

Tacoma's Climate Action Plan

Green Ribbon Climate Action Task Force

Tacoma City Council

July 1, 2008



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Green Ribbon Climate Action Task Force
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II. Acknowledgments

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III. Introduction to Tacoma's Climate Action Plan

by Green Ribbon Task Force Co-chairs Ryan Mello & Joanne Buselmeier

It has been an honor to work with 25 of this community's most ingenious and committed citizens on what is being called the most significant challenge of our lifetime. Climate change has the ability to drastically, negatively alter the lives of our children and grandchildren, and we have a moral imperative to ensure that we don't put our descendants in that position.

Cities, by making themselves more attractive places to live, can contribute much to mitigate climate change. Tacoma can and should be a leader to act locally to help solve this global challenge.

Tacoma has a unique opportunity to build on the renewal that is already under way, attracting more residents and growing its economy while protecting the local environment. Being an attractor of growth in a compact, connected and coordinated way is the most important thing the City of Tacoma can do to ensure we are not repelling growth and encouraging suburban sprawl. In the end, sprawl simply encourages longer commute times – adding to the gases that are causing climate change – and develops the land base that could be used for the working resource economy while acting as a carbon sink.

As the Green Ribbon Climate Action Task Force studied the factors contributing to climate change and the methods for reducing greenhouse gas emissions, three realities became clear:

- 1) Transportation produces more than 50 percent of local greenhouse gases, so changes in this sector remain our greatest opportunity and must be a top priority for fundamental change – focusing on how we move people and goods around, rather than single occupancy vehicles around the region.
- 2) Energy generation is the next largest source of local emissions, therefore local efforts must focus on both conserving the energy we use in our homes and businesses and developing new, clean energy sources to meet the demands of the future as our population grows.
- 3) Tacoma must demonstrate leadership to accept population growth, while increasing the quality of life and attractiveness of living within the urban core. Providing spectacular, affordable opportunities for people to live closer to where they work, shop and entertain themselves is not just an economic development issue, it's a climate change solution, and Tacoma must invest in the tools to encourage this growth while increasing the quality of life of its residents.

For 15 months, the Green Ribbon Task Force studied other regions' climate action plans, evaluated strategies, projected potential reductions and estimated costs. Our proposed plan is a selection of calculated decisions that represent a blueprint for Tacoma to reduce its greenhouse gas emissions.

But it is more than that.

It is also a blueprint to create a more livable community. As a fundamental strategy to curb global warming, the task force suggests the City must invest in and build upon its current infrastructure. As the region grows in the coming decades, expanding populations should be absorbed in areas where infrastructure already exists, rather than duplicating municipal services. This is not only a wiser use of tax dollars, but also brings the critical mass together to afford the amenities communities desire to be more livable, such as transportation options, better streets and sidewalks for all types of mobility, shopping and entertainment options, and so on.

A commitment to concentrate development rather than encourage suburban sprawl is critical. Land use planning must drive investment in the downtown core and existing multiple-use centers. Livable, walkable, compact cities are vital to curbing climate change because it fundamentally reduces driving distances for our most common activities, such as going to work, shopping and entertaining our families. Affordable housing will also be an important element so that people can live very close to where they work and entertain their families.

By having more consumers and taxpayers in a more compact environment, we will begin to grow our local economy and truly become the regional growth center from an economic and residential perspective that Tacoma has the potential to be.

We can't emphasize enough that the strategies defined in this action plan are more than steps to reduce our greenhouse gas emissions as a city. It is a blueprint to grow our local economy, sustainably for the long term, to make Tacoma more livable and more attractive, and allow our citizens to be healthier and have the potential to save significantly on energy costs.

The strategies work together as a portfolio, many dependent upon the next to truly succeed and maximize its ability from a climate and an economic development perspective. As a result, the plan is designed to be implemented as a whole, not piecemeal, to gain the most efficiencies and positive results in the various arenas.

In closing, in learning from various communities, the success in implementing this action plan is directly related to how seriously the City takes this initiative and invests both in fundamentally changing the way we think about issues of growth, energy and moving people and goods around, as well as financially implementing the strategies and dedicating the human resources to maximize the efficiencies the plan affords. How this plan is led and coordinated will dictate its chances of success. Implementing this action plan should rise to the highest levels of City government and be treated as one of the most important initiatives the City has ever undertaken.



Joanne Buselmeier
Tacoma-Pierce County Chamber of Commerce



Ryan Mello
Cascade Land Conservancy

IV. Executive Summary

Tacoma's Climate Action Plan establishes carbon reduction goals for the City and community and offers more than 40 new strategies to achieve those goals.

Mayor Bill Baarsma established the City's commitment to reducing greenhouse gas emissions when he signed the U.S. Mayors Climate Protection Agreement in April 2005, pledging that Tacoma would strive to meet or exceed the reduction target set in the Kyoto Protocol to cut emissions by 7 percent from 1990 levels by 2012 (see Appendix E).

In April 2006, the Tacoma City Council adopted a resolution supporting efforts to curb global warming and reduce greenhouse gases, while encouraging the continued growth and development of clean technology businesses in the City of Tacoma.

The 2006 resolution noted that greenhouse gas reduction activities complement many of the City's environmental values, including the promotion of clean and efficient energy use, commuter trip reduction efforts and clean air initiatives, solid waste reduction and recycling, salmon recovery, assuring a reliable and affordable water supply, protecting urban and rural forests, and promoting low-impact development.

The resolution called for reducing greenhouse gas emissions in City operations, while pursuing reductions in community emissions through cooperative programs and policies.

The Green Ribbon Climate Action Task Force was appointed by the City Council in February 2007. The task force was charged with defining carbon reduction goals, and developing specific community and government action plans to achieve those goals.

The task force members listed on page 4 represent a diverse set of interests and community groups, including business and trade groups, conservation organizations, government agencies, higher education institutions and the health community.

The task force reviewed Tacoma's emissions inventory (see Appendix A). The group considered other scientific data and studied climate action plans from other cities, as well as state and regional efforts. They looked at regional and national models, and identified the unique opportunities presented in Tacoma.

Task force members identified more than 80 strategies to reduce greenhouse gas emissions. These included about 40 new strategies, in addition to actions in progress or soon to be implemented, and strategies that couldn't be numerically quantified with a specific carbon savings

The task force gathered public feedback on the proposed strategies through a series of public meetings, by attending community meetings, and from a Web survey. After reviewing all of the input, the task force adopted its final recommendations in May 2008.

