CITY OF OAKLAND
AGENDA REPORT

TO: Office of the City Administrator
ATTN: Dan Lindheim
FROM: Public Works Agency
DATE: December 14, 2010

RE: **Conduct A Public Hearing On The Draft Oakland Energy And Climate Action Plan (ECAP) And Upon Conclusion Adopt A Resolution Directing That Appropriate California Environmental Quality Act Review Be Performed By Staff For The Draft Oakland ECAP**

SUMMARY

In July 2009, the City Council directed staff to develop a draft Oakland Energy and Climate Action Plan (ECAP) using a preliminary greenhouse gas (GHG) reduction target of 36% below 2005 GHG emissions by 2020.

A draft ECAP has been developed to identify and prioritize actions to reduce energy consumption and GHG emissions to meet this GHG reduction target. The ECAP will clarify policy direction and provide a roadmap for the City and the Oakland community that identifies implementation strategies and funding considerations.

The draft ECAP includes revisions based on: (1) City Council input received at a City Council Special Workshop on March 30, 2010; and (2) public comment received following the release of the first draft of the ECAP in April 2010. In addition, a public hearing was held before the City Planning Commission on December 1, 2010.

It is recommended that the City Council adopt a resolution directing that appropriate California Environmental Quality Act (CEQA) review be performed by City staff for the draft ECAP.

FISCAL IMPACT

The Community & Economic Development Agency (CEDA) will perform a preliminary CEQA review, which may result in a finding that the ECAP is exempt from further CEQA review. However, if this initial review determines that a more detailed CEQA review is required, funding will need to be identified to pay for the additional environmental analysis. Additionally, over the long term, implementation of the ECAP may result in potential reductions in revenues associated with decreased energy and fuel consumption (e.g., Utility Consumption Tax, Alameda County Transportation Improvement Authority [Measure B-ACTIA], State Gas Tax). Conversely, an influx of new revenues may result from the creation of new green business activities (e.g., business tax and sales tax revenue associated with energy retrofit work performed, green business attraction). The draft ECAP (page 13) includes a qualitative discussion of revenue impacts.

BACKGROUND

In July 2009, the Oakland City Council directed staff to develop an ECAP using a preliminary GHG reduction target of 36% below 2005 GHG emissions by 2020.

A draft ECAP (***Attachment A)*** has been developed to identify and prioritize actions to reduce energy consumption and GHG emissions to meet the adopted City Council GHG reduction target. The draft ECAP provides a climate action roadmap for the City and the Oakland community that identifies implementation strategies and funding considerations.

ECAP development began in November 2008 with the City holding multiple community workshops to gather input on GHG reduction targets and actions for consideration. The Public Works Agency has led the development of the ECAP, working in collaboration with staff throughout the City organization, external subject matter experts, and community stakeholders.

Hundreds of Oakland residents, businesses and other organizations have provided input during the ECAP development process. This input, along with ideas generated through earlier efforts, such as the Oil Independent Oakland Task Force, has helped to shape the analysis and inform the development of the draft ECAP. Local organizations contributed valuable assistance by providing additional outreach and gathering input for the development of the ECAP.

The draft ECAP was released for public review and comment on April 22, 2010 (Earth Day). Public comments were accepted until June 11, 2010 through community workshops and the City's website. Staff has developed a revised draft ECAP in response to the public comments received. In addition, a public hearing was held before the City Planning Commission on December 1, 2010. The draft ECAP is currently posted at www.sustainableoakland.com.

KEY ISSUES AND IMPACTS

The primary focus of the ECAP is to recommend GHG reduction actions through which the City government can position Oakland to meet the established GHG reduction target. The draft ECAP describes the role that recently adopted State policies are expected to play in reducing emissions, as well as the scale of community leadership and engagement needed. In addition to GHG reduction actions, the draft ECAP includes a plan for identifying and adapting to anticipated climate impacts on the City's infrastructure caused by potential changes in sea level, fresh water availability, and weather.

The draft ECAP proposes a set of actions through which the City could position Oakland to achieve the 2020 GHG reduction target. It recommends one subset of these actions for implementation within the next three years. Existing or anticipated resources are available to support implementation of this subset. Out of the remaining actions needed to achieve the 2020 target, the draft ECAP recommends an additional subset to be prioritized during the same three year period. These additional unfunded actions would require the identification of new resources.

The draft ECAP Appendix ***(Attachment B)*** contains additional information about the development of the ECAP, Oakland's GHG emissions baseline, and how the actions included in the draft ECAP are projected to enable Oakland to meet the identified GHG reduction target.

PROGRAM DESCRIPTION

A preliminary CEQA review of the draft ECAP is necessary, which may result in a finding that the ECAP is exempt from further CEQA review. Depending on the determination of this review, further study may be needed (with funding sources to be identified). It is in the City's interest to finalize the draft ECAP prior to initiating the preliminary CEQA review so that such review is based on complete information and City Council policy direction. Upon completion of the CEQA review process, the CEQA document (e.g., exemption, (mitigated) negative declaration, EIR, etc.) would be prepared and brought back to City Council with the final ECAP.

The following schedule is anticipated to conclude development of the ECAP:

- December 1, 2010 Planning Commission consideration of draft ECAP
- December 14, 2010 Public Works Committee consideration of draft ECAP
- January 2011 City Council Public Hearing and consideration of draft ECAP, followed by adoption of resolution directing appropriate CEQA review
- Winter/Spring 2011 CEQA review of draft ECAP
- TBD City Council consideration of CEQA document and Final ECAP; date depends on level of CEQA review needed.

SUSTAINABLE OPPORTUNITIES

Economic: Many potential GHG reduction actions can save money through improved efficiency and decreased waste, as well as create other economic benefits through job creation and business attraction.

Environmental: Reducing GHG emissions can create significant environmental benefits by helping to reduce the impacts of climate change, as well as potentially conserving water and natural resources, reducing impacts associated with landfills, improving local air quality, reducing ecological impacts associated with pollution, and many others.

Social Equity: Reducing GHG emissions can result in social equity benefits, such as through the creation of green jobs, reduction in local air pollutants in specific areas, and targeting of programs to underserved communities.

DISABILITY AND SENIOR CITIZEN ACCESS

The action requested in this report will not have any direct impact on access for persons with disabilities or senior citizens. Implementation of the draft ECAP may create benefits through changes such as increased availability and frequency of transit service.

ACTION REQUESTED OF THE CITY COUNCIL

Staff requests that the City Council adopt a resolution directing that appropriate CEQA review be performed by staff for the draft ECAP.

Respectfully submitted,

Vitaly B. Troyan, P.E.
Interim Director, Public Works Agency

Reviewed by:
Brooke A. Levin, Assistant Director

Reviewed by:
Becky Dowdakin, Acting Environmental Services Manager

Prepared by:
Garrett Fitzgerald, Sustainability Coordinator
Environmental Services Division

Attachment A: Draft Energy and Climate Action Plan
Attachment B: Draft Energy and Climate Action Plan Appendix

APPROVED AND FORWARDED TO THE
PUBLIC WORKS COMMITTEE:

Office of the City Administrator

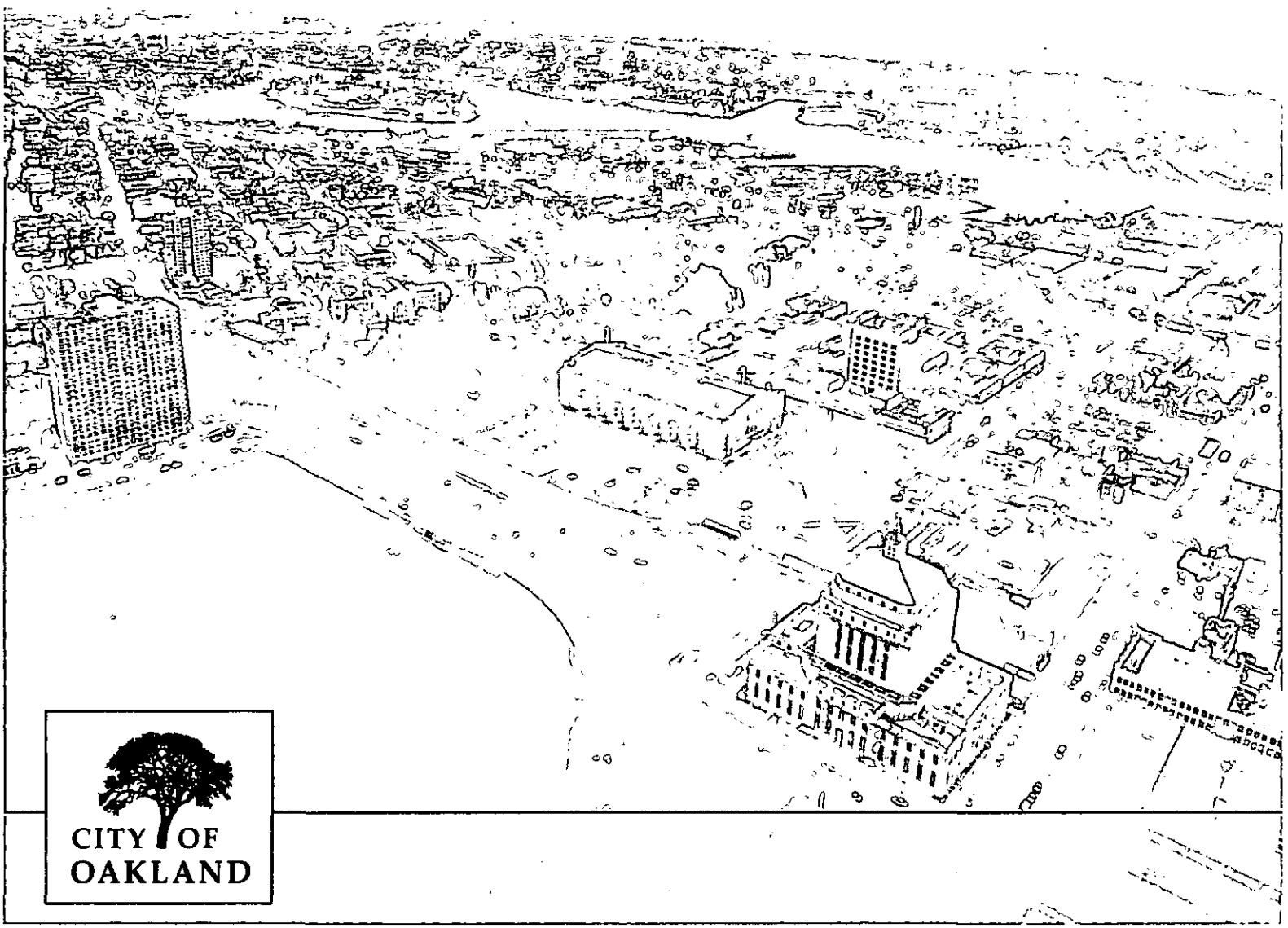
Item: _____
Public Works Committee
December 14, 2010

Attachment A

City of Oakland

Draft Energy and Climate Action Plan

December 1, 2010



CITY OF OAKLAND

Acknowledgements

Mayor

Ronald V. Dellums

Members of the City Council

Jane Brunner (District 1)
President

Jean Quan (District 4)
Vice Mayor

Desley Brooks (District 6)
Ignacio De La Fuente (District 5)
Rebecca Kaplan (At Large)
Pat Kernighan (District 2)
Nancy Nadel (District 3)
Larry Reid (District 7)

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John Russo, City Attorney

Courtney Ruby, City Auditor

Administration

Dan Lindheim, City Administrator

Marianna Marysheva-Martinez, Assistant City Administrator

Margaretta Lin, Deputy City Administrator

LaTonda Simmons, City Clerk

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The Public Works Agency would like to thank the following for their contributions to this document:

Funders: City of Oakland, Bay Area Air Quality Management District

Contributors: Members of the Oakland Climate Action Coalition, AC Transit, StopWaste.Org, QuEST, Energy Solutions, Beyond Compliance, Pacific Institute, City of Berkeley, City of Hayward, Alameda County, and all members of the Oakland community who have provided input into the development of this document.

City Staff: Eric Angstadt, Michelle Byrd, Napoleon Campbell, Becky Dowdakin, Diana Downton, Lesley Estes, Garrett Fitzgerald, Mark Gagliardi, Aliza Gallo, Mark Gomez, Meghan Horl, Gregory Hunter, Jeff Hutcher, Susan Kattchee, Heather Klein, Steve Lautze, Jeff Levin, Mike Neary, Jason Patton, Joann Pavlinec, Margot Prado, David Ralston, Darin Ranelletti, Alisa Shen, Peter Slote, Iris Starr, Mark Wald, Loyd Ware, Scott Wentworth, Bruce Williams, Wlad Wlassowsky, Robert Zahn, and volunteer interns Farhad Farahmand, Brendan Daughton and Tulsi Patel

Consultants: ICLEI – Local Governments for Sustainability, CirclePoint

Contents

The purpose of the Oakland Energy and Climate Action Plan (ECAP) is to identify and prioritize actions the City can take to reduce energy consumption and greenhouse gas (GHG) emissions associated with Oakland. The ECAP will assist the City of Oakland in continuing its legacy of leadership on energy, climate and sustainability issues, and provide a roadmap for the Oakland community to achieve broad community goals related to reducing GHG emissions.

A technical appendix is also available through the City's website at www.sustainableoakland.com providing additional information on Oakland's GHG emission sources and the role of recommended strategies and actions in meeting Oakland's GHG reduction goal.

Executive Summary

The City of Oakland is committed to reducing energy use and the causes of climate change. The purpose of the Oakland Energy and Climate Action Plan (ECAP) is to identify and prioritize actions the City can take to reduce energy consumption and greenhouse gas (GHG) emissions associated with Oakland. This plan recommends GHG reduction actions and establishes a framework for coordinating implementation, as well as monitoring and reporting on progress. The ECAP will assist the City of Oakland in continuing its legacy of leadership on energy, climate and sustainability issues.

In July 2009, the Oakland City Council approved a preliminary GHG reduction target for the year 2020 of 36% below 2005 levels. This planning target was developed based on recent publications of the world's leading climate scientists. The primary sources of Oakland's GHG emissions are:

- Transportation & Land Use
- Building Energy Use
- Material Consumption & Waste

The ECAP outlines a ten year plan including more than 150 actions that will enable Oakland to achieve a 36% reduction in GHG emissions with respect to each of these GHG sources. Oakland can accomplish this goal by 2020 through:

- 20% reduction in vehicle miles traveled annually as residents, workers and visitors meet daily needs by walking, bicycling, and using transit
- 24 million gallons of oil saved annually due to less driving and more fuel efficient vehicles on local roads
- 32% decrease in electricity consumption through renewable generation, conservation and energy efficiency
- 14% decrease in natural gas consumption through building retrofits, solar hot water projects and conservation
- 62 million kWh and 2.7 million therms annually of new renewable energy used to meet local needs
- 375,000 tons of waste diverted away from local landfills through waste reduction, reuse, recycling, and composting

The ECAP also recommends a Three Year Priority Implementation Plan - a prioritized subset of actions recommended for implementation in the next three years. These priority actions will capitalize on near term opportunities and lay the groundwork for long term progress. Some of the recommended priority actions can be implemented with existing and anticipated resources. Others will require the identification of new, in some cases significant, resources to move forward. Implementation responsibility, status and resource needs are outlined for each recommended priority action.

Achieving Oakland's GHG reduction goals will require an unprecedented collaborative effort. The ECAP outlines the role that recent State policies are expected to play in reducing GHG emissions, and provides a vision for the role of additional community leadership. The ECAP also recommends steps the City can take to help Oakland adapt to the impacts of climate change and increase community resilience.

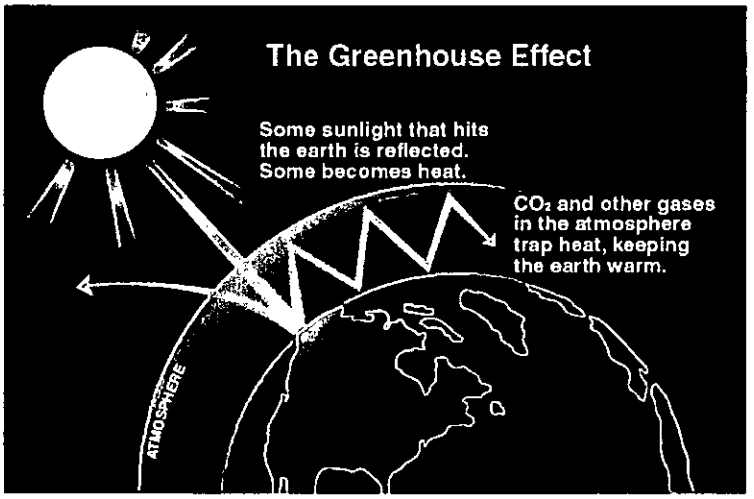
Implementing the actions identified in the ECAP has the potential to create a variety of community benefits, including energy cost savings, local green economic development and job creation, reduced local air pollution, improved public health, and other quality of life enhancements throughout Oakland.

Progress in reducing citywide GHG emissions will be reported annually. The ECAP will be updated every three years to review progress, identify new priority actions and maintain momentum.

Chapter 1 – Background

The Importance of Addressing Energy and Climate Issues

Solving the challenge of climate change is critical to preserving and improving quality of life in Oakland.



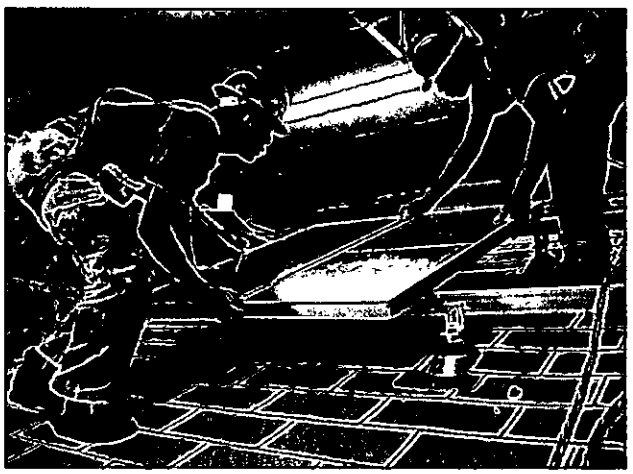
A scientific near-consensus has emerged regarding the dangers of increasing concentrations of greenhouse gas (GHG) emissions in the Earth's atmosphere, and the significant role that human activity is playing in increasing those concentrations.

Climate change is projected to impose significant ecological, health, economic and quality of life risks on Oakland and other communities. Projected local impacts of climate change include rising Bay and delta waters, increased vulnerability to flood events, decreased potable water supply due to shrinking Sierra snowpack, increased fire danger, more extreme heat events and public health impacts, added stress on infrastructure, higher prices for food and fuels, and other ecological and quality of life impacts. Current dependence on fossil fuels not only creates GHG emissions, but imposes other risks associated with energy security, environmental impacts (e.g., recent Gulf oil spill), and vulnerability to energy price volatility. These risks are magnified for economically disadvantaged communities.

Reducing greenhouse gas emissions, in Oakland and elsewhere, can help to avoid and/or lessen the severity of these impacts. Tremendous collective action will be necessary on a global scale to reduce GHG emissions to safer levels.

Transforming the threat of climate change into an opportunity for Oakland

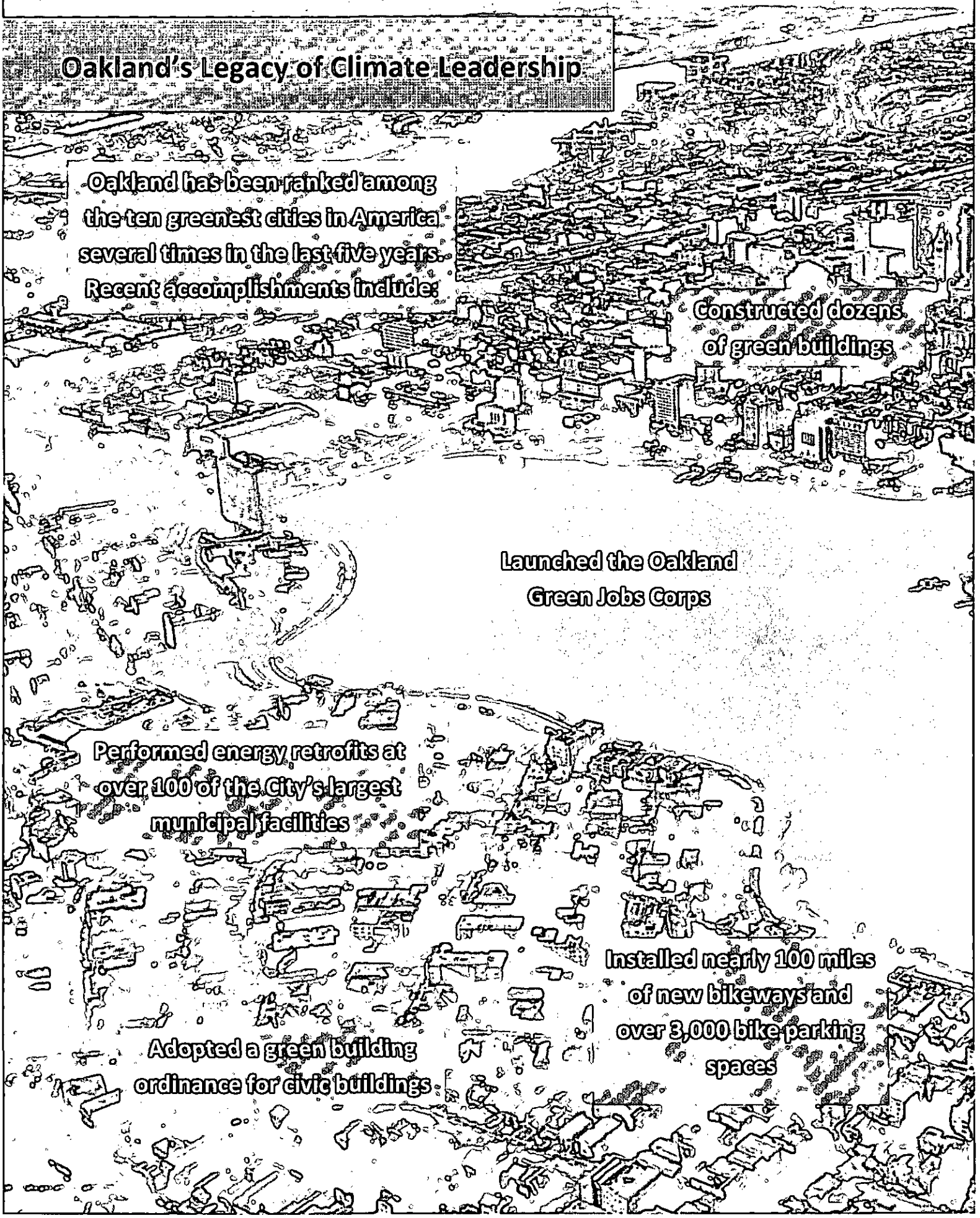
Many actions that could be taken locally to reduce energy use and GHG emissions hold the potential to create a range of economic, health and other quality-of-life benefits in Oakland. Actions described in this plan have the potential to attract new green businesses, create hundreds of new local green jobs, and help neighborhoods thrive. By reducing fuel consumption, we can also reduce fossil fuel dependence and local air pollutants, and help to improve public health.



The City of Oakland is dedicated to doing its part to reduce GHG emissions and the threat of climate change. We recognize that many of the sources of GHG emissions can be reduced through local action. We also recognize the need to take local steps to better adapt to the impacts of climate change and improve the resiliency of our community.

We will take action, joining cities around the globe to provide the leadership needed to answer this challenge. In doing so, we are not just working to alleviate the threat of climate change, we are working to create a better Oakland, and a better world, for residents, businesses, and all members of our community.

Oakland's Legacy of Climate Leadership



Oakland has been ranked among the ten greenest cities in America several times in the last five years. Recent accomplishments include:

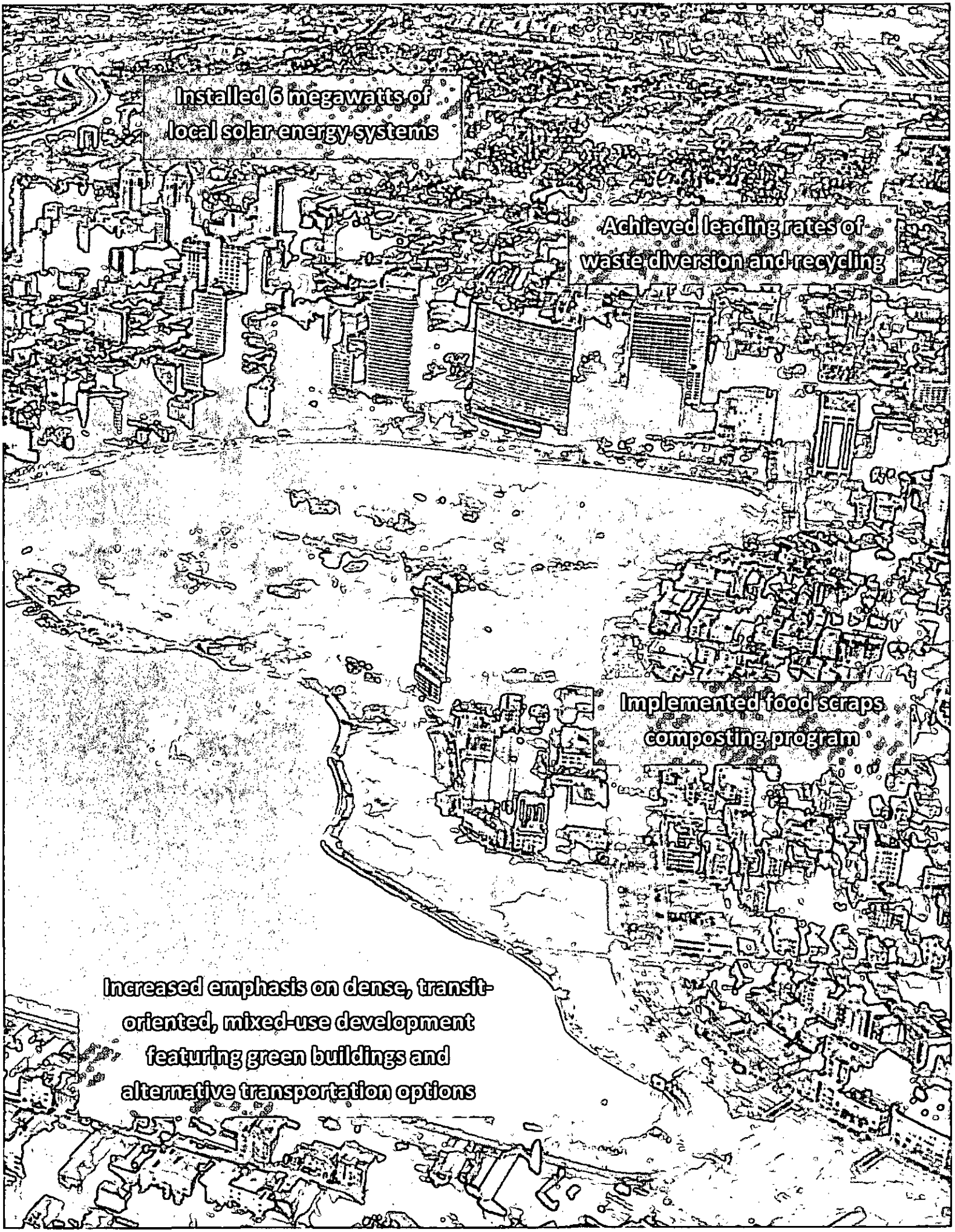
Constructed dozens of green buildings

Launched the Oakland Green Jobs Corps

Performed energy retrofits at over 100 of the City's largest municipal facilities

Installed nearly 100 miles of new bikeways and over 3,000 bike parking spaces

Adopted a green building ordinance for civic buildings


Installed 6 megawatts of local solar energy systems
Achieved leading rates of waste diversion and recycling
Implemented food scraps composting program
Increased emphasis on dense, transit-oriented, mixed-use development featuring green buildings and alternative transportation options

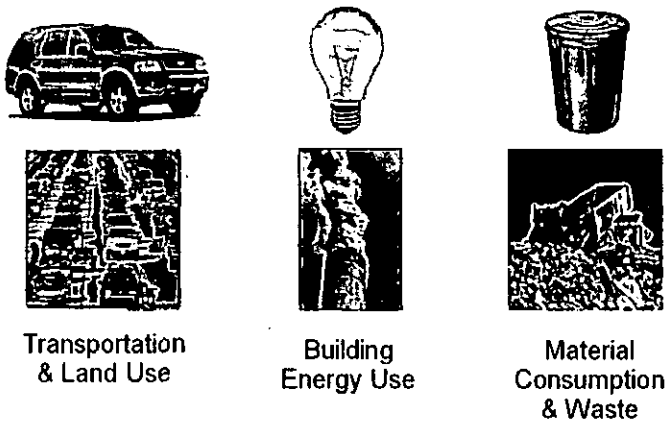
The Next Phase of Local Climate Action

Building on Oakland's legacy of climate protection progress, the next phase of action on energy and climate issues must consist of efforts in two major areas: Mitigation and Adaptation. The primary focus of this draft ECAP is on Mitigation – reducing energy use and GHG emissions. Recommendations are also included for moving forward with Adaptation strategies. It is important to make progress in these two areas simultaneously.

Mitigation

Mitigation refers to actions that reduce the creation of greenhouse gas emissions. These include strategies to reduce transportation fuels used to move people and goods around, reducing natural gas used to heat our homes, reducing electricity use used to light and power our buildings, and reducing consumption of material goods and disposal of materials into landfills. Reducing GHG emissions in collaboration with other communities around the world can help us to avoid, or at least lessen, some of the projected impacts of climate change.

Figure 1. Areas Targeted for GHG Reductions



Adaptation

Adaptation refers to activities that can help our community adapt to the impacts of climate change. Projected local climate impacts include sea level rise, reduced water availability from shrinking snowpack, and increased occurrence of extreme heat events and wildfires. Some impacts, such as minor sea level rise, are already starting to be observed – the result of decades of fossil fuel combustion and other activities such as deforestation. Adaptation strategies may include imposing land use restrictions in vulnerable low-lying areas, upgrading storm and sewer infrastructure, and practicing water conservation. Adaptation strategies are further discussed in later chapters.

Figure 2. Sea Level Rise Vulnerability is One of Many Projected Local Climate Impacts

Source: Pacific Institute

Oakland's Greenhouse Gas Emissions

Oakland's citywide carbon footprint can be measured in multiple ways. Each perspective illuminates opportunities to reduce greenhouse gas emissions through local action. Transportation & Land Use, Building Energy Use, and Material Consumption & Waste are the three largest sources of GHG emissions associated with Oakland.

Figure 3 illustrates a "sector-based" perspective of GHG emissions over which the City government has a relatively high degree of influence. These sources include emissions occurring within Oakland's boundaries, as well as external emissions from citywide electricity consumption and waste sent to landfill. From this perspective, building energy use and fuel used for transportation are both major sources of GHG emissions.

Figure 4 provides a "demand-based" perspective that reveals a different story. National average data illustrates that material consumption and waste – including energy used to manufacture and transport goods, energy consumed in their use, and methane generated when some materials are discarded in landfills – accounts for the majority of GHG emissions.[1] This perspective highlights the potential to reduce GHG emissions through waste reduction and recycling.

Figure 3. Sector-Based View of Oakland GHG Emissions

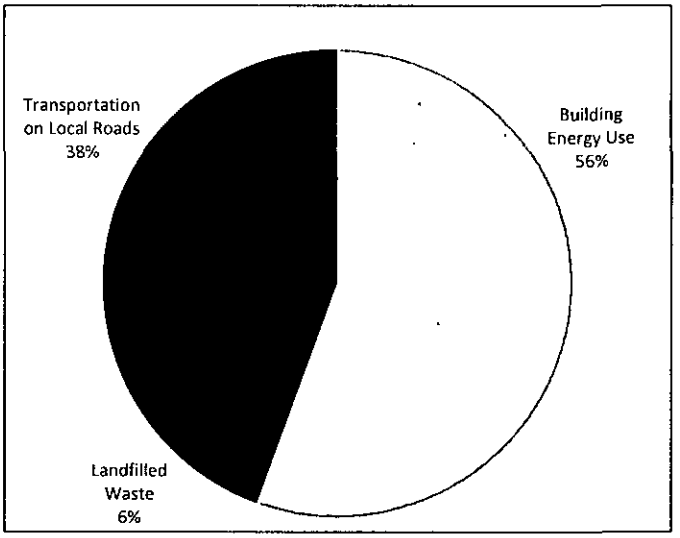
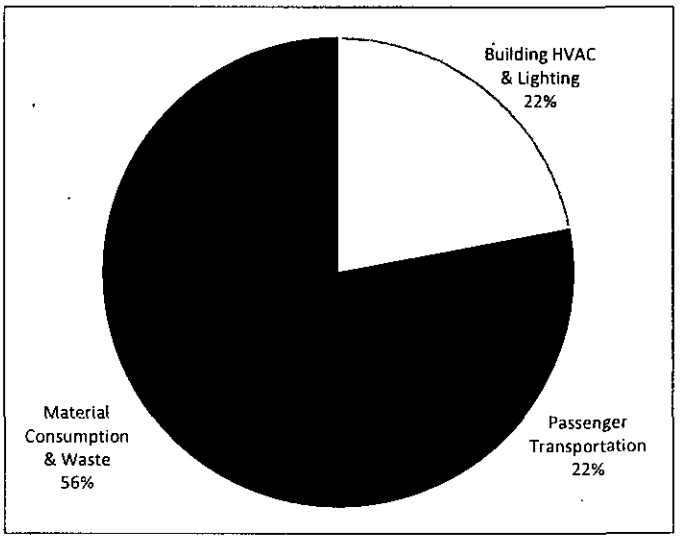


Figure 4. Demand-Based View of U.S. GHG Emissions



Transportation & Land Use, Building Energy Use, and Material Consumption & Waste are each significant sources of GHG emissions, and all can be addressed through local action.

For the purposes of the ECAP, these categories of GHG emission sources have been defined to include the following issues:

- ***Transportation & Land Use:*** integrated planning; transit-oriented development; bike/pedestrian issues; parking; vehicles/fuels; Port of Oakland operations; urban forestry; and the City fleet.
- ***Building Energy Use:*** new construction; building operations; retrofits of existing buildings; water use / conservation; renewable energy; product efficiency; City facilities; and streetlights.
- ***Material Consumption & Waste:*** waste reduction; recycling; composting; reuse and repair; rehabilitation and renovation; landfill waste; purchasing; producer responsibility; and local urban agriculture.

Additional information about GHG emission sources associated with Oakland is provided in the ECAP Appendix. To download the ECAP Appendix, visit the City's website at www.sustainableoakland.com.

Oakland's 2020 GHG Reduction Goal

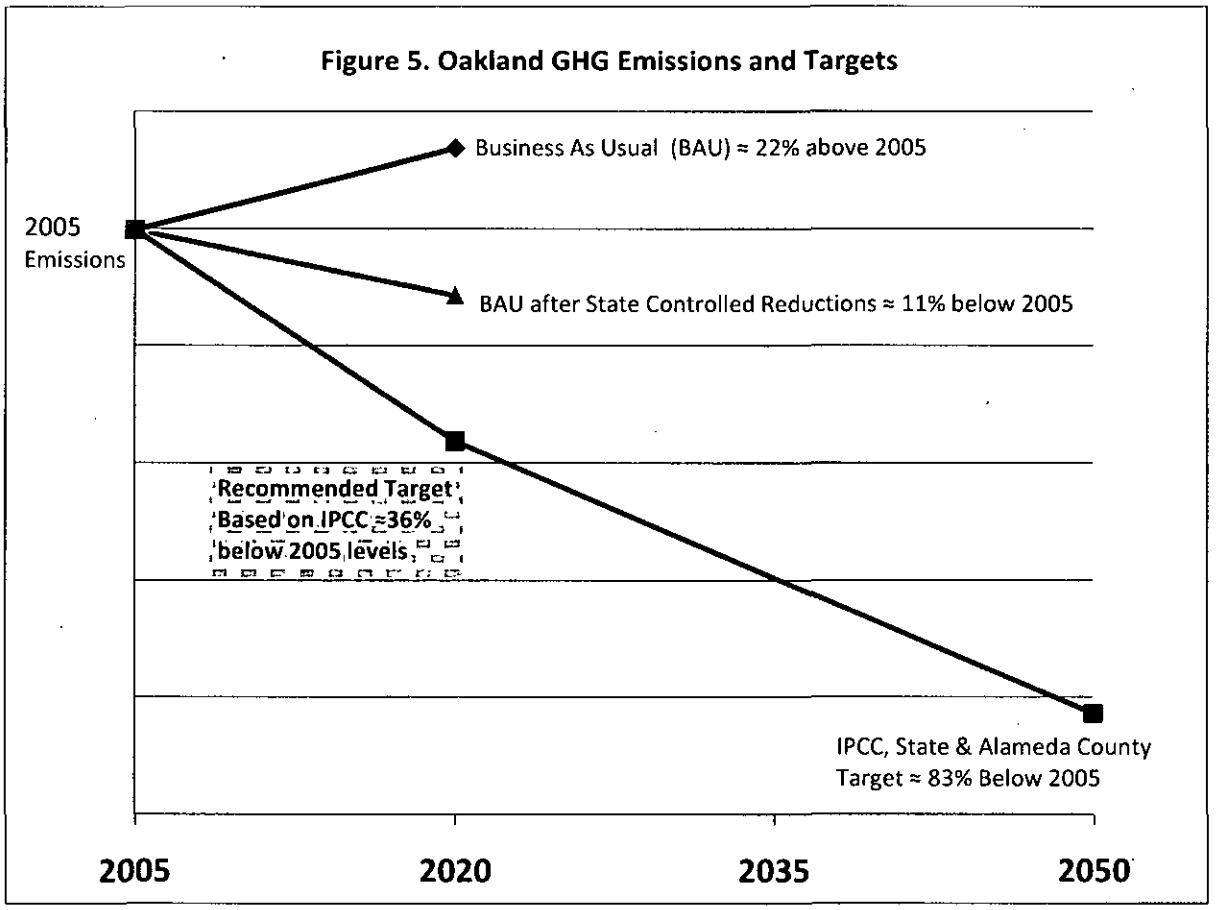
In July 2009, the Oakland City Council approved a preliminary planning GHG emissions reduction target for the year 2020 at 36% below 2005 levels, on a path toward reducing GHG emissions by more than 80% below 2005 levels by 2050.

This planning target was developed based on recent publications of the Intergovernmental Panel on Climate Change (IPCC), widely recognized as the world's leading body of climate scientists. According to a recent IPCC report[ii], achieving this level of GHG reductions throughout the industrial world will help to produce a level of climate stabilization that would avoid the worst future climate impact scenarios.[iii] Additional background on this GHG reduction target is provided in the ECAP Appendix.

Oakland has an opportunity to demonstrate leadership by striving to achieve this level of GHG emissions reductions, reinforcing our commitment to local climate action.

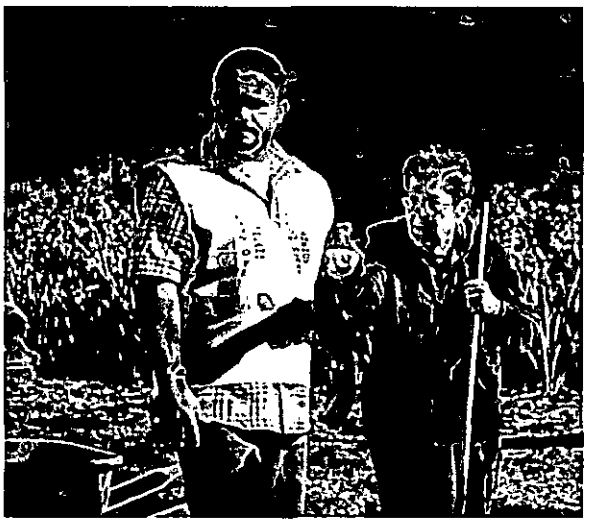
36%
reduction

Figure 5. Oakland GHG Emissions and Targets



Chapter 2 – Implementation and Reporting

Implementing the Plan



City Departments that are responsible for each priority action will provide regular status updates to the Environmental Services Division. Annual reports will be presented to the City Council. These reports will be publicly available.

ECAP implementation will involve an inter-agency staff team to provide staff-level coordination. This team will discuss progress and challenges in ECAP implementation. Team members will continue relationships with key external partners (e.g., PG&E, EBMUD, StopWaste.Org) to foster coordination and collaboration.

Updating and Evolving the Plan

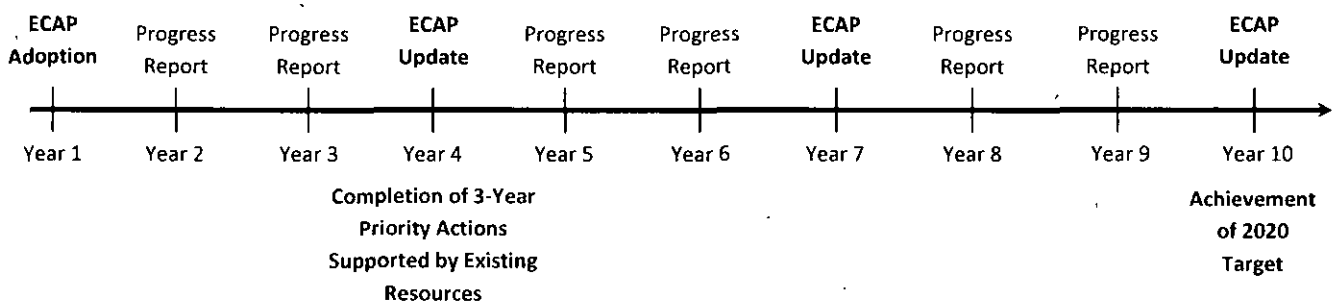
Annual updates on the status of ECAP implementation will be presented to City Council. The ECAP will be updated every three years, including updates to Oakland GHG inventories.

The City will benefit from monitoring the implementation of priority actions during the next three years (2010-2013), and will have the opportunity to learn from these observations to improve plans going forward. Successful programs may be continued and expanded, while unsuccessful actions can be dropped or reconfigured. Other unforeseen changes (e.g., technological advancements, energy price changes, economic growth rates, updated climate models, funding availability) will be considered in future updates to this plan.

The City will provide ongoing opportunities for the public to receive information on the City's progress in implementing ECAP actions, and to provide input as the implementation process proceeds. These will include three community climate forums annually as described in the Community Engagement section of Chapter 4.

Timeline for Plan Implementation

The City will report on progress and update the ECAP according to the timeline below.



Priority Actions Supported by Existing Resources

A number of actions in the ECAP can be accomplished with existing resources, or with the aid of anticipated external support (e.g., grants). The Priority Actions Supported by Existing Resources below will move forward with existing or anticipated resources, and will be implemented during the next three years (2010-2013). Some of these actions are in progress. Table 1 provides a summary of when the City anticipates beginning work on each action and which department/ division is responsible for implementation.

Table 1. Priority Actions Supported by Existing Resources

Priority Action	Anticipated Implementation Start	Responsible Department / Division
PA 1. Identify and Adopt Priority Development Areas	Underway	Transportation Services, Strategic Planning, Redevelopment
PA 2. Launch and Develop a Funding Plan for the Downtown Shuttle	Underway	Transportation Services, Economic Development
PA 3. Advance Bus Rapid Transit in Oakland	Underway	Transportation Services, Infrastructure Planning & Programs
PA 4. Participate in Quarterly SB 375 Discussions	Underway	Transportation Services, Strategic Planning, Housing and Community Development
PA 5. Call for Port of Oakland GHG Reduction Targets and Plans	Underway	Elected Officials
PA 6. Call for Climate Action by Port Tenants	Underway	Elected Officials
PA 7. Adopt a Green Building Ordinance for Private Development	Completed Fall 2010	Planning, Building Services
PA 8. Offer Property-Based Energy Financing	TBD	Environmental Services, Planning, Building Services
PA 9. Launch a Downtown Commercial Retrofit Program	Underway	Economic Development, Environmental Services
PA 10. Encourage Participation in Local Energy Efficiency Programs	Underway	Environmental Services
PA 11. Launch a Residential Green Retrofit Program	Underway	Environmental Services, Planning, Housing & Community Development
PA 12. Conduct a Multi-Family Affordable Housing Retrofit Pilot	Underway	Housing and Community Development
PA 13. Expand Weatherization Program Delivery	Underway	Housing and Community Development
PA 14. Launch the Weatherization and Energy Retrofit Loan Program	Underway	Housing and Community Development
PA 15. Create an Oakland-Specific Water-Efficient Landscaping Ordinance	TBD	Strategic Planning
PA 16. Implement Advanced Operating Procedures for City Facilities	Winter 2011/12	Department of Facilities & Environment
PA 17. Improve Energy Performance of New City Facilities	Underway	Environmental Services

PA 18. Retrofit City Facilities to Improve Energy Performance	Underway	Environmental Services, Building Services
PA 19. Restructure Solid Waste Management System	Underway	Environmental Services
PA 20. Refine Implementation of C&D Recycling Ordinance	Underway	Building Services and Permit Center
PA 21. Promote Waste Reduction at Community Events	Underway	Environmental Services
PA 22. Develop Regulations Enabling Urban Food Production	TBD	Strategic Planning, Economic Development
PA 23. Encourage Land Owners to Lease Space for Food Production	TBD	Strategic Planning
PA 24. Provide Additional Information on Energy and Climate Issues Through Existing City Channels	Winter 2010/11	Environmental Services
PA 25. Expand Outreach on Energy and Climate Issues Through Partnerships with Local Organizations	Winter 2010/11	Environmental Services
PA 26. Convene Community Climate Forums	Summer 2011	Environmental Services
PA 27. Report on Energy and GHG Reduction Progress	Winter 2011/12	Environmental Services
PA 28. Support Local Green Jobs Programs	Underway	Mayor's Office, Redevelopment Agency
PA 29. Participate in Regional Climate Adaptation Discussions	Underway	Strategic Planning, Economic Development, Engineering

Priority Actions Requiring New Resources

Putting Oakland on a steady path of progress toward achieving a 36% reduction in GHG emissions by 2020 will require the implementation of additional actions during the next three years, beyond those described above for which existing resources are available. The Priority Actions Requiring New Resources identified in Table 2 below will move forward if new resources can be found. See page 40 for more information on these proposed actions.

