

OFFICE OF THE MAYOR
SAN FRANCISCO



EDWIN M. LEE
MAYOR

March 8, 2013

Mary D. Nichols
Chair, California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Dear Chair Nichols:

Thank you for the opportunity to provide input as the Air Resources Board and Department of Finance develop an investment plan for the Greenhouse Gas Reduction Fund. San Francisco has long been at the fore of progressive environmental policy and greenhouse gas reduction. Our comments are provided with a single goal – to ensure that the greatest, most cost effective statewide greenhouse gas emissions reductions are achieved.

Every dollar of cap-and-trade auction proceeds invested in cities and urban areas – and therefore invested in areas that generate highest emissions – would see the greatest emissions reduction returns. It is imperative to prioritize investment in sectors that generate the largest greenhouse gas emissions in order to achieve the optimal cost/benefit reduction of emissions. Finally, an emphasis on proven reduction strategies that can be easily replicated in other jurisdictions would generate the greatest impact.

The attached document provides general investment principles and example project proposals. The City and County of San Francisco is eager to assist you and your organization as you continue this important work.

Sincerely,

A handwritten signature in black ink, appearing to read "Edwin M. Lee".

Edwin M. Lee
Mayor

City and County of San Francisco

Cap-and-Trade Auction Proceeds Investment Priorities

As the Air Resources Board and Department of Finance develop an investment plan for the Greenhouse Gas Reduction Fund, it is in our mutual best interest to invest where greatest reduction returns are possible. Urban areas, by virtue of their density, are significant emitters of greenhouse gases. Every dollar of Cap-and-Trade auction proceeds invested in cities and urban areas – and therefore invested in areas with highest emissions – would see the greatest emissions reduction returns. Prioritization of urban areas and cities is the smartest, most efficient and direct way to see the GHG emissions reductions that AB 32 requires. Furthermore, it is important to prioritize investment in sectors that generate the largest GHG emissions, in order to achieve the optimal cost/benefit reduction of emissions.

The City and County of San Francisco supports efforts by the Transportation Coalition for Livable Communities to advance its proposed key concepts for inclusion in the investment plan. The Coalition's concepts are designed to ensure maximum greenhouse gas reductions and long term co-benefits under AB 32 by investing a major portion of revenues related to fuels in integrated transportation and land use strategies consistent with SB 375 and regional planning processes.

In order to address the spectrum of investment plan components, this document provides input on what evaluative principles might be most effective, which priorities might bring greatest results, and, most importantly, suggests proposals which are ready for implementation in the short term.

Background

San Francisco is making steady progress in reducing greenhouse gas (GHG) emissions, while simultaneously growing our economy and population. In 2004, San Francisco became one of the first American cities to take political action against climate change. San Francisco published a local-level climate action plan in 2005 and is now pursuing GHG emissions reductions through the promotion of renewable energy, alternative fuels, walking, biking, energy efficiency, and waste reduction. Consistent with the scientific community's recommendations to reduce emissions by 80% to stabilize our climate system, San Francisco has adopted ambitious reductions in emissions, including 25% reduction below 1990 levels by 2017, 40% by 2025 and 80% by 2050. Emissions reported for 2010 were 5.3 million metric tons of carbon dioxide equivalent (CO₂e), down 14.5% from 1990 levels. This puts San Francisco well ahead of targets set by AB 32 and the Kyoto Protocol.

Electricity use in San Francisco is up 11% since 1990, but the supply is significantly cleaner with 41% coming from renewable sources, including hydro, wind, solar, geothermal, and biomass. Use of natural gas for heating, hot water, and cooking is up a modest 2.7% in the past 20 years, as energy efficient building codes, more efficient boilers, and insulation have become widely adopted. Emissions from buildings (electricity and natural gas combined) are now down 21.1% since 1990. Progress reflects in part City policies that shut down two dirty natural gas power plants and replaced the electricity load

with cleaner power. While the carbon intensity of our power mix has gone down – resulting in lower overall emissions – vehicular emissions have continued to rise.

