

**Item:**  
**Date:** 04/03/2007

## Staff Report

**March 26, 2007**

**TO:** City Council

**FROM:** Bill Emlen, City Manager  
Mitch Sears, Open Space Planner

**SUBJECT:** Consideration of initial City strategy to address climate change and community sustainability

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### **Recommendations**

1. Receive report;
2. Adopt the attached Davis Climate Protection/Community Sustainability Framework Strategy resolution (Attachment 1);
3. Direct staff to provide regular updates on development of an action plan and implementation measures as called for in the strategy;
4. Direct the Natural Resources Commission to continue in its lead role in developing a community climate action plan.

### **Overview**

The primary purpose of this report is to provide a strategy for the City to move forward on multiple objectives related to climate change and long-term community sustainability. In summary, the recommended strategy includes the following five elements:

1. Assess the City's current programs and projects that support resource conservation and community sustainability.
2. Develop a short-term action plan to identify early action items to be implemented in less than 18 months.
3. Develop a mid-term action plan to implement multi-year projects that build on existing City programs/projects to achieve the City's climate protection and sustainability goals.
4. Initiate a visioning process to define a sustainable Davis that guides future decisions.
5. Develop a community outreach program to provide and gather information.

These elements will be implemented on parallel tracts when resources and sequencing permit.

The report also includes background on existing Davis policies and programs related to climate change, as well as a brief review of current efforts by other communities. The analysis section provides detail on the recommended strategy and identifies key issues to be considered as the City moves forward. This is not a technical report; technical detail will be provided in follow up reports as actions are identified for implementation.

### **Fiscal Impact**

To be determined. Implementation of actions related to reducing the community's contribution to global warming pollution is anticipated to require significant capital improvement and operating investment by the City. Implementation of these actions will also likely result in efficiencies that may partially offset initial investments. Greater fiscal impact detail will be provided as potential actions are identified by the Council for implementation.

### **Background**

For decades Davis has been a leader and working example of how a community can take action to improve quality of life by increasing efficiency and reducing consumption of natural resources. Davis has been an incubator for innovative community design, drawing on the considerable talents and energy of its citizens. Even as Davis has grown and evolved, these core values continue to influence community decisions. Faced with mounting evidence that climate change, mass species extinction, unsustainable energy supply/use, etc. are modern realities, Davis' environmental values are quickly becoming mainstream and influencing how communities are designed and operate.

In recent years there has been occasional commentary that Davis has lost its "cutting edge" spirit. Often this type of comment is made in reference to unique projects in another community containing the latest in environmentally beneficial features. While this may be true in the context of the latest development projects or comprehensive community sustainability policies/programs, we would still be hard pressed to find a community of Davis' size that has actually implemented the range of initiatives that the City has over the years. That said, the emerging discussion on sustainability and climate change certainly should continue to be pursued and celebrate what the community has accomplished while also acknowledging that the problems before us will warrant further aggressive efforts in the future.

### **General Plan**

The Davis General Plan has provided policy direction and support for resource conservation, compact community design, energy efficiency, etc for decades. Examples of these policies areas that support action to address climate change and community sustainability include:

- Encouraging compact urban growth
- Improving energy efficiency and alternative transportation options
- Reducing consumption and waste of non-renewable natural resources
- Improving protection of ecosystems and farmlands
- Increasing access to and the quality of social, recreational, and cultural services
- Improving air and water quality

The recommended strategy and associated actions outlined in the analysis section below are consistent with and strengthen the link between existing City General Plan policies. Staff recognizes that achieving a meaningful balance between competing policies is a significant challenge that will influence the City's actions on the issues identified in this report. Development of guiding principles that address competing policies in advance is one aspect of the recommended strategy. This approach has been used in communities such as Santa Monica to guide decisions and manage trade-offs.

### Council Goals – 2007/08

In setting its goals for the next two years, the City Council has also provided clear direction that action on climate change and related issues is one of its priorities. Of eight goals covering the spectrum of all city services, one goal is dedicated fully to conservation and environmental protection. The Council goal and action items related to these issues include:

#### Goal: Conserve natural resources and protect the environment

- Develop policies and programs that promote reduction of resource consumption and waste generation, improvement of air and water quality, preservation of natural resources, and creation of a sustainable community.

Within this goal area is a shorter-term objective specific to this report:

- Act on the recommendations of the Natural Resources Commission and the Public Works Department regarding global warming, air quality and reduction of our carbon footprint, including a ban on polystyrene.

Many of the remaining goals (downtown, housing, infrastructure, etc.) are related to and affected by the approach the community takes to sustainability.

The strategy and related actions described in the analysis section complement and support the Council's adopted goals.

