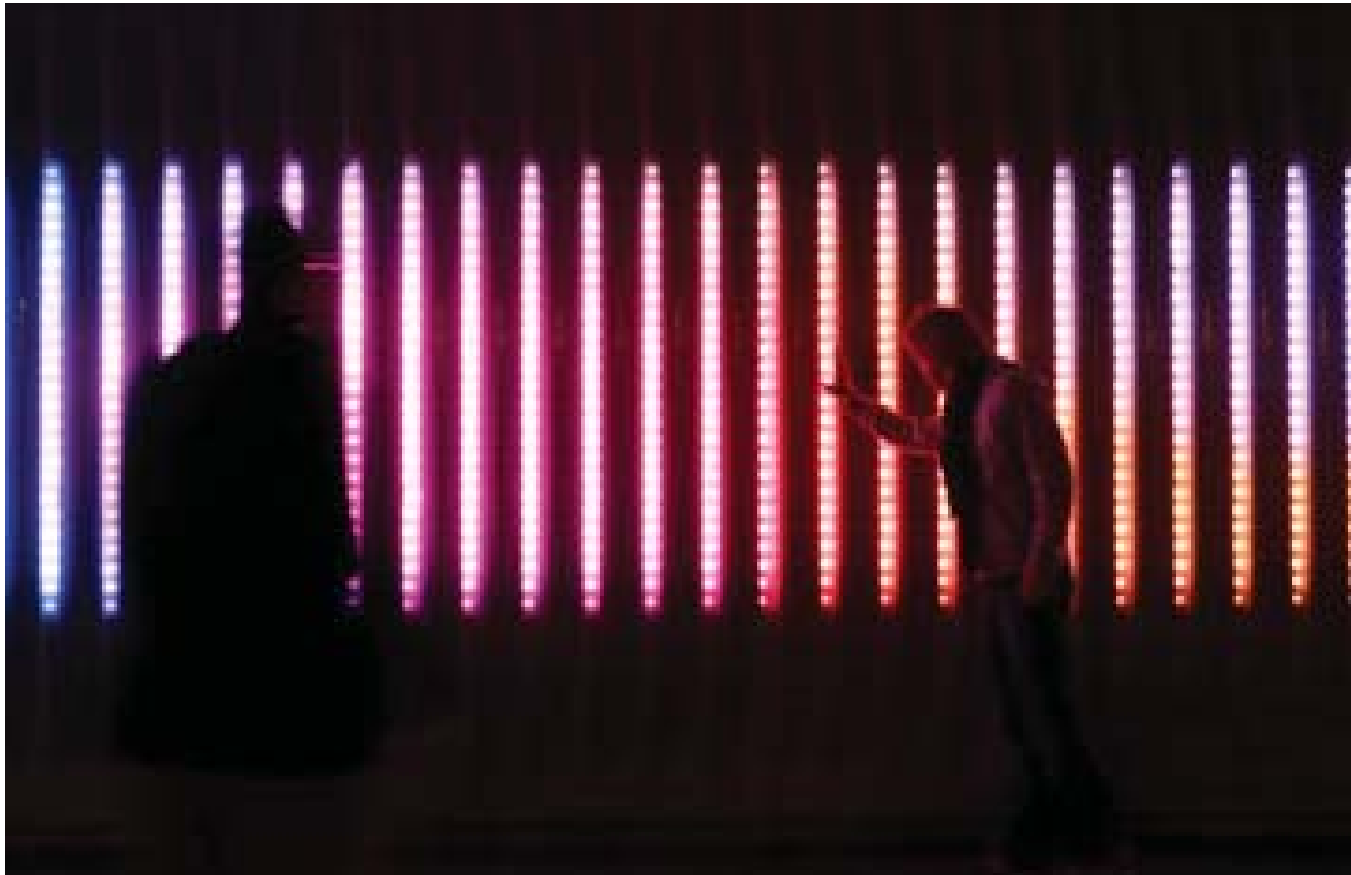


Central Corridor Eco-District



PROGRAM FRAMEWORK, OCTOBER 2012
SAN FRANCISCO PLANNING DEPARTMENT

SAN FRANCISCO
PLANNING DEPARTMENT

San Francisco Planning Department

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What is an Eco-District?

An Eco-District is a neighborhood or district where neighbors, community institutions, and businesses join with city leaders and utility providers to meet ambitious sustainability goals and co-develop innovative projects.

Eco-Districts use a set of performance metrics to guide and shape project development, which provide a methodology to choose projects that have triple bottom line benefits and monitor process over time.

Creating Eco-Districts provides a practical vehicle for the City to achieve the goals of the city's Climate Action Plan, Electricity Resource Plan, and Green Building Ordinance.

An Eco-District fosters the implementation of community-driven creative projects which blend the physical and cultural environment to explore new possibilities in public space. Eco-Districts invite creative solutions to a variety of needs and enhance the experience of an area.



Rendering of a Central Corridor Eco-District

Operating between building-level programs and city-wide policy, Eco-District initiatives are an important economy-of-scale approach to furthering urban sustainability.

Introduction

The Planning Department's Sustainable Development Program is responsible for balancing San Francisco's plans for future growth within the context of state and city environmental goals and requirements. A primary goal of the Sustainable Development Program is to facilitate the implementation of sustainable infrastructure systems by coordinating development, public realm, and public infrastructure improvements through community engagement.

Over the last decade, the Planning Department has planned for significant growth in the city. State and local environmental goals and requirements mandate that this growth be more sustainable, particularly in the areas of water and energy conservation and waste reduction. The Sustainable Development Program works to achieve compliance with the existing environmental legislation efficiently and cost effectively; it aims to improve coherence and cost-effectiveness of different policy measures; and it aims to enhance public private partnerships. Eco-Districts have emerged as an important tool of the Sustainable Development Program.

The Eco-District approach is gaining momentum around the world. Commensurate with its diversity, the Planning Department has identified four types of Eco-Districts for 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, under-developed, 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 its character. Our Central Corridor Plan area has been identified as a Type 2 Eco-District.

Type 3: The Strengthened Neighborhood

The Type 3 Eco-District, in coordination with the Office of Economic and Workforce Development's Invest in Neighborhoods Initiative, focuses on existing residential neighborhoods and their commercial corridors. Type 3 Eco-Districts are located in parts of the city that are not planned to accommodate growth, but through tactile 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.

Development and Implementation of the Central Corridor Eco-District Plan

The Central Corridor Plan Area has been identified by the Planning Department for Eco-District implementation. The Plan area is the subject of a significant re-zoning effort that encourages sustainable growth. The area's proposed public realm and transportation improvements may create opportunities to align energy, water, and waste infrastructure systems.

We anticipate approximately 10,000 new housing units and 35,000 jobs in this area. Including this new development in an Eco-District can help San Francisco meet its environmental, economic, and social goals. For example, the foundations of existing and proposed buildings in this area are/will be below the area's water table. These structures could be engineered to collect groundwater that would otherwise seep into the foundations and discharge into the sewer system. Reusing this water for non-potable use could help meet the city's water goals while saving money for property owners.

In another example, the elevated highway along the southern border of the area could capture and carry rainwater that could be redirected to community or rooftop gardens. The space underneath the highway could host facilities needed for sustainable infrastructure projects such as neighborhood scale stormwater management facilities or a local energy generation plant.

Creating an Eco-District will also greatly enhance the resiliency of the Central Corridor. The ability to generate power, produce potable water, and treat sewage is essential for both the immediate and long-term recovery from a large earthquake or similar disaster.

