CITY OF OAKLAND
CITY COUNCIL

LEGISLATIVE ANALYST MEMORANDUM

To: Public Works Committee
From: Alice Glasner, Legislative Analyst
Date: February 26, 2008
Re: **Report and Recommendations of the Oil Independent Oakland by 2020 Task Force**

EXECUTIVE SUMMARY

On February 26, 2008, the Oil Independent Oakland by 2020 Task Force (OIO), a ten-member committee appointed by City Council and the Mayor, presents its report and recommendations for reducing oil consumption in Oakland.

Three of the key initiatives of the **Oil Independent Action Plan** are:

- Adopt the Oil Depletion Protocol as City policy so that Oakland will protect itself against diminishing oil supplies and/or future hikes in petroleum prices.
- Redesign the City into numerous "urban villages" where jobs, services and shopping are conveniently located so that walking, biking, and electric vehicle use can become more practical and desirable on a daily basis.
- Encourage more use of public transit so that when people do need to travel beyond their immediate neighborhoods, alternatives to private automobiles are available, accessible and convenient.

The Oil Independent Action Plan describes numerous detailed recommendations supporting these focal points, as well as other recommendations related to the larger picture of changing Oakland's energy consumption patterns, creating green jobs, and reaching out to Oakland citizens to also reduce household oil consumption. To conform to the OIO's vision, some of the actions require immediate implementation, while others requiring more resources or collaboration, may demand a series of steps over time.

The Oil Independent Action Plan is available on the OIO's web page on the City of Oakland's website, at: http://www.oaklandnet.com/Oil/default.html.

BACKGROUND

Oakland City Council Resolution No. 80214, adopted in October 2006, called for the formation of the Oil Independent Oakland by 2020 Task Force (OIO), to explore strategies that not only reduce oil consumption in Oakland but enhance the local economy and economic opportunities for Oakland residents.

The OIO convened thirteen public meetings from April through December 2007, with members providing expertise in transportation and energy, air quality, land use and other public policy issues, as well as environmental and economic justice. Presentations to the OIO included: reviews of similar commission work in Sweden and Portland, OR.; an assessment of greenhouse gas emissions in Oakland; the challenge of 'Peak Oil'; the 'Personal Rapid Transit' model; the urban village model for Oakland; public transit in Oakland, the region, and Curitiba, Brazil; 'Green Jobs and Eco-Equity'; and 'Navigating Out of Fuel Dependence'. There were also ad hoc work sessions on subjects related to the Port of Oakland, transportation, and land use and infrastructure.

The OIO Task Force sought to develop an action plan that would address the inevitable future oil supply shortages and/ or substantial price increases which could have a significant and adverse effect on Oakland's economy and population. The Task Force agreed that by lowering Oakland's dependence on oil, it could create a more resilient city that could better deal with these future challenges. The Task Force tried to focus on recommendations that would be "city actionable"—that is, where the City could take concrete steps to reduce its oil consumption, and also on recommendations that consider social and environmental justice.

To achieve the goals of significant reduction in citywide oil consumption, the Task Force discussed a number of options and reached consensus on several principle areas:

- The physical arrangement of the city and its infrastructure,
- Transportation,
- Port operations, and
- Preparing for oil shortfalls and resulting price increases.

The Task Force identified actions that could be implemented by the City, opportunities for outreach to citizens and collaboration with other jurisdictions, including the Port of Oakland and regional transportation agencies.

FISCAL/POLICY DISCUSSION

The OIO Task Force Action Plan recommends policy changes to the 1998 Land Use and Transportation Element (LUTE) of the General Plan. Some of these, such as increasing density and mixed uses, promoting efficient transportation as well as improving access for bicycles and pedestrians are already supported to varying degrees. The OIO Action Plan advocates a more expansive, yet systematic, integration of these and other objectives to create a greater number of community- oriented 'vitality centers'. These recommendations would require amendments to the General Plan as well as substantive revisions to the Zoning Ordinance so that elements like density, the range of allowed uses, parking requirements, and 'transfer of development rights' are updated to reflect the new General Plan policies.

Several other recommendations call for innovative policies in areas such as creating permanent green jobs, carbon charges, creating contingency plans to prepare for constraints in oil supplies, and producing localization strategies—developing plans to increase local markets for local goods and services.

It would be speculative at this point to assess the costs of these recommendations. Certainly implementing a new General Plan strategy would require initial costs in staff time and could have costs related to infrastructure changes. The Task Force recommends that the City seek both public and private funding sources for infrastructure costs. Additionally, there are costs or tradeoffs associated with a public education campaign to further the Action Plan goals and designating City staff for a new 'Oil and Energy Team', which could either include hiring new people or adding new assignments to existing staff.

Nonetheless, there is also a high potential for savings and even revenues over the long term, in both the public and private sectors. For example, by reducing single-driver automobile trips, reducing total oil and energy consumption across the board, and preparing for imminent oil price increases, Oakland and Oaklanders could save in fuel costs. There are also potential revenue sources from new businesses in rezoned areas, from new uses on former parking lots, and from new residents who come to Oakland as it becomes more attractive because of its 'urban village' feel.

SUSTAINABLE OPPORTUNITIES

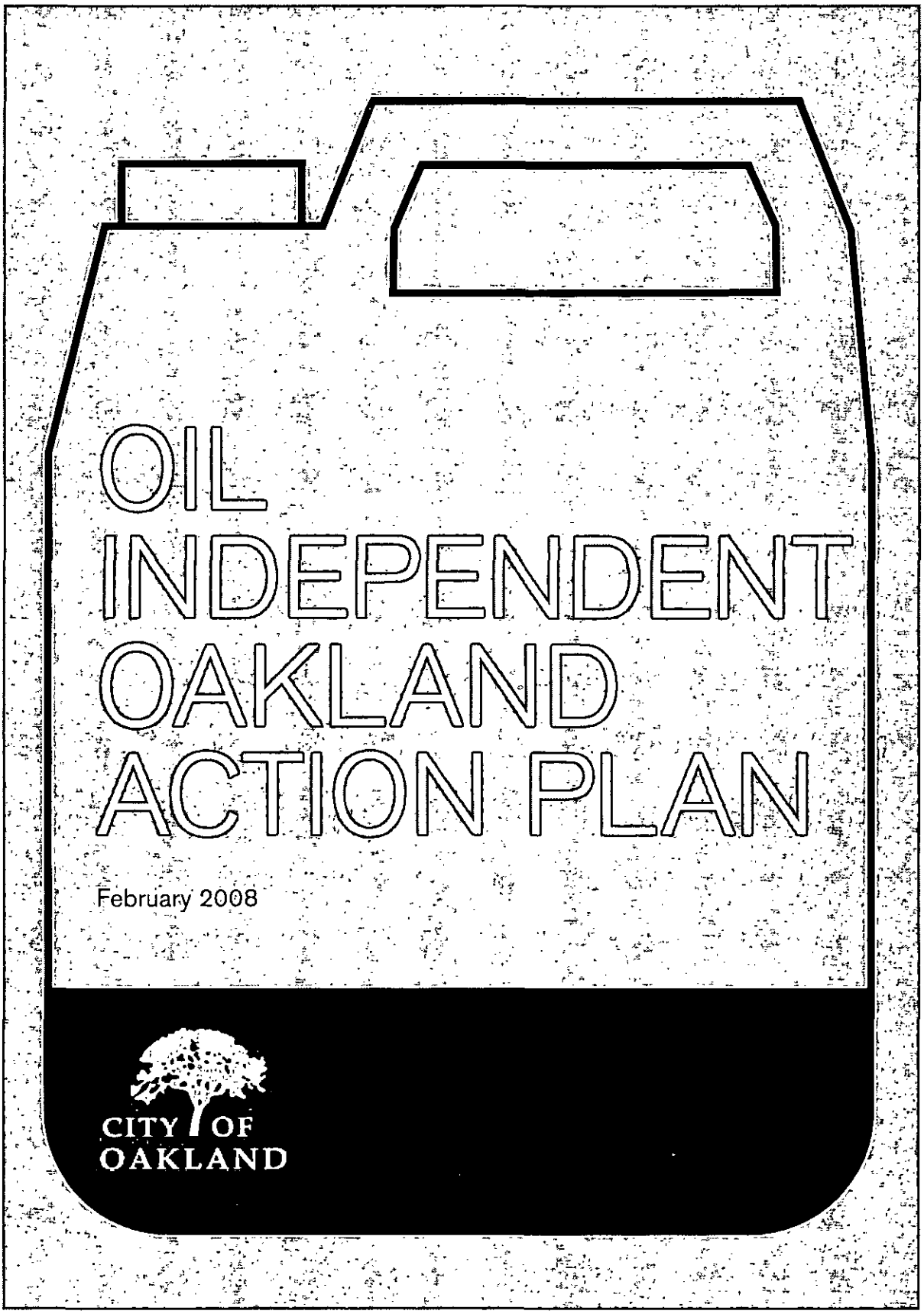
Oakland could be the first city in the United States to adopt the Oil Depletion Protocol with reduction targets. Reducing oil consumption, as presented in the OIO Action Plan, by modifying land use patterns, facilitating alternative transportation, and/ or adding carbon charges could also effectively reduce traffic and localized air pollutants. The combination of reduced vehicle exhaust and increased opportunities for walking and bicycling could have positive health effects on the local population. Since 47% of Oakland's greenhouse gas emissions are attributed to transportation (according to ICLEI, presented on page 8 of report), adoption of the OIO Action Plan is a step that could reduce Oakland's contribution to climate change.

The OIO Action Plan recommends several initiatives which would reduce oil consumption as it diversifies and supports the local economy. These include creating green jobs, allowing the 'collocation' of diverse yet compatible uses, supporting High Speed Rail as an alternative to short-haul air travel, and developing the infrastructure to support alternative transportation, supporting clean energy generation and contingency plans for the City and the Port. These measures could offer Oaklanders some economic and environmental resilience as the price of oil increases.

CONCLUSIONS

The Oil Independent Oakland by 2020 Task Force has presented a wide array of recommendations for reducing oil consumption in the City of Oakland. The Oakland City Council has an opportunity to accept or reject the recommendations, in whole or in part.

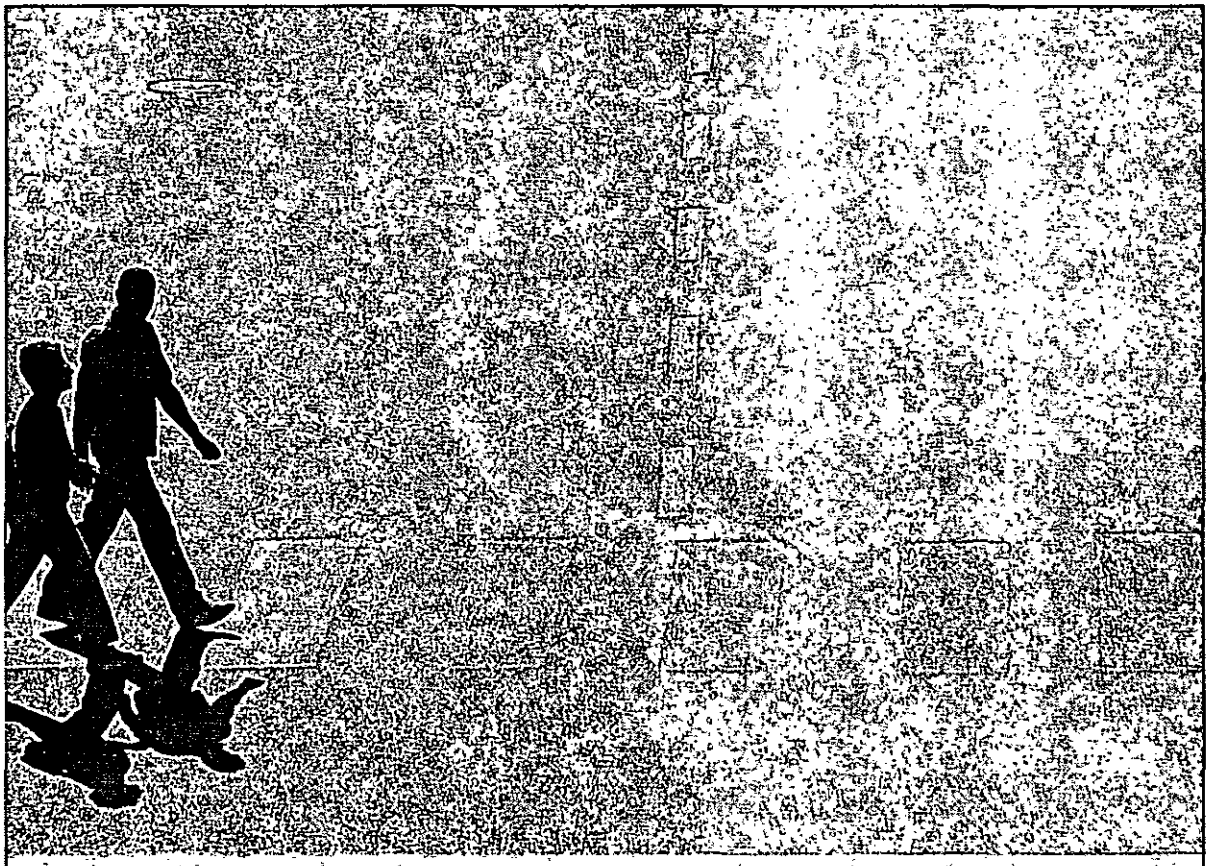
Recommendations could be carried forward through policy or ordinance development. As part of this work, fiscal implications should be developed, as well as timelines for the most effective Oil Independence.



OIL INDEPENDENT OAKLAND ACTION PLAN

February 2008

CITY OF OAKLAND



TAKE STEPS

OIL INDEPENDENT OAKLAND ACTION PLAN

Contents

EXECUTIVE SUMMARY

The Oil Independent Oakland by 2020 Task Force (OIO) is presenting a series of recommendations to enable the City of Oakland to reduce its dependence on oil and become one of the world's leading cities in sustainable development. The focus of the OIO was on oil reduction not on greenhouse gas emissions, although the two are closely aligned and reducing oil use will decrease greenhouse gas emissions.

A key factor in this report is the concept of "Peak Oil," defined as the time when the global rate of extraction of petroleum will reach a maximum and begin to decline. The Task Force did not debate when this peak would occur and accepted the opinion of many experts that it will occur within a few years time–if it has not already occurred. As oil supplies begin to decline, there will be an estimated shortfall of approximately 2.6% or more per year worldwide. Although 2.6% may not sound like a lot, in ten years the cumulative shortfall would be 29%. In twenty years the shortfall would be 67%. This could be devastating for a world accustomed to continued expansion in available energy supplies. The shortfall could be even higher as economies expand, population grows, and affluence spreads. Countries such as the U.S. that import most of their oil supplies may also be more severely impacted.

To avoid major disruptions anticipated by Peak Oil, the OIO Task Force recommends that the City of Oakland begin making a series of changes to reduce its dependence on oil in both the near term and long term.

The primary focus of OIO recommendations is on the transportation sector. That is where 97% of oil is directly *consumed in Oakland.*

Quite simply, if Oakland is to reduce its dependence on oil, its residents must DRIVE LESS.

To avoid major disruptions anticipated by Peak Oil, the OIO *recommends that the City of Oakland begin making a series* of changes to reduce its dependence on oil in both the near term and long term. Many of the changes the Task Force recommends will take many years to implement but will have significant long term benefits that will help the City to avert potentially catastrophic economic, infrastructure and social repercussions. Given the long lead times required to change such things as transportation and infrastructure, it is imperative that many of the actions begin immediately.

The primary focus of the OIO recommendations is on the transportation sector. That is where 97% of oil is used in Oakland. The OIO did not focus on natural gas or on electricity since none of the electricity supplied to Oakland is generated from oil.

The Task Force recommends first and foremost that the City formally adopt the Oil Depletion Protocol. This is the approach set forth by author Richard Heinberg in his book by the same title which outlines a plan to avert disaster by having all nations commit to reducing oil usage by approximately 3% per year. The OIO recommends that the City of Oakland adopt this protocol locally and to take immediate steps to implement it. While San Francisco has already endorsed the Protocol, Oakland would be the first government at any level in the world to adopt and implement the Protocol.

Quite simply, if Oakland is to reduce its dependence on oil, its residents must DRIVE LESS. This is the title of Chapter 1 and includes the two most important recommendations of the Task Force. They are:

- Begin the process of **gradually redesigning the city so that residents can reduce their automobile dependence.** This can be done by creating vibrant neighborhoods where jobs, housing and a full range of services are available within short distances.

- **Advance transportation alternatives** so that when residents do need to travel, they have options other than driving private automobiles. Details regarding how to accomplish this are included in the report.

The Task Force encourages the City to take a leadership role in a number of regional and statewide initiatives that will assist in the transition to an Oil Independent Oakland. Additional recommendations are included that cover oil used in Food and Materials, as well as the Port of Oakland.

In order to implement these recommendations, the OIO also strongly recommends that the City do the following:

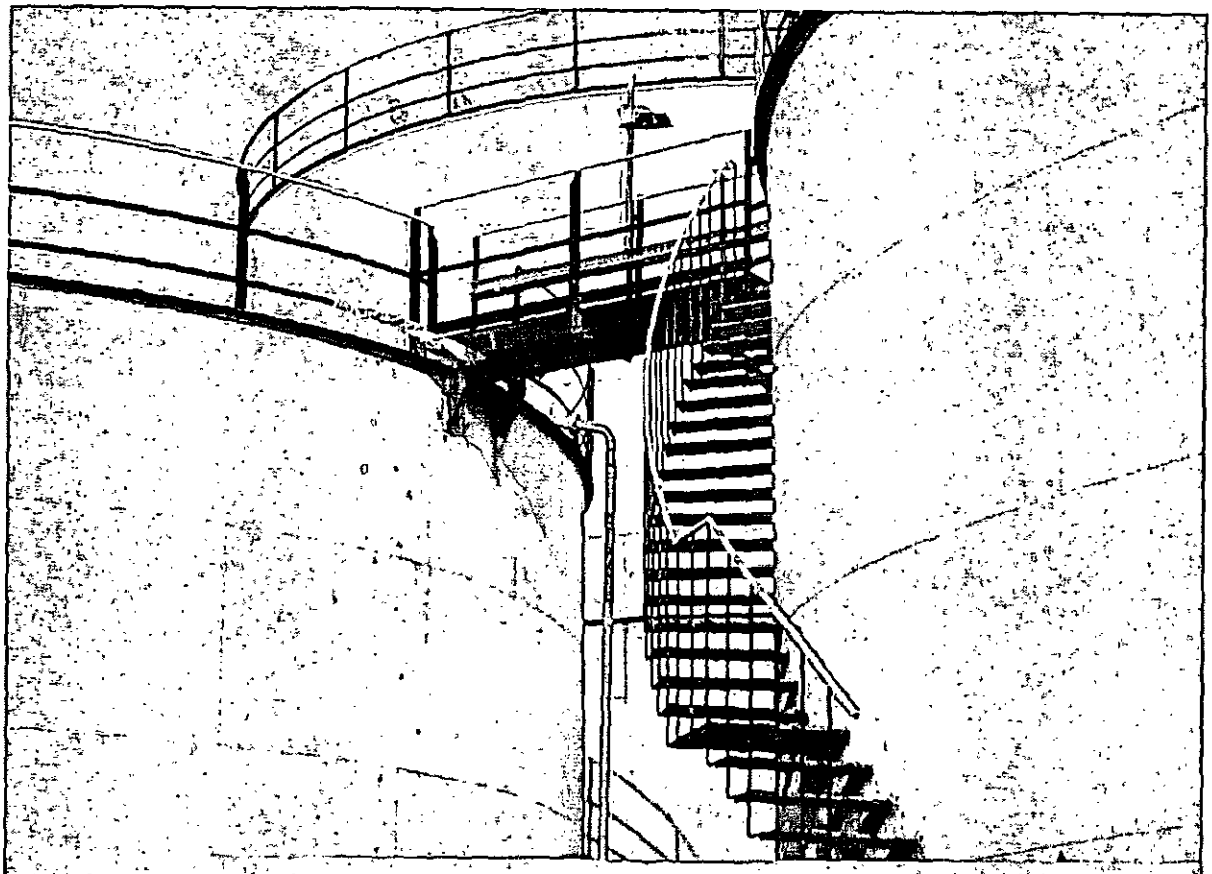
1. Establish an Oil and Energy Team to coordinate the actions outlined in this report.

2. Explore financing mechanisms to help pay for infrastructure changes such as applying for federal and state grants, assessing developer impact fees, researching the feasibility of regional congestion charges or carbon/gas taxes, and selling local carbon offsets.

3. Develop a contingency plan to address future oil price and supply shocks on Oakland residents. These may be short term due to regional supply disruptions or long term due to factors mentioned above.

4. Begin a Public Education and Outreach campaign to educate Oakland residents about this issue and to encourage them to adopt the Oil Depletion Protocol as individuals. A section of the report is devoted to showing how an individual can reduce their oil consumption by 3% each year.

5. Set up a process whereby there is consistent/regular collaboration and outreach with regional transportation agencies such as MTC, BART, AC Transit, CALTRANS and neighboring cities to expand public transit.



RUNNING ON EMPTY

OVERVIEW

Peak Oil and The Oil Depletion Protocol

SUMMARY OF TASK FORCE RECOMMENDATIONS

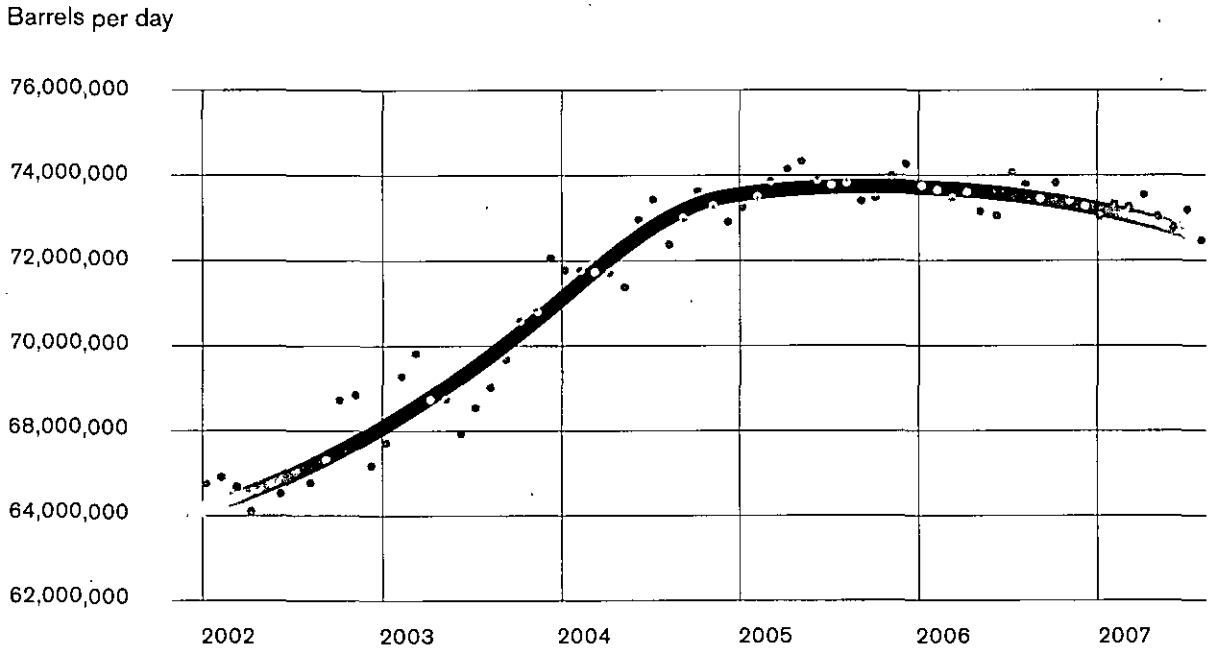
Adopt the Oil Depletion Protocol as a City

Adopt the Oil Depletion Protocol as Individuals

During the past decade a growing chorus of energy analysts has warned of the approach of "Peak Oil," the time when the global rate of extraction of petroleum will reach a maximum and begin its inevitable decline. While there is some dispute among experts as to *when* it will occur, there is none as to *whether.*

How near is the global peak? Today the majority of oil-producing nations are seeing reduced output. US oil production has been declining since 1970. Meanwhile global rates of discovery of new oilfields have been declining since 1964. According to the Energy Information Administration (EIA), a division of the US Department of Energy, the monthly average for daily world production rates for conventional crude oil achieved 74.2 millions of barrels per day in May 2005; that figure has not been equaled since.[1] During the past decade, oil prices have soared from $12 per barrel to $100, reflecting growing demand and a supply has which has leveled off. *(See Appendix for a graph showing changes in global petroleum traded and related prices in this decade)*

Oil depletion: the decline of world crude oil production



Source: www.oildrum.com

Oil depletion presents a unique set of vulnerabilities and risks. While global warming is a problem that has gained increasing public awareness, "Peak Oil" is less well understood. The potential is not just that we will have less oil in the future, but also that the resulting shortages will be both disruptive, and costly. Still, oil depletion and global warming are intertwined, as the solutions to oil depletion must not sacrifice efforts to reduce carbon-loading in the atmosphere; simply replacing oil with large amounts of liquefied coal or other carbon-producing products, for example, could worsen global climate change.

1 Simmons, Matthew R., Another Nail in the Coffin in the Case Against Peak Oil, November 16, 2007. http://www.simmonsco-intl.com/files/Another%20Nail%20in%20the%20Coffin.pdf

The peak in oil production is forecast to be followed shortly by a peak in global natural gas production, complicating a simple shift from one type of fossil fuel to another. It is surely fair to say that fossil fuel dependency constitutes a systemic problem of a kind and scale that no society has ever had to address before. The human community's central task for the coming decades must be the undoing of its dependence on oil, coal, and natural gas in order to deal with the twin crises of resource depletion and climate chaos. If policy makers fail to take steps to reduce the effects petroleum shortages, society could be left mired both in internal economic turmoil and additionally, in international conflict over constrained oil supplies. In that environment, the pursuit of international climate policies (or any other international agreement) becomes much more difficult than is already the case.

If we are to deal with this challenge successfully, we must engage in systemic thinking that leads to sustained, bold action. Those cities that undertake careful planning will find themselves able to respond a more resilient way, providing a relatively better refuge for their citizens than those cites that do not have a plan.

Local inaction could render Oakland defenseless against the rising price of oil affects economic growth and employment–higher oil prices slow business expansion, impact wages and jobs and increase production costs. The continued burning of fossil fuels, one of the chief causes of global warming, threatens the living conditions of future generations of Oakland residents- Oakland suffers from asthma disproportionately in neighborhoods adjacent to freeways and other major sources of exhaust and pollution generated by traffic and the burning of fossil fuels. Global warming will exacerbate these health problems.

Our recommendations emphasize **preparedness**[2] , ensuring that Oakland is:

- prepared for escalating energy prices and supply disruptions
- committed to using less energy and developing near term plans to do so, and
- rethinking policies, procedures, and existing conditions that require a high volume of energy consumption (e.g., reconfiguring the built infrastructure for less transportation)

Adopt the Oil Depletion Protocol as a City

The OIO recommends first and foremost that the City formally adopt the *Oil Depletion Protocol*. The protocol set forth by author Richard Heinberg in his book by the same title outlines a plan to avert disaster by having all nations commit to reducing oil usage by approximately 3% per year.[3] The Task Force recommends that the City of Oakland adopt this protocol locally and to take immediate steps to implement it. While other cities including San Francisco have already endorsed the protocol, Oakland would be the first government at any level in the world to officially adopt and implement the protocol.

The Oil Depletion Protocol, if adopted as a global initiative, would proactively address the Peak Oil crisis, setting a target of about 3% reduction per year in oil consumption, without specifying how this goal should be achieved. The 3% reduction trajectory approximates the annual depletion rate for world oil (the amount produced each year as a percentage of what remains). It should be regarded as a minimum reduction target, since actual declines in available oil may be significantly greater.

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2 Energy Preparedness: A Municipal Perspective, Energy Preparedness, January 2008. Available at http://www.energypreparedness.net/resources/whitepaper/1.

3 Richard Heinberg, The Oil Depletion Protocol – A Plan to Avert Oil Wars, Terrorism and Economic Collapse, New Society, 2007. http://www.oildepletionprotocol.org.

Implementing a citywide program to proactively and cooperatively reduce the use of oil (effectively, a reduction in *demand*) ahead of actual production declines would ameliorate the impacts of Peak Oil on Oakland. As part of adopting the protocol, the Task Force recommends the City establish a minimum annual oil consumption reduction goal of 3%.

A minimum 3% annual reduction in oil consumption by the City of Oakland is commensurate with carbon emissions reduction targets adopted by the State of California, and will lead to over 30% reduction in oil consumption from 2008-2020. Were a 3% annual reduction carried through 2050, the reduction would be on the order of 72%. If Oakland were to meet its minimum reduction target for the next four decades, it is likely that years which exceed the target would result in an even larger cumulative reduction.

Without an annual reduction target, efforts of this Task Force will likely result in making fuel usage more efficient, while total fuel consumption continues to grow. In that case, vulnerability to supply shocks actually INCREASES, because the slack in the system (inefficiency) has already been removed, while dependency has worsened. The only way for Oakland to reduce its vulnerability to supply shocks is to reduce its actual consumption of fuel.

Adopt the Oil Depletion Protocol as individuals

Individual households should be encouraged to make a commitment to reduce their oil use by 3% per year also. There are many ways this might be done, and the chart below shows one possible scenario for a typical Oakland household to achieve a 3% reduction.

Oil consumption footprint

Transportation is the largest share of the typical Oaklander's oil consumption footprint. The average Oakland household travels about 58 miles per day. About 30 percent of vehicle trips are for travel to work and the remaining trips are for other purposes.[4] The table below shows some statistics for transportation in Oakland.

Baseline statistics: Oaklanders, transportation and oil

40%	Transportation as a share of Oakland energy use
47%	*Transportation as a share of greenhouse gas emissions in Oakland*
97%	Transportation as a share of Oakland oil consumption
58.4 miles/day	Vehicle miles traveled each day, per household
6.9 trips/day	Daily trips per household
8.4 miles/trip	Vehicle miles traveled for a typical trip
30%	Work trips as a share of total
17.4 miles/day	Vehicle miles traveled for work, per household
20.2 mpg	Average vehicle fuel economy

Sources: Metropolitan Transportation Commission, and ICLEI

4 Statistics are calculated based on data from the Metropolitan Transportation Commission http://www.mtc.ca.gov/maps_and_data/datamart/stats/baydemo.htm

Assuming that the typical Oakland household completes all of its travel in a single occupancy passenger vehicle that meets the average fuel economy of today's fleet (20.2 mpg), the household will consume just over one thousand gallons of gasoline per year.

To meet the goal of the Oil Depletion Protocol, each household needs to reduce its oil use by 3 percent.

There are several simple steps that a household could take to achieve this:

- Eliminating one work trip per week by telecommuting.
  Approximate Reduction 4%
- Eliminating one non-work trip per week through walking or biking rather than driving.
  Approximate Reduction 4%
- Replacing all work trips with commuting by bus or carpooling with one person.
  Approximate Reduction 13%

Another way to greatly reduce oil consumption would be to replace trips in the household's gasoline powered cars with electric car trips as feasible. *(See "Consumer Vehicle Choice" section in the Appendix)* Most commercially available electric vehicles have a range on the order of 30–40 miles. A substantial oil savings (potentially greater than those indicated above) is possible if common, short-range auto trips are done with electric instead of gasoline vehicles.[5]

Background

Oil Independence

Following the lead of Sweden's Oil Independence initiatives, this Task Force was created to investigate what it would take to make Oakland oil independent by 2020. At the beginning, the Task Force recognized that being completely oil free was not attainable by 2020, if at all, and therefore it has been focused on relative rather than absolute oil independence. In the Oakland context, the Task Force considered the initial objective to be relative oil independence by 2020 and suggested that oil independence efforts should be an ongoing focus for Oakland for at least the next five decades. Through these efforts, Oakland should continually reduce its vulnerability to oil price and supply shocks and its contributions to the oil economy.