The strategies are organized into five categories:

Category 1. City Leading by Example – These strategies focus on specific actions to be taken by municipal government, calling on the City to take the lead in reducing greenhouse

gas emissions in Tacoma. For business, industry and residents to change behavior, they must first see leadership from the City. Strategies include implementing policies on environmentally responsible purchasing and waste reduction/conservation; establishing green-building standards for all new or renovated City buildings; reducing electricity and natural gas consumption; and purchasing fuel-efficient or alternative-fuel vehicles for the City fleet.

Category 2. Moving People and Goods More Efficiently – Transportation strategies start with reducing the number of single occupancy vehicles both locally and from out of the South Sound region. Encouraging ridesharing, carpooling and the use of public transportation are key strategies in this area. Reducing the need for driving is another approach, with an emphasis on developing a comprehensive bicycle and pedestrian network, and promoting telecommuting and flexible work schedules. Other strategies recommend changing parking policies to discourage single occupancy vehicle driving, and policies and programs aimed at reducing fuel use and/or increasing fuel efficiency.

Category 3. Enhancing Compact/Livable Neighborhoods – Strategies include starting a regional transfer of development rights program and implementing smart growth principles. The task force also recommends increasing tree-planting requirements, and adopting and funding the Open Space Habitat and Recreation Plan being developed by the City.

Category 4. Energy Efficiency in Our Buildings, Homes and Industries – Energy strategies include increasing conservation and expanding renewable energy sources. Specific recommendations include requiring sellers to have an energy audit before the sale of any building, hiring a City “green building advocate” to assist with green-building projects, and encouraging installation of renewable energy.

Category 5. Reuse and Recycle ... from Buildings to Food Waste – These strategies seek to maximize commercial and residential recycling, ramping up to 100 percent recycling. Recommendations include exploring home composting programs and diverting more organic waste from landfill disposal. Other strategies emphasize reuse of materials and reducing waste generation through reusing older buildings and encouraging the deconstruction and recycling of structures being demolished in the city.

Tacoma’s Climate Action Plan includes a recommendation for an implementation structure designed to ensure that the strategies are successfully executed, and a two-year action plan identifying the steps to be taken during 2009-2010. This plan is consistent with the latest reports from the Intergovernmental Panel on Climate Change, set up by the World Meteorological Organization and the United Nations Environment Programme, which strongly advises that early actions will have more impact than the same actions taken years later.

V. Greenhouse Gas Emission Reduction Goals

In April 2005, Mayor Bill Baarsma signed the U.S. Mayors Climate Protection Agreement committing Tacoma to reduce its greenhouse gas emission levels to 7 percent below 1990 levels by 2012, the Kyoto Protocol target (see Appendix E).

Mayor Baarsma was one of the early signers of the U.S. Mayors agreement, which was launched in February 2005, but every day more mayors across the United States sign on. To date, some 850 U.S. mayors – representing nearly 80,000,000 citizens – have signed the agreement, committing their communities to take actions to meet or exceed the Kyoto Protocol.

Tacoma is already moving in the right direction. Tacoma’s 1990 estimated greenhouse gas emissions level was 1,990,830 tons¹, based on an emissions inventory conducted in 2007 (see Appendix A).

Because Tacoma has already implemented a series of sustainability programs², the city is on pace to reduce its emissions by 104,775 tons by 2012, which is more than 5 percent of Tacoma’s 1990 estimated emissions level.

Through current and planned efforts, Tacoma is demonstrating that cities can meet the Kyoto Protocol. However, supported by the comments of Tacoma citizens and the 2007 findings of the Intergovernmental Panel on Climate Change showing that intense efforts in the short term are better than moderate efforts over the long term³, the Green Ribbon Climate Action Task Force believes that Tacoma and its citizens can and should be a leader in *exceeding* the Kyoto Protocol.

The Green Ribbon Climate Action Task Force recommends:

- **By 2012, reduce Tacoma’s greenhouse gas emissions to 15 percent below 1990 levels.** This means reducing emissions in Tacoma by 214,373 tons below the level of emissions predicted for 2012.
- **By 2020, reduce Tacoma’s greenhouse gas emissions to 40 percent below 1990 levels.** This means reducing emissions to a total of 1,194,498 tons, which is 712,081 tons below what is predicted for 2012.
- **By 2050, reduce Tacoma’s greenhouse gas emissions to 80 percent below 1990 levels.** This means reducing emissions to a total of 398,166 tons, which is 1,508,413 below what is predicted for 2012.

¹ Emissions are calculated in U.S. tons in this report because this unit of measurement is familiar to local readers. International reports use metric tonnes for reporting carbon dioxide equivalents.

² See Section VI. Strategies – Part 2. Evolving Strategies

³ Page 19, IPCC fourth assessment report, *Climate Change 2007: Synthesis Report, Summary for Policymakers*, released November 2007: “Many impacts can be reduced, delayed or avoided by mitigation. Mitigation efforts and investments over the next two to three decades will have a large impact on opportunities to achieve lower stabilisation levels. Delayed emission reductions significantly constrain the opportunities to achieve lower stabilisation levels.”

VI. Strategies to Reduce Greenhouse Gas Emissions

Part 1. New Strategies

More than 40 new strategies are proposed to guide Tacoma – the City and the community – in reducing greenhouse gas emissions. These are presented in five broad categories, from strategies that primarily affect the City as an organization and employer, to strategies that focus on energy and transportation within the city and the region. Many strategies, although listed in separate categories, are interconnected. For example, some of the transportation strategies in Category 2 are dependent upon the smart growth principles in Category 3.

Category 1.

City Leading by Example – Actions to be Taken by City Government

estimated eCO₂ savings⁴: 2012 - 1,655 tons 2020 - 24,775 tons

The City of Tacoma, its leaders and employees will serve as models for the community, setting the standard for policy and behavior changes required to reduce greenhouse gas emissions.

While addressing climate change is a global undertaking and will require most people to make significant changes, the strategies in this section are almost entirely the responsibility of the City and will affect the City as an employer and organization far more than any other residents.

By employing these strategies, the City will inspire residents and businesses to make similar changes. These initial actions will also serve as a strong platform for the City to move ahead with implementing the rest of the Climate Action Plan.