The Central Corridor Eco-District Plan will be comprised of two parts: a policy framework and an implementation program. The principles and recommendations embedded in the policy framework will be integrated into the Central Corridor Area Plan. The Implementation Program will prioritize projects for the area and establish a path for implementation, including identifying funding sources. This document provides a progress report of Central Corridor Eco-District activities and offers recommendations for next steps. It is organized into the four elements of Eco-District development:

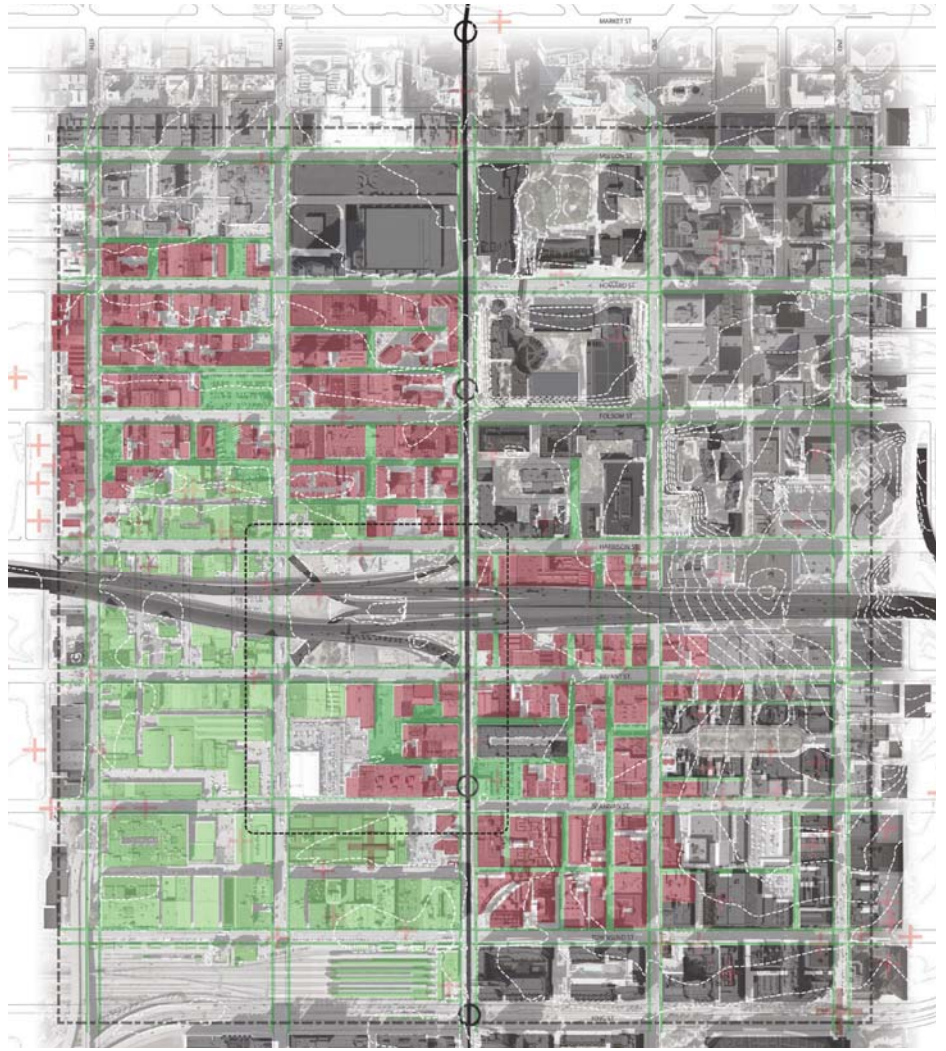
1. District Organization
2. District Assessment
3. District Projects
4. District Management

The Central Corridor Eco-District Plan will be created in collaboration with area stakeholders through a task force, or as projects and financing mechanisms are established through grant funded work. The Central Corridor Eco-District Plan is expected to be completed in the fall 2013.

Note on Graphics: SWA Group, a local landscape architecture firm, focused their summer program on a Central Corridor Eco-District. The studio explored the physical qualities of the Central Corridor Plan Area and proposed ideas for Eco-District projects. The graphics included in this document are the result of this studio work and serve to inspire. For more information about the program and to learn more about the study, visit swagroup.com

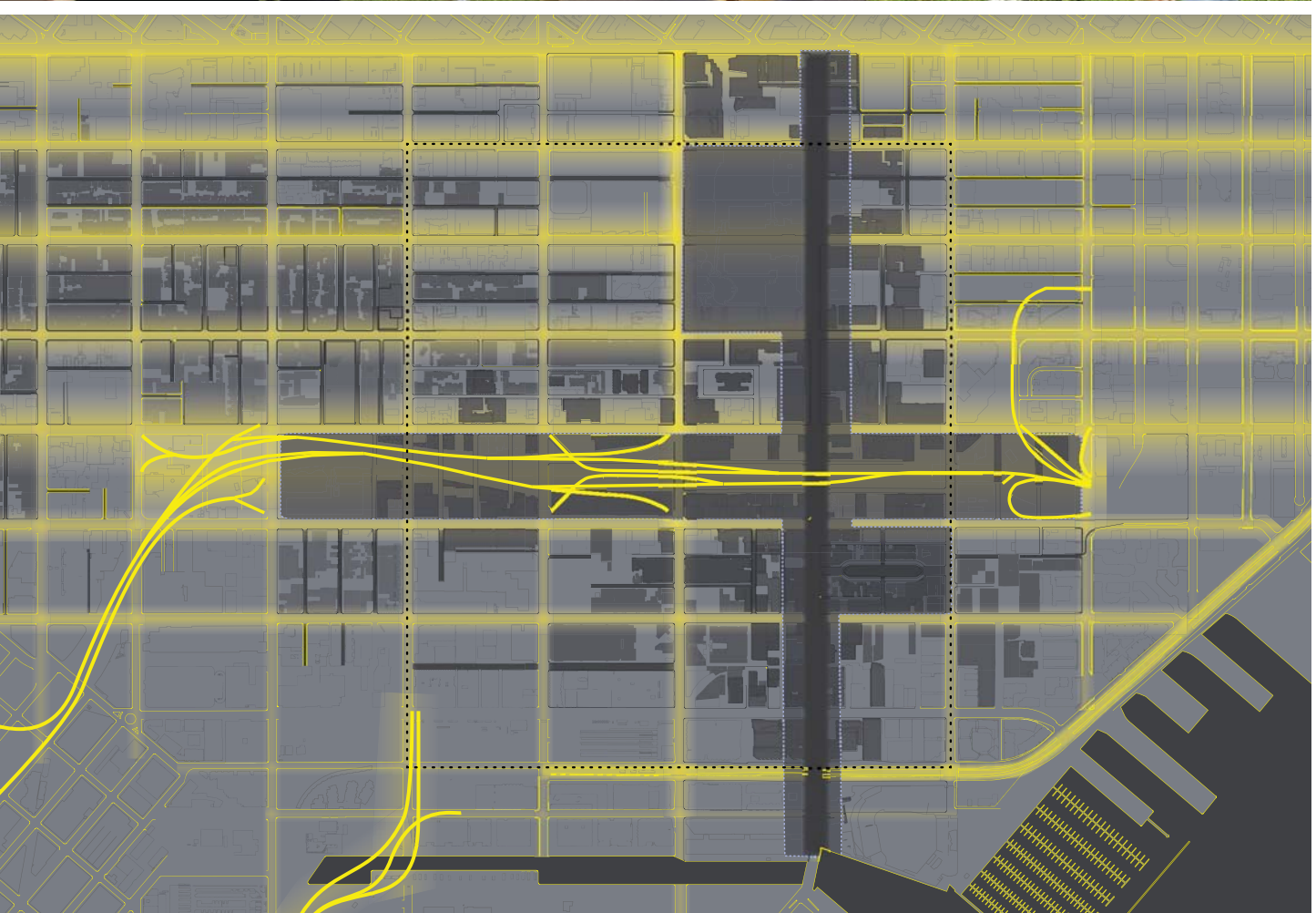


Phasing: Axons



Phasing: Plan

Assessment Example: An analysis of the geology and soil quality of the area can help identify projects best suited for the area. The map above identifies different districts based on subsurface conditions. The Green District is defined by artificial fill over a former salt marsh, the Red District is defined by ground contamination and the Black District is defined by its good soil quality. Illustrations on the left propose ecologically-based projects according to these subsurface conditions.



Noise pollution map in the Central Corridor

District Organization

To become an Eco-District, a neighborhood—in partnership with the city and other public agencies—must create a shared vision and governance structure to ensure that it has the capacity and resources for implementation. Engaging public and private stakeholders to work together, share ideas, and establish partnerships for the area is a primary component of District Organization. This first phase of Eco-District implementation includes establishing a neighborhood governing entity charged explicitly with managing district sustainability and identifying the next steps of Eco-District formation. Eco-District success will require sophisticated coordination and investment from Central Corridor stakeholders and the City. Clarity in the areas of governance (relationships between district stakeholders and the City) and funding (for staff and projects) is essential.



To date, the Inter-Departmental Eco-District Working Group has focused on waste, water and energy infrastructure systems.

Engagement

Inter-Departmental Eco-District Working Group

In November 2011, the Planning Department assembled staff from city departments including SFPUC water, wastewater and power divisions, SF Environment, and the Department of Public Works to find ways to meet established city environmental goals while accommodating planned growth. Working together, this team identifies hurdles, aligns public capital infrastructure project timelines, and discusses the roles departments will take in meeting these goals and implementing the recommendations proposed in our existing plans such as the Climate Action Plan and the Electricity Resource Plan. The group also clarifies the roles different departments will play with this work—identifying public sector opportunities and outlining a path for private sector involvement.