The Oil Independent Oakland by 2020 Task Force

The Oakland City Council established the "Oil Independent Oakland by 2020" (OIO) Task Force on October 17, 2006. The Task Force was asked to develop an action plan for Oakland to become oil independent by 2020, and that would include strategies to create jobs and economic growth in Oakland.

Recognizing the many problems associated with our dependence on oil, the City Council realized the great potential for making significant changes to reduce that dependence. In so doing, Oakland could become one of the world's leading cities in sustainable development.

5 Depending on the household's travel needs, the percentage of vehicle miles accounted for by shorter trips could vary greatly, but could be 100% for some households.

Members and Structure

The Task Force convened in April 2007, met at least monthly and delivered its final report in December 2007. Ten members were appointed by the Mayor and City Council. Those members were Chair Parin Shah, Vice Chair Ian Kim, and members Louise Bedsworth, Shannon Graham, Richard Heinberg, James Lutz, Mike Petouhoff, Richard Register, David Room and Jane Seleznow. Task Force members had a wealth of knowledge and expertise in the following areas:

- Alternative Fuels/Transportation
- Energy Efficiency/Energy Conservation
- Urban Land-Use Planning
- Community Choice Aggregation
- Economic Development
- Environmental Health/ Air Quality
- Sustainability Indicators
- Port of Oakland
- Public Policy
- Renewable Energy
- Workforce/Job Development

The OIO by 2020 Task Force began with a review of work by two similar groups who had studied this topic. One was the June 2006 report by the Sweden Commission on Oil Independence entitled *Making Sweden an Oil-Free Society.*[6] The other was the March 2007 Report of the City of Portland, Oregon Peak Oil Task Force entitled *Descending the Oil Peak: Navigating the Transition from Oil and Natural Gas.*[7]

At various Task Force meetings, members heard presentations from a wide range of experts including:

- Peter V. Schwartz, California Polytechnic State University, on Navigating The Way Out of Fossil Fuel Dependence
- Daniel Lerch, Post Carbon Institute on Post Carbon Cities: Planning For Energy and Climate Uncertainty
- Ian Kim, Ella Baker Center, Oakland, CA on Green Jobs and Eco-Equity
- Kirsten Miller, Executive Director of Ecocity Builders on Ecocities and Oil Independence
- Robert Baertsch of University of California, Santa Cruz on Solving Transportation, Land-Use, and Energy Issues Using Personal Rapid Transit.
- Ron Swenson, advisor to the Swedish Institute for Sustainable Transportation on a more sustainable transportation system.
- Richard Heinberg summarized his book entitled The Oil Depletion Protocol, and
- Task Force member Mike Petouhoff showed a segment of the film, Urban Solutions from Curitiba, Brazil, highlighting the transformation from auto to into an extremely efficient bus-centered urban area.

In addition to meetings of the Task Force, the Land Use and Transportation working groups (subcommittees of the Task Force), along with Oakland's Planning Department, convened a public "charrette" or workshop to discuss the urban villages concept and to elicit recommendations on transportation issues from regional agencies and the public. *(See the Appendix for the charrette agenda)*

To focus its efforts, the Task Force established four working groups were. These were:

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6 Sweden Commission on Oil Independence, June 21, 2006 "Making Sweden and Oil- Free Society",. found online at: http://www.sweden.gov.se/content/1/c6/06/70/96/7f04f437.pdf

7 City of Portland Peak Oil Task Force, March 2007. "Descending the Oil Peak: Navigating the Transition from Oil and Natural Gas", found online at: http://www.portlandonline.com/shared/cfm/image.cfm?id=145732

- Transportation – This group focused on reducing dependence on oil by reducing car use in Oakland and the region, exploring energy choices in public, private, and municipal fleet, and new green jobs that could be developed along with new policies.
- Land Use & Infrastructure – This group focused on reducing dependence on oil through better urban planning including transit oriented development and urban villages to create neighborhoods where residents could shop and work close to where they live.
- Food & Materials – This group focused on recommendations that would help the City reduce the amount of oil that is used in food production and distribution, in producing plastics and chemicals and in road-paving materials.
- The Port of Oakland – This group considered ways to make the Port less oil dependent by reviewing operations at Oakland's maritime port (including the significant rail and trucking operations) and the international airport.

City Of Oakland: Current Environmental Efforts

There is already a high degree of consciousness and progress in Oakland around sustainability and environmental issues. Examples of recent programs and initiatives are:

- March 2006: Oakland City Council adopted a Zero Waste Goal by 2020 and in December 2006 passed a resolution adopting a Zero Waste Strategic Plan. The Zero Waste Strategic Plan provides a framework of policies and initiatives that guide the planning and decision-making process to achieve the City's Zero Waste Goal.

- June 2006: City of Oakland, along with 10 other local governments in Alameda County, committed to becoming a member of the International Council for Local Environmental Initiatives (ICLEI) and participating in the Alameda County Climate Protection Project. See the ICLEI website, at http://www.iclei.org.

- June 2006: Oakland City Council adopted a Resolution banning polystyrene foam disposable food packaging, and requiring the use of biodegradable or compostable disposable food service ware, by food vendors and City facilities. See the Staff Report and Resolution at http://clerkwebsvr1.oaklandnet.com/attachments/13659.pdf.

- November 2006: The City of Oakland entered into an agreement with the Port of Oakland and Clean Energy (a California corporation supplying vehicles with natural gas) for the funding, design, and construction of a downtown Compressed Natural Gas (CNG) Refueling Station.

- December 2006: Oakland City Council authorized $50,000 allocation to provide start-up funding for the establishment of a Food Policy Council for the City of Oakland

- June 2007: Oakland City Council appropriated funds from the Williams Energy Settlement for: an energy-oriented green jobs program, a youth training program that provide energy and water-saving services to Oakland households, creating a Climate Action plan, upgrading City facilities with energy efficiency upgrades including a new 35kW solar project.

- Community Efforts: Various environmental health impact and emissions studies by the West Oakland Environmental Indicators Project, the West Oakland Toxics Reduction Collaborative, the Ditching Dirty Diesel Collaborative, and the Pacific Institute, to name a few.

Principles

In order to determine what actions to propose to the City Council, the Task Force decided to employ the following principles:

- Ensure recommendations are City actionable
- Pursue bold ideas
- Make use of similar efforts and other experts in the area
- Consider impacts on the environment, equity and the economy
- Consider both/and rather than an either/or approach
- Ensure recommendations have a positive impact on workers and businesses

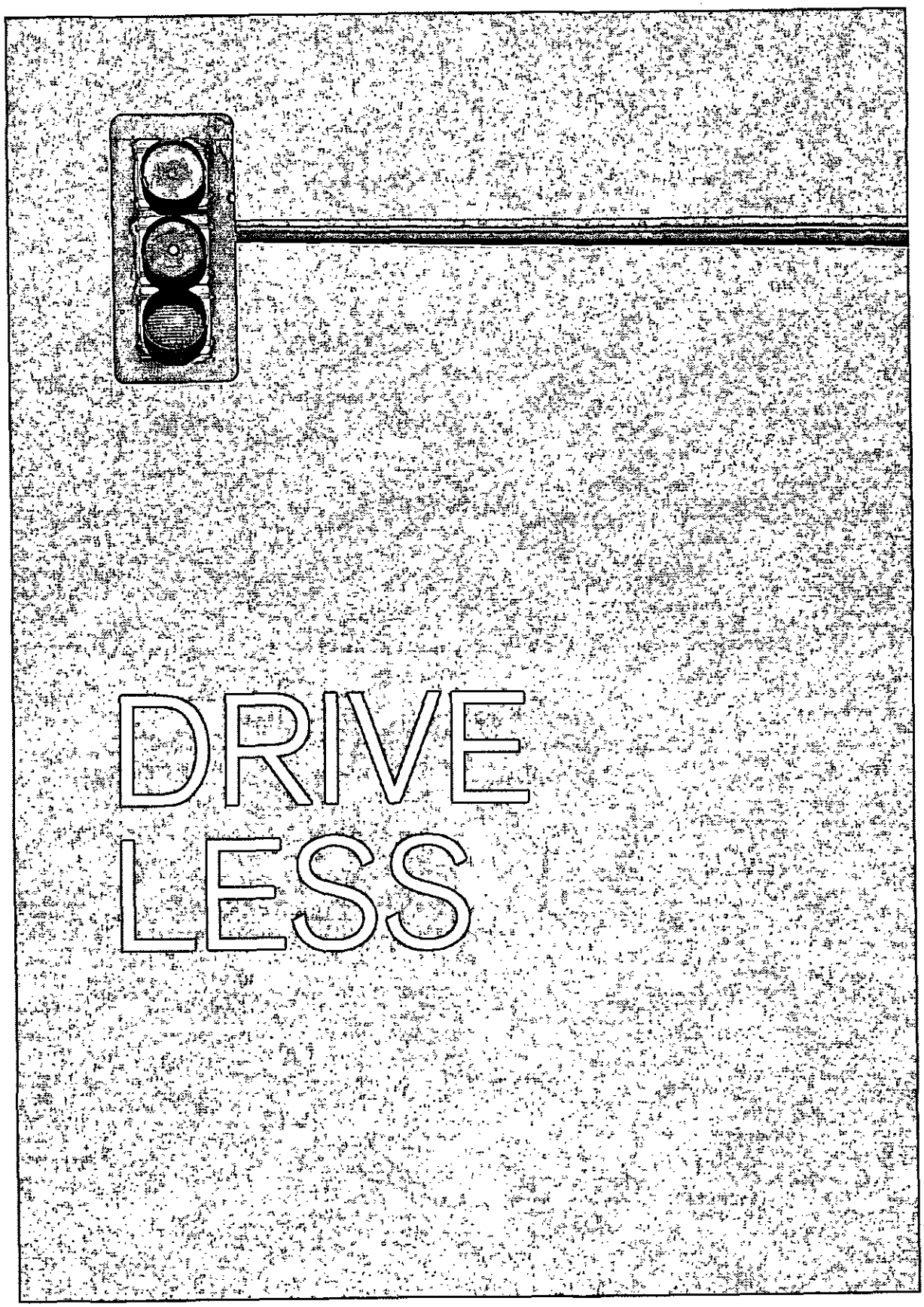
Timing of potential actions

Determining when actions should occur or the length of time required to implement them was an important consideration for the Task Force (see Table opposite). Priority recommendations were designated "short", "mid", and "long"-term actions. The table also indicates who should carry out the particular action: individual citizens, City of Oakland, or the City in a leadership role in the region or state (when the action cannot be implemented unilaterally).

The degree to which individuals can take transit, or bike or walk to work, is an individual choice, but one that is greatly enhanced by the decisions and actions the City and other governments make, in terms of infrastructure, urban design, and transit. In the longer term more options are available to individuals for a number of reasons, including through government actions.

What to do: a summary of recommendations

		Actions			Timeframe in years		
		Individual	City	Regional	1–3	4–7	8+
TWO MAIN RECOMMENDATIONS							
1	Adopt the Oil Depletion Protocol as a city	●	●	●			
2	Adopt the Oil Depletion Protocol as individuals	●			●		
DRIVE LESS/LAND USE AND TRANSPORTATION							
	Design Urban Villages						
3	Amend General Plan (LUTE)		●		●		
4	Modify Design Review standards		●			●	
5	Develop financing strategy		●			●	
6	Revise transfer of Development Rights ordinance		●	●			●
	Advance transportation alternatives to the car						
7	Implement the Pedestrian and Bicycle Master Plans		●		●		
8	Develop and implement Public Transit Master Plan		●		●		
9	Collaborate with regional transit agencies		●	●	●		
10	Encourage transportation sharing	●	●	●	●		
11	Promote less oil-intensive transport	●	●	●	●	●	●
LEAD THE WAY/ REGIONAL & CITY INITIATIVES							
12	Create an Oil and Energy Team		●		●		
13	Expand on public education campaigns		●	●	●		
14	Prepare contingency plans		●	●		●	
15	Create green collar jobs		●	●		●	
16	Support local clean energy generation		●	●		●	
17	Implement Community Choice Aggregation		●	●		●	
18	Develop financing plan		●			●	
19	Develop a model City fleet		●			●	●
BUY SMART/FOOD AND MATERIALS							
20	Maximize local food production	●	●	●			
21	Reduce plastics use		●	●			
22	Explore non-oil based road materials		●	●			
MOVE WISELY/PORT OF OAKLAND							
23	Prepare Port contingency plan			●		●	
24	Develop Green Port Plan			●	●		
25	Expand cold ironing			●	●		●
26	Use electric vehicles at the airport			●	●		
27	Support High-Speed Rail in California			●	●	●	●


DRIVE
LESS

CHAPTER 1

Land Use and Transportation

SUMMARY OF TASK FORCE RECOMMENDATIONS

1 Redesign the City using the concept of Urban Villages

Step 1– Amend the Land Use and Transportation element of the General Plan and the Zoning Ordinance to create a framework for Urban Villages

Step 2 – Craft high density and mixed use design review standards

Step 3 – Develop a financial strategy for infrastructure and public improvements to support the preferred transportation hierarchy and urban villages

Step 4 – Revise the Transfer of Development Rights ordinance to establish additional conservation and open space areas

2 Advance transportation alternatives to the car

Implement the Pedestrian and Bicycle Master Plan

Develop and implement Public Transit Master Plan

Set up processes and outreach to collaborate with regional transportation agencies and neighboring cities to expand public transit

Encourage transportation sharing

Promote less oil-intensive transport

Synopsis

Transportation is the largest consumer of oil (97%) and the largest source of greenhouse gas emissions in Oakland. *(See Appendix for information supporting the Task Force emphasis on reducing private automobile use)* Therefore, the most effective way to reduce oil consumption would be to significantly change travel behavior. This would require an investment into strategies that would make transit, bicycle and walking more practical as well as more desirable than they are today. An important first step is to make land use decisions that reduce the need to use a personal automobile.

The first recommendation, **develop Urban Villages**, captures this idea and would entail strengthening vital focal points of the City, such as neighborhood centers, transit centers like Fruitvale and downtown with more development. That development would be "village-like" in having most of the full range of life's activities all provided for close together: living, working, commercial, social and cultural spaces. Integral to the "urban villages" notion is removing development outside the concentrated cores steadily over the years to open creek systems, expand community and commercial gardens for food production and security, for parks, sports, recycling and other open space uses. The overall pattern of change thus will support bicycle, transit and pedestrian access and thereby create the foundation in urban form for greatly reducing demand for energy and land, and thus creating a basis for adding exactly the right technologies and jobs that fit a more localized economy and an energy conserving and benign renewable energy future. That is a potential future so low in demand for energy that oil independence becomes a real possibility.

From this foundation on up, the City can save enormous quantities of energy and can more successfully implement other recommendations, such as promoting pubic transport and transport sharing, creating disincentives for the use of private automobiles and promoting the use of less oil-intensive transport that will support the "drive less" ideal.

The Task Force established the preferred transportation hierarchy chart (opposite), roughly based on the amount of oil required per person per trip (listed from least to most oil intensive). The Task Force used the hierarchy as a prioritization scheme and as guidance for recommendations throughout the Action Plan. We especially encourage its use in determining land use and zoning priorities.

Priorities: getting to least oil-intensive trips

Ranking based on the amount of oil required per person per trip

Least *oil-intensive*	Rank	Mode of travel
	1	Walking
	2	Bicycling
	3	Electric scooters and carts
	4	Electric rapid transit, such as BART or streetcars
	5	Diesel bus rapid transit
	6	Electric cars
	7	Plug-in hybrids a. electric drive train with onboard fueled generator b. gasoline drive train with electric assist motors
	8	Alternative fueled vehicles and hybrids
	9	Petroleum fueled cars
	10	Airplanes
Most ***oil-intensive***		

1 Redesign the City using the concept of Urban Villages

Over decades, the organization of our cities has been based on separating residential from small scale commercial and office, and separating those from large scale manufacturing and warehousing districts. Today, most of the heavy industrial uses are gone and there are more advantages in bringing distinct uses together rather than separating them. Zoning needs to be overhauled not by changing patterns indiscriminately, but with an updated understanding of work and jobs. An urban village approach would be more focused on a wider range of businesses and services to provide the daily needs of the residents and workers, while reducing trips in private automobiles.

The design of cities greatly affects how people move around in them. Land use and transportation are tightly linked in more sustainable urban environments. When home, work, school, and shopping destinations are separated by long distances or inefficient routes, more energy is required to fulfill daily needs. Cities in Europe and the United States that matured prior to the pervasiveness of the automobile have a variety of uses within shorter distances and are more energy efficient per capita than cities such as Los Angeles that were built to accommodate transportation by private auto. Redesigning cities to bring diverse land uses in closer proximity to one another will allow a larger number of people to use less oil intensive transportation options.

The Task Force debated energy sources and various means to conserve energy in Oakland and concluded that an urban form that is compact and diverse in the "urban village" sense described here works best. This compact "mixed use" pattern, in the language of planners, fits best with public transit powered by electricity, rather than liquid fuels such as fossil fuels and generally, biofuels. Even private transportation with lower impact, such as electric cars, carts and scooters, is benefited by the switch to a more compact urban form surrounded by more open space. To support the overall pattern, we need vigorous commitment *to* and economic investment *in* renewable solar, wind, and geothermal renewable energy sources and in transit and bicycle transportation. Each neighborhood, major district center and the downtown can provide the full range of many or most of its needs for housing, employment, food, everyday services, basic education and local or regional transportation. Thus petroleum independence is proposed in a way that will build and strengthen local communities.

An Oakland with numerous urban villages will be a more resilient place as oil becomes more expensive and/or less abundant, and will help citizens endure the price shocks which could wreak havoc in communities with fewer transportation options.

The Oil Independent Oakland Task Force members agreed that there is no "silver bullet" to solve the problem of society's oil dependence. There is, however, what we might call a **'silver sequence'**. Urban design needs to follow a number of steps in a certain order to successfully produce a healthy environment that runs on a minimum of energy. First, the land uses have to be well thought out and established based on centers of development, not low density scattering. Then the architecture that rises from that land use pattern can be designed to conserve energy, and to relate well to other buildings and open spaces and linkages like streets and rails. Next, supportive technologies like solar and creek restoration materials and plants can be added. And even communications technologies can play a contributing role in energy conservation and community vitality by helping establish work places in the smaller centers as well as downtown center and thus decreasing commuting and increasing the diversity of activity in those centers.

Providing a variety of land uses in cities solves much of the problem by reducing oil demand dramatically. More compact development makes possible preservation or recovery of open spaces that can be utilized for recreation, urban food gardens, and sometimes habitat

restoration. Not insignificantly, the funds saved on automobile-serving infrastructure (e.g., repaving streets, maintaining public fleets, traffic/parking management and enforcement) can be better spent providing for the well-being of all residents and especially lower income people. An urban design that liberates us from dependence on cars and gasoline serves safety and national security goals as well.

The first step on the sliver sequence is changing the land use policies in our cities to provide for the mixed use and concentration of activities that were discussed above. City government has the power to make these changes through General Plan amendments and Zoning Ordinance changes. Procedurally, this begins with developing the overarching policies that would define and support the urban village context; then, the City would produce Area Plans, providing the analysis for each potential "village"–how it could fit the vision; and finally, the new, specific "rules" needed to make the areas consistent with the urban village vision, which would require changes in the Zoning Ordinance–details like changing the required number of parking spaces or the uses allowed on a specific street.

The second step is to make the denser development more attractive by establishing design review standards. Steps three and four would be to fund the infrastructure and other costs necessary for implementation, and finally, set in motion amendments in the Transfer of Development Rights Ordinance that could eventually remove the least-desired structures to promote the long-term vision to make way for paths, parks, and other open spaces that will embellish or surround the centers.

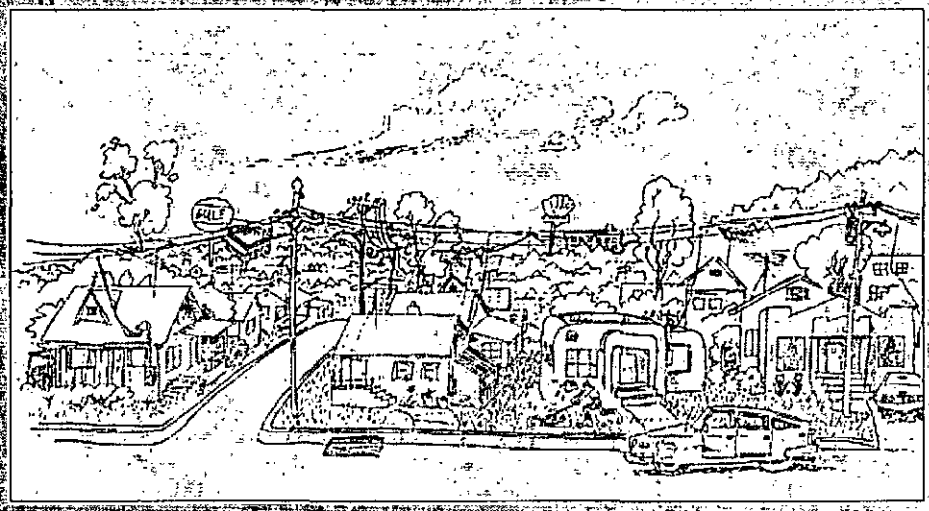
Employment Implications of the Silver Sequence and Community-Oriented Development

The silver sequence obviously has major implications for employers and Oakland's economy. Employers and industry representatives should be consulted and integrally involved in its planning and execution-- ideally the process would be collaborative rather than contentious, with a shared sense of the emergency we all face and must solve together. Economic localization and the collocation of live/work/shop centers have many positive implications for productivity and efficiency. Imagine eliminating 1-3 hour daily commute times for significant percentages of the workforce. Imagine large areas of prime real estate previously dedicated to the automobile (parking lots, roads and highways, etc.) becoming available for vibrant economic activity. Imagine stronger relationships among local and regional businesses who build mutually reinforcing networks as suppliers and purchasers. Imagine reversing some of the effects of economic globalization, bringing manufacturing and industrial activity back to local and regional economies.

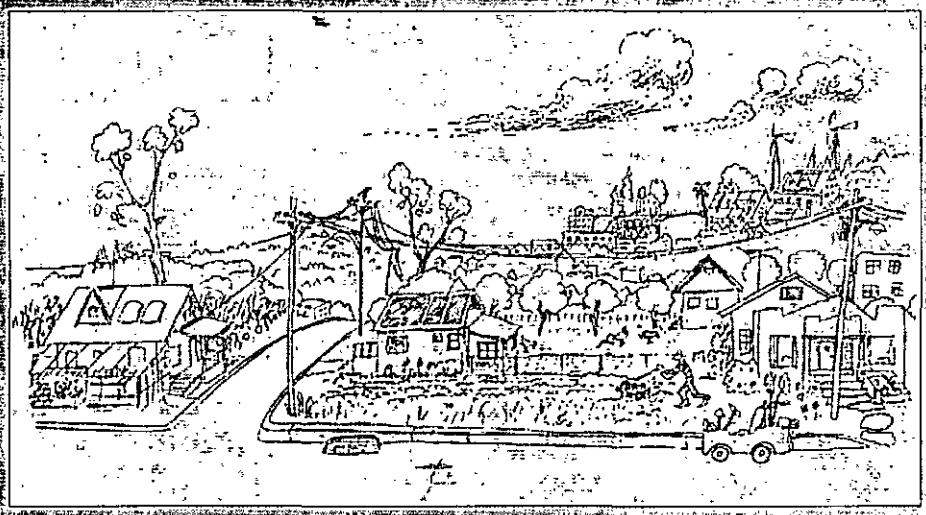
Massive economic shifts are inevitable in the 21st century, and there will undoubtedly be big "winners" and "losers" when it comes to businesses and employers. The question is not whether we can avoid tectonic change. The question is whether we can guide such change wisely, partnering with the private sector in such a way that lessens the economic shocks, maximizes job quality, and provides stable transitions for employers and for workers.

Finally, it should not go unstated: The land use recommendations immediately following involve major changes in the built environment and infrastructure, which in turn imply a great deal of construction work (reforming roadways and building homes, offices, public transit systems, etc.). The contracts for the construction work can and should be guided by community standards that ensure job quality and safety, adequate wages, funding for job training, and other benefits for workers, their families and communities.

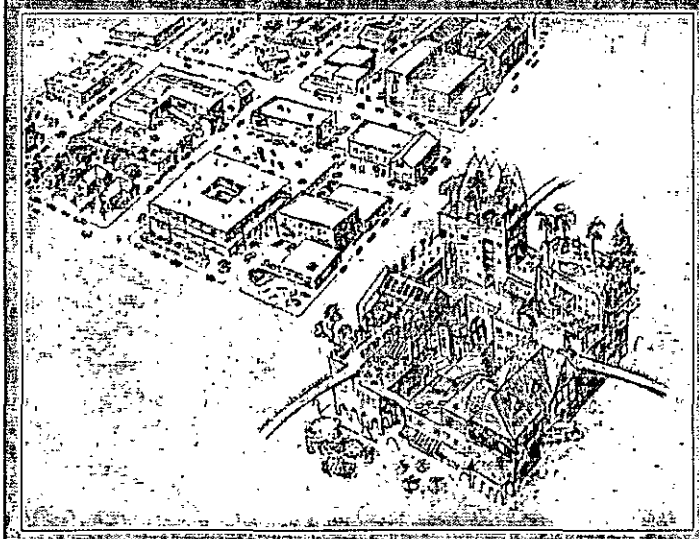
REDESIGNING THE CITY OF OAKLAND



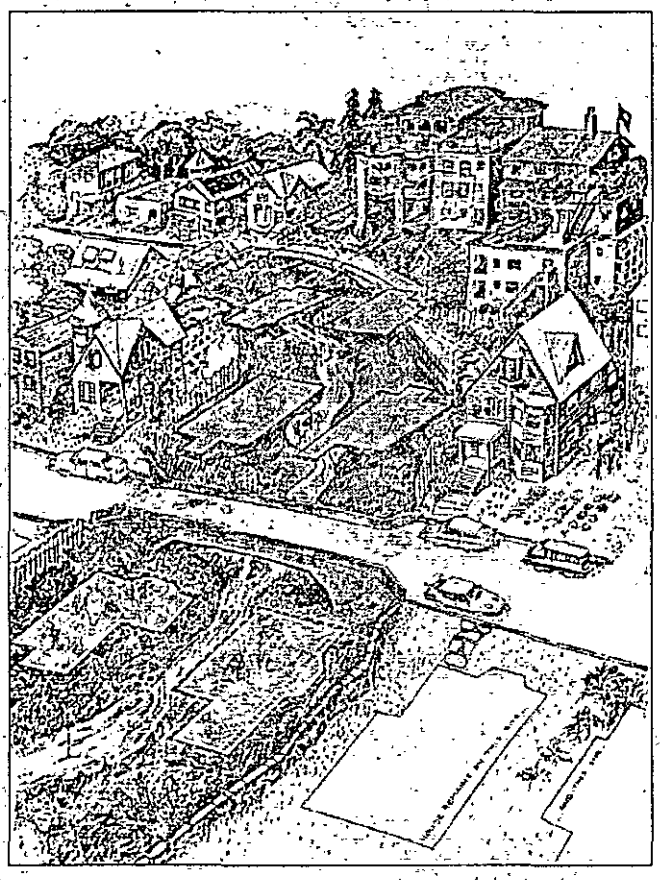
Removing Suburbia 1
Present condition in older low-density areas all over the United States



Removing Suburbia 2
Ten to thirty years later its people are preparing for world Peak Oil production and shifting urban layout to conserve energy, and with it, land and biodiversity, while reintroducing close in food raising



Five Blocks to One
Typical low density haphazard development, upper left, replaced by more compact much more pedestrian oriented and very diverse uses in the lower right. Everything in the upper left is provided for by building taller in the lower right, plus because of the space saved as well as energy saved, new options become available, as with all the rooftop uses and various activities in the sheltered area in the middle of the new block.



TDR Paying for a Shift in Densities toward Vitality Centers

The "pads" represent the footprint of buildings removed in willing seller deals and paid for by the developers of the apartments in the upper left. Transfer of Development Rights is a legal/real estate tool created by city or county ordinance to remove development rights and thereby preserve or restore open space (or historic buildings) by selling those rights to a developer to build more in areas that work well with transit – the "vitality centers" referred to in this report.

Small Town Center Creek Restoration

Typical neighborhood center celebrating a local creek of the sort common in Oakland, surrounded by modestly dense development of a variety of uses.

Implementing the Urban Villages concept

Step 1 Amend the 1998 Land Use and Transportation Element of the General Plan and the Zoning Ordinance

Urban planning and land development are primarily City functions guided by Oakland's General Plan. The General Plan amendment (specifically to the Land Use and Transportation Element (LUTE) of the General Plan) would contain the over-arching policies to bring the urban village concept to life for all of Oakland. The Task Force recommends that the LUTE be amended to improve coordination between land uses and transportation (focusing on alternatives to private autos) and also change the land use pattern to one that brings together a wide range of distinct yet compatible land uses so that daily live, work and shopping needs can be met in a close geographic area. The latter goal implies not only a high density and a high diversity of uses that creates a sense of community and place which we refer to as Urban Villages.

An important tool in this process is GIS mapping to help identify existing centers of vitality with *high density* and *high diversity* of land uses, as well as amenities or uses that could be missing. An initial analysis identifying these centers of vitality, based on GIS and site visits around Oakland, has been completed as a starting point by Ecocity Builders, Inc., an educational and research non-profit corporation. A sketchy but illustrative first generation map was prepared identifying and explaining the purposes for shifting development toward those centers (see map below).[8] In many cases, the land use patterns may have actually been influenced by previous transit systems like the Key Route system of the first half of the 20th century *(see Appendix to read about the Key Route system).*

8 This project was conducted in 2005 by graduate students at the University of California at Berkeley in the Department of City and Regional Planning, under the direction of Kirstin Miller and Richard Register of Ecocity Builders. There is a detailed report by students Richard Smith, David Schecter and Jason A. Hayter.

In the Oakland Map provided, the bands of color indicate distances from centers and a general guide for further density, with higher density toward the centers (pink and reds) and highest priority for restoration of open space farther from the centers. This early stage map is a composite of the "eco-city" mapping that locates centers, the City of Oakland's GIS maps and Google Earth, which gives a sense of landscape features and the bay. Creeks are based on Oakland and GIS maps.

After amendments are adopted, a more rigorous investigation of each center identified would be completed in the form of an Area Plan. The goal of the Area Plan would be to see how each area measures up to the new General Plan policies: where are the consistencies and inconsistencies with the new goals and mandates? This research also identifies what steps should be taken to implement the General Plan policies, whether those be rezoning, changing parking requirements, or something else. The Planning Code (through an update of the Zoning Ordinance) would provide the implementing details.

Two Concepts of Concentrated Development

Community Oriented Development (COD) focuses on development of an area in terms of a range of land uses, employment, and other opportunities provided within a close proximity, so that citizens can move about the "village" without dependence on private automobiles, and yet will have most of their daily needs met within this setting.

Transit Oriented Development[9] (TOD) directs development towards transit hubs like BART stations. It is a moderate to higher-density development, located within an easy walk of a major transit stop, generally with a mix of residential, employment and shopping opportunities designed for pedestrians without excluding the auto. TOD can be new construction or redevelopment of one or more buildings whose design and orientation facilitate transit use.

The Appendix contains examples of zoning, planning code, and fee based changes to support the Urban Village Concept.

Step 2 Create a set of high density and mixed use design review standards

One of the most important factors in creating high density structures that are livable and appealing is the building design. Oakland has encountered significant community resistance in its initial efforts at placing high density development in existing neighborhoods. Part of the problem is that the City does not have a current set of design review standards for high density multi-family and mixed use development. By the City's own admission, the existing multi-family design review standards are so outdated, they are not used.

However, the City has had recent success in creating a set of proactive design review standards for one and two family residences, which can be a template for a similar high density and mixed use design review manual. Oakland should encourage design that is aesthetically pleasing, vibrant, as well as practical. Design professionals should be sought out during the process of preparing design review standards.