Reduce consumption and promote environmentally responsible purchasing:

1. The City should implement an **environmentally responsible purchasing policy**, considering the cradle-to-grave lifecycle effects of goods and services purchased. Factors to be considered include pollution, waste generation, energy consumption, recycled material content, depletion of natural resources, and potential impact on human health and the environment. Examples include specifying local purchasing when possible, using recycled paper and products, and purchasing advanced technology vehicles.
2. The City should implement a **waste reduction/conservation policy**. Double-sided printing should be required for all City documents, when printing is necessary. Recycling efforts should be evaluated in all City buildings and at City events to ensure opportunities are maximized. Other elements may include establishing paperless/digital offices, requiring composting, and banning disposables, such as plastic water bottles, for City-related activities.
3. **Contractors who use low-emission equipment and low-carbon fuels** in their equipment **should receive a preference** when bidding on City contracts.

⁴ eCO₂ means equivalent carbon dioxide. It includes carbon dioxide, methane and other greenhouse gases associated with an emissions source.

4. The City should actively **support and encourage state and regional product stewardship** efforts, where everyone involved in a product's lifecycle is required to share responsibility for reducing its environmental impact and strong incentives exist for manufacturers to make products that are durable, reusable, recyclable and contain fewer toxic materials.

Save energy in City facilities and fuel in City vehicles:

5. **All new or renovated buildings** to be used or funded by the City **should be built, at a minimum, to Leadership in Energy and Environmental Design (LEED) Silver criteria** or an appropriate alternative green building standard. The size and type of buildings required to meet this criteria will be defined by City ordinance. The ordinance will also allow the City to develop its own system for those structures where the established standards cannot be appropriately applied.

6. The City should **reduce electricity use by implementing energy conservation measures** in City owned and operated facilities. This includes reviewing previous energy-use audits and reassessing energy-saving measures and associated greenhouse gas emissions; hiring a resource conservation manager to prioritize and coordinate the planning and implementation of resource efficiency efforts in City facilities; and investing in building commissioning⁵ for new City facilities and retro-commissioning⁶ facilities larger than 25,000 square feet.

The City should **participate in Tacoma Power's EverGreen Options program** at the EPA Green Power Partner level. Based on the City's annual electricity use, the City would purchase green power at a level of at least 3 percent of that amount. All City facilities larger than 25,000 square feet should be evaluated annually using ENERGY STAR benchmarks. City policies should be established requiring the purchase of ENERGY STAR or equivalent products when available for any equipment that uses electricity, natural gas or fuel oil.

The City should **convert street lights to more efficient technologies** as soon as they become available and **continue converting traffic signals to LED** technology.

7. **Natural gas consumption** in City owned and operated facilities **should be reduced by implementing energy conservation measures**, including energy audits, prioritizing efficiency efforts, building commissioning, and hiring resource conservation managers for key properties.

8. The **purchase of fuel-efficient and alternative-fuel vehicles should be required** for the City fleet when these vehicles are available and suitable for the needs of the job.

⁵ Commissioning is a systematic process of ensuring that a building's complex array of systems (including energy management systems) is designed, installed, and tested to perform according to the design intent and the owner's operational needs. Source: Energy Design Resources

⁶ Retro-commissioning – commissioning for existing buildings – is a systematic process for investigating, analyzing and optimizing the performance of building systems by improving their operation and maintenance to ensure their continued performance over time. Source: Building Commissioning Association

Category 2.

Moving People and Goods More Efficiently

estimated eCO₂ savings: 2012 - 46,175 tons 2020 - 514,600 tons

Transportation contributes 53 percent⁷ of greenhouse gas emissions in the Tacoma area. About 65 percent of transportation emissions can be attributed to personal driving and 25 percent to trucks hauling freight. Tacoma's transportation climate action strategies focus on moving people and goods, not cars, with particular emphasis on reducing vehicle miles traveled and single occupancy vehicles. They also identify approaches to reducing emissions through policies and technology.

Encourage more people to ride together and/or reduce single occupancy vehicles:

9. Increase the use of all public transportation modes – buses, carpools and vanpools – by all Tacoma residents, encouraging employees in the public and private sector through one-to-one outreach. This will be done through intense investment in commute trip reduction programs and individualized education to each employee.

Specific goals:

Increase the share of carpools used for commuting by 5 percent by 2012 and 25 percent by 2020. This will mean 18 percent of commute trips in the City will use carpools by 2012.

Increase the share of buses used for commuting by 2.5 percent by 2012 and an additional 2.5 percent by 2020.

Increase the number of vanpools in Tacoma by 20 by 2012 and another 20 by 2020.

10. Expand promotion of Pierce Transit's online ridesharing and carpooling system, www.rideshareonline.com.

11. Recruit a car-sharing service to Tacoma. This could be used by people who don't own cars and by people who need to drive during the day when they walk, bike or take carpools or public transportation to work. Evaluate the potential for using a car-sharing service in public and private-sector fleets; evaluate making vehicles available for personal use during the work day by City employees who don't drive their cars to work; evaluate providing car-sharing service membership to employees as part of a tax-free transportation option or benefit.

12. Work with Pierce Transit to increase frequency of bus service on City arterials to every 15 minutes during morning and evening commute times.

13. Construct the initial phase of a streetcar system in Tacoma to connect the residential areas of the City with the mixed-use districts and the mixed-use districts with each other.

⁷ Community Emissions 2005 from the Tacoma Emissions Inventory Update, June 18, 2007, Appendix A.

Reduce the need for driving/the amount of driving:

14. **Develop and implement a comprehensive citywide bicycle and pedestrian system** that will allow residents to bike or walk to work. The system should be coordinated with the City's six-year street plan to identify opportunities to develop both systems at the same time. Give incentives for, or require, bicycle storage, locker rooms and shower facilities for all major office building construction and remodeling projects in the downtown core.

15. **Encourage telecommuting and other flexible/alternative work schedules** for all public and private-sector employees whose job duties can be performed from home; encourage flexible work schedules including compressed work weeks and non-traditional work hours for public and private-sector employees whose job duties allow it.

16. Work with the Puget Sound Clean Air Agency and Puget Sound Regional Council to **set annual per-capita vehicle-miles-traveled goals** that will encourage residents to drive less⁸.

Change parking policies to discourage single-occupancy vehicle driving:

17. **Provide free or reduced cost parking only for employees using registered carpools and vanpools** at each work site; eliminate free parking for drive-alone employees.