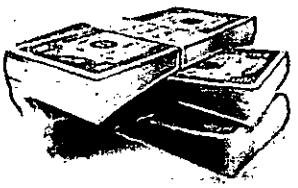
Table 2. Priority Actions Requiring New Resources

PA 30. Develop a Comprehensive Transportation Policy Plan
PA 31. Improve Transportation & Land Planning Integration in Every Planning Effort
PA 32. Create and Adopt a Transportation Impact Fee to Support Implementation
PA 33. Update Local CEQA Standards to Reduce Emphasis on Congestion Impacts
PA 34. Accelerate Completion of Bicycle and Pedestrian Plans
PA 35. Establish Alternative Mechanisms for Meeting Parking Requirements
PA 36. Conduct a Citywide Dynamic Parking Pricing Study
PA 37. Plan for Electric Vehicle Infrastructure
PA 38. Develop an Urban Forestry Master Plan
PA 39. Accelerate City Fleet Vehicle Replacement

PA 40. Subsidize Transit and Transportation Alternatives for City Employees
PA 41. Discontinue Subsidizing Parking for City Employees
PA 42. Engage Largest Electricity Consumers in Energy Retrofits
PA 43. Market Energy Retrofit Opportunities to All Oakland Businesses
PA 44. Create a Renter-Occupied Residential Energy Retrofit Program
PA 45. Adopt and Implement a Residential Energy Conservation Ordinance
PA 46. Encourage the Creation of On-Bill Financing for Energy Retrofits
PA 47. Seek Resources to Support Energy Programs
PA 48. Encourage Citywide Energy Conservation and Efficient Product Purchasing
PA 49. Facilitate Community Solar Programs
PA 50. Encourage PG&E to Offer Green Power Options
PA 51. Monitor Community Choice,Energy
PA 52. Enforce Mandatory Recycling
PA 53. Conduct Residential Social Marketing Campaigns and Business Outreach
PA 54. Study Options for Advancing Next-Level Waste Reduction
PA 55. Develop an Oakland Climate Action Model Practices Campaign
PA 56. Community Climate Action Guide
PA 57. Support Local Climate Workshops
PA 58. Study Potential Local Climate Impacts
PA 59. Communicate Climate Impacts to the Community
PA 60. Identify and Act on Opportunities to Improve Resilience in City Plans and Policies

Cost of Priority Actions Requiring New Resources

The ECAP includes budget estimates for resources the City would need to implement the 32 Priority Actions Requiring New Resources identified in Table 2. The average annual cost to the City associated with implementing all 32 of these actions is projected to be approximately 20 additional staff FTE (2.5 of which can be funded with identified external funds), and an additional $9 million per year for related expenses. It is outside the scope of the ECAP to include a total budget for other actions proposed for implementation through 2020. It is important that the City identify long-term dedicated funding streams to support energy and climate action.



Implementation of climate actions, whether imposed by Federal, State or local law, or from voluntary community action at a level commensurate with achieving Oakland's 36% GHG reduction target, may result in potential reductions in revenues to the City associated with decreased energy and fuel consumption (e.g., Utility Consumption Tax, Alameda County Transportation Improvement Authority [Measure B-ACTIA], State Gas Tax). Conversely, an influx of new revenues may result from the creation of new green business activities (e.g., business tax and sales tax revenue associated with energy retrofit work performed, green business attraction, local job creation associated with implementation activities). It is beyond the scope of the ECAP to estimate net costs and benefits associated with achievement of the 36% GHG reduction target.

Cost to Oakland Community and Stakeholders

In addition to resources required by the City to support implementation, achieving the 36% GHG reduction target will require complementary action throughout the community in many areas. For example, the City may develop and offer programs assisting property owners in improving energy efficiency of their buildings. In most cases, those property owners would require additional resources to implement the upgrades. In another example, the City would require resources to participate in the development of a Public Transit Master Plan for Oakland. AC Transit would also require significant additional resources to increase the frequency of its service and provide amenities needed to foster significant increases in ridership.

It is beyond the scope of the ECAP to project total implementation costs that might be borne by the greater Oakland community in the course of taking primarily voluntary action at the level necessary to achieve a citywide GHG reduction of 36%. However, these costs would clearly be significant. For example, it is estimated that performing voluntary energy upgrades to 30% of Oakland's residential properties would cost on the order of $400 million. Much of this work has the potential to create significant cost savings for property owners and/or tenants, and some households could experience a net positive cash flow. However, identifying resources to support initial implementation costs is a significant barrier to implementation. ECAP actions (e.g., working with partners to expand financing options) are identified to help overcome such barriers, but cannot fully remove the need for resources.

Potential Funding Opportunities

Through a variety of partnerships, Oakland has been successful in receiving resources to support new energy and climate programs. These programs include support for residential energy retrofits and expanded weatherization services, downtown commercial energy retrofits, and the launch of a new downtown free shuttle.

Opportunities to seek funds are available. Assuming that capacity to seek funds exists, Oakland will continue to be competitive. Examples of funding sources the City should continue to explore include:

- State and Federal energy grants
- Air District & CA Air Resources Board grants
- Foundation support
- Emerald Cities Collaborative support
- Federal appropriations
- HUD Sustainable Communities planning grants
- EPA Climate Showcase Communities grants
- State and Federal transportation funds
- MTC directed regional transportation dollars
- Additional ARRA funding opportunities
- Regional gas tax/green investment fee
- Surcharges on GHG intensive energy use
- Parking rates
- Landfill disposal fees
- Federal tax credits
- EPA Clean Water Revolving Loan Fund
- Reformulated Gasoline Settlement Fund
- Development impact fees
- Permit fees
- Tax increment financing

Considerations of Job Quality and Economic Development in Implementation

Climate action by the City and complementary action by the Oakland community have the potential to foster significant green job creation and green economic development in Oakland. The City encourages the expansion of local green job training programs to help provide the workforce needed to achieve these goals. The City also encourages private employers to ensure that these are high quality, living wage jobs offering green career pathways for local residents. The City will continue to support these objectives by applying existing living wage, local hire and prevailing wage policies to its programs and projects.

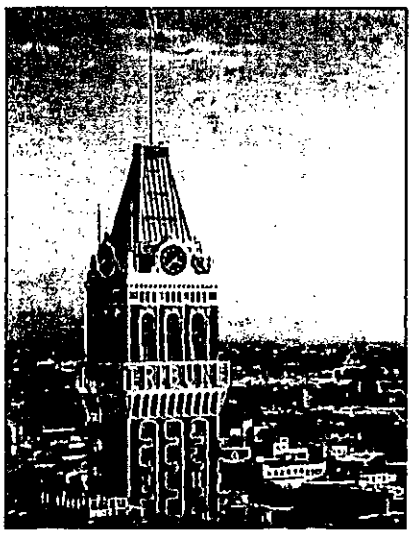
Tracking and Reporting on Progress

The City will report on the status of priority actions and key performance metrics on an annual basis beginning one year after ECAP adoption. In addition to annual reports to City Council, reporting will be delivered through a variety of dissemination methods to various interest groups and stakeholders. Multiple actions identified in the Community Engagement section of Chapter 5 will serve as additional vehicles for reporting on implementation progress.

Oakland's success in reducing energy use and GHG emissions will be measured using the following, primarily citywide annual metrics. While not an exhaustive list, these metrics will enable evaluation of Oakland's progress as implemented actions reduce GHG emissions while creating a healthier, more equitable, and more economically vibrant Oakland.

Key Performance Metrics

- Vehicle miles traveled in Oakland
- Residential electricity consumption
- Residential natural gas consumption
- Commercial/industrial electricity consumption
- Commercial/industrial natural gas consumption
- Tons of waste sent to landfill



Secondary Performance Metrics

Transportation and Land Use

- Gallons of petroleum fuel consumed
- Percent of mode share represented by each form of transportation
- Miles of identified bikeways
- Number of bicycle parking spots
- Percent of Oakland residents living within ½ mile of major bike lane
- Total number of transit passenger miles traveled
- Total number of bus service hours
- Total miles of bus lines
- Average bus travel time for representative routes
- Revenue generated by transportation impact fees
- Funding allocated to transit projects (all sources)
- Average installed parking of new development
- City fleet fuel consumption

Building Energy Use

- Number of low-income residential units served by weatherization assistance programs
- Number of homes participating in residential retrofit programs
- Number of properties utilizing property-assessed energy financing
- Number of commercial and industrial buildings participating in energy rebate programs
- Percent of electricity from RPS-compliant renewable energy sources
- Percent of electricity from carbon-neutral sources
- Amount of energy (kWh and therms) generated from local renewable sources
- Amount of energy (kWh and therms) consumed by City operations
- Amount of electricity (kWh) generated at City facilities

Material Consumption and Waste Reduction

- Tons of waste landfilled
- Tons of material recycled by City franchisees or contractors
- Tons of organic material composted by City franchisees or contractors
- Amount of construction and demolition (C&D) debris diverted from landfills
- Amount of solid waste generated by City operations

Community Leadership

- Number of individuals pledging to take and/or reporting climate actions

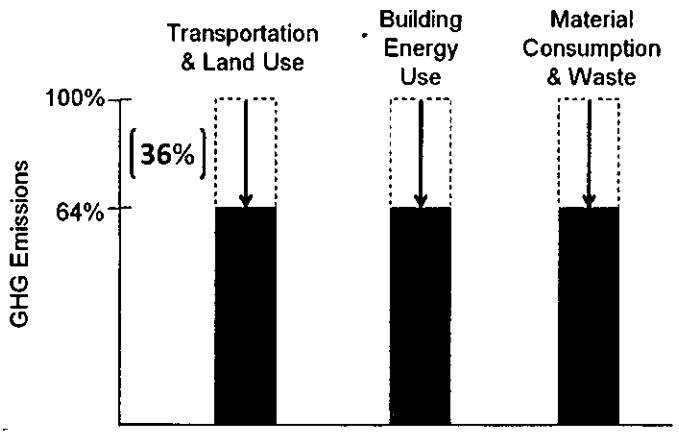
Chapter 3. A Collaborative Approach
Achieving Oakland's 2020 GHG Reduction Goal

Achieving a 36% reduction in citywide GHG emissions by 2020 will require a collaborative effort between government, business, and residents. This effort will require unprecedented action to address all three of the major sources of GHG emissions:

- Transportation & Land Use
- Building Energy Use
- Material Consumption & Waste

For the purpose of developing the draft ECAP, Oakland's 36% GHG reduction goal is applied to each of these three categories of GHG emission sources. This level of GHG reduction can be accomplished by 2020 by achieving the following targets:

Figure 6. Applying the 36% GHG Reduction Goal in Each Emissions Source Category



20% reduction in vehicle miles traveled annually as residents, workers and visitors meet daily needs through transit, walking, and bicycling

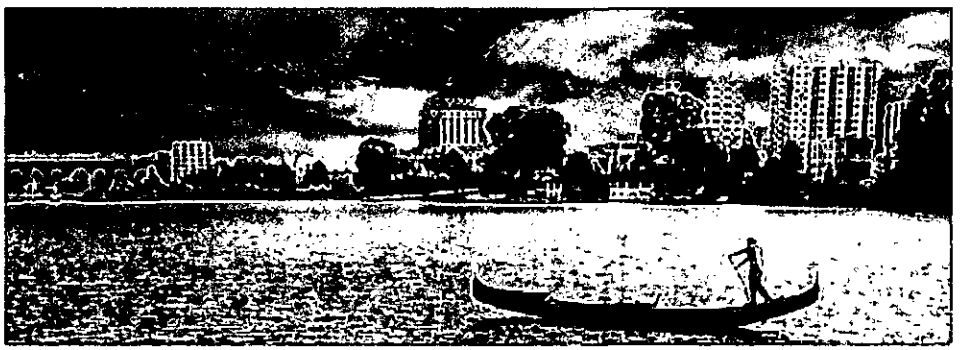
24 million gallons of gasoline and diesel saved annually on local roads due to less driving and more fuel efficient vehicles

32% reduction in annual electricity consumption through conservation and energy efficiency in homes and businesses

14% reduction in annual natural gas consumption through retrofits to Oakland's homes and commercial buildings and aggressive conservation

62 million kWh and 2.7 million therms of renewable energy production annually from local solar panels and other renewable energy technologies

375,000 tons of waste diverted annually away from local landfills through waste reduction, reuse, recycling, and composting



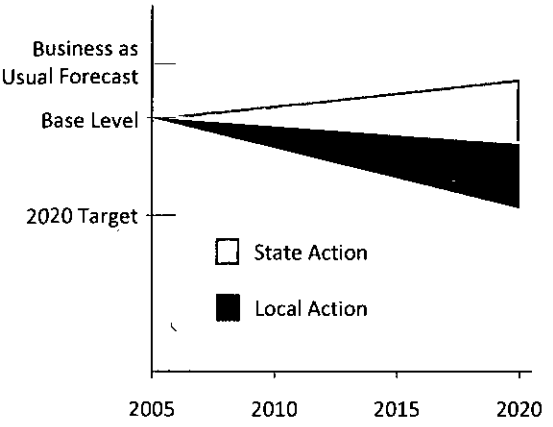
Role of Federal, State, Regional Partners

The ECAP is intended to complement actions taken by federal, state and regional governments to address the threat of climate change.

The Federal government has begun to take an increasing interest in solving the challenge of climate change. President Obama issued an executive order in 2009 calling for GHG reductions in Federal government operations.[iv] The U.S. Environmental Protection Agency has also begun to take steps to recognize GHG emissions as an environmental problem.

In California, recent climate policies adopted at the State level (e.g., AB 32, SB 375) aim to reduce statewide GHG emissions to 1990 levels by 2020.[v] Executive Order S-3-05 issued by Governor Schwarzenegger calls for statewide GHG reductions of 80% below 1990 levels by 2050.[vi]

Figure 7. A Collaborative Partnership to Achieve Oakland's GHG Reduction Goals

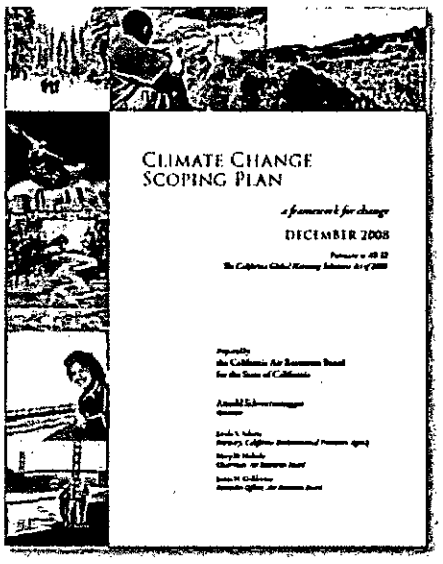


In December 2008, the California Air Resources Board (CARB) adopted the Climate Change Scoping Plan, outlining a variety of State-driven strategies to help achieve these statewide goals.[vii] Complementary and supplemental local actions will be needed to help reach these goals. Among the strategies contained in the CARB Scoping Plan are: vehicle fuel efficiency and low carbon fuel standards; energy efficiency standards for buildings; aggressive renewable portfolio standards for electricity generation; hybrid vehicle support; high speed rail; industrial sector energy efficiency measures; growing sustainable forests; and recycling and waste measures. While some of these strategies may not affect Oakland, most will have some impact in Oakland and are considered in the context of developing local GHG reduction targets and plans to meet the targets.

State policies are projected to result in significant progress toward Oakland's 2020 GHG reduction goal.

Some of the State-driven strategies, such as requiring the sale of more fuel-efficient vehicles and lower carbon fuels, are projected to reduce GHG emissions in Oakland without imposing new burdens on local government. Other State strategies outline goals for reducing GHG emissions that will only be met if action is taken by local governments and communities.

For the purpose of quantifying GHG emissions and needed reductions, projections of Oakland's 2020 GHG emissions have been adjusted based on projected changes in population, economic activity and vehicle miles traveled.[viii] These projections also assume implementation of State-driven strategies that will not require additional local government action. Achievement of other State-defined goals requiring local action is not assumed without the implementation of actions recommended in this draft ECAP.



The role of regional partners in achieving Oakland's future GHG reduction goals is very significant. Regional partners such as the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) are working to reduce emissions through development of regional housing allocations for Bay Area cities, transportation plans, and priority development areas. Several strategies that hold promise would require new regional action by a regional body or the collective action of all the cities and counties (see page 81 for examples).

Role of City Government and Local Action

The primary purpose of the ECAP is to identify and prioritize actions the City can take to reduce energy consumption and GHG emissions associated with Oakland. The ECAP also tells the story of action the Oakland community would need to take in partnership with the City to achieve a 36% reduction in GHG emissions.

The City of Oakland can provide leadership and leverage, and can play an important role in helping to reduce citywide energy use and GHG emissions. The City can enact new policies; develop new plans, programs and projects; and help to educate and motivate additional community progress.

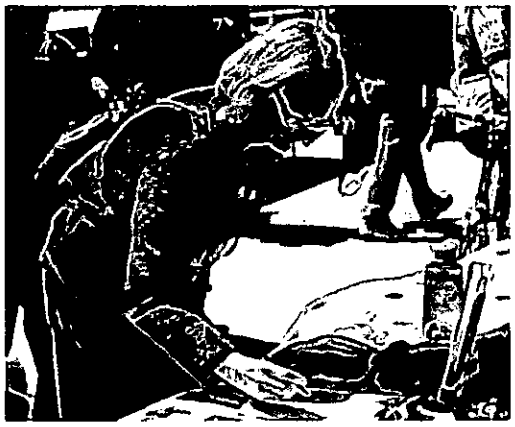
For example, land use and transportation plans developed by the City can help to orient new development around transportation networks that reduce dependence on automobiles and associated GHG emissions. Examples of relevant City planning documents include: the General Plan Land Use and Transportation Element and Housing Element; the Zoning Code; and the Bicycle and Pedestrian Master Plans.

City policies and programs can help to reduce energy use associated with residential and commercial buildings as well. For example, the City's proposed Green Building Ordinance for Private Development would help to ensure that new residential and commercial buildings and rehabilitations of existing buildings are designed to achieve high levels of energy efficiency and green performance.

The City has significant influence over GHG emissions associated with materials and waste through its solid waste management programs. The City's garbage franchise agreement and recycling service contracts define the type, frequency and cost of garbage, recycling and compost collection services, and can be tailored to keep more materials out of landfills.

The City also has an important role to play in educating and motivating all members of the Oakland community to join in the effort to reduce energy use and GHG emissions. The City can encourage voluntary action, promote model local practices, provide opportunities for new ideas from the community to further strengthen local efforts, and track and report on Oakland's progress in reducing energy use and GHG emissions.

Achieving a 36% reduction in GHG emissions will require unprecedented leadership by the City and all members of the Oakland community



Leadership from local businesses, non-profit organizations, civic groups and others will be essential to achieving Oakland's 36% GHG reduction target. As champions connected throughout the Oakland community, these organizations can help to build a movement around local climate action.

Oakland's success in reducing GHG emissions will ultimately depend on the day-to-day decisions of individuals. For example, achieving a 36% GHG reduction target will require all members of the community to drive an average of 20% less by walking and biking for neighborhood trips, using public transit, combining trips, and telecommuting where possible. Thirty percent of Oakland's homes and businesses will need to undergo energy improvements. Local service providers (e.g., PG&E, AC Transit) will play key roles in enabling individuals to make choices that reduce GHG emissions. These and other organizations will have a big role to play in creating interest and encouraging action throughout the community.

Community Climate Action Guide

Achieving significant GHG reductions will require everyone in the Oakland community working together. Below are ideas to consider as you help to reduce your own climate footprint as a resident, employee, or visitor to Oakland. To view more ideas, download a stand-alone copy of this guide, and access tools for calculating your own carbon footprint, visit the City's website at www.sustainableoakland.com.

First Steps

Greening Your Home

- Try adding a layer before turning on the heat
- Plug all appliances into powerstrips and turn off the strips when not in use
- Replace incandescent light bulbs with compact fluorescent bulbs
- Choose ENERGY STAR labeled appliances
- Insulate your water heater
- Lower the water heater temperature
- Install and use a clothesline
- Install weather stripping around external doors
- Conserve water with water-efficient showerheads and faucets

Getting Around

- Switch one work commute trip per week to biking, walking, taking transit or telecommuting
- Accomplish at least two neighborhood trips per week by biking or walking
- Plan out non-work trips in advance and combine where possible
- Carpool with neighbors, co-workers

Consume Less, Waste Less

- Recycle all eligible materials
- Bring your own bag for shopping
- Purchase durable goods made from recycled materials
- Avoid excessively packaged goods
- Shop at local farmers markets
- Eat meat at one less meal each week

Lead the Way

- Educate your family and establish green family practices
- Discuss action opportunities with neighbors, such as lowering water heater temperature, hiring an energy improvement contractor, or biking to work one day per week
- Discuss safe routes to school, transit, etc with neighbors and help create a safe street environment

Bigger Steps

Greening Your Home

- Have a home energy audit done and take actions that will pay for themselves within 5-10 years
- Look for opportunities to include passive solar design to minimize winter heating needs in new building or remodeling projects
- Collect rainwater for outdoor water needs
- Plant trees on your property
- Plant water-efficient landscaping, including smart controllers (See Bay Friendly Guidelines)
- Consider living arrangements (co-housing) that can yield lower per capita energy use

Getting Around

- Purchase a fuel-efficient vehicle
- Purchase a bike and ride it often
- Choose to live where automobile dependence can be minimized (e.g., near transit, work, school, shopping)
- Try not owning a car
- Fly less often for business; try web meetings & video conferencing

Consume Less, Waste Less

- Repair and reuse goods whenever possible
- Adapt used materials for new purposes (e.g., mason jars for cups)
- When shopping in stores, look for options in Oakland first
- Plant a garden to grow your own food
- Freeze, can, dry and preserve seasonal fruits and vegetables
- Go vegetarian

Lead the Way

- Become a mentor to other members of the community
- Become a community resource and share your skills and experience with others taking local climate action

Chapter 4

Leveraging Near-Term Opportunities and Laying the Groundwork for Long Term Progress:

The Three Year Priority Implementation Plan

It is important for the City to prioritize its efforts carefully, and to get started promptly on implementing the highest priority recommended actions when the necessary resources are available. This chapter presents a Three Year Priority Implementation Plan for making progress toward Oakland's 36% GHG reduction target.

The Three Year Priority Implementation Plan is divided into two sections:

- **Priority actions supported by existing resources**
- **Priority actions requiring new resources**

In each section, recommended priority actions are grouped into the three primary GHG reduction categories, along with a set of highlighted community engagement recommendations, and steps to assist Oakland in adapting to climate change, in the following order:

- Transportation & Land Use
- Building Energy Use
- Material Consumption & Waste
- Community Engagement
- Climate Adaptation & Increasing Resilience

Priority actions recommended using existing and anticipated resources are summarized with descriptions of current implementation status. Priority actions recommended for implementation that will require new resources include estimates of resource needs along with recommended implementation responsibility if resources become available.

All recommended priority actions are also included in Chapter 5, which provides a summary of all actions required for Oakland a 36% reduction in GHG emissions by 2020.

Priority Actions Supported by Existing Resources

During the next three years (2010-2013), the City will implement a prioritized set of recommended actions for which resources are available. These recommended actions can be implemented using existing or anticipated resources, including anticipated grants from the California Energy Commission (CEC) State Energy Program, supported by the American Recovery and Reinvestment Act (ARRA). Some of these actions are in progress.

These priority actions will create GHG reduction benefits and lay the foundation for future actions that can create additional GHG reductions in the coming years. Additional resources to continue and/or expand these actions beyond the next three years, as well as to implement additional energy and climate actions, will be necessary to achieve Oakland's 36% GHG reduction goals.

How to Read This Section

Each action below is presented through a standard format containing each of the following elements.

Priority Action identifier

Brief summary of the recommended priority action

Brief action statement

PA 1. Identify Priority Development Areas

(TLU-5) Obtain Priority Development Area status from the Association of Bay Area Governments for all appropriate areas of Oakland to enable more competitive eligibility for local transportation and infrastructure funding.

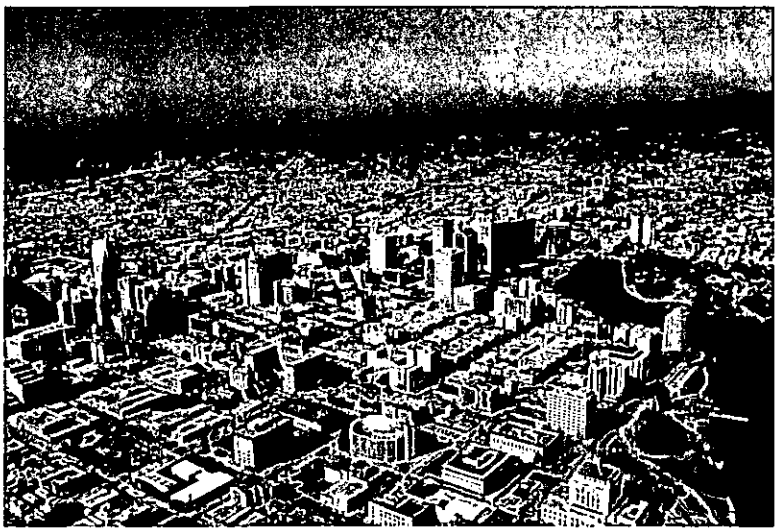
Reference to where action appears in the 2020 list in Chapter 4

Description: *Description of the action*

Responsibility: *Division or Agency responsible for implementation of the action*

Status: *Current implementation status of the action*

☆ The star icon shown at left indicates actions in the Three Year Priority Plan that can move forward in a substantive way during the next three years. Some of these actions can be accomplished with existing resources and staffing levels, while others will benefit from anticipated external funding such as recently awarded Stimulus funds.



Transportation and Land Use

Combustion of fossil fuels for transportation is a major source of GHG emissions associated with Oakland, as well as throughout California. This includes people moving to and from home, work, school, shopping, recreation, and other destinations, as well as the transport of goods. Other local air pollutants linked to increased incidence of health problems such as asthma and cancer also commonly result from use of transportation fuels.

Addressing transportation emissions presents a tremendous opportunity to simultaneously reduce GHG emissions and improve the health of Oakland residents. Efforts to reduce GHG emissions from the transportation sector also pose the opportunity to create a more equitable, sustainable, affordable and healthy Oakland by addressing the interconnection between land use and transportation. How and where housing, jobs, shopping, and other opportunities are located has a fundamental effect on both GHG emission and on the choices that people have for meeting their daily needs.

A number of tools are available to help the City reduce GHG emissions associated with transportation and land use. These include: land use and transportation planning; providing interconnected bicycle and pedestrian options; tailoring parking policies to reduce vehicle trips; supporting affordable, safe and reliable public transportation options; promoting fuel-efficient vehicles and low-carbon fuels; partnering with the Port of Oakland to reduce Port-related emissions; engaging employers to reduce commute and business trips; promoting urban forestry; and improving the City vehicle fleet.

Oakland has made progress in a number of these areas, embracing a variety of climate-friendly development principles in the City's General Plan, focusing new development around transit hubs, adopting forward-thinking Bicycle and Pedestrian Master Plans, and adopting a Clean Fleets policy aimed at improving the fuel efficiency of the City's vehicle fleet.

A number of other actions currently underway or planned for implementation are recommended for completion in the next three years. These actions include:

- Identify and Adopt Priority Development Areas in Oakland
- Launch and Develop a Funding Plan for the Downtown Shuttle
- Advance Bus Rapid Transit in Oakland
- Participate in Quarterly SB 375 Planning Discussions

Following are descriptions of each of these actions, along with information regarding implementation status.

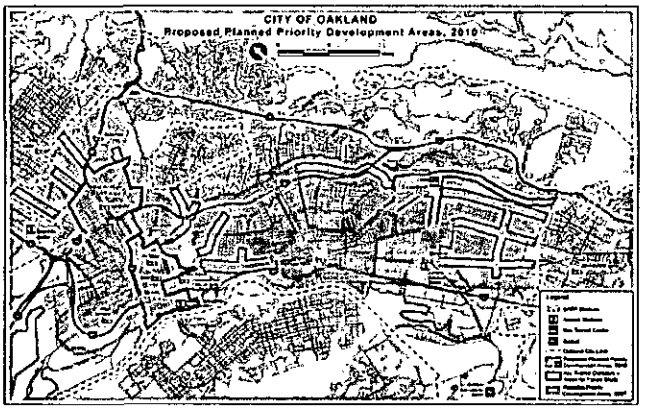
Priority Actions

PA 1. Identify and Adopt Priority Development Areas

(TLU 6) Obtain Priority Development Area (PDA) status from the Association of Bay Area Governments for all appropriate areas of Oakland to enable more competitive eligibility for local transportation and infrastructure funding.

Description: Identifying Priority Development Areas in Oakland will help the City secure resources for local transportation and infrastructure improvements. PDA designation is awarded through the FOCUS Program (a regional development and conservation strategy), led by four regional agencies: the Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC), Bay Area Air Quality Management District (BAAQMD) and the Bay Conservation and Development Commission (BCDC). The FOCUS Program and the PDA designation have the primary goal of encouraging growth near transit and in the existing communities that surround transit by enhancing

existing neighborhoods and providing good housing and transportation choices for all residents. This includes an explicit focus on promoting housing that will be affordable to low-income residents and attempts to minimize the displacement of existing residents.



Designated PDAs will become eligible to receive not only planning and technical assistance but capital funding from various sources including the Station Area Planning Grant Program, the Regional Transportation Plan (Transportation 2035), the Transportation for Livable Communities Program, Environmental Justice grants, Green Infill - Clean Storm water grants, the Proposition 1C: Transit Oriented Development Housing Program and Infill Infrastructure Grant Program, the Transportation Fund for Clean Air grant program, and other State and regional programs.

City Council has approved an application for designation. Follow-on grant applications will need to be focused on infrastructure, transportation, and housing for a range of income levels for transit-oriented development areas and corridors.

Achieving PDA designation of previously designated transit-oriented areas will be accomplished under existing Resources. An additional 0.25 FTE for a grant writing professional would augment Oakland's capacity to apply for, and chances of receiving, more above-mentioned future funding.

Responsibility: Transportation Services, Strategic Planning, Redevelopment

Status: City Council approved staff recommendations regarding the identification of Priority Development Areas in February 2010. ABAG subsequently approved these recommendations. Staff is now working to align proposals to make Oakland competitive for future transportation, infrastructure and housing funding streams.

PA 2. Launch and Develop a Funding Plan for the Downtown Shuttle

(TLU-13) Launch and sustain a downtown free shuttle to increase transit use in the downtown area. Explore options to expand the shuttle up the Broadway corridor.

Description: The City launched a new downtown shuttle serving the Broadway corridor from Jack London Square to the Uptown area. Rides on the shuttle are free to the public. The shuttle is projected to create a net reduction in GHG emissions by reducing the need for private automobile trips. The shuttle will also benefit downtown merchants.

The launch and initial operating phase of the shuttle is supported by a grant from the Bay Area Air Quality Management District. Funding is in place to support the operation of the shuttle for a two-year period. During this time, the City will work to develop a long-term

funding strategy to sustain the shuttle beyond the grant period, including development of a "fair share" methodology for assigning a portion of the costs to new development.

Existing staff resources are sufficient to support the launch of the shuttle. Additional resources may be needed to perform urban economic analysis, outreach and strategy development to create an ongoing sustainable funding stream beyond the grant period.

Responsibility: Transportation Services, Economic Development

Status: The shuttle began operations in summer 2010.

PA 3. Advance Bus Rapid Transit in Oakland

(TLU 14) Support implementation of bus rapid transit (BRT) in Oakland along the Telegraph Avenue and International Boulevard corridors while minimizing short-term potential impacts to neighborhoods and businesses.

Description: Establishing new dedicated transit service will be critical to reaching our emissions goals and fostering shifts from automobile travel to transit. Bus rapid transit offers a significant opportunity to make transit easier, faster, more reliable and more convenient. The City has an opportunity to work with AC Transit to establish a BRT system on these routes in Oakland.

Existing staff resources and consulting assistance, which have been supported by funding from AC Transit, have been sufficient to analyze the proposed BRT options for Oakland. AC Transit is currently completing the Final Environmental Impact Statement / Report on the project, which will define potential mitigations to address traffic and parking impacts. Once that document is released, City Council will be asked to vote on the project.

Based on its experience with this initial BRT project, the City should consider other opportunities to advance BRT as a local and regional strategy.

Responsibility: Transportation Services / Infrastructure Planning & Programs

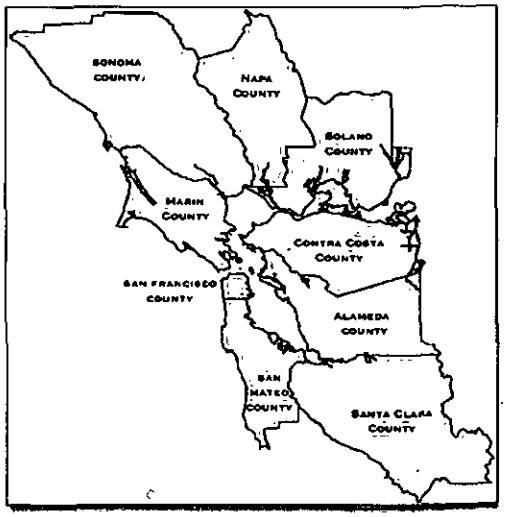
Status: Staff is working with AC transit to review the impacts and mitigations of the proposed project, and will be bring the refined project to the City Council for a vote in early 2011.

PA 4. Participate in Quarterly SB 375 Discussions

(TLU-1) Participate in development of the Bay Area Sustainable Community Strategy for reducing vehicle travel in compliance with SB 375, including defining Oakland's role in achieving regional jobs-housing balance and land use and transportation system integration.

Description: Senate Bill 375, adopted in 2008, established a new framework for reducing GHG emissions throughout California through attention to land use and transportation planning issues. SB 375 requires metropolitan regions of the state to each develop a Sustainable Community Strategy (SCS) demonstrating how each region will reduce vehicle miles traveled, and therefore contribute to GHG reductions. The SCS also presents an opportunity to improve coordination between regional transportation and housing planning.

Under the leadership of the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), partners in the Bay Area will be developing an SCS for the Bay Area over the next 2-3 years in compliance with SB 375 mandates. This regional planning process can play a significant part in reducing transportation-related GHG emissions in Oakland and throughout the region. Oakland's participation in this process will help to ensure that outcomes reflect the housing and transportation needs of the city's residents and businesses, and that future regional planning



and infrastructure funds are allocated in proportion to the amount of growth directed to Oakland and other regional centers.

Expected roles of local government and opportunities to engage in this planning process remain unclear. Staff currently has the resources to participate in quarterly conference calls to stay up to date on how the process of developing the Bay Area SCS is unfolding. Further engagement or action would require additional staff resources.

Responsibility: Transportation Services, Strategic Planning, Housing and Community Development

Status: Staff is currently able to participate in quarterly conference calls to follow regional action related to SB 375 and development of the Bay Area Sustainable Community Strategy.

PA 5. Call for Port of Oakland GHG Reduction Targets and Plans

(TLU 37) Call upon the Port to establish GHG reduction goals associated with Port operations in alignment with the City's GHG reduction target of 36% below 2005 emissions by 2020, and to create plans for achieving those goals.

Description: The Port of Oakland can demonstrate additional leadership in advancing GHG reductions by establishing GHG reduction goals associated with Port operations, and plans for achieving those goals. The Port has developed GHG emission inventories for its own operations, and has taken a number of actions toward reducing those emissions. By establishing a comprehensive GHG reduction plan based on a goal in alignment with the City's GHG reduction target of 36% below 2005 emissions by 2020, the Port can continue to demonstrate its leadership, and provide a model of operational improvements for its tenants.

The Port of Oakland is a department of the City of Oakland. However, the Charter of the City of Oakland vests the Board of Port Commissioners with exclusive control and management of the Port Department. Port Commissioners are nominated by the Mayor and appointed by the City Council.

The City has sufficient existing resources to call upon the Port as described above. The Port would require separate resources to take the actions described here.

Responsibility: Elected Officials

Status: The City and Port maintain dialogue on these issues via the City-Port Liaison Committee and peer-to-peer staff level discussions.

PA 6. Call for Climate Action by Port Tenants

(TLU-38) Call upon the Port to establish GHG inventories and reduction goals associated with tenant activities, and plans for achieving those goals with appropriate tenant commitments, potentially including requiring specific high-impact GHG reduction measures (e.g., electrification of land-based aviation equipment and maritime vessels).

Description: Beyond the Port's own operations, GHG emissions associated with tenant activities at the Port can also be significant. Through relationships with its tenants (e.g., lease agreements), the Port can advance additional GHG reductions associated with tenant activities.

Responsibility: Elected Officials

Status: The City and Port maintain dialogue on these issues via the City-Port Liaison Committee and peer-to-peer staff level discussions.

Building Energy Use

Energy used to heat, light and power Oakland's buildings and for outdoor lighting is also a major direct source of GHG emissions. Natural gas consumption is the largest source of GHG emissions related to buildings, followed by emissions from power plants that supply Oakland's electricity.

A number of methods are available to the City to reduce GHG emissions from building energy use. These include: optimizing energy efficiency in new construction; retrofitting existing buildings to reduce energy consumption; promoting energy and water conservation and efficiency; advancing the use of renewable energy; and improving the energy performance of municipal facilities. Oakland's greatest opportunities lie in retrofitting the city's existing building stock.

Oakland already has made progress in a number of these areas, adopting a green building ordinance for civic buildings, implementing energy retrofits in most of the City's existing 100 largest facilities, working with partners to guide implementation of East Bay Energy Watch programs delivering energy efficiency services to local businesses, promoting green building construction, installing more than six megawatts of solar electric panels, and working with partners to submit successful proposals for Stimulus grants to support new programs.

A number of other actions, currently underway or planned for implementation, are recommended for completion in the next three years. These actions include:

- Adopt a Green Building Ordinance for Private Development
- Offer Property Based Energy Financing
- Launch a Downtown Commercial Retrofit Program
- Launch a Residential Green Retrofit Program
- Conduct a Multi-Family Affordable Housing Retrofit Pilot
- Expand Weatherization Program Delivery
- Weatherization and Energy Retrofit Loan Program
- Implement Advanced Operating Procedures for City Facilities
- Retrofit City Facilities to Improve Energy Performance

Following are descriptions of each of these priority actions, along with information regarding implementation status.

Priority Actions

PA 7. Adopt a Green Building Ordinance for Private Development

(BE-1) Adopt a green building ordinance for residential and commercial private development new construction projects
& requiring high levels of energy performance.
(BE-3) Include all significant renovation projects in the proposed green building ordinance for residential and commercial
☆ private development projects requiring high levels of energy performance.

Description: By adopting a green building ordinance for private development, Oakland has the opportunity to ensure that new construction and major renovation projects are constructed in a manner that

reduces future operational energy and water use, transportation and waste disposal impacts, and associated GHG emissions. Such a policy can build from the City's existing Civic Green Building Ordinance and adopted green building standards for new affordable housing developments receiving funds through the annual housing Notice of Funding Availability.

Development of a draft green building ordinance for private development has been underway for more than a year. A number of workshops have been held to gather public and targeted industry input on the proposed ordinance, including affected building types, thresholds and requirements, and implementation process. Existing staff resources continue to be sufficient for development of the ordinance, though implementation may require additional training for select City staff, as well as the creation of new compliance guidance documents and process adjustments.

Once the ordinance is adopted, implementation tasks will include: updates to related content on the City's website (e.g., the ordinance, FAQs, links to helpful information); updates and maintenance of application forms and process documents; creation of a how-to manual for the public and training manual for City personnel; and development of compliance monitoring and enforcement procedures. All building and planning staff will need to receive additional training to supplement green building code training provided recently with ARRA funding support. Building inspectors will also receive training tailored for energy "raters" to maximize understanding of how to work with third-party raters. Refresher courses are expected to be available from third-party organizations (e.g., StopWaste.Org) at no cost to the City.

Responsibility: Planning, Building Services

Status: The City adopted the Green Building Ordinance in October 2010.

PA 8. Offer Property-Based Energy Financing

(BE-4) Offer property-based financing and associated outreach for energy efficiency and solar improvements to residential and commercial property owners in Oakland, supported by ARRA funding.

☆

Description: Starting in 2010, Oakland building owners will have a new way to pay for energy and water efficiency and solar energy improvements to their commercial and residential properties. Property owners who enroll in the voluntary CaliforniaFIRST program will be able to receive upfront financing for authorized energy upgrades through a loan that stays with the property. Participants will repay the loan over a 10-to-20 year period as a line item on their property tax bill. By choosing cost-effective energy upgrades, property owners may be able to reduce their utility bills by an amount greater than the loan repayment obligation, creating a net positive cash flow while greening their facilities.

The California FIRST financing program will help to enhance the effectiveness of other commercial and residential energy efficiency and solar programs. Property-based financing is anticipated to expand the number of retrofit projects and to encourage many projects to seek deeper levels of energy savings. California FIRST will be augmented during the next three years by an anticipated grant from the California Energy Commission's (CEC) State Energy Program. This grant will cover program setup costs and buy down interest rates to make the financing more attractive to property owners.

The City has no formal role in the administration of the CaliforniaFIRST financing program. City staff will however continue to advise development of the program and will assist in marketing and outreach with partner agencies.

Responsibility: Environmental Services, Planning, Building Services

Status: The City is participating in efforts to develop and launch the CaliforniaFIRST program on a statewide basis. The launch of this program has been delayed due to concerns expressed by the secondary lending market. Efforts are currently underway by program partners to resolve remaining barriers and establish the program, but no timeline for program launch is currently available. The City will promote CaliforniaFIRST through available channels once the program has launched.

PA 9. Launch a Downtown Commercial Retrofit Program

(BE-10) ☆ Offer enhanced incentives and technical assistance through the "Oakland Shines" program to help downtown commercial property owners improve energy efficiency, supported by ARRA funding.

Description: Oakland's 120-block downtown area is targeted for energy upgrades through concentrated outreach, technical assistance and hefty rebates for energy efficiency improvements. "Oakland Shines" will emphasize improvements to Class B buildings as part of its goal to reach 80% of businesses in downtown Oakland. Energy efficiency upgrades can help building owners reduce energy use and costs, and make their buildings more attractive to tenants.

"Oakland Shines" is funded by a $4.8 million ARRA grant. It will be administered by a team of local energy consulting firms.

Responsibility: Economic Development, Environmental Services

Status: The CEC is issuing contracts. It is anticipated that this program will launch in January 2011.

PA 10. Encourage Participation in Local Energy Efficiency Programs

(BE 11) ☆ Encourage local small businesses and residents to participate in local energy efficiency programs offered through the East Bay Energy Watch regional collaboration between PG&E and East Bay cities.

Description: The City will encourage businesses to improve building energy performance by an average of 20% by enrolling in local energy efficiency programs such as Smart Lights and taking advantage of other PG&E programs and incentives for energy improvements. Smart Lights is administered as a component program of East Bay Energy Watch, a collaborative partnership program offered by PG&E and several East Bay cities. The Smart Lights program facilitates cost-effective lighting efficiency improvements for retail and small businesses in Oakland, offering expert advice and coordinating lighting retrofit implementation.

In addition to Smart Lights, the East Bay Energy Watch program also supports youth training in energy efficiency and offers entry-level residential energy efficiency services through its work with California Youth Energy Services (CYES).

Responsibility: Environmental Services

Status: The City is currently collaborating with East Bay Energy Watch; working with program administrator Quantum Energy Services and Technologies, PG&E, SmartLights, CYES and other East Bay Cities to guide delivery of the program.

PA 11. Launch a Residential Green Retrofit Program

(BE-18) Launch "Energy Upgrade California in Alameda County", a new energy retrofit program to improve energy efficiency of existing single-family and multi-family residential properties, supported by ARRA funding.

Description: Under the leadership of the Association of Bay Area Governments and StopWaste.Org, Oakland is partnering with other local governments and agencies throughout Alameda County and across the region to develop a new residential green retrofit program. This program will foster energy efficiency, water conservation and other green improvements of existing single-family and multi-family residential properties in Oakland and throughout Alameda County. The program will perform outreach to promote green improvements; provide green construction technical guidance; create a green contractor certification system; connect homeowners, landlords and tenants with financing options (e.g., property-based financing); and providing quality assurance support. The program will also promote the value of third-party certification of energy and green building improvements.

This program was seeded by contributions from local governments throughout Alameda County in 2009. The funding enabled the development of green building technical guidance for single family residential retrofits. The CEC State Energy Program is funding the current activities of Energy Upgrade California in Alameda County. City staff will participate in a regional coordinating committee to optimize program design and will help to promote the program within Oakland.

Responsibility: Environmental Services, Planning, Housing & Community Development

Status: The City is participating in the regional effort including discussions, reviewing draft documents and coordinating the program with other City efforts. This program is scheduled to launch in winter 2010/11.

PA 12. Conduct a Multi-Family Affordable Housing Retrofit Pilot

(BE-19) Create an energy retrofit pilot program targeting multi-family affordable housing by providing funds to reduce risk and enable the acquisition of private investment capital to implement energy savings projects, supported by ARRA funding.

Description: This innovative pilot program will provide forgivable loan funds to be repaid from anticipated energy savings to reduce risk and encourage investment of private capital in multi-family affordable housing energy retrofits. Reduced risk is expected to encourage private capital investment which, when combined with other existing incentives, will support new energy retrofits of multi-family affordable housing properties.

This pilot program will move forward with anticipated funding from a CEC State Energy Program grant. Oakland partnered on a proposal with the San Francisco Mayor's Office of Housing to develop and launch this pilot program. The program will foster energy retrofits of an estimated 400 units in Oakland by the close of 2012, improving average energy efficiency of participating units by approximately 20%. In the process, the City will participate in State and regional efforts to develop programs and protocols for implementing and evaluating energy retrofits in multi-family housing.

Responsibility: Housing and Community Development

Status: The City is refining the program implementation plan with the partner cities and affordable housing project stakeholders. The program is expecting to begin soliciting private capital in fall 2010.

PA 13. Expand Weatherization Program Delivery

(BE-20) Augment delivery of the existing federal Weatherization Assistance Program with supplemental ARRA funds designated for retrofitting additional homes in Oakland over the next three years.

Description: The City will expand the number of homes in Oakland receiving energy- and cost-saving weatherization services during the next three years. Several hundred low-income homes already receive weatherization assistance each year through delivery of the existing federal Weatherization Assistance Program (WAP) as well as targeted PG&E programs. The American Recovery and Reinvestment Act has recently made approximately $1.6 million of additional funding available to Oakland through 2012 for weatherization services. These funds will be used to enhance and expand delivery of weatherization services to implement energy retrofits of approximately 250 multi-family and single family homes occupied by low-income households.