9 California Statewide TOD Study – Technical Advisory Committee (September 2002)

The City should consider the following in establishing new design review standards:

- Large, blocky structures are a major source of neighborhood objection to increasing density
- Adopted standards are important to all parties to reduce disruption at the end of the planning process
- Transitions from high density to lower densities areas are important; this includes transitions on all sides of the development
- Incorporating solar power to create more renewable electric capacity on the grid, especially as electric cars and transit become more prevalent.

Step 3 Create a financial strategy for infrastructure and public improvements to support the Transportation Hierarchy and the Urban Village

A financial strategy is a key component of urban village development. The City should create clear plans, based on public input, that identify the infrastructure and other essential improvements to the urban villages concept (including those that support the Transportation Hierarchy), and how the funds will be acquired.

Most infrastructure improvements should be considered on a city-wide basis and could include standards for street furniture for pedestrian friendly streets, bike racks, electric car charging stations, and innovations such as street lights that dim at dawn and dusk, in addition to standard functions. Bicycle and Pedestrian Master Plans provide a source for infrastructure improvements that must be reviewed during strategy development. These should all be included in the City's Capital Improvement Plan (CIP) five-year budget so that as funding becomes available, urban village projects can benefit.

Since public funds are limited, a strategy that combines public and private investment should be part of the plan. A basic premise of private investment is to take advantage of land value premiums - the fact that the value of land may be increased by certain public projects or investment, and so it may make sense that those who benefit also share in the cost.[10] At the same time public projects can attract private investment. Possible funding mechanisms include: Transit and Density Premiums; Development Disposition Agreements (DDA's) and Development Improvement Agreements; Redevelopment Agencies and Tax Increment Financing; and Infrastructure Impact Fees. *(Further details in the Appendix)*

Step 4 Revise the Transfer of Development Rights (TDR) Ordinance to establish additional Conservation and Open Space

The Task Force recommends that:

- The Planning Department should look comprehensively at areas that can be reverted back to open space, greenbelt, creeks and other natural amenities, as part of General Plan and/ or Area Plan updates, and Redevelopment Plan Development
- City Council modify the existing Oakland TDR ordinance to make the tool more effective and supportive of the Urban Village concept.
- Use TDR in conjunction with or in place of eminent domain in Redevelopment areas.

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10 An appraiser concluded the recently inaugurated Seattle Streetcar would spur nearby development and increase property values in the district by $68 million. Area property owners paid $25.7 million – slightly more than half the total cost of the streetcar system.
http://archives.seattletimes.nwsource.com/cgi-bin/texis.cgi/web/vortex/display?slug=slustreetcar12m&date=20051112&query=Landowners+hop+aboard+Lake+Union+Streetcar+line

It is important to note that our recommendation is not simply to create high density throughout Oakland, but rather high density centers contrasting with surrounding areas that have open space. It is also important that high density areas also incorporate natural features like creeks, greenbelts, or shorelines, as public amenities so that high density urban areas may be enriched by natural features. This is an important quality of life issue.

2 Advance transportation alternatives to the car

Summary of Task Force Recommendations

- Implement the Pedestrian and Bicycle Master Plans
- Develop and Implement Public Transit Master Plan
- Set up processes and outreach to collaborate with regional transportation agencies such as MTC, BART, AC Transit, CALTRANS and neighboring cities to expand public transit.
- Encourage Transportation Sharing
- Promote Less Oil- Intensive Transportation

Transportation is one of the greatest barriers to achieving Oakland's goal to become oil independent. Strengthening public transport, which uses less land and creates less pollution than autos, is imperative for Oakland to become oil independent.

Along with improving our public transit system, we must expand the use of the two oil-free modes of transportation – walking and biking – that top the transportation hierarchy described above. With relatively few rainy days and mild temperatures,[11] Oakland is exceptionally well suited for year round walking and biking. While many Oakland residents own bicycles, most consider cycling recreation rather than transportation. Personal safety concerns and the lack of a comprehensive biking infrastructure are impediments to increasing cycling in Oakland. We must work to expand the bikeways in Oakland and integrate them into a comprehensive, intermodal public transit system while also promoting walking.

Employment Implications of Promoting Public Transit

Shifting to bicycles and public transit implies the emergence of new economic clusters[12] to support these two modes of transport. Large-scale bicycle use triggers development of supporting local industries -- manufacturing, repair, accessories, roadway and infrastructure development, etc. Large-scale deployment of public transit systems likewise triggers supporting local industries -- retail and restaurant near transit centers, construction and infrastructure work, etc. While the shift away from automobile reliance implies negative impacts for the automobile-related business cluster (retail, repair, fueling, etc), the shift toward alternative transit implies positive impacts for the emergence of whole new classes and clusters of local green economic activity and growth.

11 Oakland averages 64 days per year with more than 0.01 inches of precipitation. Temperatures in January and July average 45 and 72 degrees, respectively.
http://realestate.yahoo.com/California/Oakland/neighborhoods

12 A cluster is a geographic concentration of firms in related industries that do business with each other, from companies that supply the raw materials and support services, to those that sell finished products or services to the consumer inside or outside the region.

Implement the Pedestrian and Bicycle Master Plans

The Land Use and Transportation Element of the Oakland General Plan includes both Pedestrian and Bicycle Master Plans. We recommend that Oakland fully implement the recently updated Bicycle Master Plan and begin the update process for the Pedestrian Master Plan.

Oakland's first Bicycle Master Plan (BMP) was adopted in 1999, and the updated plan with substantive revisions was adopted in December 2007.[13] The updated plan focuses on infrastructure improvements, such as additional bike lanes, signage, and parking. One of the goals is to address bicycle safety and access in the design and maintenance of all streets. The bike plan also calls for increased bike access to BART during commute hours at 12th and 19th Street stations, as well as increasing bike parking near BART stations. BART has a pending project to install electronic bike lockers at the Lake Merritt, MacArthur, Rockridge, and West Oakland stations.

By adopting the BMP, Oakland is obliged to consider bicycle transportation as a viable and necessary means of transportation and consequently, and to facilitate bicycle use through its decisions involving land use and the street and infrastructure improvements. It is crucial that all agencies within the City (particularly the Public Works Agency and the Community Economic Development Agency) contribute to implementing the Bicycle Master Plan. There is also a significant need for more education and enforcement, especially as the cycling population grows. *(Greater detail and recommendations are cited in the Appendix)*

Develop and implement Public Transit Master Plan

Just as the City of Oakland has Bicycle and Pedestrian Master Plans, Oakland also needs a citywide, long-range policy document for promoting public transit in Oakland over the next several decades. Such a plan would be included in the Land Use and Transportation Element (LUTE) as an amendment to the Oakland General Plan. We recommend that Council set a target completion date of December 2008 for a Public Transit Master Plan and to give staff a mandate to implement the plan over the next decade.

Improving public transit would support the City's efforts to become more environmentally, economically, and socially sustainable. A substantial increase in ridership would make Oakland much more resilient in the event of escalating oil prices and oil price shocks. The Public Transit Master Plan would identify aggressive and realistic goals for increasing public transit. This Master Plan should address route coverage, access, social equity, and safety. Oakland's Public Transit Master Plan should have the following objectives:

1. Infrastructure–Develop the physical infrastructure for a comprehensive transit network that improves access and use throughout Oakland, supports the urban village model, and connects Oakland to neighboring cities.
2. Outreach–Improve the use of transit through encouragement, education, and community outreach.
3. Coordination–Develop procedures to coordinate Oakland transit efforts with regional transit agencies, such as the Metropolitan Transportation Commission (MTC), AC Transit, Bay Area Rapid Transit (BART), and the California High Speed Rail Authority.

13 See City of Oakland's bicycle and pedestrian information at: http://www.oaklandpw.com/page123.aspx

A Public Transit Master Plan for Oakland should investigate and strongly consider the development of a citywide streetcar system, shuttles, and ways to make public transport in Oakland more attractive and more accessible for lower income residents.

Oakland should do a thorough investigation of options for creating a comprehensive, intermodal public transit infrastructure that provides sufficient options and access to citizens for commute, recreational, and utilitarian trips. The current BART-AC transit system, while useful, leaves significant gaps in coverage and timing. This work would begin with an evaluation of the current public transit infrastructure and identification of gaps or poorly served areas, consideration of projected demographic changes in the next several decades and the plans of regional transportation agencies as well as the Bicycle and Pedestrian Master Plans (see the section on Coordination below).

We strongly recommend that Oakland work with AC Transit, public transit entrepreneurs, and the public to investigate the development of a municipal streetcar system or if sufficient interest exists, an East Bay streetcar system. AC Transit's plans for dedicated Bus Rapid Transit (BRT) lanes could possibly be a first step towards streetcars. To the extent such a streetcar system for Oakland is electrified or could be electrified in the future with relative ease, it would make Oakland much less vulnerable to oil shortages and price shocks, and thereby more resilient. It is our understanding that AC Transit's current plans do not include a streetcar system in Oakland. AC transit did, however, consider an Oakland-Berkeley streetcar system in the early 1990s and whatever plans and materials that were developed may prove useful to this effort. In its investigation, Oakland should also evaluate whether the alignment of the former Key Route System that provided mass transit in Oakland, Berkeley, Emeryville, Piedmont, San Leandro, Richmond, Albany and El Cerrito from 1903 until 1958, *(See Appendix for a brief history of the Key Route System)* could guide feasible transit alignments to support the urban village transition.

Though the demise of the Key Route system is an unfortunate chapter in history, the good news is that the development of many of Oakland's neighborhoods was driven by the Key Route system, and the street alignment is in many cases the same as when the system functioned. Thus bringing a functional equivalent of the system back into use may be assisted by the existing land use patterns that grew up around the system.

The Public Transit Master Plan should consider options for Universal Transit Access (UTA) in Oakland, which would include programs to give free or discounted transit passes for city employees, as well as low income residents. Oakland should adopt a policy, such as the one adopted by Berkeley, to work with large employers, schools, and the development community to increase public transit ridership through a free "eco-pass" program. Berkeley's Policy T-3 of the Transportation Element of Berkeley's General Plan program *(see Appendix for details)* would include the following:

- free transit passes to city employees,
- required participation by new businesses with over 50 employees,
- consideration of a citywide transit pass for citizens to be funded by a tax

For any new transit, Oakland should also consider the possibility of a "zero- fare" system. Such a system could be funded by national, regional or local government through taxation or by commercial sponsorship instead of the collection box. While several mid-size European cities and many smaller towns around the world have converted their entire bus networks to zero-fare, free, short-range shuttles (such as Emeryville's Emery Go-Round) and inner-city loops are much more common. In addition to the ideas above, Oakland should consider zero-fare shuttles to improve transit coverage (and reduce parking needs).

Another way to encourage workers to use public transport is to offer incentives. City of Pleasanton employees receive $2 per day if they take BART, Altamont Commuter Express, carpool, and bike or walk to and from work. The city also offers a public transit subsidy and prizes for people who use alternative forms of transportation.

Set up processes and outreach to collaborate with regional transportation agencies

The Task Force convened a Land Use and Transportation Charrette September 14, 2007. One of the major findings of the charrette was that regional transportation agencies and ABAG have not received much input from Oakland on transportation and related matters. Unfortunately, Oakland has not applied for funds that could have been designated for improving local transit. The City of Oakland should put serious effort into collaborating with regional transportation agencies such as MTC and neighboring cities to enhance and expand public transit. Berkeley and Alameda both have staff to do this type of coordination. Alameda has a transportation board composed of two representatives from AC transit and two city councilors. While Oakland need not form a board, Oakland should consider assigning such responsibility to staff as appropriate. There are a number of relevant initiatives in the East Bay that deserve close attention from the City, including AC Transit's Bus Rapid Transit (BRT) proposal, BART's transit village developments, MTC's 511.org program, and the California High Speed Rail Proposal. *(See Appendix for the agenda of the charette and areas of collaboration identified in the charrette)*

The City could also act in an advocacy or coordination role with BART, AC Transit, CALTRANS or others regarding the State's Proposition 1 Bond, to encourage that funds be used for efficient transit rather than sprawl. The proposed "Fourth Bore" of the Caldecott tunnel is a particularly egregious example of dedicating large amounts of public money to projects that will encourage petroleum use rather than petroleum independence.

Encourage transportation sharing

- Continue expanding staff car sharing and car sharing overall. Use car share services in lieu of city vehicles.
- Support dynamic ride sharing with online, telephone, and mobile phone access
- Expand carpooling – incentives, adding online and telephone support infrastructure, organization and coordination.
- Bike sharing
- Encourage community/neighborhood car sharing

The City of Oakland should encourage sharing of cars, rides, and even bikes. Oakland is encouraging employees to use car sharing services. The city conducted a pilot program with City CarShare beginning in the fall of 2006 and is proceeding with a roll out of the program. Officials and staff managers should encourage more employees to use the program and consider following Berkeley's lead with respect to expanding the focus of the program beyond municipal operations.

The City of Berkeley's Measure G implementation program is considering a goal of Universal Car Sharing such that car share vehicles are accessible to citizens throughout the city with the possible exception of the Berkeley Hills.[14] As a first step, they are working with car share companies (e.g., City CarShare, FlexCar, and ZipCar) to increase the number of car share vehicles in Berkeley. In exchange for putting car share vehicles in less heavily trafficked areas, the City of Berkeley is dedicating some parking spots normally reserved for

14 Climate Action Plan, The City of Berkeley, January 2008.

municipal vehicles, to car share vehicles in high traffic areas. That city is also encouraging city employees to use car share vehicles for city business and has accounts for this purpose with car share companies. The City of Vancouver has also encouraged car sharing by providing car-sharing vehicles with flexible parking passes that allow them to park in permit-only residential zones throughout the city.[15]

While Oakland goes through the longer term process of improving public transit and shifting development to urban villages, it should encourage and collaborate with efforts to increase car pooling and dynamic ride sharing in the region. Carpooling is the shared use of a car for commuting to work, often by people who each have a car but travel together to save costs and/or other socio-environmental benefits.

Oakland could help increase rates of carpooling by offering incentives for workers to carpool. In May 2006, MTC started a $50,000 incentive program that gave new carpoolers as much as $100 for gas or groceries. As noted above, the City of Pleasanton offers employees a $2 per day bump in their paycheck if they carpool.

"Casual car pools" are informal car pools that form when drivers and passengers meet at designated locations. There are a number of East Bay pickup locations. Drivers drop passengers off in downtown San Francisco. Casual car pools are quick and convenient. They are quick because in the morning car pools are able to bypass the long delays at the Bay Bridge toll plaza. Casual car pools are convenient because no pre-arrangement or fixed schedule is necessary. Car pools also do not pay tolls on either the Bay Bridge or the Carquinez Bridge during commute hours. Casual car pool sites for rides to downtown San Francisco have been in existence in the East Bay for more than 20 years.[16]

It is anticipated such efforts may to some extent undermine public transit by making it less expensive to drive. We anticipate, however, the net benefit will be positive with respect to reduction of oil consumption, and the recommended improvements in public transit will have much greater impact on public transit usage than increased car pooling and ride sharing.

An even better option for City workers than carpooling, both from an oil reduction and health standpoint would be to increase the use of bicycles, both for commuting and short work-related trips. Once it finishes the implementation of the Bicycle Master Plan, Oakland should consider a City-wide bike sharing plan like the one implemented in Paris and currently being considered in Washington DC and San Francisco. To help people access and use bicycles, Oakland could use a bicycle rental business, perhaps one that serves the Bay Trail and the new improvements around Lake Merritt. As a step toward bike sharing, Oakland may be ready for a "bike pool," parallel to the City's car pool, that would encourage employees to use bicycles for city business (where practical).

As a longer-term goal, the City of Oakland should explore the feasibility of community or neighborhood car sharing. In such an arrangement, a neighborhood or building could share a single vehicle or small fleet of vehicles in lieu of private vehicle ownership. This would reduce the regular expenses associated with car ownership. This type of arrangement could be included in the development of new residences in order to discourage private vehicle ownership. San Francisco requires dedicated car share parking stalls for all new residential projects with 50 or more units. *(See Appendix for relevant San Francisco Planning Code)*

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15 *Vancouver Transportation Plan Progress Report*, 2006 at: http://www.city.vancouver.bc.ca/ctyclerk/cclerk/20060530/documents/rr1a.pdf

16 More information is available at: http://www.ridenow.org/carpool/

Promote less oil-intensive transport

- Driver education on vehicle maintenance to improve vehicle efficiency
- Enforce existing traffic laws (e.g., speed limits)
- Enforce anti-idling laws
- City Electric Vehicle procurement and leasing
- Plug-in hybrid purchase and infrastructure development
- Promote alternative fuels and electrified personal transport
- Encourage telecommuting

While the City of Oakland does not have regulatory authority over the efficiency of vehicles, there are a number of steps that the City can take to promote less oil-intensive vehicle choices and use. These range from driver education to enforcement of existing laws to programs to encourage the purchase and use of clean vehicles and fuels. *(See Appendix regarding private consumer choices)*

Proper vehicle maintenance can have a significant effect on vehicle efficiency. Improper tire inflation increases a tire's rolling resistance and, therefore, reduces a vehicle's efficiency.[17] Vehicle mileage can be reduced up to 0.4% for every 1 psi reduction in tire inflation (on all four tires). Keeping a vehicle's engine properly tuned and replacing air filters can provide even larger fuel economy benefits.[18] A public education program can help to encourage vehicle owners to properly maintain a vehicle, as well as provide some guidance as to whether to keep an existing car or buy a new one, and if the later, what to buy. *(See the "Consumer Vehicle Choices" section of the Appendix)*

The City can also reduce transportation oil use by enforcing existing laws. These include speed limits and anti-idling regulations. Vehicle fuel economy declines rapidly at speeds over 60 miles per hour, therefore, a focus on enforcement of the speed limit on the City's major streets and highways could result in an improvement in fuel economy.[19] Five to fifteen percent of a vehicle's CO2 emissions, which correlate directly with fuel consumption, occur at idle.[20] The California Air Resources Board has anti-idling regulations for heavy duty diesel vehicles and for commercial vehicles near school yards.[21] They also have a MOU with railroads that includes an idling-reduction agreement for locomotives.[22]

Finally, the City can provide incentives and services to support greater use of electrified forms of transport. This includes vehicle choice in City vehicle procurement programs (see Chapter 4) as well as development of infrastructure to support electric vehicles. An effort by the City to develop vehicle charging sites, for example, will require integration into future development plans as well as coordination with Pacific Gas and Electric. The City could also provide incentives (such as preferred parking or financial) to citizens for electric vehicles and when they are commercially available, plug-in electric vehicles.

We also recommend that the City consider judicious support of increased use of alternative fuels. We would like to make a cautionary note regarding biofuels. It is crucial to evaluate biofuels in light of the conflicting evidence on the energy benefits of biofuels as well as

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17 NAS, 2007, *Tire and Passenger Vehicle Fuel Economy: Informing Consumers, Improving Performance,* Washington DC: National Academy Press.

18 http://www.fueleconomy.gov/feg/maintain.shtml

19 http://www.fueleconomy.gov/feg/driveHabits.shtml

20 An, F., D. Friedman, and M. Ross. 2002. Near-Term Fuel Economy Potential for Light-Duty Trucks. Warrendale, PA: Society of Automotive Engineers, 2002-01-1900. June.

21 http://www.arb.ca.gov/toxics/sbidling/sbidling.htm

22 http://www.arb.ca.gov/html/fslist.htm

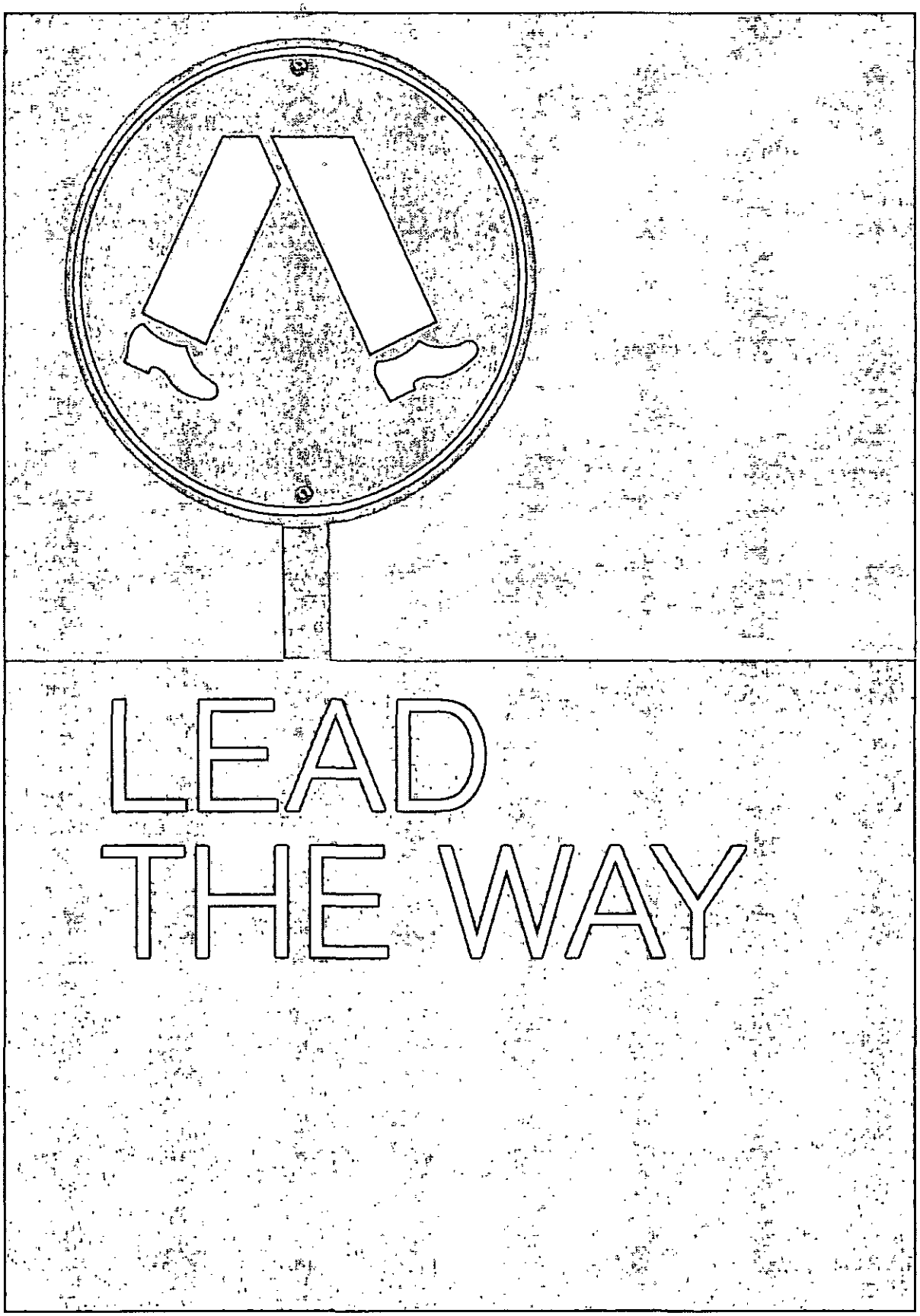
the increasing amount of information emerging on the use of food crops or their land base for fuel production. In addition, the environmental and ecological damage that can result from biofuel crop production poses significant concerns. The Transportation Sustainability Research Center at UC Berkeley is good resource to evaluate these issues and has provided a grading system.[23] Therefore, we encourage the City to only consider biofuels derived from reclaimed waste oil (i.e., biodiesel) rather than crops cultivated exclusively for fuel.

Travel to work accounts for roughly one third of travel trips in Oakland.[24] Encouraging telecommuting could reduce this share of transportation trips. Telecommuting is a work arrangement in which employees have flexibility in working location and hours such the daily commute is replaced by telecommunication links. According to the US Census Bureau's American Community Survey 2003, the average commute time of Oakland workers (not working at home) is 26 minutes, the 13th highest in the United States.[25] The same survey shows that 55% of Oaklanders drive alone to work – of the cities in California with populations greater than 150,000, only San Francisco and Berkeley had lower rates. To the extent that telecommuting replaced drive alone trips, telecommuting could substantially reduce "oil intensive" trips. Oakland should offer telecommuting to City employees a feasible and encourage large employers to follow suit.

23 A Low-Carbon Fuel Standard for California Part 2: Policy Analysis, UC Berkeley Transportation Sustainability Research Center, Paper UCB-ITS-TSRC-RR-2007-3, 2007.

24 http://www.bayareacensus.ca.gov/cities/Oakland.htm

25 http://www.census.gov/acs/www/Products/Ranking/2003/R04T160.htm


LEAD
THE WAY

CHAPTER 2

Regional and City Initiatives

SUMMARY OF TASK FORCE RECOMMENDATIONS

Create an Oil and Energy Team

Expand on public education campaigns

Prepare contingency plans

Create green collar jobs

Support local clean energy generation

Implement Community Choice Aggregation

Develop a comprehensive financing program

Move towards a model city fleet

Synopsis

This Chapter focuses on initiatives the City can undertake on its own that will facilitate implementation of the recommendations included in this report and on initiatives that go beyond the scope of the City. For the latter, the Task Force recommends that the City take a leadership role in supporting a number of programs that will lead to oil independence. This will require coordination with other cities and with regional and state agencies.

Create an Oil and Energy Team

Oakland needs to create an Oil and Energy Team whose mandate is to work with staff to get Oakland on the path for meeting the annual 3% oil consumption reduction over the next couple decades.

Just as Berkeley has dedicated staff for their Measure G Climate Protection program, Oakland needs at least a two to three-person team with a strong mandate to realistically have a chance to reach Oakland's goal of oil independence by 2020. Ideally, this team would be in or report to the Mayor's office. The team could be composed of dedicated staff, department heads or liaisons, and/or consultants. Funding could be made available through the Bay Area Air Quality Management District's Climate Protection Grants, and state and federal energy grants, or donations from organizations and private individuals interested in peak oil and oil independence.

The first order of business for the team would be to develop a 3–5 year strategic plan that lays out a strategy for meeting annual oil consumption targets, detailed descriptions of key initiatives, outreach and funding needs, and an implementation timeline. Ideally, the team would develop a "silver sequence" of initiatives that includes some that can start immediately and others that require additional time or funds. The team would oversee and to the extent appropriate manage Oakland's oil independence and carbon emissions reduction activities. Similar to Berkeley's Measure G staff, the Oakland team would explore various options for funding oil independence initiatives including grants, selling local carbon offsets, taxes and fees.

Perhaps one of the more important tasks of the team would be to establish an information system to monitor and model the City's oil and energy consumption. The system would be able to evaluate whether Oakland is meeting its oil consumption reduction targets.

Expand on public education campaigns

Oakland needs to embark on a comprehensive and effective public awareness, education, and outreach campaign for residents, businesses, large employers, and City staff that conveys a sense of urgency.

It is urgent that Oakland begin weaning itself from oil now. This endeavor will require the City of Oakland, its citizens, and organizations to change how they use energy. To meet its energy independence goals the City will need to develop an outreach and education campaign. This campaign should be managed by the Oil and Energy Team and include collaboration with all City agencies. *(Greater detail on the education campaign is in the Appendix)*

Prepare contingency plans

The Task Force found that the City should require contingency planning by new development, municipal and regional agencies, and large employers within the City. Oakland's municipal contingency plan should address a seven-day fuel outage as well as a *slow creep* in prices.

Oakland should prepare for fuel emergencies since it is very likely that the availability of fuel will become severely constrained. This will lead to increasing volatility of fuel prices. Since transportation fuels are so fundamental to Oakland's economic well being the City should be preparing contingency plans to ease the turmoil caused by either dramatic fuel price rises or by constrained fuel availability.

Given the tightening global market for petroleum based fuels several scenarios for a fuel emergency are quite plausible. One would be a continued climb in fuel prices to the point that economic activity is severely hampered. The other possibility is a relatively short outage that requires Oakland to operate on existing stocks of fuel. Such a shortage is entirely plausible from damage to the already stretched fuel supply system, whether human-caused (for example, a terrorist action at a key oil transportation facility) or natural (for example a large hurricane severely damaging the petroleum infrastructure in the Gulf of Mexico). Another plausible scenario would be some sort of economic dislocation that results in petroleum not being available at expected prices.

Among the top priorities should be securing fuel for such essential city services as policing and fire protection. If the emergency is longer term assuring fuel availability for other vital services (health, food supply, water supply, sanitation, education, etc) will become necessary. A reliable non-automobile based transportation system will be important as well. Securing reliable operation of these other vital systems will require coordination with other local cities and regional agencies.

Oakland has made preparations to respond to other emergencies such as earthquakes, hill fires, and pandemics. The strategies used for these preparations can be used as analogies to start making preparations for fuel shortage emergencies. The key idea is to have plans in place before an emergency occurs. This means preparing for actions that would not be done during normal times, but that will make dealing with a fuel emergency less traumatic. As well as preparing for action, clearly defined triggers should be identified ahead of time that would start these actions. These trigger points should be obvious events which clearly point to the need of action out of the normal. One that is easy to explain and may make sense is that rationing starts when the average price of a gallon of gasoline sold in Oakland exceeds the hourly minimum wage in Oakland, though this probably is too high to be considered a first level trigger. As part of these preparations, there should be a strategy to educate the public and raise awareness of at least the general outline of the plan of action.

We are obviously not presenting these ideas as complete or even the correct way to respond to fuel emergencies. Rather we are presenting the following ideas to encourage the City Council and Mayor to direct City staff to begin preparing the plans. Among the actions that may be appropriate are for the essential City services to create fuel stockpiles and to prepare plans for rationing of fuel to assure adequate supplies for vital systems.

Green collar jobs

Support policy decisions that encourage renewable energy development as a means to increase high quality jobs available to Oakland residents.

As compared to traditional fossil fuels, the renewable energy sector is relatively labor-intensive, requiring a larger number and wider variety of jobs in areas ranging from manufacturing, construction, and installation to ongoing operation and maintenance.

According to an analysis of 13 independent reports and studies of the clean energy industry by UC Berkeley's Renewable and Appropriate Energy Laboratory (RAEL), renewable energy technologies create more jobs per average megawatt (MW) of power generated, and per dollar invested in construction, manufacturing, and installation when compared to coal or natural gas. Over the course of a 10-year period the solar industry creates 5.65 jobs per million dollars in investment, the wind energy industry 5.7 jobs, and the coal industry only 3.96.[26] In the case of coal mining, wind and solar energy generate 40 percent more jobs per dollar invested.[27]

Studies at the state level also confirm the comparative job creation advantages of renewable energy systems. A Union of Concerned Scientists analysis conducted for the state of Wisconsin found that an 800 MW mix of new renewables would create about 22,000 more job-years than would new natural gas and coal plants over a 30-year period.[28] A New York State Energy Office study concluded that wind energy would create 27% more jobs than coal and 66% more than a natural gas plant per kilowatt-hour generated.[29] In addition, a study by Economic Research Associates of energy efficiency and renewable energy as an economic development strategy in Colorado found an energy bill savings of $1.2 billion for Colorado ratepayers by 2010 with a net gain of 8,400 jobs. The study also assessed nine other states and reached similar conclusions.[30]

In 2001, the California Energy Commission's Public Interest Energy Research program sponsored a study from the Electric Power Research Institute (EPRI) that included job creation estimates from renewable energy development based on existing and planned projects in California. These include a construction employment rate ranging from 2.57 jobs/MW for wind to 7.14 jobs/MW for solar photovoltaic (PV) systems, and an operating employment rate ranging from 0.12 jobs/MW for PV to 2.28 jobs/MW for landfill digester gas.[31]

From a national perspective, several studies indicate that hundreds of thousands, if not millions of jobs could be created, depending on the aggressiveness of the public policy approach. The California-based think tank Redefining Progress estimates that clean

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26 Daniel Kammen, Kamal Kapadia, and Matthias Fripp, "Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Create?" UC Berkeley: Renewable and Appropriate Energy Laboratory (RAEL), April 2004 (updated January 2006), 12, http://rael.berkeley.edu/files/2004/Kammen-Renewable-Jobs-2004.pdf

27 Virinder Singh, BBC Research and Consulting, and Jeffrey Fehrs, "The Work That Goes into Renewable Energy," Renewable Energy Policy Project, November 2001, 8.