18. **Encourage all Tacoma employers to offer parking cash-out programs**, paying employees to give up free parking at work.

19. **Reduce or eliminate parking minimums required for residential/mixed-use developments** to encourage transit or non-motorized transportation and thereby making these developments more profitable.

Reduce fuel use and/or increase fuel efficiency:

20. **Advocate** at the state and national levels **for policies and programs that provide incentives for Tacoma residents to use more fuel-efficient or alternative-fuel vehicles.** Possible incentives include preferred parking stalls, reduced parking fees and lower licensing fees.

21. **Place higher priority on monitoring synchronization of traffic signals** in Tacoma (by staff assignment, for example).

22. **Adopt an anti-idling ordinance** in Tacoma applicable to public-sector vehicles by 2012 and private-sector vehicles by 2020.

23. Investigate the possibility of locating a **low-interest loan program** (such as Cascades Sierra Solutions) in the Tacoma-Pierce County area **to retrofit older diesel trucks** with APUs (auxiliary power units) and other emission-reducing devices.

⁸ Statewide benchmarks for decreasing annual per capita vehicle miles traveled have been established under E2SHB 2815, passed by the 2008 Legislature. Under this new law, state agencies, the Puget Sound Clean Air Agency and other organizations will participate in a collaborative process to develop a set of tools and best practices to assist state, regional and local entities in making progress toward the benchmarks.

Category 3.

Enhancing Compact/Livable Neighborhoods

estimated eCO₂ savings: 2012 - 9,441 tons 2020 - 51,300 tons

Smart growth principles encourage compact/livable neighborhoods, concentrating growth in a city's downtown and neighborhood centers and reducing urban sprawl. These planning principles direct development toward existing communities already served by infrastructure and away from open space and farmlands. This provides for urban forests and other in-city trees, which reduce global warming by absorbing and removing carbon from the air, a natural form of carbon sequestration, while also making the cityscape more attractive. Smart growth also supports a variety of transportation choices, including walking, biking and transit, while bringing a critical mass of citizens living closer to where they work and entertain themselves, thereby growing the tax base and local economy.

Implement smart growth principles:

24. Begin a **regional Transfer of Development Rights program** with Pierce County. Under TDR, development rights are purchased from working farms, forests and natural lands in exchange for a covenant that prevents future development of the property. Developers then purchase these rights to develop at greater densities or heights than would otherwise be allowed in areas that can accommodate additional growth, such as urban centers. Without constricting growth in suburban and rural areas, there will always be an economic incentive to sprawl and to not build compactly in the urban core, which has a direct negative effect on the local economy. TDR is a market-based way to conserve resource lands, control sprawl and encourage good development in our urban core where community infrastructure already exists.

25. City should implement **smart growth principles** – including compact, transit-oriented development within the City's mixed-use centers – to promote mixed-use developments, affordable housing, green building, green site development, and bike- and pedestrian-friendly neighborhoods. Policies should **increase mobility while decreasing dependence on private vehicles**.

Increase trees and open space:

26. **Increase tree planting requirements or incentives** for all development, including transportation projects. Corridors including freeways, highways and arterials should be tree-lined appropriately, not barren. This will act as a carbon sponge, and increase the attractiveness and create the impression of a gateway to our city, its neighborhoods and business districts.

27. **Increase tree planting – of the right trees in the right places – on City and other public property**, such as parks, gulches and other open spaces. Funding must be provided for additional City trees, maintenance and management of trees, and enforcement of tree-planting requirements. Tacoma should also implement programs and policies to increase the number of trees in rights of way and on private property, strengthening incentives and regulations for tree planting and preservation. Policies and programs should address how the increased vegetation should be used, along with installation and maintenance issues. The City should establish a numeric goal, such as 200,000 trees, to absorb and remove carbon from the air (carbon sequestration).

28. **Adopt and fund the Open Space Habitat and Recreation Plan** being developed by the City to preserve and maintain remaining public and private undeveloped natural areas and create more natural open space within the City limits.

Category 4.

Energy Efficiency in Our Buildings, Homes and Industries

estimated eCO₂ savings: 2012 - 25,000 tons 2020 - 110,000 tons

Because so much of Tacoma's electricity is generated with hydropower, local greenhouse gas emissions from energy are significantly smaller than those in many other cities. However, energy use accounts for about 45 percent of the community's greenhouse gas emissions, and much work remains to reduce energy use, and secure new, renewable energy resources.

Reduce energy use and expand the use of renewable energy sources:

29. Require sellers to have **an energy audit before the sale of any building** to inform buyers of potential energy savings.

30. Encourage green building by **hiring a City "green building advocate"** to provide design assistance and technical resources for public and private developers, designers, homebuilders and residents. Provide expedited City permit application review for private-sector projects proposing the use of the LEED green building rating system for commercial projects and the Built Green program for residential construction, or appropriate alternative green building rating systems for all new building projects and renovations.

31. **Encourage installation of renewable energy**, including solar electric, solar domestic hot water, biogas, biomass and other viable renewable energy technologies as they become available. Assess cost efficiency and incentives for a solar domestic hot water program such as BPA's Bright Way program. Assess the viability and cost efficiency of biogas and emerging renewable energy technologies.

32. **Reduce oil use with residential and commercial conservation programs** focused on building efficiency and furnace improvement, conversion and replacement.

Category 5.

Reuse and Recycle ... from Buildings to Food Waste

estimated eCO₂ savings: 2012 - 70,900 tons 2020 - 326,750 tons

Recycling materials such as paper, metals and plastics yields significant offsets to carbon emissions and lower consumption of natural resources. The City Public Works Department should increase the amount of material recycled, promote recycling in both the commercial and residential sectors, and encourage building reuse and deconstruction.

Maximize commercial and residential recycling:

33. Study and implement **additional recycling programs and policies** toward a goal of **collecting 100 percent of traditional recyclable materials** (such as paper, metals and plastics) by 2020.