Weatherization services currently offered through existing WAP programs administered by Spectrum Community Services, Inc. and the Low Income Energy Efficiency program administered by PG&E will also continue to operate.

Responsibility: Housing and Community Development

Status: The City is currently refining program implementation plans with California Community Services and Development and expects to begin offering services for low-income households by fall 2010.

PA 14. Launch the Weatherization and Energy Retrofit Loan Program

(BE-20) Create the Weatherization and Energy Retrofit Loan Program (WERLP) to provide zero-interest loans to help low-to-moderate income residents improve energy efficiency and reduce energy costs, supported by $1.8 million of ARRA Community Development Block Grant (CDBG) funds.

Description: The WERLP offers loans of $6,500 to $30,000 to owner-occupied low-income and moderate-income households. Loan funds can only be used for energy efficiency-related improvements such as attic insulation, caulking, weather-stripping, water heater insulation, energy-efficient light fixtures, furnace maintenance, energy saving appliances, and systems rehabilitation and replacement. Eligible systems include the furnace, windows, doors, water heater and roof. Loans are interest free and repaid upon sale of property without any periodic payments.

This program expects to serve 75 homes by the end of 2012, with a goal of reducing energy bills by 30% on average, while generating 108 jobs and connecting with trainees from the Oakland Green Jobs Corps. The WERLP is administered as an expanded offering of the City's Lending and Rehabilitation Services.

Responsibility: Housing and Community Development

Status: The program is active and the City is coordinating with local professionals in the building performance industry to ensure that training opportunities are available to local contractors. The City is also working to ensure that the energy retrofits are performed to industry standards.

PA 15. Create an Oakland-Specific Water-Efficient Landscaping Ordinance

(BE 29) Create an Oakland-specific Water Efficient Landscape Ordinance (WELO) to address water conservation.

Description: The City will create an Oakland-specific WELO providing citywide standards for public space that ensure stormwater retention and water conservation features are incorporated into landscaping. The Oakland-specific WELO will be designed to implement California's new model WELO and align with Bay Friendly Landscaping Guidelines.

Responsibility: Strategic Planning

Status: The City plans to begin work on this action within the next three years.

PA 16. Implement Advanced Operating Procedures for City Facilities

(BE-38) Enhance and implement standard operating procedures to improve energy efficiency in City facility operations.

☆ Description: Continuous improvement of written standard operating procedures (SOPs) is necessary to ensure that City facilities operate with superior energy efficiency. New and enhanced written SOPs will be developed through interdepartmental collaboration and added to existing standards the Public Works Agency has used successfully to sustain American Public Works Association accreditation. These SOPs will cover a range of topics including utility cost reporting, energy efficiency retrofitting, direct digital controls, lighting equipment maintenance, and photovoltaic equipment maintenance.

Responsibility: Department of Facilities & Environment

Status: The City will deliver two to four SOPs by the close of 2011.

PA 17. Improve Energy Performance of New City Facilities

(BE-39) Modify the City's Civic Green Building Ordinance to increase energy efficiency standards for new construction and major renovation of City facilities.

☆

Description: The City will modify energy efficiency requirements within the Civic Green Building Ordinance to increase energy efficiency for new construction and major renovations of municipal facilities. Enhanced requirements may include controls for limiting demand for electricity and natural gas during periods of high pricing or low power availability.

Responsibility: Environmental Services

Status: The City will propose ordinance modifications by 2012.

PA 18. Retrofit City Facilities to Improve Energy Performance

(BE-40) Perform energy efficiency upgrades to existing City facilities, supported by ARRA funding.

☆ Description: The City will retrofit existing municipal facilities to improve energy efficiency and reduce operating costs. Several energy retrofit projects have been funded by the ARRA Energy Efficiency and Conservation formula block grant. These projects include modifications to the Police Administration Building's lighting, heating, ventilating and air conditioning (HVAC) equipment; the City Administration Building automated HVAC controls; Data Center servers; and lighting systems throughout City facilities.

Responsibility: Environmental Services, Building Services

Status: The projects described above are underway now with completion expected by 2012.

Material Consumption and Waste

The manufacture, transport, use and disposal of material goods represent a major source of GHG emissions. While many of these emissions do not occur within Oakland's geographic boundaries, consumption and disposal decisions made by each member of the Oakland community play a major role in the creation of these GHG emissions.

The Oakland City Council adopted a Zero Waste Goal in 2006, calling for a 90% reduction in waste sent to landfill by 2020. The City's Zero Waste Strategic Plan outlines strategies for meeting this goal. These strategies prioritize "systems" solutions to reduce landfilled waste, and expand waste reduction, recycling and composting programs. By pursuing the City's adopted Zero Waste strategies, Oakland can help to create GHG reductions on the same order of magnitude as those related to transportation and building energy use. Because GHG emissions can affect Oakland regardless of where they are created, reducing emissions associated with materials and waste represents a significant local opportunity.

A number of tools are available to the City to reduce GHG emissions associated with material consumption and waste. These include: restructuring Oakland's municipal code, garbage franchise agreement, and residential recycling service contracts; increasing reuse, repair, recycling and composting; advocating for statewide producer responsibility legislation, and promoting local food and material choices. Replacing energy-intensive virgin resources with energy-efficient recycled resources can create significant GHG benefits and help to address global resource depletion. Composting organic wastes can help to replace emissions-intensive, petroleum-based fertilizers with carbon-capturing, water-saving compost, and reduces toxic runoff from California's farms. The Zero Waste hierarchy of reduce, reuse, recycle and compost can be viewed as a global energy efficiency program that significantly reduces the energy and other natural resources used to create consumer goods, from cars to packaging to food.

Oakland has already made progress in a number of these areas, adopting a Zero Waste Goal and Strategic Plan, offering residential curbside compost collection on a citywide basis, adopting a construction and demolition debris ordinance, and promoting responsible purchasing behaviors such as bringing your own bag and buying local and recycled-content products.

A number of other actions currently underway or planned for implementation are recommended for completion in the next three years. These actions include:

- Restructure the City's Solid Waste Management System
- Refine Implementation of the City's Construction and Demolition Debris Ordinance
- Promote Waste Reduction at Community Events
- Develop Regulations Enabling Urban Food Production

Following are descriptions of each of these actions, along with information regarding implementation status.

Priority Actions

PA 19. Restructure Solid Waste Management System

(MW-1) Restructure Oakland's municipal code, garbage franchise agreement, and residential recycling service contracts and ☆ rates structure to provide comprehensive incentives for residents, businesses, and collections service providers to reduce waste.

Description: The City has a significant opportunity to foster progress toward its Zero Waste goals and reduce GHG emissions by restructuring Oakland's solid waste management system (municipal code, rate structure, and agreements for collection, processing, and landfill). A system can be designed to provide comprehensive incentives for residents, businesses, and collection service providers to recycle more and reduce waste. These changes will help Oakland comply with anticipated future statewide mandatory recycling requirements.

This restructuring exercise may recommend adjustments to the types of materials eligible for recycling, compost, and garbage services; collection frequency; container sizes; and other issues associated with Oakland's solid waste management system. Implementation of mandatory recycling participation and/or disposal bans may also be recommended. The process will result in a system that provides waste reduction and recycling incentives not just for residents and businesses, but also for the collection, processing, transfer and landfill service providers.

The City is engaged in a Zero Waste planning process that is fully funded in this three-year planning horizon. In March 2009, the City Council adopted Evaluative Criteria for developing a new solid waste management system design that is responsive to the Zero Waste by 2020 goal.

Responsibility: Environmental Services

Status: Staff is currently preparing system options to present to City Council.

PA 20. Refine Implementation of C&D Recycling Ordinance

(MW-2) Refine implementation of Oakland's Construction and ☆ Demolition (C&D) Debris Waste Reduction & Recycling Ordinance (OMC 15.34) to capture greater amounts of materials for reuse, recycling and composting.

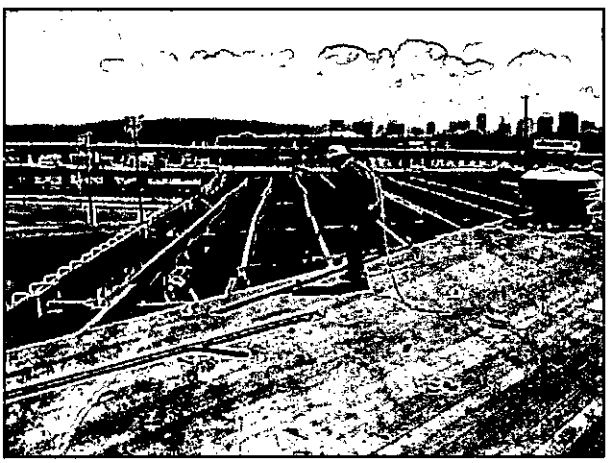


Photo: Matt Southworth

Description: The City will identify opportunities to improve implementation of the City's C&D Debris Recycling Ordinance. More effective implementation can help to capture greater amounts of materials for reuse, recycling and composting. Potential adjustments include improved administrative procedures, new or enhanced data management systems, increased internal training and outreach to affected projects, and coordination with verification requirements of a future green building ordinance for private development. Additional improvements may be aimed at broadening the definition of "affected projects," raising the diversion requirements for affected projects, and identifying and implementing creative incentive programs.

Responsibility: Building Services and Permit Center

Status: The City is currently developing outreach materials for the builder community, training materials for staff, and database modifications to improve program analysis of C&D Debris Recycling Ordinance implementation.

PA 21. Promote Waste Reduction at Community Events

(MW-3) Require development and implementation of waste reduction and recycling plans for all large venues and public events.

☆ Description: The City will require waste reduction and recycling plans as part of the event permitting process, and require recycling in agreements for City facility rentals. The City will develop and implement waste reduction and recycling plans for City-sponsored events. The City is preparing compliance guides to assist event producers and venue managers in complying with State law on large event/venue recycling, providing technical assistance for compliance and event recycling equipment where appropriate.

Responsibility: Environmental Services

Status: The City has developed drafts of guides for event and venue recycling, and work on the former is nearing completion. The City has coordinated several zero waste City-sponsored events of various sizes, including the Art & Soul Festival and Bike-to-Work Day. The City is working with its event permitting system to insert new requirements for recycling, providing technical assistance to event producers on request, lending collection containers for recycling, and testing the concepts advanced in the draft guides.

PA 22. Develop Regulations Enabling Urban Food Production

(MW-17) Develop regulations that allow for the use of urban land for food production.

☆ Description: The City will study options and develop new regulations to better allow for and regulate urban agriculture in small scale forms, civic/community gardens, and industrial forms on urban land. This analysis will explore a variety of mechanisms to enable increased local food production. Consideration will be given to issues such as soil toxicity, water access and security. The City will collaborate with the Alameda County Health Department on this effort.

Responsibility: Strategic Planning, Economic Development

Status: The City plans to begin work on this action during the next three years.

PA 23. Encourage Land Owners to Lease Space for Food Production

(MW 18) Encourage local utilities, public agencies and other large land owners to offer commercial leases to local organizations for the purpose of local food production and/or foraging.

☆ Description: The City will encourage local utilities, public agencies and other large land owners to offer commercial leases to local organizations for the purpose of local food production and/or foraging.

Responsibility: Strategic Planning

Status: The City plans to begin work on this action during the next three years.

Community Engagement

The City has an important role to play in educating and motivating all members of the Oakland community to join in the effort to reduce energy use and GHG emissions. Through its leadership and existing communication channels, the City can help to spur the high levels of community participation needed to solve the challenge of climate change, and seed opportunities for new ideas from the community to further strengthen local efforts. In addition, the City can track and report on Oakland's progress in reducing energy use and GHG emissions, and promote local examples of model practices throughout the community.

However, while the City can put Oakland in position to reduce GHG emissions, Oakland's success in meeting its GHG reduction goals will ultimately depend on the day-to-day decisions of individuals. For example, achieving Oakland's GHG reduction goals will require all members of the community to drive an average of 20% less. Everyone will need to accomplish neighborhood trips by walking and biking, using public transit, combining trips, and telecommuting when possible. 30% of Oakland's housing stock will need to undergo energy improvements, and 30% of Oakland's businesses will need to participate aggressively in energy efficiency and recycling programs. Local organizations will have a big role to play in motivating interest and action throughout the community.

The City of Oakland can foster additional voluntary community action by setting a positive example, offering a vision of needed community actions, and encouraging and collaborating with local organizations where appropriate to accelerate progress. Achieving Oakland's GHG reduction goals will require engagement of early adopters and harder to reach residents alike. Local organizations, including community-based organizations, business, labor, educational institutions and others, can help to educate, motivate and empower the entire Oakland community to participate in and benefit from local climate action. As champions connected throughout the Oakland community, these organizations can help to build a movement around local climate action.

A number of actions that involve community engagement are recommended for completion in the next three years. These actions include:

- Expand Outreach on Energy and Climate Issues
- Partner with Local Organizations to Expand Outreach
- Convene Quarterly Community Climate Forums
- Produce An Annual Climate Progress Report
- Support Local Green Jobs Programs

Following are descriptions of each of these actions, along with information regarding implementation status.

Priority Actions

PA 24. Provide Additional Information on Energy and Climate Issues Through Existing City Channels

(CE-1) ☆ Expand the City's website, Green Building Resource Center, and other outreach channels to provide more comprehensive and action-oriented information regarding opportunities to reduce energy use and GHG emissions.

Description: The City can accelerate community action by enhancing its use of existing outreach channels. For example, content on the City's website can be enhanced to report on Oakland's progress toward reducing GHG emissions; highlight model practices and examples of leadership throughout the community; illuminate opportunities for the community to provide input to relevant City planning documents, policies and programs; and provide action-oriented recommendations for community consideration at home and work.

Other outreach channels can also be enhanced. For example, the City could expand green building information provided through its Green Building Resource Center located near the Planning and Building counters in the Dalziel Building at 250 Frank H. Ogawa Plaza. The City can also expand its promotion of the Alameda County Green Business Program, and encourage more businesses to become certified. The City can provide additional information via annual events such as EarthEXPO, Bike to Work Day, and the Art and Soul Festival.

Responsibility: Environmental Services

Status: New content is being developed for the City's Green Building Resource Center and green building pages on the City's website. The City also recently launched the Oakland Green Map, helping members of the Oakland community to find local green resources such as farmers markets, green businesses and bikeways. Further improvements will be made in the process of the current re-design of the City's website. Energy and climate content on the City's website can be found by visiting www.sustainableoakland.com.

PA 25. Expand Outreach on Energy and Climate Issues Through Partnerships with Local Organizations

(CF-2) ☆ Partner with community-based organizations, neighborhood associations, business associations, and others to promote local climate action throughout the community through new and traditional channels.

Description: By partnering with local organizations, the City can more efficiently and effectively reach the community to foster engagement on energy and climate issues. This outreach can highlight and encourage the community to take advantage of existing climate action programs. It can also help to educate and motivate community members to make additional changes to reduce GHG emissions in the areas of: energy efficiency and conservation at home and work; alternative transportation options; and food and material goods consumption and disposal.

Collaborating organizations may have a geographic, topical or other focus. Examples include community-based organizations, neighborhood associations, business associations, faith-based organizations, community centers, schools and others. Their efforts might include building ongoing local networks, holding neighborhood-scale events and workshops, encouraging engagement on City policy and planning efforts, and implementing community-led demonstration projects. Basic information and messaging can be delivered to local partners for their use under existing resources. New resources would be required to help develop accessible, multi-language educational and promotional materials that collaborating organizations could utilize to support more effective outreach.

Responsibility: Environmental Services

Status: Dozens of local organizations have come together around the development of the draft Energy and Climate Action Plan, demonstrating significant organizing capacity and commitment to energy and climate issues. The City has provided information to these organizations to share through their networks. Great potential exists to enhance these collaborations to expand outreach in the future.

PA 26. Convene Community Climate Forums

(CF-10) ☆ Convene community climate forums three times per year to provide informal opportunities for members of the public and local community organizations to learn about local climate protection progress and opportunities, network and provide suggestions.

Description: The Oakland community, including those who live, work, study, shop, and/or play here, includes a wide variety of informed, dedicated individuals with the capacity to contribute ideas to speed progress on energy and climate actions. The City will convene community forums three times each year dedicated to discussion of energy and climate issues.

The community climate forums will be convened as informal meetings enabling community members to learn about energy and climate action progress and opportunities, network, and provide suggestions to City staff and each other. These forums can also provide a venue for partnering organizations to make presentations on related issues.

Responsibility: Environmental Services

Status: Community climate forums will be convened following adoption of the ECAP.

PA 27. Report on Energy and GHG Reduction Progress

(CE-15) Report on Oakland's progress in reducing energy use and GHG emissions on an annual basis

☆ Description: An annual climate action progress report on the status of selected climate actions as well as key performance metrics for evaluating Oakland's progress toward achieving GHG reduction goals will be posted to the City's website. This report can also be provided to community organizations, associations, networks, businesses, schools, and other interested parties for further dissemination throughout the community.

Responsibility: Environmental Services

Status: Reporting on progress as described can be accomplished with existing resources.

PA 28. Support Local Green Jobs Programs

(CE-20) Engage with local green jobs training providers to coordinate strategic planning and encourage programs to develop local workforce capacity and assess, train and place local residents to perform energy retrofits and other green improvements.

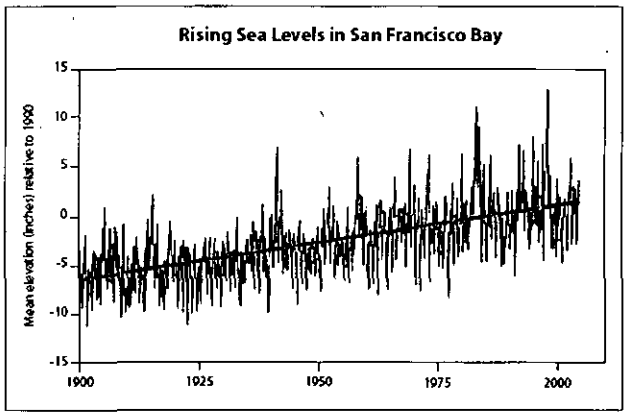
Description: Many of the actions recommended in the draft ECAP have the potential to create demand for new local green jobs. Examples of such actions include: constructing green buildings; retrofitting existing buildings; installing solar panels; creating new bikeways; providing recycling services; growing more local food; and installing water-efficient landscaping. The City will engage with the Workforce Investment Board, Green Corridor partners and local green jobs training providers (e.g., the Oakland Green Jobs Corps) to encourage curricula and skills development in alignment with projected demand for new green workforce. These efforts can improve training opportunities for Oakland residents and help to increase the employment success of local green job program graduates.

For example, the Oakland Redevelopment Agency has funded a pilot Green Works development program with $200,000 for the next two years in the Coliseum Redevelopment Area. Funds are being used to provide 40 East Oakland young adults with green education and training via special courses taught through the Peralta Community College District, including green landscape construction and site design. Project participants will work with local neighborhood stakeholders to help construct green landscape design-build projects that improve neighborhood parks and public places in the Coliseum area of East Oakland.

Responsibility: Mayor's Office, Redevelopment Agency

Status: The City participates in ongoing dialogues with local green job training program providers.

Climate Adaptation and Increasing Resilience



Some impacts of climate change (e.g., sea level rise) are already starting to be observed – the result of decades of fossil fuel combustion and other activities, such as deforestation, that have already happened. It is important to engage in mitigation efforts to lessen future climate impacts and ensure those impacts do not overwhelm our ability to adapt. Taking action to adapt to climate impacts that are already happening, and will continue to happen, is also critically important.

Projected local impacts of climate change include significantly decreased snowpack in the Sierra Mountains (the source of most of Oakland's potable water supply); rising Bay and Delta waters: increased fire danger; greater frequency and intensity of heat events; added stress on infrastructure; pricing and quality of life impacts; and ecological impacts. The State Climate Action Team has predicted that sea levels may rise between 12 and 36 inches by the end of this century.[ix] A set of climate scenarios prepared for the California Energy Commission project that mean sea level along the California coast could rise by as much as 4.5 feet by 2100.[x] According to maps produced by the Bay Conservation and Development Commission (BCDC) and Oakland-based Pacific Institute, many low-elevation areas of Oakland would be vulnerable to flood events under these scenarios.[xi]

Climate change vulnerability is a function of exposure to climate impacts, sensitivity to those impacts, and the capacity to adapt and recover. All members of the Oakland community could be affected by some of these impacts (e.g., water use restrictions), and certain population segments may be especially vulnerable. For example, more frequent and severe heat events could exacerbate existing public health problems related to poor air quality, especially affecting the elderly and those living or working in areas with high concentrations of air pollutants. Increased fire danger is likely to affect those living in the Oakland hills, while increased flooding danger in low-lying areas is of additional concern near land or facilities containing hazardous materials. The City of Oakland will continue to work with local and regional partners to explore adaptation strategies to ensure that climate impacts are minimized.

Priority Actions

PA 29. Participate in Regional Climate Adaptation Discussions

(AD-1) Participate in discussions on climate adaptation and resilience issues with local governments and other experts.

☆ Description: The City will continue to develop capacity around climate adaptation and resilience by exploring relevant issues with local partners and other experts. Where possible, the City will collaborate with local organizations such as BCDC, the Pacific Institute, Climate Bay Area, and other local governments, to develop better understanding of projected local impacts of climate change; how those impacts will affect Oakland; and strategies for moving forward to advance climate adaptation and increase community resilience. The City will monitor and advise major climate adaptation efforts of neighboring cities and entities operating within city boundaries as resources permit with consideration of impacts to Oakland neighborhoods and infrastructure. The City will also collaborate with other local governments to advocate for consideration of urban issues and coastal city issues in the context of regional adaptation discussions. Existing resources will enable the City to participate in occasional meetings of ongoing regional climate adaptation discussions.

Responsibility: Strategic Planning, Economic Development, Engineering

Status: The City will identify local governments and other experts (including community groups with relevant expertise where appropriate) to engage in climate adaptation discussions.

Priority Actions Requiring New Resources

Putting Oakland on a steady path of progress toward achieving a 36% reduction in GHG emissions by 2020 will require the implementation of additional actions during the next three years (2010-2013), beyond those recommended for completion under existing and anticipated resources described in the last chapter.

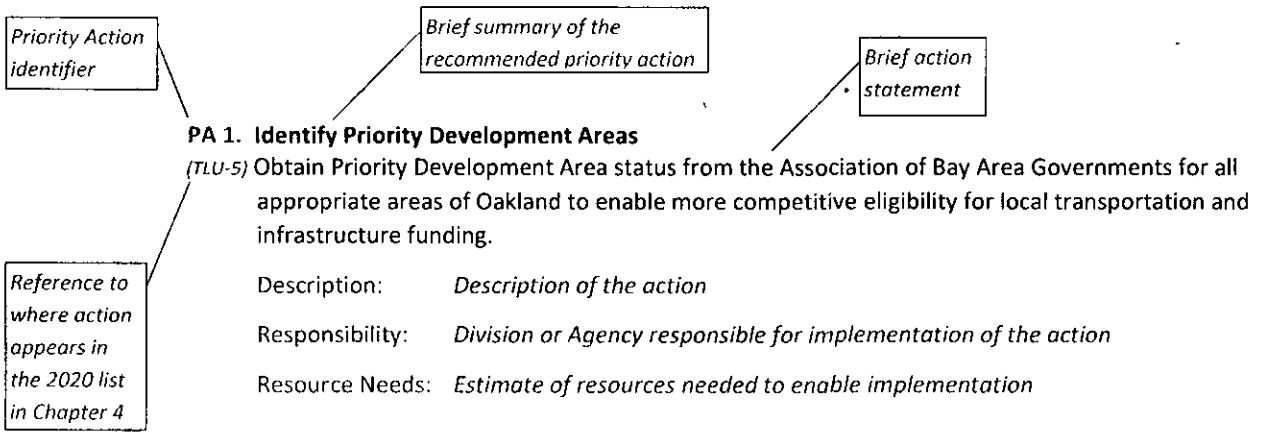
The City should pursue resources to enable implementation of this set of prioritized actions. The action recommendations presented below will move forward if new resources can be found.

These recommendations were developed based on Council-approved criteria used to assist with evaluation and prioritization of potential GHG reduction actions within the ECAP:

- GHG Reduction Potential
- Implementation Cost and Access to Funding
- Financial Rate of Return
- GHG Reduction Cost Effectiveness
- Economic Development Potential
- Creation of Significant Social Equity Benefits
- Feasibility & Speed of Implementation
- Leveraging Partnerships
- Longevity of Benefits

How to Read This Section

Each action is presented through a standard format containing each of the following elements.



Resource Requirements

Resource needs are summarized for each recommended action. The total average annual cost associated with implementing all of these proposed Three Year Priority Actions is projected to be approximately 20 additional staff FTE (2.5 of which can be funded with identified external funds), and an additional $9 million per year for related expenses (e.g., consultant support). The City will continue to pursue fundraising opportunities for unfunded priority actions.

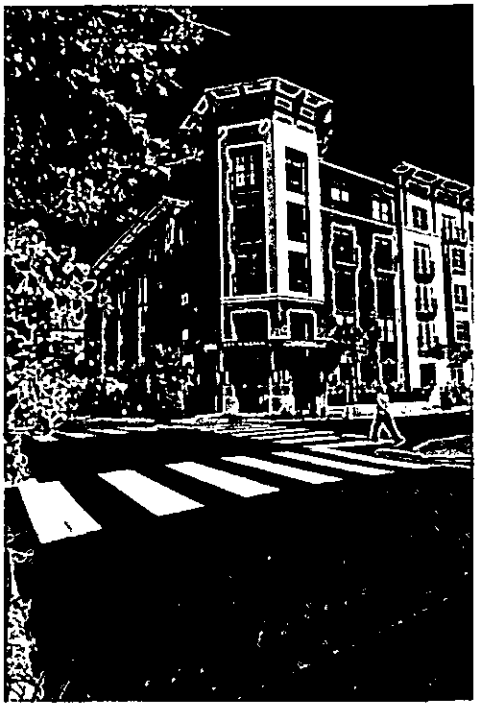
Transportation and Land Use

The following priority actions are proposed for implementation in the next three years. Some can be accomplished as one-time actions, while others will require ongoing investment. Implementation of each of these priority actions will require new resources. Implementing all Transportation and Land Use priority actions is projected to require an average of approximately 10 additional FTEs (2.5 supported by external funds) and an additional $6.3 million for annual expenses over the next three years, including $5.5 million per year for fleet replacement.

PA 30. Develop a Comprehensive Transportation Policy Plan

(TLU-2) Prepare a comprehensive, Oakland Transportation Plan in close collaboration with regional agencies, local service providers, and the community.

Description: The City will seek resources to prepare a comprehensive Oakland Transportation Plan in close collaboration with regional agencies and local service providers (e.g., MTC, AC Transit, BART, AMTRAK) that:



- Provides a new comprehensive vision of how transportation systems throughout Oakland will be developed to meet the needs of people and business, and addressing all modes of travel while minimizing greenhouse gas emissions and air pollutants associated with the transportation sector;
- Plans for transportation infrastructure management under the City's control (e.g., roadways, development around existing transit hubs, alternative transportation infrastructure) in a manner that updates and reinforces the City's existing Land Use and Transportation Element (LUTE) and "Transit First" policy; and,
- Creates a public transit master plan recommending process, program and policy changes designed to significantly increase transit utilization throughout the community, including establishment of transit-oriented land use planning criteria, policies that ensure safe walking and biking access to transit, transit service performance goals and agency implementation responsibilities.

A comprehensive transportation plan will lay a critical foundation for effective transportation planning that not only reduces GHG emissions and other pollutants, but ensures that resources are allocated effectively and efficiently to ensure the best delivery of transportation options and services to all members of the community. This plan will enhance applications for future funding, increase the City's ability to work with external transit agencies on planning and problem solving, and support Oakland's economic development.

Development of a comprehensive Oakland transportation plan would require a minimum of 4 transportation planning FTE for the next three years.

Responsibility: Transportation Services, Strategic Planning, Redevelopment

Resource Needs: 4 FTE for 3 years

PA 31. Improve Transportation & Land Planning Integration in Every Planning Effort

(TLU-3) Require the integration of land use and transportation planning and consideration of GHG reduction opportunities in every planning, major project and redevelopment effort undertaken by the City.

Description: In addition to creating a citywide comprehensive transportation plan, the City will seek resources to reduce long term vehicle miles traveled (VMT) and associated GHG emissions by ensuring that all City planning efforts fully integrate attention to land use and transportation. A number of planning and policy documents (e.g., specific plans for geographic areas) affect land use, transportation and development decisions. Where appropriate, the City can ensure that each such process results in projects that encourage dense, transit-oriented, mixed-use development including housing, retail services and/or employment opportunities centered on transit hubs and corridors.

New development in Oakland, including transit-oriented development, has the potential to benefit communities (e.g., via economic revitalization, reduction in VMT) and has the potential to adversely impact communities (e.g., via displacement, local environmental impacts). The City will make efforts to plan for new development with consideration of these issues.

Integrated planning will include establishing transportation performance goals (e.g., vehicle miles traveled per service population, citywide mode share) for planning efforts and projects consistent with citywide transportation performance goals. Other process improvements may include new requirements for analysis, reporting, and a public review process that addresses not only land use, but the transportation impacts and opportunities to reduce GHG impacts of projects. These changes can also assist the City in clarifying regional funding priorities in relationship to local projects and support evaluation of local and regional transportation planning and funding processes.

Responsibility: Transportation Services, Strategic Planning, Economic Development, Redevelopment

Resource Needs: Variable depending on the level of planning and projects undertaken. For the next three years, the minimum staff requirement to provide minimal transportation planning would be 2 FTE.

PA 32. Create and Adopt a Transportation Impact Fee to Support Implementation

(TLU-7) Adopt a transportation impact fee to support new local low-carbon transportation infrastructure.

Description: The City will seek resources to conduct the necessary research and analysis to enable the adoption of a Transportation Impact Fee (TIF) to support low-carbon transportation infrastructure and planning. A TIF can be used to assign the costs of added vehicle trips to new development, which currently does not pay an appropriate share of the infrastructure or transportation improvements necessary as a result of new development. The TIF will clarify how Oakland will enhance its existing transportation systems and support the development of key infrastructure for future transportation systems, and connect City policy to the City budget and Capital Improvement Program. Adopting a TIF can also expedite permit processing for development projects, and align City policy with neighboring jurisdictions.

Responsibility: Transportation Services, Strategic Planning, Engineering, Building Services

Resource Needs: 0.5 FTE for 2 years, plus $900,000 of expenses (all costs can be tracked and repaid upon capture of fees through the program)

PA 33. Update Local CEQA Standards to Reduce Emphasis on Congestion Impacts

(TLU-15) Update the process for evaluating local environmental impacts resulting from new development to prioritize consideration of vehicle miles traveled (VMT) impacts above congestion impacts.

Description: The City will seek resources to update the process for evaluating local environmental impacts resulting from new development as required under CEQA. These updates will prioritize consideration of VMT impacts above congestion impacts.

CEQA regulations that have required local jurisdictions to analyze and emphasize reductions in traffic congestion are one significant, but hidden, basis for our ever-expanding auto-oriented transportation network. When new plans or new projects are required to perform an environmental review, invariably the proposed growth leads to additional auto trips. These trips then must be mitigated, if possible. Often this mitigation takes the form of road widening, expanding lanes, adding turn lanes, and finding other ways to speed up traffic and avoid delays. Mitigation actions may encourage more driving, with associated emissions and pollution.

A recent update to State CEQA regulations now gives local jurisdictions the option of developing new criteria for assessing trip impacts. These updates could provide a money-saving incentive to developers, encouraging the design of projects to reduce auto dependence and rely on transit, bicycle and pedestrian networks. Clarification and simplification of the City's CEQA guidelines will enable a faster and more streamlined review process for economic development that is consistent with the policies of the Land Use and Transportation Element of the General Plan.

The City is seeking resources to update the process used for evaluating environmental impacts of new plans and projects.

Responsibility: Transportation Services, Strategic Planning

Resource Needs: 0.5 FTE for 2 years

PA 34. Accelerate Completion of Bicycle and Pedestrian Plans

(TLU-16) Accelerate the completion of bicycle and pedestrian networks as noted in the Bicycle and Pedestrian Master Plans and other General Plan policies to provide safe, healthy transportation choices for all residents.

Description: The City is seeking resources to accelerate the completion of bicycle and pedestrian networks as noted in the Bicycle and Pedestrian Master Plans and other General Plan policies to provide safe, healthy transportation choices for all residents. Improvements that would increase access to transit, transportation linkages, jobs and commercial activity in disadvantaged neighborhoods are prioritized. The Pedestrian and Bicycle Plans already include processes for updating priorities to include new infrastructure opportunities.

Project development and personnel costs are largely funded by external grants. Additional external grants are available to support additional FTEs. The level of increased staff capacity recommended below would enable the City to double the amount of bicycle facilities it currently produces annually.

Over time, full implementation of the Bicycle Master Plan is projected to cost approximately $38 million.[xii] Full implementation of the Pedestrian Master Plan is projected to cost approximately $50 million.[xiii]

Responsibility: Transportation Services

Resource Needs: Creation of 2.5 FTE Transportation Services positions offset by external funds to accelerate implementation

PA 35. Establish Alternative Mechanisms for Meeting Parking Requirements

(TLU-28) Develop regulations that would permit parking requirements to be met through alternative approaches demonstrated to reduce parking demand and GHG emissions.

Description: The City will seek resources to conduct a comprehensive review of parking policy regulations for new development. New regulations will be developed for parking requirements in the planning code pertaining to new development on private property. These regulations would permit parking requirements to be met through alternative approaches demonstrated to reduce demand for parking and GHG emissions. These approaches may involve a range of transportation demand management strategies, including on-site car-share vehicles, secure bicycle parking and showers, and subsidized transit passes.

Responsibility: Transportation Services, Strategic Planning, Redevelopment

Resource Needs: 0.5 FTE for 3 years, plus $250,000 of expenses

PA 36. Conduct a Citywide Dynamic Parking Pricing Study

(TLU-29) Conduct a citywide dynamic parking pricing study to develop a strategy for creating adjustable parking rates at City meters and garages that can: influence drivers to reduce vehicle trips; provide adequate parking supply; encourage economic development; and fund alternative transportation improvements.

Description: The City is applying for a $50,000 grant to conduct a study of innovative parking pricing and policy approaches for public facilities (on city streets and in City-owned garages). This grant, if received, will begin this study, but more resources will be necessary in order to implement a program citywide.

Current City policy does not recognize differential parking demand between areas of the city, and applies a uniform parking pricing system. This study will recommend adjusting prices based on supply and demand to maximize parking performance. Pricing can be an effective tool for reducing trips and maximizing alternatives to driving, and can help to encourage economic development as well as create new revenue for alternative transportation improvements and neighborhood improvements.

Responsibility: Transportation Services, Strategic Planning, Finance

Resource Needs: 0.5 FTE for 1 year in Transportation Services, plus $250,000 of expenses

PA 37. Plan for Electric Vehicle Infrastructure

(TLU-33) Participate in regional electric vehicle infrastructure planning and develop new processes to support local use of electric vehicles.

Description: The City will seek resources to address electric vehicle infrastructure planning and develop new processes to facilitate community adoption of electric vehicle technologies. The City is already partnering with other Bay Area cities and other partners in an effort to make the Bay Area the electric vehicle capital of the United States.

Achieving this vision will likely require planning and implementation of electric vehicle charging infrastructure in publicly accessible locations throughout the community, including industrial zones and transit village areas where infrastructure improvements are being contemplated. It will also require increased institutional capacity and changes, such as new permitting processes to enable private residents and businesses to install charging infrastructure.

The City will also seek to add electric vehicles, plug-in hybrid vehicles and supporting charging infrastructure to the municipal vehicle fleet.

Responsibility: Equipment Services, Transportation Services, Building Services

Resource Needs: 0.5 FTE for 2 years, plus $100,000 of expenses

PA 38. Develop an Urban Forestry Master Plan

(TLU-44) Develop an urban forestry master plan outlining how the City will protect, develop and maintain diversified and appropriate tree plantings on City right-of-ways.

Description: The City will seek resources to develop an urban forestry master plan outlining how the City will protect, develop and maintain diversified and appropriate tree plantings on City right-of-ways in a manner consistent with Bay Friendly Guidelines. This plan will include: the criteria and process for planting of new trees; the maintenance priorities and process for existing trees; and establishing clear roles for the City and community partners.

Responsibility: Department of Operations and Infrastructure

Resource Needs: 0.5 FTE for 1 year

PA 39. Accelerate City Fleet Vehicle Replacement

(TLU-51) Increase the rate of fleet vehicle replacement to retire older inefficient vehicles and continue to replace vehicles with fuel efficient and alternative fuel models.

Description: The City will seek resources to accelerate the rate at which it replaces fleet vehicles, creating increased opportunities to improve fuel efficiency and reduce GHG emissions associated with the municipal vehicle fleet. While proper maintenance can help to preserve vehicle fuel economy, the greatest technological opportunity to reduce GHG emissions associated with the City's vehicle fleet is at the point of purchasing new vehicles. The City's adopted Clean Fleets policy requires that vehicles achieving superior fuel efficiency and/or operated on alternative fuels (e.g., compressed natural gas, electric and plug-in hybrid vehicles, trucks with anti-idling controls) be given preference in the procurement of new vehicles. However the recent pace of vehicle replacement has not offered many opportunities to improve overall fleet fuel efficiency.

According to the April 2009 Public Works Agency Performance Audit, the City should "Prepare a five-year equipment replacement plan for the City's fleet for a review by the operating departments and the Budget Office. The City should increase its funding for the replacement of the equipment fleet by $5.5 million annually."[xiv] The Performance Audit recognizes that the City does not currently have funding to meet these needs.

Responsibility: Equipment Services

Resource Needs: $5.5 million annually

PA 40. Subsidize Transit and Transportation Alternatives for City Employees

(TLU-52) Provide subsidized transit passes and/or other alternative transportation benefits to City employees to encourage alternatives to driving.

Description: The City will seek resources to provide subsidized transit passes and/or other alternative transportation benefits (e.g., bicycle commuter allowances) to City employees to encourage alternative modes of commuting. The City already participates in the Commuter Check program, offering employees the opportunity to make pre-tax purchases of transit passes for rides on BART and AC Transit. Providing additional transit incentives can be effective at encouraging more employees to use transit for commuting to work.

For example, unlimited use subsidized transit passes can be provided to City employees through participation in the AC Transit Easy Pass program. Likewise, the City could also provide additional benefits to employees who choose to bike or walk to work, such as bicycle commuter or shoe allowances.

Responsibility: Transportation Services, Human Resources – Benefits

Resource Needs: 0.25 FTE in Transportation Services and 0.25 FTE in Human Resources personnel for 1 year, plus $330,000 of expenses for participation in the Easy Pass program

PA 41. Discontinue Subsidizing Parking for City Employees

(TLU-53) Discontinue the practice of providing parking to City employees based in transit-served locations.

Description: The City will seek resources to discontinue the practice of providing parking to City employees based in transit-served locations. Granting employees parking spaces and additional parking subsidies fosters automobile reliance and use. The City can demonstrate leadership by reducing the number of employees receiving subsidized parking in transit-rich areas of the City. This may result in an increased number of parking spaces available for public use.

This change is projected to save approximately $450,000 per year in reduced parking subsidies.

Prior to adopting such a policy, the City would need to satisfy any obligations it may have to meet unions representing affected employees.

Responsibility: Human Resources, Transportation Services, Equipment Services

Resource Needs: 0.25 FTE Human Resources and 0.25 FTE Transportation Services for 1 year. Cost of additional pool cars and/or transit subsidy options would be additional

Building Energy Use

The following priority actions are proposed for implementation in the next three years. Some can be accomplished as one-time actions, while others will require ongoing investment. Implementation of each of these priority actions will require new resources. Implementing all Building Energy Use priority actions is projected to require an average of approximately 9 additional FTEs and an additional $2 million for annual expenses over the next three years.

PA 42. Engage Largest Electricity Consumers in Energy Retrofits

(BE-12) Offer technical assistance to help Oakland's most energy intensive businesses achieve superior energy efficiency results by participating in programs offered by PG&E and other organizations.

Description: The City will seek resources to create a new program that guides the approximately 400 businesses that consume 50% of the electricity used in Oakland into existing energy auditing, water conservation and rebate programs offered by PG&E and other organizations. These 400 firms represent approximately 10% of Oakland's medium-to-large businesses, with 30 of them consuming over 25% of total citywide electricity. This program will engage each targeted business to create an energy efficiency and demand reduction strategy, or roadmap, tailored to that business' opportunities and circumstances, aiming at average annual energy savings of at least 20%. Estimated collective energy costs savings are $28 million per year.

Implementing this program will require extensive outreach to Oakland's ~400 biggest energy users. The program will aim to secure participation from property owners, tenants and building management companies. The program will create customized roadmaps encouraging businesses to participate in all applicable PG&E energy efficiency and conservation programs and EBMUD water conservation programs, to perform comprehensive energy and water audits, and to implement all cost-effective retrofit opportunities. Property owners would pay for implementing the improvements, factoring in the benefits of rebate programs from PG&E and others. PG&E, East Bay Energy Watch, StopWaste.Org and EBMUD will be among the organizations invited to collaborate and coordinate closely on this program. Some projects may take advantage of property based financing (see PA 8).

Responsibility: Business Development

Resource Needs: 3 FTE for 3 years, plus $1.5 million of expenses

PA 43. Market Energy Retrofit Opportunities to All Oakland Businesses

(BE-11) Develop a marketing campaign to encourage 30% of businesses to improve building energy performance by 20% and reduce water consumption by enrolling in programs and taking advantage of incentives offered by PG&E and other organizations.

Description: The City will seek resources to create a marketing campaign and offer technical assistance to encourage 30% of Oakland's businesses to implement energy retrofits achieving 20% energy efficiency improvements. Businesses will be encouraged to participate in all applicable programs offered by PG&E and others to receive further assistance and rebates.

Responsibility: Business Development

Resource Needs: 0.5 FTE for 3 years, plus $2 million of expenses

PA 44. Create a Renter-Occupied Residential Energy Retrofit Program

(BE-21) Create a new energy retrofit program to facilitate energy efficiency and water conservation improvements in existing renter-occupied residential properties by supporting outreach as well as assistance designing model tenant-landlord agreements so that all parties equitably share the costs and benefits of energy efficiency.

Description: The City will seek resources to develop new tools and assistance to foster energy retrofits of renter-occupied properties. This will include engaging stakeholders to provide recommendations on how to ensure that both owners and tenants can be protected and receive benefits from energy efficiency retrofits so that both have an incentive to support energy improvements.

Responsibility: Housing and Community Development, Environmental Services

Resource Needs: 1.3 FTE for 3 years

PA 45. Adopt and Implement a Residential Energy Conservation Ordinance

(BE-22) Adopt an ordinance requiring cost-effective residential energy- and water-related improvements at time of sale, or under other appropriate conditions with consideration of affordability and equity.

Description: The City will seek resources needed to research and develop options for adopting a residential energy conservation ordinance (RECO). A RECO can be an effective tool for increasing energy efficiency of Oakland's existing housing stock. The RECO can be designed to require cost-effective energy- and water-related improvements at time of sale or under other appropriate conditions, fostering continuous energy improvement of Oakland's building stock in a manner that is beneficial for residents. Lessons can be drawn from years of RECO implementation in Berkeley. Issues of affordability and equity will be considered in the process of developing an effective and appropriate RECO. The RECO can also be designed to require disclosure of home energy performance based on past utility bills in a prescribed manner, helping to raise the profile of energy use in home buying decisions and spur additional retrofit action.

Responsibility: Planning, Building Services, Environmental Services

Resource Needs: 1.5 FTE average for each of 3 years, plus $250,000 of expenses

PA 46. Encourage the Creation of On-Bill Financing for Energy Retrofits

(BE-5) Engage local utilities (e.g., PG&E, EBMUD) to develop on-bill financing options for energy efficiency improvements to increase energy retrofits in tenant-occupied and other properties.

Description: The City will seek resources to participate in collaborative efforts aimed at encouraging local utilities to offer on-bill financing for building energy improvements. An effective on-bill financing option is critical to facilitating energy retrofits in large numbers of renter-occupied properties that comprise approximately half of Oakland's housing. On-bill financing may also be a valuable tool for accelerating and deepening energy retrofits in owner-occupied properties throughout the city.

Resources will be needed to research and develop viable on-bill financing concepts and pursue the development of a pilot project with PG&E and/or EBMUD.

Responsibility: Environmental Services

Resource Needs: 0.1 FTE for 3 years, plus $105,000 of expenses

PA 47. Seek Resources to Support Energy Programs

(BE-6) Pursue funding to augment existing, and create new residential and commercial energy programs to reduce energy consumption throughout the community.

Description: The City will continue to seek resources to augment existing, and create new programs to foster a reduction in energy use throughout Oakland's residential and commercial properties. This may include opportunities offered by PG&E, California State Energy Program, Bay Area Air Quality Management District, and others. For example, the City may pursue funding to promote energy retrofits, offer free or subsidized energy audits, provide technical assistance, or provide targeted incentives.

Existing resources are sufficient for responding to a limited number of potential funding opportunities on an annual basis. Additional resources would augment the City's capacity to submit a greater number of competitive proposals.

Responsibility: Environmental Services

Resource Needs: 0.25 FTE for 3 years, plus $150,000 of expenses

PA 48. Encourage Citywide Energy Conservation and Efficient Product Purchasing

(BE-7) Encourage all businesses and households to conserve 5% on electricity, natural gas and water use, and choose energy- and water-efficient replacement products.

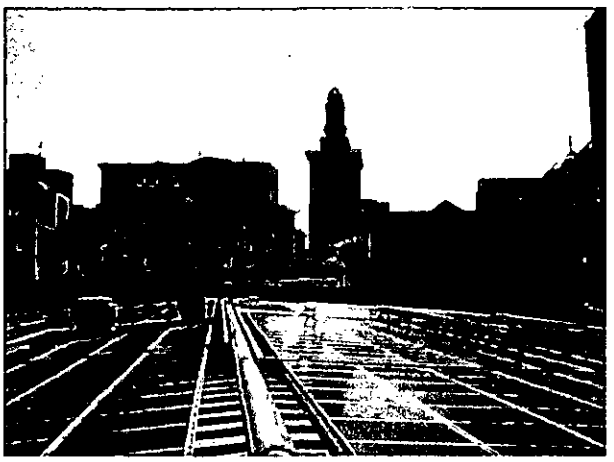
Description: The City will seek resources to create a marketing campaign and offer technical assistance with local partners to encourage all businesses and residents to reduce their energy consumption through conservation and energy efficient product purchasing. The campaign will provide information about conservation opportunities to all households and businesses, in collaboration with outreach performed by PG&E, EBMUD, trade groups and community-based organizations. All households and businesses will be encouraged to reduce energy and water use by 5% within the next three years through conservation of electricity, natural gas and water. The campaign will also encourage the purchase of energy-efficient products and appliances to help residents and businesses reduce energy use. Achieving an overall GHG reduction of 36% with respect to citywide building energy use is estimated to require products that are 10% more efficient and persistent additional conservation efforts to reduce energy use by 16% in 2020. In the residential sector, this translates to an average target of 1,040 kWh of annual electricity consumption and 123 therms of annual natural gas consumption per person.