28 Michael Brower, Michael Tennis, and Eric Denzler, *Powering the Midwest*, Union of Concerned Scientists, 1993, 107-108.

29 A.K. Sanghi, *Economic Impacts of Electricity Supply Options*, New York State Energy Office, July 1992.

30 Skip Laitner and Marshall Goldberg, *Energy Efficiency and Renewable Energy Technologies as an Economic Development Strategy*, April 1996, http://solstice.crest.org/renewables/era/index.html

31 Brad Heavner and Bernadette Del Chiaro, Renewable Energy and Jobs, Environment California Research and Policy Center, 2003, http://www.environmentcalifornia.org/uploads/OW/aa/OWaa2RaedlfHwQOWbxKd5w/Renewable_Energy_and_Jobs.pdf

energy can produce 652,000 U.S. jobs in 10 years, and 1.4 million by 2025, reducing unemployment rates by 14%.[32] Its job-growth figures depends on a plan that would increase renewable energy generation in the US by 1% per year through 2025 as well as doubling federal research and development dollars to leverage private investment to boost energy efficiency programs and clean transportation projects. A recent study by the Union of Concerned Scientists[33] also agreed closely with the RAEL study[34] by concluding that if the United States adopted a 20% Renewable Portfolio Standard for its electrical utilities, over 185,000 jobs could be created by the year 2020.

If U.S. policymakers aggressively commit to programs that support the sustained development of renewable energy and energy efficiency programs, the news gets even better. According to research by the American Solar Energy Society (ASES) and Management Information Services, Inc. (MISI), aggressive development of the renewable energy and energy efficiency industries could generate up to $4.5 trillion in revenue and create 40 million new jobs by the year 2030.[35]

New green jobs: the outlook for 2030

Projected number of jobs in U.S. renewable energy and energy efficiency industries in 2030

	Base Case Scenario	Moderate Scenario	Advanced Scenario
Renewable energy	1,305,000	3,138,000	7,918000
Energy efficiency	14,953,000	17,825,000	32,185,000
Total number of jobs	16,258,000	20,963,000	40,103,000

Source: Union of Concerned Scientists [4]

The table above outlines three different scenarios for projected job creation in the renewable energy and energy efficiency sectors. The base case is essentially a "business as usual" scenario, which assumes no change in policy and no major renewable energy or efficiency initiatives over next 23 years. The moderate scenario assumes that various moderate, incremental (above the base case) federal and state initiatives are put in place during next two decades. The advanced scenario "pushes the envelope." It indicates what is possible using current or impending technologies and includes what may be feasible both economically and technologically.

32 J. Andrew Hoerner and James Barrett, *Smarter, Cleaner, Stronger: Secure Jobs, A Clean Environment, and Less Foreign Oil*, Redefining Progress, September 2004, 2-4, http://www.rprogress.org/publications/2004/SmartCleanStrong_National.pdf

33 Union of Concerned Scientists, *Cashing In on Clean Energy*, 2007, http://www.ucsusa.org/clean_energy/clean_energy_policies/cashing-in.html

34 Kammen, Kapadia, and Fripp, 2.

35 Roger Bezdek, *Renewable Energy and Energy Efficiency: Economic Drivers for the 21st Century*, American Solar Energy Society (ASES) and Management Information Services, Inc. (MISI), 2007, iv, http://ases.org/ASES-JobsReport-Final.pdf

This growing body of evidence indicates that renewable energy technologies and investments in energy efficiency hold tremendous job creation potential. Clean energy development not only helps to mitigate the twin challenges of climate change and fossil fuels dependency, it holds great promise in addressing the pressing need for high-quality jobs with pathways to sustainable careers for Americans who have yet to benefit from the burgeoning green economy.

Support local clean energy generation

In order to develop local clean energy, Oakland should provide incentives for energy *renovations and solar installations, formally adopt a renewable energy goal of 50% by 2017,* and work with local outreach organizations to create community partnerships and educate the public on the benefits of renewable energy.

Renewable energy is the polar opposite to oil and natural gas dependence. Greater reliance on renewable energy will make for a more resilient Oakland by reducing vulnerability to oil and natural gas price shocks and shortages, while decreasing Oakland's contribution to climate change. A centerpiece of Oakland's Sustainability Program is the promotion of renewable energy with a particular emphasis on solar. At the direction of Council, Public Works Agency staff is analyzing the opportunities and risks associated with reaching 50% renewable energy in Oakland by 2017.[36] Providing that the business case is viable, we recommend that council formally adopt a renewable energy goal of 50% by 2017.

More specific data and information on local clean energy can be found in the Appendix.

Implement Community Choice Aggregation in Oakland

This Task Force recommends that Oakland fully commit to the co-development of a Joint Powers Agreement (JPA) with Berkeley and Emeryville to use Community Choice Aggregation (CCA) as a means to generate clean local power and green jobs in the East Bay Area. CCA is an opportunity for Oakland to take a leadership role and truly become a model city for local renewable energy and green jobs and oil independence. *(See Appendix for further discussion of the specific points of an Oakland-enabled JPA)*

The publicly available information regarding community choice aggregation is derived from a May 25, 2005 Base Case Feasibility Report developed by Navigant Consulting, Inc. for the Oakland City Council.[37] It found that by aggregating Oakland's electric load, the use of renewable energy in Oakland could increase to 50% by 2017, more than doubling the renewable energy content that PG&E would provide during the same time period. In the base case, Oakland's CCA program would contract energy from a diverse portfolio of resources designed to achieve the City's 50% renewable energy objective. This early feasibility analysis found that a mature CCA program could save Oakland $12.5 million annually (or approximately 4% of total customer electricity costs), thereby reducing rates for Oakland ratepayers, or generating income for the City, or a combination of both.[38]

During the California Energy Crisis of 2000-2001, communities tied to investor owned utilities like PG&E experienced rolling blackouts and steep price spikes. Communities

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36 http://www.oaklandpw.com/Page779.aspx#CCA

37 Updated Pro Forma for the Formation of a Community Choice, Navigant Consulting Inc., April 2006.

38 Cost savings will be less in the first year and are expected to evolve towards the estimated values as the CCA ramps up its sourcing of renewable energy over the next decade. While the community may be hoping to receive the bulk of the savings, it may be prudent to place some or all of the savings in the first several years in a rainy day fund.

with public power like Alameda and Palo Alto did not experience extreme price spikes or blackouts. As a hedge against future electricity price shocks and disruptions, Oakland should encourage local solar production. In the wake of the crisis, the California legislature passed AB117 to enable communities to reclaim control of their energy systems and insulate themselves against future energy crises. Community Choice Aggregation, as defined by AB 117, permits any city, county or city and county to aggregate the electric loads of residents, businesses and municipal facilities to facilitate the purchase and sale of electrical energy. *(See Appendix for detailed explanation of Community Choice Aggregation)*

The City of San Francisco, Marin County, the San Joaquin Power Authority and a number of other jurisdictions in Edison and Sempra service territories are already moving ahead to implement their own CCA programs.

Employment Implications of Community Choice Aggregation

Proposals for an East Bay CCA currently include deriving a large percentage of power generation from wind farms in Southern California (in the Tehachapis). This Task Force urges any Easy Bay CCA implementation to support local job creation as much as possible by deriving the greatest possible share of power generation from local renewable energy sources, especially solar photovoltaics. Local solar would generally be more expensive than wind generation from the Tehachapis, so we cannot recommend eliminating the "Tehachapis" option altogether. However, we urge Oakland City Council to place a bias on local solar as much as possible.

Develop a comprehensive taxation program for all fossil fuel energy sources through a set of regional and municipal initiatives

An opportunity exists for Oakland to play a leadership role in developing a carbon tax that includes transport fuels. Carbon taxes are now getting attention as a policy mechanism for reducing CO2 emissions on the national, state, and local levels. In 2006, Boulder Colorado became the first municipality to impose a carbon tax with the 60% passage of the Climate Action Plan tax. San Francisco recently proposed a carbon tax. Neither cover transport fuels. *(Examples of some types of carbon tax programs are in the Appendix)*

Taxing fossil fuel use would lead to behavior changes; people and organizations use price signals to make decisions and develop daily routines. Higher gasoline prices reduce driving. Higher prices for fossil fuel generated electricity would decrease its use and increase the development of green energy. Since the proposed tax is regressive, there would need to be an affordability component. For fees associated with home gas/electricity use, the tax could exempt those with lifeline gas/electric service. For vehicle fees, revenues generated should go towards projects that improve public transit overall and with a focus on communities which have relatively poor alternatives to driving.

Oakland should put together a comprehensive taxation program for all fossil fuel energy sources through a set of regional and municipal initiatives. The taxes could be based on either CO2 emissions or energy content and would address the consumption of gasoline, oil, natural gas, and fossil fuel-fired electricity by residential, commercial, and industrial customers. On a municipal fossil fuel electricity and natural gas tax, Oakland should collaborate with PG&E and the Bay Area Air Quality Management District to get

the legislative authority to assess the tax. MTC and the Bay Area Air Quality Management District are likely to collaborate on getting legislative approval for a 10-cent climate impact fee on gasoline with the revenues hopefully funding a series of programs that help reduce transportation contributions to climate change.[39] Oakland should support this initiative.

In the event that this effort does not come to fruition, Oakland could work with the Transport and Land Use Coalition, the Metropolitan Transportation Commission, the Bay Area Air Quality Management District, the City of Berkeley, and other interested municipalities on a regional gas tax; a regional fee would be more effective than a local tax as people already drive out of their way for cheaper gas.

Move towards a model City fleet

- Reduce the size of the City fleet through partnerships with car sharing groups
- Increase biodiesel use in City diesel vehicles
- Require best in class purchases, with priority given to electric and plug-in hybrid electric vehicles as appropriate
- Reduce or eliminate City-subsidized vehicles and parking for city employees
- Serve as a test bed for the demonstration of testing of new vehicle technologies

One element of Oakland's transportation footprint that the City has direct control over is its own vehicle fleet. The City currently maintains a fleet of just over 1700 vehicles. Of these, 45% are cars, 20% are light trucks and vans, and 15% are heavy trucks and construction equipment. The City's fleet vehicles are driven approximately 8.8 million miles per year.[40]

The City has launched a pilot program with City CarShare. The program has just over 30 employees currently enrolled and the City expects that this will increase as the size of the fleet is reduced through the removal of underutilized fleet vehicles.[41] We encourage the City to explore options to expand this program further as discussed in item #3.

The City could reduce oil usage in its heavy trucks and construction equipment through increased use of biodiesel. Oakland anticipates using B5 , some time in the future but has no solid plan because of costs associated with preparing vehicles and fueling sites. We encourage the City to utilize biodiesel from reclaimed waste oil for this use, as discussed. In addition, we encourage the City to give preference to using biodiesel that is locally produced. The city of Berkeley successfully completed a conversion of their diesel fleet vehicles to 100% biodiesel in 2003 but subsequently started using low sulfur diesel to mitigate problems identified in 2005.[42] Berkeley is now using B20 (20% biodiesel) for its fleet and its recycling program is considering moving to a higher percentage of biodiesel in the future.[43] Oakland should consult with Berkeley staff to identify best practices and a target biodiesel percentage for the City diesel fleet.

When the City is purchasing new fleet vehicles, the City should employ a best in class fuel economy rule, were feasible. While plug-in hybrids are not yet here, they will be available in the next several years. There is significant variation in the fuel economies of vehicles available in each class. For example, the highway fuel economy rating for a midsize car

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39 http://findarticles.com/p/articles/mi_qn4176/is_20071107/ai_n21086874

40 Data from memo from Public Works Agency to the Office of the City Administrator, "Report and Action on Fleet Usage, City CarShare Pilot Program, Commute options, Vehicle Locators Using Satellite Technology, and Fleet Replacement Needs, November 13, 2007.

41 Ibid

42 http://www.ci.berkeley.ca.us/news/2003/06jun/061903biodieselconversion.html

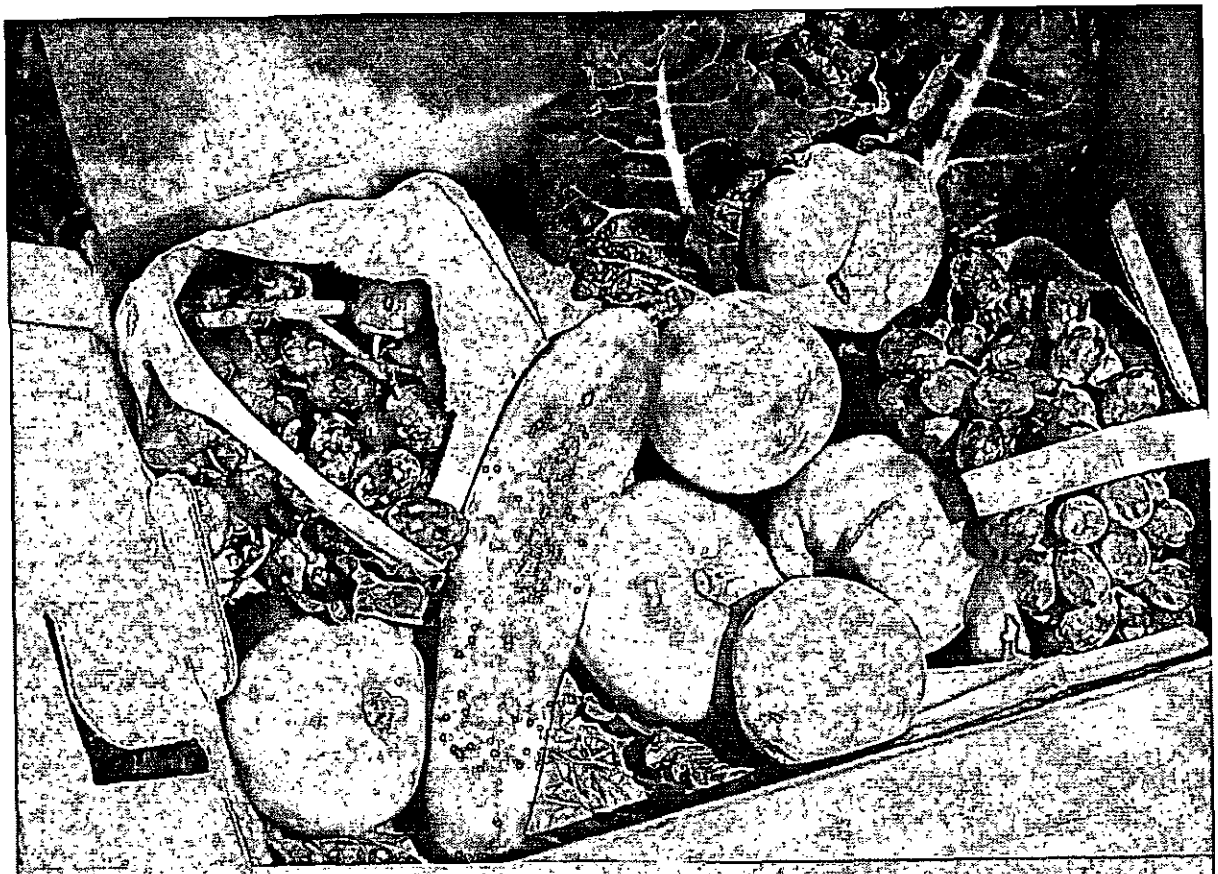
43 Conversation with the Executive Director of the Ecology Center, Martin Bourke, January 2008.

ranges from 33 miles per gallon down to 16 miles per gallon (excluding hybrids). The range for SUVs is from 28 miles per gallon down to 13 miles per gallon (excluding hybrids).[44] Using best in class purchasing rules could reduce fuel use significantly and save the City money.

The City provides subsidized parking and vehicles for a number of City employees. The City should examine the necessity of this perk and explore the feasibility of subsidizing transit usage by these employees where possible and making vehicles available either through the City's fleet or through a car share program.

In the longer term, the City of Oakland should be looking beyond efficient petroleum-based vehicles to vehicles that run on electricity and other alternative fuels. The City's fleet is an excellent opportunity to test new vehicle technologies in under real-world conditions. The City should seek opportunities with vehicle manufacturers to acquire and test demonstration vehicles. This could include electric vehicles and, even, hydrogen fuel cell vehicles. A number of manufacturers have worked with cities and private organizations to develop these partnerships. This type of arrangement can provide the City with an opportunity to identify long-term vehicle acquisition goals that will result in a more sustainable fleet.

44 Data from EPA at: http://www.fueleconomy.gov



BUY SMART

CHAPTER 3

Food and Materials

SUMMARY OF TASK FORCE RECOMMENDATIONS

Develop a localization strategy that includes food, energy and vital goods

Maximize local production of food

Promote forms of agriculture that rely on fewer fossil-fuel inputs, by encouraging the school district, private schools, and government programs purchase local organic food

Change consumption patterns in order to use fewer plastics and chemicals

Purchase products without petroleum content, preferably those where food crops are not the petroleum substitute

Reduce consumption overall (buy goods with less packaging, encourage employees and citizens to carry reusable bags)

Explore alternatives for road paving materials

Synopsis

Since the close of World War II our global economic system has evolved into a highly amplified version of David Ricardo's model of specialization and comparative advantage, which mandates that a given economy should focus on producing what it does the best and trade for all other goods and services.[45] While liberalized trade has certainly expanded markets, helped weed out inefficient operations, and kept prices of many consumer goods low, it has come at a steep cost. The rusty shells of once prosperous manufacturing plants illustrate a loss of economic diversity, declining real wages and working conditions, increasing inequality, offshoring of environmental degradation and a concentration of financial capital and economic decision-making in global corporations whose wealth dwarfs the gross national product of entire countries. Moreover, the increased trade inherent in such a specialized global economy assumes low transportation costs – an assumption that leaves us highly vulnerable to the rising price of oil and while fueling increasingly dramatic climate change.[46]

Over the past two decades, a burgeoning global movement of policy-makers, non-governmental organizations, businesses leaders, and concerned citizens has been advancing a new paradigm of economic development based on economic localization – restoring the capacity of communities to sustainably feed, clothe, house, and power themselves with the know-how, natural resources, and financial capital inherent to their own bioregions and the people who reside there. Economic localization holds great promise as a strategy for creating a wider range of local green jobs & institutions, stabilizing our economy from global shifts, increasing the diversity and quality of goods and services we consume, distributing economic benefits in a more equitable manner, and protecting our environment.[47]

Economic localization is the process by which a region, county, city, or even neighborhood frees itself from an over-dependence on the global economy and invests in its own resources to produce a significant portion of the goods, services, food, and energy it consumes from its local endowment of financial, natural, and human capital. Economic localization is achieved in three dimensions: (a) localization of goods and services; (b) localization of economic decision-making, and (c) localization of the urban landscape.[48]

Economic localization brings production of goods and services closer to their point of consumption, reducing the need to rely on long supply chains and distant markets so that communities and regions can, for the most part, provision themselves. While it is certainly not possible to produce every kind of good and service locally, economic localization seeks to restore an efficient balance between local production and imports that reduces local economic vulnerability and minimizes the negative social and environmental externalities of free trade.[49]

The Task Force recommends the development of a comprehensive localization strategy that includes targets for food, energy, and vital goods. Such a strategy would include policies to use local materials, rebuild the capacity for local production, encourage locally owned

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45 Ricardo, David, Principles of Political Taxation and Economy, reprinted in J.R. McCulloch, The Works of David Ricardo (London: Jon Murray, 1888), 77.

46 John Talberth, Aaron Lehmer, David Room, Brian Holland, Kirsten Schwind, Jennifer Bresee, and Connie Galambos, Building a Resilient and Equitable Bay Area -*Toward a Coordinated Strategy for Economic Localization*, May 2006.

47 Ibid.

48 Ibid.

49 Ibid.

businesses and cooperatives, educating the public on the importance of localization, and creating local markets for locally produced goods. A first step in the development of a localization strategy would be to do an inventory of Oakland's assets (e.g., vacant parcels, municipal rooftops) that could be used to forward localization.

The localization strategy would also apply to collaborations with other cities such as the Green Economic Corridor initiative with Berkeley, Emeryville, and Richmond. In this case, localization should be an explicit focus, especially in the creation of locally-owned businesses and cooperatives and procurement policies to favor local producers.

Employment Implications of Localization

As stated above, economic localization offers many potential benefits for high quality employment and business development. In particular, food localization implies a change in the economics of food production. Ideally, we can phase out low-margin, commoditized mass-scale production reliant on low wage migrant laborers and day laborers and phase in food production more reliant on locally accountable employers with higher quality jobs, higher quality food, and environmentally sustainable agricultural practices. Some investigation is called for regarding potential increases in the cost of food in order to protect low-income residents most vulnerable to increases in the basic cost of living.

Maximize local food production

Conventional industrial agriculture is entirely dependent on fossil fuels. Artificial ammonia-based nitrogenous fertilizers use natural gas and atmospheric nitrogen as raw materials. Much of the world's cropland has been so chemically exhausted, its topsoil so weathered and destroyed that, without these artificial fertilizers (or extensive work to rebuild the topsoil), and it cannot produce crops in the volume or at the pace that the world's population now requires. The use of farm machinery impelled by internal-combustion engines, which run on petroleum products, has freed up millions of acres of cropland from the need to grow feed for draft animals; those acres now grow food for the burgeoning human population. Without oil, farming may again require animal power, and traction animals will need to be fed. Farms always attract pests; however, the growing of monocrops, which is made economically necessary by mechanization, attracts huge numbers of insect pests. Oil provides the feedstock for making the cheap pesticides used to control these swarms of pests and to maintain crop yields. As a result of all of this, approximately ten calories of fossil fuel energy are currently needed to produce one calorie of food energy in conventional American agriculture.[50]

With the global proliferation of the industrial-chemical agriculture system, the products of that system are now also traded globally, enabling regions to support human populations larger than local resources alone could support. Those systems of global distribution and trade also rely on oil. Within the US, the mean distance for food transport is now estimated at 1,546 miles, though this distance varies greatly depending on the food item–233 miles is the average for pumpkins, 2,095 miles for broccoli.[51]

50 Mario Giampietro and David Pimentel. Food, Land, Population and the U.S. Economy, Carrying Capacity Network, 11/21/1994

51 R. Pirog and A. Benjamin, 2003. Checking the Food Odometer: Comparing food miles for local versus conventional produce sales to Iowa institutions. Ames, Iowa: Leopold Center for Sustainable Agriculture. Available at: http://www.leopold.iastate.edu/pubinfo/papersspeeches/food_travel072103.pdf.

Oakland's situation is typical of that of modern cities: most food is imported from elsewhere, and most of that food is grown using prevailing fossil-fuel intensive methods. This implies a critical vulnerability for the people of Oakland. The Task Force therefore recommends:

- maximizing local production of food in order to reduce the vulnerability implied by a fossil fuel based food delivery system; and

- promoting forms of agriculture that rely on fewer fossil fuel inputs.

While efforts along these lines require support at the Federal and State levels, some local polices could be extremely helpful:

- Promote Farmers' Markets and CSAs (community-supported agriculture) in any way possible.
- Promote gardening, including community gardens, rooftop gardens, and school gardens
- Favor local and organic production over conventional food for school food programs and other purposes that are under the control or influence of the City government.

Oakland is already pursuing such efforts as a result of Resolution #79680 C.M.S., (December 2005), in which the City Council authorized the Mayor's Office of Sustainability to develop an Oakland food policy and to plan for thirty percent local area food production. As a consequence of that Resolution, UC Berkeley graduate students Serena Unger and Heather Wooten conducted the Oakland Food System Assessment.[52] Since these efforts were initiated in response to concerns somewhat different from those motivating the work of this Task Force, further study is warranted to determine whether additional strategies are required to ensure food security for the citizens of Oakland in an increasingly oil-constrained world.

A recent study showed that Oakland's Eastlake neighborhood could produce enough leafy green and yellow vegetables on its rooftops to satisfy the recommended consumption for approximately 8,500 residents, which is more than that neighborhood's population.[53] In the study scenario, 18 rooftops would have hydroponic rooftop gardens and ten would have intensive vegetable rooftop gardens, providing approximately two acres of growing area and yielding approximately 273,373 pounds, or 124 metric tons, of vegetables annually. The higher-than-average yield would result from year-round growing methods as well as the higher relative productivity of hydroponics.

Reduce the amount of plastics and chemicals used by the City

About 5% of oil consumed in the US annually (about one million barrels per day) goes into the making of plastics and chemicals. While this is a small proportion of the total oil consumed, it is crucial to the American economy.

Petrochemicals are made by "cracking" oil, a process of breaking hydrocarbon molecules apart with intense heat and sometimes a chemical catalyst, and are the raw materials for an uncountable number of materials both frivolous and essential. Some of the more common petrochemical building blocks of our industrial world are ethylene, propylene, and butadiene.

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52 Available at: http://oaklandfoodsystem.pbwiki.com/

53 Tapping the Potential of Urban Rooftops: Rooftop Resources Neighborhood Assessment, Bay Localize, Holmes Culley, Design, Community & Environment, October 31, 2007.

Further processing of just these three chemicals produces products as common, diverse, and important as disinfectants, solvents, antifreezes, coolants, lubricants, heat transfer fluids, and of course plastics.

One of the most important petrochemicals, ethylene, can polymerize into polyethylene, a plastic used to make everything from toys to food containers and furniture. Ethylene can also react with chlorine to produce ethylene chloride, which can then be used to produce vinyl chloride, or its polymerized form, polyvinyl chloride (commonly known as PVC or vinyl), another important plastic. PVC is used in everything from building construction materials to clothing to toys.

Clearly, future oil supply problems will affect the entire chain of industrial products that incorporate these chemicals. The citizens and economy of Oakland will obviously be impacted, and it is difficult to imagine a scenario in which that impact could be entirely eliminated absent policies and practices implemented globally and nationally. Nevertheless, there are things that Oakland could do to reduce its vulnerability to these economic consequences of oil depletion.

Needed policies and practices must focus on two strategies: (1) identifying alternative materials made from renewable sources to replace petrochemicals; and (2) devising strategies to reduce the amount of materials required and consumed.

Plastics and other products now composed of petrochemicals can be made from corn, hemp, and other crops. A few companies such as NatureWorks (a division of Cargill) and Dow Chemical are actively pursuing such alternatives.

From the standpoint of consumers, it would be a tragic mistake for the industry to postpone making the lengthy and costly transition to alternative feedstocks until forced to do so by rising oil prices and shortages. In that case, entire supply chains might be disrupted, causing costs for products of all kinds to rise precipitously. Instead, the shift must be proactive, encouraged through corporate and government policy. As one example: last year, WalMart announced its intention to use biorenewable materials for all of its packaging.[54] This will have an extremely large impact on the "alternative" packaging market, due to the sheer volume of goods sold through WalMart. Research into and development of alternative materials could provide Oakland with an opportunity for jobs growth.

The replacement of petrochemical-based materials with renewable alternatives is not without problems, however. To replace the entire stream of plastics and other oil-based materials in the US economy with crop-based materials would further strain an agricultural system already stressed by the increasing mandate to produce biofuels in addition to food. Moreover, many chemical processes that incorporate renewable feedstocks are energy-intensive, which means that the expansion of those processes would entail increased energy consumption.

Therefore the second strategy, finding ways to use less, will be of even greater importance in the long run. In the opinion of the Task Force, the banning of the use of plastic bags in Oakland represents a good first step in this direction.

54 http://www.csmonitor.com/2006/0306/p13s02-sten.html

Explore non-oil based alternatives for road paving materials

One of the two most important road-paving materials is asphalt (the other is cement, a natural gas dependent material), which is a low-grade component of petroleum. As higher grades of oil will likely tend to be used preferentially during the coming years, it is unlikely that asphalt prices will rise as high or as quickly as those for light-sweet crude. Nevertheless, prices for conventional road materials will escalate substantially, making road building and road repairs more problematic as time goes on.

The following are recent figures for oil-based materials usage for road building and repairs in Oakland, as supplied by the Public Works Agency.

Road repairs: how Oakland uses oil-based materials

Oil-based materials usage in tons for the City of Oakland, 2002–2007

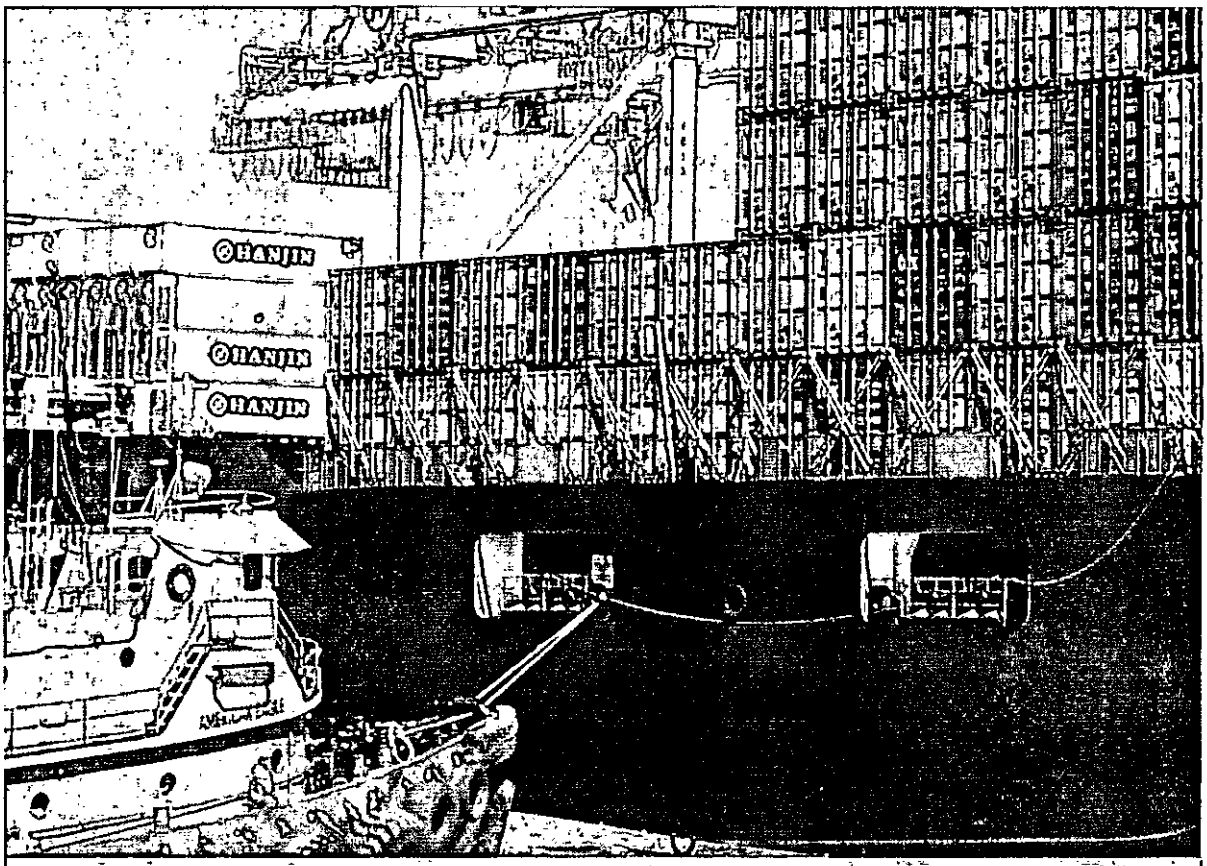
	FY 02–03	FY 03-04	FY 04–05	FY 05–06	FY 06–07	Total
Asphalt concrete (AC) CIP overlays	30,098	17,165	42,377	10,205	14,032	113,877
AC for pothole crew	2,400	2,400	2,400	2,400	2,400	12,000
AC for base repair / speed bumps	5,000	5,000	5,000	5,000	5,000	25,000
Rubberized AC	24,869	17,388	12,850	0	0	55,107
Cold patch AC	112	90	90	135	158	5,858
Slurry seal	127	180	0	0	0	307
Parks, streetscape, and sewer	6,709	8,174	6,508	6,242	6,000	33,633
Total	**69,315**	**50,397**	**69,225**	**23,982**	**27,590**	**240,509**

Source: Public Works Agency

NOTE: In FY 04–05, the Public Works Agency began the Street Resurfacing ACTIA Project, which accounts for the higher AC Overlay quantities.