Eco-District Presentation Series

The Planning Department hosts a monthly Eco-District presentation series, which is a popular forum for discussing issues relating to Eco-District development in the City. Guest speakers with backgrounds in sustainability, environmental infrastructure systems, and Eco-Districts present their work to the city's inter-departmental Eco-District Working Group and interested stakeholders. The series deals with practical issues of how and what is being developed in San Francisco, the Bay Area, other cities in the country, and abroad. Speakers relate their specific area of interest to the Sustainable Development Program's goals and provide valuable context for staff to consider in implementing Eco-Districts. The discussion engages the opinions of people from a variety of backgrounds, broadening everyone's perspective and encouraging the sharing of ideas.

Governance

The City, with input from a Central Corridor Eco-District Task Force, is seeking to establish a Sustainability Management Association (SMA) to govern Eco-District implementation. An SMA is a group of property owners and businesses within the district that, in partnership with the city, initiate implementation and management of sustainable development projects in the area. Private-sector stakeholders who bring time, resources, and enthusiasm to the partnership are critical.

The Central Corridor Task Force will convene for a fixed amount of time to help establish and articulate the governance structure of the Sustainability Management Association, including the types of partnerships property owners and businesses within the district will have with the city.

Funding

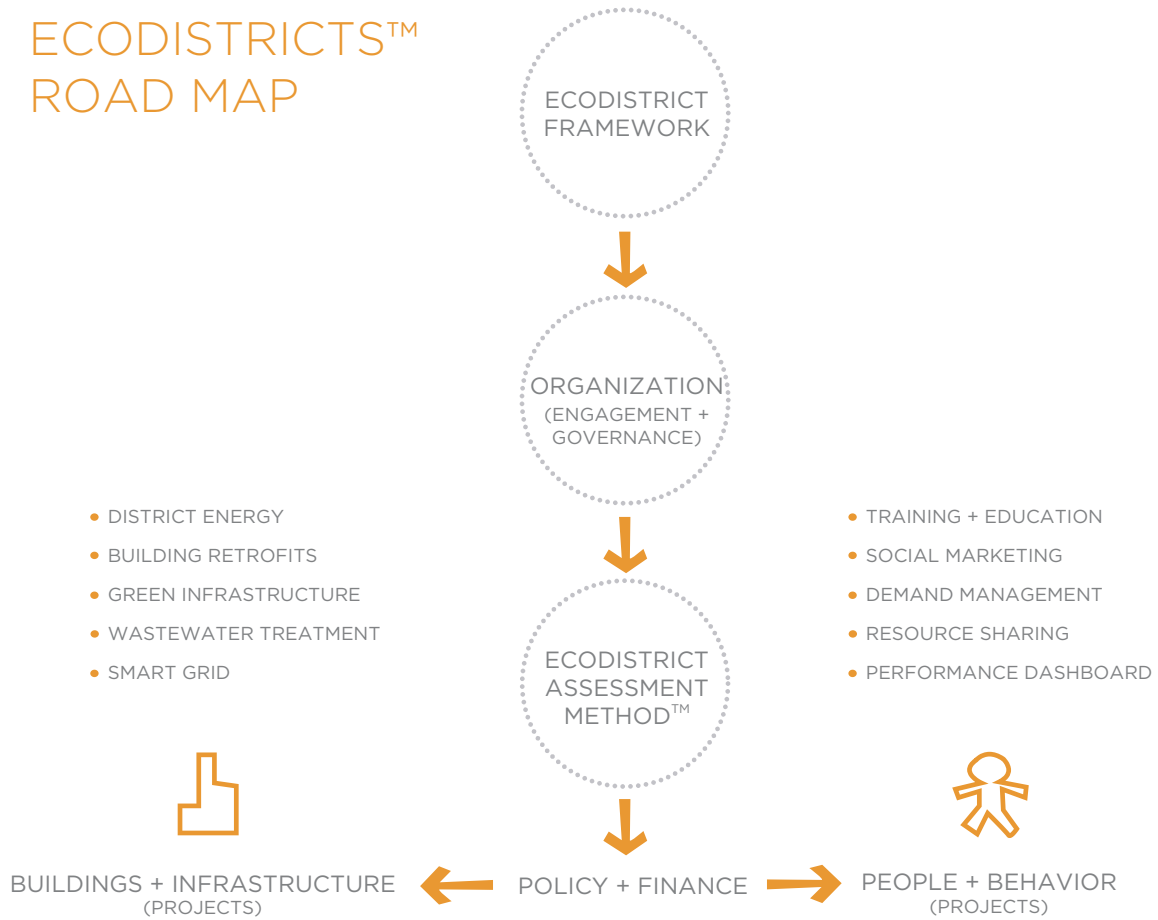
In some cases, governance may be supported by a particular funding mechanism. The City and district stakeholders will explore the following and other potential funding mechanisms to provide ongoing support and resources to the Central Corridor Eco-District:

- **Business Improvement District:** To fund Eco-District staff and ongoing organizational operations
- **Local Improvement District (LID):** To fund sustainability infrastructure improvements.
- **Resource Consumption Surcharges:** A surcharge, or carve out, on existing utility bills to support energy, water, and waste efficiency projects.

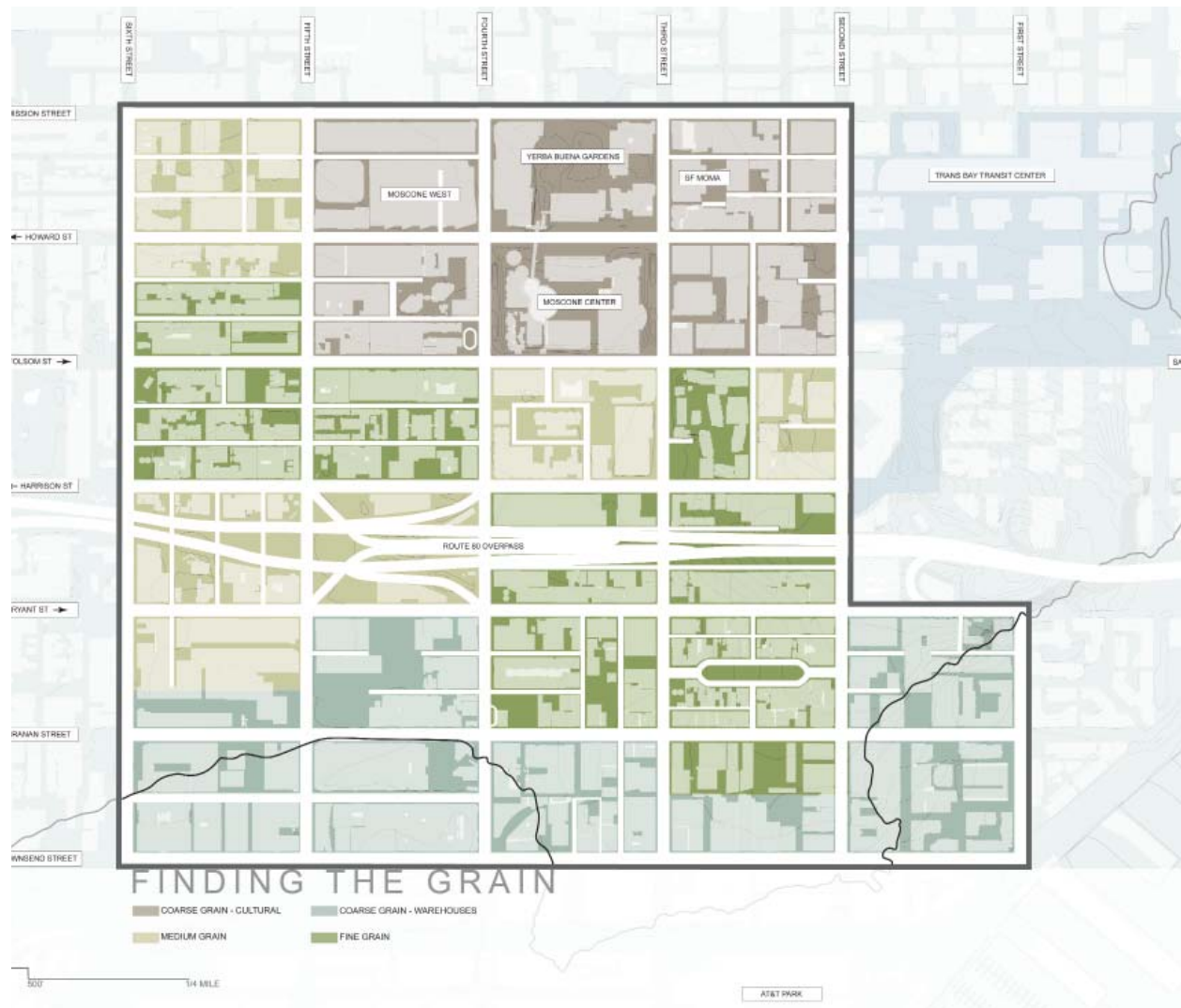
Recommended Actions for District Organization in Fiscal Year 2012-2013

1. **Roles and Responsibilities:** Clarify the initial commitments and expectations of the City as well as district stakeholders to the Central Corridor Eco-District.
2. **Task Force:** Establish and Formalize a Central Corridor Eco-District Task Force. The charge will be to define “Eco-District” for the Central Corridor, establish short and long-term goals and objectives, and advise on the structure and responsibilities of the SMA .
3. **Eco-District Development Roadmap:** Create a short, mid, and long-term Eco-District roadmap that includes assessment, priority projects, and expected outcomes.
4. **Funding:** Determine funding strategy for ongoing revenue to fund Eco-District organization (the new SMA) and projects.