34. Explore **home composting programs**, including subsidizing the sale of home composting units, to divert food and yard wastes from the landfill.
35. Ensure that the City's **new garbage transfer station** planned at the Tacoma Landfill also has the **capability for separating and processing recyclables**.
36. Identify and implement **additional residential and commercial programs to divert organic waste from landfill disposal**. The City should expand programs beyond those already in place or planned, removing more food, yard and garden waste, and the organic portion of construction, demolition and land-clearing waste from the landfill.
37. **Significantly expand reuse and waste reduction efforts**. The City should partner with agencies and businesses to increase reuse and reduce waste. The goal is to reduce waste by 16,000 tons by 2020, in addition to recycling.
38. **Determine if a change in the solid waste rate structure**, providing greater cost incentives for using smaller garbage containers, **would encourage more recycling and reduce waste**. For example, some cities use larger fee differentials for garbage can sizes, such as a flat per-gallon rate, to reduce the amount of garbage generated. Collecting garbage less often should also be explored.

Reuse, recycle and deconstruct buildings:

39. **Adaptive reuse of historic or older buildings** – using older buildings for new purposes – should be encouraged by City policy.
40. The City should review other cities' efforts and recommend methods to **encourage deconstruction⁹ and recycling of structures** to be demolished in the City.

⁹ Deconstruction is the process of selectively and systematically disassembling buildings that would otherwise be demolished to generate a supply of materials suitable for reuse in the construction or rehabilitation of other structures. Deconstruction diverts material from landfills. Source: U.S. Environmental Protection Agency

Part 2. Evolving Strategies: Strategies in progress or soon to be implemented

A number of activities that will help reduce greenhouse gas emissions in the Tacoma area are already in the works. These include implementing Initiative 937, the renewable energy/energy conservation initiative passed by Washington state voters in 2006; increasing commercial and residential recycling programs; continuing current strategies encouraging transit-oriented development; extending Sound Transit bus and train service; and implementing other transportation-related plans. Ensuring that these programs move forward is vital to reducing the area's greenhouse gas emissions.

Category 1.

City Leading by Example – Actions to be Taken by City Government

estimated eCO₂ savings: 2012 - 825 tons 2020 - 3,300 tons

E-41. Use **renewable fuels for all City-owned diesel vehicles**.

Category 2.

Moving People and Goods More Efficiently

estimated eCO₂ savings: 2012 - 1,200 tons 2020 - 42,000 tons

E-42. Work with Sound Transit to **complete the Sounder connection to Lakewood**, expand service to South Tacoma residents, and continue to increase the frequency of Sound Transit bus service in and out of Tacoma.

E-43. Establish **metered parking in downtown Tacoma** to discourage single occupancy vehicles and encourage pedestrian traffic and the use of transit.

Category 3.

Enhancing Compact/Livable Neighborhoods

estimated eCO₂ savings: 2012 - 24,200 tons 2020 - 46,450 tons

Encourage these development strategies:

E. 44. **Encourage transit-oriented development** and zone the surrounding areas for needed housing and employment densities to **support increased use of public transit, biking and walking** while removing the growth/sprawl potential on working resource lands outside Tacoma.

E-45. **Encourage needed housing and employment densities to maximize the use of public transportation.**

E-46. **Designate mixed-use centers for employment and housing growth.**

Category 4.

Energy Efficiency in Our Buildings, Homes and Industries

estimated eCO₂ savings: 2012 - 57,650 tons 2020 - 109,226 tons

Achieve the maximum possible energy savings through:

E-47. **Electricity conservation in homes** and other residential buildings.

E-48. **Natural gas savings in homes** with programs focused on energy-efficient buildings and efficient heating and hot water appliances, such as rebate programs and other assistance to improve insulation and purchase more efficient appliances.

E-49. **Electricity conservation in the commercial-industrial sector.**

E-50. **Natural gas energy savings in the commercial-industrial sector.**

Category 5.

Reuse and Recycle ... from Buildings to Food Waste

estimated eCO₂ savings: 2012 - 20,900 tons 2020 - 63,800 tons

Tacoma Public Works Solid Waste Management should:

E-51. Implement its near-term plans to **increase recycling in the commercial sector**, which is currently defined as all commercial and industrial customers, including multifamily units that are three units and larger.

E-52. Evaluate and implement methods to **increase residential recycling** in the short term, such as evaluating and addressing differences in recycling rates in different geographic areas within the city, increasing participation and other methods.

E-53. Continue to **improve collection system efficiencies**, by evaluating and implementing programs or alternative collection methods and equipment to reduce greenhouse gas emissions and transportation impacts of the solid waste operations.

E-54. Implement near-term plans to **develop a commercial food waste recycling program.**

E-55. **Continue mulching mower sales assistance programs.**

Part 3. Unquantifiable Strategies

This section includes policy statements in support of other strategies in the Climate Action Plan and strategies where the impact could not be measured with any level of confidence. The task force recommends that these strategies be explored.

Category 2. Moving People and Goods More Efficiently

U-56. Work with Pierce Transit and the GIS system to **identify existing bus stops in Tacoma** and **evaluate potential locations for new stops or routes** to bring a stop within one-fourth of a mile of all residents.

U-57. Develop a **map of renewable fuel locations and electric plug-in stations** to make it easier for drivers to find stations and to show that adequate infrastructure exists to make refilling convenient.

U-58. **Analyze the potential for shared parking** – parking facilities that serve multiple users or destinations – throughout the city. Studies show that shared parking can reduce the need for parking spaces by 10 to 30 percent.¹⁰

U-59. **Adopt parking maximums rather than parking minimums** for new developments and major remodels. Studies show parking maximums can reduce the need for parking spaces by 10 to 30 percent.¹⁰

Category 3. Enhancing Compact/Livable Neighborhoods

Policy support for smart growth principles:

U-60. Design standards for **City Public Works projects to incorporate applicable “complete streets” principles**. (Complete streets are designed to be safe, comfortable and attractive for all users, including pedestrians, bicyclists, motorists and people using other means of travel.)

U-61. **Encourage and give incentives for the development of existing and future mixed-use centers to increase density**. Mixed-use centers should have a minimum of 25 units per acre and provide amenities that could reduce the need for additional off-site trips.

U-62. **City codes and development processes should apply a holistic approach to projects**, including balancing carbon emission impacts and benefits in the immediate area as well as the region.

U-63. **Inventory and map existing affordable housing options** to identify gaps in availability and target those areas for more affordable housing.

¹⁰ Victoria Transport Policy Institute

U-64. **Create a Web-based housing match program for Tacoma area employees** to find housing close to their place of employment.

U-65. Promote amenities that **make high-density living more attractive**.

Policies and strategies to support urban trees and open space:

U-66. Develop **databases or inventories of urban trees and existing open space/green space**. Having a database of trees will help the City quantify the impacts of urban forests on greenhouse gas emissions.