The Task Force recommends that the City of Oakland investigate alternative materials for these purposes. One promising possibility is a material made from clay mixed with alkaline chemicals, which is being used increasingly in Zambia and other African nations. According to one report, the new material, besides being environmentally friendly, is both cheaper and more durable than conventional asphalt.[55] If EBMUD goes down the path of gasification, the ash from the gasification process could be used for making asphalt.

55 http://allafrica.com/stories/200706220926.html



MOVE WISELY

CHAPTER 4

The Port Of Oakland

SUMMARY OF TASK FORCE RECOMMENDATIONS

Prepare contingency plans for the Port

Develop a Green Port Plan that emphasizes oil independence as well as public health

Plan for cold ironing systems from the grid

Use electric vehicles at the airport

Support High-Speed Rail in California

Synopsis

Any discussion of oil independence for Oakland must discuss the Port. Long distance transportation has long been a centerpiece to Oakland's economy. This has been true since the completion of the Oakland Long Wharf became the western terminus of the transcontinental railroad in 1869. The Port of Oakland was originally established in 1927 as an independent department of the City of Oakland and functioned as a self-supporting company with no tax revenue. The idea at the time was to separate the Port from City government as much as possible in order to protect the Port's business and operations from corrupt City officials.

The Port is the fourth busiest container port in the United States and it is crucial to the economy of Oakland, Northern California and the western Central States.[56] In 2006 about 2000 vessels were unloaded and loaded at the Port. The Port directly provides 60,000 jobs locally and 700,000 in the region. The Port of Oakland supports billions of dollars in economic activity each year, and indirectly generates significant state and local tax revenues for the City of Oakland.[57] The Port of Oakland has eight marine terminals, (between 50 and 150 acres in size), twenty berths and two railroads that access the freight.

The Port of Oakland has also operated the Oakland Airport since 1927. It is the second largest airport in the Bay Area. The airport operates more than 200 flights a day and has an annual freight volume of 1.4 billion pounds.[58]

The governing body of the Port of Oakland is the Port Commission, not the City Council. However, given the major importance of the Port of Oakland to the City's economy – and given the Port's major role in oil consumption and emissions in the Bay Area – the Task Force felt it was crucial to devote time to making some recommendations related to the Port (see the factors in the box below that affect decision-making at the Port). We urge the City Council to ask the Port Commission to act on these recommendations.

Key structural, political, and economic factors at the Port of Oakland

There are a number of factors that should be considered in determining how to support the Port's economic objectives while addressing the issues of oil independence. Key among them are:

- Competition with other ports is a major consideration for any economic decisions
- The Port's governance is highly independent from oversight by the Mayor and the City Council
- The Port acts mostly a landlord, not an actual operator of goods movement activities
- Controversy around the Port's fossil fuel consumption is largely centered on local/ regional air quality and public health impacts, not economic vulnerabilities or global climate change
- The Port of Oakland is in the midst of major growth and expansion
- A unique labor and community agreement exists to govern the Port's expansion

56 Oakland brings in 8% of California's cargo imports while Long Beach and Los Angeles bring in the majority at 89% (the remaining 3% come from other CA ports).

57 Meeting July 30, 2007. Port of Oakland Meeting at the Port of Oakland Offices.

58 http://www.city-data.com/us-cities/The-West/Oakland-Economy.html

The Port Working Group had the opportunity to attend meetings and a workshop with Port representatives. The Task Force vice-chair, additionally, made a presentation to the Port/ City Liaison meeting in November 2007.

Long distance transportation and passenger travel is vitally important to the Port of Oakland, and by extension to the City. This long distance transportation relies heavily on bunker oil for ships and jet fuel (kerosene-type fuel) for airplanes. Although the volume of freight and travel is still growing, restrictions in the availability and/or increases in the price of these petroleum based fuels will have a dampening impact.

Employment Implications of these Port Recommendations

The Port of Oakland and the related cluster of trade and logistics commerce is a major employer for Oakland and the region. There is an implicit contradiction here -- activity at the Port is largely based on a globalized economy that in turn relies on cheap energy and plentiful oil. As fuel becomes scarcer and more expensive, the impacts on the globalized economy are unpredictable. Needless to say, the outlook is not positive. One of our key recommendations is for the City and Port to conduct appropriate studies to better understand the likely impacts on our local economy, thus to investigate how to apply the Port toward appropriate and sustainable uses for trade and logistics.

Prepare contingency plans for the Port

The Port is a huge aspect of the City of Oakland's economy. Since the Port's maritime and aviation activities are so dependent on petroleum products, any significant change in fuel price or availability is likely to have a large impact on those activities.

The City should urge the Port to prepare contingency plans for changes in fuel price and availability. Fuel prices will be strongly influenced by the international petroleum market, and recent trends suggest that *dramatic changes will occur.* The Port should investigate the potential impacts of price increases and/ or reduced fuel supplies on shipping volume and airport activity. Literature on the elasticity of shipping volume and airline traffic relative to fuel prices should be reviewed and evaluated with respect to current and projected Port activities. If the analysis demonstrates that a sudden fuel price increase is likely to reduce Port activities substantially, the Port and its stakeholders should respond quickly by using a prepared contingency plan.

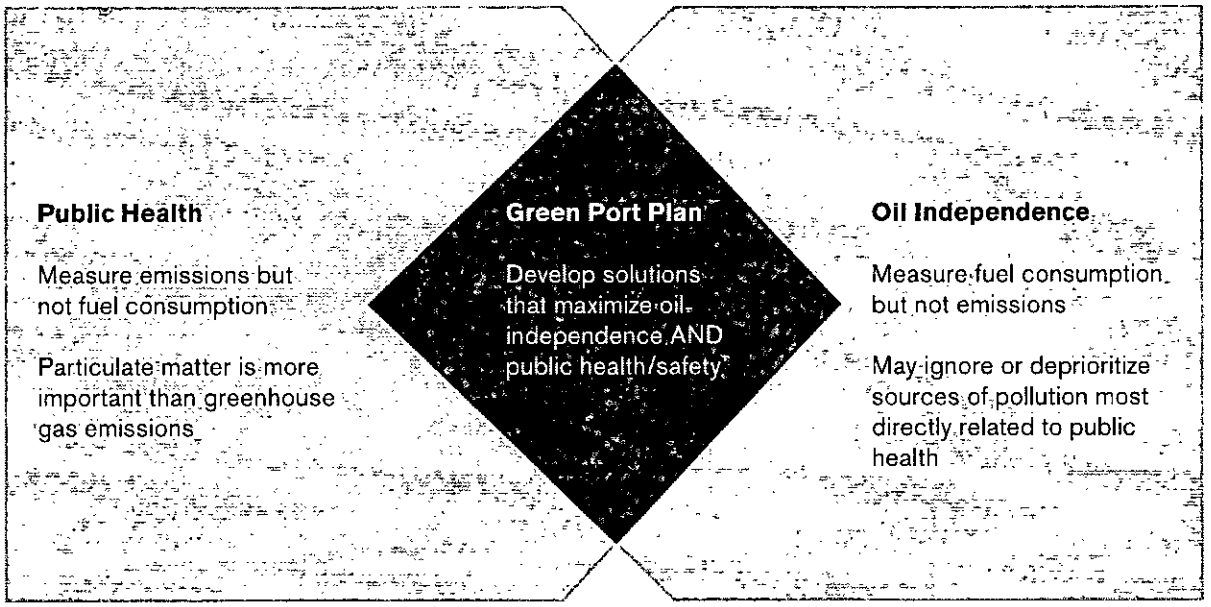
Since marine shipping and aviation operate as part of national and international transportation/ trade networks and sometimes under unique rules, much of this activity is beyond the influence of the City Council or the Port Commission, however, we do urge both entities to support policies (even at a national or international level, when possible) to reduce oil consumption in the goods movement sector and in aviation. This could take the form of increasing efficiency of transportation systems and reducing the amount of transportation needed.

Develop a Green Port Plan that emphasizes oil independence as well as public health

One of the Port's current goals is to reduce pollution, including emissions of particulate matter. This is a critically important public health measure that should be accelerated and enforced to the highest degree possible for the sake of vulnerable residents in Oakland.

However, the Port must also develop, deploy, and enforce measures that are aimed at reducing petroleum dependence. There will be many synergistic and mutually reinforcing measures that can address both public health as well as petroleum dependence. The Port should avoid solutions that address only one or the other.

Come together: a Green Port Plan that does both



Key components of a Green Port Plan are listed in the Appendix.

Plan for cold ironing systems from the grid

Cold ironing is the practice of plugging into an electrical source while docked instead of burning diesel or other dirtier fuels. The South Coast Air Quality Management District (Southern California) estimates this practice can reduce pollution by two-thirds if the source of electricity is a coal-fired plant, and up to 100% if renewable sources are used.

The Port of Oakland is currently testing a cold ironing system that uses natural gas. This is a positive step forward. However, over the long term, the global markets for fuel face a "peak natural gas" problem very similar to the "peak oil" supply curves. The Task Force recommends planning for cold-ironing systems that tie into the City's main electrical grid (relying on the grid to have a large and increasing mix of renewable energy sources).

Other major ports such as Los Angeles/Long Beach are implementing cold ironing,[59] so it is clear that the necessary technology exists, despite the lack of standardization amongst ships' electrical systems in the global goods movement network. *(Further discussion of cold ironing is in the Appendix)*

Use electric vehicles at the airport

Through air quality mitigation projects of the Airport Development Program, the Airport is already engaged in activities that reduce petroleum use. Analogous to cold-ironing ships at the maritime port, the Airport provides preconditioned air and ground power to airplanes while they are at gates.

Additionally, there are many vehicles used at the Oakland International Airport that should be electrified, and could be electrified without major disruption to the existing systems and infrastructure. Aside from airplanes, there are small vehicles that move luggage, fuel, the planes themselves, and are used for other purposes, many of which use diesel or other fossil fuels. The Airport has adopted some measures to convert ground support equipment to electricity or alternative fuels. These measures should be encouraged and broadened. There should not be any vehicles, other than airplanes, that use fossil fuels.

Roadway traffic carrying passengers and employees to and from the airport could also be electrified. There are plans to replace the AirBART shuttle that runs between the Coliseum BART station and the Airport with an elevated automated transit system. All vehicles used for Airport operations should be changed over to create an electric fleet. Finally, the Port should provide incentives that will motivate companies that run vans and buses around the Airport (to parking lots, hotels, and off-site destinations) to purchase electric vehicles.

Support High-Speed Rail in California

Since 1996 California has had a High-Speed Rail Authority. It was created to build an electric high-speed train network connecting California's major metropolitan areas.

An electrified High-Speed Rail system in California would be dramatically more sustainable than the many short haul passenger flights between Northern and Southern California, from an oil consumption and climate change perspective, and would be competitive in terms of price and convenience for travelers. The California High-Speed Rail Authority has estimated that between 35% and 56% of passengers would be diverted from air to rail travel in various

59 http://www.sustainableshipping.com/news/2006/11/66248

markets, depending on relative fares.[60] Moving some of these passengers to High-Speed Rail would significantly reduce airport congestion as well as oil usage. The Transport and Land Use Coalition projected that High-Speed Rail would reduce seven million tons per year of greenhouse gases in California by 2030.[61] This could be as high at ten million tons if there is a larger switchover of passengers due to higher cost of air and auto travel.

One of the thirty stations for the projected high-speed rail network would be in Oakland. The City of Oakland and the Port should support the California High-Speed Rail Authority to assure that current intrastate air travel from the Oakland Airport is well served by the high-speed trains. It might be possible for the Port of Oakland to become an operator of the Oakland station of the California High-Speed Rail system.

While it is obviously not within the jurisdiction of the Oakland City Council to build High-Speed Rail for the state, every local and regional governmental body should support the funding and an expeditious completion of the project.

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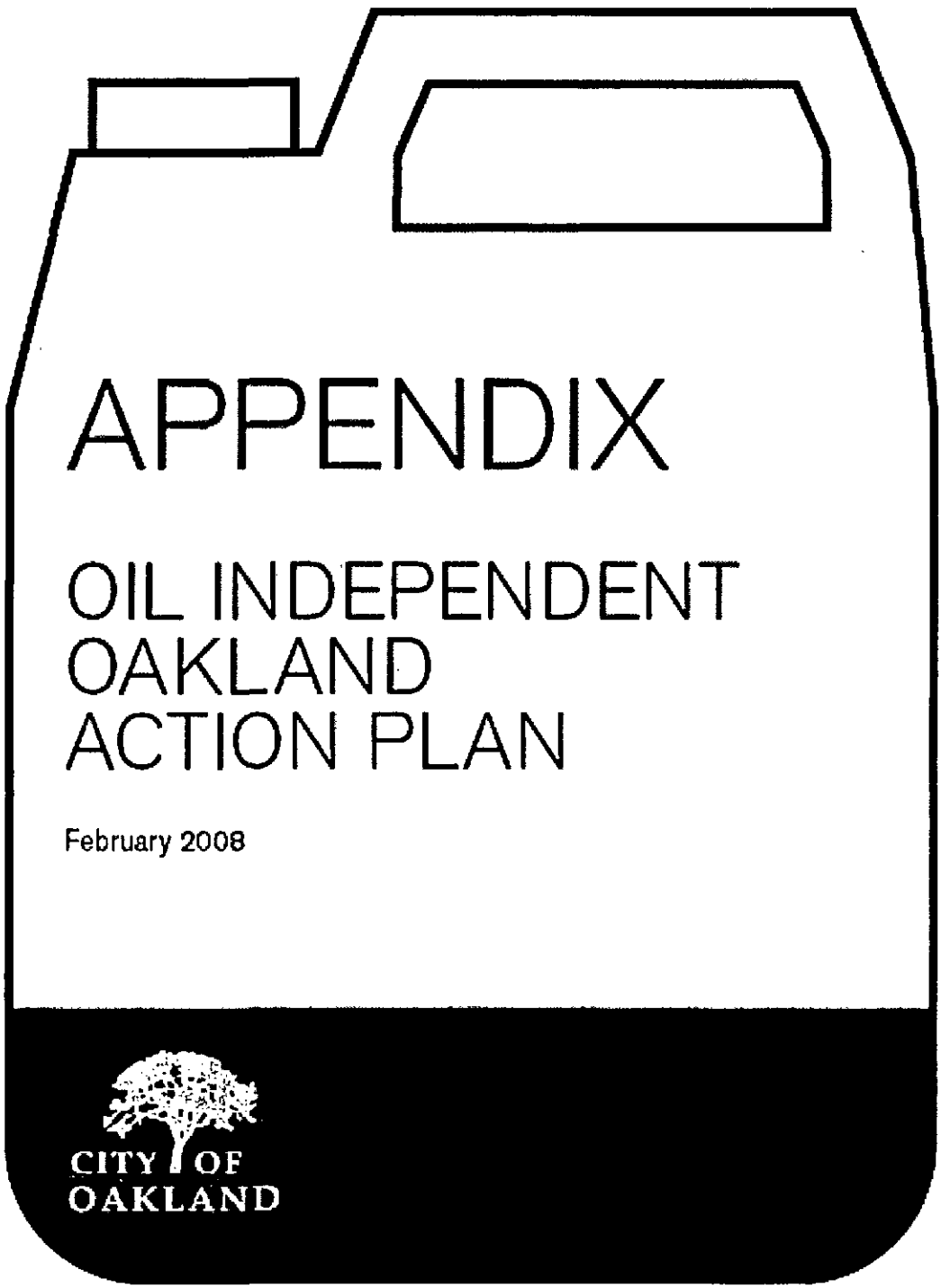
60 Prepared for the Regional Airport Planning Committee of the Metropolitan Transportation Commission, "Overview of Alternatives to New Runways as Analyzed in the 2000 Regional Airport System Plan (RASP)", September 2006, p.24:
http://apps.mtc.ca.gov/meeting_packet_documents/agenda_721/9.06_RAPC_RASP_Report.doc

61 http://www.transcoalition.org/c/sus_hsr/hsr_ghg.pdf



APPENDIX

OIL INDEPENDENT OAKLAND ACTION PLAN

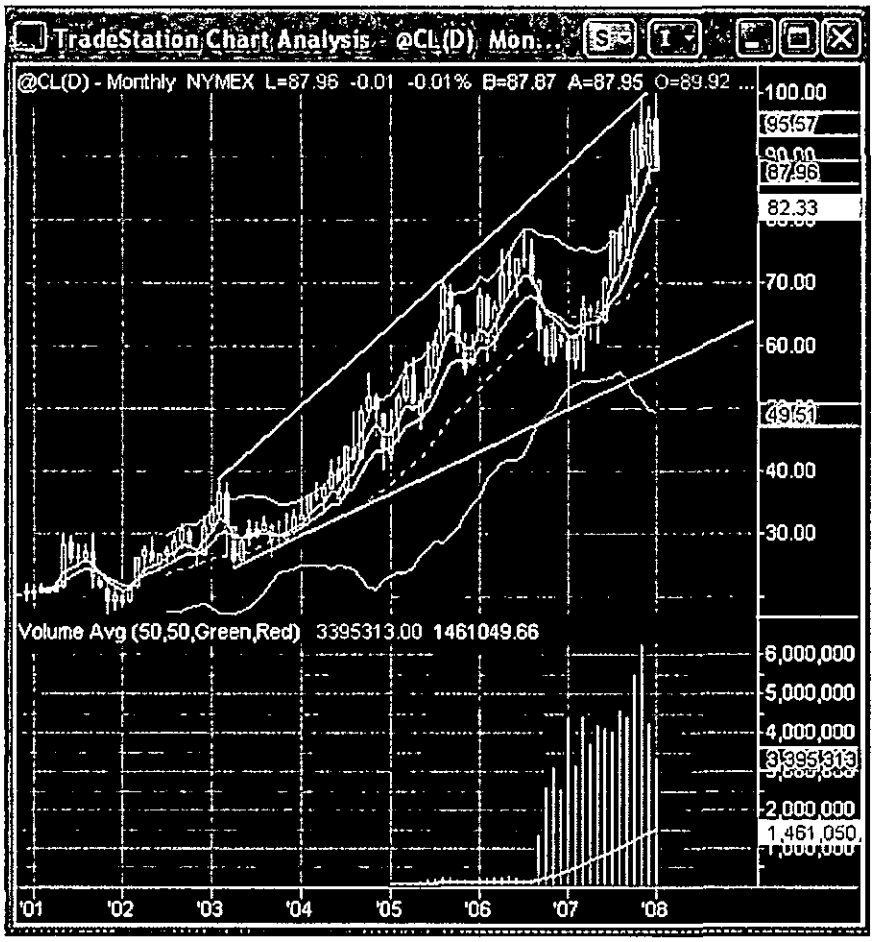
February 2008

CITY OF OAKLAND

OVERVIEW AND BACKGROUND

Oil Price Volatility

As shown in the monthly crude oil chart below, the price and volume traded in crude oil has been growing exponentially since 2003. As indicated by the widening of the upper and lower price trend lines, the volatility is increasing. For the past six months, prices have been above the 5-month moving average (show in white) and been riding up the upper Bollinger band (two standard deviations above the mean, shown in pink). While it would not be surprising if prices touched down to the lower Bollinger band sometime in the next year, it seems highly likely given the current price trajectory that prices will exceed $150 per barrel in the next couple of years. Given the supply and demand situation and assuming continued global oil dependence, prices may only begin to stabilize when significant "demand destruction" occurs, most likely in the form of a severe economic recession or depression.



Source: www.AViewFromthePeak.com

Oakland's Energy Consumption and Greenhouse Gas Emissions Inventory

It became clear to the Task Force that if Oakland wants to reduce its dependence on oil, then the Task Force needed to focus its attention on transportation. *The main driver of oil dependence turns out to be.....the driver.* Although specific information about oil use in Oakland was not readily available, the following information was provided:

ICLEI[1] data in the *Baseline Greenhouse Gas Emissions Inventory Report*, dated December 2006 showed that for the year 2005, transportation accounted for 47% of Oakland's greenhouse gas emissions, the largest single source (see major sources in Table below). The transportation sector includes emissions from private, commercial and fleet vehicles driven within the City's geographical boundaries on city streets (these calculations do not include trains, boats, or freeways) as well as the emissions from transit vehicles and the City-owned fleet. Fuel for transportation comes overwhelmingly from oil.

Although energy consumption in the residential, commercial and industrial sectors accounted for 53.1% of greenhouse gas emissions (this does not include mobile sources like trucks), little, if any, of that energy was generated from oil. The City of Oakland receives its electricity from Pacific Gas & Electric Company (PG&E) and much of that utility's electricity is generated from natural gas, hydro power and nuclear sources. If oil were a primary energy source for PG&E's electricity or if the reduction of carbon emissions were the goal of the Task Force, recommendations would include building retrofitting and design to reduce electricity demand (green building).

The table below shows Oakland's total greenhouse gas emissions from all major sources for the year 2005, as computed by ICLEI. In the base year 2005, the City of Oakland emitted approximately 2,248,667 tons CO2 "equivalents" (meaning that estimates for six greenhouse gases were converted into a carbon dioxide volume) from the residential, commercial/industrial, transportation and waste sectors. Emissions from highways are not included, but these estimates but will be available in 2008.

City of Oakland 2005 Community Emissions Inventory

Potential Sources	Equiv. eCO2 (tons)	energy (MMBtu)	% of total emissions
Residential	580,710	8,838,214	24%
Commercial/Industrial	709,199	10,282,046	29%
Transportation	1,138,767	13,250,101	47%
TOTAL	2,248,667	32,370,361	100%

ICLEI, *Oakland: Baseline Greenhouse Gas Emissions Inventory Report, December 2006*

[1] The International Council for Local Environmental Initiatives, known as ICLEI, was founded in 1990, and works with local and regional governments worldwide on sustainability issues, including climate protection

CHAPTER 1

Energy Consumption in the Urban Village

MEMORANDUM
TO: OAKLAND OIL INDEPENDENCE BY 2020 TASK FORCE
FROM: RICHARD J. SMITH
RE: How Green Building Can Save Oakland 160,000 Barrels Oil Per Year

The purpose of this memo is to support recommendations of the Land Use and Transportation Subcommittee of the Oakland Oil Independent by 2020 Task Force to reduce oil consumption by 1) identifying and build upon Urban Villages in Oakland with existing density, 2) Improve multifamily design guidelines to consider green building materials, renewables and car free by choice options (Oil Independent Oakland (OIO) By 2020 Task Force).

Eco-City Builders, a non-profit educational and consulting organization, has prepared a draft Eco-City Map of 13 Urban Villages in Oakland. These neighborhoods have their origin in the historic trolley lines and have been institutionalized in zoning. Each village center is an existing commercial district. Currently they are home to about 117,000 of Oakland's 415,000 people (Oakland, California - Wikipedia, the free encyclopedia). According to the 2000 Census, about 70% of the 52,000 households in these urban villages are multifamily and 30% are single family(Census Bureau Home Page).

First, this memo estimates that the average Oakland single family household in 2000 consumed 25 barrels of oil per year (bbl/y) compared to only 16 bbl/y in average households in multifamily units. This is a function of the equivalent energy costs of heating, lighting and otherwise living in a 1600 square foot unit vs. 1000 sq. ft. unit on average. Although little current grid power comes from petroleum, it is still a partial substitute for other energy sources used to power the grid. In 2000, Urban Village Homes consumed 880,000 bbl/year. In a business as usual scenario assuming exponential growth, this will go up to 1 million bbl/year. If each home derived 50% of it's heating needs from solar thermal to substitute for natural gas, this would reduce consumption to 840,000 bbl/year. If every housing unit derived 80% of it's electricity from solar PV, this could be reduced to 740,000 bbl/year. If we get only half the homes to add solar the savings would be 80,000 or 130,000 bbl/year respectively.

In these households, 66% drive to work for an average of 30 minutes at 20 m.p.g. each way which consumes almost 990,000 bbl/year gasoline. By 2020 with the same mix of housing and assuming population trends are reflected in housing starts, this consumption will decrease to 650,000 bbl/year if we assume car efficiency improves on average to 35 m.p.g. However, more can be done by increasing the proportion of multifamily housing. Studies in the Bay Area have shown that increasing density reduced vehicle miles traveled per year and in turn oil consumption(Burer et al. 2004). If we can increase the proportion multifamily by 20% in Urban Villages that do not already have greater than 90% multifamily housing, we can reduce consumption to 590,000 bbl/year. The additional savings over projected fuel efficiency changes would amount to 56,000 bbl/year. An average mix of solar homes plus 20% increased density would save 160,000 bbl/year. Although much more work would need to be done to

become oil independent, land use and green building can yield substantial savings. Further research would be needed to balance that with the costs of these changes.

Table 1: Assumptions of BBL Costs of Average Home from Consumer Footprint

	Ave. sq. ft.	Tons CO2/HH	BBL	Sq Ft.
Average Size Single Family Home	1600	10.5	25	396
Average Multi-Family Unit	1000	6.7	16	1700

Table 2: Adding Renewables to New and Existing Housing by 2020

Ave. sq. ft.	Power Source	Tons CO2/HH	BBL	BBL Savings of Average MF Unit	BBL Saving Compared to Grid
1600	Grid	10.5	25		
1000	Grid	6.7	16	9	
1600	Tons CO2/hh-.8 Solar PV	8.4	20		5
1000	BBL-.8 Solar PV	4.8	11	9	5
1600	tons CO2/HH-.5 Solar Thermal	8.4	20		5
1000	BBL-.5 Solar Thermal	5.8	14	6	2

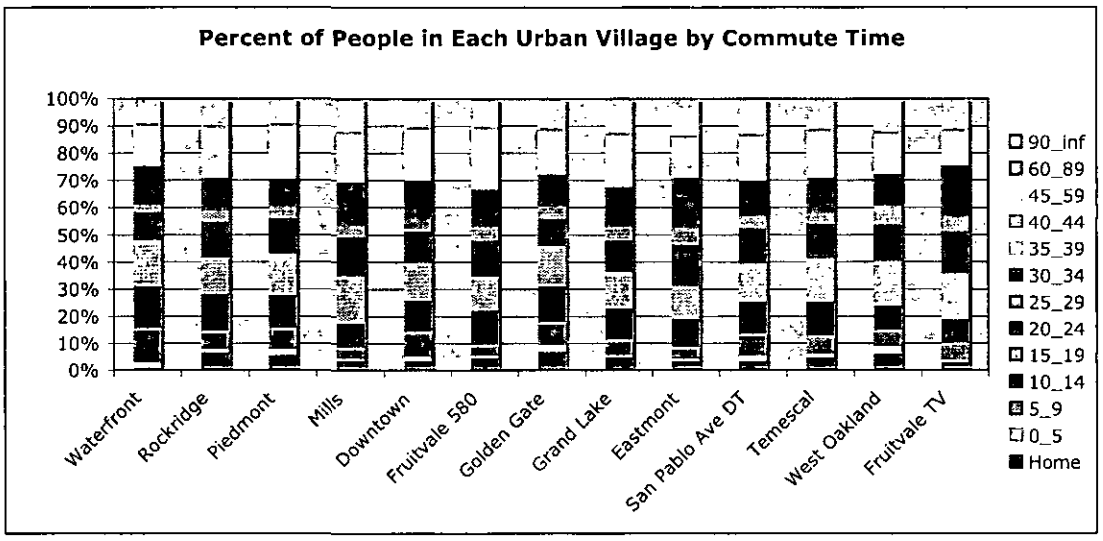
Table 3: Energy Savings for Solar Improvements by Village in BBL eq.