ECODISTRICTS™ ROAD MAP



Eco-districts Road Map from the Portland Sustainability Institute



Assessing the areas natural, cultural and physical characteristics create opportunities to emphasize elements that make the area distinct within San Francisco.

District Assessment

A neighborhood sustainability assessment will determine the most effective project priorities for a district. The process includes:

1. Mapping existing resources that can contribute to an Eco-District, which will ensure that all sustainability opportunities are identified. The city's inter-departmental Working Group identified energy, water, community identity, habitat and ecosystem function, and materials management, as the focus areas for assessment based on the city's need to meet established environmental goals and coordinate proposed land use changes and public realm improvements in the plan area,
2. Gathering information about district conditions to develop performance baselines,
3. Identifying strategies to meet established goals and targets, and
4. Selecting projects that will support those strategies.

This assessment process will build on work done to date and identify gaps and synergies. Each of the focus areas (energy, water, community identity, habitat and ecosystem function, and materials management) poses particular questions and challenges that will be addressed in the assessment process. Energy assessments, and to some extent food and habitat assessments have been funded through grants. SFPUC is funding a district scale water study. Other assessment work is currently unfunded.



ENERGY

Community-Scale Energy Resources

One of San Francisco's biggest challenges in the coming decades is determining how to meet the demands of anticipated growth while reducing greenhouse gas (GHG) emissions. The City has established aggressive climate protection and energy conservation goals, including a GHG-free electricity supply by 2030 and an 80% reduction in citywide carbon emissions from 1990 levels by 2050. To meet these targets, the City needs to continue developing and implementing aggressive and diversified approaches to reducing GHG emissions while continuing to absorb our fair share of regional population growth. One such approach is to plan carbon-free community-scale energy resources locally and regionally.

While dense, mixed-use, transit-oriented-development and investments in transportation infrastructure can go a long way to reducing GHG emissions associated with growth, land use and transportation is only a part of the picture. In San Francisco, 56% of GHG emissions are associated with lighting, heating, and cooling buildings. Recognizing that building energy use is a major contributor of GHG emissions, the California Public Utilities Commission in 2008 adopted goals for all new residential construction in California to be zero net energy by 2020, and for all new commercial construction in California to be zero net energy by 2030.

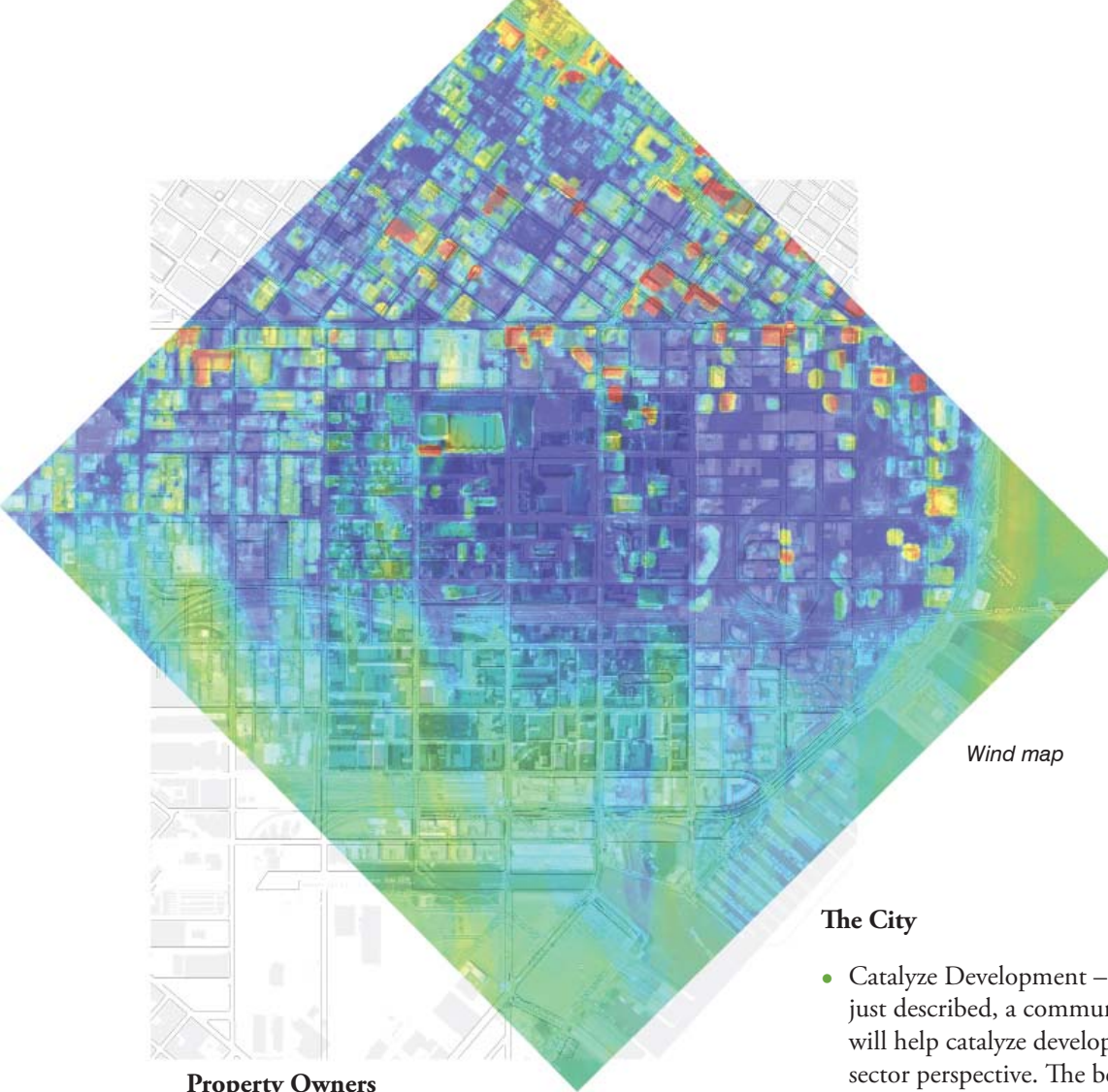
A variety of approaches exist that may help address GHG reductions at a district scale, rather than at the smaller scale of individual buildings. Community-scale energy resources could include district energy systems, like district heating and Combined Heat and Power (CHP), procurement of GHG-free electricity (including SFPUC resources), and other innovative methods to develop renewable energy at a community scale. Such community-scale energy resources have the potential to be an important tool in the City's efforts to reduce GHG emissions, particularly in areas with intensive infill capacity and anticipated growth.

Additionally, coordinated district approaches to energy efficiency can help improve energy performance through neighborhood collaboration and integration with community-scale energy generation systems. Most new construction and major alteration projects in San Francisco must now comply with San Francisco Building Code Chapter 13C: Green Building Requirements, including exceeding California's Title-24 Energy Code by 15%. All existing buildings 10,000 square feet and larger must now comply with San Francisco Environment Code Chapter 20: Existing Buildings Energy Performance Ordinance. The intent of this ordinance is to help the local market maximize energy efficiency in San Francisco by empowering owners, managers, operators, and occupants with the key information to control utility costs, and to know exactly how they will benefit by improving energy efficiency. An Eco-District assessment will consider how these buildings can work together to maximize efficiency at a community scale.

If planned carefully, community-scale energy systems may offer benefits to property developers, property owners, tenants and for the City in the following ways:

Property Developers

- Lower development cost – District energy systems (i.e. district heating, cooling, and/or electricity) can reduce the amount of capital required to develop a project because traditional building heating and cooling systems (i.e., boilers and chillers) may be reduced or eliminated (upwards of 5% total building cost savings is estimated).
- Improve marketing and unit sales – District energy systems can help developers achieve LEED goals more easily and at less cost. Moreover, the brand benefits and demonstrable energy savings associated with community-scale energy can help move tenant acquisition and increase sale prices.