### Past resolutions on climate change

Consistent with the City's long held goals of limiting resource consumption and reducing environmental impacts, the Council joined the Cities for Climate Protection Campaign in 1999 (Attachment 2 - resolution). The Climate Protection Campaign outlined the emerging global warming threat and encouraged cities of all sizes to take preventative steps. That initial action was followed in 2006 by Council adoption of the US Mayor's Climate Protection Agreement (Attachment 3 – resolution). Both resolutions are a call to action for national and local governments to take specific steps to reduce global warming pollution. By virtue of its past and on-going programs (sampling of programs provided in Table 1 below), the Davis community was already implementing a majority of the recommended actions (e.g. promote compact urban design). However, formal global warming pollution reduction targets have not been set and the results of Davis' efforts have not been systematically gathered or evaluated.

These two climate protection resolutions are the most direct and formal declarations by the City regarding global warming. They form the platform for the work of the Natural Resources

Commission on global warming. The Commission met on March 26<sup>th</sup> and unanimously passed a motion recommending that the City move forward with its efforts to assess its greenhouse gas emissions and develop a plan to reduce those emissions. The Commission clearly stated its desire to play a lead role in developing and implementing such a plan.

Current Davis programs and projects

In many ways, Davis has been an incubator and testing place for many of the projects and programs related to global warming and sustainability that are now being embraced by a growing number of communities. The list of current programs and projects related to community sustainability, and specifically reduction of global warming pollution, is notable and due in large part to a committed and informed citizenry. This extends from leaders in the municipal, business, educational, and non-profit sectors to the individual citizens who are willing to take advantage of the bike network or fund innovative projects or volunteer to lend their expertise. A sampling of these projects and programs (large and small), demonstrate the scope of the effort:

Table 1

| City Project/Program                                  | Energy | Transportation | Resource Conservation |
|---|--------|----------------|-----------------------|
| PV systems on City buildings                          | X      |                | x                     |
| Community Forest Plan                                 | X      |                | X                     |
| Unitrans public transit system                        | x      | X              |                       |
| Bike Transportation System (lanes, paths, greenbelts) | x      | X              |                       |
| Farmland conservation                                 | x      |                | X                     |
| Green building program (pending)                      | X      |                | X                     |
| Compact community design                              | X      | X              | X                     |
| LED stop lights                                       | X      | x              | x                     |
| Wetlands water treatment                              | x      |                | X                     |
| Bike stop light sensors/push buttons                  |        | X              |                       |
| Storm water ponds/conveyance system                   | x      |                | X                     |
| Fluorescent lighting w/ electronic ballast            | X      |                | x                     |
| Recycling and Waste reduction program                 | X      |                | X                     |
| Storm/waste water quality program                     |        |                | X                     |
| Washer and toilet replacement incentives programs     |        |                | X                     |
| City bike program                                     | x      | X              | x                     |
| Cogeneration at the WWTP                              | X      |                | X                     |
| EV program  | X      | X              | x                     |
| Transit center project                                | x      | X              | x                     |
| City vehicle & equipment idling policy                | X      |                | X                     |
| Low emission vehicle acquisition policy               | X      |                | X                     |

X Directly supports objectives in this conservation/efficiency category



x Indirectly supports objectives in this conservation/efficiency category

The list of projects represents a sustained investment by the community to improve quality of life through resource conservation and efficiency. It is a central organizing objective of the proposed strategy to maximize the return on those investments. Additionally, these projects provide a platform for the community to:

- Meet or exceed targets for reducing its contribution to global warming pollution.
- Successfully adapt in a rapidly changing physical and economic environment.
- Provide leadership on long-term implementation of these types of programs/projects for other communities.
- Plan for future actions

It should be noted that the list in Table 1 is not exhaustive and does not include social or economic programs that are essential considerations in developing a sustainable community and climate protection action plan.

#### Efforts of other communities

There are a number of planning strategies that cities around the world have taken to address global warming and community sustainability. Hundreds of U.S cities, including Davis, have signed onto declarations to reduce energy consumption and global warming pollution. A smaller, though growing subset, have initiated objectives based community plans that serve to establish a long-range vision for the community and a strategy for moving toward that desired future. Several common features of these types of plans include:

- Establishment of common language and definitions
- Adoption of a systems approach that incorporates guiding principles into organizational and community decisions
- Integrated system of measuring program success (community indicators)
- Development and maintenance of a community education and outreach program

To build Council members' knowledge base, staff has included three community plans as attachments to this report that provide a range of approaches adopted by similar sized communities – Arcata, Santa Monica, and Whistler B.C. (Attachments 4, 5, 6). The general approaches in these plans are:

- Arcata: Relatively narrow, single issue focusing on climate change.
- Santa Monica: Relatively broad, systems approach using multiple factors to guide decisions. General focus and leadership has been provided by the City.
- Whistler B.C.: Relatively broad, systems approach using objectives based planning to guide decisions. General focus and leadership appear to extend more fully into the community.