San Francisco recently attained an 80% waste diversion rate – the highest of any big city in North America. The success of the City’s recycling and composting programs means that emissions from waste sent to landfills are down by nearly half compared to 1990 levels. Progress can be attributed to a series of local policies including adopting a zero waste goal by 2020 in 2002, a mandatory construction and demolition ordinance in 2006, and a mandatory recycling and composting ordinance in 2009. With nearly a decade of experience in GHG reduction strategies, San Francisco is well-positioned to provide investment insight and assist in identification of priority investments that generate greatest reduction returns.

Investment Principles

- Investment in urban areas should be of the highest priority. A study conducted by UN-HABITAT shows that while the world’s cities only cover 2% of global land area, they account for a 70% of GHG emissions. In order to meet the ambitious reduction targets outlined in AB 32, and to see the greatest return for every dollar invested, ARB must invest heavily in cities.
- Investment in sectors that generate the largest amounts of GHG emissions should be of high priority in order to achieve the highest return on investment. Specifically, the transportation sector – responsible for approximately 40% of statewide emissions – should be considered a top priority investment sector.
- A portion of funding should be allocated through per-capita block grants. Regular block grant allocations, under applicable state guidelines and annual plan review, allow local governments to most effectively budget, plan, hire staff, and maintain an effort that matures over time. This longer term, more predictable disbursement of funds goes far to create local partnerships and more effective programs that reach ever deeper into the community. Furthermore, should funds be distributed for transit-related endeavors, that distribution should be based on transit ridership and daytime population – capturing use of the transit system and jobs housed by a municipality – not simply general city population data.
- A portion of funding should also be allocated through regular competitive solicitations, similar to the process used to disburse funds associated with Proposition 84, approved in 2006. Competitive solicitations allow for formation of regional- and sector-based partnerships that capture broader opportunities with innovative strategies. They also allow for more pilot-based projects, which require a higher early investment. San Francisco has many projects that are immediately ready for implementation – competitive solicitations would allow for this instant emissions reduction improvement.
- Preference should be awarded to projects which demonstrate proven GHG reduction strategies. Given San Francisco’s track record of emissions reduction efforts, we know what works and what doesn’t. The state should advance those projects which have highest likelihood of impact and success.

- Do not incentivize landfill gas. San Francisco has an internationally recognized track record when it comes to zero waste and diverting valuable materials away from landfills. We follow the principal of highest and best use. In the case of organics, this means a focus on capturing organic discards, including food scraps, before they reach a landfill. This practice allows for the capture of high impact GHGs, before they are released at landfills, for maximum beneficial use. We urge CARB to provide funding and incentives for anaerobic digestion and composting infrastructure and not for landfill gas capture. Incentivizing landfill gas capture would be a step backwards; it is contrary to the state's 75% diversion mandate and strategic zero waste to landfill goal.

Investment Priorities

1. Low-Carbon Transportation and Infrastructure

- **Invest in Alternative Fueling Infrastructure: 1,000,000 MTs/yr**

The transition to sustainable fuels represent the single largest GHG reduction San Francisco can take as a city government and offers the opportunity to connect a key energy loop within the city. Alternative fuels are estimated to avoid over one million metric tons of GHG emissions annually while simultaneously decreasing harmful particulates and carcinogens. An example of ready, replicable projects would be:

- Increasing the biodiesel blend used by San Francisco Municipal Transit Agency buses and other City fleets from B20 to B50. In addition, the installation of new fueling station infrastructure at City Central Shops and public works yards, as well as at transit bus stations would affect great positive change.
 - Projects that recover resources from biosolids to generate renewable energy. The biosolids remaining at the end of the wastewater treatment process contain valuable resources. Established and emerging technologies have shown the potential of converting biosolids into essential commodities such as fuel and electricity. Funds for research and demonstration projects that have a goal of generating a net positive energy from biosolids would do much to reduce GHG emissions.
 - Projects that utilize biogas to fuel San Francisco's municipal fleet. Interest in upgrading of biogas for utilization in vehicles is rapidly expanding in California. San Francisco's existing wastewater treatment infrastructure is already equipped for biogas generation, partial storage, and pretreatment. However, the implementation of new technologies to upgrade biogas to meet commercial standards remains costly. Funding is needed to demonstrate the technical validity of technologies to produce high quality pipeline gas suitable for compression into vehicle fuel.
- **Make Public Transportation Work Better**
- Transportation is responsible for nearly 40% of GHG emissions – and approximately 85% of those emissions are related to the surface transportation system. And while people will always need to get from here to there, encouraging a mode shift away from single passenger vehicles is an effective strategy for reducing overall GHG emissions. A single person, commuting alone by car, who switches a 20-mile round trip commute to existing public transportation, can reduce his or her annual CO₂ emissions by 4,800 pounds per year, equal to a 10% reduction in all