Wind map

Property Owners

- **Reduced capital and operating costs** – By sharing energy infrastructure across multiple buildings and usage profiles, community-scale energy systems can achieve economies of scale and improved operating efficiencies, which leads to lower operating costs and lower capital costs over time compared to multiple building-scale systems.
- **Higher property values** – The potential cost savings, in addition to the environmental benefits, from an appropriately planned community-scale energy system (efficiency gains and GHG reductions) can translate into higher property values.

Tenants (residents and businesses)

- **Reduced living expenses** – Tenants like the lower operating costs and are attracted to the environmental benefits like lower energy use and GHG emissions. Innovative businesses and environmentally-conscious residents want to be in green buildings.

The City

- **Catalyze Development** – Based on the benefits just described, a community-scale energy system will help catalyze development from a private sector perspective. The benefits to the public sector from this include increased revenue opportunities through system development charges and/or increased property tax revenue from higher property values that community-scale energy can bring.
- **Leverage Private Capital** – community-scale systems can bring additional outside capital to larger-scale projects. Funding would otherwise be limited by the economics of financing improvements at multiple individual buildings.
- **Sustainability** – community-scale energy planning can greatly help achievement of the city policies and goals. Community-scale energy can accelerate progress in achieving environmental goals for green buildings by taking advantage of synergies between buildings to achieve efficiencies as well as stimulating adoption of renewable energy sources at a community scale.
- **Innovation Leadership** – Community-scale energy approaches can contribute to the city's global leadership position in tackling environmental issues.

Energy Use Analysis and Parcel Assessment

As part of the Eco-District assessment, the overall energy use profile of the neighborhood will be analyzed to understand current energy use patterns as well as changes expected from future growth. Evaluating individual parcels within the plan area will help the City and area stakeholders identify site condition criteria to evaluate the overall feasibility of community-scale energy. The assessment will identify:

1. The most promising opportunities to maximize energy efficiency in existing buildings and new construction,
2. Appropriate energy generation types at district scale that include but are not limited to:
 - CHP potential,
 - Renewable energy generation including solar and wind,
 - Possible heat recovery from industrial in the area and thermal storage options, and
 - Wastewater centric energy generation such as biogas and anaerobic digestion of organics (waste organics, or compostables), treated wastewater/stormwater for transformer cooling of Central subway system; biogas; and heat mining/recovery from wastewater.
3. Greenhouse gas emissions reduction potential for energy generation type,
4. Opportunities to integrate water district planning with energy planning (e.g. wastewater heat recovery, bio digester gas recovery, solar water and space pre-heating),
5. Sites most appropriate as anchor heat and/or cooling loads, and
6. Remaining energy needs to be procured from clean and renewable sources in order to reduce district carbon footprint to the lowest possible level.

The parcel criteria established during the district assessment phase will also consider policy tools, financing and funding opportunities, legal and regulatory issues and partnerships. A final report will be prepared in December 2012 that compiles and summarizes the district assessment work.

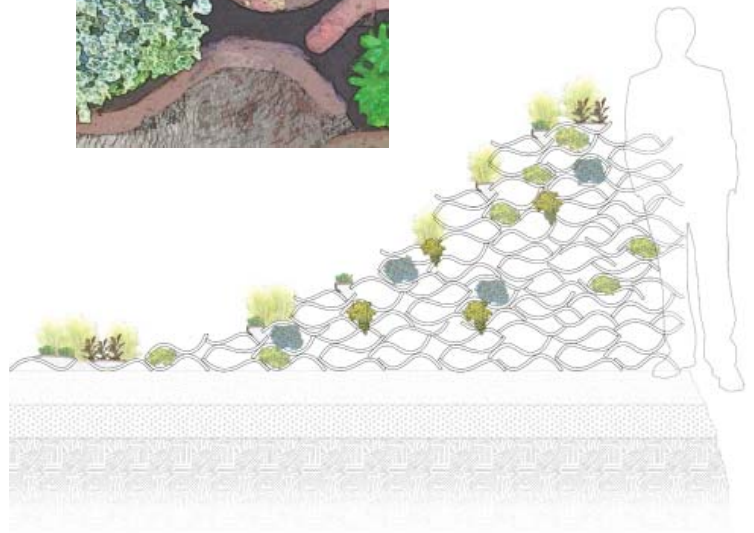


With an Eco-District, we can start to imagine new types of public space, architecture, and infrastructure that connects communities, engages with the public realm, and participates in the local ecology.



WATER

The SFPUC's Regional Water System supplies the City's water. The Hetch Hetchy Reservoir in Yosemite National Park delivers 85 percent of San Francisco's water, and local protected Alameda and Peninsula sources provide the remaining 15 percent. To ensure continued reliable and adequate potable water for necessary uses, the City needs to reduce consumption of potable water and increase the efficiency with which we use water. Frequent droughts, climate change, projected local and regional growth, impacts to fish and other wildlife, and environmental concerns for the health of the ecosystems from which the water is drawn all contribute to this need. Reducing potable demands through conservation and developing a local supply of non-potable water for non-potable uses will help ensure that our water supply portfolio is managed to provide a reliable, high quality supply for public drinking water and that the state's environment is not compromised. There are different ways to help achieve this, including but not limited to, conservation and non-potable water use.



Reusing discarded ceramic roof tiles to catch and filter water while providing a visual connection throughout the area was an idea proposed in the SWA Summer Program.

Conservation

As part of the Central Corridor re-zoning effort, a number of building renovations and conversions will take place, which will require the retrofit of existing plumbing fixtures with newer water efficient models. This will decrease water use in existing buildings and maximize water efficiency in new development. In addition, regulations limit the amount of water that can be used on landscaping. These conservation efforts will reduce wastewater flows to the combined sewer system.

Non-potable Water Use

Municipal recycled or other non-potable water can significantly improve water efficiency and promises substantial reduction in potable water use. Treated non-potable water can be used for toilet flushing, boilers/chillers, irrigation, and other uses.

Municipal Recycled Water

The Central Corridor Plan area is within the City's designated Recycled Water Use Area (Use Area). The Recycled Water Ordinance, adopted in 1991, requires large developments in Use Areas to be dual-plumbed (with "purple pipes") to use recycled water for non-potable applications. Currently, there are no treatment facilities available to supply recycled water to the Central Corridor area however planning is underway for the SFPUC's Eastside Recycled Water Project. Through rezoning, the Central Corridor anticipates significant new development in the area. An initial assessment performed by a third party estimated the amount of water that could be reused based on the Planning Departments projected development scenarios. The results were that reusing water in all projects over 40,000 square feet for toilets, irrigation, and cooling towers could save approximately 550,000 gallons of water per day (200,000,000 gallons per year).

On-site Non-potable Water Use

The SFPUC's non-potable water program offers guidelines for new large developments in San Francisco to collect, treat, and reuse water for toilet flushing, irrigation, and other non-potable uses. Established through an ordinance adopted by the San Francisco Board of Supervisors in 2012, this voluntary program also created local regulations that ensure appropriate water quality standards. A number of water sources available on-site include: rainwater, stormwater, graywater, blackwater, and foundation drainage (dewatering systems).

Wastewater System Efficiency

Most of San Francisco (including the Central Corridor area) is served by a combined sewer system. Stormwater, along with residential and commercial sewage, is combined and transported in a single sewer pipe to treatment plants prior to being released into the San Francisco Bay or the Pacific Ocean. During major wet weather events, stormwater runoff can overwhelm the City's collection system and treatment plants, leading to combined sewer discharges into the Bay and Ocean. In addition, high amounts of runoff into the sewer system can overwhelm it and lead to localized flooding. In urbanized areas, like the Central Corridor District, the high percentage of impervious surface (e.g. roofs, streets) creates high runoff volume and peak rate of stormwater entering the combined sewer system during wet weather, contributing substantially to these problems. These problems can be addressed by both reducing the amount of stormwater discharged into the combined sewer system (such as by rainwater harvesting or increased permeable surfaces) and by detaining and slowing the release of stormwater when it hits the ground or structures. The Plan's proposed public realm improvements include increasing the percentage of permeable surfaces. Project developments are required to manage stormwater for all private parcel developments that trigger the Stormwater Design Guidelines.

Through the City's non-potable water program, the city promotes and incentivizes re-use opportunities onsite for non-potable purposes so that buildings can significantly decrease their impact on the city's water and sewer infrastructure. The City is exploring district water. The SFPUC has initiated a study to research current regulations, barriers, and existing models for district-scale water. This study will provide the SFPUC with needed analysis and recommendations for a district water policy and is expected to be completed in spring 2013.