Responsibility: Environmental Services

Resource Needs: 1 FTE for 3 years, plus $2 million of expenses

PA 49. Facilitate Community Solar Programs

(BE-25) Encourage and collaborate with local partners to launch a community solar program to increase local use of renewable energy, including solar-thermal energy to produce heat and hot water.



Description: The City will seek resources to encourage and collaborate with local partners to offer a community solar program(s) promoting increased use of renewable energy. Such a program may perform outreach to residents and businesses about opportunities to utilize solar energy; provide technical assistance including opportunity assessment and procurement support; connect residents to property-secured and other financing

opportunities; offer to coordinate collaborative purchasing for local installation of solar energy systems; and/or offer free energy opportunity audits and technical assistance for this purpose.

Responsibility: Environmental Services

Resource Needs: 1.0 FTE for 3 years, plus $200,000 of expenses

PA 50. Encourage PG&E to Offer Green Power Options

(BE-26) Negotiate with PG&E to offer green power options to local customers.

Description: The City will seek resources to participate in collaborative efforts aimed at encouraging PG&E to offer green power options to local customers. The City will engage directly with PG&E and encourage PG&E to make meaningful local green power offerings available on a voluntary basis. In addition, the City will participate in the public comment process of the California Public Utilities Commission (CPUC), encouraging California utilities to offer green power options to all of their customers.

Responsibility: Environmental Services

Resource Needs: 0.05 FTE, plus $30,000 of expenses

PA 51. Monitor Community Choice Energy

(BE-27) Continue to monitor the feasibility and utility of implementing community choice energy aggregation (CCA) in Oakland.

Description: The City will continue to monitor the feasibility and utility of implementing a CCA program in Oakland, and will seek resources to enable additional analysis of CCA if warranted. CCA may offer a powerful tool for increasing the renewable energy content of electricity consumed in Oakland. However, a number of technical, financial, legal and political issues must be addressed before moving any CCA proposal forward. New information is likely to be gained from observing early CCA efforts now underway in Marin County and San Francisco. If CCA is demonstrated as a successful model, the City will revisit program design and needed resources under revised objectives. The City encourages continued study of this issue by other partners.

Responsibility: Environmental Services, Finance

Resource Needs: 0.05 FTE per year

Material Consumption and Waste

The following priority actions are proposed for implementation in the next three years. Some can be accomplished as one-time actions, while others will require ongoing investment. Implementation of each of these priority actions will require new resources. Implementing all Material Consumption and Waste priority actions is projected to require an average of at least one additional FTE and an additional $200,000 annually for expenses through the next three years.

PA 52. Enforce Mandatory Recycling

(MW-4) Enforce mandatory recycling and/or bans on the use, sale, or disposal of certain product types.

Description: The City will seek funds as necessary to enforce future mandatory recycling requirements or bans on the use, sale, or disposal of certain product types. It is anticipated that the State of California may mandate commercial recycling in the future, and that local governments would have a role in the enforcement of such mandates.

Responsibility: Building Services (Code Compliance)

Resource Needs: To be determined

PA 53. Conduct Residential Social Marketing Campaigns and Business Outreach

(MW-5) Conduct new residential social marketing campaigns and increased outreach to businesses and other institutions regarding waste reduction and recycling programs.

Description: The City will seek resources to conduct new residential social marketing campaigns and increased outreach to businesses and other institutions to improve participation in available waste reduction and recycling programs. Reduction of material consumption and waste requires long-term behavioral change in purchasing and discard decisions. Outreach and marketing efforts to that end will require a sustained effort to connect participants to the social good of recycling and waste reduction. The City will coordinate with StopWaste.Org to leverage resources.

Responsibility: Environmental Services

Resource Needs: 0.5 FTE for 3 years, plus $500,000 of expenses

PA 54. Study Options for Advancing Next-Level Waste Reduction

(MW 6) Study options for advancing the next level of waste reduction activities to help achieve the City's adopted Zero Waste Goal.

Description: The City will seek resources to study and support additional actions that may be needed in the coming years to help Oakland progress toward its Zero Waste goal. These may include actions to further increase rates of recycling and composting, target particular problem materials, etc. The City will continue to collaborate with StopWaste.Org in considering potential actions to further reduce waste toward achieving Zero Waste.

Responsibility: Environmental Services

Resource Needs: 0.5 FTE for 3 years, plus $150,000 of expenses


Photo: Matt Southworth

Community Engagement

The following priority actions are proposed for implementation in the next three years. Some can be accomplished as one-time actions, while others will require ongoing investment. Implementation of each of these priority actions will require new resources. Implementing all Community Engagement priority actions is projected to require an average of approximately 0.5 additional FTE and an additional $450,000 for expenses over the next three years.

PA 55. Develop an Oakland Climate Action Model Practices Campaign

(CE-16) Develop a local climate action model practices campaign collaborating with local organizations to document and promote examples of local climate actions to the community.

Description: The City will seek resources to local organizations in promoting local model practices and encouraging widespread adoption of affordable energy and climate-friendly behaviors throughout the community. This campaign would utilize multimedia approaches to make it easier for members of the community to promote do-it-yourself actions and teach each other to implement them. Low-cost multimedia technology could be provided to local organizations to document personal and neighborhood climate actions and share them with the larger community.

Examples of actions that might be demonstrated include replacing faucets and showerheads with low-flow devices; lowering the water heater thermostat; purchasing and installing water heater insulation; repairing windows; installing a clothesline; repairing a bicycle; adding air to car tires; using web-based tools to plan trips on BART and AC Transit; identifying materials that can be recycled; building garden boxes and compost bins; and storing kitchen food scraps for composting.

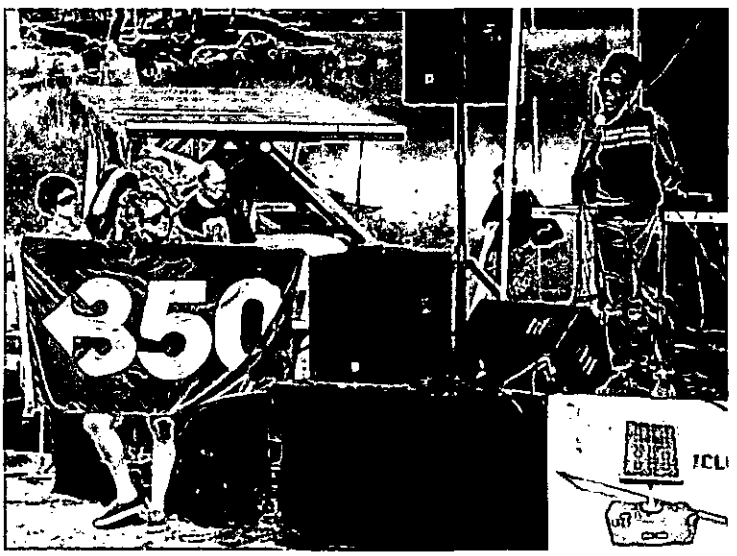
Responsibility: Environmental Services

Resource Needs: 0.25 FTE for one year, plus $3,000 of expenses

PA 56. Community Climate Action Guide

(CE-3) Develop and distribute a community climate action guide and targeted educational materials in collaboration with local organizations to inspire all members of the Oakland community to take action to reduce GHG emissions.

Description: The City will seek resources to accelerate local action throughout the community by developing and distributing new online and hardcopy materials such as a community climate action guide and other materials targeted at specific actions (e.g., why and how to adjust your water heater temperature). The City can collaborate with local organizations to distribute these materials in an effort to inspire all members of the Oakland community to take action to reduce GHG emissions.



Responsibility: Environmental Services

Resource Needs: 0.5 FTE for one year, plus $300,000 of expenses

PA 57. Support Local Climate Workshops

(CE-4) Establish a mini-grant program to provide financial and other support to local organizations to convene neighborhood-scale or issue-based community climate action workshops.

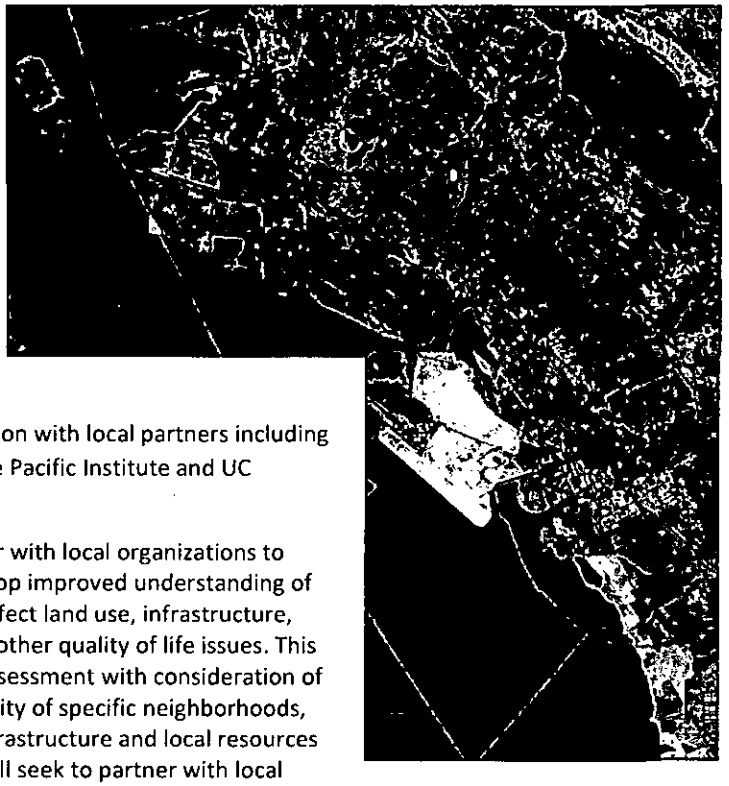
Description: The City will seek resources to accelerate community education and action by supporting local workshops and events dedicated to education and raising awareness about opportunities to address energy and climate issues and create valued co-benefits. These workshops can leverage the existing roles and relationships of collaborating organizations, and can be tailored to geographically, demographically or topically-focused segments of the community. In the process, the City can develop new understanding of how to target new programs and policies to engage all members of the Oakland community effectively and appropriately. Providing information through in-person delivery channels and forums fostering community dialogue about energy and climate issues will be critical to accelerating voluntary climate actions.

Responsibility: Environmental Services

Resource Needs: 0.25 FTE for three years, plus $150,000 for grants

Climate Adaptation and Improving Resilience

The following priority actions are proposed for implementation in the next three years. Some can be accomplished as one-time actions, while others will require ongoing investment. Implementation of each of these priority actions will require new resources. Implementing all Climate Adaptation priority actions is projected to require an average of at least 0.5 additional FTE and an additional $80,000 annually for expenses throughout the next three years to study and communicate with the community about climate impacts.



PA 58. Study Potential Local Climate Impacts

(AD-2) Conduct a study of all local climate impacts in collaboration with local partners including the Bay Conservation and Development Commission, the Pacific Institute and UC Berkeley.

Description: The City will seek resources to partner with local organizations to study local climate impacts and develop improved understanding of how these impacts are expected to affect land use, infrastructure, public health, the local economy and other quality of life issues. This study would include a vulnerability assessment with consideration of both projected impacts and the capacity of specific neighborhoods, population segments and affected infrastructure and local resources to adapt to those impacts. The City will seek to partner with local experts at BCDC, the Pacific Institute and UC Berkeley to study climate impacts and translate impacts in a meaningful way that can help to inform future planning decisions in Oakland. Resource needs assume that local and regional partners will act in a lead capacity for the study of climate impacts under separate funding.

Responsibility: Environmental Services, Strategic Planning

Resource Needs: 0.25 FTE for three years, plus $30,000 of expenses

PA 59. Communicate Climate Impacts to the Community

(AD-3) Communicate information about local climate impacts to the Oakland community to develop: shared understanding; the will for personal and collective action; and local capacity to participate in development of climate adaptation strategies.

Description: The City will seek resources to develop new educational materials and perform outreach to inform the Oakland community about projected climate impacts. Developing a greater shared understanding of potential impacts will be critical to generating the will for personal and collective action that may be needed to implement future adaptation strategies, as well as the capacity of Oakland community members to engage in adaptation planning efforts. This may include developing content that could be delivered through existing channels such as the City's Citizens of Oakland Respond to Emergencies (CORE) program, planned Community Climate Forums (See PA 26), partners that deliver similar services such as Bay Area Red Cross and Alameda County Health Department, and local organizations interested in communicating about climate impacts within their networks. Content would be developed with consideration of opportunities to address identified community vulnerabilities, and tailored to specific audiences. This action would be most effective if local organizations had capacity to assist with development of messaging and delivery of content, which is outside the scope of the proposed budget.

Responsibility: Strategic Planning, Marketing, Economic Development

Resource Needs: 0.2 FTE, plus $200,000 of expenses

PA 60. Identify and Act on Opportunities to Improve Resilience in City Plans and Policies

(AD-4) Identify potential adaptation strategies to improve community resilience to climate change, and to integrate these with City planning and policy documents and processes where appropriate.

Description: The City will seek resources to research, analyze and recommend adaptation strategies to improve community resilience to projected impacts of climate change and integrate these with City planning and policy documents and processes where appropriate. Example adaptation strategies may include:

- Considering vulnerability to flood events during the project approval process
- Storm/sewer infrastructure design criteria and upgrades in major projects
- Design requirements for new buildings in flood prone areas
- Water efficiency and conservation indoors and outdoors
- Requirements for highly reflective surfaces where feasible (e.g., rooftops, pavement) and urban forest management strategies to reduce heat island effects
- Sea walls to guard against sea level rise and flood events
- Preparedness systems for vulnerable residents
- Development of buffer zone wetlands

The City will seek to identify planning projects such as new area planning processes that could serve as opportunities to pilot appropriate adaptation strategies and development requirements to help inform future adaptation planning efforts.

Responsibility: Multiple Agencies (e.g., CEDA, PWA) based on strategies

Resource Needs: To be determined

Chapter 5

Achieving a 36% Reduction in GHG Emissions: The 2020 Plan

Over 150 separate actions are recommended for implementation by the City during the next ten years. These actions will help to put Oakland in position to achieve a 36% reduction in GHG emissions from 2005 levels in each of the three primary GHG reduction categories (Transportation & Land Use, Building Energy Use, and Material Consumption & Waste) by 2020. Most will require new resources to move forward.

This chapter includes all actions recommended for implementation to achieve a 36% reduction in GHG emissions. Actions recommended for priority implementation in Chapter 4 are included here, along with remaining actions needed to achieve the 2020 target.

As in Chapter 4, recommended actions are grouped into the three primary GHG reduction categories, along with a set of highlighted community engagement recommendations, and steps to assist Oakland in adapting to climate change, in the following order:

- Transportation & Land Use
- Building Energy Use
- Material Consumption & Waste
- Community Engagement
- Climate Adaptation & Increasing Resilience

In Chapter 5, the full list of actions recommended for implementation by 2020 is organized by thematic strategy. Targets have also been identified for key performance metrics, translating the 36% GHG reduction goal into a series of performance targets.

Further information regarding implementation coordination, monitoring, reporting and evaluation is presented in Chapter 2.

Actions to Achieve a 36% GHG Reduction

Following implementation of priority actions during the next three years (2010-2013), many actions will need to be implemented in subsequent years to position Oakland to achieve a 36% reduction in GHG emissions by 2020.

The following pages summarize all of the actions currently envisioned for implementation by 2020 to achieve this GHG reduction goal. This list may be updated every three years concurrent with the development of a new 3 Year Priority Implementation Plan.

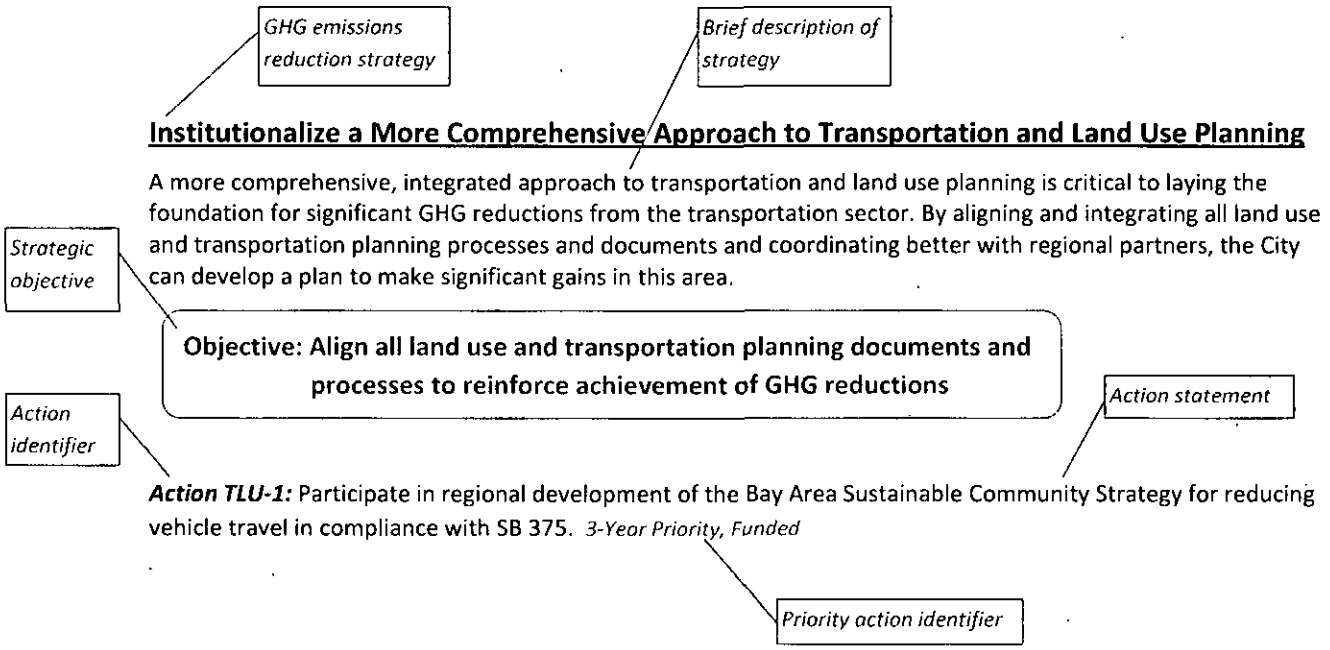
As is the case for actions recommended for priority implementation in the next three years, existing resources are likely to be sufficient to enable implementation of some of the remaining actions on the 2020 list during the period of 2014-2020. Other actions will require new resources to move forward.

The City will benefit from observing actions implemented during the next three years, and will have the opportunity to learn from these observations to improve plans going forward. Successful programs might be continued and expanded, while unsuccessful actions might be dropped or reconfigured for success. Other unforeseen changes in the world (e.g., technological advancements, energy price changes, economic growth rates, new climate models) also have the potential to cause adjustment of future plans.

Actions listed in this chapter are expected to help Oakland achieve a 36% reduction in GHG emissions by 2020.

How to Read This Chapter

Each action below is presented through a standard format containing each of the following elements.



Transportation and Land Use

The combustion of fossil fuels used for transportation is a major source of GHG emissions associated with Oakland. This includes people moving to and from home, work, school, shopping, recreation, and other destinations, as well as the transport of goods. Other local air pollutants linked to increased incidence of health problems such as asthma and cancer also commonly result from use of transportation fuels. Addressing transportation emissions presents a tremendous opportunity to simultaneously reduce GHG emissions and improve the health of Oakland residents, while reducing dependence on foreign oil and local vulnerability to energy price fluctuations.

Achieving a 36% reduction in GHG emissions associated with Transportation and Land Use will require unprecedented local action, **reducing citywide driving by 20% and improving citywide vehicle fuel efficiency.**

A number of strategies are available through which the City can help to reduce GHG emissions associated with Transportation and Land Use.

Key GHG Reduction Strategies:

- Institutionalize a More Comprehensive Approach to Transportation & Land Use Planning
- Advance Infill, Mixed-Use and Transit-Oriented Development
- Advance the Use of Alternative Transportation
- Refine Parking Policies to Encourage Low-Carbon Mobility
- Foster the Use of Low-Carbon Vehicles and Fuels
- Engage the Port of Oakland and Related Industry in Reducing GHG Emissions
- Develop Oakland's Urban Forest
- Reduce Emissions Associated with City Operations

Achieving the 2020 goal of reducing GHG emissions associated with Transportation and Land Use by 36% will require significant action in all of these areas. All members of the Oakland community, including residents, businesses, visitors and the City, will need to make daily decisions to reduce the need for automobile trips. When purchasing new vehicles, members of the community will also need to prioritize fuel efficiency in their decisions wherever possible.

Transportation and Land Use 2020 Goals:

- 20 % reduction in vehicle miles traveled
- 24 million gallons of gasoline and diesel saved on local roads
- Fully integrated transportation and land use planning

Strategies to Achieve 2020 Goals

Institutionalize a More Comprehensive Approach to Transportation and Land Use Planning

A more comprehensive approach to transportation and land use planning is critical to laying the foundation for significant GHG reductions from the transportation sector. Because transit infrastructure can require substantial investment and have a profound impact on other land use and development decisions, proactive integrated planning is key to creating the infrastructure and guiding development in a manner that will reduce the need to drive in Oakland. By aligning and integrating all land use and transportation planning processes and documents and increasing coordination with regional partners, the City can develop a plan to make significant gains in this area.

Objective: Align all land use and transportation planning documents and processes to reinforce achievement of GHG reductions

Action TLU-1: Participate in regional development of the Bay Area Sustainable Community Strategy for reducing vehicle travel in compliance with SB 375. *3-Year Priority, Funded*

Action TLU-2: Prepare a comprehensive, integrated Oakland Transportation Plan in close collaboration with regional agencies, local service providers and the community. *3-Year Priority, Resources Needed*

Action TLU-3: Require the integration of land use and transportation planning and consideration of GHG reduction opportunities in every planning, major project and redevelopment effort undertaken by the City. *3-Year Priority, Resources Needed*

Action TLU-4: Identify opportunities to adjust the structure, function and/or composition of the Planning Commission to advance integrated consideration of transportation and land use planning issues.

Action TLU-5: Prioritize GHG reduction opportunities in the City's ongoing Zoning Update process.

Advance Infill, Mixed-Use and Transit-Oriented Development

Well designed, transit-oriented, dense, mixed-use, development providing access to goods and services can significantly reduce the use of fossil-fuel powered transportation. Reducing automobile trips can significantly reduce GHG emissions, local air pollution and related health impacts, and improve neighborhood quality of life.

Objective: Plan new development to minimize dependence on fossil fuel-powered transportation

Action TLU-6: Obtain Priority Development Area status from the Metropolitan Transportation Commission for all appropriate areas of Oakland to enable more competitive eligibility for local transportation and infrastructure funding. *3-Year Priority, Funded*

Action TLU-7: Create and adopt a transportation impact fee for Oakland to support local low-carbon transportation infrastructure and planning. *3-Year Priority, Resources Needed*

Action TLU-8: Develop and require transit-oriented development performance criteria for associated vehicle miles traveled and mode share for all major new development plans and projects throughout the city, emphasizing development proximate to transit hubs and corridors of all modes.

Action TLU-9: Actively promote the construction of housing at a range of price levels near transit hubs and corridors to meet the needs of Oakland's workforce.

Action TLU-10: Develop a comprehensive infrastructure plan (e.g., utilities, sewer, water, storm drains) to support Oakland's capacity to absorb planned infill development and to enable new green improvements (e.g., recycled water, solar technology installation).

Action TLU-11: Engage the community, through the zoning update process and other appropriate mechanisms, to develop a strategy for increasing density adjacent to transit in ways that improve neighborhood livability. For example, update design review standards for high-density multi-family buildings, encouraging design that is aesthetically pleasing, visually understandable, and practical. Insist on the creation of vibrant, safe, and attractive public spaces as a part of every development.

Action TLU-12: Engage the lending community on a shared strategy to improve the financial attractiveness of infill development in Oakland.

Advance the Use of Low-Carbon Transportation Modes

To achieve significant GHG reductions, transportation modes such as transit, bicycling and walking must increasingly become the preferred mode of moving about the city. To be effective, these modes will need to be available, accessible, safe, cost-competitive and desirable in comparison to the private automobile.

Objective: Make transit, biking and walking the preferred modes for local trips

Action TLU-13: Launch and sustain a downtown free shuttle to increase the ease of transit use in the downtown area. Explore options to expand the shuttle route along the Broadway corridor. *3-Year Priority, Funded*

Action TLU-14: Support bus rapid transit in Oakland along the Telegraph Avenue and International Boulevard corridors while minimizing short-term potential impacts to neighborhoods and businesses. *3-Year Priority, Funded*

Action TLU-15: Update the process for evaluating local environmental impacts resulting from new development (as required by the California Environmental Quality Act) to prioritize consideration of vehicle miles traveled impacts above congestion impacts. *3-Year Priority, Resources Needed*

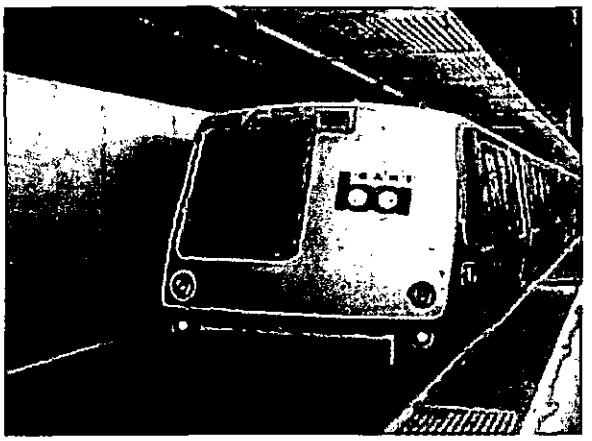
Action TLU-16: Accelerate the completion of bicycle and pedestrian networks as described in the Bicycle and Pedestrian Master Plans and other General Plan policies to provide safe, healthy transportation choices for all residents. *3-Year Priority, Resources Needed*

Action TLU-17: Optimize the design of streets to support transit, bicycling and walking (e.g., via bulb outs, traffic signal synchronization, transit and emergency signal priority).

Action TLU-18: Encourage and assist employers and transportation funding agencies to offer support for alternative transportation strategies that can help reduce the need to drive. These strategies may include transit incentive programs (e.g., AC Transit Easy Pass), flexible schedules, rideshare and car share programs, fuel-efficient workplace vehicles, and enhanced bicycle access in order to reduce the need for employees to drive.

Action TLU-19: Collaborate with regional partners (e.g., AC Transit, BART, shuttles, train, taxis, ferry) to expand and enhance public transit service, interconnections, vehicle amenities, and associated facilities (e.g., smaller transit shuttles to underserved areas of the community, connection timing, NextBus signage expansion).

Action TLU-20: Explore opportunities to implement major transit investments on the primary trunk lines of the city to improve the availability and reliability of transit service in areas where urban densities and activity centers exist.



Action TLU-21: Collaborate with community partners in developing and providing sustained community outreach and marketing about all available alternative transportation options (e.g., walking, biking, Safe Routes to School, car share programs, "Translink").

Action TLU-22: Partner with 511.org and the city's largest employers, event venues and other destinations to ensure that employees and visitors to Oakland have full information about the transportation choices.

Action TLU-23: Partner with and promote community based organizations that provide knowledge and skills such as bicycle safety training, transit system use, etc. to help Oakland residents shift trips to non-auto modes.

Action TLU-24: Encourage the creation of local bike sharing programs.

Action TLU-25: Explore potential strategies for increasing the availability of car share vehicles throughout the city (e.g., consider providing priority car share locations in high trafficked areas to car share companies willing to make car share vehicles available and accessible in less trafficked or underserved areas).

Action TLU-26: Enforce transportation demand management measures that are physically built into projects (e.g., car sharing spots, bike parking and showers, pedestrian-oriented elements).

Action TLU-27: Explore and revise City policies that make transit service difficult (e.g., analyze the true effect of transit on commercial districts, provide potential parking meter revenue if meters are removed), and consider transit-only lanes and amenities on significant thoroughfares.

Refine Parking Policies to Encourage Low-Carbon Mobility

Parking policies and pricing can have a significant impact on local transportation choices, especially in areas served by other transportation options such as public transit. Parking policies and pricing can be tailored to meet the needs of the Oakland community while fostering shifts from automobile use to other transportation modes. Parking pricing can also be used to support the development of alternative transportation options and other community benefits.

Objective: Meet parking needs while creating disincentives to drive

Action TLU-28: Develop regulations that would permit parking requirements to be met through alternative approaches demonstrated to reduce parking demand and GHG emissions (e.g., on-site car-sharing, bicycle parking, transit passes). *3-Year Priority, Resources Needed*

Action TLU-29: Conduct a citywide dynamic parking pricing study and develop a strategy to set parking rates at City meters and garages that can reduce trips, favor transit, provide adequate parking supply, encourage economic development, and fund alternative transportation and neighborhood streetscape improvements. *3-Year Priority, Resources Needed*

Action TLU-30: Impose parking maximums on new development and assist developers, lenders, property owners and tenants in preparing strategies to minimize parking demand and encourage shifts to transit and other transportation modes.

Action TLU-31: Develop a strategy to facilitate unbundling of the costs of renting parking from renting building space, where appropriate, to more explicitly charge for parking.

Action TLU-32: Review the process of establishing residential permit parking and consider opportunities to expand this program in appropriate locations.

Foster the Use of Low Carbon Vehicles and Fuels

A portion of transportation in the city will continue to be accomplished through the use of gasoline and diesel-powered automobiles. Improving vehicle fuel efficiency through purchasing decisions and maintenance activities and utilizing low carbon fuels (e.g., biodiesel from waste oils) can help to reduce GHG emissions associated with these vehicle trips.

Objective: Increase representation of low-carbon fuels and vehicles in the citywide fleet

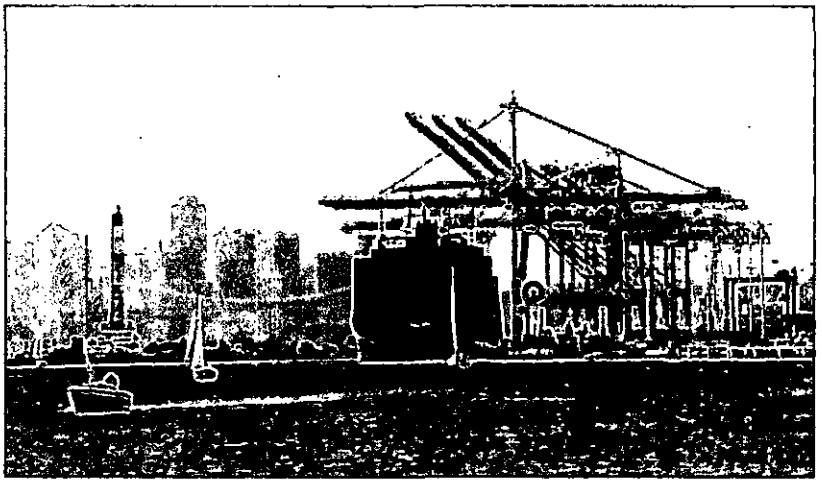
Action TLU-33: Participate in regional electric vehicle infrastructure planning and develop new processes to support local use of electric vehicles. *3-Year Priority, Resources Needed*

Action TLU-34: Collaborate with community partners to develop and provide sustained community outreach and marketing about fuel-efficient vehicles and low carbon fuels (e.g., biodiesels from waste oils).

Action TLU-35: Encourage the responsible local manufacture and production of low-carbon fuels (e.g., biofuels produced from recycled waste oil) through incentives and/or promotional support.

Action TLU-36: Work with large fleet operators such as taxi companies, along with the City's own fleet, to establish minimum GHG performance criteria for all new fleet vehicles and fleet-wide GHG performance goals.

Engage the Port of Oakland and Related Industry in Reducing GHG Emissions



As a primary hub of goods movement, activities associated with the Port of Oakland and its tenants are a significant source of GHG emissions, along with other local air pollution. Oakland is fortunate to reap economic and employment benefits from its Port, but is also troubled with high levels of local air pollution and other problems created by this concentration of goods movement.

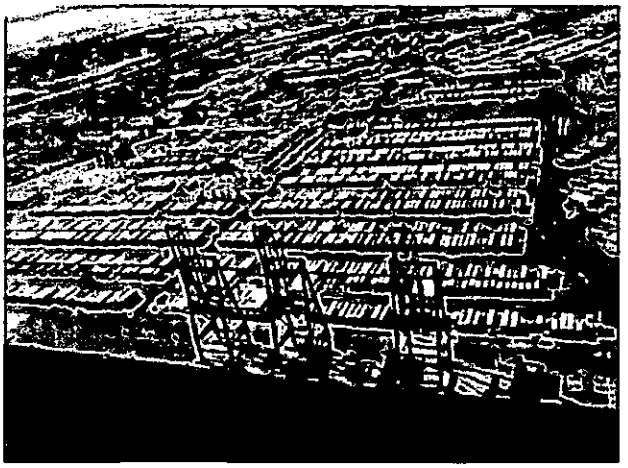
GHG emissions associated with the Port and its tenants include emissions associated with building energy consumption, Port-owned vehicles and equipment, harbor craft, cargo handling equipment, berthed vessels, trucks and trains operating within Port property and within Oakland's boundaries, and other stationary sources. Tenant activities create additional GHG emissions outside of Oakland in the form of fuel used to power airplanes, trucks, trains and marine vessels. Emissions associated with these planes and vessels generally fall under the regulatory authority of the Federal Aviation Administration, the International Maritime Association, or State and Federal government. However, Oakland can help to reduce emissions associated with these sources through actions that reduce material consumption and waste, as described in Chapters 4 and 5. See the ECAP Appendix for further information on GHG emission sources related to the Port and its tenants.

Short of incorporating GHG reduction actions and/or performance requirements applicable to the Port of Oakland within the City's General Plan, the City's ability to influence these emission sources is generally limited. However, it is in the collective best interests of the City and the Port to continue collaborating to explore opportunities to reduce emissions associated with

the Port and its tenants. The Port has a significant opportunity to play a leadership role in addressing local sources of GHG emissions and other air pollutants.

The Port has taken a number of steps in recent years to reduce emissions associated with Port operations and on-site tenant activities, including installing infrastructure for alternative fuel vehicles, advancing shoreside electrification for tenant vessels, retrofitting facilities and installing solar energy systems. Many opportunities for additional progress remain, as indicated by measures contained in the Port's Maritime Air Quality Improvement Plan that would reduce GHG emissions.

Objective: Reduce GHG emissions associated with the Port of Oakland and its tenants



Action TLU-37: Call upon the Port to establish GHG reduction goals associated with Port operations in alignment with the City's GHG reduction target of 36% below 2005 emissions by 2020, and plans for achieving those goals. *3-Year Priority, Funded*

Action TLU-38: Call upon the Port to establish GHG inventories and reduction goals associated with tenant activities, and plans for achieving those goals with appropriate tenant commitments, potentially including requiring specific high-impact GHG reduction measures (e.g., electrification of land-based, aviation and maritime vessels). *3-Year Priority, Funded*

Action TLU-39: Offer to partner with the Port, where appropriate, in evaluating and developing GHG reduction strategies.

Action TLU-40: Collaborate with the Port to advocate that Port tenants be required to implement actions at Oakland's ports in demonstrating compliance with statewide fleet emissions reduction targets (e.g., through electrification of docked vessels).

Action TLU-41: Conduct a study of potential options to implement truck re-routing in Oakland to reduce driving and parking of diesel trucks near residential neighborhoods, as well as increased enforcement of anti-idling restrictions.

Action TLU-42: Make land use and planning decisions (e.g., plans for the former Army Base) in a manner that minimizes GHG emissions and other air pollutants associated with the Port and related activities and travel without unduly compromising the economic value of the Port.

Action TLU-43: Identify opportunities to incorporate GHG reduction actions and/or performance requirements applicable to the Port of Oakland within updates to the City's General Plan.

Grow Oakland's Urban Forest

Urban forestry can be both an effective GHG mitigation and climate adaptation strategy. Trees provide important benefits in helping to directly and indirectly cool nearby buildings, reducing energy demand. Tree canopies also help to reduce the urban heat island effect, reducing temperatures throughout the city and helping to mitigate air quality and health problems caused by extreme heat events. Urban forests can also help to provide animal habitat, create economic development benefits in commercial districts, and improve quality of life. However, urban forests require thoughtful and resourced management. Trees must be planted carefully with consideration of infrastructure, public safety and maintenance and other sustainability impacts. The development and maintenance of the urban forest requires an effective public-private partnership.

Objective: Develop Oakland's urban forest throughout the city

Action TLU-44: Develop an urban forestry master plan outlining how the City will protect, develop and maintain diversified and appropriate tree plantings on City right-of-ways. *3-Year Priority, Resources Needed*

Action TLU-45: Develop a robust urban tree inventory of all trees in proximity to sidewalks, medians, public buildings, parks and other public right-of-ways.

Action TLU-46: Provide preventative maintenance and management of trees in City right-of-ways.

Action TLU-47: Implement a street tree planting pilot project with local partners utilizing advanced planting techniques.

Action TLU-48: Develop a plan to ensure the continued health of all parks and forested land within the city and encourage tree planting on private land throughout the community.

Action TLU-49: Convene community workshops to educate community members on proper tree maintenance.

Action TLU-50: Collaborate with local organizations where appropriate to advance local urban forestry efforts.

Reduce Transportation Impacts of City Operations

The City adopted a Green Fleets policy in 2003, committing to purchase vehicles powered by alternative fuels whenever possible. While efforts in accordance with this policy have been made since, many opportunities remain to improve fleet fuel efficiency and shift to alternative fuel vehicles. Fleet replacement has been significantly underfunded in recent years, resulting in an aging and fuel-inefficient fleet requiring significant maintenance investment. A number of City fleet vehicles now operate on compressed natural gas (CNG), but opportunities exist to convert hundreds of non-emergency vehicles to CNG and other fuel efficient alternatives (e.g., plug-in hybrid electric vehicles). Vehicle replacement with more fuel efficient vehicles continues to represent the largest opportunity to decrease GHG emissions associated with the City's fleet.

Objective: Achieve a 36% reduction in City-related fuel consumption by 2020

Action TLU-51: Increase the rate of fleet vehicle replacement to retire older inefficient vehicles and continue to replace vehicles with fuel efficient and alternative fuel models (e.g., CNG, electric and plug-in hybrid vehicles, trucks with anti-idling controls). *3-Year Priority, Resources Needed*

Action TLU-52: Provide subsidized transit passes (e.g., participate in the AC Transit Easy Pass program) and bicycle or shoe commuter allowances to all City employees. *3-Year Priority, Resources Needed*

Action TLU-53: Discontinue the practice of providing parking to City employees based in transit-rich locations. *3-Year Priority, Resources Needed*

Action TLU-54: Support employee commute trip reduction by enabling flexible work schedules and encouraging telecommuting where possible.

Action TLU-55: Continue efforts to reduce the size of the City's vehicle fleet by utilizing pool cars and car share programs and eliminating underutilized inefficient vehicles.

Action TLU-56: Perform regular preventive maintenance (e.g., tire inflation) of the City's vehicle fleet to ensure optimum fuel efficiency performance.

Action TLU-57: Expand employee education programs training staff on how to reserve pool cars and car share vehicles, planning practices for optimizing and reducing trips, and vehicle maintenance and driving habits that promote optimum fuel efficiency.

Action TLU-58: Expand the City's capacity to support the use of alternative fuel vehicles, such as through the installation of new electric vehicle charging infrastructure.

Action TLU-59: Integrate fuel-efficient and zero emission specialized vehicles (e.g., cargo trikes for park maintenance) into the City's fleet where appropriate.

Building Energy Use

Building Energy Use, including energy used to heat, light and power Oakland's buildings and other stationary devices such as streetlights, as well as to pump and treat water consumed in Oakland, is a major direct source of greenhouse gas emissions.

Natural gas consumption represents the majority of GHG emissions from this sector, followed closely by electricity use. The combustion of natural gas, primarily to heat buildings, heat water and cook, results directly in GHG emissions. Electricity consumption results in the creation of GHG emissions at the power plant(s) generating and providing the electricity. Most electricity generation occurs outside of Oakland's boundaries, but those GHG emissions are included here given the direct relationship to electricity consumption occurring in Oakland.

A number of strategies are available through which the City can help to reduce GHG emissions associated with Building Energy Use.

Key GHG Reduction Strategies:

- Optimize energy efficiency in new buildings
- Retrofit existing buildings to reduce energy consumption
- Promote energy and water conservation and efficiency
- Advance the use of renewable energy
- Improve the energy performance of municipal facilities

Achieving the 2020 goal of reducing GHG emissions associated with Building Energy Use by 36% will require significant action in all of these areas. Improving energy performance in existing buildings is especially important. A community-wide movement will be needed to: reach all businesses and guide 30% of them through energy efficiency programs; encourage property owners to retrofit 30% of Oakland's homes; and foster dedicated energy conservation behaviors on the part of every member of the Oakland community.

Building Energy Use 2020 Goals:

- Construct all new buildings citywide to high energy standards
- Retrofit 30% of commercial space and homes between 2010 and 2020
- Achieve 32% electricity savings across all sectors
- Achieve 14% natural gas savings across all sectors
- Achieve a 33% renewable portfolio standard for grid electricity
- Generate 3% of building energy consumption from new local renewable energy

Strategies to Achieve 2020 Goals

Optimize Energy Efficiency & Consumption in New Buildings

Every year new buildings continue to be constructed in Oakland. Achieving long term energy reductions starts by ensuring that all new buildings are constructed to high performance energy standards. Recent updates to the State's Title 24 building energy code have raised the energy performance bar in California, but new buildings in Oakland can achieve even higher levels of energy efficiency.

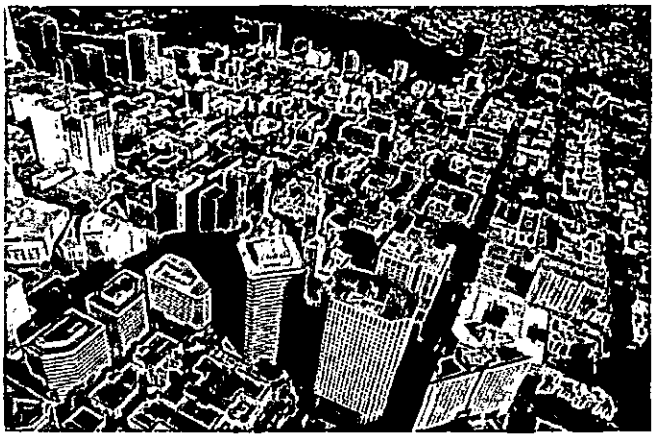
Objective: Achieve 10% better energy performance than Title 24 in all new building stock

Action BE-1: Adopt a green building ordinance for residential and commercial private development new construction projects requiring high levels of energy performance and water efficiency. *3-Year Priority, Funded*

Action BE-2: Ensure enforcement of building energy codes in accordance with all code requirements.

Retrofit Oakland's Existing Building Stock to Reduce Energy Consumption

There are more than 100,000 residential and commercial buildings in Oakland, built over many decades, many of which offer significant opportunities for improved energy performance. Reducing citywide energy consumption will require retrofitting all of these buildings to improve energy efficiency. Many energy efficiency improvements offer significant cost savings opportunities, and can also improve indoor occupant health, comfort, productivity and quality of life. Energy retrofits can reduce energy consumption and energy costs as much as 25-35% per building, often creating a net positive cash flow from day one. With a large and experienced pool of energy contractors, Oakland is well positioned to become the energy retrofit capital of America.



All Building Types

Action BE-3: Include all significant renovation projects in the proposed green building ordinance for residential and commercial private development projects requiring high levels of energy performance. *3-Year Priority, Funded*

Action BE-4: Offer property-based financing and associated outreach for energy efficiency and solar improvements to residential and commercial property owners in Oakland. *3-Year Priority, Funded*

Action BE-5: Engage local utilities (e.g., PG&E, EBMUD) to develop on-bill financing options for energy efficiency improvements to increase energy retrofits in tenant-occupied and other properties. *3-Year Priority, Resources Needed*

Action BE-6: Pursue funding to augment existing and create new residential and commercial energy programs to reduce energy consumption throughout the community. *3-Year Priority, Resources Needed*

Action BE-7: Encourage all businesses and households to use 16% less energy through conservation actions such as turning off unnecessary equipment and right-sizing the use of energized equipment. *3-Year Priority, Resources Needed*

Action BE-8: Develop and promote a suite of energy efficient upgrades specifically for historic buildings so that these buildings can be made energy efficient while also retaining their historic status.

Action BE-9: Promote the benefits of investing in energy efficiency in existing properties and provide guidance on getting started to property owners and tenants through a targeted marketing and outreach campaign in collaboration with local partners.

Commercial/Industrial Buildings

Objective: Perform efficiency retrofits in 30% of Oakland's commercial building stock by 2020, resulting in 20% less building-related electricity and natural gas consumption

Action BE-10: Offer enhanced incentives and technical assistance to help downtown commercial property owners improve energy efficiency. *3-Year Priority, Funded*

Action BE-11: Encourage businesses to participate in local energy efficiency programs offered through the East Bay Energy Watch regional collaboration between PG&E and East Bay cities. *3-Year Priority, Partially Funded*

Action BE-12: Launch a program offering technical assistance to help Oakland's most energy intensive businesses to develop and implement energy efficiency and conservation strategies. *3-Year Priority, Resources Needed*

Action BE-13: Adopt an ordinance requiring cost-effective commercial energy-related improvements at time of lease or sale or under other appropriate conditions based on analysis of existing commercial retrofit programs.

Action BE-14: Develop analytical tools and invest in strategic planning to identify energy improvement opportunities and new initiatives to reduce energy use in commercial buildings.

Action BE-15: Encourage the use of building feedback systems to assist local building owners in identifying, implementing, tracking and reporting on energy efficiency improvements over time.

Action BE-16: Enhance and expand existing small commercial energy retrofit assistance programs to help existing owner-occupied and rented small commercial properties reduce energy use and save money via energy audits, technical assistance, retrofit incentives, and/or continuous commissioning support.