greenhouse gases produced by a typical two-adult, two-car household. If we can make public transportation a more attractive option, by making it more efficient and reliable, we can achieve great reductions. Some suggested methods for enhancing public transportation are:

- **Transit Optimization.** The Transit Effectiveness Project is a national model in identifying treatments that will result in a more efficient and reliable transit service within a heavily urbanized environment. Some recommended improvements include major expansions of the network into developing high-density areas of San Francisco. Investments of this nature provide three-fold benefit – forwarding Transit-Oriented Development, reduction in GHG emissions from vehicles, and encourage a mode-shift to public transit. The Transit Effectiveness Project paves the way for low-cost improvements to the transit system to improve service reliability and customer experience. Again, these improvements will promote transit and encourage mode-shift, reducing single occupancy car trips and GHG impacts. Implementation of the Transit Effectiveness Project would require an investment of \$170 million.
 - **Zero Emission Public Transit Fleet (Trolley Coaches/LRV).** San Francisco has the largest electric trolley coach fleet in the United States. These vehicles are some of the oldest in the City’s fleet. San Francisco is partnering with King County, Washington on the development of the next generation of trolley coaches. In addition, San Francisco is currently partnering with the automobile industry to develop the next generation of Light Rail Vehicles for the Muni Metro System. This investment in new technologies makes California ground zero for zero emissions public transit. Advancing vehicle replacement with zero emission vehicles results in increased service capacity and reliability – not to mention significant GHG emissions reductions.
 - **Muni Fleet Emission Reduction.** As our diesel bus fleet ages and requires replacement, San Francisco prioritizes the purchase of new vehicles which produce less GHG. Currently, San Francisco is procuring a new low-emission hybrid electric fleet to replace diesel motor coaches. Increased transit reliability and more vehicles makes public transit more attractive and should result in positive mode shift from single occupant car trips to transit.
- **Urban Forests: 150,000 MTs/yr**

Maintaining and growing San Francisco’s urban forest can play a vital role in offsetting carbon emissions by sequestering CO₂. The current urban forest is expected to sequester 2% of the City’s annual emissions. This sink could be expanded significantly through advancing tree planting and fully funded establishment programs. The important role that urban trees play in any city’s climate action tools is evidenced by ARB designation of Urban Forests as an acceptable offset option. To be an offset, trees must be additive to a location’s base-line number of trees. Planting trees to replace those lost to normal mortality is key to ensuring that we don’t have a net loss of CO₂ capabilities in the City, while adding new trees would expand our role in helping sequester greenhouse gases, particularly if the planting money were paired with maintenance money.

- Planting a new street tree and providing care for its fragile 5-year establishment period costs \$3,400.
- **Prioritize Tree Maintenance**
ARB's Compliance Offset Protocol Urban Forest Projects includes tree maintenance as an essential practice for ensuring the longevity of trees, and therefore maximizing their CO₂ sequestration value. Tree maintenance is the pruning and care given to mature trees, after they are through their establishment period. Tree maintenance is especially important, as prolonging the life and health of a mature tree has a much greater immediate carbon sequestration impact. Under current budgetary constraints, the City of San Francisco can only maintain any given tree once every 50 years. Without investment, this critical urban asset will decline.
 - Maintaining all street trees in San Francisco on an ideal 3-year cycle would cost approximately \$15 million per year, or \$428 per tree.
- **Bicycle Network Enhancements – Bicycle Sharing Network**
The San Francisco Bicycle Strategy identifies an approximate need of \$225 million in infrastructure, programs, and education to promote a positive mode shift. Currently, 3.5% of all transportation trips in San Francisco are made by bicycle. After full execution of the Bicycle Strategy, a positive mode shift resulting in 8-10% of all trips being taken by bike is expected. One immediate recommendation of the Bicycle Strategy is investment in a full bicycle sharing network in San Francisco. The current estimate for implementation is approximately \$15 million.