U-67. Develop and implement a **plan for establishing and maintaining trees on streets and City rights of way**. The City should bring together the various City departments with a current or historic role in tree planting and maintenance to design a cohesive, holistic system (including funding) to plant and maintain City street trees.

U-68. Work with the Washington State Department of Transportation to **initiate a highway planting program**.

U-69. Develop and implement, pending Council approval, a **plan for acquisition, ongoing management and funding to support the Open Space Habitat and Recreation Plan**. This plan should address funding mechanisms, ongoing maintenance of open space properties owned by the City, and partnerships required to efficiently implement the plan.

U-70. The **goal of all City open space programs should be no net loss or an increase of protected, public open space** in Tacoma.

Category 4.

Energy Efficiency in Our Buildings, Homes and Industries

U-71. **Consider providing tax abatements for buyers if energy conservation upgrades are performed**. (This would be an alternative funding method for energy audits; the recommended strategy calls for sellers to pay for energy audits prior to sale of buildings.)

Support for green building:

U-72. Perform an analysis of the City's current codes, policies and administrative processes to **determine if there are institutional barriers to green building**.

U-73. **Identify methods to provide incentives for green building**, including quicker review times for permits, reduced permit fees, tax abatements and other possibilities. Report this information to the City Council.

U-74. Research and identify ways to **partner with existing and future private and nongovernmental organizations' green-building programs** such as Built Green and the upcoming National Association of Home Builders Standards. Explore ways to leverage City and private sector efforts to streamline these programs.

Category 5.

Reuse and Recycle ... from Buildings to Food Waste

U-75. Work with Pierce County and the private sector to **secure and encourage additional organic material processing capacity** in the area. The lack of a composting facility in the region is a major barrier to additional composting.

U-76. Identify and implement public education and other programs to **reduce the amount of organic material generated and increase the volume recycled**.

U-77. **Programs such as natural yard care** can be implemented as a pilot to determine **if they provide sufficient benefit**. Natural yard care includes water conservation, alternatives to pesticides and other toxic lawn and garden chemicals, composting, mulch mowing and minimizing water runoff from property.

VII. Implementation Recommendation

As the Green Ribbon Climate Action Task Force developed its recommendations for Tacoma's Climate Action Plan, it recognized that an implementation strategy was necessary for the plan to succeed. Members of the task force studied effective organizational structures in other cities and determined that a three-pronged approach would work best. The task force adopted this carefully constructed design, noting that each element is important to Tacoma achieving its greenhouse gas reduction goals.

Tacoma's Climate Action Plan should be implemented with an organization comprised of three elements:

1) Office of Sustainability

This office would be led by a director-level position reporting to the City Manager and responsible for the coordination of efforts and implementation of the Climate Action Plan strategies. This office leads the effort by collaborating with City agencies, City department heads (Tacoma Green Team), business and residential groups and organizations, the citizen commission, and other partners to complement and help implement programs and strategies that promote the goals of Tacoma's Climate Action Plan.

Purpose: Implements Tacoma's Climate Action Plan, provides leadership, coordinates and integrates implementation efforts, houses information for City and external stakeholders to implement and monitor progress of Tacoma's Climate Action Plan.

Tasks and Functions:

- Responsible for greenhouse gas emissions measurement with periodic reports to the community.
- Accountable for the implementation of Climate Action Plan strategies and CO₂ reduction efforts.
- Coordinates education and training on sustainability for City staff.
- Identifies barriers to and incentives for implementation in the public and private sectors.
- Organizes marketing, outreach and educational programs targeting the public/private commercial and residential community.
- Establishes the Tacoma Climate Partnership to analyze and reduce the carbon footprint in business and industry.
- Reports on financial savings and reinvestment from Climate Action Plan strategies.
- Coordinates a business partnership to support and encourage consumers to "buy local," with purchasing, environmental stewardship and food security initiatives, using independent local business associations to engage Tacoma's entrepreneurial spirit.
- Minimizes duplication and maximizes synergy with state, regional and national climate action efforts. Leverages external resources to fully implement all of the strategies in the Climate Action Plan.

and

2) Tacoma Green Team

Two distinct representative groups (City and Community) to collaborate with the Office of Sustainability and to report to the City Manager (City) on implementing programs that promote the goals of Tacoma's Climate Action Plan, relative to each member's specific function and jurisdiction.

Purpose: To be as effective and efficient as possible in implementing Tacoma's Climate Action Plan, eliminating duplicative efforts and maximizing communication and best practices. Proper implementation of this effort should result in cost-saving measures, consistency in messaging with limited confusion, and leveraging of multiple entities' efforts. Examples include energy efficiency programs, environmentally responsible office practices, expanded recycling programs and green design for new construction projects.

Tasks and Functions:

City of Tacoma

- Representatives from City of Tacoma departments to work on a variety of related tasks as recommended by Tacoma's Climate Action Plan. Members might include representatives from Community and Economic Development, Police, Fire, Parking Facilities, Public Assembly Facilities, Public Utilities and Public Works.
- Responsible for greenhouse gas emissions measurement with periodic reports to the Office of Sustainability.
- Implements education and training on sustainability for City staff.
- Identifies barriers to and incentives for implementation.
- Recruits candidates for City's green-sector jobs; helps identify City jobs with responsibilities related to sustainability.
- Reports on financial savings and reinvestment from Climate Action Plan strategies to the Office of Sustainability.
- Minimizes duplication and maximizes synergy with state, regional and national climate action efforts.

Tasks and Functions:

Community Agency Representatives

- Representatives from local agencies to work on a variety of related tasks as recommended by Tacoma's Climate Action Plan. Members might include Pierce Transit, Sound Transit, Tacoma Public Schools, Tacoma/Pierce County higher education institutions, Port of Tacoma, hospital/medical administration, and Metro Parks.
- Responsible for greenhouse gas emissions measurement with periodic reports to the Office of Sustainability.
- Identifies barriers to and incentives for implementation.
- Coordinates marketing, outreach and educational programs targeting the public/private commercial and residential community with the Office of Sustainability.
- Reports on financial savings and reinvestment from Climate Action Plan strategies to the Office of Sustainability.
- Minimizes duplication and maximizes synergy with state, regional and national climate action efforts.

and

3) Citizen Oversight Commission on Climate Change

Members are selected by the City Council Appointments Committee and report to the City Council.