Action BE-17: Create a community "Kilowatt Crackdown" challenge program in collaboration with BOMA and the Oakland Partnership pushing commercial office buildings to reduce energy use while competing for recognition based on energy performance and progress.

Residential Buildings

Objective: Retrofit 30% of Oakland's residential building stock by 2020, resulting in 10% less building-related electricity and natural gas consumption

Action BE-18: Launch a new energy retrofit program to improve energy efficiency of existing single-family and multi-family residential properties via promoting green improvements, providing green construction specs, certifying green contractors, connecting homeowners, landlords and tenants with financing options (e.g., new property-based financing), and providing quality assurance support. *3-Year Priority, Funded*

Action BE-19: Create an energy retrofit pilot program targeting multi-family affordable housing by providing funds to reduce risk and enable the acquisition of private investment capital to implement energy savings projects. *3-Year Priority, Funded*

Action BE-20: Expand, enhance and promote delivery of weatherization and energy retrofit assistance services to help low-to-moderate income residents improve energy efficiency and reduce energy costs. *3-Year Priority, Funded*

Action BE-21: Develop new energy retrofit programs to facilitate energy efficiency improvements of existing renter-occupied residential properties by supporting outreach as well as assistance designing tenant-landlord agreements so that all parties equitably share the costs and benefits of energy efficiency. *3-Year Priority, Resources Needed*

Action BE-22: Adopt an ordinance requiring cost-effective residential energy-related improvements at time of sale, or under other appropriate conditions. *3-Year Priority, Resources Needed*

Action BE-23: Support local programs delivering entry-level residential energy efficiency services to Oakland neighborhoods (e.g., California Youth Energy Services).

Action BE-24: Support do-it-yourself home energy improvements by providing appropriate tools for home energy evaluation and improvement through Oakland's Tool Lending Library.

Increase the Use of Clean Renewable Energy

Even after conservation and significant improvements in energy efficiency, remaining energy consumption will need to be supported by more clean, renewable energy sources. Governor Schwarzenegger has established a 33% renewable portfolio standard (RPS), requiring 33% of electricity provided by utilities such as PG&E to come from renewable energy sources by 2020. Oakland can go further toward achieving higher rates of renewable energy use through additional action to increase local renewable energy generation from solar, wind and other sources.

Objective: Achieve a minimum of 33% renewable energy on the electricity grid, along with new local renewable systems generating an additional 3% of Oakland's energy for buildings

Action BE-25: Encourage and collaborate with local partners to launch a community solar program to increase local use of renewable energy, including solar-thermal energy to produce heat and hot water. *3-Year Priority, Resources Needed*

Action BE-26: Negotiate with PG&E to offer local green power options to Oakland customers. *3-Year Priority, Resources Needed*

Action BE-27: Continue to monitor the feasibility and utility of implementing community choice energy aggregation (CCA) in Oakland. *3-Year Priority, Resources Needed*

Action BE-28: Study potential local solar, wind, wave, combined heat and power, and anaerobic digestion opportunities and develop strategic plans for increased clean energy use in Oakland.

Promote Water Conservation and Efficiency

The treatment and transport of water is energy intensive, consuming approximately 19% of the state's electricity, 30% of its natural gas and 80 million gallons of diesel fuel in 2001. By reducing potable water consumption we can conserve a precious and limited resource, and reduce associated pumping and treatment energy and GHG impacts. The City can continue collaborating with the East Bay Municipal Utility District (EBMUD), StopWaste.Org, PG&E and community organizations to promote and support water conservation and efficiency.

Objective: Reduce energy consumption through water conservation and efficiency in new and existing buildings and infrastructure.

Action BE-29: Create an Oakland-specific Water Efficient Landscape Ordinance (WELO) to address water conservation. *3-Year Priority, Funded*

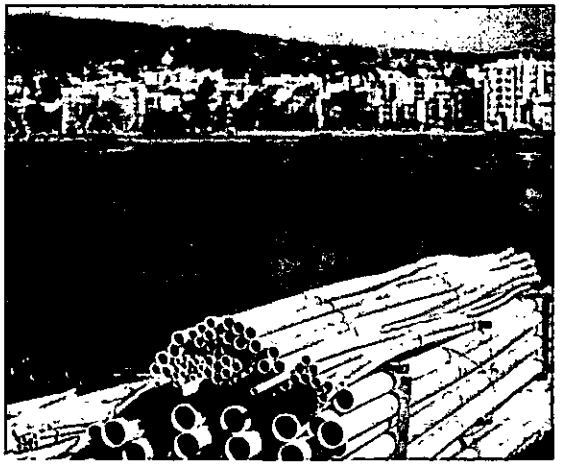
Action BE-30: Expand promotion of water conservation and efficiency practices such as water-efficient landscaping and irrigation and lawn replacement. Continue promoting StopWaste.Org publications titled "Bay Friendly Landscaping Guidelines: Sustainable Practices for the Landscape Professional" and "Bay Friendly Gardening: From Your Backyard to the Bay" through targeted outreach campaigns in partnership with local organizations.

Action BE-31: Participate in outreach campaigns by EBMUD, StopWaste.Org and others to encourage water monitoring, conservation and efficiency by Oakland's largest water consumers.

Action BE-32: Encourage the installation of rainwater harvesting through water collecting cisterns in new development to capture water during the rainy season for outdoor uses and/or indoor uses.

Action BE-33: Refine the permit process for greywater system installation in new development and existing properties. Encourage installation of greywater systems, where appropriate, in accordance with State and local codes.

Action BE-34: Advocate for enhancing water metering practices (e.g., installation of smart meters, sub-meters for tenant-occupied spaces) to enable monitoring and evaluation of consumption patterns.



Action BE-35: Encourage the installation of water efficient fixtures and plumbing in private development, including products labeled under the EPA's WaterSense program.

Action BE-36: Increase the amount of public space landscaped with drought-resistant plants and trees meeting Bay Friendly Landscaping Guidelines.

Action BE-37: Create standard operating procedures for installing water efficient fixtures and equipment in municipal buildings, landscapes, ballfields and swimming pools at regular replacement schedules, and proactively when cost-effective.

Optimize Energy Efficiency & Consumption in City Facilities

The City has built in energy efficiency or performed energy retrofits in over 100 of its largest buildings during the last twenty years. However, significant potential remains to reduce energy use and improve performance in existing City facilities.

Objective: Reduce GHG emissions from energy consumption in City buildings and streetlights by 36% by 2020, achieving 10% through conservation

Action BE-38: Enhance and implement standard operating procedures to improve energy conservation and efficiency in ongoing City facility operations. Require City facilities over a certain age to participate with the LEED O&M program. *3-Year Priority, Funded*

Action BE-39: Modify the City's Civic Green Building Ordinance to increase energy efficiency standards for new construction and major renovation of City facilities. *3-Year Priority, Funded*

Action BE-40: Perform energy efficiency upgrades to City facilities and operations. *3-Year Priority, Funded*

Action BE-41: Explore opportunities to install alternative energy technologies (e.g., via solar power purchase agreements) or purchase grid-based renewable energy for City facilities.

Action BE-42: Replace streetlights with energy-efficient advanced technology models in all appropriate locations during the course of normal technology replacement schedules.

Action BE-43: Develop and provide training to City employees on targeted energy and climate issues.

Material Consumption and Waste

The Oakland City Council adopted a Zero Waste goal in 2006, calling for a 90% reduction in waste sent to landfill by 2020. The City's Zero Waste Strategic Plan outlines strategies for meeting this goal. These strategies prioritize "systems" solutions to reduce landfilled waste, and expand waste reduction, recycling and composting programs. By pursuing the City's adopted Zero Waste strategies, Oakland can create GHG reductions on the same order of magnitude as those related to transportation and building energy use.

From a lifecycle perspective, GHG impacts associated with the manufacture, transport, use and disposal of material goods and food represent a major source of GHG emissions. While many of these emissions do not occur within Oakland's geographic boundaries, consumption and disposal choices in Oakland can help to reduce GHG emissions elsewhere.

A number of strategies are available through which the City can help to reduce GHG emissions associated with Material Consumption & Waste Reduction.

Key GHG Reduction Strategies:

- Expand and Improve Waste Reduction, Reuse, Recycling, and Composting
- Encourage Sustainable Consumption
- Promote Local Food

Achieving Oakland's adopted Zero Waste goal will require significant action in each of these areas.

The City can position Oakland to keep many more materials out of landfills by restructuring elements of Oakland's solid waste management system. This may include changes to Oakland's municipal code, garbage franchise agreement, residential recycling service contracts, and rate structure. Expanding and refining implementation of the City's Construction and Demolition Debris Recycling Ordinance can foster reuse and keep materials out of landfill. Other actions described in this section can also play important roles in reducing waste. All members of the community will need to make individual purchasing, consumption and disposal choices to help Oakland reach Zero Waste goals.

Material Consumption & Waste Goals:

- Achieve a 90% reduction (~375,000 tons) in waste sent to landfill by 2020
- Increase local food production

Strategies to Achieve 2020 Goals

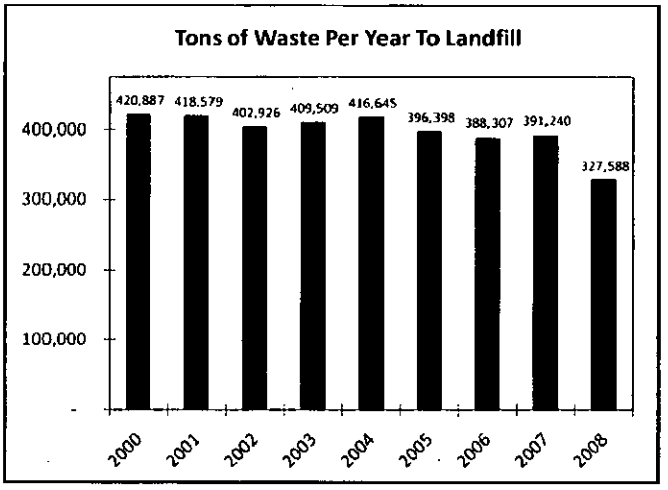
Expand and Improve Waste Reduction, Reuse, Recycling, and Composting

Achieving Zero Waste will require expanded and improved waste reduction reuse, recycling, and composting systems. By structuring these systems to better reward behaviors that keep waste out of landfills, the City can foster significant GHG reductions associated with the lifecycle impacts of materials.

Objective: Reduce community-wide waste sent to landfill to 40,000 tons by 2020

Action MW-1: Restructure Oakland's solid waste management system (municipal code, garbage franchise agreement, and residential recycling service contracts) to provide comprehensive incentives for residents, businesses, and collection service providers to reduce waste and recycle more. These changes will help Oakland comply with potential statewide mandatory recycling requirements, including for multi-family residential properties. The outcome of this restructuring exercise may recommend adjustments to the types of recycling, compost, and garbage services offered, collection frequency, and container sizes, and the implementation of mandatory recycling participation and/or disposal bans. *3-Year Priority, Funded*

Figure 9. Oakland Citywide Waste Sent to Landfill



Action MW-2: Refine implementation of Oakland's Construction and Demolition (C&D) Debris Recycling Ordinance to capture greater amounts of materials for reuse, recycling and composting, and consider opportunities to expand the ordinance to include a broader range of projects with potential incentives for deconstruction and salvage. *3-Year Priority, Funded*

Action MW-3: Require development and implementation of waste reduction and recycling plans for all large venues and public events. *3-Year Priority, Funded*

Action MW-4: Enforce mandatory statewide and countywide bans on sale, use, or disposal of material types, and implement selected local bans. *3-Year Priority, Resources Needed*

Action MW-5: Conduct new residential social marketing campaigns and increased outreach to businesses and other institutions to improve the effectiveness of waste reduction and recycling programs. *3-Year Priority, Resources Needed*

Action MW-6: Study options for deepening future waste reduction activities to help achieve the City's adopted Zero Waste Goal, including consideration of commercial food scraps. *3-Year Priority, Resources Needed*

Action MW-7: Identify and retain sufficient industrially zoned lands through zoning and specific plans to support Zero Waste business development and infrastructure, and associated green jobs. Provide appropriate locations for new and existing recycling facilities.

Action MW-8: Adopt Zero Waste practices in City operations, facilities, capital improvement and maintenance practices.

Action MW-9: Require reporting on implementation of the City's Environmentally Preferable Purchasing Policy.

Action MW-10: Require reporting from state-recognized institutions in Oakland that are exempt from local waste reduction rules (e.g., public school systems, State/Federal offices, the Port, Oakland Housing Authority) to increase waste reduction and recycling at their facilities.

Action MW-11: Facilitate easier recycling of organic materials in multi-family buildings through revised design requirements.

Action MW-12: Promote Bay Friendly Landscaping practices to reduce excess plant debris from being sent to landfill and the need for nitrogen-based synthetic fertilizers.

Encourage Sustainable Consumption

Achieving Zero Waste begins with purchasing and material consumption choices that reduce the potential for waste generation. By placing emphasis on reuse and repair opportunities, and purchasing new materials only when necessary, it is possible to reduce upstream GHG impacts associated with the manufacture and transport of goods, as well as downstream impact such as landfill gas creation.

Objective: Support Oakland's waste reduction goals through sustainable consumption practices

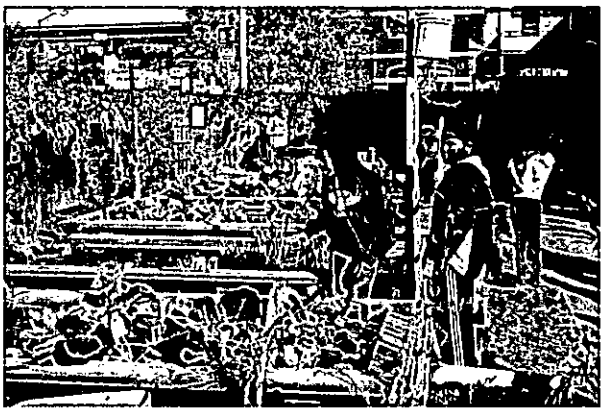
Action MW-13: Promote reduction of product waste and better management of hard-to-recycle and toxic products through producer responsibility. Support statewide producer responsibility legislation. Support the creation of convenient and cost-effective product take-back opportunities for the public through existing retail distribution systems.

Action MW-14: Promote members of the Alameda County Green Business Program and support program efforts to expand to include additional business types.

Action MW-15: Foster local reuse and repair opportunities, including through expanded community outreach efforts promoting re-use of buildings and materials, and "buy local" programs focusing on goods made from recycled materials.

Action MW-16: Encourage businesses capable of manufacturing needed products from existing waste streams and businesses utilizing low impact packaging techniques to locate in Oakland.

Promote Local Food

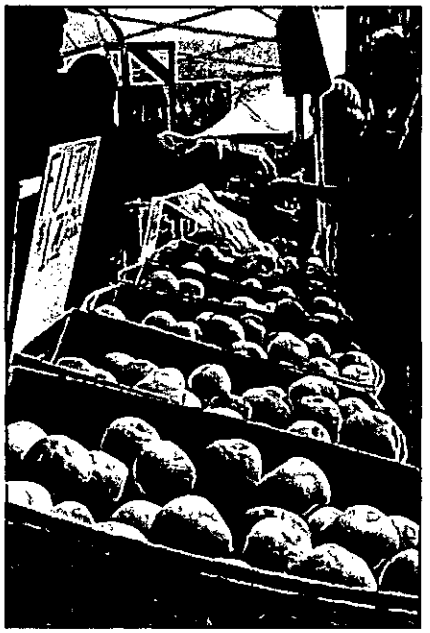


Globally, up to 32% of GHG emissions are related to food system activities including production, transportation, processing, and storage. A low-carbon food system emphasizes food that is produced with efficient use of resources, and food that is produced, processed and distributed near where it is consumed. Significant opportunities to reduce GHG emissions associated with the food system exist in decreasing consumption of meat and foods grown with intensive use of manufactured fertilizers. A local food system can help to reduce transportation-related GHG emissions and upstream use of GHG-intensive fertilizers, while creating local green jobs and strengthening the local economy.

The City recognizes that local food production can also create adverse impacts related to issues such as noise, trucking, lighting, odors, and air quality. Efforts to expand local food production should include consideration of both beneficial and adverse potential impacts.

Oakland is home to a range of innovative food system initiatives, including the Oakland Food Policy Council (OFPC). The OFPC was launched in 2009 to develop recommendations to support the development of Oakland's local food sector and increase community access to healthy foods. The City has an opportunity to promote, integrate and build upon existing local food initiatives distinguishing Oakland.

Objective: Increase opportunities for urban agriculture in Oakland



Foster More Local Food Production

Action MW-17: Develop regulations that allow for the use of urban land for food production. *3-Year Priority, Funded*

Action MW-18: Encourage local utilities, public agencies and other large land owners to offer commercial leases to local organizations for the purpose of local food production and/or foraging. *3-Year Priority, Funded*

Action MW-19: Evaluate the potential of creating additional community gardens on City-controlled public land.

Action MW-20: Encourage the inclusion of food-producing gardens, including roof-top gardens, in private development where appropriate, with consideration of Bay Friendly principles.

Action MW-21: Provide limited information maintained by the City on available brownfield land and promote the efforts of local organizations to document the potential of local land to be used for urban agriculture, including consideration of availability, soil toxicity, water access, and security.

Action MW-22: Promote the efforts of local organizations that provide training on gardening and composting.

Action MW-23: Provide a portion of compost generated through the City's residential recycling program back to the community.

Action MW-24: Include a preference for inclusion of community gardens and sustainable local food production in evaluating applications for City funds and contracts.

Action MW-25: Encourage partnerships among private and non-profit sector organizations to create shared commercial kitchens in underserved areas of Oakland to stimulate local food microenterprises.

Develop Markets for Local Food

Action MW-26: Integrate consideration of local food procurement and food related impacts into processes for selecting food for City sponsored events and contracts.

Action MW-27: Work with partners to add consideration of local food procurement and food related impacts to green business certification criteria.

Action MW-28: Encourage efforts of local organizations to promote local food procurement and consideration of food related impacts to the community, focusing on large employers and other targeted venues.

Action MW-29: Advance economic development strategies that promote sustainable food production in Oakland.

Action MW-30: Review and align permit and other requirements for farmers markets, community supported agriculture programs and other local food distribution efforts.

Community Engagement

Oakland's success in meeting its GHG reduction goals will ultimately depend largely on the day-to-day decisions of all members of the Oakland community, including residents, businesses and other institutions.

The City has an important role to play in educating and motivating all members of the Oakland community to join in the effort to reduce energy use and GHG emissions. By leveraging its leadership and existing communication channels, the City will help to spur the high levels of community participation needed to solve these challenges, and provide opportunities for new ideas from the community to further strengthen local efforts. In addition, the City will monitor and report on Oakland's progress in reducing energy use and GHG emissions, and promote local examples of leadership throughout the community.

The City can implement a number of strategies to engage the community to increase citywide climate action.

Key GHG Reduction Strategies:

- Encourage Community Energy and Climate Action
- Create New Opportunities for Community Engagement
- Track and Promote Community Action

Achieving Oakland's GHG reduction goals across Transportation & Land Use, Building Energy Use, and Material Consumption & Waste will require significant action in each of these areas. By collaborating with local organizations, the City can help to spur local action that will be needed to reduce driving citywide by 20%, retrofit 30% of Oakland's housing stock with energy improvements, enroll 30% of businesses in local energy efficiency programs, and reduce waste sent to landfill by 90% by 2020. Actions to reach these goals can in turn help to create new local green job opportunities for Oakland residents.

Local organizations, including community-based organizations, business, labor, educational institutions and others, can educate, motivate and empower the Oakland community to participate in and benefit from local climate action. As champions connected throughout the Oakland community, these organizations can help to build a movement around local climate action.

Community Engagement Strategies

Encourage Community Energy and Climate Action

Working in collaboration with local organizations, the City can help to educate and motivate all members of the Oakland community to take individual action on energy and climate issues.

Action CE-1: Expand the City's website, Green Building Resource Center, and other outreach channels to provide more comprehensive and action-oriented information regarding opportunities to reduce energy use and GHG emissions. *3-Year Priority, Funded*

Action CE-2: Partner with community-based organizations, neighborhood associations, business associations, and others to promote local climate action throughout the community through new and traditional channels. *3-Year Priority, Funded*

Action CE-3: Develop and distribute a community climate action guide and targeted educational materials in collaboration with local organizations to inspire all members of the Oakland community to take action to reduce GHG emissions. *3-Year Priority, Resources Needed*

Action CE-4: Provide support to local organizations to convene neighborhood-scale or issue-based community climate action workshops. *3-Year Priority, Resources Needed*

Action CE-5: Create citywide and neighborhood scale opt in electronic listservs and other information sharing opportunities focused on targeted climate protection topics (e.g., community gardening, installing rooftop solar) to help interested residents and other parties connect with each other, share wisdom, etc.

Action CE-6: Promote climate-related volunteer events throughout the community in partnership with local organizations.

Action CE-7: Create a community climate challenge campaign and work with local business partners to identify and provide incentives for participation and achievement.

Action CE-8: Encourage OUSD and other organizations to provide educational opportunities on energy and climate issues to local youth, and to integrate energy and climate action within operational practices where possible (e.g., safe routes to school and green schools programs).

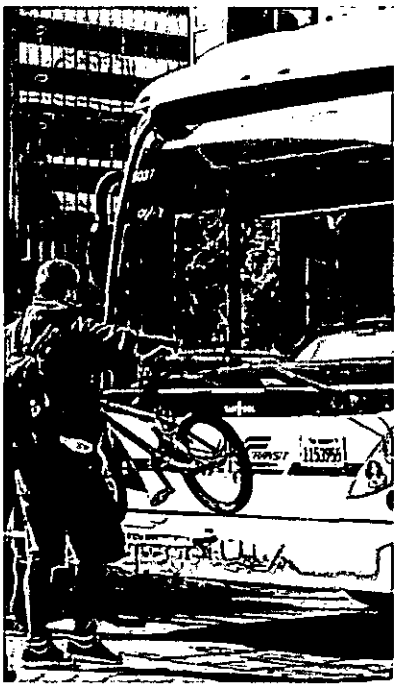
Action CE-9: Engage the local philanthropic community to provide support for model projects with potential for replication throughout the community, especially in areas with the least resources and/or least engagement in local climate actions.

Create New Opportunities for Community Engagement

The City will provide ongoing opportunities for new community ideas on energy and climate action to further strengthen local efforts.

Action CE-10: Convene community climate forums to provide informal opportunities for members of the public and local community organizations to learn about local climate protection progress and provide input on future activities. *3-Year Priority, Funded*

Action CE-11: Establish and highlight opportunities for members of the community to provide suggestions to City staff and policy makers regarding how the City can further augment its climate protection efforts through adjustments to local planning, policies and programs.



Action CE-12: Provide information through local organizations, community information channels and the City's website to assist the Oakland community in identifying opportunities to advance local climate action through planned updates to City planning documents, policies and programs.

Action CE-13: Include content in regular community surveys conducted by the City to help inform future energy and climate action planning decisions, and engage local partners in additional surveying efforts where appropriate.

Action CE-14: Engage the community in visioning Oakland in 2050 to help identify steps toward achieving significant GHG reductions in the process of realizing that vision.

Track and Promote Community Action

The City will monitor and report on Oakland's progress in reducing energy use and GHG emissions, and promote local examples of model practices throughout the community.

Action CE-15: Report on Oakland's progress in reducing energy use and GHG emissions on an annual basis. *3-Year Priority, Funded*

Action CE-16: Develop a local climate action model practices campaign collaborating with local organizations to document and promote examples of local climate actions to the community. *3-Year Priority, Resources Needed*

Action CE-17: Expand energy and climate content on the City's website and other outreach tools to track progress and promote the GHG reduction achievements of the City and the Oakland community, as well as tools to support local action and opportunities to get involved.

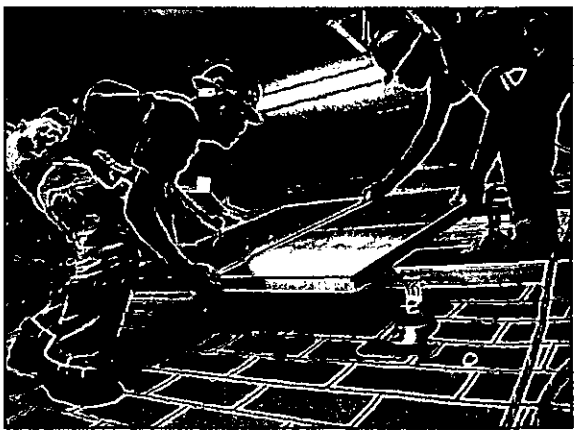
Action CE-18: Create a community climate leaders recognition program and promote model actions and performance through an annual recognition program.

Action CE-19: Promote green community events throughout the city.

Develop the Local Green Workforce to Support Local Green Businesses

The emerging green economy will continue to create new demand for trained professionals capable of delivering work such as building energy retrofits, development of bikeways, product repair, installation of solar panels and construction debris collection for reuse. Oakland has an opportunity to build on its investment in local green jobs training programs to develop a local green workforce and provide employment opportunities for disadvantaged residents.

Objective: Train workers for new green jobs to support energy and climate actions



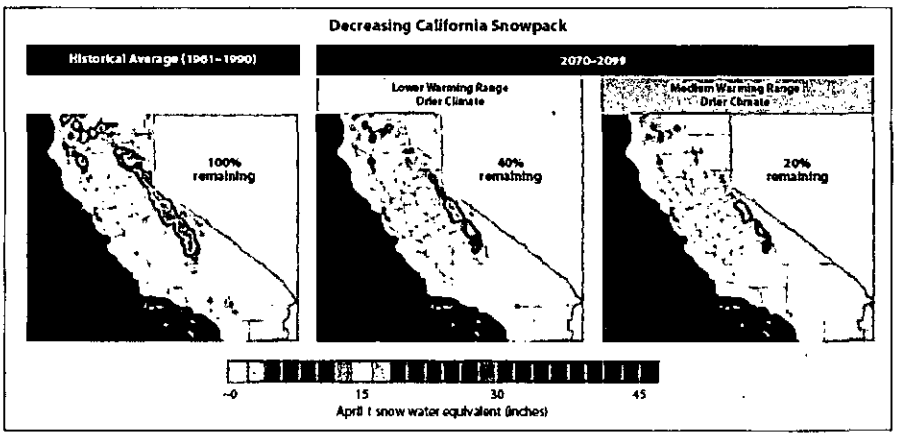
Action CE-20: Engage with local green jobs training providers to coordinate strategic planning and encourage programs to develop local workforce capacity and assess, train and place local residents in jobs to perform energy retrofits and other green improvements. *3-Year Priority, Funded*

Action CE-21: Facilitate the hiring of green jobs program graduates through promotion and subsidized internship placement with local employers.

Action CE-22: Work with local partners to develop a community green jobs electronic bulletin board promoting local green job opportunities.

Adapting and Increasing Resilience to Climate Change

Some impacts of climate change (e.g., sea level rise) are already starting to be observed. Additional impacts projected to occur during this century have the potential to significantly affect our community. In addition to taking action to reduce GHG emissions that cause climate change, Oakland must take simultaneous action to adapt to unavoidable local climate impacts.



Source: State Climate Action Team Report

Oakland is a large and diverse community; climate impacts will be experienced in a number of areas. Due to its location, Oakland is vulnerable to a number of climate impacts, including sea level rise, reductions in water supply due to shrinking snowpack in the Sierra Mountains, wildfires, extreme heat, flooding, added stress on infrastructure, ecological impacts and other potential pricing and quality of life impacts. For example, a set of climate scenarios prepared for the California Energy Commission project that mean sea level along the California coast could rise by as much as 4.5 feet by 2100.[xv] Many low-elevation areas of Oakland would be vulnerable to flood events under these scenarios.[xvi]

A number of strategies are available through which the City can help Oakland to adapt to the impacts of climate change and increase community resilience.

Key Adaptation Strategies:

- Study Potential Local Climate Impacts
- Communicate Climate Impacts to the Community
- Identify and Act on Opportunities to Improve Resilience

Adapting to future climate impacts will likely require significant action in each of these areas. Some adaptation measures, such as water conservation and urban forestry, can serve to minimize existing vulnerabilities and provide social, economic and environmental benefits regardless of the extent of potential climate impacts. A number of these actions also create mitigation benefits (e.g., water efficiency reduces energy needed to provide and treat water, urban trees reduce heat island effect and associated building cooling needs) and have been discussed elsewhere in the ECAP. Other adaptation measures can be more capital-intensive, including:

- Protecting and restoring Oakland's creeks and estuary;
- Upgrading sewer and stormwater infrastructure to accommodate sea-level rise and increased stormwater volumes;
- Augmenting water supply with seawater desalination;
- Armoring the coast against sea-level rise through levees and seawalls; and,
- Updating peak electrical transmission capacity for summer cooling to help reduce human health impacts.

The City will continue to develop its internal capacity around these issues and will work with local partners to explore adaptation strategies concurrently with efforts to reduce GHG emissions to ensure that climate impacts are minimized.

Strategies to Achieve 2020 Goals

Study Potential Local Climate Impacts

The first step in addressing climate adaptation is to study projected climate impacts and develop an understanding of how those impacts may affect important local issues such as land use, infrastructure, public health, the local economy and other quality of life issues. Opportunities exist to leverage the work of local partners and State agencies that have begun to study these impacts.

Action AD-1: Participate in discussions on climate adaptation and resilience issues with local governments and other experts. *3-Year Priority, Funded*

Action AD-2: Conduct a study of all local climate impacts in collaboration with local partners including the Bay Conservation and Development Commission, the Pacific Institute and UC Berkeley. *3-Year Priority, Resources Needed*

Communicate Climate Impacts to the Community

As projected climate impacts become understood, it will be important to educate the Oakland community about these impacts to lay the foundation for public discussion of future planning decisions and adaptation strategies. Developing a greater shared understanding of potential impacts will be critical to generating the will for personal and collective action that may be needed to implement future adaptation strategies.

Action AD-3: Communicate information about local climate impacts to the Oakland community to develop shared understanding, the will for personal and collective action, and local capacity to participate in the development of climate adaptation strategies. *3-Year Priority, Resources Needed*

Figure 10. Projected area in danger of 100-year flood event based on 4.5 foot sea level rise. Courtesy of Pacific Institute

Identify and Act on Opportunities to Improve Resilience

Taking action to adapt to projected climate impacts will help to increase community resilience in Oakland, minimize vulnerabilities and encourage sustainable development.

Action AD-4: Integrate climate adaptation strategies into City planning and policy documents and processes where appropriate. *3-Year Priority, Resources Needed*

Action AD-5: Update community emergency preparedness and recovery plans, infrastructure (e.g., consider community cooling centers) and communication networks as appropriate based on projected climate impact scenarios with consideration for vulnerable communities.

Action AD-6: Encourage and participate actively in efforts of regional partners including BCDC to engage in the development of a regional climate adaptation strategy informed by climate impact modeling, scenario analysis and development of adaptation strategies to advance regional climate adaptation capacity and resilience.

Action AD-7: Develop a climate adaptation plan for Oakland identifying strategies to improve community resilience to climate change in collaboration with State, regional and local stakeholders.

Action AD-8: Update planning documents and building codes to include requirements for high albedo (reflective) surfaces where possible (e.g., rooftops, pavement) to reduce the urban heat island effect and mitigate public health impacts of extreme heat events.

Action AD-9: Promote the development of Oakland's urban forest (see pages PA 38, page 46).

Action AD-10: Promote indoor and outdoor water conservation and efficiency (see pages 69 and 70).

Action AD-11: Promote measures to reduce the impact of flood events by encouraging stormwater catchment and diversion through use of rain barrels, bio-swales, permeable surfaces, and green roofs.

Action AD-12: Encourage the efforts of the East Bay Municipal Utility District to develop infrastructure to deliver recycled water to Oakland properties for appropriate uses, reducing dependence on external water supplies.

Action AD-13: Consider opportunities to raise revenue to support local climate impact modeling and planning at the local or regional level (e.g., water use fees, development impact fees).

Advocacy Recommendations

Achieving Oakland's GHG reduction goals will require ongoing climate action at all levels by multiple partners. These include Federal, State and County government; regional agencies such as the Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC), Bay Area Air Quality Management District (Air District), Bay Conservation and Development Commission (BCDC), Joint Policy Committee (JPC), and StopWaste.Org; and other partners such as the California Public Utilities Commission (CPUC), Pacific Gas & Electric (PG&E) and the East Bay Municipal Utility District (EBMUD). Energy and climate are gaining attention from each of these organizations.

Many actions that can help to reduce energy use and GHG emissions in Oakland would be most efficiently, effectively and appropriately implemented at a regional level by these partners. Local governments will continue to lack the resources to solve the climate challenge without policy, financial and other support from these partners. The City should advocate for further action by these agencies that will help achieve Oakland's GHG reduction goals. Examples of advocacy opportunities include:

Transportation and Land Use

- Increasing funding for local transit projects, and prioritizing transit relative to highway projects (MTC, State, Federal govt)
- Adopting indirect source rules to place fees on new development to support low carbon transportation (CARB)
- Imposing new revenue generating fees (e.g., gas tax, mileage tax) to fund regional transit upgrades (JPC, MTC, Air District)
- Developing better models to help local and regional planners quantify GHG impacts of land use and transportation scenarios (State, MTC, ABAG, CARB)
- Providing support for infrastructure upgrades needed to absorb additional development in urban areas (Federal govt, State, CPUC, ABAG)
- Requiring Port tenants to implement actions at Oakland's ports in demonstrating compliance with statewide fleet emissions reduction targets (e.g., through electrification of docked vessels) (Federal govt, State)
- Providing support and requiring monitoring devices to reduce idling in trucks serving the Port (CARB)
- Placing a moratorium on regional freeway capacity expansion (State, Federal govt)
- Enforcing speed limits and anti-idling rules (State, CARB)

Building Energy Use

- Increasing the percentage of grid electricity that must be supplied from renewable energy sources, including applying this to all direct access contracts (State)
- Improving feed-in tariff and net metering policies (e.g., single solar power systems serving multiple tenants) (State, CPUC)
- Increasing investment in developing advanced renewable energy technologies (Federal govt, State)
- Requiring utilities to offer on-bill financing programs, either directly or through third-party collaborations (State, CPUC)
- Authorizing utilities to provide better data to local governments for energy program strategic planning (State, CPUC)
- Revising California's commercial new construction regulations to properly account for natural ventilation (State)
- Developing an effective and equitable cap-and-trade system for reducing GHG emissions (State, Federal govt)

Material Consumption and Waste Reduction

- Imposing revenue generating fees (e.g., on GHG-intensive or non-durable goods) to support GHG reductions (State, JPC)
- Requiring manufacturer product responsibility for reducing product waste and problem materials (State)
- Requiring mandatory product impact labeling, commercial recycling and other waste reduction measures (State)
- Conducting regional social marketing campaigns to increase recycling and waste reduction (StopWaste.Org)

Adaptation and Resilience

- Advancing climate impacts modeling and developing local climate adaptation strategies (State, BCDC)

Endnotes

[i] Adapted from a whitepaper titled "Products, Packaging and US Greenhouse Gas Emissions" written by Joshuah Stolaroff and published by the Product Policy Institute in September 2009. For the purposes of this illustration, GHG emissions associated with Products & Packaging and the Provision of Food have been combined under the heading Material Consumption & Waste, and GHG emissions associated with Infrastructure (1% of total pie) have been combined under the heading Building HVAC & Lighting.

[ii] Gupta, S., D. A. Tirpak, N. Burger, J. Gupta, N. Höhne, A. I. Boncheva, G. M. Kanoan, C. Kolstad, J. A. Kruger, A. Michaelowa, S. Murase, J. Pershing, T. Saijo, A. Sari, 2007: Policies, Instruments and Co-operative Arrangements. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[iii] A 36% reduction in GHG emissions from 2005 levels in Oakland is projected to be approximately equivalent to a 25% reduction from 1990 levels based on analysis by City of Oakland staff using California statewide 1990 and 2005 emissions as a proxy for Oakland.

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City of Oakland
Energy and Climate Action Plan

Appendix
Draft – December 1, 2010

This document contains supporting information related to the draft Energy and Climate Action Plan for Oakland, California.

Contents

Updates and Additional Information: *www.sustainableoakland.com*

Developing the Oakland Energy and Climate Action Plan

Oakland has a long legacy of leadership on reducing energy use and greenhouse gas (GHG) emissions. Through the Oakland Energy and Climate Action Plan (ECAP), the City is developing a comprehensive, prioritized plan of action to enable Oakland to achieve aggressive and important GHG emissions reduction targets.

Development of the ECAP began in fall 2008 with the first of several public workshops held to gather community ideas on potential climate targets, actions, and the process to be used for developing the ECAP. Approximately 200 people attended these workshops, representing a variety of interests, including local nonprofit and advocacy organizations, government agencies, utilities, interest groups, private companies, and individual citizens.

The first two workshops (held in December 2008 and January 2009) provided an overview of the planned ECAP development process, gathered initial input on potential ways of reducing GHG emissions, and discussed issues to consider in the process of developing the ECAP. With assistance from ICLEI – Local Governments for Sustainability and CirclePoint, Inc., City of Oakland (City) staff used input gathered at the workshops to identify and evaluate potential greenhouse gas (GHG) emissions reduction targets, and strategies for hitting those targets.

The next two workshops (held in April 2009) were used to gather input on target setting and GHG reduction actions to evaluate for potential inclusion in the ECAP. Input from these workshops also helped to inform the ECAP development process and the evaluative criteria used in considering actions for inclusion in the ECAP. Information from all four of these workshops, along with other project information, has been posted to the City's website at www.sustainableoakland.com. Additional public input was also gathered through this website, and at other meetings.

On July 7, 2009, the Oakland City Council directed staff to develop the draft ECAP using a preliminary planning target equivalent to achieving a 36% reduction from 2005 GHG emissions by 2020, and annual benchmarks for meeting the target. The target-setting staff report and accompanying City Council resolution are available on the City's website.

From summer 2009 through spring 2010, the City continued to identify and analyze potential GHG reduction actions through which the City could position Oakland to achieve a 36% reduction in GHG emissions. Ideas for GHG reduction actions were gathered from public input, existing City policy documents, adopted climate action plans from other jurisdictions, and various other sources (e.g., Oil Independent Oakland Action Plan, The 21st Century Energy Greenprint for the East Bay). The evaluative criteria outlined in Table 1 were used to inspire ideas for GHG reduction opportunities and to evaluate potential actions to help guide future planning and budgeting discussions. These nine evaluative criteria capture the range of issues expressed by the community at the first four public workshops held between December 2008 and April 2009. Based on this analysis, Staff developed recommendations for a prioritized set of GHG reduction actions best suited to helping the City advance Oakland's GHG reduction efforts and achieve the identified target.

Following a special City Council workshop on energy and climate action issues, the first Draft Energy and Climate Action Plan was released on April 22nd, 2010 (Earth Day). Two more public workshops were held in

May 2010 to provide an overview of the draft ECAP and gather community input. Public comments were also accepted for several weeks via the City's website. Local organizations helped to spread the word about the draft ECAP and to generate public review and comment.

From summer 2010 through fall 2010, City staff proceeded to consider public input received about opportunities to improve the draft ECAP. A revised draft ECAP, accompanied by this appendix, was then developed for consideration of the Oakland City Council.

Table 1. Evaluative Criteria for Considering Potential Energy and Climate Actions

Evaluative Criteria	Issues to Consider
GHG Reduction Potential	• Magnitude of GHG reductions • Measurability of reductions
Implementation Cost and Access to Funding	• Cost to City budget • Cost to other stakeholders • Access to funding
Financial Rate of Return	• Return on investment to City and/or stakeholders implementing the action • Protection from future costs
GHG Reduction Cost Effectiveness	• Relative cost/benefit assessment in terms of estimated GHG reductions
Economic Development Potential	• Job creation potential • Business development and retention potential • Workforce development potential • Cost savings to community • Education benefits for community
Creation of Significant Social Equity Benefits	• Benefits to disadvantaged residents in the form of jobs, cost savings, and other opportunities • Reduction of pollution in heavily impacted neighborhoods • Equity in protection from impacts of climate change
Feasibility & Speed of Implementation	• Degree of City control to implement the action • Level of staff effort required • Resources required • Degree of stakeholder support • Amount of time needed to complete implementation • Time period during which implementation can begin
Leveraging Partnerships	• Leverage partnerships with community stakeholders • Leverage partnerships on a regional, state or national level • Facilitate replication in other communities
Longevity of Benefits	• Persistence of benefits over time • Opportunity to support future additional benefits

Community input was critical to the development of the ECAP. This input was received directly from hundreds of community members and dozens of local organizations engaged with thousands of additional community members. The Oakland community helped to shape the process, GHG reduction targets, tone and structure of the ECAP, and many of the proposed GHG reduction actions.

Development of the Energy and Climate Action Plan was made possible by funds allocated by the Oakland City Council from the Williams Energy Settlement; an energy and climate planning grant from the Bay Area Air Quality Management District; and many hours of City staff time leveraged throughout the development process.

Oakland's 2005 Energy Use and Greenhouse Gas Emissions

Challenges Associated with Quantifying Oakland's GHG Emissions

Many local governments throughout the country have developed GHG emission inventories for the purpose of understanding GHG emissions associated with their operations and the communities they represent, revealing emissions reduction opportunities and tracking performance toward emissions reduction goals. However, no official protocol has been developed and imposed on local governments to guide quantification of GHG emissions associated with geographically defined communities.

While widespread agreement exists that emissions associated with building energy use and transportation fuel should be counted, methodologies for how this accounting is done vary widely from one community to another. Furthermore, methodologies differ even more widely regarding GHG accounting associated with solid waste decomposition and recycling, regional ports located within or outside the community (e.g., airports, seaports), non-road vehicle traffic (e.g., airplanes, trains, ships), pass-through highway vehicle travel, upstream and downstream lifecycle emissions associated with activity occurring in the community, and other sources. Data for many of these sources can be difficult to obtain and more difficult to correlate to a particular geographic community, yet all can be significant sources of GHG emissions. Debate also exists as to whether community-scale GHG accounting should seek to include all GHG sources within each community or focus instead on areas of most policy relevance to the local government performing the assessment, establishing reduction targets and developing plans.

It is reasonable to assume that GHG inventory methodologies will continue to evolve in the coming years, driven by changes in data availability, scientific understanding, and the application of GHG inventories. For example, ICLEI – Local Governments for Sustainability is currently developing a voluntary protocol to guide local governments in estimating GHG emissions associated with their geographically defined communities. This project began in fall 2010 and is slated for completion in summer 2011.

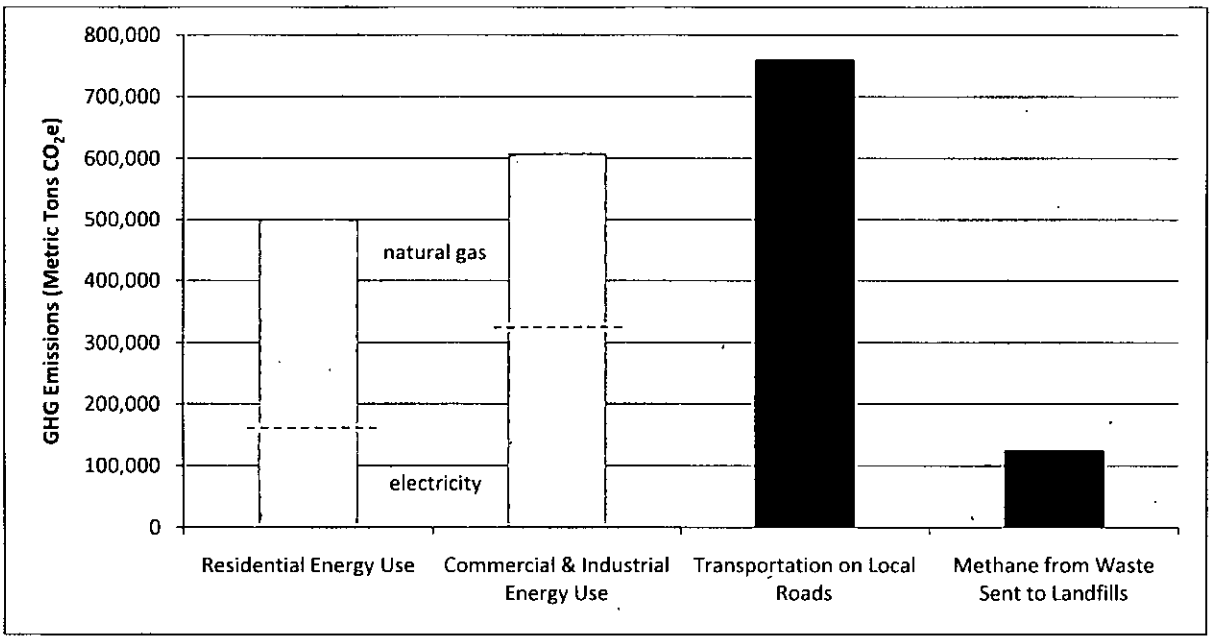
As GHG inventory methodologies evolve, Oakland's baseline 2005 and other inventories may be adjusted to comply with improved methodologies. It will be important to maintain an ability to compare GHG emissions over time in a meaningful and appropriate method to allow for informative tracking of progress in reducing GHG emissions. For this reason, GHG reduction targets are defined in terms of percentages of a baseline, rather than absolute tons of GHG emissions, to best maintain relevance.

Oakland's 2005 GHG Emissions

City Action Focus Areas

To date, the City has focused its GHG reporting on emission sources that the City has a relatively high degree of influence over and the ability to measure over time. These sources (transportation on local roads; electricity and natural gas consumption in residential, commercial and industrial buildings; and landfilled solid waste) are the primary focus of the draft ECAP. The draft ECAP is designed to highlight energy and GHG reduction actions that enable Oakland to achieve its GHG reduction targets for these sources. Figure 1 provides a summary of 2005 GHG emissions associated with these focus area sources. Additional detail on these sources is provided in Tables 2 – 5 below.