2. Disadvantaged Communities

- **Support the Bayview Hunters Point community:** SB 535, approved in the last legislative session, directed the State to invest dedicated percentages of cap-and-trade auction revenue to benefit disadvantaged communities. CalEPA has designated the 94124 zip code – the Bayview Hunters Point community – as disadvantaged. Bayview Hunters Point suffers from high unemployment, poverty, crime, and disease. It has been identified as one of the Bay Area's five "extreme poverty" neighborhoods, meaning that more than 40% of its inhabitants live below the federal poverty line. San Francisco has a number of projects that are designed to promote environmental justice throughout the city, especially in Bayview Hunters Point.

Projects that could directly reduce GHG emissions while benefitting this community include the cogeneration of methane at the Southeast Water Pollution Control Plant biosolids digester facility, diversion of stormwater away from San Francisco's combined sewer system through the implementation of green infrastructure in Bayview Hunters Point, and the Central Bayside Improvement Program. These projects will, respectively, reduce methane emissions, reduce the amount of water that requires treatment, and provide the community with a seismically-reliable sewage delivery system.

3. Energy Efficiency and Clean Energy

- **Provide Dedicated Funding to Local Governments' Renewable Generation Projects: 800,000-1,000,000 MTs/yr**

While renewable generation projects have been identified as a broad category for auction revenues, it is critically important that a portion of these funds be targeted to local governments. Many local governments have concrete action plans to reduce their carbon footprint, and auction revenue can help move these plans forward. For example, the San Francisco's Electricity Resource Plan is a roadmap for how San Francisco can meet all citywide electricity needs using zero-GHG sources by 2030. Auction revenue could be used to develop grants, low-interest loans, and incentives to assist local governments to construct and operate renewable electricity generation projects. San Francisco has identified over 50 megawatts (MW) of potential renewable generation projects that could move forward if funding was available:

- University Mound Reservoir (3.5 MW)
- Stanford Heights Reservoir (1.5 MW)
- Sunol Valley (20 MW) and Tesla Portal (5 MW)
- Pulgas Reservoir (2 MW)
- San Francisco International Airport, Long-Term Parking Lot (10 MW)
- San Francisco City College Ocean Campus (500 kW)
- Moscone Center West (300 kW)
- SFPUC Millbrae Yard (150 kW)
- City-owned ground-mounted solar project at Parcel E at Hunters Point Shipyard (approximately 5 MW), with additional opportunity to incentivize developer to install rooftop solar

- **Expand Municipal Renewable Energy Efforts: 200,000 MTs/yr**

Total municipal government emissions in San Francisco have dropped from 214,000 mTs of CO₂e in 2005 to 199,000 mTs in 2010, or a 6.9% reduction. Further actions San Francisco can take, pending available funds, include:

- Expand solar water heating system installations on fire houses, at a cost of \$10-20,000 per site.
- Maintain the SF Clean Energy Map to help educate residents and businesses about clean energy, find their home's solar potential, and learn about local, state, and federal incentives at an annual cost of \$6,000.
- Develop a solar low-interest loan program, including loan-loss reserve, with a start-up cost of \$500,000.
- Install solar thermal systems on large natural gas consuming departments.
- Support installation of renewable, off-grid power systems to serve critical loads (e.g. command centers, communications equipment, lighting staging areas, fuel pumps) during an emergency, in line with planning required under CaLEAP planning.