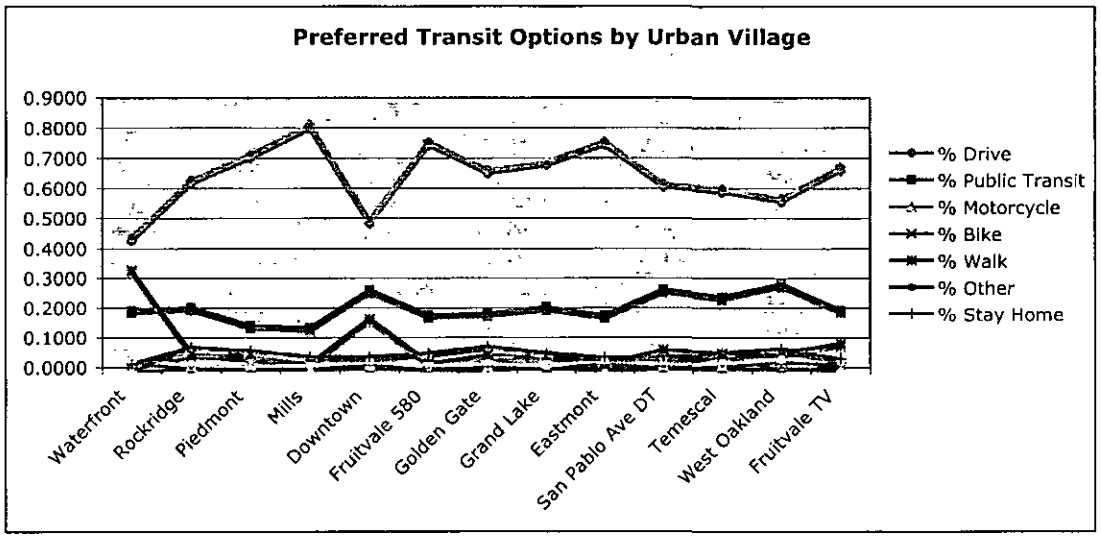
	2000	2000	2020 BAU	2020 BAU	2020 PV	2020 PV	2020 ST	2020 ST
NAME	BBL_SF_00	BBL_MF_00	BBL_SF_20	BBL_MF_20	BBL_SF_PV	BBL_MF_PV	BBL_SF_ST	BBL_MF_ST
Waterfront	693	16340	794	18706	635	12861	635	16368
Rockridge	74146	36546	84882	41838	67906	28764	67906	36609
Piedmont	25749	19504	29478	22329	23582	15351	23582	19537
Mills	66406	31500	76021	36062	60817	24792	60817	31554
Downtown	7159	131802	8196	150887	6557	103735	6557	132026
Fruitvale 580	46381	22812	53096	26116	42477	17954	42477	22851
Golden Gate	26166	19142	29954	21914	23964	15066	23964	19174
Grand Lake	21646	148402	24781	169891	19825	116800	19825	148654
Eastmont	32235	15514	36903	17760	29522	12210	29522	15540
San Pablo Ave DT	21839	30583	25001	35011	20001	24070	20001	30635
Temescal	48757	65228	55816	74673	44653	51337	44653	65339
West Oakland	11307	5372	12944	6149	10355	4228	10355	5381
Fruitvale TV	28272	32162	32366	36819	25893	25313	25893	32217

Table 4: BBL Gasoline Consumed by Driving: Current, Business as Usual and 20% Denser

NAME	Ave Minues/day	BBL at 20 mpg	Drivers 2000	BAU BBL at 35 mpg	Proj Drivers_2020	New Mix BBL at 35 mpg	New Drivers with 20% increase MF
Waterfront	27	11757	816	7691	934	9295	1129
Rockridge	28	116846	7893	76437	9036	82754	9783
Piedmont	27	55265	3803	36153	4354	32270	3886
Mills	31	124127	7473	81200	8555	68429	7210
Downtown	29	73016	4707	47765	5389	51187	5775
Fruitvale 580	31	91220	5626	59673	6441	53746	5801
Golden Gate	28	37537	2529	24556	2895	23768	2802
Grand Lake	31	204102	12481	133517	14288	106254	11371
Eastmont	32	51806	3022	33890	3460	30519	3115
San Pablo Ave DT	31	48953	2947	32023	3374	30025	3163
Temescal	29	110595	7237	72348	8285	70325	8053
West Oakland	30	12900	823	8439	942	10162	1135
Fruitvale TV	31	60085	3716	39306	4254	34955	3783
TOTAL	30	994661	63073	650678	72206	594777	66003
Change from 2000				343983	9133	399884	-2930

Exponential Growth Rate for Alameda County R= 0.006761416




Preferred Transit Options by Urban Village
0.9000
0.8000
0.7000
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
Waterfront
Rockridge
Piedmont
Mills
Downtown
Fruitvale 580
Golden Gate
Grand Lake
Eastmont
San Pablo Ave DT
Temescal
West Oakland
Fruitvale TV
% Drive
% Public Transit
% Motorcycle
% Bike
% Walk
% Other
% Stay Home

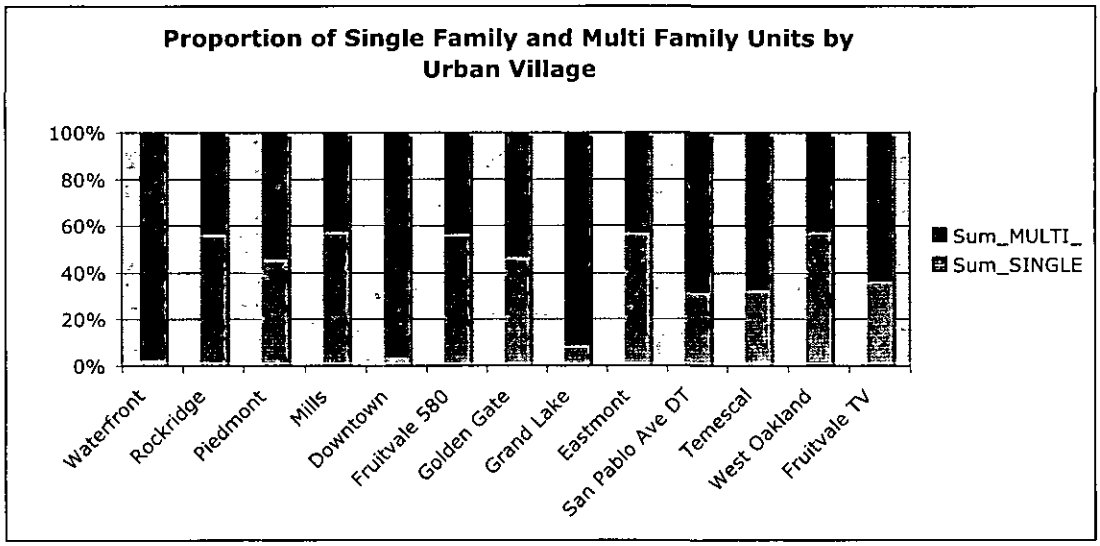
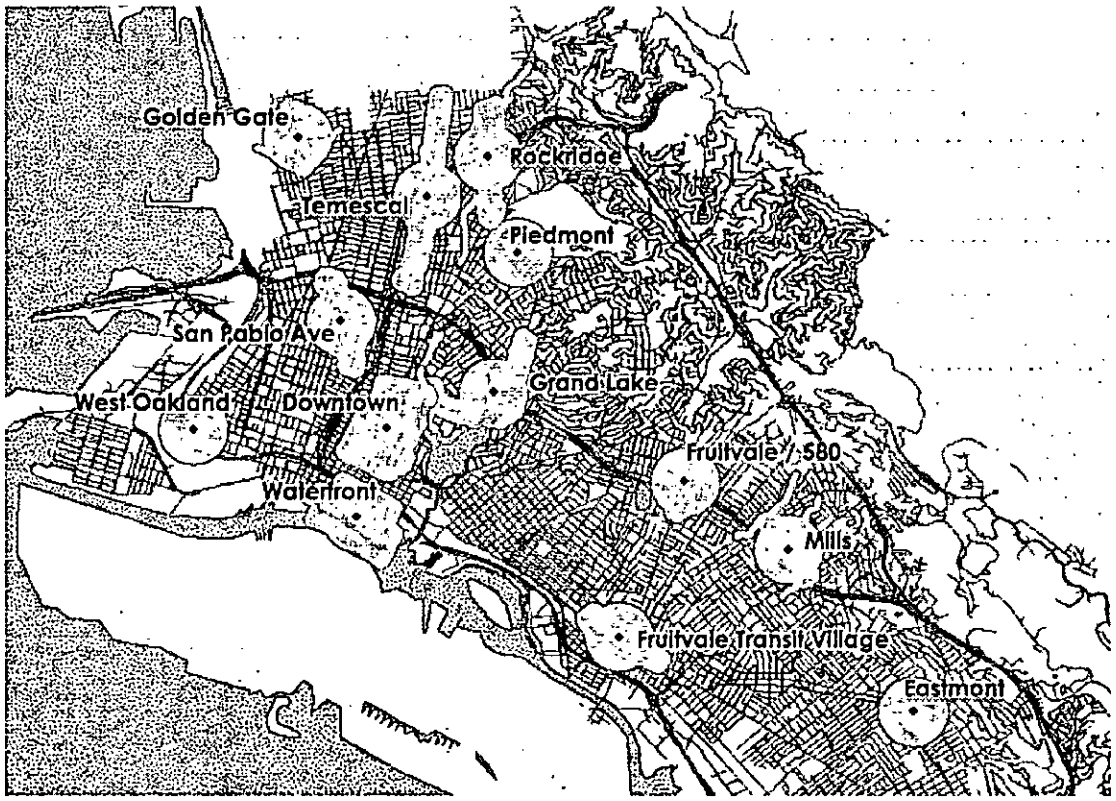

Proportion of Single Family and Multi Family Units by Urban Village
100%
80%
60%
40%
20%
0%
Waterfront
Rockridge
Piedmont
Mills
Downtown
Fruitvale 580
Golden Gate
Grand Lake
Eastmont
San Pablo Ave DT
Temescal
West Oakland
Fruitvale TV
Sum_MULTI_
Sum_SINGLE

Table 5: Oakland's Urban Villages



References

Burer, M., D. Goldstein, and J. Holtzclaw. 2004. Location Efficiency as the Missing Piece of The Energy Puzzle: How Smart Growth Can Unlock Trillion Dollar Consumer Cost Savings. *Breaking Out of the Box, Proceedings of the 2004 ACEEE Summer Study on Energy Efficiency in Buildings.*

BTS | Table 4-23: Average Fuel Efficiency of U.S. Passenger Cars and Light Trucks. http://www.bts.gov/publications/national_transportation_statistics/html/table_04_23.html (accessed December 6, 2007).

California Department of Finance: Demographic, Economic, and Financial Research. http://www.dof.ca.gov/HTML/DEMOGRAP/ReportsPapers/Projections/P1/P1.php (accessed December 6, 2007).

Census Bureau Home Page. http://www.census.gov/ (accessed December 6, 2007).

Consumer Footprint Calculator (application/x-shockwave-flash Object). http://bie.berkeley.edu/calculator.swf (accessed December 6, 2007).

Ecocity Builders - Projects. http://ecocitybuilders.org/OUVillages.html (accessed December 6, 2007).

GISC Data Sets. http://www.gisc.berkeley.edu/data/datasets.html (accessed December 6, 2007).

A Lifecycle Assessment of U.S. Household Consumption: The Methodology and Inspiration Behind the "Consumer Footprint Calculator". http://repositories.cdlib.org/ucias/breslauer/8/ (accessed December 6, 2007).

Oakland, California - Wikipedia, the free encyclopedia.
http://en.wikipedia.org/wiki/Oakland,_California (accessed December 7, 2007).
Oil Independent Oakland (OIO) By 2020 Task Force.
http://www.oaklandnet.com/Oil/default.html (accessed December 6, 2007).
Schecter, David, Richard Smith, and Jason Hayter. 2006. *Oakland Urban Villages Project:Green Mapping & Site Selection Analysis.* UC Berkeley.

Charrette Workshop held on Friday, September 14, 2007

Held with participation of OIO Task Force, Oakland Planning, AC Transit, BART, ABAG, and interested public

Agenda
Oil Independent Oakland (OIO) By 2020 Task Force
Friday, September 14, 2007 *Special Meeting/"Charrette"*

Members:

Jane Seleznow District 1
Louise Bedsworth District 2
Ian Kim (Vice Chair) District 3
James Lutz District 4
Shannon Graham District 5
David Room District 6
Legislative Analyst
Richard Register District 7
Mike Petouhoff At Large
Parin Shah (Chair) Mayor
Vacant Mayor
Richard Heinberg Mayor
Patrick Tang, Esq. Deputy City Attorney
Alice Glasner Public Works

WORKING MEETING

"Coordinating Land Use and Transportation in Oakland"
One Path to Achieving Petroleum Independence
9:00 am to 4:00 pm
Hearing Room 3, City Hall, One Frank H. Ogawa Plaza

AGENDA

1. (9:00 am) Informal gathering of participants and members of the public to meet before the Charrette begins.
2. (9:20 am) Roll Call and Establishment of Quorum.
3. (9:30 am) Informational Presentation of the Oil Independent Oakland (OIO) Task Force on the Purpose and Objectives of the OIO Task Force (by TF members).
4. (10:00 am) Presentation and Outline of Land Use and Infrastructure (LUI) Issues and LUI Working Group Scope and Direction, Relating to the General Plan, Zoning (to bring jobs to residential areas for access by proximity), Design Review Standards for High Density, and Infrastructure (by Mike Petouhoff).
a. Urban Village Mapping Case Study (by Kirstin Miller, Ecocity Builders).

5. (11:00 am) **Discussion:** Seeking Response, Input, and Recommendations from public members in regard to Case Study Presentation and LUI scope.

12 pm – LUNCH BREAK.

6. (1:00 pm) **Discussion:** How can transportation support Urban Villages? (TF members and members of the public.)

7. (1:30 pm) Presentation of Transportation Issues:

a. Presentation of Transportation "Matrix" from OIO Transportation Working Group.

b. Bus Rapid Transit Case Study – Curitiba Brazil DVD (15 min).

c. AC Transit Presentation: Tony Bruzzone will present plans and options for AC Transit Bus Rapid Transit (BRT), and will lead discussion regarding potential areas in which to concentrate bus transit service .

d. BART presentation: BART Planning Staff, including Marianne Payne, Thomas Tumola, Jeff Ordway, and Kenya Wheeler, will address the Regional Rail Plan with respect to Oakland, as well as BART Transit Village standards and projects in Oakland.

e. Association of Bay Area Governments (ABAG) Presentation: Marisa Cravens, ABAG Regional Planner will discuss the ABAG/MTC Regional Transportation Summit scheduled for October 26, 2007, and the "FOCUS" program to designate areas for priority development.

f. High-Speed Rail Presentation by Oakland Planning Department.

8. (2:45 pm) **Discussion:** Seeking Response, Input, and Recommendations from public members in regard to Transportation Issues.

9. (3:15 pm) Roundtable Discussion of the Presentations, Outlines and Recommendations Agendized as Items 3-8 by OIO Task Force Members, with comments from the public.

10. (4:00 pm) Open Forum

A. Specific Coordination Areas from the Charrette

Improved coordination between regional transit agencies and Oakland Land Use Planning efforts might include:

- Work with AC Transit on priority traffic signaling which could increase service by a third
- Create a Joint Powers Authority to streamline Transit Village development
- Coordination of Land Use and Infrastructure with AC Transit and BART future Plans.

Specific areas of regional coordination include:

- Support implementation of the Translink "one-fare" system
- Advocate infrastructure for bus loading stations
- Advocate AC Transit provide the "ribs" that feed into the "spine" of BRT and BART.
- Advocate AC Transit provide shuttle type services within activity nodes (urban villages) and to BART using excess BART parking at night where feasible
- Coordinate transit plans with city infrastructure plans

BRT Coordination

- Telegraph at 49th
- Telegraph at 31st
- International at 34th - Current

Oakland staff should respond to AC Transit's initial thoughts for other transit priority locations:

- 20th Street between SP and Harrison (where AC just spent $4 million to fix the street between Telegraph and Broadway)
- Broadway between 2nd and Grand
- 11/12th between MLK and Oak
- 8th OR 7th between Oak and MLK
- W Grand between Toll Plaza and SP Avenue

Oakland staff should coordinate with the following BART Regional Rail and Transit Village projects:

Short Term

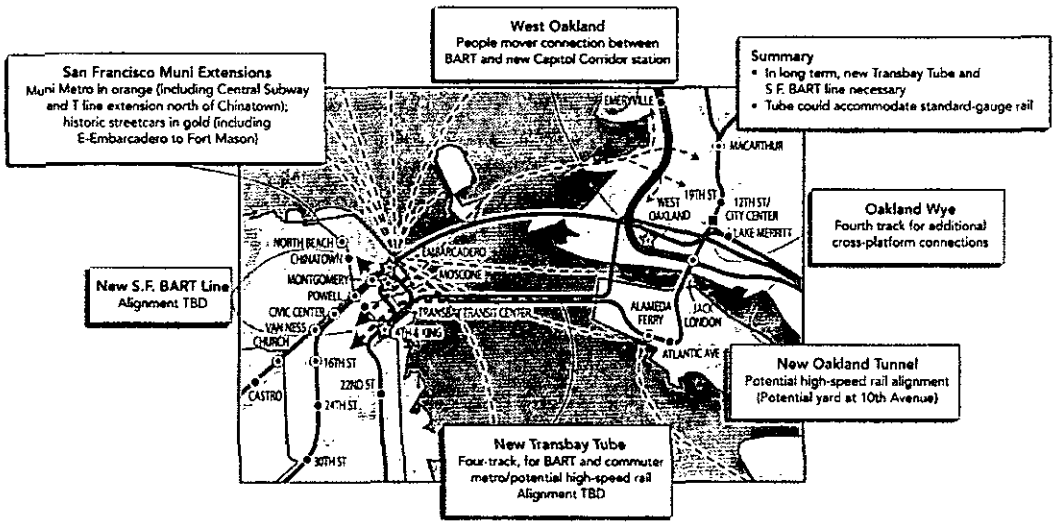
- Corridor Preservation – Oakland Subdivision
- Increase frequency of Capitol Corridor
- Port of Oakland Intermodal Facility and 7th Street Grade Separation

Medium and Long Term

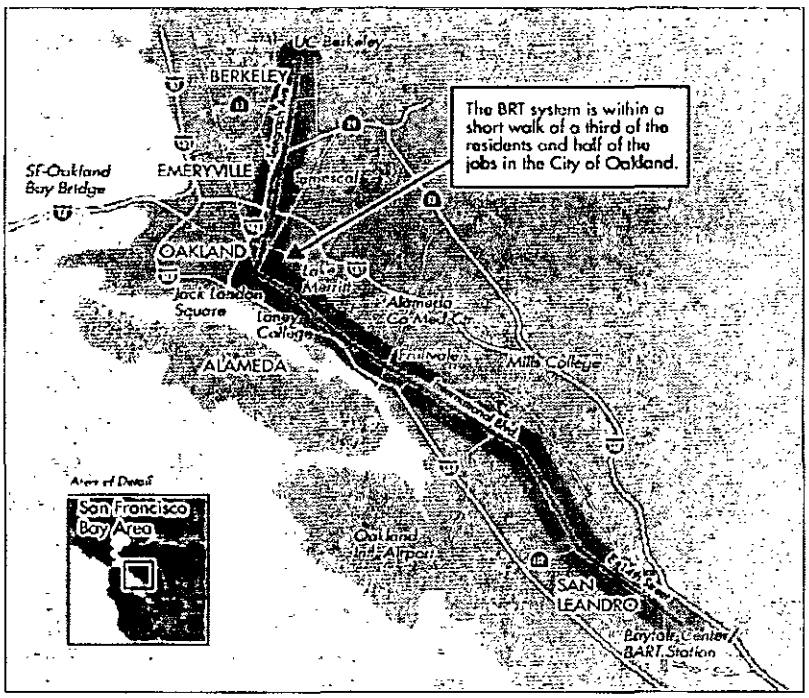
- BART implements Metro vision and 30-year CIP
- Fourth Track in Downtown Oakland
- West Oakland Capitol Corridor Station
- Potential new Transbay Rail / BART Crossing with HSR station at West Oakland BART and train yard in Oakland

Projects/concepts under consideration by regional agencies to improve transportation and regional planning in the Bay Area
See MTC, ABAG, and AC Transit websites for more information.

BART
Regional Rail and High Speed Rail
Focus on Oakland



AC Transit BRT Plan



C. The BART transit village opportunities identified in the Charrette were as follows:

Station	Status	Development Status	Project Value
Fruitvale (Phase I)	Completed	47 rental units, 135,000 sf (37,000 retail, 27,000 office, 71,000 public)	$100 M
Fruitvale (Phase II)	Approved	278-425 units	$130-190 M
MacArthur	Negotiations CEQA	675 units, 34,000 sf retail, 5,000 sf community space	$350 M
West Oakland	Negotiations	1. West Oakland Alliance 2. McGrath Properties	$73 M (both projects)
Coliseum	Negotiations	Oakland Economic Development Corporation and MacFarlane Partners	$341 M (BART land)

For these areas, BART's Transit Village Guidelines, and the ongoing experience of the San Jose-Santa Clara BART Transit Village will be good resources.
All specific plans should be clear in addressing needed public improvements and infrastructure to provide input to the funding strategy outlined below.

Parking and Parking Policy

Parking Policy, Housing Balance

If we are going to redefine a city structure that is less dependent on automobile use, parking policy must be redefined. First we must understand the hidden cost of parking. One study done when Oakland first introduced parking requirements for new multifamily apartments in 1961 shows the impact of parking. Brian Bertha studied projects before and after the change and found that the change increased construction cost by 18%, and that developers had to create larger units with higher rents to recover the cost. Less units per acre resulted in 30% lower densities, and investment per acres dropped 18%. Overall, rents went up and the number of units went down.[2] Similar studies show cost impact on units for sale. Many more examples show the increased cost and that the current systems for retail parking spread the cost for those that park to those that do not require parking. Thus parking needs to be part of our overall affordable housing approach

[2] These studies and others are described in Donald Shoup's book, *The High Cost of Free Parking*, Chicago: Planners Press, 2005.

- Parking requirements for new developments

If we are going to redefine a city structure that is less dependent on automobile use, parking policy must be redefined. It some cities, car ownership is the exception rather than the rule, and parking lots are much less prevalent.

Off-street parking requirements could be reduced immediately for targeted developments or locations where the population drives less. For example, in senior housing, "car- free contracts" for residents are becoming more common. Similarly, housing near transit stations can sensibly qualify lower parking requirements. Then, instead of providing parking spaces, developers can fund streetscape improvements or other amenities which enhance pedestrian, bicycle, and transit friendliness, increasing the attraction to transportation alternatives.

If local grocery shopping and other standard personal needs can be within walking, streetcar, or shuttle distance, a larger number of trips would not require a car at all. The Planning Code could require a broad range of transportation options to be considered in the calculation of required parking spaces, with the goal of reducing the requirement.[3] These could include such things as: in lieu fees to support transit passes, shuttles between transit hubs, car-share programs (some of these options are discussed below).

- On-street parking and other public parking controls

Curbside and garage pricing strategies can also affect parking/driving behavior while raising funds to enhance streetscapes and alternative transportation. Redwood City has enacted a pricing strategy, after working with community stakeholders, which taps into a market-based approach to regulate parking space supply in its downtown area.[4] A measure such as this would need to be implemented through Oakland City Council action to change parking fee structure, rather than Planning Commission action.

Ensuring a Retail Balance

It is important that Oakland improve its retail balance. This means that policy implementation should reflect a balance of local serving and regional retail citywide and in each urban village. This will improve petroleum resiliency, while also increasing local jobs, and strengthening the tax base.

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[3] Additionally, see the Appendix for some information on the hidden costs of parking, as well as work by Donald Shoup, who has written extensively on parking. See http://shoup.bol.ucla.edu/

[4] Dan Zack, Downtown Development Coordinator, Adopted on July 25, 2005,Community Development Department, Redevelopment Division, The Downtown Redwood City Parking Management Plan. (Available at http://www.redwoodcity.org/cds/redevelopment/downtown/Parking/parkingbigpicture.htm.)

Currently, lack of retail balance means more vehicle trips out of the City and greater petroleum dependence. This lack of retail in Oakland means expenditures and sales tax leave Oakland.[5] Conley Consulting Group et al found Oakland retail "leakage" includes:

- $1 Billion/Year in Oakland Residents going outside Oakland
- $10M loss in sales Tax revenue
- About 10,000 potential retail jobs
- Potential for about 5 Million square feet of Space (new construction and construction jobs)

In order to reverse this trend, Zoning Ordinance review with respect to retail balance should consider:

- Placing regional anchored retail near transit (similar to what is done in San Francisco's Union Square and Market Street near Powell Street.)
- Consider transit collocation, or streetcar service to reduce parking requirements
- Encourage retail in a vibrant highly mixed use environment rather than standalone "big box" retail

Include Housing Balance

Housing balance, in this context, is the extent to which urban village zoning includes sufficient and affordable housing in its residential mix. The Oakland City Council should ensure that urban villages house, employ, and welcome a broad socio-economic cross-section of the City's population. There are numerous means to accomplish this goal, many of which have been considered by the City Council, the Community and Economic Development Agency, and the Planning Commission in a range of contexts. These include: reducing the cost of development by replacing some or all parking requirements with enhanced transit access and other transportation alternatives (mentioned in the Transportation section below); where possible, increasing the proportion of affordable units required in residential/mixed use projects; siting these development projects so that they are near amenities such as transit hubs and open spaces; and expanding the types of uses that can be collocated with housing so that a range of employment opportunities are provided in the urban village.

San Francisco has a lower off-street parking requirement than Oakland. Some downtown residential developments do not have to provide parking spaces at all. Considerations for determining parking requirements include: existing traffic congestion, access to transit, commercial versus residential uses, character and scale of neighborhood (See Section 161, (c) through (e) below).

San Francisco is also a leader in the use of "car-share" requirements as a means to reduce traffic and parking demand. Section 166 of its Planning Code (provided below)

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[5] Conley Consulting Group, Strategic Economics, JRDV Architects and Colliers International with the assistance of City of Oakland staff including Claudia Cappio, Gregory Hunter, Aliza Gallo, Keira Williams and Kathy Kleinbaum, September 2007, Upper Broadway Strategy: A Component of the Oakland Retail Enhancement Strategy.

stipulates the car-share parking space requirement for developments containing 50 or more residential units, and defines how implementation is to occur.

Lastly, Section 167 of San Francisco's Planning Code, requires that the cost of parking spaces be separated from the purchase or renting of housing units in some downtown and C-3 districts.

ARTICLE 1.5 OFF STREET PARKING

SEC. 161. EXEMPTIONS FROM OFF-STREET PARKING, FREIGHT LOADING AND SERVICE VEHICLE REQUIREMENTS

The following exemptions shall apply to the requirements for off-street parking and loading spaces set forth in Sections 151 through 155 of this Code. These provisions, as exemptions, shall be narrowly construed.

(a) No off-street parking shall be required for a one-family or two-family dwelling where the lot on which such dwelling is located is entirely inaccessible by automobile because of topographic conditions.

(b) No off-street loading shall be required where access to the lot cannot be provided other than by means of a driveway across a sidewalk 25 feet or more in width from the curb to the front lot line which would cause serious disruption to pedestrian traffic.

(c) In recognition of the compact and congested nature of the downtown area and portions of Chinatown, the accessibility of this area by public transit, and programs for provision of public parking facilities on an organized basis at specific locations, no off-street parking shall be required for any use, in any C-3 Districts, or for any use other than dwellings units where a requirement is specified, in Chinatown Visitor Retail, or Chinatown Residential Neighborhood Commercial Districts.

(d) In recognition of the small scale of development, the desirability of retention and conversion of many existing buildings of established character, the need to relieve congestion, and the provision of public parking facilities on an organized basis at specific locations, no off-street parking shall be required for any use other than dwellings in the Washington Broadway Special Use District Numbers 1 and 2 as described in Section 239 of this Code and in the Chinatown Community Business District, where the size of the lot does not exceed 20,000 square feet.

(e) In recognition of the close neighborhood orientation of the uses provided for in Residential-Commercial Combined Districts of high density, no off-street parking shall be required for any principal use in an RC-4 District for which the form of measurement is occupied floor area, where the occupied floor area of such use does not exceed 10,000 square feet.

(f) In recognition of the policies set forth in the Northeastern Waterfront Plan, a part of the General Plan, the unique nature of the area and the difficulty of providing vehicular access thereto, the Planning Department or Planning Commission in specific cases may determine an appropriate reduction in off-street parking requirements in Waterfront Special Use District Numbers 1 and 3 as described in Sections 240.1 and 240.3 of this Code, in authorizing any principal or conditional use, respectively, under those sections. In considering any such reduction, the Planning Department for principal

uses, and the Planning Commission for conditional uses, shall consider the following criteria:

(1) The anticipated parking demand to be generated by the particular use contemplated;

(2) Accessibility to the proposed site from freeway ramps or from major thoroughfares;

(3) Minimization of conflict of vehicular and pedestrian movements;

(4) The service patterns of forms of transportation other than the automobile;

(5) The pattern of land uses and the availability of parking in the vicinity;

(6) The policies set forth in the Northeastern Waterfront Plan, including policies concerning the relative emphasis that should be given to pedestrian and vehicular movement; and

(7) Such other criteria as may be deemed appropriate in the circumstances of the particular case.

(g) In instances in which all public agencies involved have certified by resolution that the requirements of this Code (i) will be satisfied in whole or in part by public off-street parking facilities constructed or authorized to be constructed for a special assessment district or upon any other basis, or (ii) in C-3 and NC Districts will be satisfied by a requirement of a cash contribution in an amount deemed sufficient to provide for the future construction of the required number of parking stalls, off-street parking required for individual buildings and uses may be correspondingly reduced if the total off-street parking supply in the area will nevertheless meet the requirements of this Code for all buildings and uses in the area.

(h) The off-street parking requirements for dwelling units in the North of Market Residential Special Use District, as described in Section 249.5 of this Code, may be reduced by the Planning Commission pursuant to the procedures for conditional use authorization set forth in Section 303 of this Code. In acting upon any application for a reduction of requirements, the Planning Commission shall consider the criteria set forth below in lieu of the criteria set forth in Section 303(c), and may grant the reduction if it finds that:

(1) The reduction in the parking requirement is justified by the reasonably anticipated auto usage by residents of and visitors to the project; and

(2) The reduction in the parking requirement will not be detrimental to the health, safety, convenience, or general welfare of persons residing or working in the vicinity.

(i) In recognition of the fact that site constraints in C-3 Districts may make provision of required freight loading and service vehicle spaces impractical or undesirable, a reduction in or waiver of the provision of freight loading and service vehicle spaces for uses in C-3 Districts may be permitted, in accordance with the provisions of Section 309 of this Code. In considering any such reduction or waiver, the following criteria shall be considered:

(1) Provision of freight loading and service vehicle spaces cannot be accomplished underground because site constraints will not permit ramps, elevators, turntables and maneuvering areas with reasonable safety;

(2) Provision of the required number of freight loading and service vehicle spaces on-site would result in the use of an unreasonable percentage of ground-floor area, and thereby preclude more desirable use of the ground floor for retail, pedestrian circulation or open space uses;

(3) A jointly used underground facility with access to a number of separate buildings and meeting the collective needs for freight loading and service vehicles for all uses in the buildings involved, cannot be provided; and

(4) Spaces for delivery functions can be provided at the adjacent curb without adverse effect on pedestrian circulation, transit operations or general traffic circulation, and off-street space permanently reserved for service vehicles is provided either on-site or in the immediate vicinity of the building.

(j) The off-street parking requirements for dwelling units in NC Districts, as described in Article 7 of this Code, may be reduced by the Planning Commission pursuant to the procedures for conditional use authorization set forth in Section 303 of this Code. In acting upon any application for a reduction of requirements, the Planning Commission shall consider the criteria set forth below in lieu of the criteria set forth in Section 303(c), and may grant the reduction if it finds that:

(1) The reduction in the parking requirement is justified by the reasonably anticipated auto usage by residents of and visitors to the project;

(2) The reduction in the parking requirement will not be detrimental to the health, safety, convenience, or general welfare of persons residing or working in the vicinity;

(3) The project is consistent with the existing character and pattern of development in the area; and

(4) The project is consistent with the description and intent of the neighborhood commercial district in which it is located.

(k) For arts activities in the RED, RSD, SPD, SLR, SLI or SSO Districts which will operate primarily during evenings and weekends, the Zoning Administrator may reduce or waive the off-street parking requirement when he or she determines pursuant to Section 307(g) that within an 800 foot walking distance from the site the anticipated demand from the proposed project, in combination with the existing nighttime and/or weekend demand for parking within the same geographic area at the time of the permit application,would not exceed 90 percent of the on-street or off-street parking spaces available to the public within the subject area. The applicant shall provide to the Zoning Administrator an acceptable parking survey and study which shows evidence of existing parking resources and demand and anticipated demand generated by the proposed project and nearby land uses. The Zoning Administrator may impose conditions on reduction or waiver of the requirement, including, but not limited to, advertising of nearby transit and parking facilities, requiring valet parking services and/or leasing parking spaces on nearby lots during performance or exhibition activities.

(l) Beginning on the effective date of Ordinance No. 412-88 (effective October 10, 1988), within any South of Market District, the Zoning Administrator, upon application pursuant to Section 307(g), may waive or reduce the required off-street parking for any nonresidential use where he or she determines that: (1) sufficient spaces to replace the waived or modified requirement will be provided within a parking facility open to the public sponsored by the San Francisco Parking Authority or the City and County of San Francisco; (2) it is anticipated that the replacement spaces will be available not more than 10 years after the parking would otherwise first be required to be available; (3) the facility in question is within a walking distance, as defined in Section 159(d), of one-half mile; and (4) the applicant agrees to pay a one-time fee of $15,000.00 (this amount shall be adjusted annually effective April 1st of each calendar year by the percentage of change in the Building Cost Index used by the San Francisco Department of Building

Inspection) for each space as to which the requirement is waived or modified, which fee shall be deposited to the Off-Street Parking Fund for the purpose of acquiring property or rights to property, through lease, purchase, or other means, and design, improvement and maintenance of property, for the general purpose of providing publicly accessible parking within the South of Market Base District, as defined in City Planning Code Section 820 and identified on Sectional Map 3SU of the Zoning Map of the City and County of San Francisco, which parking is reasonably expected to be used by persons who live, work, shop, do business or visit in the South of Market Base District. Said fee, and any interest accrued by such fee, shall be used for the purposes stated herein unless it is demonstrated that it is no longer needed. This payment shall be paid in full to the City prior to the issuance of any temporary or other certificate of occupancy for the subject property.

(m) Within the South of Market Base District, the required off-street parking for any nonresidential principal or conditional use in structures designated as landmarks, as contributory buildings within a historic district identified in the approved South of Market Plan or as significant or contributory buildings pursuant to Article 11 of this Code, may be modified or waived by the Zoning Administrator pursuant to Section 307(g) of this Code when the Landmark Preservation Advisory Board advises that the provision of parking would adversely affect the landmark, significant or contributory character of the structure or that modification or waiver would enhance the economic feasibility of preservation of the landmark or structure.

(n) With respect to dwelling units in the China-town Mixed Use Districts, the parking requirement may be reduced to not less than one space for each four dwelling units, if the Zoning Administrator determines pursuant to Section 307(g) that the reduced parking requirement is sufficient to serve the reasonably anticipated auto ownership by residents of and auto usage by visitors to the project.

(o) Within the South of Market Base District, upon approval by the Zoning Administrator pursuant to Section 307(g), the required off-street parking for bars, restaurants, arts, nighttime entertainment, pool halls, and neighborhood-serving retail or personal service activities may be modified, reduced or waived through participation in a Parking Management Program approved by the Zoning Administrator which may include, but need not be limited to, participation in a coordinated off-site satellite parking facilities program, shuttle service, specified signage and designated advertising procedures.

(Added by Ord. 414-85, App. 9/17/85; amended by Ord. 69-87, App. 3/13/87; Ord. 131-87, App. 4/24/87; Ord. 115-90, App. 4/6/90; Ord. 15-98, App. 1/16/98; Ord. 278-00, File No. 001421, App. 12/15/2000; Ord. 129-06, File No, 060372, App. 6/22/2006)

SEC. 166. CAR SHARING

(a) Findings. The Board hereby finds and declares as follows: One of the challenges posed by new development is the increased number of privately-owned automobiles it brings to San Francisco's congested neighborhoods. Growth in the number of privately-owned automobiles increases demands on the City's limited parking supply and often contributes to increased traffic congestion, transit delays, pollution and noise. Car-sharing can mitigate the negative impacts of new development by reducing the rate of

individual car-ownership per household, the average number of vehicle miles driven per household and the total amount of automobile-generated pollution per household. Accordingly, car-sharing services should be supported through the Planning Code when a car-sharing organization can demonstrate that it reduces: (i) the number of individually-owned automobiles per household; (ii) vehicle miles traveled per household; and (iii) vehicle emissions generated per household.