Figure 1. Oakland's 2005 GHG Emissions from Focus Area Sources



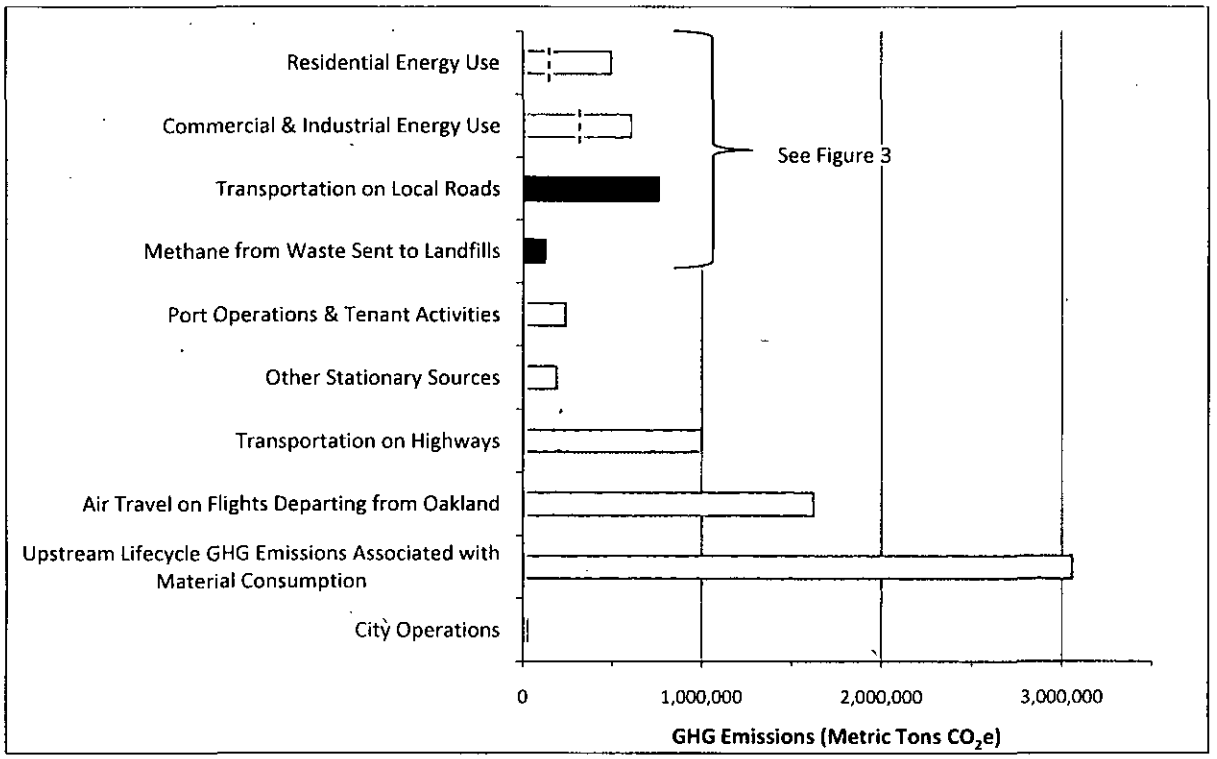
Recognizing All Relevant GHG Emission Sources

Beyond the ECAP focus areas, there are a number of significant GHG emission sources that, while City influence might be relatively limited, can be reduced through local and regional community action (e.g., passenger air travel associated with the Oakland International Airport, pass-through travel on local highways, lifecycle impacts of material consumption choices of residents and businesses).

This more comprehensive set of GHG emission sources associated with Oakland is identified in Tables 2 – 5 and summarized in Figure 2 below. Estimates of GHG emissions associated with each source are included where possible. The draft ECAP includes actions aimed at reducing GHG emissions outside of the City's primary focus areas identified above. The City will continue to report on all of these GHG emission sources, to the extent feasible, in future progress reports and updates to the ECAP.

Information provided in Tables 2 – 5 is intended to summarize all relevant sources to the extent possible and to enable the City and other interested community stakeholders to report on and consider GHG emissions associated with Oakland in a variety of manners. For example, local organizations may wish to help educate community members about the importance of reducing lifecycle GHG emissions by changing material consumption choices. Data from the tables below enable comparison of emission sources associated with Oakland, and can be used to highlight the magnitude of impacts associated with material consumption, as well as other activities such as air travel.

Figure 2. 2005 GHG Emissions Associated with Oakland from Select Quantified Sources



Appropriate Reporting of Citywide GHG Emissions

When summarizing GHG emissions associated with Oakland in 2005 or for any other unit of time, a summary of the reporting method used should always be provided. This summary should include transparency regarding which GHG emission sources are included in the analysis, along with available detail on assumptions and data inputs used. This information will help to ensure that reported GHG emissions are analyzed appropriately and interpreted in the manner intended.

Note that overlap may exist amongst some of the data contained in Tables 2 – 5 below. For example, it would be inappropriate to add GHG emissions associated with "transportation on local roads" to GHG emissions associated with "trips of origin and/or destination in Oakland", as significant overlap exists between these two data sets. Both are presented below as each may offer unique value to GHG reporting efforts. Care should be taken whenever reporting on GHG emissions to avoid under-reporting, over-reporting, or double-counting of Oakland's emissions.

Data Tables for GHG Emission Sources Associated with Oakland

GHG emissions associated with Oakland in 2005 are summarized in Tables 2 – 5 below. The following information is provided for each GHG emissions source:

- **GHG Emissions Source** – Brief description of the GHG emissions source
- **Notes** – Additional description or context regarding each GHG emissions source
- **2005 Estimated GHG Emissions (metric tons CO_2e)** – Quantity of GHG emissions associated with this source in 2005 expressed in metric tons of carbon dioxide equivalence (CO_2e)
- **2005 Data Primary Input Factors** – Primary input factors used to estimate GHG emissions, if available
- **2020 GHG Reduction Goal** – Emissions reduction target to be achieved relative to 2005 by 2020
- **Within Geographic Boundary?** – Do the emissions associated with this source occur primarily within the geographic boundary of Oakland? (yes/no)
- **Relative Degree of City Influence** – What is the City government's degree of influence over this emissions source relative to other sources documented in these tables? (high/medium/low)
- **Measurable?** – Are emissions or primary inputs associated with this source: currently measured; modeled based on assumptions; or not available?
- **ECAP Focus Area?** – For the purposes of identifying GHG sources of relatively high City influence, is it the intent of the ECAP to focus attention on this source and include a full set of actions needed to achieve the GHG reduction goal for this source? (yes/no) These sources may also be identified as pertinent to the City's development of a Qualified Greenhouse Gas Reduction Strategy to be used for tiering environmental analysis of future projects under the California Environmental Quality Act.
- **Data Provider(s)** – What agency provides data needed to estimate GHG emissions associated with this source and monitor progress toward emission reduction goals?

Table 2a. Oakland GHG Emissions by Source – Transportation Related Emissions

GHG Emissions Source	Vehicle Miles Traveled Within Geographic Boundary Method				Trip-Based Method	Bay Area Rapid Transit (BART) Operations
	Transportation on Local Roads	Transportation on Highways			VMT Associated with Trips of Origin and/or Destination in Oakland	
		Total Transportation on Highways	Pass-Through Transportation on Highways	Oakland Trips Transportation on Highways		
Notes	Includes all miles driven on local roads within city boundaries, regardless of trip origin or destination	Includes all miles driven on highways within city boundaries, regardless of trip origin or destination	Subset of total highway transportation miles associated with trips for which neither trip origin nor destination occur in the city	Subset of total highway transportation miles associated with trips for which trip origin and/or destination occur in the city	Provides more insight into effects of local planning and policy decisions, but data not yet available at city-scale. Methodology: count full VMT from intra-city trips, half VMT from trips with either origin or destination in Oakland, no VMT from pass-through trips.	GHG emissions from BART assumed to be zero due to BART direct access contract for carbon neutral electricity
2005 Estimated GHG Emissions (metric tons CO_2e)	759,884	1,006,911	Not Available	Not Available	Not Available	0
2005 Data Primary Input Factors	1.4 billion VMT	1.8 billion VMT	Not Available	Not Available	Not Available	Not Available
Within Geographic Boundary?	Yes	Yes	Yes	Yes	Partially	No
Relative Degree of City Influence	high	medium	low	medium	high	Low
Measurable?	Measured and Modeled	Measured and Modeled	Not Available	Not Available	Not Available	Measured
ECAP Focus Area?	Yes	No	No	No	No	No
Data Provider(s)	MTC	CalTrans	Not Available	Not Available	MTC considering potential of establishing models to generate estimates of trips associated with individual communities	BART

Notes:

- On-road movement of passenger vehicles, freight, transit, and other vehicles is included in the estimates provided in Table 2a. This data is not available by vehicle type/use.
- GHG emissions associated with BART are not included because a) consumption data is not currently available, and b) it is believed that BART was operating on a direct access contract supplying carbon neutral electricity in 2005.

Table 2b. Oakland GHG Emissions by Source – Port and Other Transportation Related Emissions

Emissions Source	**Port Operations & Tenant Activities**	**Air Travel Originating at Oakland International Airport**	**Air Travel Serving Oakland Residents**	**Marine Vessel Travel Associated with Port of Oakland**	**Truck Freight Travel Associated with Port of Oakland**	**Train Travel Associated With Oakland**	**Other Off-Road Vehicle Activity**
Notes	Includes emissions associated with Port-owned vehicles and equipment, harbor craft, cargo handling equipment, berthed vessels, and trucks and trains operating within Port property. Does not include movement of vehicles outside of Oakland.	Includes all fuel consumed by planes on flights departing from Oakland International Airport. Data from 2007.	Includes only Oakland resident portion of trips to/from Oakland International Airport, plus portion of impacts from connecting flights elsewhere	Movement of marine vessels outside of port	Movement of freight trucks outside of port and outside of Oakland	Movement of trains outside of port	Other off-road vehicle activity
2005 Estimated GHG Emissions (metric tons CO_2e)	235,000	1,627,688	Not Available	Not Available	Not Available	Not Available	Not Available
2005 Data Primary Input Factors	Estimated by City based on data in Port of Oakland Maritime Air Quality Improvement Plan and 2007 Criteria Pollutant and Greenhouse Gas Emissions Inventories, as well as studies from other ports	169,698,222 gallons of jet fuel 469,058 gallons of AvGas*	Not Available	Not Available	Not Available	Not Available	Not Available
Within Geographic Boundary?	Yes	No	No	No	No	No	Yes
Relative Degree of City Influence	Low	Low	Low	Low	Low	Low	Low
Measurable?	Measured and Modeled	Measured	Not Available	Not Available	Not Available	Not Available	Not Available
ECAP Focus Area?	No	No	No	No	No	No	No
Data Provider(s)	Port of Oakland; studies from other ports	Port of Oakland	Not Available	Not Available	Not Available	Not Available	Not Available

* This figure was updated on November 30, 2010 to correct a typographical error contained in the version of this document that was posted on the City website on November 24, 2010 and provided to the City Planning Commission for its December 1, 2010 meeting

Table 3. Oakland GHG Emissions by Source – Building Energy Use Related Emissions

GHG Emissions Source	Natural Gas Residential	Natural Gas Commercial /Industrial	Electricity Residential	Electricity Commercial /Industrial	Stationary Sources	Water Related Energy Use Serving Oakland Customers	Port of Oakland Building Energy Use and Stationary Sources
Notes	Natural gas consumed by accounts in Oakland	Natural gas consumed by accounts in Oakland	Electricity consumed by accounts in Oakland	Electricity consumed by accounts in Oakland	Stationary sources permitted by the Bay Area Air Quality Management District such as stationary diesel motors	Includes energy use associated with delivery and treatment of water by EBMUD serving Oakland accounts. Total EBMUD facility energy use occurring in Oakland already included in Commercial/ Industrial data	Includes emissions associated with building energy consumption, and other stationary sources. Does not include movement of vehicles outside of Oakland.
2005 Estimated GHG Emissions (metric tons CO_2e)	350,162	288,514	150,077	320,151	195,238	Not Available	31,662
2005 Data Primary Input Factors	65 million therms	54 million therms	671 million kWh	1.4 billion kWh	Not Available	Not Available	Not Available
Within Geographic Boundary?	Yes	Yes	No	No	Yes	Partially	Yes
Relative Degree of City Influence	High	High	High	High	Low	Low	Low
Measurable?	Locally measured	Locally measured	Locally measured	Locally measured	Locally measured	Locally measured	Measured and Modeled
ECAP Focus Area?	Yes	Yes	Yes	Yes	No	No	No
Data Provider(s)	PG&E	PG&E	PG&E	PG&E	BAAQMD	EBMUD	Port of Oakland; BAAQMD; estimates based on studies at other ports

Notes:

- GHG emissions associated with direct access electricity consumption have not been included as data is not currently available. Depending on the fuel source consumed, direct access electricity consumption can result in significantly more GHG emissions than the current PG&E average grid electricity. Data on the number and size of direct access accounts in Oakland is not currently available to the City.
- Electricity consumed by facilities located in Oakland to deliver and treat water and wastewater is assumed to be included in macro-level Commercial/Industrial Electricity estimates. These facilities serve customers both in and outside of Oakland.
- Other decentralized GHG emission sources, including decentralized fuel use in applications not permitted through the Bay Area Air Quality Management District and fugitive emissions associated with refrigerants and solvents are not included due to lack of data availability.

Table 4. Oakland GHG Emissions by Source – Material Consumption and Waste Related Emissions

GHG Emissions Source	**Landfilled Solid Waste**	**Upstream Lifecycle Impact of Material and Food Consumption**	**CO_2e Emissions Derived from Biogenic Methane Liberated During Wastewater Treatment Located in Oakland**	**Methane from Wastewater Treatment Serving Oakland Customers**
Notes	Estimated using EPA WARM model	Estimated using Carnegie Mellon University EIO-LCA model, national Consumer Expenditure Survey data, and Oakland household income data available through U.S. Census	Estimate of CO2 generated at EBMUD wastewater treatment facility after liberated biogenic methane is either used to produce electricity or flared	Includes only the portion of wastewater treatment methane associated with Oakland customers
2005 Estimated GHG Emissions (metric tons CO_2e)	126,361	3,065,110	757620	Not Available
2005 Data Primary Input Factors	416,827 tons of waste*	# of households by income bracket; national average household expenditures by material category; upstream GHG impacts by material category	Not Available	Not Available
Within Geographic Boundary?	No	No	Yes	Yes
Relative Degree of City Influence	high	Low	Low	Low
Measurable?	Locally measured	Modeled	Unknown	Unknown
ECAP Focus Area?	Yes	No	No	No
Data Provider(s)	CalRecycle	Carnegie Mellon University, national Consumer Expenditure Survey, U.S. Census	EBMUD	EBMUD

Notes:

- Oakland sent 416,827 tons of waste to landfill in 2005, plus 201,625 tons of alternative daily cover (ADC). Source: Oakland 2005 GHG Inventory developed by ICLEI – Local Governments for Sustainability; Updated Nov 2008
- GHG impacts associated with agricultural products (e.g., fertilizers) consumed in Oakland are not included due to lack of data availability.

Table 5. Oakland GHG Emissions by Source – City Government Operations Related Emissions

Emissions Source	Vehicle Fleet Fuel Consumption	Employee Commute Travel	Employee Business Travel	Facilities and Operations Natural Gas Consumption	Facilities and Operations Electricity Consumption	Facilities and Operations Water Consumption	Landfilled Solid Waste
Notes	City fleet fuel consumption		Includes employees driving their own vehicles. Would also include other forms of business travel (e.g., air travel) if available	City facilities energy consumption	City facilities energy consumption	Impacts of City operations water consumption	Solid waste collected from City facilities and sent to landfill
2005 Estimated GHG Emissions (metric tons CO_2e)	10,585	Not Available	78	3,786	12,099	Not Available	3,374
2005 Data Primary Input Factors	751,537 gallons gasoline; 280,539 gallons diesel; 95,317 therms of natural gas	Not Available	~8,031 gallons gasoline from reimbursed mileage; Additional business travel data not available	706,367 therms	52,211,408 kWh	Not Available	12,727 tons
Within Geographic Boundary?	Yes	Partially	Partially	Yes	Yes	Yes	No
Relative Degree of City Influence	High	High	High	High	High	High	High
Measurable?	Measured	Not Available	Not Available	Measured	Measured	Measured	
ECAP Focus Area?	Yes	No	No	Yes	Yes	No	Yes
Data Provider(s)	BART	City employees	City	PG&E	PG&E	EBMUD	Not Available

Oakland's GHG Reduction Target

Overview of Oakland's GHG Reduction Target

In July 2009, the Oakland City Council approved a preliminary planning GHG emissions reduction target for the year 2020 at 36% below 2005 levels, on a path toward reducing GHG emissions by more than 80% below 2005 levels by 2050.

This planning target was developed based on recent publications of the Intergovernmental Panel on Climate Change (IPCC), widely recognized as the world's leading body of climate scientists. According to a recent IPCC report[i], achieving this level of GHG reductions throughout the industrial world will help to achieve a level of climate stabilization that would avoid the worst future climate impact scenarios.[ii]

Oakland has an opportunity to demonstrate leadership by striving to achieve this level of GHG emissions reductions, reinforcing our commitment to local climate action.

Identifying an Oakland Preliminary Planning Target for GHG Reduction

A clear scientific near-consensus has emerged regarding the dangers of escalating concentrations of greenhouse gases in the Earth's atmosphere and the significant role that anthropogenic (human caused) sources of GHG emissions are playing in increasing those concentrations. Tremendous collective action will be necessary in the near term on a global scale to reduce GHG emissions to levels that avoid the worst impacts.

Projected local impacts of climate change include rising Bay and delta waters, decreased potable water supply, increased fire danger, added stress on infrastructure, pricing and quality of life impacts, ecological impacts, and other impacts. The State Climate Action Team has predicted that sea levels may rise between 12 and 36 inches by the end of this century.[iii] According to the Bay Conservation and Development Commission, low-elevation portions of Oakland, including the airport, could be vulnerable to a 16-inch rise in sea level.[iv]

Current Scientific Perspective on Needed GHG Reduction Goals

Significant reductions in global anthropocentric GHG emissions are projected to be necessary to reverse present trends and restore a stabilized atmospheric GHG concentration level similar to that of recent history. According to climate scientist James Hansen, "If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO_2 will need to be reduced from its current 385 ppm to at most 350 ppm, but likely less than that."[v] Achieving an atmospheric GHG concentration of 350 ppm CO_2 would roughly correlate to a concentration of approximately 450 ppm in total CO_2-equivalent (CO_2e) terms, a metric often used to express the total equivalent warming potential of CO_2 and other relatively minor but also significant greenhouse gases in the atmosphere.[vi]

According to the latest report of the Intergovernmental Panel on Climate Change (IPCC), a body of the world's most authoritative climate scientists, achieving even an atmospheric GHG concentration of 450 ppm CO_2e will yield some negative climate impacts, including some deglaciation, species extinction, and changes in frequency and severity of flooding, droughts, fires and other impacts. However, this target is frequently framed in the

literature near the best-case scenario end of the future range of projections, requiring highly aggressive GHG reductions.[vii]

The IPCC's Fourth Assessment Report (FAR) suggests that industrialized countries would need to reduce GHG emissions to levels 25-40% below 1990 levels by 2020 and 80-95% below 1990 levels by 2050 to achieve a stabilized atmospheric GHG concentration of 450 ppm CO_2-equivalent (CO_2e).

Applying Current Global Climate Science in the Context of Oakland

Data are unavailable regarding Oakland's 1990 GHG emissions, but a 2005 GHG inventory was developed for Oakland. Using Oakland's existing 2005 GHG emissions inventory as a baseline will allow progress to be measured and demonstrated going forward.

Based on information provided by the California Air Resources Board, achieving a statewide GHG reduction of 25% below 1990 levels would correlate to a statewide reduction target of approximately 36% below 2005 GHG levels. Achieving statewide reductions of 80% below 1990 levels would be roughly equivalent to an 83% reduction relative to 2005 levels.

Faced with a lack of data for 1990, Staff are assuming similar GHG emissions growth has occurred in Oakland to the State average during the time period from 1990 to 2005. Thus for Oakland to meet the IPCC-suggested GHG reduction targets for industrialized countries, Oakland's GHG emissions would need to be reduced by at least 36% below 2005 levels by 2020, and 83% below 2005 levels by 2050.

State Perspective on Role of Local Governments in Reducing GHG Emissions

Below is an excerpt from the California Air Resources Board (CARB) adopted Climate Change Scoping Plan describing CARB's perspective on the role of local governments in reducing GHG emissions in California.[viii]

> The Role of Local Government: Essential Partners
>
> Local governments are essential partners in achieving California's goals to reduce greenhouse gas emissions. They have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect greenhouse gas emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Many of the proposed measures to reduce greenhouse gas emissions rely on local government actions.
>
> Over 120 California cities have already signed on to the U.S. Conference of Mayors Climate Protection Agreement. In addition, over 30 California cities and counties have committed to developing and implementing Climate Action Plans. Many local governments and related organizations have already begun educating Californians on the benefits of energy efficiency measures, public transportation, solar homes, and recycling. These communities have not only demonstrated courageous leadership in taking initiative to reduce greenhouse gas emissions, they are also reaping important co-benefits, including local economic benefits, more sustainable communities, and improved quality of life.
>
> Land use planning and urban growth decisions are also areas where successful implementation of the Scoping Plan relies on local government. Local governments have primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth and the changing needs of their jurisdictions. Decisions on how land is used will have large impacts on the greenhouse gas emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas sectors.

To provide local governments guidance on how to inventory and report greenhouse gas emissions from government buildings, facilities, vehicles, wastewater and potable water treatment facilities, landfill and composting facilities, and other government operations, ARB recently adopted the Local Government Operations Protocol. ARB encourages local governments to use this protocol to track their progress in achieving reductions from municipal operations. ARB is also developing an additional protocol for community emissions. This protocol will go beyond just municipal operations and include emissions from the community as a whole, including residential and commercial activity. These local protocols will play a key role in ensuring that strategies that are developed and implemented at the local level, like urban forestry and greening projects, water and energy efficiency projects; and others, can be appropriately quantified and credited toward California's efforts to reduce greenhouse gas emissions.

In addition to tracking emissions using these protocols, ARB encourages local governments to adopt a reduction goal for municipal operations emissions and move toward establishing similar goals for community emissions that parallel the State commitment to reduce greenhouse gas emissions by approximately 15 percent from current levels by 2020. To consolidate climate action resources and aid local governments in their emission reduction efforts, the ARB is developing various tools and guidance for use by local governments, including the next generation of best practices, case studies, a calculator to help calculate local greenhouse gas emissions, and other decision support tools.

The recent passage of SB 375 (Steinberg, Chapter 728, Statutes of 2008) creates a process whereby local governments and other stakeholders work together within their region to achieve reduction of greenhouse gas emissions through integrated development patterns, improved transportation planning, and other transportation measures and policies. The implementation of regional transportation-related greenhouse gas emissions targets and SB 375 are discussed in more detail in Section C.

Considering GHG Reduction Targets in the Context of Recent State Policy Action

Recent climate policies adopted at the State level in California (e.g., AB 32, SB 375) aim to reduce statewide GHG emissions to 1990 levels by 2020.[ix] This correlates to a reduction of approximately 15% below current levels by 2020. Executive Order S-3-05 issued by Governor Schwarzenegger calls for statewide GHG reductions of 80% below 1990 levels by 2050.[x]

As recently documented in the Climate Change Proposed Scoping Plan adopted by the California Air Resources Board (CARB) in December 2008, a variety of State-driven strategies are being developed and implemented to help achieve these statewide goals. Additional and complementary local actions will be needed to help reach these goals and make additional progress. Table 8 summarizes these State-driven strategies outlined in the CARB Scoping Plan.

Table 8. Recommended Greenhouse Gas Reduction Measures from CARB Climate Change Scoping Plan[xi]

Recommended Reduction Measures
California Light-Duty Vehicle Greenhouse Gas Standards • Implement Pavley standards • Develop Pavley II light-duty vehicle standards
Energy Efficiency • Building/appliance efficiency, new programs, etc. • Increase CHP generation by 30,000 GWh • Solar Water Heating (AB 1470 goal)
Renewables Portfolio Standard (33% by 2020)
Low Carbon Fuel Standard
Regional Transportation-Related GHG Targets
Vehicle Efficiency Measures
Goods Movement • Ship Electrification at Ports • System-Wide Efficiency Improvements
Million Solar Roofs
Medium/Heavy Duty Vehicles • Heavy-Duty Vehicle Greenhouse Gas Emission Reduction (Aerodynamic Efficiency) • Medium- and Heavy-Duty Vehicle Hybridization
High Speed Rail
Industrial Measures (for sources covered under cap-and-trade program) • Refinery Measures • Energy Efficiency & Co-Benefits Audits
Additional Reductions Necessary to Achieve the Cap
High Global Warming Potential Gas Measures
Sustainable Forests
Industrial Measures (for sources not covered under cap and trade program) • Oil and Gas Extraction and Transmission
Recycling and Waste (landfill methane capture)
Other Recommended Measures
State Government Operations
Local Government Operations
Green Buildings
Recycling and Waste (other measures)
Water Sector Measures
Methane Capture at Large Dairies

While some of these strategies may not affect Oakland significantly, most will have some impact in Oakland and should be considered when developing local GHG reduction targets and plans for meeting those targets.

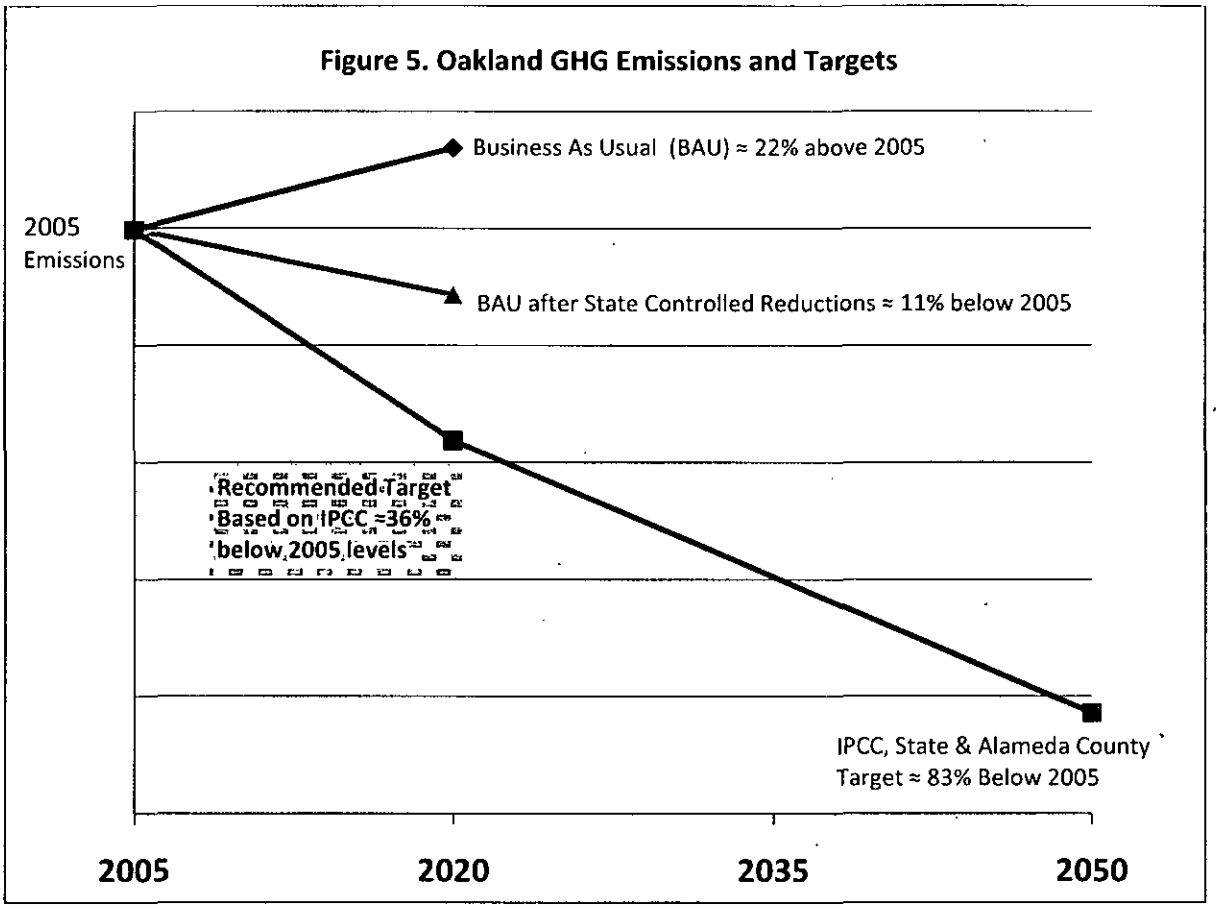
Some of these State-driven strategies will affect future GHG emissions in Oakland irrespective of additional local action. For example, strategies such as requiring the sale of low carbon fuels and more fuel efficient vehicles on a statewide basis may create GHG reductions in Oakland without relying on local government implementation. Projections of future GHG emissions in Oakland are based on the assumed implementation of these State-driven strategies.

Other State-driven strategies identify goals for creating GHG reductions that can be translated to Oakland, but which will only be met if supported by new local action. For example, achieving statewide and regional goals related to reducing the number of vehicle miles traveled on local roads will require planning, policy and programmatic action at the local government level. To avoid any double-counting of GHG reductions,

achievement of these goals is not assumed in business-as-usual projections of future GHG emissions in Oakland, as potential actions under consideration in the development of the ECAP will be needed to achieve these goals.

For the purpose of quantifying GHG reductions associated with a preliminary planning target, Oakland's business-as-usual 2020 GHG projections have been adjusted based on these factors. These projections are also based on projected increases in population and economic activity provided by the Association of Bay Area Governments and vehicle miles traveled provided by the California Energy Commission.

Figure 5. Oakland GHG Emissions and Targets



Under business-as-usual conditions without implementation of the strategies outlined in the CARB Climate Change Scoping Plan, GHG emissions in Oakland were projected to increase by approximately 22% above 2005 levels by 2020. Assuming implementation of State-driven strategies as described above, Oakland's GHG emissions in 2020 are projected to be approximately 11% below 2005 levels in the absence of additional local action.

Review of GHG Reduction Targets Established by Other Jurisdictions

Other jurisdictions within and outside of California have adopted a wide range of community-scale GHG reduction targets. These targets reference a variety of baseline years and target years, influenced by the date

at which each target was adopted, local data availability, and other factors. These variables make direct comparison of adopted GHG reduction targets difficult. Below is a summary of selected GHG reduction targets adopted by other institutions.

Table 9. Example GHG Reduction Targets Established by Other Jurisdictions

Jurisdiction	Community-Scale GHG Reduction Target
State	
California Assembly Bill 32	1990 levels by 2020[xii]
Executive Order S-3-05	80% below 1990 levels by 2050[xiii]
California Air Resources Board	Encourages local governments to adopt GHG reduction targets of 15% below current levels by 2020[xiv]
California Cities	
Berkeley	80% below 2000 levels by 2050, on a path to reduce GHG emissions by ~25% from 2005 levels by 2020
Chula Vista	20% below 1990 levels by 2010
Hayward	12% below 2005 levels by 2020, 83% below 2005 level by 2050
Los Angeles	35% below 1990 levels by 2030
Palo Alto	5% below 2005 levels by 2012 and 15% below 2005 levels by 2020
San Diego	15% below 1990 levels by 2010
Bay-Area Counties	
Alameda County	80% below ~2007 levels by 2050
Marin County	15% below 2000 levels by 2020
San Francisco	20% below 1990 levels by 2012
Sonoma County & Cities	25% below 1990 levels by 2015 (all nine cities in Sonoma County have adopted targets at least as aggressive)
National, International	
Denmark	21% below 1990 levels by 2012
European Union	20% below 1990 levels by 2020
Germany	21% below 1990 levels by 2012
Luxembourg	28% below 1990 levels by 2010
Sweden	25% below 1990 levels by 2020
United Kingdom	20% below 1990 levels by 2010
Kyoto Protocol (and U.S. Mayors' Climate Protection Agreement)	7% below 1990 levels by 2012

Applying Oakland's GHG Reduction Target

Identification of Sub-Targets

There are many ways to report and evaluate community-scale GHG emissions data. In the absence of a standard protocol for community-scale GHG emissions accounting and reporting, it is currently up to each community to identify its preferred method.

It is recommended that each community apply its GHG reduction target to each category of GHG emission sources separately (e.g., transportation on local roads, building energy use). This method will help to avoid potential problems associated with double-counting of GHG reductions by multiple communities and increase the likelihood that collective action is producing the expected results.

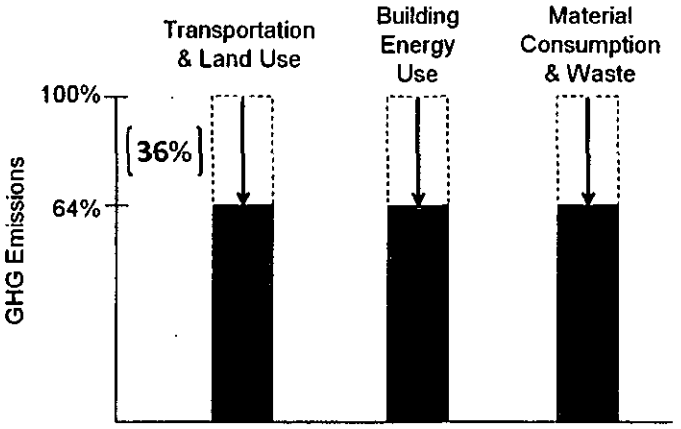


Figure 6. Applying the 36% GHG Reduction Goal in Each Emissions Source Category

Staff recommends that Oakland's target of reducing GHG emissions by 36% from 2005 levels by 2020 be separately applied to each GHG emission source category. GHG emissions reduction progress will be reported with respect to each emissions source category and sub-category (as illustrated in Tables 2 – 5) as data and resources allow. Progress will be analyzed on both an absolute basis and per capita basis to enable future reflection on GHG reduction process, irrespective of population migration patterns.

Consideration of Regional Context

As regional and statewide action on climate protection grows, Oakland may be asked to adjust future growth plans to accommodate more or less residential, commercial, or industrial development than is currently planned. In some cases, increasing development in Oakland near comparatively transit-rich infrastructure may help the region to achieve bigger overall success toward energy and climate goals. Future updates to the ECAP will require reflection on regional plans and consideration of refinements to Oakland's targets, planned actions and reporting metrics to ensure that Oakland is able to meet its own goals, contribute effectively to regional GHG reduction progress and track its contribution toward mitigating this global problem.

Considering Actions Reducing GHG Emissions Outside of Oakland

Some policies and actions that could be undertaken by the Oakland City government might result in significant GHG reductions in other geographic communities, or in the future, in ways that are difficult to represent in a traditional inventory of Oakland citywide GHG emissions. For example:

- Fostering population movement to dense, transit-served urban centers like Oakland may lead to big overall statewide reductions in vehicle miles traveled and associated GHG emissions (while possibly increasing vehicle use and GHG emissions within Oakland).
- Fostering decreased consumption of material resources can help to conserve fossil fuel energy used for production and transportation of goods outside of Oakland.

- Fostering decreased generation of waste sent to landfill may lead to reductions in landfill methane in another geographic location where Oakland's waste is sent.

In many cases these 'lifecycle' benefits occur elsewhere in time and/or space and can be difficult to quantify accurately. In situations where the GHG reduction benefits from these kinds of actions can be estimated at a sufficient level of accuracy, they will be reported as part of the story of Oakland's progress in fostering GHG emissions reductions.

Revisiting Climate Targets and Plans

It is reasonable to assume that climate science will continue to evolve in the coming years and revisions to the target and actions recommended in this report may be appropriate. The draft ECAP outlines a process by which the City will periodically revisit GHG reduction targets to consider ongoing scientific, policy and technological developments, as well as progress toward the goal.

Achieving Oakland's 36% GHG Reduction Target

Oakland's Citywide Target: 36% Reduction in All GHG Emission Source Areas

Achieving Oakland's 36% GHG reduction target across all sources of GHG emissions will require significant action in many areas by all members of the Oakland community. In some areas (e.g., local land use planning, building codes), the City has significant opportunities to influence GHG emission sources and foster GHG reductions. In others areas (e.g., air travel and material consumption choices by residents), achieving Oakland's GHG reduction target will rely most heavily on the choices of individuals and additional leadership from local and regional partners. The City calls upon the greater Oakland community to embrace a 36% GHG reduction target for each GHG emission source area, and to take personal action toward that target wherever feasible.

Applying Oakland's Target to ECAP Focus Action Areas

The purpose of the draft ECAP is to identify and prioritize actions through which the City of Oakland can foster reductions in energy consumption and GHG emissions and position Oakland to achieve a 36% reduction in GHG emissions from 2005 levels.

Actions included in the ECAP are primarily designed to enable Oakland to achieve its 36% citywide GHG reduction target with respect to those GHG emission sources that the City has a relatively high degree of influence over and for which measurable data can be collected over time. These sources (transportation on local roads; electricity and natural gas consumption in residential, commercial and industrial buildings; and landfilled solid waste) are the primary focus of actions in the draft ECAP. The City will measure and report on progress for each of these focus area emissions sources at a greater level of detail than for other areas. This chapter provides information on how actions identified in the ECAP will quantifiably help Oakland to achieve its 36% GHG emissions reduction goal in each of the ECAP focus action areas.

Achieving a 36% GHG Reduction – Transportation on Local Roads

The City of Oakland has a number of significant opportunities to influence fuel consumption and GHG emissions associated with transportation on local roads. As described in the draft ECAP, these include land use planning decisions, parking requirements associated with new development, parking pricing and management strategies, development of alternative transportation infrastructure such as bicycle lanes and transit connections, and support for the use of transit, pedestrian and bicycling travel choices.

The ECAP contains a number of proposed actions through which the City can enable Oakland to reduce citywide GHG emissions associated with transportation on local roads by 36% from 2005 levels. These actions will also help to significantly reduce GHG emissions on Oakland's highways, though additional actions will need to be implemented on a regional scale to reduce emissions associated with the many trips that pass through Oakland on local. The City appreciates the emphasis that SB 375 has placed on reducing GHG emissions from transportation on a regional level, and looks forward to partnering with regional agencies and other local governments to enact land use and transportation planning supporting these changes.

2005 Energy Use and GHG Emissions Associated with Transportation on Local Roads

Table 10 provides a summary of key energy and GHG data associated with transportation on local roads in 2005.

Table 10. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2005

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,273,207,834	98,783,366	1,371,991,200
Annual Gallons of Fuel	66,660,096	15,434,901	82,094,997
Avg MPG	19.1	6.4	n/a
Fuel CO2e/gallon	0.009038	0.010197	n/a
GHGs in Metric Tons (CO_2e)	602,496	157,387	759,883

Reading the Tables Below

In each of the tables below, the following color scheme is used to illustrate which factors are assumed to be directly affected by the assumptions considered, and which other factors are indirectly affected as a consequence.

Directly Affected Factors
Indirectly Affected Factors

2020 Business As Usual Forecast – GHG Emissions Associated with Transportation on Local Roads

Fuel consumption and GHG emissions associated with transportation on local roads in 2020 were projected using assumptions based on statewide average growth projections.[xv] The forecast assumes a 1.543% average annual growth rate statewide in vehicle miles traveled. The City will consider opportunities to update this forecast with more region- or ideally Oakland-specific projections in the future.

As illustrated, GHG emissions associated with transportation on local roads are projected to grow by 26% between 2005 and 2020 under business as usual conditions.

Table 11. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Under Business As Usual Forecast Assumptions

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,601,950,726	124,289,280	1,726,240,007
Annual Gallons of Fuel	83,871,766	19,420,200	103,291,966
Avg MPG	19.1	6.4	n/a
Fuel CO2e/gallon	0.009038	0.010197	n/a
GHGs in Metric Tons (CO_2e)	758,061	198,024	956,085
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			+ 26 %

State Actions Anticipated to Affect 2020 Forecast

Numerous State-driven actions associated with California's AB 32 climate policy are planned for implementation between 2005 and 2020. Several of these State-driven actions are projected to help reduce GHG emissions associated with the transportation sector. Below are summaries of each significant anticipated State-driven action, including quantified projections of impacts on Oakland's GHG emissions associated with transportation on local roads.

State Scoping Plan Strategy 1: Pavley 1 and 2

This policy is expected to reduce GHG emissions from passenger vehicles, based on a fleetwide average, through technological efficiency improvements to vehicles and other actions. The Pavley standards (Pavley I) regulate passenger vehicle GHG emissions starting with the 2009 model year and continuing through 2016. The second phase of the Pavley regulations (Pavley II) is expected to affect model year vehicles from 2016 through 2020. This calculation assumes that Pavley I and II will only affect light duty vehicles. Assuming fleetwide fuel efficiency will increase from an average of 19.1 miles per gallon (current EMFAC data) to 28.5 miles per gallon based on trends observed in a recent study by the Metropolitan Transportation Commission (MTC).

Table 12. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions – Adding State Scoping Plan Strategy 1 (Pavley 1 & 2 Fuel Efficiency Standards)

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,601,950,726	124,289,280	1,726,240,007
Annual Gallons of Fuel	56,208,797	19,420,200	75,628,997
Avg MPG	28.5	6.4	n/a
Fuel CO2e/gallon	0.009038	0.010197	n/a
GHGs in Metric Tons (CO_2e)	508,034	198,024	706,058
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 7 %

State Scoping Plan Strategy 2: Tire Inflation Program

This measure would increase vehicle fuel efficiency by requiring properly inflated automobile tires to reduce rolling resistance. A proposed Tire Pressure Measure would require all automotive service centers and test-only smog check service centers in California to perform mandatory tire pressure inspections on vehicles being serviced at the facility and further requires that the tires be inflated to the manufacturer recommended levels. Increasing fuel efficiency reduces GHG emission by consuming less fuel. This calculation assumes that 51% of the light-duty fleet will be affected by this by 2020, and that fuel efficiency for those vehicles will be increased by 0.7%, increasing overall fleet wide fuel efficiency to 28.6 miles per gallon.

Table 13. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions – Adding State Scoping Plan Strategy 2 (Tire Inflation Program)

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,601,950,726	124,289,280	1,726,240,007
Annual Gallons of Fuel	56,008,846	19,420,200	75,429,046
Avg MPG	28.60	6.4	n/a
Fuel CO2e/gallon	0.009038	0.010197	n/a
GHGs in Metric Tons (CO_2e)	506,226	198,024	704,251
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 7 %

State Scoping Plan Strategy 3: Tire Tread Standard

This measure would increase vehicle efficiency by creating an energy efficiency standard for automobile tires to reduce rolling resistance. A reduction in GHG emissions would result from reduced fuel use. This calculation assumes that reducing the rolling resistance of tires by 10% results in a 2% increase in fuel efficiency, and that 15% of the passenger vehicle fleet would be affected by 2020, increasing fleet wide average fuel efficiency to 28.69 miles per gallon.

Table 14. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions – Adding State Scoping Plan Strategy 3 (Tire Tread Standard)

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,601,950,726	124,289,280	1,726,240,007
Annual Gallons of Fuel	55,841,322	19,420,200	75,261,522
Avg MPG	28.69	6.4	n/a
Fuel CO2e/gallon	0.009038	0.010197	n/a
GHGs in Metric Tons (CO_2e)	504,712	198,024	702,737
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 8 %

State Scoping Plan Strategy 4: Low Friction Engine Oil

This measure would increase vehicle efficiency by mandating the use of engine oils that meet certain low friction specifications. The American Petroleum Institute has established "energy conserving designation" for certain oils. These specifications would be used as a starting point for the mandated oils under this measure. This calculation assumes that 85% of the light-duty passenger vehicle fleet would be affected by 2020, and that these vehicles would experience a 2% average fuel efficiency would increase, resulting in a new fleet wide average fuel efficiency of 29.18 miles per gallon.

Table 15. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions – Adding State Scoping Plan Strategy 4 (Low Friction Engine Oil)

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,601,950,726	124,289,280	1,726,240,007
Annual Gallons of Fuel	54,907,888	19,420,200	74,328,088
Avg MPG	29.18	6.4	n/a
Fuel CO2e/gallon	0.009038	0.010197	n/a
GHGs in Metric Tons (CO_2e)	496,276	198,024	694,300
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 9 %

State Scoping Plan Strategy 5: Solar reflective Automotive Paint and Window Glazing

This measure would increase vehicle efficiency by reducing the engine load for cooling the passenger compartment with air conditioning. The use of solar reflective automotive paints and window glazing reduces heating of the automobile passenger compartment from the sun. This results in both less frequent air conditioning use by drivers and smaller air conditioners specified by manufacturers for new vehicles. This calculation assumes that 43% of light-duty passenger vehicles would be affected by 2020, and that these vehicles would experience a 1.7% average fuel efficiency increase, resulting in a fleet wide fuel efficiency of 29.4 miles per gallon.

Table 16. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions – Adding State Scoping Plan Strategy 5 (Solar Reflective Paint & Glazing)

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,601,950,726	124,289,280	1,726,240,007
Annual Gallons of Fuel	54,509,424	19,420,200	73,929,624
Avg MPG	29.4	6.4	n/a
Fuel CO2e/gallon	0.009038	0.010197	n/a
GHGs in Metric Tons (CO_2e)	492,674	198,024	690,699
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 9 %

State Scoping Plan Strategy 6: Low Carbon Fuel Standard

This measure would reduce GHG emissions by requiring a 10% reduction in carbon intensity of transportation fuels sold in California by the year 2020. The low carbon fuel standard regulation is under development and the reduction pathways are being analyzed.

Table 17. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions – Adding State Scoping Plan Strategy 6 (Low Carbon Fuel Standard)

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,601,950,726	124,289,280	1,726,240,007
Annual Gallons of Fuel	54,509,424	19,420,200	73,929,624
Avg MPG	29.4	6.4	n/a
Fuel CO2e/gallon	0.008134	0.009177	n/a
GHGs in Metric Tons (CO_2e)	443,407	178,222	621,629
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 18 %

Impact of Proposed ECAP Actions

Actions proposed in the draft ECAP have been designed to help Oakland advance beyond the results above and achieve a 36% total reduction in GHG emissions associated with transportation on local roads. These actions result in the following sub-targets, which together enable Oakland to achieve the 36% reduction:

- Reduce vehicle miles traveled on local roads by 20%
- Increase fuel efficiency by 2% over statewide average
- Decrease City fleet GHG emissions by 36%

Additional information on how the proposed actions included in the draft ECAP are projected to achieve each of these sub-targets is provided below.

Objective 1. Reduce Vehicle Miles Traveled by 20% from 2005 Levels on Local Roads

Anticipated State actions are focused on increasing the fuel efficiency of vehicles sold in California and reducing the GHG impact of transportation fuels sold across the state. To reach Oakland's GHG reduction goals, the number of vehicle miles traveled (VMT) on our roads, the third major determinant of GHG emissions associated with transportation, must also be addressed.