Purpose: To bring citizen accountability, transparency and vigilance to the long-term implementation of Tacoma's Climate Action Plan as developed by the Green Ribbon Climate Action Task Force.

Tasks and Functions:

- Representatives from various stakeholders in the Tacoma community to oversee implementation of Tacoma's Climate Action Plan strategies.
- Coordinates with the Office of Sustainability to obtain greenhouse gas emissions reduction reports.
- Obtains updates from the Office of Sustainability on Climate Action Plan strategy implementation efforts and periodic result reports. Provides annual progress report to the public. Communicates barriers to and incentives for implementation to the City Council.
- Creates a forum for regular public comment and community involvement.

VIII. Two-year Action Plan: 2009-2010

From the full list of strategies recommended, the Green Ribbon Climate Action Task Force has selected key strategies that must be started in the next two years for Tacoma to reach its long-term greenhouse gas reduction goals. The most current research by the Intergovernmental Panel on Climate Change shows that earlier interventions will have a larger impact than delayed interventions¹¹.

While the entire plan works together as a complete blueprint toward a better climate future, with limited resources and time, the plan must be implemented in manageable steps. This two-year action plan does just that.

The selected “early actions” are those that:

- Citizens indicate as higher priority,
- Are anticipated to be less complex strategies to implement, relative to others,
- Are estimated to yield appreciable greenhouse gas reductions, and
- Are consistent with practices that have been demonstrated by other cities to be effective in reducing greenhouse gases.

Of all the strategies put forth, ***the single most important action that must be accomplished in the next two years is dedicating a structure to implement all of the recommended strategies.*** As detailed in Section VII of this report, the task force recommends an implementation structure that consists of an Office of Sustainability, a Tacoma Green Team and a Citizen Oversight Commission on Climate Change. This recommendation was based on an evaluation of successful organizations in other cities.

Tacoma has little chance of preventing and reducing greenhouse gases if it does not ensure the recommended strategies are effectively executed. Simply put, a key office must be assigned the responsibility to measure emissions, implement the strategies and monitor success.

The task force recognizes that its recommendations are not without cost. Within the volunteer capacity of the members, and with staff support, the task force calculated broad cost estimates for each strategy. While a first task of implementation will be to refine the projected costs, the task force is confident that its cost estimates are generally consistent with those of other successful efforts.

The task force also researched other programs, and firmly believes that while the effort of climate protection may be viewed as a “new program” for the City, much of what needs to be accomplished is not new activity; it is simply retooling current activities. A prime example is purchasing hybrid vehicles rather than traditional gas vehicles when the City needs to replenish its fleet. The task force also believes that many of these strategies will not yield as much cost as they will *savings* in the long term. Two simple, effective examples are the policy of double-sided printing and energy conservation in City buildings.

¹¹ Page 19, IPCC fourth assessment report, *Climate Change 2007: Synthesis Report, Summary for Policymakers*, released November 2007: “Many impacts can be reduced, delayed or avoided by mitigation. Mitigation efforts and investments over the next two to three decades will have a large impact on opportunities to achieve lower stabilisation levels. Delayed emission reductions significantly constrain the opportunities to achieve lower stabilisation levels.”

This action plan assumes the City of Tacoma will continue with its existing efforts¹². The strategies proposed in this 2009-2010 action plan are *in addition* to those efforts listed in the evolving strategies section of this report.

If the City of Tacoma continues the efforts it has already initiated and begins these new strategies in 2009-2010, it will reach the greenhouse gas reduction goal of 214,373 tons by 2012. And if the *full list* of new strategies is implemented in the years following, it is entirely within Tacoma's reach to meet the goals the task force has recommended for 2020 and 2050, making Tacoma a leader among cities across the nation taking positive steps for a better climate future.

Category 1.

City Leading by Example – Actions to be Taken by City Government

estimated eCO₂ savings: 4,575 tons

Strategy: Implement an environmentally responsible purchasing policy for the City, considering cradle-to-grave lifecycle effects of goods purchased. Actively support state and regional product stewardship efforts, requiring everyone involved in a product's lifecycle to share responsibility for reducing its environmental impact. Require double-sided printing for all City documents.

Aim:

- Each year, 25 percent of the City's copier paper purchases (estimated 2,600 reams) are a minimum of 30 percent recycled content.
- Cut paper use 10 percent each year, ultimately reducing paper use by 25 percent.

Strategy: All new or renovated buildings to be used or funded by the City should be built to LEED Silver criteria or an appropriate alternative green building standard. The size and type of buildings required to meet this criteria will be defined by City ordinance.

Aim: 50,000 square feet per year of new or renovated green buildings.

Strategy: Require purchase of fuel-efficient and alternative-fuel vehicles for City fleet when available and suitable.

Aim: 12 hybrids and 3 electric vehicles purchased each year.

Strategy: Give bidding preference for City contractors who use renewable or low-carbon fuels in their equipment.

Aim: 12,500 gallons of diesel are switched to B20 or other renewable fuel.

Strategy: Reduce City's electricity use by implementing energy conservation measures in facilities and incorporating energy-efficient technology in street lights and traffic signals. (The City should participate in Tacoma Power's EverGreen Options program at the EPA Green Power Partner level.)

¹² See Section VI. Strategies – Part 2. Evolving Strategies for a list of actions already in use or in development.

Aim:

- Energy audits and improvements on two City-owned buildings per year.
- 50 percent of City electricity usage is green power or offset by purchase of green tags (carbon offsets that support development of renewable energy).

Category 2.

Moving People and Goods More Efficiently

estimated eCO₂ savings: 6,425 tons

Strategy: Begin creating and implementing a comprehensive citywide bicycle and pedestrian plan.

Aim: 300-350 workers (0.4 percent of Tacoma's estimated 88,000-person workforce) walk or bike to work an average of one day per week.

Strategy: Expand promotion of Pierce Transit's online ridesharing and carpooling system.

Aim: Each year create 125 new two-person carpools and 60 new four-person carpools.

Strategy: Recruit a car-sharing service to Tacoma; evaluate possible use in public and private-sector fleets.

Aim: 30-35 car-share vehicles in Tacoma with 800-950 members by 2012.

Strategy: Encourage telecommuting and alternative work schedules for all public and private-sector employees in Tacoma.

Aim: 2.5 percent of Tacoma's workforce (an estimated 2,270 employees) telecommutes one day per week.

Category 3.