(b) Definitions. For purposes of this Code, the following definitions shall apply:

(1) A "car-share service" is a mobility enhancement service that provides an integrated citywide network of neighborhood-based motor vehicles available only to members by reservation on an hourly basis, or in smaller intervals, and at variable rates. Car-sharing is designed to complement existing transit and bicycle transportation systems by providing a practical alternative to private motor vehicle ownership, with the goal of reducing over-dependency on individually owned motor vehicles. Car share vehicles must be located at unstaffed, self-service locations (other than any incidental garage valet service), and generally be available for pick-up by members 24 hours per day. A car share service shall provide automobile insurance for its members when using car share vehicles and shall assume responsibility for maintaining car share vehicles.

(2) A "certified car-share organization" is any public or private entity that provides a membership-based car-share service to the public and manages, maintains and insures motor vehicles for shared use by individual and group members. To qualify as a certified car-share organization, a car-share organization shall submit a written report prepared by an independent third party academic institution or transportation consulting firm that clearly demonstrates, based on a statistically significant analysis of quantitative data, that such car-sharing service has achieved two or more of the following environmental performance goals in any market where they have operated for at least two years: (i) lower household automobile ownership among members than the market area's general population; (ii) lower annual vehicle miles traveled per member household than the market area's general population; (iii) lower annual vehicle emissions per member household than the market area's general population; and (iv) higher rates of transit usage, walking, bicycling and other non-automobile modes of transportation usage for commute trips among members than the market area's general population. This report shall be called a Car-sharing Certification Study and shall be reviewed by Planning Department staff for accuracy and made available to the public upon request. The Zoning Administrator shall only approve certification of a car-share organization if the Planning Department concludes that the Certification Study is technically accurate and clearly demonstrates that the car-share organization has achieved two or more of the above environmental performance goals during a two-year period of operation. The Zoning Administrator shall establish specific quantifiable performance thresholds, as appropriate, for each of the three environmental performance goals set forth in this subsection.

(3) The Planning Department shall maintain a list of certified car-share organizations that the Zoning Administrator has determined satisfy the minimum environmental performance criteria set forth in subsection 166(b)(2) above. Any car-share organization seeking to benefit from any of the provisions of this Code must be listed as a certified car-share organization.

(4) An "off-street car-share parking space" is any parking space generally complying with the standards set forth for the district in which it is located and dedicated for current or future use by any car share organization through a deed

restriction, condition of approval or license agreement. Such deed restriction, condition of approval or license agreement must grant priority use to any certified car-share organization that can make use of the space, although such spaces may be occupied by other vehicles so long as no certified car-share organization can make use of the dedicated car-share spaces. Any off-street car-share parking space provided under this Section must be provided as an independently accessible parking space. In new parking facilities that do not provide any independently accessible spaces other than those spaces required for disabled parking, off-street car-share parking may be provided on vehicle lifts so long as the parking space is easily accessible on a self-service basis 24 hours per day to members of the certified car-share organization. Property owners may enact reasonable security measures to ensure such 24-hour access does not jeopardize the safety and security of the larger parking facility where the car-share parking space is located so long as such security measures do not prevent practical and ready access to the off-street car-share parking spaces.

(5) A "car-share vehicle" is a vehicle provided by a certified car share organization for the purpose of providing a car share-service.

(6) A "property owner" refers to the owner of a property at the time of project approval and its successors and assigns.

(b) Requirements for Provision of Car-Share Parking Spaces.

(1) In newly constructed buildings containing residential uses or existing buildings being converted to residential uses, if parking is provided, car-share parking spaces shall be provided in the amount specified in Table 166 (below).

Table 166 REQUIRED CAR SHARE PARKING SPACES

Number of Residential Units	Number of Required Car Share Parking Spaces
0--49	0
50--200	1
201 or more	1, plus 1 for every 200 dwelling units over 200

(2) The required car-share spaces shall be made available, at no cost, to a certified car-share organization for purposes of providing car-share services for its car-share service subscribers. At the election of the property owner, the car-share spaces may be provided (i) on the building site, (ii) on another off-street site within 800 feet of the building site.

(3) Off-Street Spaces. If the car-share space or spaces are located on the building site or another off-street site:

(A) The parking areas of the building shall be designed in a manner that will make the car-share parking spaces accessible to non-resident subscribers from outside the building as well as building residents;

(B) Prior to Planning Department approval of the first building or site permit for a building subject to the car share requirement, a Notice of Special Restriction on

the property shall be recorded indicating the nature of requirements of this Section and identifying the minimum number and location of the required car-share parking spaces. The form of the notice and the location or locations of the car-share parking spaces shall be approved by the Planning Department;

(C) All car-share parking spaces shall be constructed and provided at no cost concurrently with the construction and sale of units; and

(D) if it is demonstrated to the satisfaction of the Planning Department that no certified car-share organization can make use of the dedicated car-share parking spaces, the spaces may be occupied by non-car-share vehicles; provided, however, that upon ninety (90) days of advance written notice to the property owner from a certified car-sharing organization, the property owner shall terminate any non car-sharing leases for such spaces and shall make the spaces available to the car-share organization for its use of such spaces.

(c) Provision of a required car-share parking space shall not be counted against the number of parking spaces allowed by this Code as a principal use, an accessory use, or a conditional use.

(d) The Planning Department shall maintain a publicly-accessible list, updated quarterly, of all projects approved with required off-street car share parking spaces. The list shall contain the Assessor's Block and Lot number, address, number of required off-street car share parking spaces, project sponsor or property owner contact information and other pertinent information as determined by the Zoning Administrator.

(Added by Ord. 217-05, File No. 050865, App. 8/19/2005; Ord. 129-06, File No, 060372, App. 6/22/2006)

SEC. 167. PARKING COSTS SEPARATED FROM HOUSING COSTS IN NEW RESIDENTIAL BUILDINGS

(a) In DTR and C-3 Districts, all off-street parking spaces accessory to residential uses in new structures of 10 dwelling units or more, or in new conversions of non-residential buildings to residential use of 10 dwelling units or more, shall be leased or sold separately from the rental or purchase fees for dwelling units for the life of the dwelling units, such that potential renters or buyers have the option of renting or buying a residential unit at a price lower than would be the case if there were a single price for both the residential unit and the parking space. Renters or buyers of on-site inclusionary affordable units provided pursuant to Section 315 shall have an equal opportunity to rent or buy a parking space on the same terms and conditions as offered to renters or buyers of other dwelling units.

(b) Exception. The Planning Commission may grant an exception from this requirement for projects which include financing for affordable housing that requires that costs for parking and housing be bundled together.

(Added by Ord. 217-05, File No. 050865, App. 8/19/2005; Ord. 129-06, File No, 060372, App. 6/22/2006)

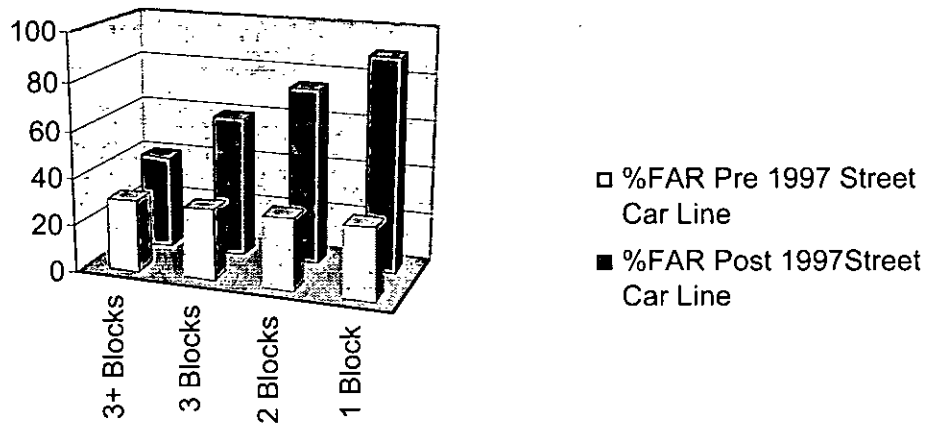
Potential Funding Mechanisms for Urban Villages

Transit and Density Premiums. For example, a transit premium often results from proximity to public transportation. Two Bay Area examples of this are found in a study by the Institute of Urban and Regional Development, at UC Berkeley. The study shows that in San Francisco, for every meter a single family home was closer to a BART station, its 1990 sale price increased by $2,290, all else being equal. In other words, a home 100 meters closer would be worth $229,000 more on average. The study showed that in Alameda County houses located a few blocks from a BART station sold, on average, for 39 percent more than an otherwise comparable house 20 miles from a station. Other studies have found similar results, though the impact is greater in urban areas, than in suburban areas. (These premiums would likely grow even larger as rising fuel prices increase the cost of transportation)

In a similar fashion, entitlements and other factors such as market conditions that allow land to be developed at higher densities, generally raise the value of the land, because more units can be sold or leased per acre. In some cases, the density and transit premiums can work together. An example of this can be seen from an analysis of how implementation of a pubic street car system in Portland increased both the density of development and private development investment in nearby areas.

A study conducted by E.D. Hoovee for Portland Street Car Inc showed that whereas prior to 1997- when the Portland streetcar system was established- buildings were constructed at an average 30% of allowable density, (as measured by floor area ratio [FAR]), but after 1997, projects were constructed at much higher densities, as much as 90% within one block from the alignment. The impact was less further from the line, leveling out at three blocks.

Development Density (in Floor Area Ratio [FAR] vs Blocks from Street Car Line in Portland



Staying with street car impact but looking at a broader range of cities that implemented street car systems, we can gauge the extent the street car system attracted private development investment dollars.

Private Returns on Public Investment
Streetcar Example

	Start of Service	Initial Track Miles	Initial System Cost Per Track Mile ($M)	Initial System Cost ($M)	Development Investment ($M)	Return on Investment ($M)
Kenosha	2000	2.0	3.1	6.20	150	2319.35%
Little Rock	2004	2.5	7.84	19,60	200	920.41%
Tampa	2003	2.4	20.13	48.30	1000	1970.30%
Portland (1)	2001	4.8	11.50	55.20	1046	1794.93%
Portland (ext)	2005	1.2	14.83	17.80	1353	7501.12%

In other words, public investment in transportation infrastructure can result in huge private investment and a vitality and economic activity that raise property values, as well as tax base.

Since there is a huge private sector impact to public transportation infrastructure investments, how can this be leveraged into public private partnerships so that private investments can serve the public good? Especially since Proposition 13 made tax increases more difficult in California, many cities look to private funding mechanisms for many of their infrastructure needs. There are several mechanisms that leverage local, state, federal and private investments.

Development Disposition Agreements (DDAs)
and Development Improvement Agreements
These development agreements are the key document that outline the responsibilities of the parties, when a city authorizes development. In a DDA, the city may ask a developer for such things as environmental cleanup of blighted property, construction of needed public infrastructure, parks, pedestrian friendly streetscapes, creek day lighting, transit infrastructure, buss stops, bike paths, parking, affordable housing provisions, and a commitment to invest in and build certain types of development, such as residential or commercial, at specified densities. In return, the city may authorize certain types of development, and may provide public funding or improvements of their own. Developers may agree to actually design and construct these improvements, or may simply provide specified funding. An improvement agreement gives more specifics, and typically has a performance bond that must be in place before the building permits will be issued.

Thus DDAs can be a vehicle to bring private development funding to address many of the infrastructure and amenity needs for urban villages, and for the positive

transportation hierarchy outlined above. The key point though, is for the city to be able to have a clear plan as to what is to ask for to support a specific vision for the area. This implies that the general plan or the specific plan for the area spells out both a vision and the specific infrastructure to implement it. The **Sunnyvale Downtown Specific Plan** is one example of a plan which coordinates, rail and bus transit, with mixed use development, and has a specific list of public infrastructure and amenities, including open space, pedestrian walkways, pedestrian friendly streetscapes, transit parking, bus stops, and a train station, to support the plan, with a clear indication of who is expected to fund each item. In this way, each developer is able to see clearly what public improvements they are expected to fund, as well as other improvements their project may benefit form, whether they are expected to be funded publicly or by other developers.

Absent this type of plan, the City is vulnerable to land speculation, and thus specific developer proposals, and the resulting DDAs may not reflect, the needs of the community and various development proposals may not fit together to provide all needed public improvements.

A smaller example, but even closer to Oakland, is the Park Avenue Improvement Plan in Emeryville. The city planned and designed a streetscape to improve the pedestrian *experience, including bike racks, street furniture, and lighting, in a redevelopment area.* The city then asks each developer to ether contribute funds or to outright construct, the improvements along their projects frontage, as a condition their project. Though there is cost involved, each project benefits from the improved streetscape.

Another example of the use of development agreements is the Portland Development Commission (PDC), (an organization similar to a redevelopment agency in California). With no funds to bring to the table, PDC negotiated its first Development Agreement, with Hoyle Street Properties (HSP). The land had been zoned for strip malls or big box retail in a blighted previously industrial area. But PDC created a plan for a mixed use community with a street car service. PDC agreed to demolish an overhead highway ramp obstructing the site, and agreed to site a streetcar alignment along the property and to authorize specific development densities. In return, HSP donated the land for the street car right of way, contributed $700,000 to fund its construction, donated 1.5 acres of land for a park, and agreed to meet affordable housing goals. PDC created additional financing for the street car with bonds backed by revenues from city owned parking garages.

PDC next worked toward the waterfront district with similar plans that brought in a $65 million private investment in area infrastructure, and 1 Billion dollars of taxable investment in the water front district. PDC achieved 5,000 units off new housing, 25% of which were affordable. This is clearly an example of a public private partnership for the public benefit.

A city's ability to ask for various provisions is limited by the extent that the overall project is still economically feasible, and California, law also provides there should be some nexus between the improvement requested and the project it serves. Thus it is *important that infrastructure investments are such that they will contribute to the overall*

function of the project, and thus add value to the project. It's tough to ask developers for more concessions, but in fact the data shows that urban villages and transit projects can provide investments with excellent returns.

Two key factors are a clear plan, which has substantial community engagement up front, and that the terms that create land value premiums, are coordinated with those that create burdens on the land value. Otherwise, public funds could be spent on transit infrastructure, and the land value premiums might be lost to land speculators, while developers later have a hard time contributing their share of infrastructure dollars. In a similar fashion, requirements such as affordable housing provisions are best done in a proactive way, across the board, so that they are calculated into the land value, prior to each development deal, rather than trying to extract minor concessions, on a project by project basis, that were not included in the developer's land sale calculations.

While Oakland certainly uses DDAs, the question is if they are done in a way that ties the requirements to the specific types of plans outlined above in a proactive way, since the General Plan is almost a decade old, and the zoning and General Plan are inconsistent.

Redevelopment Agencies and Tax Increment Financing

California land use law has provisions, like many states, for the definition of redevelopment project areas, where conditions of blight necessitate economic development, under the auspices of a redevelopment authority. In these areas, the existing tax base is "frozen" and as public and private investment results in growth and the tax base grows, much of the tax increment is retained within the redevelopment area for further investment. This tax increment represents a significant source of revenue that can finance the growth of urban villages. Redevelopment areas however are not new to Oakland, in fact about 40% of the city's geographic area is defined as a redevelopment area. This represents a significant opportunity. While it is not surprising that the existing tax increment is fully allocated in past budgets, the opportunity looking forward is to shape the 5 year redevelopment plans, in a way that supports development of vitality through urban villages, with specific needs for public improvements and infrastructure clearly laid out. At the same time an urban village approach offers a path to economic growth and vitality consistent with the goals of redevelopment, however, it is key that redevelopment plans do in fact represent the overall needs of the community and reflect the economic development and affordability benefits of an urban village approach. One way to make sure that redevelopment plans do reflect the needs of the community is through public input through Project Area Committees (PACs) which reflect the diverse interests of a community. These PACs are required by law in project areas where a city intends to use eminent domain authority, but are optional elsewhere. Most of Oakland's redevelopment areas do not have PACs currently (three are established). Thus the Task Force recommends establishment of PACs in other redevelopment areas, to ensure redevelopment plans do address community needs, and also that redevelopment plans reflect the urban villages approach and a positive transportation hierarchy, and specifically list needed public improvements that may be candidates for tax increment financing, or private redevelopment financing.

Infrastructure Impact Fees
Assessment districts or across the board infrastructure impact fees is another means of collecting private funding. Oakland has many types of assessments currently in place. Creating ones that support infrastructure have their own challenges. The experience in Portland shows two important principles. One is that the fee should be proportionate the benefit. Assessments that measure frontage along a transit line may be fairer than ones that focus on parcel square footage for example. The other is that vacant parcels end to have the highest land value impact, which should be considered in any scheme to assess costs for an improvement based on benefit. Congestion fees are another source of funds addressed more extensively elsewhere in this report that could also be a revenue source.

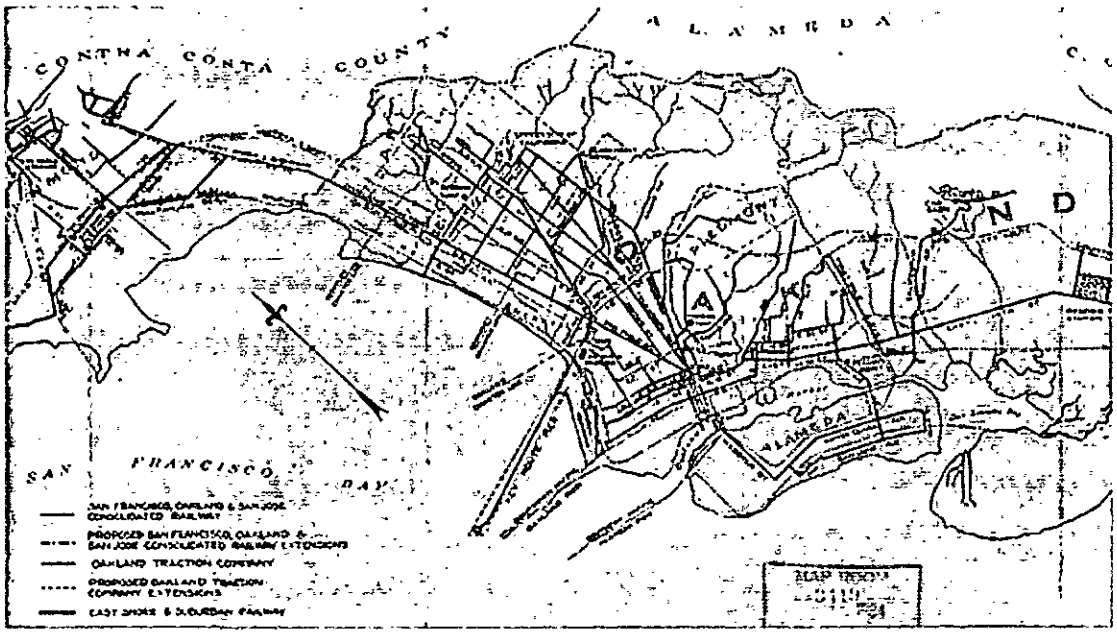
Public Financing
At the same time, financing from other public agencies still must play a major role. One of the key problems here is that many state and federal programs require planning and often even detailed design that first needs to be funded locally. Thus, it is important that some local sources be included in the infrastructure mix to fund this up front effort. Funds such as market rate parking fees, as well as the potential for impact fees or a congestion fee can be a good source for this local funding to address this up front work, and even provide a source for matching funds for outside grants. Then the City is in a good position to vie for regional, state and federal dollars through MTC, ABAG, and the Department of Transportation.

Fourth bore versus streetcars
The City may act in an advocacy role in vying for outside funds form public agencies if it follows the strategy above. The following comparison is offered in that context. Current state Proposition 1 funds plan for a 3-4 Billion dollar expenditure to add a fourth bore to the Caldecott tunnel. This would encourage further sprawl, increasing petroleum consumption, and the addition capacity would eventually be consumed by more sprawl travelers resulting in further gridlock. By contrast, an effort to restore 50 miles of the Key Route system with new streetcars, at $15 million dollars per mile, would cost only $750 million. (Though that cost would likely be shared by public- private partnerships, and the project would be in many small pieces done over time) A streetcar system that mirrored part of the Key Route system would cost about _ the cost of the fourth bore and provide much more sustainable benefit.

A Brief History of the Key Route System

The Key Route System, a privately owned company, provided mass transit in Oakland, Berkeley, Emeryville, Piedmont, San Leandro, Richmond, Albany and El Cerrito from 1903 until 1958. It consisted of local streetcar and bus lines operating solely in the East Bay, and a network of commuter rail and bus lines connecting to San Francisco via ferries and tracks on the lower deck of the Bay Bridge. At its height in the 1940s, the Key Route System had over 66 miles of track that connected communities from Richmond to San Leandro, and connected them to San Francisco.

The Key Route System's commuter train system was dismantled in 1958 after years of declining ridership, and due to the effort of National City Lines, a General Motors affiliate which bought the system in the late 1940s, to petition the public utility board to abandon the last rail lines. In 1949, a Federal Court convicted General Motors, Standard Oil of California, Firestone Tire and others of criminally conspiring to replace electric



transportation with gasoline or diesel powered buses, and to monopolize the sale of buses and related products to local transit companies throughout the U.S. They were fined $5,000. State planners anxious to embrace California's postwar love for the automobile also pushed to have the track across the Bay Bridge and street rights of way removed to increase highway and street capacity. Local governments in the East Bay attempted to purchase the Key Route System, but were unsuccessful. In 1960, its assets were sold to a newly formed public agency, AC Transit.

Supporting Transit Policy

For a successful urban village, the OIO Task Force includes recommendations to promote and improve local transit options. Berkeley includes an "eco-pass" program in its General Plan with the goal of increasing transit ridership and reducing traffic.

City of Berkeley Transportation Element of General Plan

Policies and Actions

Public Transportation

Policy T-3 Eco-Pass City Program

Increase transit use and reduce automobile traffic and congestion in Berkeley by creating an Eco-Pass program.

Action:

A. Work with AC Transit, BART, neighboring jurisdictions, major employers, and neighboring transit districts to establish an "Eco-Pass" program for Berkeley employers that would allow pass holders free unlimited rides on AC Transit and/or BART. Once the program is established:

1. Provide Eco-Passes for all City employees.

2. Establish participation in the Eco-Pass program as a condition of approval for all new businesses with over 50 employees.

3. Encourage existing area employers, particularly major employers such as UC Berkeley, Berkeley Unified School District, Lawrence Berkeley National Laboratory, and Alta Bates Medical Center, to join the program.

4. Contact all employers with 50 or more employees to encourage their participation in Eco-Pass.

5. Work with the participating transit agencies to offer a neighborhood Eco-Pass, which would allow neighborhoods to participate in the program, similar to the Boulder, Colorado, Neighborhood Pass.

6. Consider creation of a Citywide Transit Pass for Berkeley residents financed by a tax that would allow pass holders free unlimited rides on AC Transit and/or BART.

7. As an interim measure, contact and encourage area employers to participate in the existing Commuter Check program. Maintain or increase existing transit subsidies for City employees and encourage other employers to maintain and increase existing transit subsidies.

Bicycle Master Plan

We recommend that Council give staff a mandate to build consensus and a vision for fully implementing the updated BMP. Council should direct staff to develop a comprehensive strategy to implement the priorities listed in Chapter 6 of the Bicycle Master Plan and integrate them with other City projects, like resurfacing and streetscapes. This will likely require additional staffing and to a lesser extent funding to fully take advantage of the opportunity to bundle bike projects with other City projects, and will ultimately be less expensive than doing implementing the BMP as a standalone project.

The Pedestrian Master Plan, originally adopted in 2002, promotes pedestrian safety and access to help ensure that Oakland is a safe, convenient, and attractive place to walk. It establishes a Pedestrian Route Network emphasizing safe routes to school and connections to transit. The routes include streets, walkways, and trails that connect schools, libraries, parks, neighborhoods, and commercial districts throughout the City. It identifies priority street segments along these routes for targeted improvements over the next twenty years. The plan also identifies new pedestrian design elements to promote pedestrian safety and access throughout the City.

In concert with the development of the Public Transit Master plan, we recommend that staff begin the process of updating the Pedestrian Master Plan to ensure that it is consistent with recommendations of the Task Force (e.g., Urban Villages) and other current city policies. The update should strongly consider increasing car free areas in Oakland as well as improving pedestrian safety in residential areas with significant cargo truck traffic such as the area near the Oakland Coliseum BART Station. A first step may be to ensure that all public and private development proposals (including any improvements to existing facilities) are reviewed for enhancing pedestrian uses.

Biofuels

We recommend that the city consider judicious support of increased use of alternative fuels. Recent evidence shows that biofuels vary widely in energy balance, amount of petroleum they displace, and the extent to which they decrease green house gases (GHG's) depending on their source. For example, corn based ethanol, one of the most common forms currently produced in the US, can be produced in a number of ways, but when life cycle analysis considers petroleum use in agricultural feedstock creation, production methods, as well as final use, it is shown to be far worse than ethanol from other sources, such as cellulosic ethanol, and only marginally better than the gasoline it replaces, in terms of GHG emisons. However, because ethanol has become a commodity, absent specific controls, the markets would not distinguish the various sources of the fuel and it would be sold without regard for its production history. This difference, not reflected in market prices, is what economists call an environmental

"externality". Since all ethanol is not created equally, it is important to draw distinctions in the sources of alternative fuels.

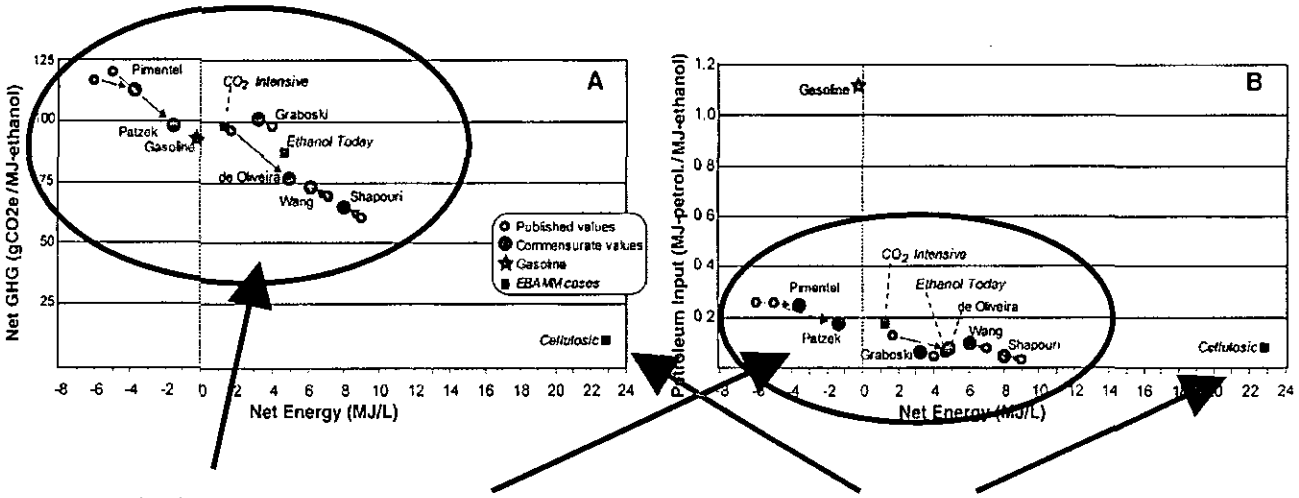
In addition, the OIO Task Force members are concerned about the potential for agricultural sources of bio-fuels feedstock, to compete with factors of production for food products. This is a dual concern. First, agricultural sources of biofuels can create **significant disruptions in food supply and pricing.** These food disruptions have the potential to be especially acute in light of various factors that may disrupt petroleum fuel supplies, and changing regulatory energy policy. Secondly, indirect or secondary impacts could include additional land going into agricultural cultivation, as a result of existing agricultural land being dedicated to bio-fuel feedstock production. Given international markets for food and agricultural sources of production, if, for example, additional agricultural land in he US were to be dedicated to biofuel production, one result might be additional land in South America going into cultivation, potentially destroying more rain forests. If, on the other hand, the US is not able to satisfy its biofuels demand domestically, the US might import biofuels from places like Malaysia where virgin forests are being burned to clear the area for palm plantations. In either case, the GHG impacts could be extraordinary and are difficult to predict and irreversible.

In addition, there are scaling limits as to how much agricultural feedstock can be used to replace the current fuel supply. Bio-fuels are clearly not a panacea. For these reasons, the OIO Task Force cautions against the large scale use of agricultural feedstocks for biofuels and suggests further consideration of non-agricultural sources.

Alternative Fuels from Waste Instead of Agricultural Bio Fuel Feedstock that Competes with Food Sources

As of December 2007, it appears that the US Congress will mandate an increased level of ethanol use; a more ecologically and socially benign source than agricultural biomass would be waste biomass and other non-agricultural cellulosic sources such as forestry waste. Cellulosic ethanol, which has a better GHG footprint and petroleum avoidance than corn based ethanol, can be made from agricultural sources such as myscanthus or switch grass as well as from the biomass fraction of municipal solid waste, forestry waste, or food processing waste. The non-agricultural nature of cellulosic waste biomass gives it a dual advantage of not interrupting the food supply, while potentially achieving a better GHG footprint. Though the technology is still being developed, it has potential for commercialization before 2020, so should be evaluated amongst other waste management options, if it does not conflict with the City's Zero Waste goal.

Comparison of Corn-based Ethanol with Cellulosic Ethanol



Corn Based Ethanol Using Various Methods

Cellulosic Ethanol

(Graph from Farell et al, ***Science***, Vol 311, 27 Jan 2007, p507)

Since fuel from waste is a one-time reuse of the waste, it cannot truly be considered renewable as would be a transportation system completely powered by renewable electricity. Since a fully electrified transportation system is not expected anytime soon, alternative fuels may be considered a short and/or midterm option.

New Low Carbon Fuel Standards under development

The UC Berkley Transportation Sustainability Research Center is in the process of producing a "Low Carbon Fuel Standard for California". This ongoing effort deserves our attention and support. The proposal is to look at life cycle fuel costs from "wheel to well", considering GHG, and petroleum avoidance in the total lifecycle including, feedstock creation, production and final use. Additional information can be found at:

http://repositories.cdlib.org/its/tsrc/UCB-ITS-TSRC-RR-2007-1/

Waste to Energy and Petroleum Avoidance

Municipal Waste as an energy or petroleum avoidance option is one area that may be particularly important for cities since cities often control municipal solid waste processing, and especially as new Zero Waste Policies are unfolding. Some developing initiatives are discussed below.

Oakland's used motor oil and filter recycling

The City supports two programs for residents to recycle used motor oil and filters. Weekly curbside collection is provided under the City's residential recycling contracts, and is described at http://www.oaklandpw.com/Page306.aspx. The City also offers free oil recycling kits through a distribution network of local retailers, primarily auto parts stores. Residents may use the kits for curbside pickup, or they may drop them off at *any of the 17 state certified collection centers in Oakland listed at*

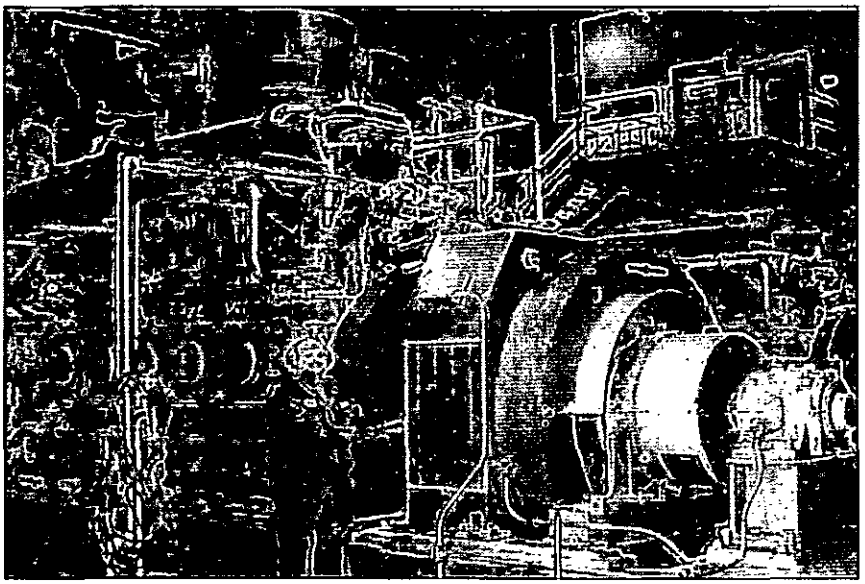
http://www.ciwmb.ca.gov/UsedOil/Centers/. Whether recovered via the curbside program or through collection centers, the oil is sold into an existing, established market of re-refiners and made into new oil products. In addition, recycling prevents improper disposal and the problems with used oil going down the drain to the sewer system or worse yet untreated through a storm drain or creek to the San Francisco Bay. Any reused oil avoids the need to use virgin product, and these programs need to be supported and publicized.