Historically, the area was once a salt marsh which dominated the natural landscape and provided filtration. The area's topography gradually slopes down to its lowest point at 5th and Bryants under the freeway, making the space an opportunity for stormwater collection and filtration.

COMMUNITY IDENTITY

Green Industry

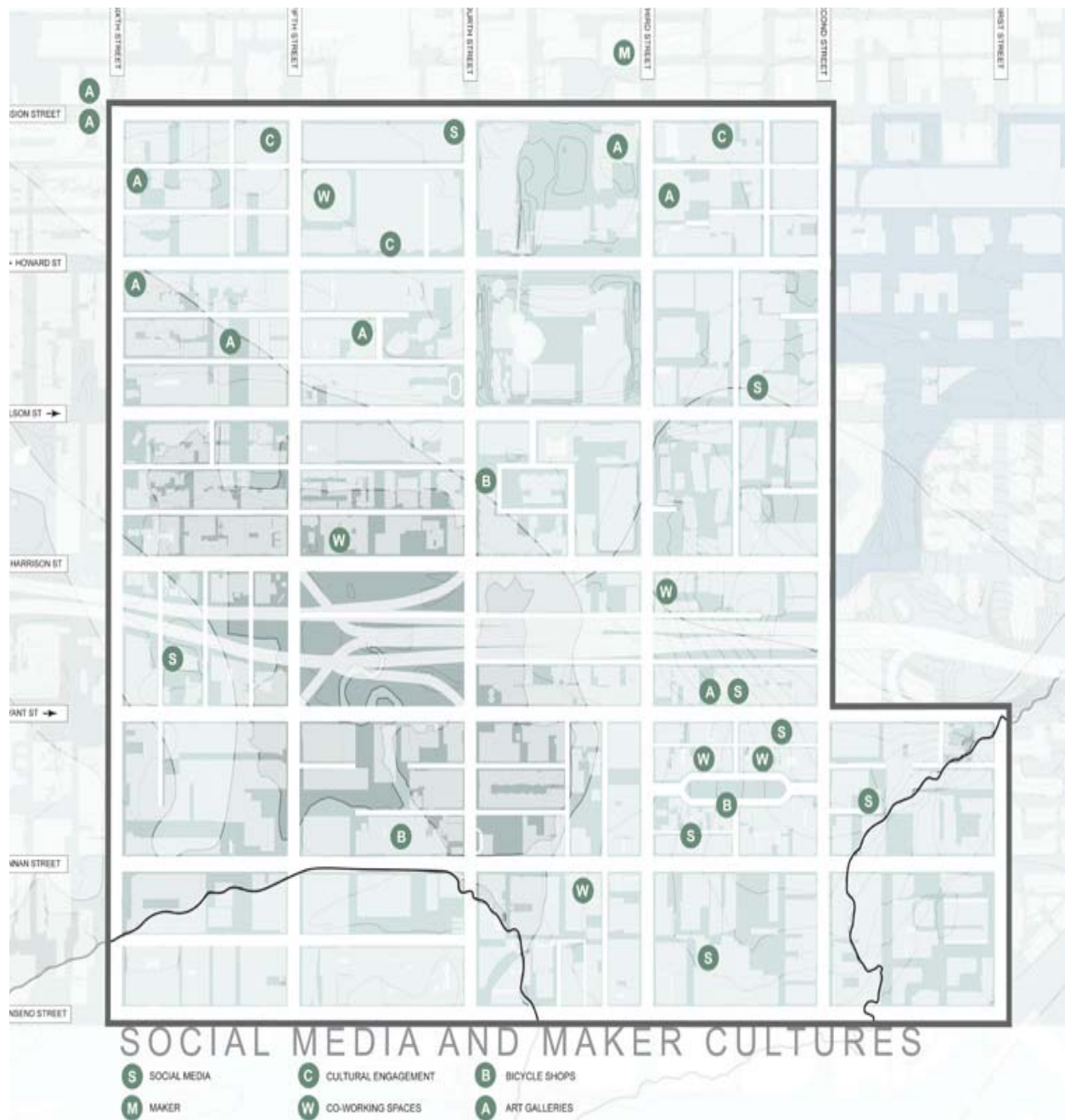
The Central Corridor area of San Francisco is a bustling center of economic and cultural activity that has grown out of a historically manufacturing and warehouse district south of the City's financial district. Today the Central Corridor is the focus of much of the City's growth and integrating the historic fabric of the area as it grows is essential to its evolving identity. Using existing sites to either host green manufacturing or to contribute to the character of the area creates a sense of place, which is a core value of Eco-District work. A piecemeal and fragmented approach to incorporating historic preservation into an Eco-District would diminish the potential impact. With a Green Communities Grant from the California Office of Historic Preservation, the city will examine the role of preservation in sustainability efforts and determine how to integrate preservation best practices into the Eco-District to maintain the historic character of the Central Corridor area. Assessment expected to be completed summer 2013.

Innovative Citizen-Led Initiatives

An Eco-District promotes alternative and complementary opportunities that invites creative solutions to a variety of unmet social needs and enhances comfort, inspiration, and fun in the public realm. San Francisco is enthusiastic about crowd-sourcing urban design, as witnessed by the successful Pavement to Parks program, which grew out of PARK(ing) Day, an annual guerilla art event. Currently, the San Francisco Planning Department is exploring a range of new policies that will support similar incremental, citizen-led initiatives. An assessment of the Eco-District's role in fostering these initiatives should be performed. The assessment should include the integration of the physical qualities of the surrounding environment as a contributor to creating a sense of place.



The South of Market Area has developed an eclectic mix of commerce, industry, and increasingly, entertainment and residential living spaces.



Innovation Assessment Example: South of Market currently hosts a diverse ecosystem of tech companies. This culture of various scales of technological innovation can be expressed visually. By embracing independent fabrication, tech cultures can tinker with ways to improve the efficiency and beauty of the district.

HABITAT AND ECOSYSTEM FUNCTION

Habitat + Ecosystem Function

Eco-Districts can help to balance human needs and the natural world. Although highly urbanized, San Francisco is home to a diverse range of biotic communities—plants and wildlife. An assessment of the district's biodiversity and ecosystem function should be performed. This will include an inventory of existing vegetation (native and non-native), wildlife population, tree canopy, and habitat connectivity. Some of this work is already being done through the Department's Urban Forest Plan. The Forest Plan will evaluate the potential for trees and vegetation on city streets to support wildlife and habitat connectivity and is expected to be completed in spring 2013. Findings from a targeted district assessment will be used to identify projects related to habitat, reducing wildlife hazards and nature-friendly urban design.

Food Systems

Eco-Districts offers the advantages around creating sustainable food systems on a neighborhood scale. San Francisco offers numerous opportunities for increasing urban agriculture by, for example, converting black top roofs to food-producing gardens or by transforming vacant lots into permanent or temporary community gardens. Farmers' markets and corner stores could be a consistent supply of healthy food as well as a place to meet and talk to your neighbors. Eco-District's could also provide efficiencies in supporting food waste to compost programs.



San Francisco is home to a diverse range of biotic communities that could be supported concurrent with new development.

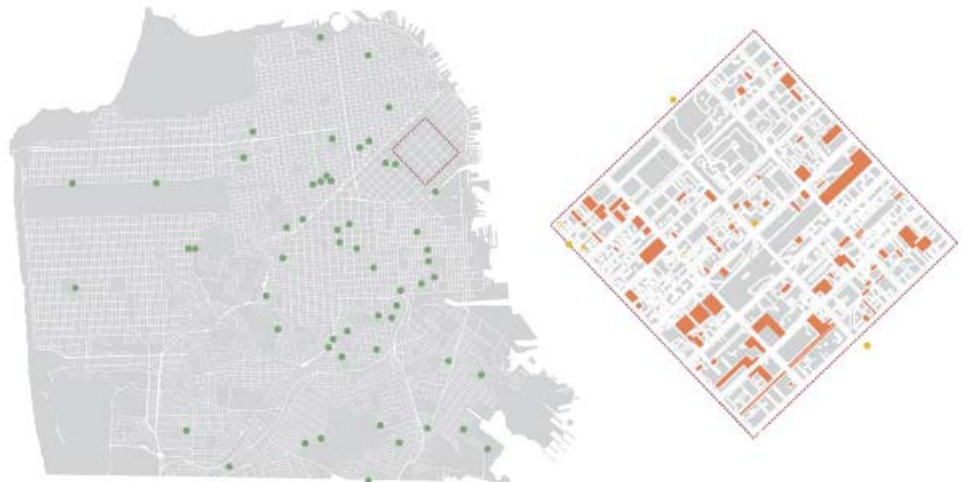
An assessment of the neighborhood food economy and the opportunities within the district to increase access to healthy food should be performed. Some of this work is already being done through the Department's food systems planning activities. A toolkit recommending best practices and return on investment is expected to be completed in spring of 2013. A more robust analysis would include an inventory of land and rooftops that are suitable to community gardening, healthy food retail and farmer's market opportunities, and food waste to compost opportunities. Findings from the assessment should identify projects that create neighborhood-scale sustainable food systems.