- **Assist Local Governments in Energy Efficiency Improvements: 200,000 MTs/yr**

San Francisco has conducted energy retrofit projects at almost 150 public buildings over the past decade, and has completed numerous additional energy audits to identify cost-effective energy savings opportunities. Auction revenues could be used to implement additional energy efficiency projects that would reduce emissions and improve indoor environmental quality at heavily used public facilities. These improvements would result in reduced energy costs, improved government efficiencies, and a municipal facilities network that will support density growth. San Francisco has identified numerous energy efficiency projects, including both lighting and mechanical system retrofits, which could be implemented if funding was available:

- **San Francisco General Hospital.** Improve campus steam distribution system.
- **Fine Arts Museums.** Install advanced lighting retrofits.
- **SFMTA Stations and Maintenance Facilities.** Install lighting and mechanical retrofits.
- **San Francisco International Airport.** Install lighting and mechanical retrofits.
- **Hunters Point Shipyard.** Incentivize new developments to exceed San Francisco's already strong green building standards.
- **Other Municipal Projects.** Convert additional street lights to LED; Retrofit mechanical systems at police stations, fire stations, and SF Zoo; Provide energy efficiency services for tenants of municipal properties, such as the Port and Airport.

4. Integrated Climate Mitigation and Adaptation Projects

- **Finance Green Infrastructure Projects**

San Francisco is embarking on a citywide sewer system improvement program. While this project could simply tear up pavement, replace the system, and rebuild a street exactly as it was, San Francisco has taken a different approach. Every City must build "brown" infrastructure; we are taking the opportunity to rebuild these streets in a more efficient way. These green infrastructure projects will manage stormwater, minimize flooding, and help the sewer system adapt to climate change. All of these projects include ancillary benefits such as air quality improvements, reduction of heat island effect, green job creation, and enhanced community spaces. Examples of these projects, which total approximately \$58 million, include:

- **Chinatown Green Alley.** Redesign an alley to improve neighborhood public space and maximize stormwater capture and detention. Design features include replacing the asphalt middle lane with flow-through planters and adding permeable pavement.
- **Sunset Boulevard Infiltration.** Redesign Sunset Blvd to maximize the capture and retention of stormwater using infiltration galleries and bioretention planters. Infiltration features may also provide groundwater recharge to the underlying aquifer system.
- **Sunnyvale Watershed.** Install cisterns beneath a playground for park irrigation and other non-potable reuse. The cisterns will serve in a bioretention capacity to promote groundwater recharge and reducing water demand.
- **Lake Merced.** Retrofit the main campus using rain gardens and infiltration trenches to disconnect approximately 50% of campus rooftops. The SFPUC is partnering with SF State University to develop this project in the Lake Merced Watershed, which will include rain gardens fed by disconnected downspouts, beautify the campus, increase

groundwater recharge, while significantly reducing the volume of stormwater reaching the sewer system.

- **Mission & Valencia Street Green Gateway.** Redesign two blocks with flow-through planters, permeable paving, and subsurface stormwater storage and reuse to minimize local flooding, and provide traffic calming and neighborhood open space benefits.
- **Richmond Green Street Concept.** Street redesign to maximize stormwater capture and infiltration using bioretention rain gardens and permeable paving on soils with high infiltration rates. Additionally, the potential installation of bulb outs and new lane alignments will slow traffic speeds and increase pedestrian safety.
- **Permeable Wiggle.** Incorporate bioretention and permeable paving in parking lanes and alleys along San Francisco's famous bike route, "The Wiggle." SFPUC will collaborate with Municipal Transportation Agency (MTA) and Department of Public Works (DPW) to redesign the blocks surrounding the bike route to maximize retention of stormwater.
- **Upper Yosemite Creek Day-Lighting.** Implement creek day-lighting to divert flows from the sewer system using design features such as swales, vegetated channels, and constructed wetland and bioswale systems. Stormwater management will occur through the natural hydrologic functions that will be restored by this project.