Programs at EBMUD

East Bay Municipal Utility District (EBMUD) is a regional facility located in Oakland, serving about 650,000 people with a capacity of about 100 MGD (million gallons per day) of waste water treatment. Because of excess capacity resulting from a loss of food manufacturing facilities in Oakland, EMBUD has brought in new types of waste by truck, in addition to the flow from the sewer system. This helps to keep the rate base economic for EBMUD users, as well as providing new energy recovery opportunities.

Used fats, oils, and greases (FOG) are a significant problem for water treatment plants, and new restaurants are required to use separation systems. EBMUD has successfully piloted a process to convert FOGs onto biodiesel, after delivery by truck to the plant, mostly from San Francisco Restaurants. The process has capacity to be scaled up with more extensive collection geographies, systems, and processes.

Another EBMUD program uses gas collection from the anaerobic digesters to produce electrical power. The digesters are a normal part of a waste water treatment system, and treat the organic solids resulting from other steps in the treatment process. The gas collected is used to run gas engines, which power electrical generators. The plant currently produces 5MW of power which is approximately what it uses. The plant is currently scheduled to buy two additional turbines, putting them at 9MW and giving their water treatment operations the capacity to become a net power generator.



EBMUD Electrical Generation

The anaerobic digesters have excess capacity and are also able to receive biomass brought in by truck. The residual of the anaerobic process is a bio-solid that can be used for the alternate daily cover at landfills and has been used by farms though this use is controversial and begin phased out. EBMUD is working with Alameda County Waste Management Authority to dedicate one of their anaerobic digesters to food waste. The bio-solids from this digester would be suitable for organic farming. This anaerobic digestion processing of food waste into soil amendments is preferable to centralized composting since it generates energy and is much more effective at capturing GHGs. Thus, this process can achieve return of nutrients to the soil as would composting, with much greater control and energy capture of the gases.

EBMUD's current plans are to also pursue the gasification of the bio-solids from non-food sources, to achieve further energy recovery from the solids and as well as further volume and mass reduction. It is important to note that gasification is not an incarnation process, but rather an energy recovery process, and volume reduction process.

Discussions by two members of the taskforce with EBMUD resulted in three specific suggestions. Oakland should

- Encourage continued growth and expansion of food and biomass diversions from landfill disposal. Continue to explore with EBMUD and other partners the highest and best use of this material to obtain methane, renewable energy, and soil amendments.

- Continue to support the regional Fats, Oils, and Grease (FOG) program to reduce sanitary sewer overflows and divert FOG materials to renewable biofuel uses.

- Explore with EBMUD the options for energy recovery from bio solids.

There is ripe potential to coordinate EBMUD's work with Oakland's waste management to achieve synergistic waste management, energy recovery, and soil amendment goals. So while there are many variables we cannot predict, and technology will certainly evolve, we can suggest that energy and waste management policies will have to be looked at together, with potential synergies as well as additional complexities resulting.

The OIO suggests that Oakland stay proactively engaged in this area collaborating with waste agencies and waste collection companies on energy recovery, and work with EBMUD.

Consumer Vehicle Choices

Keep or Buy?

With the number of hybrid models offered growing rapidly, people are faced with the decision of whether to keep their current car or buy a new car. This is, of course, a personal choice and everyone has different circumstances. One consideration is that the total amount of oil consumed by a vehicle includes not only the fuel it takes to run a vehicle, but also the oil involved in manufacturing and distributing the vehicle (i.e., embodied oil). While each car varies, the energy to create a vehicle is typically about two years of use. Thus, keeping the car you have longer avoids (or delays) the additional energy of manufacturing and distributing a new car. Newer cars, however, tend to be more efficient and far less polluting, and this will likely be more the case if the federal government adopts new fuel efficiency standards. Depending on their transport needs, some people (especially those with long commutes and inefficient cars) may be able to save more oil by buying a new car. When replacement is necessary, a highly efficient vehicle should be considered based on individual needs.

What to buy?

This is best thought of in terms of the transportation hierarchy in the introductory chapter. The best choice may be no car at all. Where possible walking, biking and public transit are better ecologically, less expensive, and less oil intensive. Or car needs could be satisfied by car share. While we expect car usage to go down, in favor of other modes, cars are not likely to disappear in the near to intermediate future. Even Curitiba Brazil, one of the world's best examples of Bus Rapid Transit, still has one car for every three people. Thus a major component of petroleum independence, even in a far more localized and transit friendly Oakland of 2020, is a better choice of vehicles for those who are not able to kick the driving habit.

So what is the best approach? Our hierarchy starts (at the bottom) with the status quo petroleum vehicle, then a range of options, alternative fuel, hybrids, plug in hybrids, and then electric. Though each step in the hierarchy offers some benefit, moving away from fuels to an electric transport offers the closest thing to truly renewable personal transportation. An electrified transportation system powered by renewable electricity (ideally generated locally in Oakland with feed-in tariffs) is the only possibility for a truly renewable transport system in Oakland. In the realm of electrified transport, mass transit like BART or electric streetcars are still the most efficient choice. Private electric cars, however, are one option that should not be overlooked, especially considering they can be charged at night when the grid (even currently) has a greater renewable component and potentially using the energy generated during the day by solar panels on the building's roof. While electric cars will certainly evolve between now and 2020, there are an increasing number of options available now with some models under $20K. Since they have a shorter range, and speed limitations, their "mode of use" use may be different from our experience with fueled vehicles. Happily, their shorter range and slower speeds make them better suited for more compact urban villages than petroleum cars.

One approach that may work for the current two-car family is to have one hybrid car and one electric car. This combination provides a hybrid for longer trips, while an

electric car may be suitable for shorter trips. As urban design changes in Oakland reduce the distance people need to travel, more trips may fall within the 20-25 mile practical range of many existing electric cars. Even today most vehicle trips are less than 20 miles, making an electric car a practical option for many; this will be amplified as Oakland focuses development on urban village communities and places charging stations in retail and work areas so cars can charge up for the return trip. Electric cars are generally much more energy and cost efficient to manufacture since they are smaller, lighter and simpler than fuel powered cars. Natural gas is largest component of PG&E's electricity mix; an electric car charged electricity from natural gas, still has far less GHG footprint (about 95% less) than a gasoline vehicle. [this needs a reference] Furthermore, to the extent cars charge at night, they will access the electric grid when it generally has far more capacity and cleaner energy.

These recommendations, of course, should be considered in conjunction with car sharing and similar programs, in addition to evaluating the types of cars to use.

Sources:

- Energy and GHG emissions: Presentation at OIO meeting, April 5, 2007
- Oakland work transportation mode data from 2000 Census and 2005 ACS, (http://www.bayareacensus.ca.gov/cities/Oakland.htm)
- Oakland household stats from MTC (www.mtc.ca.gov/maps_and_data/datamart/stats/baydemo.htm)
- Fuel/mode properties: GREET, BTS, NREL
- Author calculations

CHAPTER 2

Public Education Campaign

The campaign needs effective branding and messaging. Oakland should hire or seek pro bono design services from a creative firm. The creative firm would develop an overall brand including logos, type fonts, web site header, web site theme, and messaging to residents, staff, businesses, and large employers. Prior to rollout, the branding and messaging should be tested with a focus group to ensure that it is effective with Oaklanders. Possible themes include "your choices matter" and "for our children".

The campaign needs a strong web presence with interactive elements that enable people to estimate their energy and oil footprints, get ideas for personal actions they can do to reduce their consumption, get ideas for working on these issues in their community, and volunteer opportunities.

The campaign needs a strategic plan for connecting with residents, businesses, and staff. In the strategy development phase, models such as California's Flex Your Power program should be reviewed for best practices. The campaign should include community events to get input on recommendations such as urban villages, local clean energy, and public transit. The campaign should collaborate with existing neighborhood and community groups such as neighborhood watch and Citizens of Oakland Responding to Emergencies (CORE). The campaign should also develop strong ties with media with a significant Oakland audience. Multimedia content created from events, initiatives, and interviews with the media should be hosted on the campaign web site.

The education and outreach program should help citizens understand the importance of using public transit and what choices are available to them. This campaign could be coupled with a program to sell local carbon offsets generated by local renewable energy and other oil independence and climate protection initiatives. As part of the program for specific neighborhoods where many transit opportunities exist but there is still low public transit usage, Oakland might consider an initiative like TravelChoice, a grant funded program of the Transportation and Land Use Coalition which educates and informs households on their specific public transportation options. Since this program is labor intensive, it could be a source of green jobs but should be targeted to specific neighborhoods with the greatest opportunities.

To the extent that citizens' transport needs cannot be addressed through public transit, the education and outreach program should also inform citizens about their choices -- whether to keep their existing vehicle or to buy a new vehicle. If people need to purchase a vehicle, it would be far better for Oakland and its oil independence efforts if they were to purchase an electric vehicle or one of the forthcoming plug-in electric vehicles.

The campaign would include outreach to large employers in Oakland to develop programs to reduce oil consumption including those that

- Educate about/encourage flex time models and compressed work weeks
- Educate about/encourage telecommuting
- Encourage participation in car pooling, van pooling, and shuttle services
- Provide incentives for trip tracking and reduction
- Identify opportunities for waste minimization, renewable energy use, clean fleet purchases, etc.

Oakland should continue with and expand outreach and education to ensure that all City employees and other workers, citizens, and students are aware of their public transit options.

Some existing, transit-supporting programs include:

- A Safe Routes to School program for both walking and biking
- A bike and pedestrian map
- Monthly Bicycle & Pedestrian Advisory Committee (BPAC) committee meetings
- The third annual car-free day was in September 2007
- The 14th annual Bike to Work Day in May 2007
- City of Oakland's Public Works Agency and KTOP - TV Channel 10 produced "Doing the Green Thing", An Award-Winning Ten-Part Environmental Series which covered public transit, walking and biking on the Air Quality episode.

As part of a public education campaign, individuals who chose to continue driving in the short term could be given information about how to choose a vehicle.

Local Clean Energy

Among its many attractive characteristics, the Bay Area is blessed with ample sun and wind resources. These resources could be used to generate clean, renewable power here in Oakland. A recent neighborhood assessment study, "Tapping the Potential of Urban Rooftops", found that the one-quarter-square mile Eastlake neighborhood could install 8.5 megawatts (MW) of solar power capacity without sacrificing other rooftop uses (e.g., living and edible roofs). [6] The photovoltaic installations would generate over 11 million kilowatt hours (kWh) of electricity per year, satisfying approximately 25% of the Study Area's electricity demand. The solar installations were assumed to only cover 50% of the accessible roof space which accounts for several factors including that solar installations are generally undersized because building owners are not compensated for any net energy that they supply PG&E. Considering that the Eastlake neighborhood is more than 5 times denser than the city overall, even with the provision of only using solar where it is the best use, solar could likely meet more than Oakland's entire electricity demand.

[6] Tapping the Potential of Urban Rooftops: Rooftop Resources Neighborhood Assessment, Bay Localize, Holmes Culley, Design, Community & Environment, October 31, 2007.

Since this Task Force recommends that Oakland promote and encourage the re-electrification of private and public transport to reduce reliance on oil and natural gas, in the interests of resiliency, it is crucial that Oakland begin building the infrastructure to generate more local renewable electricity. Importantly, building out and maintaining the infrastructure for local renewable energy would be one of Oakland's best near term opportunities to create thousands of meaningful, well-paying, green collar jobs (see green collar section below).

This Task Force applauds Oakland's pursuit of 50% renewable energy by 2017 and endorses the goals of the Local Clean Energy Alliance (LCEA), a coalition of local nonprofits and businesses including Bay Localize, Ecology Center, KyotoUSA, Nomad Café, Pacific Environment, Rainforest Action Network, and Sierra Club Bay Chapter. The goals are:

- Achieve a mix of at least 50% renewable energy by 2017
- Maximize local renewable energy production
- Offer stable and affordable rates for all
- Create local business opportunities and green-collar jobs
- Facilitate local businesses and residents' ability to sell excess energy to the grid
- Mandate energy conservation

Oakland should consider grant programs specifically geared toward energy renovations and solar installations for low-income residents through the redevelopment fund and/or the California Public Utilities Commission. Another option would be creating a plan similar to Berkeley's energy efficiency and solar financing program[7], which is implemented through a property tax assessment and charged annually to the building owner. Adding the cost of the solar installation to the property tax bill, as opposed to financing through a private company has one very important benefit – if the building owner decides to sell before the contract term is up, the payments automatically roll over to the next building owner rather than becoming a loss to the original contract holder. Additionally, San Francisco recently proposed a subsidy of $3,000 and $5,000 per residence and up to $10,000 for businesses.[8] City officials are also proposing a low-interest financing program that would allow residents to incrementally pay back money borrowed for solar installations at below-market rates, possibly via charges on their property tax bills.

Grant programs and financing for Oakland businesses and residents would be a huge catalyst towards citywide solar implementation, making energy efficiency upgrades and solar installations (thermal and photovoltaic) accessible for all demographics in Oakland.

As the City of Oakland considers options for making renewable energy sources financially affordable, Oakland should partner with local outreach organizations such as Grid Alternatives, California Youth Energy Services (CYES), and Oakland Solar Power Project to create community partnerships, educate the public on the benefits of

[7] http://www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2007/11/07/BAT9T7GC0.DTL
[8] http://www.cnn.com/2007/TECH/science/12/12/solar.city.ap/index.html

renewable energy, train youth to install solar, and organize entire neighborhoods to aggregate their purchases.

In October 2006, a Portola Valley (San Mateo County) neighborhood aggregated their purchasing power to receive bulk purchase discounts on a total of 343kW.[9] The threshold for receiving the bulk discount was 175kW. The solar panels were installed on 78 homes within four months with an average residential installation of 4.3kW. The savings for the community aggregating their orders was 20-30% per array installed. After the bulk discounts as well as state incentives from the California Solar Initiative ($2.50/W rebate) and Federal tax credits (the lesser of $2000 and 30% of the total installation), the fully amortized monthly cost of these installed systems is less than their previous utility bills.

With the appropriate residential and business outreach and organizing programs, it is conceivable that the vast majority of buildings in Oakland could have photocoltaic and/or thermal solar panels. To make solar financially viable for even more buildings and encourage larger installations that would generate net electricity to the grid, Oakland should advocate "feed in" tariffs that should compensate building owners for producing more electricity that the building uses. Outreach and organizing programs would also include an energy audit and energy efficiencies repairs to reduce electricity consumption and reduce the total size and cost of solar installation.

Community Choice Aggregation

PG&E has indicated that it will not likely meet the 2010 state-mandated deadline to generate 20% of their power from renewable sources. PG&E believes it will meet the letter of the law by reaching 20% renewable power by 2011 or 2012 and further asserts that they are already 60% carbon neutral. While most studies indicate that nuclear power has much lower CO2 emissions than fossil-fuel fired plants, they also indicate that nuclear energy's carbon emissions are comparable to renewable if the full nuclear life cycle is considered (i.e., mining uranium ore, refining and enriching fuel, building and operating the plant). In any case, this tack steers the conversation away from "real" renewable energy such as solar, micro-hydro, wind, geothermal, tidal, wave, biomass, etc...

Furthermore, PG&E's projected generation mix poses significant financial risk to Oakland. A study by the Community Environmental Council notes that cities face serious risks by sticking with the status quo. Based on projections from the UC Santa Barbara Economic Forecast Project, they found that the cost of electricity generated by nuclear, coal, and gas is projected to rise considerably for all three sources between now and 2030. Hence, in the "business as usual" scenario, in which current price trends are projected to continue, switching to a 100% renewable power system would save Santa Barbara county residents about $830 annually by 2020 and $3,015 annually by 2030. In a "low fossil fuel cost" scenario, net annual savings for county residents from becoming

[9] http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/01/06/HOGVMNCB361.DTL&hw=solarcity&sn=001&sc=1000

fossil free are projected to be $389 per person in 2020 and $1,487 per person in 2030. Even in a low fossil fuel price future, switching to renewable power still makes fiscal sense.

This Task Force believes that Community Choice Aggregation (CCA) is one of the best potential tools to move the above goals forward, especially for creating more local green collar jobs and offering stable electricity rates.

CCA, as defined by AB 117, permits any city, county or city and county to aggregate the electric loads of residents, businesses and municipal facilities to facilitate the purchase and sale of electrical energy. Prior to AB 117, individual customer participation in electric load aggregation programs required their positive written declaration indicating their choice to participate (opt-in programs). In contrast, CCA under AB 117 provides for aggregating customer loads within city or county boundaries, but each customer is given an opportunity to leave their community's aggregation program and thereby continue to be served by the incumbent distribution utility (opt-out program). If a customer makes no negative declaration, that customer is served through the CCA program. This is a major departure from previous aggregation structures as it frees the aggregator from the need to market the program and ensures wide-scale customer participation.

The community choice aggregator must inform participating customers at least 60 days in advance of the date commencing automatic enrollment. Distribution utilities are directed to cooperate fully with any community choice aggregator in its efforts to develop their aggregation program including providing all necessary data as well as to continue to provide all metering, billing, collection, and customer service to retail customers that participate in CCA programs. Community Aggregation programs cannot begin until departing load fees are determined, and the California Public Utilities Commission (CPUC) has determined rules and protocols for implementing aggregation programs. The CPUC will deciding these issues in 2004 under Rulemaking # R.03-10-003.

A recent study explored the job creation possibilities of a San Diego Community Choice Aggregation program that increases electricity efficiency by 40% and installs photovoltaic (PV) systems on about 20% of its roofs and parking lots. The study found that installing photovoltaic's and electricity efficiency improvements would create more than 96k and 27k direct job-years of employment, respectively, over 40 years or an average of 3,105 direct job-years of employment each year. The study also found that such a San Diego CCA would create 13 times more direct job-years of employment and 22 times more indirect job-years of employment than continued dependence and investment on fossil fuels and nuclear power.

Oakland, Berkeley, and Emeryville are considering the formation of a joint powers authority (JPA) to manage and administer a CCA system for their cities. The three cities are currently drafting a business plan, which involves the development of an Implementation Plan that will look at items like demand for electricity by customer types, governance plans, power supply options, financing options and regulatory issues. Oakland staff is charged with evaluating whether a CCA can feasibly deliver stable, low rates with 50% renewable energy content. The business plan should be completed in

2008, at which time the respective Cities will have to decide if they wish to become Aggregators.

The publicly available information regarding community choice aggregation is derived from a May 25, 2005 Base Case Feasibility Report developed by Navigant Consulting, Inc. for the Oakland City Council The report summarizes the feasibility of CCA for the City of Oakland. This early feasibility analysis found that a mature CCA program could save Oakland $12.5 million annually (or approximately 4% of total customer electricity costs), thereby reducing rates for Oakland ratepayers, or generating income for the City, or a combination of both. Of course, cost savings will be less in the first year and may evolve towards the estimated values as the CCA ramps up its sourcing of renewable energy over the next decade. While the community may be hoping to receive the bulk of the savings, it may be prudent to place some or all of the savings in the first several years in a rainy day fund.

The Base Case Feasibility Report also found that by aggregating Oakland's electric load, the use of renewable energy in Oakland could increase to 50% by 2017, more than doubling the renewable energy content that PG&E would provide during the same time period. In the base case, Oakland's CCA program would contract energy from a diverse portfolio of resources designed to achieve the City's 50% renewable energy objective. The City would initially match the renewable content of PG&E's portfolio, and incrementally increase the renewable component to achieve a mix of 50% by 2017. The portfolio also includes power purchases through five-year contracts and spot market purchases to supplement the production of the City's generation resources.

While it is possible that PG&E may enjoy a near term "greenhouse gas" advantage as the CCA program ramps up due to their installed base of nuclear and hydro plants, a locally focused CCA has the potential to create thousands of local green jobs and well over $100 million dollars in cost savings during the initial ten year implementation phase. CCA's carbon emissions may initially be higher than current carbon emissions from PG&E, however, overall comparisons are difficult to make because emissions depend on the mix of fuels used to produce electricity. Once the CCA is established, the competition to reduce the use of fossil fuels should increase the amount and number of renewable energy sources from which the electricity is purchased.

In a feasibility study for the City of Berkeley, NCI found that cities can reduce the cost of acquiring renewable energy by financing development of renewable resources used to supply its CCA program. The capital-related costs are significantly less if the City were to own or otherwise finance the resource, compared to ownership by an investor owned utility such as PG&E. The use of low cost debt and greater financial leverage by the City reduces the annualized costs such that during the first year of operation, the City can produce energy at a cost that is significantly lower than what the investor owned utility would incur if it owned the identical resource. Thus, the City's cost of producing renewable energy could be nearly the same as the market price of system power. CCA is an opportunity for Oakland to take a leadership role and truly become a model city for local renewable energy and green jobs. In the JPA under consideration, Oakland would account for over 70% of the energy supplied. Due to the economies of scale, it is unlikely that Berkeley and Emeryville could undertake CCA without Oakland. While

creating such a JPA to administer the CCA program would require coordination and agreement among the municipalities involved, a JPA could also lower the administrative cost per MW supplied and enable Oakland to tap into the expertise of Berkeley and Emeryville staff.

Administering and managing the CCA need not be a drain of city staff and resources. The Oakland-enabled JPA could follow the lead of San Francisco, and contract out the administration and management of CCA to an Electric Service Provider (ESP). San Francisco is in the process of putting out an RFP for the development and operation of CCA. The basic structure of the deal (subject to change pending the actual writing of the RFP) is that PG&E will continue to handle billing, metering, and transmission (for a nominal fee), while the new ESP on behalf of the City and with oversight, will handle procurement. In addition, the City will issue approximately $600 M in revenue bonds ("H Bonds") to the ESP to finance local clean energy generation capacity – initially 72 Megawatts of renewable distributed generation and at least 31 MW of solar photovoltaic, 107 MW of demand response, efficiency and conservation technologies, and a 150 MW wind farm. The CCA will control monthly revenues and prioritize H Bond repayment, making the ESP will assume the risk for facilities performance and rollout time, and must post bonds to cover liability for any potential service default or facilities nonperformance (which reduces the risk to the city). At the end of the contract with the ESP - upon the repayment of the bonds - the city will own the new generation capacity, and may transfer ownership to residents and businesses that choose to purchase and own systems based on a monthly charge. [10]

Another way for Oakland to take a leadership role would be to initiate and host an ongoing forum for all Bay Area CCA efforts to share experiences, best practices, and collaborate, as well as to promote CCA in Bay Area municipalities that do not have public power and are not yet working on CCA. Such a forum would address issues such as how to retain large businesses in CCA.

This task force recommends that Oakland fully commit to the co-development of a JPA with Berkeley and Emeryville to use CCA as a means to generate clean local power and green jobs in the East Bay Area. CCA is superb opportunity to demonstrate regional leadership in oil independence and renewable energy while meeting its own self-proclaimed goals.

Furthermore, we recommend the following for the Oakland-enabled JPA:

- Include solar photovoltaic as a key component of the CCA. While solar is not as cost-effective as wind, given federal subsidies, projections of lowered manufacturing costs, and the low cost of capital for municipalities, solar can certainly be a cost effective way to boost locally generated renewable power and quickly ramp up CCA, while providing many green-collar jobs installing and maintaining solar panels.
- Include a "feed-in tariff" or a strong "net-metering" plan so that municipalities, businesses, and individuals are fully compensated for any net solar energy they contribute to the grid.

- Include energy efficiency and conservation as key components of the CCA. Energy efficiency is generally considered the cheapest electricity "generation" option and could generate a large number of green jobs for youth through programs such as California Youth Energy Services (CYES). Efficiency and conservation measures will reduce demand, which has the collateral benefit of further enhancing the reliability of the JPA's power supply and lessening the environmental impacts from conventional sources.
- Investigate financing options such as municipal bonds (e.g., San Francisco's H bond measure) and federal subsidies such as the "new market tax credit" for low income communities.
- Use some of the CCA cost savings to fund green jobs training for youth of color and coordinate with green jobs programs like the Oakland Green Job Training Corp.
- Consider programs like the one recently announced in Berkeley that allow property owners to pay for energy efficiency improvements and solar system installations as a long-term assessment on their individual property tax bills.
- Consider the possibility of setting up the JPA such that other East Bay municipalities such as Richmond and San Leandro can be added in the future.

The task force does not mean to minimize the difficulty of getting consensus among Oakland, Berkeley, and Emeryville city councils to move forward as PG&E appears to be actively trying to work directly with city governments on renewable energy. Though cities will almost certainly not reach 50% renewable energy by 2017 working with PG&E, partnering with PG&E could be seen as an easier and more financially attractive way to increase renewable energy.

Even if Oakland chooses not to pursue CCA, to meet its goals, Oakland should still increase local renewable energy installations for the sake of greater resiliency and green jobs. Staff is currently looking at other ways to get to 50% renewable energy. To make the switchover from fossil fuels to renewable energy financially viable, Oakland needs programs in which the cost of renewable power is less than or equal to today's cost of electricity through PG&E.

Sources

- Electricity Supply and Price Security in San Diego County: comparison of Strategies for the Production/Procurement of Electricity and Elimination of Greenhouse Gas Emissions, Jim Bell and Dr. Heather Honea, 2007. http://www.jimbell.com/mayor/index.html
- In the Black: The Growth of the Low Carbon Economy, The Climate Group, May 2007.
- http://www.lgc.org/cca/what_is_cca.html
- Updated Pro Forma for the Formation of a Community Choice, Navigant Consulting Inc., April 2006.
- A New Energy Direction: *Bold Local Solutions to a Global Problem,* A Blueprint for Santa Barbara County, Community Environmental Council, Oct 30, 2007. http://www.communityenvironmentalcouncil.org/EnergyBlueprint/CompleteBlueprint.pdf

- Community Choice Aggregation: Base Case Feasibility Evaluation: City of Berkeley, Navigant Consulting, Inc., April 2005.
- Community Choice Aggregation Program Description, Revenue Bond Plan and Draft Implementation Plan: City and County of San Francisco, Local Power Inc. (localpower.com), June, 2007.

Carbon Charge

Boulder's Climate Action Plan tax is an excise tax upon electricity consumption for residential, commercial, or industrial customers that provides an exemption for voluntary purchases of utility provided wind power.[10] The tax rate is highest for residential customers at $0.0022 per kilowatt hour (kWh) or 4.5 times higher than commercial rates and 10 times higher than industrial rates. Officials in Boulder estimate the tax will add $2 a month to the average household's bill and between $5 and $35 for businesses. Revenues will be used for public-education campaigns to make people aware of energy-efficiency rebates, incentives and to fund energy audits for businesses and homeowners. Funds will also be used to provide residents with easier access to energy-efficient products, such as compact fluorescent light bulbs.

San Francisco plans a ballot measure that would increase the city's 5 percent commercial utilities tax to encourage energy-saving steps by hotels, offices and other nonresidential buildings. The tax would be revenue neutral; the initiative would also decrease the 1.5 percent payroll tax on for-profit businesses in San Francisco.[11] Berkeley is also considering a carbon tax. While the form of such a tax is undetermined, a climate tax will be proposed in concept for community input in Berkeley's soon-to-be-released *Climate Action Plan*.

City of Boulder Carbon Tax

Shall City of Boulder taxes be increased $860,265 annually (in the first year), and up to $1,342,000 each year thereafter for the period of April 1, 2007 to March 31, 2013, by authorizing the city council to levy and collect a climate action plan tax as an excise tax upon persons consuming electricity as residential, commercial, or industrial customers, and providing an exemption for voluntary purchases of utility provided wind power. The tax shall be established with a first year rate of $0.0022 per kilowatt hour (kWh) for residential customers, $0.0004 per kWh for commercial customers, and $0.0002 per kWh for industrial customers. The tax shall take effect on April 1, 2007 and expire on March 31, 2013, and shall be for the purpose of funding a climate action plan to reduce greenhouse gas emissions. The measure would establish city council authority to increase the tax after the first year up to a maximum permitted tax rate of $0.0049 per kWh for residential customers; $0.0009 per kWh for commercial customers; an $0.0003 per kWh for industrial customers.

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[10] http://www.newrules.org/environment/climateboulder.html

[11] http://www.mercurynews.com/news/ci_7650110?nclick_check=1

Tax revenues generated would be used to implement programs to increase energy efficiency, increase renewable energy use, reduce emissions from motor vehicles, and take other steps toward the goal of meeting the Kyoto Protocol.

And in connection with the climate action plan tax,

Shall the full proceeds of such taxes at such rates and any earnings therefrom be collected and spent without limitation or condition, and without limiting the collection or spending of any other revenues or funds by the city of boulder, under article x, section 20 of the Colorado constitution or any other law?

For the measure _____ against the measure _____

And in connection with the climate action plan tax,
shall the full proceeds of such taxes at such rates and any earnings therefrom be collected and spent without limitation or condition, and without limiting the collection or spending of any other revenues or funds by the city of boulder, under article x, section 20 of the colorado constitution or any other law?

For the measure _____ against the measure _____

"Advantages" in the table below may be seen as elements commonly desired by communities. These were used in GIS work to characterize urban village.

	Advantages
Public Services	Fire Station
	Courts/Police/Halls
	Libraries
	Doctors
	Community Health Facilities
	Recreation Centers
	Educational Institutions
	Senior Centers
	Child Care
	"Initiative 2000" Community Groups
	Hospitals
	Shelters
Retail Services	Farmers' Markets
	Entertainment
	Shopping
	Grocery
	Food
	Tourist Locations
Employment	Government Buildings
	Hospitals
	Industry
Transportation	BART Station
	Bike Routes
	Bus Routes
	Pedestrian Trails
Housing	Assisted Housing
	Public Housing
	Single Family Housing
	Multi-Family Housing
Natural Amenities	Creeks
	Streams
	Water
	Marsh
	City Parks
	OUSD Parks
	Community Gardens
	Historic Sites

CHAPTER 4

Key components of **a Green Port Plan** would include the following:

- A study of fuel consumption and emissions that measures three key variables: fuel consumption, particulate matter (and health-related emissions), and greenhouse gas emissions. This study should track all the different types of vehicles related to the Port (ships and tugboats, trains, trucks, airplanes, cranes and other equipment). The study should first be conducted to gather baseline data, with repeated data collection every five years to track progress. The appendix includes some collected resources on best practices on conducting emissions inventories for ports, with examples of reports on the emissions inventories conducted in Los Angeles and Long Beach.
- Plan and budget for staffing and enforcement of Green Port Plan policies. Too often, "green" policies have no teeth because enforcement is inadequate. It is important to devote the staffing and financial resources for successful follow-through.
- The creation of an advisory group composed of staff from the Port and City of Oakland, as well as residents that would oversee the development of the Green Port Plan and its ultimate implementation.

Cold ironing

One challenge to implementation in Oakland is infrastructural: there are currently no "easy" ways of building large enough transmission lines to the grid.

Building the needed transmission may require collaborative planning between the Port, the City of Oakland, and other government, utility, and private sector stakeholders. Another possible set of challenges for cold ironing is related to the average size of ship and length of stay at the Port. The length of stay tends to be shorter in Oakland than elsewhere, so that cold ironing may be less cost effective. Cold ironing will require some logistical creativity to ensure a cost effective and efficient system.