Recently adopted State policies encourage progress in reducing VMT as well. Adopted Senate Bill 375 requires that a regional plan be developed demonstrating how the Bay Area will achieve reductions in vehicle miles traveled and associated GHG emissions. However, these reductions in VMT will only be achieved through a combination of planning efforts, local policies and programs, and infrastructure investments on the part of local governments. Thus for the purposes of the draft ECAP it is assumed that progress toward reducing VMT on local roads will only happen through local action.

It is estimated that taking local action to reduce VMT on local roads by 20% will play a key role in achieving Oakland's 36% GHG reduction target.

Table 18. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions and Local Actions – Adding 20% Reduction in Vehicle Miles Traveled

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,281,560,581	99,431,424	1,380,992,006
Annual Gallons of Fuel	43,607,539	15,536,160	59,143,699
Avg MPG	29.4	6.4	n/a
Fuel CO2e/gallon	0.008134	0.009177	n/a
GHGs in Metric Tons (CO_2e)	354,725	142,578	497,303
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 34 %

Table 19 summarizes how proposed actions in the draft ECAP are projected to support the achievement of a 20% reduction in driving on local roads in Oakland. Assumptions used to project VMT reduction goals for each set of actions below are generally drawn from "Quantifying Greenhouse Gas Mitigation Measures" published in August 2010 by the California Air Pollution Control Officers Association, the "California Environmental Quality Act – Air Quality Guidelines" published in June 2010 by the Bay Area Air Quality Management District, and other sources.

Table 19. Reducing Vehicle Miles Traveled on Local Roads by 20% Through Proposed Actions in Draft ECAP

Proposed Action or Group of Actions	Notes	Estimated % Reduction Goal in Vehicle Miles Traveled on Local Roads
Advance Infill, Mixed-Use and Transit-Oriented Development	A number of actions would advance infill, mixed-use, dense, transit-oriented development, with an emphasis on development around priority, transit-oriented areas with the potential to significantly reduce the number of future vehicle miles traveled. Many of these are foundational facilitative actions needed to enable VMT reductions from other actions as well. Requiring transportation demand management (TDM) performance criteria and strategies of all new major development projects is estimated to reduce future vehicle miles traveled by 2%. Other actions, such as developing a public transit master plan for Oakland and optimizing street design to encourage modes such as transit, bicycling and walking are estimated to further reduce VMT. Assuming that these actions would generate a reduction in VMT on local roads of approximately 3%. The following actions may contribute to this goal: • TLU 1 Participate in Quarterly SB 375 Discussions • TLU 2 Develop a Comprehensive Oakland Transportation Plan	3%

Proposed Action or Group of Actions	Notes	Estimated % Reduction Goal in Vehicle Miles Traveled on Local Roads
Advance Infill, Mixed-Use and Transit-Oriented Development (continued)	• TLU 3 Integrate Land Use and Transportation Planning in Every Project • TLU 6 Identify and Adopt Priority Development Areas • TLU 7 Create a Transportation Impact Fee • TLU 8 Require Transit-Oriented Development Performance for New Development • TLU 9 Encourage New Housing at Range of Price Levels • TLU 10 Develop a Comprehensive Infrastructure Plan • TLU 11 Promote Vibrant, Safe and Attractive Transit-Oriented Dense Development • TLU 12 Engage Lenders on Infill Development Strategy • TLU 15 Update Environmental Impact Evaluation Process • TLU 17 Optimize Street Design for Transit, Bicycling and Walking • TLU 26 Enforce Transportation Demand Management Measures in New Development • TLU 42 Make Planning Decisions With Consideration of Port GHG Impacts	
Transit System Improvements	Several actions will help to reduce VMT by encouraging drivers to switch from personal automobile travel to increased use of public transit. When operating at capacity, public transit can create significant net fuel efficiency benefits. Improving transit interconnections, frequency, hours of service, and real-time information signage (e.g., NextBus) is estimated to increase bus ridership by at least 5% and yield a net 1% reduction in vehicle miles traveled. Implementing bus rapid transit along a major transportation corridor through Oakland is estimated to reduce vehicle miles traveled by 2.4%. Additional community outreach efforts would encourage residents and employees to take advantage of improve transit system and further reduce VMT. The following actions may contribute to this goal: • TLU 13 Launch and Develop a Funding Plan for the Downtown Shuttle • TLU 14 Advance Bus Rapid Transit in Oakland • TLU 19 Expand and Enhance Transit Service, Interconnections, Vehicles, and Facilities • TLU 20 Enhance Transit Service on Major Corridors • CE-1 Expand Outreach on Energy and Climate Issues • CE-2 Partner with Local Organizations to Expand Outreach • CE-3 Develop a Community Climate Action Guide • CE-4 Support Local Climate Action Workshops • CE-5 Create Community Listservs on Climate Related Topics • CE-6 Promote Climate-Related Events • CE-7 Create a Community Climate Challenge	4%
Parking Pricing and Management Strategies	Several actions relate to adjustments in parking pricing and management strategies, including limiting parking supply, on-street market pricing, and use of residential parking permits. The combination of these strategies is projected to reduce driving by 5%. Unbundling the cost of parking from building space rental costs on a citywide basis is estimated to reduce vehicle miles traveled by 3%. Imposing parking maximums on new development is estimated to reduce vehicle miles traveled on local roads by approximately 1%. As the City engages in an update to its parking policies within the next three years, these strategies will be considered to foster a reduction in VMT while meeting the needs of residents and businesses.	7.5%

Proposed Action or Group of Actions	Notes	Estimated % Reduction Goal in Vehicle Miles Traveled on Local Roads
Parking Pricing and Management Strategies (continued)	The following actions may contribute to this goal: • TLU 28 Develop Regulations Allowing Alternatives to Installing Parking • TLU 29 Develop a Dynamic Parking Pricing Strategy • TLU 30 Impose Parking Maximums on New Development • TLU 31 Facilitate Unbundling of Parking Costs from Renting Building Space • TLU 32 Review Opportunities to Expand Residential Permit Parking	
Advance the Use of Alternative Modes of Travel, Alternative Fuels, & Fuel-Efficient Vehicles	Several actions would advance the use of alternative modes of travel and help to reduce total vehicles miles traveled. Expanding car share service by promoting car share options and expanding the number of car share locations in Oakland is estimated to increase car share program participation and reduce net vehicle miles traveled by 1.6%. Completing the implementation of bicycle paths outlined in the City's adopted Bicycle Master Plan is anticipated to further increase biking in the community and reduce vehicle miles traveled by 0.4%. Optimizing trip planning in City operations will also reduce VMT. Other community outreach efforts would generate additional mode shifts and reductions in VMT. The following actions may contribute to this goal: • TLU 16 Accelerate Completion of Bicycle and Pedestrian Networks • TLU 17 Optimize Street Design for Transit, Bicycling and Walking • TLU 25 Explore Strategies for Increasing Local Car Share Capacity • TLU 57 Expand Staff Training on Fuel Efficient Vehicle Operation • CE-1 Expand Outreach on Energy and Climate Issues • CE-2 Partner with Local Organizations to Expand Outreach • CE-3 Develop a Community Climate Action Guide • CE-4 Support Local Climate Action Workshops • CE-5 Create Community Listservs on Climate Related Topics • CE-6 Promote Climate-Related Events • CE-7 Create a Community Climate Challenge	3%
Encourage Reductions in Commute Trips and Other Trips	Several actions would encourage GHG reductions associated with commute trips of Oakland residents and employees. Expanding existing Safe Routes to School and guaranteed ride home programs is estimated to result in a 0.7% VMT reduction. Expanding offerings to City staff and encouraging large private developers to do the same to foster the use of alternative employee commute modes is estimated to reduce vehicle miles traveled by 0.5%. Other outreach efforts, requiring TDM components in major new developments, discontinuing the practice of providing free parking to some City staff and enabling more employees to work flex schedules or to telecommute would help to generate additional VMT reductions. The following actions may contribute to this goal: • TLU 18 Support Alternative Transportation Strategies by Private Employers • TLU 21 Provide Outreach on Alternative Transportation Options • TLU 26 Enforce Transportation Demand Management Measures in New Development • TLU 52 Provide Subsidized Transit Passes and Commuter Allowances • TLU 53 Discontinue Providing Parking to City Employees • TLU 54 Enable Flexible Work Schedules and Encouraging Telecommuting	2%

Proposed Action or Group of Actions	Notes	Estimated % Reduction Goal in Vehicle Miles Traveled on Local Roads
Traffic Signal *Synchronization*	Traffic signal synchronization can reduce vehicle idling time and create significant GHG benefits. However, it may also encourage vehicle travel by reducing trip times. *This calculation assumes that traffic signal synchronization at 40 key intersections is* projected to decrease GHG emissions associated with vehicle miles traveled by 0.5%.	0.5%
Total Reduction in VMT from the Above City Actions		20%

Objective 2. Improve Citywide Average Vehicle Fuel Efficiency by 2%

While actions that reduce VMT are projected to account for the majority of progress toward Oakland's transportation GHG reduction target, the City will also seek to further improve the fuel efficiency of vehicles operating on local roads. As stated earlier, recent State policies are expected to significantly improve vehicle fuel efficiency by 2020. By promoting fuel-efficient and alternative fuel vehicles, the City will seek to foster even higher levels of fleet wide fuel efficiency among vehicles operating on local roads.

Several actions would advance the use of alternative fueled vehicles and fuel-efficient vehicles. Facilitating public adoption of electric vehicles by planning for and developing local EV infrastructure is estimated to improve fuel efficiency equivalence by at least 0.7%. Encouraging taxi fleets and other large vehicle fleets to shift to fuel-efficient vehicles is estimated to improve fuel efficiency by 1%. Replacing older, inefficient vehicles in the City's fleet is estimated to improve fleet wide fuel efficiency by 0.1%. Other community outreach efforts would generated additional shifts to more fuel efficient vehicles. This calculation assumes that these actions would further improve average fleet wide fuel efficiency of all vehicles on local roads by approximately 2%.

The following actions may contribute to this goal:

- TLU 33 Engage in Electric Vehicle Infrastructure Planning
- TLU 34 Promote Use of Fuel-Efficient Vehicles and Low Carbon Fuels
- TLU 35 Encourage Low-Carbon Fuels Production
- TLU 36 Establish GHG Performance Criteria for Large Vehicle Fleets
- TLU 51 Replace Inefficient City Vehicles
- TLU 56 Perform Preventive Maintenance of City Fleet
- TLU 57 Expand Staff Training on Fuel Efficient Vehicle Operation
- TLU 58 Expand Capacity to Support Electric and Alternative Fuel Vehicles
- CE-2 Partner with Local Organizations to Expand Outreach
- CE-3 Develop a Community Climate Action Guide
- CE-4 Support Local Climate Action Workshops
- CE-7 Create a Community Climate Challenge

Table 20. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions and Local Actions – Adding Achievement of 2% Average Increase in Vehicle Fuel Efficiency

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,281,560,581	99,431,424	1,380,992,006
Annual Gallons of Fuel	42,752,489	15,231,529	57,984,019
Avg MPG	30.0	6.5	n/a
Fuel CO2e/gallon	0.008134	0.009177	n/a
GHGs in Metric Tons (CO_2e)	347,770	139,782	487,552
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 35 %

Objective 3. Reduce City Fleet GHG Emissions by 36 %

The City is also committed to achieving the 36% GHG reduction target within its own operations. Several proposed actions will enable the City to reduce the amount of fuel consumed and associated GHG emissions from City fleet operations. This calculation assumes that the City will reduce the equivalent of approximately 400,000 gallons of fuel use annually through use of more fuel efficient vehicles, optimization of trip planning, and conversions to more fuel efficient alternative fuel vehicles such as electric vehicles.

The following actions may contribute to this goal:

- TLU 51 Replace Inefficient City Vehicles
- TLU 56 Perform Preventive Maintenance of City Fleet
- TLU 57 Expand Staff Training on Fuel Efficient Vehicle Operation
- TLU 58 Expand Capacity to Support Electric and Alternative Fuel Vehicles

Table 21. Fuel Use and GHG Emissions Associated with Transportation on Local Roads in 2020 Adjusted for State Actions and Local Actions – Adding Achievement of Average X MPG Vehicle Fuel Efficiency

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
Annual VMT	1,281,560,581	99,431,424	1,380,992,006
Annual Gallons of Fuel	42,552,489	15,031,529	57,584,018
Avg MPG	30.0	6.5	n/a
Fuel CO2e/gallon	0.008134	0.009177	n/a
GHGs in Metric Tons (CO_2e)	346,143	137,947	484,090
Cumulative GHG Emissions from Local Roads Transportation Relative to 2005 Levels			- 36 %

Summary of Achieving a 36% GHG Reduction Associated with Transportation on Local Roads

Table 22. Summary of Achieving a 36% GHG Reduction Associated with Transportation on Local Roads

	Gasoline	Diesel	Subtotal
Vehicle Type	Passenger vehicles	Heavy trucks	
2005 GHGs in Metric Tons (CO_2e)	602,496	157,387	759,883
2020 GHGs in Metric Tons (CO_2e) Adjusted for BAU Forecast	758,061	198,024	956,085
2020 GHGs in Metric Tons (CO_2e) Adjusted for Anticipated State Actions	443,407	178,222	621,629
2020 GHGs in Metric Tons (CO_2e) Adjusted for Proposed ECAP Actions	346,143	137,947	484,090
Estimated GHG Reduction Below 2005 Baseline by 2020 Based on Proposed ECAP Actions			**36%**

Achieving a 36% GHG Reduction – Building Energy Use

2005 Energy Use and GHG Emissions Associated with Building Energy Use

Baseline energy use and associated GHG emissions from the year 2005 are summarized below.

Table 23. 2005 Building Energy Use Baseline

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	671,311,906	-	1,432,075,418	-	2,103,387,324	-	-
Natural Gas Consumed (Therms)	-	65,470,470	-	53,944,169	-	119,414,639	-
CO_2e /kWh	0.0002236	-	0.0002236	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	150,105	346,339	320,212	285,365	470,317	631,703	1,102,021

2020 Business As Usual Forecast – GHG Emissions Associated with Building Energy Use

Energy use and associated GHG emissions were forecasted to grow between 2005 and 2020 under business as usual conditions. Residential energy consumption is forecasted to grow as a function of predicted population growth. Commercial and industrial energy consumption is assumed to grow as a function of predicted jobs growth. Projections are based on data from the Association of Bay Area Government's 2009 Projections.[xvi]

- 2005 Oakland Population: 410,600
- 2020 Oakland Population: 470,900
- 2005 Oakland Jobs: 202,570
- 2020 Oakland Jobs: 229,720

Table 24. 2020 Business As Usual Forecast

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	769,899,602	-	1,624,013,255	-	2,393,912,857	-	-
Natural Gas Consumed (Therms)	-	75,085,349	-	61,174,184	-	136,259,533	-
CO_2e /kWh	0.0002236	-	0.0002236	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	172,150	397,201	363,129	323,611	535,279	720,813	1,256,092
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							+ 14%

State Actions Anticipated to Affect 2020 Forecast

Numerous State-driven actions associated with California's AB 32 climate policy are planned for implementation between 2005 and 2020. Several of these State-driven actions are projected to help reduce GHG emissions associated with building energy use. Below are summaries of each significant anticipated State-driven action, including quantified projections of impacts on Oakland's GHG emissions associated with building energy use.

Building and Appliance Standards

New statewide building and appliance standards enforced by the State are anticipated to require higher levels of energy efficiency performance in building construction and appliances. Anticipated impacts of these standards are illustrated in Table 25.

Table 25. 2020 Adjusted Forecast Including Anticipated State Actions – Building and Appliance Standards

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	741,359,086	-	1,563,810,370	-	2,305,169,456	-	-
Natural Gas Consumed (Therms)	-	72,738,257	-	59,261,941	-	132,000,198	-
CO_2e /kWh	0.0002236	-	0.0002236	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	165,768	384,785	349,668	313,496	515,436	698,281	1,213,717
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							+ 10%

Renewable Portfolio Standard for Electricity

Changes to California's Renewable Portfolio Standard (RPS) now require utilities to provide 33% of electricity supplied to the grid from qualifying renewable energy sources by 2020. Projected impacts shown in Table 26 assume that electricity production shifting to clean renewable energy sources will displace production from natural gas. Resulting electricity production would be approximately 79% GHG emissions free (ignoring unknown upstream GHG impacts associated with power production from nuclear and renewable energy sources).

Table 26. 2020 Adjusted Forecast Including Anticipated State Actions – 33% Renewable Portfolio Standard

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	741,359,086	-	1,563,810,370	-	2,305,169,456	-	-
Natural Gas Consumed (Therms)	-	72,738,257	-	59,261,941	-	132,000,198	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	84,520	384,785	178,285	313,496	262,805	698,281	961,086
	Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels						- 13%

Impact of Proposed ECAP Actions

Actions proposed in the draft ECAP have been designed to help Oakland advance beyond the State-driven results above to achieve a 36% total reduction in GHG emissions associated with building energy use. These actions result in the following sub-targets, which together enable Oakland to achieve the 36% reduction:

- Oakland Shines Program Targeting Downtown with Energy Efficiency and Conservation Programs
- Energy Programs Targeting 400 Largest Commercial Energy Users
- Energy Efficiency Improvements in Other Commercial Properties
- Residential Energy Efficiency Initiatives
- Energy Efficiency in New Construction
- Renewable Energy Generation (electricity and heat) in Excess of RPS and State Action
- Combined Heat and Power
- Energy Efficient Product Purchasing
- Persistent Energy Conservation

Additional information on how the proposed actions included in the draft ECAP are projected to achieve each of these sub-targets is provided below.

Oakland Shines Program Targeting Downtown with Energy Efficiency and Conservation Programs

The Oakland Shines program plans to offer energy efficiency and conservation services to 80% of the several thousand businesses located in a 120-block area of Downtown Oakland. The program implementation team, comprised of Quantum Energy Services and Technologies (QuEST), Community Energy Services, and the City of Oakland, in coordination with PG&E, will conduct comprehensive outreach and provide significant rebates for improvements to Class B buildings to help owners reduce energy use and costs, and make their buildings more attractive to tenants. Oakland Shines is funded by a $4.8 million ARRA grant and is expected to save 8,300,000

kWh of electricity and 138,000 therms of natural gas annually by helping participants to reduce energy consumption by 20% through efficiency, pre-and post-project utility cost tracking, and conservation.

The following actions may contribute toward this goal:

- Maximize participation in the Oakland Shines program targeted at downtown businesses, combining turnkey design and installation programs with large incentives and energy cost tracking and benchmarking services
  - BE-10 Oakland Shines downtown outreach and incentives
  - BE-12 Offer technical assistance to energy intensive businesses
  - BE-14 Strategic analysis and planning
  - BE-15 Track consumption and cost over time
  - BE-17 Kilowatt crackdown community challenge
- Continue delivering aggressive, cost-effective, proven energy and water efficiency improvement measures to businesses throughout Oakland
  - BE-9 Promote benefits of efficiency and offer guidance
  - BE-31 Large water user conservation and efficiency monitoring with EBMUD
  - BE-35 Use water-efficiency fixtures

Table 27. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Oakland Shines Program Targeting Downtown Commercial Sector

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	741,359,086	-	1,555,445,664	-	2,296,804,750	-	-
Natural Gas Consumed (Therms)	-	72,738,257	-	59,123,416	-	131,861,673	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	84,520	384,785	177,331	312,763	261,851	697,548	959,399
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 13%

Energy Programs Targeting 400 Largest Commercial Energy Users

It is estimated that 86% of commercial building electricity and 93% of commercial natural gas consumption is associated with energy used by building infrastructure, heating, cooling refrigerators, hot water, lighting and cooking. These elements are addressed by building codes and energy retrofit programs, which are the emphasis of this section of the analysis. The other 14% of electricity is used for computers and equipment that are not covered by green building ordinances, energy codes and major programs. The remaining 7% of natural gas is used for processes and miscellaneous activities. This calculation assumes that 100% of the largest 400 electricity users reduce their building energy (that is energy that is governed by building codes and green building ordinances and often the focus of energy retrofit programs) by an average of 20%.

The following actions may contribute toward this goal:

- Maximize participation in the Oakland Shines program targeted at downtown businesses, combining turnkey design and installation programs with large incentives and energy cost tracking and benchmarking services
  - BE-12 Offer technical assistance to energy intensive businesses

  - BE-14 Strategic analysis and planning
  - BE-15 Track consumption and cost over time
  - BE-17 Kilowatt crackdown community challenge
- Leverage green building and time of sale ordinances to require cost-effective energy efficiency improvements when properties are in transition
  - BE-3 Renovation in green building ordinance
  - BE-13 Time of lease or sale ordinance
- Continue delivering aggressive, cost-effective, proven energy and water efficiency improvement measures to businesses throughout Oakland
  - BE-6 Pursue funding for new energy consumption reduction programs
  - BE-9 Promote benefits of efficiency and offer guidance
  - BE-29 Large water user conservation and efficiency monitoring with EBMUD
  - BE-34 Use water-efficiency fixtures

Table 28. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Adding Energy Assistance to Largest Energy Users

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	Electricity	natural gas	total
Electricity Consumed (kWh)	741,359,086	-	1,377,879,523	-	2,119,238,609	-	-
Natural Gas Consumed (Therms)	-	72,738,257	-	54,153,095	-	126,891,352	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	84,520	384,785	157,087	286,470	241,607	671,255	912,863
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 17%

Energy Efficiency Improvements in Other Commercial Properties

It is estimated that 86% of commercial building electricity and 93% of commercial natural gas consumption is associated with energy used by building infrastructure, heating, cooling refrigerators, hot water, lighting and cooking. These elements are addressed by building codes and energy retrofit programs, which are the emphasis of this section of the analysis. The other 14% of electricity and 7% of natural are used for computers and equipment that are not covered by green building ordinances, energy codes and major programs. This calculation assumes that 30% of commercial sector properties that are not among the largest 400 electricity users reduce their building energy use (that is energy that is governed by building codes and green building ordinances, or is the focus of an energy retrofitting program) by an average of 20%.

The following actions may contribute toward this goal:

- Maximize participation in the Oakland Shines program targeted at downtown businesses, combining turnkey design and installation programs with large incentives and energy cost tracking and benchmarking services
  - BE-10 Oakland Shines downtown outreach and incentives
  - BE-14 Strategic analysis and planning
  - BE-15 Track consumption and cost over time
  - BE-17 Kilowatt crackdown community challenge

- Leverage green building and time of sale ordinances to require cost-effective energy efficiency improvements when properties are in transition
  - BE-3 Renovation in green building ordinance
  - BE-13 Time of lease or sale ordinance
- Continue delivering aggressive, cost-effective, proven energy and water efficiency improvement measures to businesses throughout Oakland
  - BE-6 Pursue funding for new energy consumption reduction programs
  - BE-8 Promote upgrades for historic buildings
  - BE-9 Promote benefits of efficiency and offer guidance
  - BE-11 Encourage participation in East Bay Energy Watch
  - BE-16 Expand technical assistance in small commercial programs
  - BE-29 Water efficient landscaping
  - BE-31 Large water user conservation and efficiency monitoring with EBMUD
  - BE-35 Use water-efficiency fixtures

Promote innovative financing techniques to support the implementation of cost effective upgrades
  - BE-4 Property tax assisted financing
  - BE-5 On-bill financing

Table 29. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Adding Energy Efficiency Improvements in Other Commercial Properties

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	741,359,086	-	1,357,856,331	-	2,099,215,416	-	-
Natural Gas Consumed (Therms)	-	72,738,257	-	52,716,281	-	125,454,538	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	84,520	384,785	154,805	278,869	239,324	663,655	902,979
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 18%

Residential Energy Efficiency Initiatives

This calculation assumes that 30% of all households will achieve an average 10% reduction in building-related electricity and natural gas consumption by implementing home energy upgrades in areas such as refrigerators, duct sealing, hot water insulation, programmable thermostats, envelope sealing, lighting with compact fluorescent lamps, heating systems, wall insulation and windows, where cost-effective. Building-related energy accounts for approximately 60% of electricity and 90% of natural gas use.

The following actions may contribute toward this goal:
- Promote efficient use of energy and water
  - BE-6 Pursue funding for new energy use reduction programs
  - BE-8 Promote upgrades for historic buildings
  - BE-9 Promote benefits of efficiency and offer guidance
  - BE-18 Energy Upgrade California
  - BE-20 Weatherization for low-to-moderate income households
  - BE-21 Promote improvements in rental housing

  - BE-24 Do-it-yourself tools at tool lending library
  - BE-29 Water efficient landscaping
  - BE-32 Collect water in cisterns
  - BE-35 Use water-efficiency fixtures
- Leverage green building and time of sale ordinances to require cost-effective energy efficiency improvements when properties are in transition
  - BE-3 Include renovation in green building ordinance
  - BE-22 Residential time of lease or sale ordinance
- Encourage the use of on-site renewable energy sources
  - BE-25 Community solar program
- Promote innovative financing techniques to support the implementation of cost effective upgrades
  - BE-4 Property tax assisted financing
  - BE-5 On-bill financing
  - BE-19 Promote investment in multi-family affordable housing

Table 30. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Adding Residential Energy Efficiency Initiatives

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	727,996,924	-	1,357,856,331	-	2,085,853,255	-	-
Natural Gas Consumed (Therms)	-	70,774,324	-	52,716,281	-	123,490,605	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	82,996	374,396	154,805	278,869	237,801	653,265	891,066
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 19%

Energy Efficiency in New Construction

This calculation assumes that 100% of residential and commercial new construction projects in Oakland will be built with infrastructure that is 10% more energy efficient than required by the State Energy Code. It is estimated that 60% of electricity and 90% of natural gas consumption in residential buildings are associated with the building infrastructure. It is also estimated that 84% of commercial building electricity and 93% of natural gas consumption are associated with energy used by building infrastructure, heating, cooling refrigerators, hot water, lighting and cooking. These elements are addressed by building codes, which are the emphasis of this section of the analysis. The remaining energy consumption is used for equipment that is not covered by green building ordinances and energy codes.

The following actions may contribute toward this goal:

- Adopt the proposed Green Building Ordinance to include cost-effective energy efficiency construction for new buildings and renovations
  - BE-1 Green Building Ordinance for new construction and renovation
  - BE-3 Include renovation in green building ordinance
- Include water efficiency measures in new construction projects
  - BE-29 Water efficient landscaping
  - BE-32 Collect water in cisterns

  - BE-35 Use water-efficiency fixtures
- Continue delivering aggressive, cost-effective, proven energy and water efficiency improvement measures to businesses throughout Oakland
  - BE-14 Strategic analysis and planning
- Promote innovative financing techniques to support the inclusion of all cost-effective efficiency and conservation measures in new construction projects
  - BE-4 Property tax assisted financing
  - BE-5 On-bill financing
- Encourage the use of on-site renewable energy sources
  - BE-25 Community solar program

Table 31. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Adding Energy Efficiency in New Construction

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	724,048,186	-	1,346,901,521	-	2,070,949,707	-	-
Natural Gas Consumed (Therms)	-	70,197,431	-	52,268,461	-	122,465,892	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	82,546	371,344	153,556	276,500	239,102	647,845	883,947
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 20%

Renewable Energy Generation in Excess of RPS and State Action

This calculation assumes that 3% of post-efficiency electricity and natural gas energy for residential and commercial use is generated from clean renewable energy sources.

The following actions may contribute toward this goal:

- Identify, promote and finance solar and other renewable energy projects throughout the residential and commercial sectors
  - BE-4 Property tax assisted financing
  - BE-25 Community solar program
  - BE-28 Study local solar, wind, wave, combined heat and power and anaerobic digestion opportunities
- Alternative methods for increasing renewable energy production
  - BE-26 Negotiate with PG&E for green power
  - BE-27 Explore Community Choice Aggregation

Table 32. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Adding Renewable Energy Generation in Excess of RPS and State Action

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	702,326,740	-	1,306,494,475	-	2,008,821,216	-	-
Natural Gas Consumed (Therms)	-	68,617,989	-	51,123,605	-	119,741,594	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	80,070	362,989	148,949	270,444	229,019	633,433	862,452
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 22%

Combined Heat and Power

Combined heat and power fits into Oakland's efforts to strategically place energy production where it can achieve the biggest benefit. This calculation assumes that Oakland has discretion about whether to build combined heat and power projects. The State estimates that combined heat and power will reduce electricity consumption by 13.5%. Although GHG emissions from combustion of natural gas use would increase, the net effect would be to reduce GHG emissions because combined heat and power makes good use of waste heat to create a net GHG emissions benefit.

The following actions may contribute toward this goal:

- Develop combined heat and power projects city-wide on a strategic basis to support City objectives
  - BE-14 strategic analysis and planning
  - BE-26 Study local solar, wind, wave, combined heat and power and anaerobic digestion opportunities
  - BE-27 Explore Community Choice Aggregation
- Maximize effectiveness of renewable power by striving to minimize consumption
  - BE-9 Promote benefits of efficiency and offer guidance
- Promote innovative financing techniques to support the implementation of Combined Heat and Power
  - BE-4 Property tax assisted financing

Table 33. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Adding Combined Heat and Power

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	607,234,254	-	1,129,599,871	-	1,736,834,123	-	-
Natural Gas Consumed (Therms)	-	69,694,999	-	53,127,099	-	122,822,098	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	69,229	368,687	128,782	281,042	198,011	649,729	847,740
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 23%

Energy Efficient Product Purchasing

This calculation assumes that 100% of Oakland residents and businesses will reduce energy consumption associated with their non-infrastructure (e.g., energy using products such as televisions, stereos, cell phone chargers) by 10% through more energy efficient product purchasing decisions.

The following actions may contribute toward this goal:

- Encourage energy efficient choices when making purchasing decisions
  - BE-9 Promote benefits of efficiency and offer guidance

Table 34. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Adding Energy Efficient Product Purchasing

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	582,993,203	-	1,113,353,162	-	1,696,346,364	-	-
Natural Gas Consumed (Therms)	-	68,998,049	-	52,750,373	-	121,748,422	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	66,465	365,000	126,930	279,049	193,395	644,049	837,444
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 24%

Persistent Energy Conservation

This calculation assumes that all Oakland residents and businesses practice persistent energy conservation that reduces energy consumption by 16% below that achieved through other State and local actions. Achieving this goal will require significant change in energy use behaviors of all members of the Oakland community.

The following actions may contribute toward this goal:

- Encourage energy efficient choices when making purchasing decisions
  - BE-7 Promote energy conservation
  - BE-17 Commercial building energy challenge
  - BE-29 Water efficient landscaping
  - BE-35 Use water-efficiency fixtures
  - CE-2 Promote local climate action
  - CE-3 Produce community climate action guide
  - CE-7 Community climate challenge
  - CE-16 Develop multi-media library of local model action

Table 35. 2020 Building Energy Use and Associated GHG Emissions Adjusted for State Actions and Local Actions – Adding Persistent Energy Conservation

	Residential		Commercial & Industrial		Total		
	electricity	natural gas	electricity	natural gas	electricity	natural gas	total
Electricity Consumed (kWh)	489,714,290	-	935,216,656	-	1,424,930,946	-	-
Natural Gas Consumed (Therms)	-	57,958,361	-	44,310,314	-	102,268,675	-
CO_2e /kWh	0.00011401	-	0.00011401	-	-	-	-
CO_2e /therm	-	0.005290	-	0.005290	-	-	-
GHGs in Metric Tonnes CO_2e	55,831	306,600	106,621	234,402	162,452	541,001	703,453
Cumulative Total Building Energy Use GHG Emissions Relative to 2005 Levels							- 36%

Table 36. Summary of Plan for Achieving a 36% GHG Reduction Target for Building Energy Use

	Residential			Commercial & Industrial			Total		
	electricity	natural gas	subtotal	electricity	natural gas	subtotal	electricity	natural gas	total
2005 Baseline GHG Emissions (Metric Tonnes CO_2e)	150,105	346,339	496,444	320,212	285,365	605,577	470,317	631,703	1,102,021
2020 Business as Usual Forecast (Metric Tonnes CO_2e)	172,150	397,201	569,351	363,129	323,611	686,741	535,279	720,813	1,256,092
2020 Forecast Adjusted for State Actions (Metric Tonnes CO_2e)	84,520	384,785	469,305	178,285	313,496	491,780	262,805	698,281	961,086
% Reduction from 2005 Baseline	44%	-11%	5%	44%	-10%	19%	44%	-11%	13%
2020 Planned Including Local Actions (Metric Tonnes CO_2e)	55,831	306,600	362,431	106,621	234,402	341,023	162,452	541,001	703,453
% Reduction from 2005 Baseline	63%	11%	27%	67%	18%	44%	65%	14%	**36%**

Achieving a 36% GHG Reduction – Material Consumption & Waste

From a lifecycle perspective, GHG impacts associated with the manufacture, transport, use and disposal of material goods and food represent a major source of GHG emissions. While many of these emissions do not occur within Oakland's geographic boundaries, material consumption and disposal decisions made by each member of the Oakland community are a major factor driving their creation. By virtue of its role in administering solid waste collection and management programs in Oakland, the City has the ability to influence the manner in which solid waste is collected, managed and disposed.

The Oakland City Council adopted a Zero Waste goal in 2006, calling for a 90% reduction in waste sent to landfill by 2020. The draft ECAP recognizes the importance of achieving this Zero Waste Goal, which would reduce landfill methane emissions associated with solid waste sent from Oakland to nearby landfills by far more than 36%. Given the difficulty associated with achieving this goal, it is not recommended that GHG reduction targets be lessened in other areas, despite the potential for progress beyond a 36% GHG reduction with respect to this source. Rather, achieving Oakland's Zero Waste Goal by 2020 would enable Oakland to meet anticipated longer term goals (on the order of 80% reduction by 2050) sooner.

This calculation assumes that solid waste sent to landfill from Oakland for purposes other than as alternative daily cover would be reduced by 90% from 2005 levels by 2020.

Table 37. GHG Emissions Associated with Solid Waste Sent to Landfill from Oakland Activity in 2005

Quantity of Non-ADC Solid Waste Sent to Landfill (tons)	416,827*
Estimated GHG Emissions (metric tons CO_2e)	126,361

*In 2005, 416,827 tons of solid waste was disposed in landfill from Oakland, along with an additional 201,625 tons of alternative daily cover (ADC). Oakland's adopted Zero Waste goal applies to non-ADC solid waste.

Table 38. GHG Emissions Associated with Solid Waste Sent to Landfill from Oakland Activity in 2020 Based on City's Adopted Zero Waste Goal

Quantity of Non-ADC Solid Waste Sent to Landfill (tons)	40,000
Estimated GHG Emissions (metric tons CO_2e)	13,306
Reduction in Total Building Energy Use GHG Emissions from 2005 Levels	89%

Existing Oakland Energy and GHG Reduction Policies and Programs

The City of Oakland has a long legacy of action on energy and climate issues. Below are examples of existing City policies supportive of energy and GHG emission reduction activities in Oakland.

General Plan Land Use and Transportation Element (LUTE)

Policy	Description
Policy I/C2.2	**Reusing Abandoned Buildings** The reuse of abandoned industrial buildings by non-traditional activities should be encouraged where the uses are consistent with, and will assist in the attainment of, the goals and objectives of all elements of the Plan.
Policy T1.6	**Designating Truck Routes** An adequate system of roads connecting port terminals, warehouses, freeways and regional arterials, and other important destinations should be designated. This system shall rely upon arterial streets away from residential neighborhoods.
Policy T1.8	**Rerouting and Enforcing Truck Routes** The City shall make efforts to re-route truck traffic away from neighborhoods, wherever possible, and enforce truck route controls.
Policy T2.1	**Encouraging Transit-Oriented Development** Transit-oriented development should be encouraged at existing or proposed transit nodes, defined by the convergence of two or more modes of public transit such as BART, bus, shuttle service, light rail or electric trolley, ferry, and inter-city or commuter rail.
Policy T2.2	**Guiding Transit-Oriented Development** Transit-oriented developments should be pedestrian oriented, encourage night and day time use, provide the neighborhood with needed goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.
Policy T2.3	**Promoting Neighborhood Services** Promote neighborhood serving commercial development within one-quarter to one-half mile from established transit routes and nodes.
Policy T2.5	**Linking Transportation and Activities** Link transportation facilities and infrastructure improvements to recreational uses, job centers, commercial nodes, and social services, (i.e. hospitals, parks, and community centers).
Policy T3.3	**Allowing Congestion Downtown** For intersections within Downtown and for those that provide direct access to Downtown locations, the City should accept a lower level of service and a higher level of traffic congestion than is accepted in other parts of Oakland. The desired pedestrian-oriented nature of Downtown activity and the positive effect of traffic congestion in promoting the use of transit of other methods of travel should be recognized.
Policy T3.5	**Including Bikeways and Pedestrian Walks** The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realized streets, wherever possible.

Policy	Description
Policy T3.6	**Encouraging Transit** The City should encourage and promote use of public transit in Oakland by expediting the movement of and access to transit vehicles on designated "transit streets" as shown on the Transportation Plan.
Policy T3.7	**Resolving Transportation Conflicts** The City, in constructing and maintaining its transportation infrastructure, should resolve any conflicts between public transit and single occupant vehicles in favor of the transportation mode that has the potential to provide the greatest mobility and access for people, rather than vehicles, giving due consideration to the environmental, public safety, economic development, health, and social equity impacts. [Note: This is the City's 'Transit-First Policy.']
Objective T4	**Increase use of alternatives modes of transportation**
Policy T4.1	**Incorporating Design Features for Alternative Travel** The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.
Policy T4.2	**Creating Transportation Incentives** Through cooperation with other agencies, the City should create incentives to encourage travelers to use alternative transportation options.
Policy T4.3	**Reducing Transit Waiting Times** The City should encourage transit operators to reduce waiting times for users by coordinating schedules and maintaining intervals of fifteen (15) minutes or less between buses during peak daytime periods.
Policy T4.4	**Developing Light Rail or Electric Trolley** The City supports the development of light rail or trolley bus along Regional Transit Streets in high travel demand on corridors.
Policy T4.5	**Preparing a Bicycle and Pedestrian Master Plan** The City should prepare, adopt, and implement a Bicycle and Pedestrian Master Plan as part of the Transportation Element of this General Plan.
Policy T4.6	**Making Transportation Accessible for Everyone** Alternative modes of transportation should be accessible for all of Oakland's population, including the elderly, disabled, and disadvantaged.
Policy T4.7	**Reusing Abandoned Rail Lines** Where rail lines (including siding and spurs) are to be abandoned, first consideration should be given to acquiring the line for transportation and recreational uses, such as bikeways, footpaths, or public transit.
Policy T4.8	**Accommodating Multiple Types of Travel on the Bay Bridge** The City should encourage the design and engineering for the new Bay Bridge to accommodate multiple means of access and travel by automobiles, trucks, transit, bicycles, pedestrians, and future mass transit.

Policy	Description
Policy T4.10	**Converting Underused Travel Lanes** Take advantage of existing transportation infrastructure and capacity that is underutilized. For example, where possible and desirable, convert underused travel lanes to bicycle or pedestrian paths or amenities.
Policy D3.1	**Promoting Pedestrians** Pedestrian-friendly commercial areas should be promoted.
Policy D3.2	**Reusing Vacant or Underutilized Buildings** Existing vacant or underutilized buildings should be reused. Repair and rehabilitation, particularly of historic or architecturally significant structures, should be strongly encouraged. However, where reuse is not economically feasible, demolition and other measures should be considered.
Policy D10.6	**Creating Infill Housing** Infill housing that respects surrounding development and the streetscape should be encouraged in the downtown to strengthen or create distinct districts.
Policy D11.1	**Promoting Mixed-Use Development** Mixed use developments should be encouraged in the downtown for such purposes as to promote its diverse character, provide for needed goods and services, support local art and culture, and give incentive to reuse existing vacant or underutilized structures.
Policy D13.1	**Coordinating Transportation Options** A variety of transportation modes to and within all downtown districts should be coordinated to safely and efficiently move people and goods. Affordability and convenience are primary considerations.
Policy N1.2	**Placing Public Transit Stops** The majority of commercial development should be accessible by public transit. Public transit stops should be placed at strategic locations in Neighborhood Activity Centers and Transit-Oriented Districts to promote browsing and shopping by transit users.
Policy N3.2	**Encouraging Infill Development** In order to facilitate the construction of needed housing types, infill development that is consistent with the General Plan should take place throughout the City of Oakland.
Policy N8.1	**Developing Transit Village** "Transit Village" areas should consist of attached multi-story development on properties near or adjacent to BART stations or other well-used or high-volume transit facilities, such as light rail, train, ferry stations, or multiple-bus transfer locations. While residential units should be encouraged as part of any transit village, other uses may be included where they will not negatively affect the residential living environment.

Open Space Conservation and Recreation (OSCAR) Element

Policy	Description
Action OS-1.2.6	**Management of Airport Wetlands** Encourage the Port of Oakland to retain wetlands within Oakland International Airport as Resource conservation Areas, where compatible with the FAA.

Policy	Description
Policy OS-2.3	**Community Gardening** Maintain and support a viable community gardening program to foster an appreciation of local ecology, instill a sense of stewardship and community, and provide a multi-ethnic, multi-generational activity open to all.
Policy OS-5.2	**Joint Use of Right-of-Way** Promote the development of linear parks or trails within utility or transportation corridors, including transmission line rights-of-way, abandoned railroad rights-of-way, and areas under the elevated BART tracks.
Policy OS-5.4	**Maintenance of Mid-Block Paths** Maintain a network of mid-block paths and stairsteps in Oakland to enhance neighborhood character and provide pedestrian "short-cuts" through developed areas.
Objective OS-12	**Street Trees** To green Oakland's residential neighborhoods and commercial areas with street trees.
Policy OS-12.2	**Street Tree Maintenance** Maintain street trees to promote their natural forms, eliminate hazardous conditions, provide adequate vertical clearance over streets and sidewalks, and abate pest and disease problems.
Policy CO-1.2	**Soil Contamination Hazards** Minimize hazards associated with soil contamination through the appropriate storage and disposal of toxic substances, monitoring of dredging activities and clean-up of contaminated sites. In this regard, require soil testing for development of any site (or dedication of any parkland or community garden) where contamination is suspected due to prior activities on the site.
Objective CO-4	**Water Supply** To maintain a water supply sufficient to meet local needs while maintaining the need to develop new water supply facilities.
Policy CO-4.1	**Water Conservation** Emphasize water conservation and recycling strategies in efforts to meet future demand.
Policy CO-4.2	**Drought-Tolerant Landscaping** Require the use of drought-tolerant plants to the greatest extent possible and encourage the use of irrigation systems which minimize water consumption.
Action CO-4.2.1	**Adoption of a Water Efficient Landscape Ordinance** Adopt a revised version of the Water Efficient Landscaping Ordinance.
Policy CO-4.3	**Use of Reclaimed Water** Study the feasibility of amending the Oakland Municipal Code to require the use of reclaimed wastewater for irrigation on development exceeding a certain threshold, or to require that new irrigation systems be designed so that they can be switched over to reclaimed water when it becomes economically feasible.
Policy CO-4.4	**Water Conscious Development Process** Encourage regional development patterns which make environmentally sound use of water resources.

Policy	Description
Policy CO-7.4	**Tree Removal** Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons.
Action CO-7.6.1	**Long-Term Tree Replacement Plan and Firestorm Reforestation** Develop a long-term plan for maintaining and replacing Oakland's aging trees and reforesting the 1991 firestorm area.
Objective CO-10	**Vegetation Management** To manage vegetation so that the risk of catastrophic wildfire is minimized.
Objective CO-12	**Air Resources** To improve air quality in Oakland and surrounding Bay Region.
Policy CO-12.1	**Land Use Patterns Which Promote Air Quality** Promote land use patterns and densities which help improve regional air quality conditions by: (a) minimizing dependence on single passenger autos; (b) promoting projects which minimize quick auto starts and stops, such as live-work development, mixed use development, and office development with ground floor retail space; (c) separating land uses which are sensitive to pollution from the sources of air pollution; and (d) supporting telecommuting, flexible work hours, and behavioral changes which reduce the percentage of people in Oakland who must drive to work on a daily basis.
Policy CO-12.2	**Coordinated Transportation Systems** Maintain a coordinated bus, rail, and ferry transit system which provides efficient service to major destinations and promotes alternatives to the single passenger auto.
Policy CO-12.3	**Transportation Systems Management** Expand existing transportation systems management and transportation demand management strategies which reduce congestion, vehicle idling, and travel in single passenger autos.
Policy CO-12.4	**Design of Development to Minimize Air Quality Impacts** Require that development projects be designed in a manner which reduces potential adverse air quality impacts. This may include: (a) the use of vegetation and landscaping to absorb carbon monoxide and to buffer sensitive receptors; (b) the use of low-polluting energy sources and energy conservation measures; and (c) designs which encourage transit use and facilitate bicycle and pedestrian travel.
Policy CO-12.7	**Regional Air Quality Planning** Coordinate local air quality planning efforts with other agencies, including adjoining cities and counties, and the public agencies responsible for monitoring and improving air quality. Cooperate with regional agencies such as the Bay Area Air Quality Management District (BAAQMD), the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Alameda County Congestion Management Agency in developing and implementing regional air quality strategies. Continue to work with BAAQMD and the California Air Resources Board in enforcing the provisions of the State and Federal Clean Air Acts, including the monitoring of air pollutants on a regular and on-going basis.
Objective 13	**Energy Resources** To manage Oakland's energy resources as efficiently as possible, reduce consumption of non-renewable resources, and develop energy resources which reduce dependency on fossil fuels.

Policy	Description
Policy CO-13.1	**Reliable Energy Network** Promote a reliable local energy network which meets future needs and long-term economic development objectives at the lowest practical cost.
Policy CO-13.2	**Energy Efficiency** Support public information campaigns, energy audits, the use of energy-saving appliances and vehicles, and other efforts which help Oakland residents, businesses, and City operations become more energy efficient.
Policy CO-13.3	**Construction Methods and Materials** Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.
Policy CO-13.4	**Alternative Energy Sources** Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.
Policy REC-8.7	**Transit-Dependent Populations** Improve access to parks and recreational services for adults without access to automobiles.

Housing Element

Policy	Description
Policy 1.3	**Appropriate Locations and Densities for Housing** Consistent with the General Plan Land Use and Transportation Element adopted in 1998, review and revise the residential development regulations with the intent of encouraging and sustaining a diverse mix of housing types and densities throughout the City for all income levels.
Action 1.3.2	**Mixed Use Development** Consistent with the General Plan Urban Residential land use classification, update the Planning Code and Development Control Map to rezone designated commercial areas along San Pablo Avenue, Telegraph Avenue, MacArthur Boulevard, Foothill Boulevard and International Boulevard to higher density residential uses or to urban residential mixed use zoning districts to allow mixed use developments that include a combination of retail, office, and residential uses in the same project or on the same site. See Action 7.5.1.
Policy 1.6	**Adaptive Reuse** Encourage the re-use of industrial and commercial buildings for joint living quarters and working spaces.
Policy 7.1	**Sustainable Residential Development Programs** Develop and promote programs to foster the incorporation of sustainable design principles, energy efficiency and Smart Growth principles into residential developments. Offer education and technical assistance regarding sustainable development to project applicants.
Policy 7.2	**Minimize Energy Consumption** Encourage the incorporation of energy conservation design features in existing and future residential development beyond minimum standards required by State building code.