Enhancing Compact/Livable Neighborhoods

estimated eCO₂ savings: 9,441 tons

Strategy: Begin a regional Transfer of Development Rights program with Pierce County.

Aim: 25 TDRs per year beginning in 2010.

Strategy: Adopt and fund the Open Space Habitat and Recreation Plan being developed by the City to preserve remaining public and private undeveloped natural areas and create more open space within the City limits.

Aim: Acquire 10 acres of open space by 2012.

Strategy: Increase tree planting requirements or incentives for all development, including transportation projects. Increase tree planting on City/public property to absorb and remove carbon from the air (carbon sequestration).

Aim: 20,000 trees planted in the city per year.

Strategy: Implement smart growth principles – including compact, transit-oriented development – promoting mixed-use developments, affordable housing, green building, and bike- and pedestrian-friendly neighborhoods. Policies should increase mobility while decreasing dependence on private vehicles.

Aim:

- Residential densities of 25 dwelling units per acre and employment densities of 125 employees per acre in mixed-use centers.
- Reduce single occupancy vehicle commuting in the city by 10 percent.
- Reduce average one-way commute distance in the city by 10 percent, from 13.8 miles to 12.4 per person.

Category 4.

Energy Efficiency in Our Buildings, Homes and Industries

estimated eCO₂ savings: 26,232 tons

Strategy: Tacoma Power is increasing electricity conservation in the residential, commercial and industrial sectors, preparing for the conservation and renewable energy acquisition required between 2010 and 2020 by Initiative 937.

Aim: Acquire 56,976 MWh of electricity conservation savings.

Strategy: Encourage installation of solar and other renewable energy.

Aim: Acquire an additional 50 kW of new renewable electricity generation on Tacoma's grid, in addition to the 43kW of solar electricity on Tacoma's system as of mid-2008.

Category 5.

Reuse and Recycle...from Buildings to Food Waste

estimated eCO₂ savings: 31,100 tons

Strategy: Implement additional recycling programs to collect 100 percent of traditional recyclable materials (such as paper, metals and plastics) by 2020.

Aim: Additional 10,000 tons of commingled recycling.

Support Activities

The task force expects that several of the following activities and policies may be needed to facilitate successful implementation of the strategies identified in the 2009-2010 action plan and in future years.

Category 1.

City Leading by Example – Actions to be Taken by City Government

For the City to effectively lead by example, its employees must have the knowledge to be able to make decisions about and carry out City processes that are supportive of climate protection goals. To this end, education and training of employees is recommended, including actions such as coordinating education and training on sustainability for all City staff and making education available to staff on green building, low-impact development and other topics.

Category 2.

Moving People and Goods More Efficiently

Study activities that may help implement the strategies to move people and goods more efficiently – such as expanding the use of public transportation and renewable fuels, carpooling, car-sharing, and developing a comprehensive bike and pedestrian network – are:

- Work with Pierce Transit on the GIS system to identify existing bus stops in Tacoma and evaluate potential locations for new stops or routes to bring a stop within one-fourth of a mile of all residents.
- Develop a map of renewable fuel locations and electric plug-in stations.
- Analyze the potential for shared parking throughout the city.

A policy that has helped other communities succeed in improving their mobility networks is:

- Adopt parking maximums rather than parking minimums for new developments and major remodels.

Category 3.

Enhancing Compact/Livable Neighborhoods

To begin a Transfer of Development rights program, adopt the Open Space Habitat and Recreation Plan, increase tree planting, and implement smart growth principles that will enable Tacoma to enhance compact/livable neighborhoods, the following groundwork and studies should be undertaken:

- Develop databases or inventories of urban trees and existing open space/green space.
- Work with the Washington State Department of Transportation to initiate a highway planting program along the interstate.
- Develop and implement a plan for establishing trees on streets and City rights of way.
- Promote amenities that make high-density living more attractive.
- Inventory and map existing affordable housing options to identify gaps in availability and target those areas for more affordable housing.
- Create a Web-based housing match program for Tacoma area employees to find housing close to their place of employment.
- The goal of all City open space programs should be no net loss or an increase of open space in Tacoma.

Some policies that would assist in developing compact/livable neighborhoods are:

- Evaluate design standards for Public Works projects to incorporate applicable “complete streets” principles (applying the bicycle and pedestrian plan, where appropriate).
- Encourage and provide incentives for the development of existing and future mixed-use centers to increase density. Density at mixed-use centers should be a minimum of 25 units per acre, and have amenities that could reduce the need for additional off-site trips.
- The City’s codes and development processes should apply a holistic approach to projects, including balancing carbon emission impacts and benefits in the immediate area as well as the region.

Category 4.

Energy Efficiency in Our Buildings, Homes and Industries

The strategies recommended – in the two-year action plan and beyond – to improve energy efficiency in buildings and industries focus primarily on conserving energy and expanding green building. Studies and groundwork that may effectively complement and advance the recommended strategies include:

- Perform an analysis of the City’s current codes, policies and administrative processes to determine if there are institutional barriers to green building.
- Identify possible methods to provide incentives for green building in Tacoma, including such items as quicker review times for permits, reduced permit fees and tax abatements. Provide report to the City Council.
- Consider tax abatements for buyers if energy conservation upgrades are performed.

- Research and identify ways to partner with existing and future private and nongovernmental organizations' green building programs such as Built Green and the upcoming National Association of Home Builders Standards. Explore ways to leverage City and private-sector efforts to streamline these programs.

Category 5.

Reuse and Recycle...from Buildings to Food Waste

The goal of the reuse and recycle strategies is to recycle or compost *more of everything*. Among the partners and concepts that could contribute toward moving recycling strategies forward are:

- Work with Pierce County and the private sector to secure and encourage additional organic material processing capacity in the area.
- Identify and implement public education and other programs to reduce the amount of organic material generated and increase the volume recycled.
- Implement programs such as natural yard care as pilot projects to determine if they provide sufficient benefit.

IX. Appendices

These documents are posted on the Green Ribbon Climate Action Task Force Web site at www.cityoftacoma.org/greenribbon.

- Appendix A. Tacoma Emissions Inventory Update, June 18, 2007
- Appendix B. Matrix of Evolving, New and Unquantifiable Strategies
- Appendix C. Task Force Subcommittee Worksheets
- Appendix D. Tacoma City Council Resolution, April 18, 2006
- Appendix E. Kyoto Protocol