- **Fund Projects that Address the Energy-Water Nexus**

The California Energy Commission has estimated that 20% of the state's electricity is used for storing, transporting, and treating water. Auction revenues should provide funding to water and wastewater agencies to reduce emissions stemming from the pumping of water and stormwater. In particular, green stormwater and water conservation projects are ripe for investment. Green stormwater infrastructure significantly reduces the amount of stormwater and avoids the electricity used to pump and treat stormwater through collection systems. Green stormwater infrastructure includes green roofs, bio-retention facilities, pervious paving, trees, creek day-lighting, and rainwater capture and reuse.

- **Invest in Water Conservation**

Water conservation reduces potable water use which reduces the energy needed to store, transport, and treat water. Water conservation measures that reduce hot water use also have direct energy saving benefits. Examples of easily implementable projects in San Francisco include:

- **Retail Water Conservation Program.** Expand the SFPUC's Retail Water Conservation Program which is aimed at helping retail customers reduce their water use. Projects that decrease hot water use have the added benefit of lowering energy consumption. The program offers direct incentives for reducing water use as well as services such as comprehensive indoor/outdoor conservation surveys and plan reviews for large projects.
- **Nonresidential Equipment Replacement Rebates.** Provide rebates to cover the replacement of inefficient water-using items. Rebates could include: ice machines, food steamers, steam sterilizers, commercial laundry retrofits, and more.

5. Strategic Planning for Sustainable Infrastructure

- **Invest in Bicycle and Pedestrian-Oriented Streetscape Enhancements**

Streetscape projects play an important role in achieving San Francisco's Transit First policy and Climate Action Plan. The Climate Action Plan identifies reducing vehicle trips by encouraging a shift to alternative modes of travel as a "major approach" for reducing transportation sector greenhouse gas emissions. The Plan further notes that achieving such a mode shift hinges upon making the alternatives to driving more attractive. Through visual and safety enhancements, streetscape projects make bicycling and walking more attractive options, as evidenced by a visit to the heavily-used bicycle lanes on Valencia Street in San Francisco's Mission District.

- Streetscape improvement projects cost an estimated \$2 million a block. San Francisco's goal is to improve 10 blocks annually.

- **Prioritize Pavement Preservation**

Research collected by the Bay Area's Metropolitan Transportation Commission documents that performing low-cost preventative maintenance, or pavement preservation, to roads reduces the greenhouse gas emissions of keeping local streets and roads in a state of good repair. Over the life of a roadway, preventative maintenance requires less asphalt and fewer heavy truck trips than would be required if the road was left to deteriorate until in needed rehabilitation.

Preventative maintenance also encourages bicycling by reducing uneven roads, one of the biggest safety hazards facing cyclist on city streets.

- Pavement renovation costs an estimated \$9,000 per block and San Francisco currently expends \$2 million a year on pavement preservation.

- **Transportation and Open Space Improvements to Support Transit-Oriented Development**

The San Francisco Planning Department's Implementation Group looks to support planned transit-oriented development through funding the infrastructure necessary to support growth, especially multi-modal transportation improvements (including transit, pedestrian, and bicycle facilities), open space, and affordable housing. Projected needs are described below:

- In order to support a projected 20-30,000 new infill housing units over the next 20 years, San Francisco must invest nearly \$750 million dollars in infrastructure to add capacity to our existing services.
- San Francisco has recently completed a plan to enhance the regional and local services by investing in the Transbay Transit Center. In the short term, phase one infrastructure requires roughly \$2 billion in capital dollars. Additionally, the longer term "Downtown Extension," with a total project cost of approximately \$2.7 billion, seeks funding to match the 15% of funds currently identified.
- Support High Speed Rail/Caltrain Blended System, with a funding need of approximately \$7.52 million for the construction of the positive train control/Communications-Based Overlay Signal System (CBOSS) portion of the project and \$32.62 million for Caltrain electrification. Both projects will have a significant positive impact on reducing GHG

emissions. Each will also have the benefit of reducing the operating costs of the Caltrain system while allowing for more frequent and reliable train service – making transit easier for all. The projects will prepare the peninsula corridor for future high speed rail service to the new Transbay Transit Center, the northern terminus of the California high speed rail system.