San Francisco Urban Farms

Mapping the urban farms in the city revealed a distinct lack in the Central Corridor. Zooming in to the site scale, vacant and parking lots were identified as possible sites for community gardens and farms.

- Community Garden/Farm
- Market/Grocery Store
- Surface Parking Lot



Urban Farms + Vacant Land Potentials

MATERIALS MANAGEMENT

Waste Management

SF Environment, the Commission on the Environment, the Board of Supervisors, and the Mayor have all helped create ordinances and resolutions to address the problem of solid waste. Currently, the city is diverting 78% of its waste from the land fill and has met its initial goal of 75% waste diversion by 2010. In order to meet its next goal of zero waste by 2020, the city has implemented policy initiatives to ensure that government leads by example and has created programs to encourage the private sector to move toward zero waste. Currently, the city is exploring waste management opportunities including zero waste facilities and anaerobic digestion. A waste management assessment in the Central Corridor area would identify how the district could help to accomplish the city's zero waste goal, be it in combination with its energy and water infrastructure systems or separately.

Recommended Actions for District Assessment in Fiscal Year 2012-2013

- 1. Perform the Eco-District Assessment:** Continue to assess existing conditions and resources in the Central Corridor area and create a performance baseline to measure proposed projects against.
- 2. Set Goals:** Set long term performance goals as well as interim targets based on the performance baseline.
- 3. Determine Other Strategy Opportunities:** Identify strategies in addition to those listed above that are essential for meeting adopted goals.
- 4. Define Priorities:** Determine relative priority (short, mid, long term implementation) of all strategies identified.

District Projects

Once the key opportunities are identified through the assessment process, an in-depth feasibility analysis will determine overall viability and cumulative impact. In the District Projects phase, the Sustainability Management Association conducts business and technical analysis, and develops an implementation and funding strategy for priority projects. The outcome is a project plan that includes the business case, implementation approach, and partners.

The feasibility analysis in the Central Corridor will focus on district utilities and screen to identify, structure, and prioritize projects within the Central Corridor that may merit a more detailed analysis. The screening will include technical feasibility, ease of implementation, economic viability, and environmental benefits.

The screening involves several steps.

1. Establish clear boundaries for the Eco-District screening,
2. Gather information on costs drivers, capacity or operating constraints, and environmental footprint of existing central utility systems,
3. Gather information on current and projected building area, utility demands, costs, and environmental footprint,
4. Identify nodes of growth within the Eco-District that could be a starting point for the development of shared utility systems, and
5. Identify and screen specific opportunities for collective systems based on factors such as technical feasibility, ease of implementation, economic viability, and environmental benefits.

This phase includes alignment and coordination between district stakeholders, public agencies, and utilities to develop and finance projects at a scale that has meaningful impact. It also involves predevelopment planning, financing, partnership building, and regulatory engagement.



ENERGY

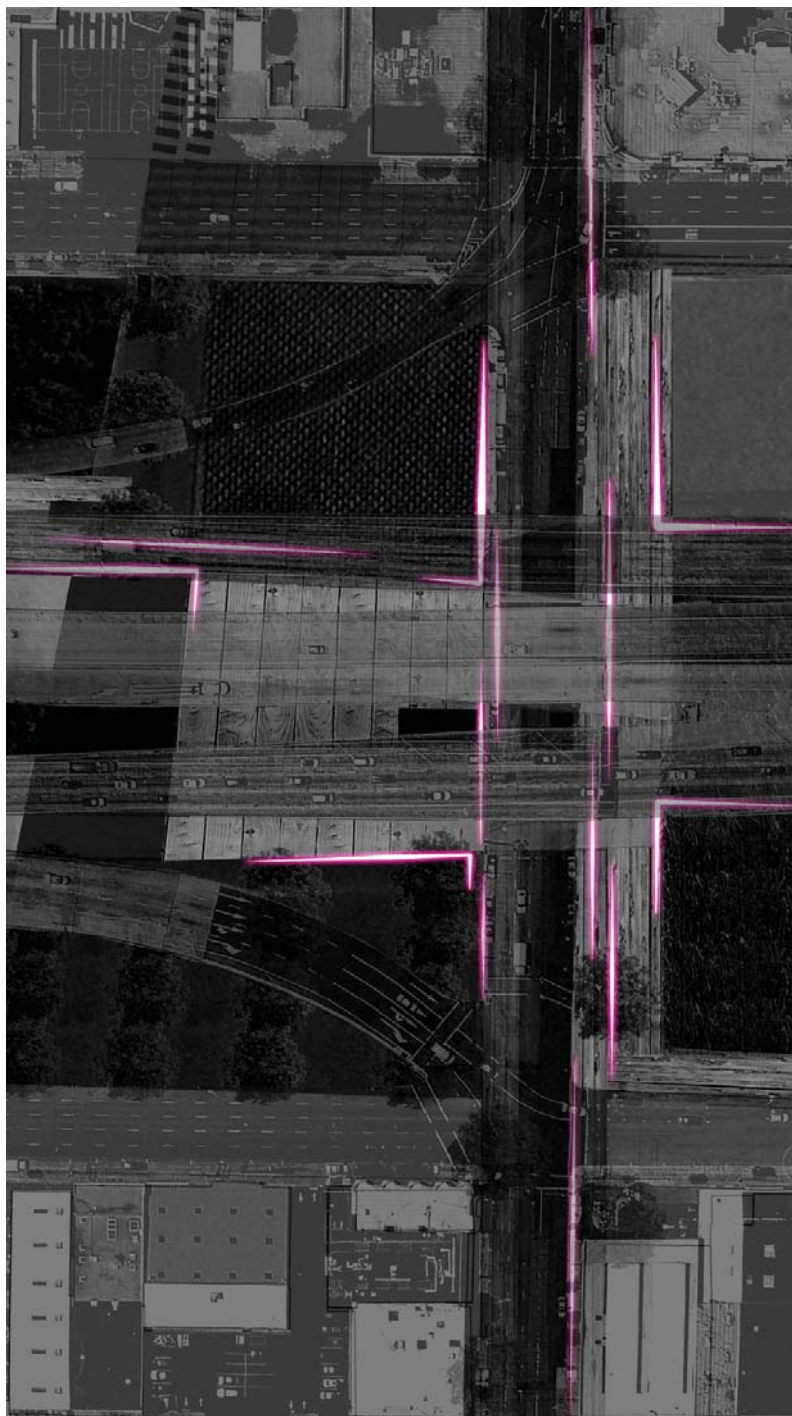
Community-Scale Energy Resources

The parcel criteria established as a part of the assessment phase will be used to determine feasibility based on policy tools, financing and funding opportunities, legal and regulatory issues and partnerships. A feasibility study will help to identify ways the City can advance community-scale energy by providing a strategy to coordinate multiple public and private interests, including identification of all key institutional stakeholders and relevant regulatory frameworks.

Building Performance and Data Standardization

Energy is the largest controllable operating cost for commercial facilities. Currently, through the City's Existing Commercial Buildings Energy Performance Ordinance, the City requires existing commercial buildings to benchmark energy performance annually and get an energy audit every five years. The intent of the Existing Commercial Buildings Energy Performance Ordinance is to help the local market maximize energy efficiency in San Francisco by empowering owners, managers, operators, and occupants with the key information to control utility costs, and to know exactly how they will benefit by improving energy efficiency. Through the Eco-District work, there is an opportunity to explore shared energy efficiency analytic resources to pool resources for audits and energy efficiency improvements in surrounding buildings that may not be adjoining, or to engage in building performance challenges to enhance competition for recognition of operational improvements, or to otherwise leverage transparency of building performance information.