Policy	Description
Policy 7.3	**Foster Low-Carbon Emission and Development** Continue to direct development toward existing communities and encourage infill development at densities that are higher than—but compatible with-- the surrounding communities. Encourage development in close proximity to transit, and with a mix of land uses in the same zoning district, or on the same site, so as to reduce the number and frequency of trips made by automobile.
Policy 7.4	**Minimize Environmental Impacts from New Housing** Work with developers to encourage construction of new housing that, where feasible, reduces the footprint of the building and landscaping, preserves green spaces, and supports ecological systems.

Historic Preservation Element

Policy	Description
Objective 1	**Identifying Properties Potentially Warranting Preservation** To adopt an objective, consistent, well-documented, and widely-accepted method for identifying which properties warrant, or may warrant preservation effort and for determining the relative importance of each of these properties so that preservation efforts may be appropriately gauged.
Objective 2	**Preservation Incentives and Regulations** To develop a system of preservation incentives and regulations for specifically designated significant older properties.
Objective 3	**Historic Preservation and Ongoing City Activities** To establish administrative procedures and criteria to promote preservation of significant older properties as a routine part of City-sponsored or assisted projects, programs, and regulatory activities.
Policy 3.5	**Historic Preservation and Discretionary Permit Approvals** For any project involving complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make the finding that: (1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or (2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or (3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.
Policy 3.6	**Historic Preservation and City-Sponsored or Assisted Projects** To the extent consistent with other Oakland General Plan provisions, City-sponsored or assisted projects involving an existing or Potential Designated Historic Property, except small-scale projects, will: (a) be selected and designed to avoid or minimize adverse effects on these properties and to promote their preservation and enhancement; (b) incorporate preservation efforts based in part on the importance of each property; and (c) be considered to have no adverse effects on the these properties if they conform with the Secretary of the Interior's Standards for the Treatment of Historic Properties. The City will encourage applicants for City-assisted projects to submit proposals consistent with this policy.
Policy 3.7	**Property Relocation Rather than Demolition as Part of Discretionary Projects** As a condition of approval for all discretionary projects involving demolition of existing or Potential Designated Historic Properties, the City will normally require that reasonable efforts be made to relocate the properties to an acceptable site.

Safety Element

Policy	Description
Policy PS-1	Maintain and enhance the city's capacity to prepare for, mitigate, respond to and recover from disasters and emergencies.
Policy FI-3	Prioritize the reduction of the wildfire hazard, with an emphasis on prevention.
Policy HM-2	Reduce the public's exposure to toxic air contaminants through appropriate land use and transportation strategies.
Policy FL-1	Enforce and update local ordinances, and comply with regional orders, that would reduce the risk of storm-induced flooding.
Policy FL-2	Continue or strengthen city programs that seek to minimize the storm-induced flooding hazard.
Policy FL-3	Seek the cooperation and assistance of other government agencies in managing the risk of storm-induced flooding.
Action FL-4.3	Inform shoreline-property owners of the possible long-term economic threat posed by rising sea levels.
Action FL-4.4	Stay informed of emerging scientific information on the subject of rising sea levels, especially on actions that local jurisdictions can take to prevent or mitigate this hazard.

Bicycle Master Plan

Policy	Description
Policy 1A	**Bikeway Network** Develop and improve Oakland's bikeways network.
Policy 1B	**Routine Accommodations** Address bicycle safety and access in the design and maintenance of all streets.
Policy 1C	**Safe Routes to Transit** Improve bicycle access to transit, bicycle parking at transit facilities, and bicycle access on transit vehicles.
Policy 1D	**Parking and Support Facilities** Promote secure and conveniently located bicycle parking at destinations throughout Oakland.
Policy 2A	**Education** Work with public agencies and the private sector to improve bicycle education, enforcement, and promotional programs.
Policy 2B	**Enforcement** Prioritize the enforcement of traffic laws that protect bicyclists.
Policy 3A	**Resources** Seek the necessary staff and funding to implement the Bicycle Master Plan.
Policy 3B	**Project Development** Prioritize and design bicycle projects in cooperation with key stakeholders.
Policy 3C	**Public Review** Prior to the implementation of bikeway projects, affected residents, merchants, and property owners shall be notified of the project's costs and benefits.

Pedestrian Master Plan

Policy	Description
Policy 1.1	**Crossing Safety** Improve pedestrian crossings in areas of high pedestrian activity where safety is an issue.
Policy 1.2	**Traffic Signals** Use traffic signals and their associated features to improve pedestrian safety at dangerous intersections.
Policy 1.3	**Sidewalk Safety** Strive to maintain a complete sidewalk network free of broken or missing sidewalks or curb ramps.
Policy 2.1	**Route Network** Create and maintain a pedestrian route network that provides direct connections between activity centers.
Policy 2.2	**Safe Routes to School** Develop projects and programs to improve pedestrian safety around schools.
Policy 2.3	**Safe Routes to Transit** Implement pedestrian improvements along major AC Transit lines and at BART stations to strengthen connections to transit.
Policy 3.2.	**Land Use** Promote land uses and site designs that make walking convenient and enjoyable.
Policy 4.1	**Education** Promote safe and courteous walking and driving and the benefits of walking through targeted outreach programs.
Policy 4.2	**Enforcement** Prioritize the enforcement of traffic laws that protect the lives of pedestrians.

Estuary Policy Plan

Policy	Description
Objective C-2	Establish a continuous waterfront parkway; a safe promenade for pedestrians, bicycles, and slow-moving automobiles.
Objective C-5	Promote transit service to and along the waterfront.
Objective C-6	Improve pedestrian and bicycle circulation.
Policy JL-6	Encourage the preservation and adaptive reuse of existing buildings in a new Waterfront Warehouse District. Use of buildings and new infill development should include joint living and working quarters, residential, light industrial, warehousing & distribution, wholesaling, offices and other uses which preserve and respect the District's unique character.
Policy JL-14	Provide for increased transit service to the Jack London District.
Policy JL-15	Enhance bicycle circulation through the Jack London District.
Policy OAK-6	Explore the future potential for a new BART station and major parking facility on BART property at Fifth Avenue and East Eighth Street.

Policy	Description
Policy OAK-9	Improve the Embarcadero east of Oak Street as a multimodal landscaped parkway with bicycle, pedestrian and vehicular facilities.
Policy OAK-10	Create a network of pedestrian-friendly streets that opens up views and access to the water.
Policy SAF-9	Provide a continuous Embarcadero parkway from Ninth Avenue to Damon Slough.

Other Existing City Policies Supporting GHG Reductions

- Sustainable Development Resolution (No. #74678 C.M.S., 1998)

  Authorizes the City of Oakland to adopt the "City of Oakland Sustainable Community Development Initiative"

- Climate Protection Resolution (No. #72809 C.M.S., 1998)

  Authorizes the City of Oakland to join the Cities for Climate Protection campaign; and to apply to the International Council for Local Environmental Initiatives (ICLEI) and accept the amount of $13,000 for the "Get Around Town" Transportation alternatives marketing project

- Construction and Demolition Recycling Ordinance (No. #12253 C.M.S., 2002)

  Authorizes the City of Oakland to divert a minimum of 50% of Construction and Demolition debris from landfills; process and return the materials in to the economic mainstream thereby conserving natural resources; and stimulating markets for recycled and salvaged materials.

- Recycled Content Procurement and Source Reduction Policy (No. #70814 C.M.S., 1994)

  Adopts the Source Reduction and Recycling Procurement Policy.

- Recycling Space Allocation Ordinance (No. #11807 C.M.S., 1995)

  Amends the Oakland planning code to include provisions which allow for adequate space for the collection and storage of recyclable materials.

- Green Fleet Resolution (No. #77842 C.M.S., 2003)

  Establishes "Green Fleet" policies and procedures to reduce greenhouse gas emissions and improve air quality in the City of Oakland, and to increase the energy efficiency of the city's fleet.

- Waste Reduction and Recycling Act (Measure D, 1989)

  Measure D establishes the Alameda County Source Reduction and Recycling Board. It was approved by the voters of Alameda County in November, 1990 by a margin of 63%. The requirements and prohibitions contained within the Alameda County Waste Reduction and Recycling Initiative apply to the County of Alameda, as an entity, and to unincorporated areas within the county.

- Waste Reduction Resolution (No. #77500 C.M.S., 2002)

  Establishes a goal of 75% reduction of waste going to landfills by 2010 for the City of Oakland in alliance with the countywide 75% waste reduction goal.

- Chicago Climate Exchange Resolution (No. #79135 C.M.S., 2005), Agenda Report and Supplemental Report

  Authorizes the Oakland City Administrator to establish membership in the Chicago Climate Exchange (a market for reducing and trading greenhouse gas emissions) for the City of Oakland, and to expend the funds necessary to initiate and maintain such membership and the cost of trading emissions.

- Urban Environmental Accords Resolution (No. #79808 C.M.S., 2006)

  Acknowledges the Urban Environmental Accords signed by Mayor Jerry Brown on January 5, 2005 on the occasion of United Nations World Environment Day and declares Oakland A Green City and proclaiming April, 2006 as Earth month in recognition of the 36th anniversary of Earth Day and the several community events to celebrate Oakland as a sustainable city.

- Civic Green Building Ordinance (No. #12658 C.M.S., 2005), Agenda Report and Supplemental Report

  Establishes green building (e.g. sustainable site development, water savings, energy efficiency materials selection and indoor environmental quality) requirements for certain City projects

- Food Policy Plan Resolution (No. #79680 C.M.S., 2006) and Agenda Report

  Authorizes the Mayor's Office of Sustainability to develop an Oakland food policy and plan for 30% local area food production, by undertaking an initial food systems assessment study, conducted by a research team from the University of California at Berkeley.

- Zero Waste Resolution (No. #79774 C.M.S., 2006) and Agenda Report

  Adopts a zero waste goal by 2020 for the City of Oakland and directing the Public Works Agency, in concert with the Mayor's Office, to develop a zero waste strategic plan to achieve the city's zero waste goal.

- Green Building Guidelines Resolutions (No. #79871 C.M.S., 2006) and Agenda Report

  Provides, as official City reference documents, The Alameda County Residential Green Building Guidelines, the U.S. Green Building Council's LEED Rating Systems and Bay-Friendly Landscape Guidelines, and recommending their use in the City of Oakland.

- Green Food Service Ware (No. #12747 C.M.S., 2006), Agenda Report and Supplemental Report

  Prohibits the use of polystyrene foam disposable food service ware and require, when cost neutral, the use of biodegradable or compostable disposable food service ware by food vendors and city facilities.

- Williams Resolution Resolution (No. #80659 C.M.S., 2007)

  Allocates $3,519,409.74 from Williams Energy Corporation and Reliant Energy Corporation settlement for energy efficiency projects for activities that promote alternative energy production or improved energy efficiency.

- Food Policy Council Resolution and Agenda Report

  Authorizes the City Administrator to allocate $50,000 from the Williams Energy Settlement within the City Facilities Energy Conservation Fund (4450) to Provide Startup Funding for the Establishment of a Food Policy Council for Oakland.

- Environmentally Preferable Purchasing Policy (2007)

  Requires City purchasers to consider environmental attributes along with traditional purchasing factors such as performance, safety, price and local availability, when making purchasing decisions.

- Zero Waste Strategic Plan Resolution (No. #80286 C.M.S., 2006), and Agenda Report

  Adopts a Zero Waste Strategic Plan to provide a framework of policies and initiatives to guide the planning and decision-making process to achieve Oakland's Zero Waste Goal.

- Extended Producer Responsibility Resolution (No. #80390 C.M.S., 2007) and Agenda Report

  Authorizes the City to pursue and support statewide and local legislative and other initiatives to hold producers responsible for product waste.

- Housing and Business Mix Zoning (No. #12772 C.M.S., 2006)

  Amends Title 17 of the Oakland Planning Code to include the Central Business District zoning regulations.

- Mills Act Pilot Program (No. #12784 C.M.S., 2007)

  The Mills Act Program is a preservation incentive that allows reductions of property tax assessments for historic properties if the owner signs an agreement with the local government to preserve and maintain the historic characteristics of the property.

- Industrial Zoning (No. #12875 C.M.S., 2008)

  Amends Title 17 of the Oakland Planning Code to include the industrial zoning regulations.

- Bike Parking Ordinance (July, 2008)

  Amends Title 17 of the Oakland Planning Code to include bicycle parking for certain development projects.

- Central Business District Zoning (No. #12955 C.M.S., 2009)
  Amends Title 17 of the Oakland Planning Code to include the Central Business District zoning regulations.
- Bay Friendly Landscaping Ordinance (June, 2009)
  Amends Title 15 of the Oakland Municipal Code to require City projects to meet minimum landscaping standards.
- Green Building Ordinance for Private Development Projects (October, 2010)
  Requires certain private development construction projects to meet minimum green building standards.

Standard Conditions of Approval

Listed below are applicable and adopted City of Oakland Conditions of Approval & Uniformly Applied Development Standards imposed as Standard Conditions of Approval related to policies in the Draft Energy and Climate Action Plan.

1. Required Landscape Plan for New Construction and Certain Additions to Residential Facilities of over 500 sq. ft.
2. Landscape Requirements for Street Frontages.
3. Assurance of Landscaping Completion.
4. Landscape Requirements for Downslope Lots.
5. Landscape Maintenance.
6. Parking and Transportation Demand Management for Projects over 50 units or 50,000 sq. ft. of non-residential space
7. Dust Control
8. Construction Emissions
9. Waste Reduction and Recycling
10. Asbestos Removal in Structures
11. Asbestos Removal in Soil
12. Tree Removal Permit on creekside and non-creekside properties
13. Tree Replacement Plantings
14. Tree Protection During Construction
15. Vegetation Management Plan for fire safety on creekside and non-creekside properties
16. Fire Safety during construction
17. Creek Protection Plan
18. Regulatory Permits and Authorizations for creek protection
19. Creek Monitoring
20. Creek Landscaping Plan
21. Creek Dewatering and Aquatic Life
22. Creek Dewatering and Diversion
23. Regulatory Permits and Authorizations for all projects within a flood plain
24. Structures within a Floodplain for all projects within a flood plain
25. Stormwater and Sewer capacity for new projects
26. Traffic Fairshare for Projects Located in Southeast Oakland
27. Indoor Air Quality for new residential uses and sensitive receptors
28. Air Pollution Buffering for Private Open Space for new residential uses and sensitive receptors

CEQA Review of Future Development Projects

This section explains the relationship between the ECAP and the review of future development projects under the California Environmental Quality Act (CEQA). In accordance with the State CEQA Guidelines and the Bay Area Air Quality Management District (Air District) CEQA Guidelines, the City may determine that future proposed development projects would result in a less-than-significant GHG impact under CEQA if the projects are consistent with a "qualified GHG Reduction Strategy" that meets certain requirements under the State CEQA Guidelines and the Air District CEQA Guidelines. The ECAP provides the framework for Oakland's qualified GHG Reduction Strategy. As demonstrated below, the ECAP, along with other City adopted plans and policies, provide the basis for tiering GHG impact analysis of future projects so that future projects would result in less-than-significant GHG impacts under CEQA if the future projects comply with the ECAP and other City requirements.

Environmental impacts associated with GHG emissions are now recognized under CEQA. According to the State CEQA Guidelines §15183.5 (Tiering and Streamlining the Analysis of Greenhouse Gas Emissions):[xvii]

"(a) Lead agencies may analyze and mitigate the significant effects of greenhouse gas emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce greenhouse gas emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of greenhouse gas emissions as provided in section 15152 (tiering), 15167 (staged EIRs) 15168 (program EIRs), 15175-15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning).

(b) Plans for the Reduction of Greenhouse Gas Emissions. Public agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions or similar document. A plan to reduce greenhouse gas emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.

(1) Plan Elements. A plan for the reduction of greenhouse gas emissions should:

- *A. Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;*
- *B. Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;*
- *C. Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;*
- *D. Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;*
- *E. Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;*
- *F. Be adopted in a public process following environmental review."*

(2) Use with Later Activities. A plan for the reduction of greenhouse gas emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects. An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable

notwithstanding the project's compliance with the specified requirements in the plan for the reduction of greenhouse gas emissions, an EIR must be prepared for the project.

The Air District has further clarified the above Guidelines by developing specific criteria for the development of a qualified GHG Reduction Strategy that would comply with these requirements. According to the Air District 's June 2010 CEQA Guidelines:

"If a project is located in a community with an adopted qualified GHG Reduction Strategy..., the project may be considered less than significant if it is consistent with the GHG Reduction Strategy. A project must demonstrate its consistency by identifying and implementing all applicable feasible measures and policies from the GHG Reduction Strategy into the project."[xviii]

The ECAP contains the following elements specified in the Air District's CEQA Guidelines to serve as a qualified GHG Reduction Strategy.[xix] Meeting these criteria should enable the ECAP, upon environmental review, formal adoption, and implementation to relieve future Oakland development projects of conducting additional project-specific GHG analysis as part of their CEQA review:

Air District CEQA Guidelines Requirement for a Qualified GHG Reduction Strategy	ECAP Consistency with Requirement
Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area. Include projections for forecast year 2020.	The ECAP includes a baseline GHG inventory for Oakland's citywide direct GHG emissions from the year 2005. The ECAP also includes a forecast of 2020 citywide GHG emissions under business-as-usual assumptions. Results of these analyses are shown in Chapter 4 of this document.
A GHG Reduction Strategy must establish a target that is adopted by legislation that meets or exceeds one of the following options, all based on AB 32 goals: • Reduce emissions to 1990 level by 2020 • Reduce emissions 15 percent below baseline (2008 or earlier) emission level by 2020 • Meet the plan efficiency threshold of 6.6 MT CO2e/service population/year	The ECAP includes a goal of reducing citywide GHG emissions by 36% below 2005 levels by 2020. This goal is expected to be adopted in the context of adoption of the ECAP. This goal exceeds the minimum requirements outlined by the Air District in comparison with each of the options provided.
Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.	The ECAP includes quantified estimates of the anticipated results of State-driven strategies included in the AB 32 Scoping Plan. State-driven strategies that do not require implementation action by the City are assumed to be part of an adjusted business-as-usual projection of 2020 emissions. Strategies that would require action by the City (e.g., land use planning to reduce vehicle miles traveled and associated fuel consumption), are included in the ECAP in relevant sections of Chapters 3 & 4.
Specify measures or a group of measures, including performance standards that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level. The GHG Reduction Strategy should include mandatory and enforceable measures that impact new development projects, such as mandatory energy efficiency standards, density requirements, etc. These measures may exist in codes or other policies and may be included in the Strategy by reference. The GHG Reduction Strategy should include quantification of expected GHG reductions from each	The ECAP contains more than 130 distinct GHG reduction actions recommended for implementation by 2020 that would, in concert with anticipated State actions, achieve Oakland's 2020 GHG reduction goal as outlined above. The draft ECAP includes quantification of projected GHG reduction benefits of recommended actions. Individual actions have been quantified where possible, and in many cases actions have been grouped for the purpose of quantifying projected benefits. Additional information on how recommended strategies and actions will help to reduce citywide GHG emissions to the 2020 GHG reduction target is provided in Chapter 4 of this Appendix.

Air District CEQA Guidelines Requirement for a Qualified GHG Reduction Strategy	ECAP Consistency with Requirement
identified measure or categories of measures (such as residential energy efficiency measures, bike/pedestrian measures, recycling measures, etc.), including disclosure of calculation methods and assumptions. Quantification should reflect annual GHG reductions and demonstrate how the GHG reduction target will be met. The Strategy should specify which measures apply to new development projects.	
To ensure that all new development projects are incorporating all applicable measures contained within the GHG Reduction Strategy, the Strategy should include an Implementation Plan containing the following: 1) Identification of which measures apply to different types of new development projects, discerning between voluntary and mandatory measures. 2) Mechanism for reviewing and determining if all applicable mandatory measures are being adequately applied to new development projects. 3) Identification of implementation steps and parties responsible for ensuring implementation of each action. 4) Schedule of implementation identifying near-term and longer-term implementation steps. 5) Procedures for monitoring and updating the GHG inventory and reduction measures every 3-5 years before 2020 and submitting annual implementation updates to the jurisdiction's governing body. 6) Annual review and reporting on the progress of implementation of individual measures, including assessment of how new development projects have been incorporating Strategy measures. Review should also include an assessment of the implementation of Scoping Plan measures in order to determine if adjustments to local Strategy must be made to account for any shortfalls in Scoping Plan implementation.	The ECAP includes a plan for monitoring implementation of actions contained in the plan, as well as evolving the plan over time. Each of the following are included: 1) The section below identifies which measures would be voluntary and which measures would be mandatory. 2) The City will report on the mechanism for reviewing and applying mandatory measures to new development projects. 3) Responsible parties are identified for all actions recommended for implementation in the next three years (2010-2013). 4) The ECAP outlines both a ten year plan for achieving Oakland's 2020 GHG reduction target (Chapter 4), as well as a Three Year Priority Plan for ensuring near term progress toward this goal (Chapter 3). A summary is provided in Chapter 3 of the anticipated implementation starts of all Priority Actions for which resources have been identified. Chapter 5 outlines how implementation will be coordinated and where additional funding will be sought to support implementation. 5) Chapter 5 outlines procedures for monitoring progress, reporting on and updating the ECAP. The City will update the ECAP every three years. Updates will include Oakland's citywide GHG inventory as well as priority actions for the next three year phase of implementation. City staff will provide annual implementation updates to the City Council. 6) The City will report on the status of actions and key performance metrics on an annual basis, as outlined in Chapter 5, and report on implementation of requirements for new development projects.
Adopt the GHG Reduction Strategy in a public process following environmental review. A GHG Reduction Strategy should undergo an environmental review which may include a negative declaration or EIR. If the GHG Reduction Strategy consists of a number of different elements, such as a general plan, a climate action plan and/or separate codes, ordinances and policies, each element that is applicable to new development projects would have to complete an environmental review in order to allow tiering for new development projects.	The Draft ECAP has undergone an extensive public process as outlined on pages 2-3 of the Appendix, in addition to duly noticed public hearings before the City Planning Commission, Public Works Committee of the City Council, and the City Council. Environmental review of the ECAP is planned to be completed prior to ECAP adoption.

The City believes that implementation of the ECAP, in combination with other existing City regulations that place specific GHG-reducing requirements on new development (e.g., Standard Conditions of Approval, the Bicycle Master Plan), would meet the requirements set forth in the State CEQA Guidelines and the Air District CEQA Guidelines above. Therefore, the City would be able to use this combination of plans and policies for the purpose of tiering GHG impact analysis of future projects to determine that future projects would result in a less-than-significant GHG impact under CEQA if the projects comply with the ECAP and other City requirements.

Mandatory Requirements

The following would impose mandatory requirements on new development projects upon their respective future adoption called for by the ECAP:

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
Goal Area: Transportation and Land Use				
TLU-7	Create a Transportation Impact Fee		✓	
TLU-8	Require Transit-Oriented Development Performance for New Development			✓
TLU-13	Launch and Develop a Funding Plan for the Downtown Shuttle	✓		
TLU-16	Accelerate Completion of Bicycle and Pedestrian Networks		✓	
TLU-17	Optimize Street Design for Transit, Bicycling and Walking			✓
TLU-26	Enforce Transportation Demand Management Measures in New Development			✓
TLU-30	Impose Parking Maximums on New Development			✓
TLU-31	Facilitate Unbundling of Parking Costs from Renting Building Space			✓
Goal Area: Building Energy Use				
BE-1	Adopt a Green Building Ordinance for Private Development	✓		
BE-29	Create an Oakland-specific Water Efficient Landscape Ordinance	✓		
Goal Area: Material Consumption and Waste				
MW-1	Restructure Solid Waste Management System	✓		
MW-4	Enforce Statewide and Countywide Bans on Certain Materials		✓	

Voluntary Actions

The following ECAP actions would encourage additional voluntary action by new development projects.

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
Goal Area: Transportation and Land Use				
TLU-9	Encourage New Housing at Range of Price Levels			✓
TLU-11	Promote Vibrant, Safe and Attractive Transit-Oriented Dense Development			✓
TLU-13	Launch and Develop a Funding Plan for the Downtown Shuttle	✓		
TLU-16	Accelerate Completion of Bicycle and Pedestrian Networks		✓	
TLU-17	Optimize Street Design for Transit, Bicycling and Walking			✓
TLU-18	Support Alternative Transportation Strategies by Private Employers			✓
TLU-21	Provide Outreach on Alternative Transportation Options			✓
TLU-25	Explore Strategies for Increasing Local Car Share Capacity			✓
TLU-28	Develop Regulations Allowing Alternatives to Installing Parking		✓	
TLU-31	Facilitate Unbundling of Parking Costs from Renting Building Space			✓
TLU-33	Engage in Electric Vehicle Infrastructure Planning		✓	
TLU-34	Promote Use of Fuel-Efficient Vehicles and Low Carbon Fuels			✓
TLU-35	Encourage Low-Carbon Fuels Production			✓
TLU-36	Establish GHG Performance Criteria for Large Vehicle Fleets			✓
TLU-37	Call for Port of Oakland GHG Reduction Goals and Plans	✓		
TLU-38	Call for Climate Action by Port Tenants	✓		
Goal Area: Building Energy Use				
BE-7	Encourage All Community Members to Engage in Energy Conservation		✓	
BE-9	Promote Energy Efficiency to Property Owners and Tenants			✓
BE-11	Encourage Participation in Local Energy Efficiency Programs	✓		
BE-15	Promote Use of Building Energy Feedback Systems			✓
BE-16	Enhance Energy Retrofit Assistance for Small Commercial Properties			✓
BE-17	Launch a Commercial Building Energy Challenge Program			✓
BE-25	Launch a Community Solar Program		✓	
BE-30	Expand Promotion of Water Conservation and Efficiency			✓
BE-34	Promote Detailed Water Metering			✓
BE-35	Promote Indoor Water Efficiency			✓

Goal Area: Material Consumption and Waste				
MW-5	Conduct New Social Marketing Campaigns		✓	
MW-19	Evaluate Potential for Gardens on City-controlled Land			✓
MW-20	Encourage Gardens in Private Development			✓
MW-23	Provide Compost to Community Members			✓
MW-26	Consider Local Food in Selecting Vendors for City Events and Contracts			✓
Goal Area: Community Engagement				
CE-1	Provide Additional Information on Energy and Climate Issues Through Existing City Channels	✓		
CE-2	Expand Outreach on Energy and Climate Issues Through Partnerships with Local Organizations	✓		
CE-3	Develop a Community Climate Action Guide		✓	
CE-4	Support Local Climate Action Workshops		✓	
CE-8	Encourage Local Organizations to Integrate Climate Action into Operations			✓

Actions Reference Tables

The following tables provide a quick summary of all actions included in the draft Energy and Climate Action Plan. Actions are categorized based on the following criteria as identified in the draft ECAP:

- Actions identified to move forward with existing or anticipated resources during the next three years (2010-2013)
- Actions recommended for prioritization in the next three years for which new resources would be needed
- Other actions recommended for implementation by 2020

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
Goal Area: Transportation and Land Use				
Strategy: Institutionalize a More Comprehensive Approach to Transportation and Land Use Planning				
TLU-1	Participate in Quarterly SB 375 Discussions	✓		
TLU-2	Develop a Comprehensive Oakland Transportation Plan		✓	
TLU-3	Integrate Land Use and Transportation Planning in Every Project		✓	
TLU-4	Augment Planning Commission Role in Transportation Planning			✓
TLU-5	Prioritize GHG Reductions in Zoning Updates			✓
Advance Infill, Mixed-Use and Transit-Oriented Development				
TLU-6	Identify and Adopt Priority Development Areas	✓		
TLU-7	Create a Transportation Impact Fee		✓	
TLU-8	Require Transit-Oriented Development Performance for New Development			✓
TLU-9	Encourage New Housing at Range of Price Levels			✓
TLU-10	Develop a Comprehensive Infrastructure Plan			✓
TLU-11	Promote Vibrant, Safe and Attractive Transit-Oriented Dense Development			✓
TLU-12	Engage Lenders on Infill Development Strategy			✓
Advance the Use of Low-Carbon Transportation Modes				
TLU-13	Launch and Develop a Funding Plan for the Downtown Shuttle	✓		
TLU-14	Advance Bus Rapid Transit in Oakland	✓		
TLU-15	Update Environmental Impact Evaluation Process		✓	
TLU-16	Accelerate Completion of Bicycle and Pedestrian Networks		✓	
TLU-17	Optimize Street Design for Transit, Bicycling and Walking			✓
TLU-18	Support Alternative Transportation Strategies by Private Employers			✓
TLU-19	Expand and Enhance Transit Service, Interconnections, Vehicles, and Facilities			✓
TLU-20	Enhance Transit Service on Major Corridors			✓

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
TLU-21	Provide Outreach on Alternative Transportation Options			✓
TLU-22	Promote Transportation Options Information			✓
TLU-23	Promote Educational Outreach Efforts			✓
TLU-24	Encourage Bike Sharing Programs			✓
TLU-25	Explore Strategies for Increasing Local Car Share Capacity			✓
TLU-26	Enforce Transportation Demand Management Measures in New Development			✓
TLU-27	Reduce Barriers to Transit			✓
Refine Parking Policies to Encourage Low-Carbon Mobility				
TLU-28	Develop Regulations Allowing Alternatives to Installing Parking		✓	
TLU-29	Develop a Dynamic Parking Pricing Strategy		✓	
TLU-30	Impose Parking Maximums on New Development			✓
TLU-31	Facilitate Unbundling of Parking Costs from Renting Building Space			✓
TLU-32	Review Opportunities to Expand Residential Permit Parking			✓
Foster the Use of Low Carbon Vehicles and Fuels				
TLU-33	Engage in Electric Vehicle Infrastructure Planning		✓	
TLU-34	Promote Use of Fuel-Efficient Vehicles and Low Carbon Fuels			✓
TLU-35	Encourage Low-Carbon Fuels Production			✓
TLU-36	Establish GHG Performance Criteria for Large Vehicle Fleets			✓
Engage the Port of Oakland and Related Industry in Reducing GHG Emissions				
TLU-37	Call for Port of Oakland GHG Reduction Goals and Plans	✓		
TLU-38	Call for Climate Action by Port Tenants	✓		
TLU-39	Partner with the Port to Advance GHG Reductions			✓
TLU-40	Advocate With the Port for Tenant Performance Requirements			✓
TLU-41	Study Truck Re-routing Options			✓
TLU-42	Make Planning Decisions With Consideration of Port GHG Impacts			✓
TLU-43	Consider Opportunities to Require Port Climate Action via General Plan Update			✓
Grow Oakland's Urban Forest				
TLU-44	Develop an Urban Forest Master Plan		✓	
TLU-45	Conduct an Urban Tree Inventory			✓
TLU-46	Provide Preventative Tree Maintenance and Management			✓
TLU-47	Implement a Street Tree Planting Pilot Project			✓
TLU-48	Promote Proper Forest Management and Private Tree Planting			✓
TLU-49	Convene Community Tree Maintenance Workshops			✓

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
TLU-50	Collaborate with Local Organizations on Urban Forestry			✓
Reduce Transportation Impacts of City Operations				
TLU-51	Replace Inefficient City Vehicles		✓	
TLU-52	Provide Subsidized Transit Passes and Commuter Allowances		✓	
TLU-53	Discontinue Providing Parking to City Employees		✓	
TLU-54	Enable Flexible Work Schedules and Encouraging Telecommuting			✓
TLU-55	Reduce the Size of the City's Vehicle Fleet			✓
TLU-56	Perform Preventive Maintenance to Optimize Fuel Efficiency			✓
TLU-57	Expand Staff Training on Fuel Efficient Vehicle Operations			✓
TLU-58	Expand Capacity to Support Electric and Alternative Fuel Vehicles			✓
TLU-59	Integrate fuel efficient specialized vehicles into City fleet			✓
Goal Area: Building Energy Use				
Optimize Energy Efficiency & Consumption in New Buildings				
BE-1	Adopt a Green Building Ordinance for Private Development	✓		
BE-2	Enforce Building Energy Codes			✓
Retrofit Oakland's Existing Building Stock to Reduce Energy Consumption – All Building Types				
BE-3	Adopt a Green Building Ordinance for Private Renovation Projects	✓		
BE-4	Offer Property-Based Energy Financing	✓		
BE-5	Engage Utilities to Offer On-Bill Financing Options		✓	
BE-6	Create New Residential and Commercial Energy Programs		✓	
BE-7	Encourage All Community Members to Engage in Energy Conservation		✓	
BE-8	Promote a Energy Upgrades for Historic Buildings			✓
BE-9	Promote Energy Efficiency to Property Owners and Tenants			✓
Retrofit Oakland's Existing Building Stock to Reduce Energy Consumption – Commercial/Industrial Buildings				
BE-10	Launch a Downtown Commercial Energy Retrofit Program	✓		
BE-11	Encourage Participation in Local Energy Efficiency Programs	✓		
BE-12	Target Energy Efficiency Outreach to Energy Intensive Businesses		✓	
BE-13	Require Energy-Related Improvements at Time of Lease or Sale			✓
BE-14	Develop New Tools to Advance Commercial Building Retrofits			✓
BE-15	Promote Use of Building Energy Feedback Systems			✓
BE-16	Enhance Energy Retrofit Assistance for Small Commercial Properties			✓
BE-17	Launch a Commercial Building Energy Challenge Program			✓

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
Retrofit Oakland's Existing Building Stock to Reduce Energy Consumption – Residential Buildings				
BE-18	Launch a Residential Green Retrofit Program	✓		
BE-19	Conduct a Multi-Family Affordable Housing Retrofit Pilot	✓		
BE-20	Expand Weatherization Program Delivery	✓		
BE-21	Accelerate Energy Retrofits in Tenant-Occupied Properties		✓	
BE-22	Adopt a Residential Energy Improvement Time of Sale Ordinance		✓	
BE-23	Support Entry-Level Residential Energy Services Programs			✓
BE-24	Make Energy Related Tools Available at the Tool Lending Library			✓
Increase the Use of Clean Renewable Energy				
BE-25	Launch a Community Solar Program		✓	
BE-26	Encourage PG&E to Offer Green Power		✓	
BE-27	Continue to Monitor Community Choice Energy		✓	
BE-28	Study Local Renewable Energy Potential			✓
Promote Water Conservation and Efficiency				
BE-29	Create an Oakland-specific Water Efficient Landscape Ordinance	✓		
BE-30	Expand Promotion of Water Conservation and Efficiency			✓
BE-31	Support Partners in Promoting Water Conservation and Efficiency			✓
BE-32	Encourage Use of Rainwater Collection Systems			✓
BE-33	Refine Greywater Permit Process			✓
BE-34	Promote Detailed Water Metering			✓
BE-35	Promote Indoor Water Efficiency			✓
BE-36	Landscape Municipal Open Space with Water Efficient Vegetation			✓
BE-37	Require Water Efficiency in City Operations			✓
Optimize Energy Efficiency & Consumption in City Facilities				
BE-38	Implement Advanced Operating Procedures for City Facilities	✓		
BE-39	Improve Energy Performance of New City Facilities	✓		
BE-40	Retrofit City Facilities to Improve Energy Performance	✓		
BE-41	Explore Alternative Energy for City Facilities			✓
BE-42	Upgrade to Energy-Efficient Streetlights			✓
BE-43	Develop and provide training to City employees on targeted energy and climate issues.			✓

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
Goal Area: Material Consumption and Waste				
Expand and Improve Waste Reduction, Reuse, Recycling, and Composting				
MW-1	Restructure Solid Waste Management System	✓		
MW-2	Refine Implementation of C&D Recycling Ordinance	✓		
MW-3	Require Waste Reduction at Community Events	✓		
MW-4	Enforce Statewide and Countywide Bans on Certain Materials		✓	
MW-5	Conduct New Social Marketing Campaigns		✓	
MW-6	Study Options for Deeper Waste Reduction Activities		✓	
MW-7	Identify and Retain Industrial Lands for Zero Waste Businesses			✓
MW-8	Adopt Zero Waste Practices in City Operations			✓
MW-9	Require Reporting on Environmentally Preferable Purchasing Policy			✓
MW-10	Require Waste Reduction Reporting from State-Recognized Institutions			✓
MW-11	Facilitate Recycling of Organics in Multi-Family Buildings			✓
MW-12	Promote Bay Friendly Landscaping Practices			✓
Encourage Sustainable Consumption				
MW-13	Support Expanded Producer Responsibility			✓
MW-14	Promote Local Green Businesses and Expand Green Business Program			✓
MW-15	Foster Reuse, Repair, Buy Local and Buy Recycled			✓
MW-16	Recruit Businesses Supporting Zero Waste Goals to Oakland			✓
Foster More Local Food Production				
MW-17	Update Zoning Regulations to Better Allow For and Regulate Urban Agriculture	✓		
MW-18	Evaluate the Potential of Creating Community Gardens on City-Controlled Public Land	✓		
MW-19	Evaluate Potential for Gardens on City-controlled Land			✓
MW-20	Encourage Gardens in Private Development			✓
MW-21	Promote Consideration of Land Available for Urban Agriculture			✓
MW-22	Promote Training on Urban Gardening and Composting			✓
MW-23	Provide Compost to Community Members			✓
MW-24	Include Preference for Local Food in Evaluating Applications for City Funds & Contracts			✓
MW-25	Encourage Development of Shared Commercial Kitchens			✓
Develop Markets for Local Food				
MW-26	Consider Local Food in Selecting Vendors for City Events and Contracts			✓
MW-27	Promote Food Impact Consideration in Green Business Certification			✓

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
MW-28	Promote Local Food to Community Partners			✓
MW-29	Advance Economic Development Strategies Supporting Local Food Production			✓
MW-30	Review Permitting Requirements for Local Food Distribution Efforts			✓
Goal Area: Community Engagement				
Encourage Community Energy and Climate Action				
CE-1	Provide Additional Information on Energy and Climate Issues Through Existing City Channels	✓		
CE-2	Expand Outreach on Energy and Climate Issues Through Partnerships with Local Organizations	✓		
CE-3	Develop a Community Climate Action Guide		✓	
CE-4	Support Local Climate Action Workshops		✓	
CE-5	Create Community Listservs on Climate Related Topics			✓
CE-6	Promote Climate-Related Events			✓
CE-7	Create a Community Climate Challenge			✓
CE-8	Encourage Local Organizations to Integrate Climate Action into Operations			✓
CE-9	Engage Philanthropic Support for Model Projects			✓
Create New Opportunities for Community Engagement				
CE-10	Convene Community Climate Forums	✓		
CE-11	Establish Opportunities for Ongoing Community Climate Action Input			✓
CE-12	Encourage Community Input on Updates to City Plans and Policy Documents			✓
CE-13	Include Climate Content in Regular Community Surveys			✓
CE-14	Engage the Community in Developing a 2050 Vision for Oakland			✓
Track and Promote Community Action				
CE-15	Report on Energy and GHG Reduction Progress	✓		
CE-16	Develop an Oakland Climate Action Model Practices Campaign		✓	
CE-17	Expand Energy and Climate Reporting and Outreach Tools			✓
CE-18	Recognize Local Climate Leaders and Model Actions			✓
CE-19	Promote Green Community Events			✓
Develop the Local Green Workforce to Support Local Green Businesses				
CE-20	Support Local Green Jobs Programs	✓		
CE-21	Facilitate Hiring of Green Jobs Program Graduates			✓
CE-22	Develop a Community Green Jobs Electronic Bulletin Board			✓

Action Number	Action	Funded 3-Year Priority Action	Other 3-Year Priority Action	Other 10-Year Action
Adapting & Increasing Resilience to Climate Change				
Study Potential Local Climate Impacts				
AD-1	Participate in Regional Climate Adaptation Discussions	✓		
AD-2	Conduct a Study of Local Climate Impacts		✓	
Communicate Climate Impacts to the Community				
AD-3	Communicate Climate Impacts Information to the Community		✓	
Identify and Act on Opportunities to Improve Resilience				
AD-4	Identify and Act on Opportunities to Improve Resilience in City Plans and Policies		✓	
AD-5	Update Community Emergency Preparedness Plans and Capacity			✓
AD-6	Encourage Development of Regional Climate Adaptation Strategy			✓
AD-7	Develop a Climate Adaptation Plan			✓
AD-8	Require Reflective Surfaces to Reduce Urban Heat Island Effect			✓
AD-9	Develop Oakland's Urban Forest			✓
AD-10	Promote Indoor and Outdoor Water Conservation and Efficiency			✓
AD-11	Install Infrastructure to Reduce Flood Impacts			✓
AD-12	Encourage EBMUD to Deliver Recycled Water to Oakland			✓
AD-13	Consider Opportunities to Raise Funds for Adaptation			✓

Peak Oil: A term used to describe the transition from many decades in which the available supply of oil grew each year to a period in which the rate of oil production enters it terminal decline

PG&E: Pacific Gas & Electric

PV: Photovoltaics, a solar power technology that converts sunlight into electricity

RECO: Residential Energy Conservation Ordinance

RPP: Residential Permit Parking

Solar thermal: A technology that captures solar energy for heat

SR2S: Safe Routes to School program

StopWaste.Org: The Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board serving as one agency

TALC: Transportation and Land Use Coalition, a local organization that advocates for alternative forms of transportation

Therm: 100,000 British Thermal Units (BTUs), equivalent to approximately 100 standard cubic feet of natural gas

Title 24 Energy Code: California's energy efficiency standards for residential and nonresidential buildings

VMT: Vehicle miles traveled

Zero Waste: The City's goal to eliminate waste sent to the landfill. All of the community's discarded material would be recycled or reused.

Endnotes

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[ii] A 36% reduction in GHG emissions from 2005 levels in Oakland is projected to be approximately equivalent to a 25% reduction from 1990 levels based on analysis by City of Oakland staff using California statewide 1990 and 2005 emissions as a proxy for Oakland.

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[v] Hansen, James and Makiko Sato, Pushker Kharecha, David Beerling, Robert Berner, Valerie Masson-Delmotte, Mark Pagani, Maureen Raymo, Dana L. Royer, James C. Zachos. "Target Atmospheric CO2: Where Should Humanity Aim?" The Open Atmospheric Science Journal. Volume 2. ISSN: 1874-2823. pp.217-231

[vi] Fisher, B.S., N. Nakicenovic, K. Alfsen, J. Corfee Morlot, F. de la Chesnaye, J.C. Hourcade, K. Jiang, M. Kainuma, E. la Rovere, A. Matysek, A. Rana, K. Riahi, R.G. Richels, S. Rose, D.P. van Vuuren and R. Warren. 2007. Issues Related to Mitigation in the Long-Term Context. In Climate Change 2007: Mitigation - Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, S O. Davidson and B. Metz (eds.), Cambridge University Press, Cambridge. pp.229-230

[vii] Gupta, S., D. A. Tirpak, N. Burger, J. Gupta, N. Höhne, A. I. Boncheva, G. M. Kanoan, C. Kolstad, J. A. Kruger, A. Michaelowa, S. Murase, J. Pershing, T. Saijo, A. Sari, 2007: Policies, Instruments and Co-operative Arrangements. In Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[viii] California Air Resources Board. "Climate Change Proposed Scoping Plan." http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm

[ix] California Air Resources Board. http://www.arb.ca.gov/cc/cc.htm

[x] State of California Executive Department. Executive Order S-3-05. http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm

[xi] California Air Resources Board. "Climate Change Proposed Scoping Plan." Oct 2008. http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm

[xii] California Air Resources Board. http://www.arb.ca.gov/cc/cc.htm

[xiii] State of California Executive Department. Executive Order S-3-05. http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm

[xiv] California Air Resources Board. "Climate Change Proposed Scoping Plan." http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm

[xv] California Energy Commission. "Transportation Energy Forecasts for the 2007 Integrated Policy Report". Table 4. Sept 2007.

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OAKLAND

2010 DEC -2 PM 12:37

Approved as to Form and Legality

City Attorney

OAKLAND CITY COUNCIL

RESOLUTION NO._____C.M.S.

RESOLUTION DIRECTING THAT APPROPRIATE CALIFORNIA ENVIRONMENTAL QUALITY ACT REVIEW BE PERFORMED BY STAFF FOR THE DRAFT OAKLAND ENERGY AND CLIMATE ACTION PLAN

WHEREAS, the City of Oakland is developing an Energy and Climate Action Plan (ECAP) to identify energy and climate goals, clarify policy direction, and recommend priority actions for reducing energy use and GHG emissions in a framework that supports implementation and funding discussions; and

WHEREAS, the City Council adopted a resolution in July 2009 directing Staff to develop the draft Oakland's ECAP using a preliminary planning GHG reduction target equivalent to 36% below 2005 GHG emissions by 2020 and annual benchmarks for meeting the target; and

WHEREAS, the draft ECAP includes revisions based on: (1) City Council input received at a City Council Special Workshop on March 30, 2010; and (2) public comment received following the release of the first draft of the ECAP in April 2010; and

WHEREAS, a duly noticed public hearing was held before the City Planning Commission on December 1, 2010, as well as a hearing before the Public Works Committee of the City Council on December 14, 2010; and

WHEREAS, consideration of this Resolution has included a duly noticed public hearing on the Draft ECAP before the City Council; and

WHEREAS, *appropriate California Environmental Quality Act (CEQA) review of the draft* ECAP is necessary prior to adoption of a final ECAP; now, therefore be it

RESOLVED: That the City of Oakland is committed to continuing to provide leadership to reduce greenhouse gas emissions to mitigate the future effects of climate change both locally and globally; and be it

FURTHER RESOLVED: That the City Council hereby directs City staff to perform appropriate CEQA review for the proposed draft ECAP and upon conclusion of that review return to the City Council for consideration of the CEQA review and final adoption of the ECAP.

IN COUNCIL, OAKLAND, CALIFORNIA, _____, 20_____

PASSED BY THE FOLLOWING VOTE:

AYES - BROOKS, DE LA FUENTE, KAPLAN, KERNIGHAN, NADEL, QUAN, REID, and PRESIDENT BRUNNER

NOES -

ABSENT -

ABSTENTION -

ATTEST: _____
LaTonda Simmons
City Clerk and Clerk of the Council
of the City of Oakland, California