- San Francisco prioritizes building new open spaces in high density and high need areas, as well as improving and upgrading parks in areas with intensifying density. Adequately funding this effort would cost up to \$1.2 billion.
- San Francisco’s Regional Housing Need Allocation for 2014-2022 projects that the City will need to produce approximately 11,500 subsidized housing units to meet the needs of low-income households, with a total subsidy cost of almost \$3 billion dollars. While federal sources, the City’s Housing Trust Fund, and developer requirements will address up to 1/3 of that cost, likely \$2 billion is still unfunded.

- **Plan for Transit-Oriented Land Uses**

San Francisco invests heavily in long-range planning efforts to manage and encourage growth in areas served by public transit as well as to ensure adequate open space. It is this deliberate approach that creates walkable communities that limit the need to drive. Plans and projects in San Francisco’s Priority Development Areas – as designated by regional planning organizations – provide the collective capacity for over 65,000 new residential units and almost 100,000 new jobs. However, more planning is required to ensure that the majority of growth occurs in transit-served urban areas, and environmental analysis is needed to clear the pathway for development in these areas. Planning efforts are needed in the following areas:

- Land use and technical analysis to adequately plan for housing and jobs near Caltrain and future High Speed Rail sites would cost up to \$3 million.
- Master planning and environmental analysis on publicly-owned opportunity sites ranging from underutilized bus lots and yards to former power plant sites would cost \$1 million.
- Opportunity site planning on waterfront sites, including associated transportation planning, will require \$500,000.
- Acquisition, Rehabilitation, Preservation, and New Development of Affordable Transit Oriented Development.
- Green Retrofits of Affordable Multifamily Housing.

- **Sustainable Development and Eco-District Formation**

The San Francisco Planning Department’s Sustainable Development Program is responsible for balancing plans for future growth within the context of the state’s GHG emissions reduction targets and the City’s goals to reduce water consumption, reduce waste, and enhance community-scale energy resources. A primary goal of the Sustainable Development Program is to facilitate the implementation of sustainable infrastructure systems by coordinating private development and public improvements. The City is using Eco-Districts to help implement this work. In an Eco-District, neighbors, community institutions and businesses join with City leaders

and utility providers to meet ambitious sustainability goals and to co-develop innovative projects to improve livability by reducing air quality, efficiently using water and wastewater, improving public transportation options, and integrating energy efficiency and renewable energy resources. Eco-Districts focus on the district scale—bigger than a building, but smaller than the City—to advance environmental sustainability. These sustainable developments can move closer to implementation with the following investments:

- **Eco-District Impact Assessments.** Identify opportunities and benefits derived from sustainable infrastructure design such as renewable energy generation, recycled water, urban agriculture, and urban forests. This has a projected cost of \$200,000 per Eco-District, for a total cost of \$1.4 million citywide.
 - **Fund an Integrated Infrastructure Plan.** Create a district infrastructure strategy to implement sustainable infrastructure projects. This has a projected cost of \$200,000 per Eco-District, for a total cost of \$1.4 million citywide.
 - **The Better Streets Plan.** Fund green streets infrastructure to capture and reduce storm water and water conservation projects per the Better Streets Plan.
 - **Funding for Adaptation Planning.** Provide funding for Adaptation Planning in areas subject to sea level rise. Plan should include an analysis of sea level rise for infrastructure and buildings. The estimated cost for this type of work in San Francisco \$500,000.
- **Bicycle Network Planning**

The transportation sector is the largest contributor of GHG in California – approximately 38%. The largest contributor within that sector is passenger vehicles. The primary goal of any GHG reduction investment should be inciting a shift in transportation mode or a choice to switch from a passenger vehicle altogether to one in which there is no GHG emission at all. Bicycling not only results in a transportation trip that creates zero emissions – it also provides a public health benefit. Many cities in California have well-established bicycle networks and have achieved shifts in transportation trips; however, many of those same areas have “peaked.” The greatest barrier to continued growth in the mode is enhancing these “peaked” networks, making them safer with greater connections and reduced conflicts. Innovative treatments and the next generation of bicycle networks require planning dollars to complete the necessary engineering, community outreach, and education.