Study Leads: SFPUC, SF Environment

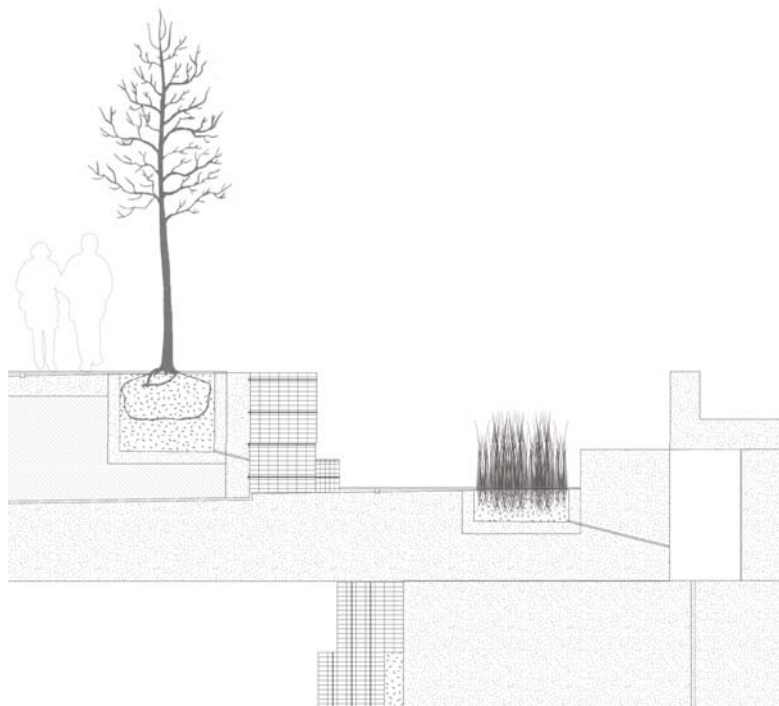


WATER

Water Efficiency

The growth planned for the area coupled with the expected future water shortages for the city and state suggest some opportunity for district water strategies. Further study of a district water strategy is needed to consider opportunities for shared stormwater management and decentralized wastewater treatment and reuse. The study would evaluate types of decentralized systems and ownership/operation models for organizing such utilities to understand potential scenarios for decentralized water and wastewater infrastructure in the city.

Study Lead: SFPUC Water and Wastewater



COMMUNITY IDENTITY

Green Industry

We anticipate that there are innovative ways to repurpose and maximize the green energy contributions of historically industrial manufacturing structures within the Central Corridor Eco-District. There is currently a window of opportunity to integrate historic preservation best practices into the creation of the Central Corridor Eco-District to maintain the historic character in a rapidly changing urban area. Working with the Office of Historic Preservation, the Planning Department will evaluate policies and programs that support the inclusion of historic buildings as components of district scale systems, including but not limited to policy impact on economic viability, standards for process and review, code amendments, and interagency coordination.

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 the Central Corridor's planned growth and Eco-District, and detail specific recommendations for new and/or revised preservation policies and practices that will accomplish these goals. Implementation strategies will identify specific tasks, responsible agencies, estimated costs, and anticipated timelines. The final product will also include presentations to the Historic Preservation and Planning Commissions.

Study Lead: SF Planning

MATERIALS MANAGEMENT

Waste Management

The city is currently in discussion with Recology to explore the next generation of waste recycling facilities including identifying technologies able to get us to zero waste and maximum sort separation. Options are being explored such as anaerobic digestion processing facilities. Additionally, the distribution system associated with moving waste in and out of the city to waste treatment plants contributes to the city's greenhouse gas emissions. A study should evaluate incorporating anaerobic digestion with energy infrastructure to meet zero waste goals while simultaneously meeting community-scale energy goals.

Study Lead: SF Environment

Recommended Actions for District Projects in Fiscal Year 2012-2013

- 1. Integrated Infrastructure Plan:** Create a district infrastructure strategy to integrate energy, water, and waste systems with a related business case. Coordinate in-kind agreements with forthcoming developments, accordingly.
- 2. Identify goals and objectives** of remaining categories of the Central Corridor Eco-District.

District Management



As Eco-District projects are planned and developed, ongoing monitoring and program evaluation is essential to understand the performance impacts. This phase includes formalizing the ongoing monitoring of baseline metrics established in the Assessment phase. Monitoring may be district-wide or specific to a particular project. Eco-District performance areas can be used regularly to collect data to show the overall

value of particular project interventions. In addition, qualitative documentation and lessons learned about Eco-District implementation will be essential to refining the Eco-Districts approach. The outcome is a report every three to five years that documents the performance improvements across the district in the areas of Eco-District performance.

No Recommended Actions for District Management in Fiscal Year 2012-2013

Summary of Recommended Actions FY 2012-2013

DISTRICT ORGANIZATION

1. Roles and Responsibilities: Clarify the initial commitments and expectations of the City as well as district stakeholders to the Central Corridor Eco-District.
2. Task Force: Establish and formalize a Central Corridor Eco-District Task Force. The charge will be to define “Eco-District” for the Central Corridor, establish short and long-term goals and objectives, and advise on the structure and responsibilities of the SMA.
3. Eco-District Development Roadmap: Create a short, mid, and long-term Eco-District roadmap that includes assessment, priority projects, and expected outcomes.
4. Funding: Determine funding strategy for ongoing revenue to fund Eco-District organization (the new SMA) and projects.

DISTRICT ASSESSMENT

1. Perform the District Assessment: Continue to assess existing conditions and resources in the Central Corridor Eco-District area and create a performance baseline to measure proposed projects against.
2. Set Goals: Set long term performance goals as well as interim targets based on the performance baseline.
3. Determine Other Strategy Opportunities: Identify strategies in addition to those listed that are essential for meeting adopted goals.
4. Define Priorities: Determine relative priority (short, mid, long term implementation) of all strategies identified.

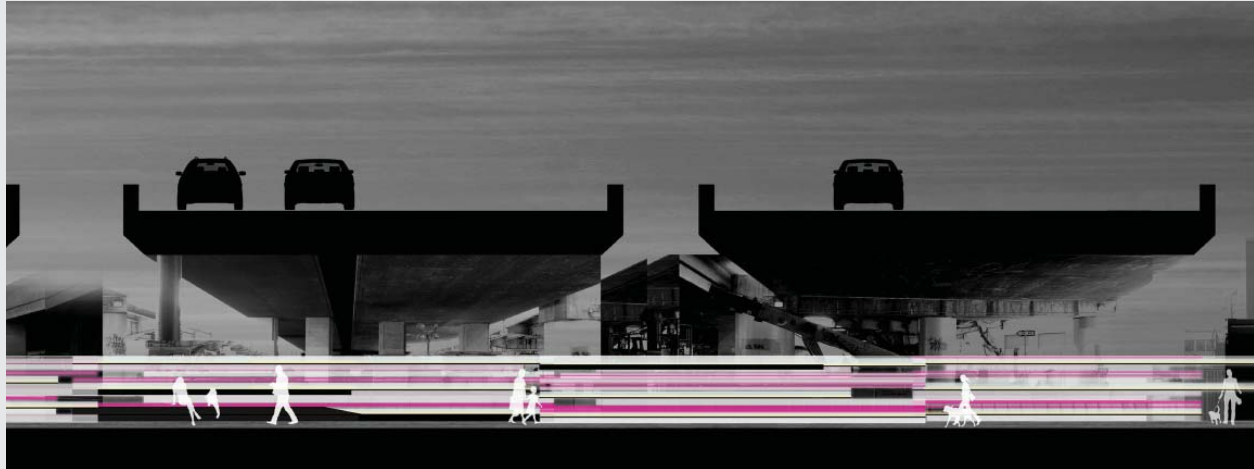
DISTRICT PROJECTS

1. Integrated Infrastructure Plan: Create a district infrastructure strategy to integrate energy, water, and waste systems with a related business case. Coordinate in-kind agreements with forthcoming developments, accordingly.
2. Identify goals and objectives of remaining categories of the Central Corridor Eco-District.

DISTRICT MANAGEMENT

1. None

Next Steps & Schedule



Over the course of the next year, the Planning Department will develop a Central Corridor Eco-District Plan and Implementation Program for a Central Corridor Eco-District. Some of the initial work to create the Eco-District has already been funded and is about to begin.

The Planning Department received a technical assistance award from the EPA. This work is a 12 month technical analysis to evaluate district energy opportunities in the area. Work is expected to commence in October 2012. The Planning Department also received a grant from the Office of Historic Preservation which will evaluate the potential to include Eco-District concepts into the preservation of buildings in the plan area. Work is to commence in October 2012. The SFPUC is performing a district utility analysis to evaluate district water options for the area. Lastly, the Portland Sustainability Institute, with funding from a private foundation, will support the Planning Department in the development of Eco-District policies beginning in September 2012.

It is anticipated that the Central Corridor Eco-District Plan and Implementation Program will be completed in fall 2013, at which time it will be incorporated into the Central Corridor Area Plan for adoption.

To learn more about the Planning Department's Sustainable Development Program and Eco-Districts, please visit: <http://sustainabledevelopment.sfplanning.org> or contact Kate McGee at: Kate.McGee@sfgov.org.