Based on Council direction, follow up reports will provide analysis of the various approaches developed by other communities.

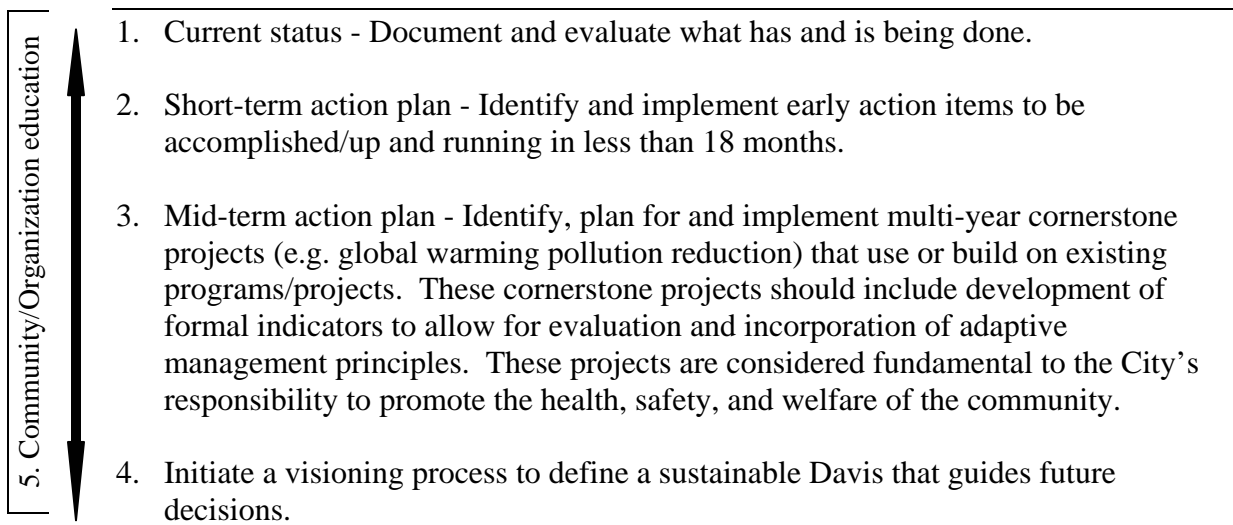
### **Analysis**

While Davis has changed significantly over the past 35 years, staff believes that the types of programs listed in Table 1 and included in the recommended strategy below remain an accurate reflection of closely held community values. This is based on past general survey information, community votes, and general support of these types of projects and programs.

Despite the on-going commitment and work that has been accomplished, more remains to be done to achieve the environmental goals identified by the Council. To this end, staff recommends that the Council adopt the following strategy to guide the City's efforts.

The overall recommended strategy has five integrated elements:

**Framework strategy** (performed on parallel tracts when resources and sequencing permit).



### **Framework strategy elements**

#### **1. Current status - Document and evaluate what has and is being done.**

Document and provide a general assessment of the City's current programs and projects that support resource conservation and generally contribute to making Davis a more sustainable community. This will provide baseline information that will inform management of current efforts and guide planning, implementation, and assessment of future actions. Use of consultant services is likely to be required to carry out this assessment.

#### **2. Short term action plan**

Within the next three months, develop a short term action plan to identify immediate action items that can be implemented with minimal delay and early action items that can be implemented in less than 18 months. Many of these action items will be related to the operation of the City organization and can be implemented in a relatively short period of time. Individually, these

actions are small; cumulatively they provide a platform and momentum for action on larger projects and contribute to the general goal of increasing efficiency and reducing natural resource consumption. Examples of early action items that staff has identified are listed below; feasibility of these actions would be analyzed in future reports. Staff anticipates that as the organization and community become more aware of the City's objectives, many more early action items will be identified. The action plan will need to include criteria for evaluating actions such as cost effectiveness, need for research/support outside of existing City staffing capacities, and whether the projects require on-going support or are generally self-perpetuating.

*Short-term action items (examples of potential projects)*

- Implement green building program. Anticipated outcome: reduced waste, reduced energy consumption, community education.
- Join the regional effort to make the Capitol area the center for clean energy technology and use - Anticipated outcome: reduced global warming pollution, reduced energy consumption, community education.
- Develop standards for zero energy use development projects - Anticipated outcome: reduced natural resource consumption.
- Investigate the use of rain water cisterns and other water use reduction methods - Anticipated outcome: reduced natural resource consumption, community education
- Develop an initial community indicator program to provide on-going assessment of livability and the City's general progress toward community goals. Indicators may include housing affordability, transit ridership, recycling rates, academic achievement, and public safety - Anticipated outcome: community education.
- Form inter-agency climate change team with DJUSD, UCD, Yolo County, private and non-profit sector to share information and begin coordination on existing projects related to climate change - Anticipated outcome: community education.
- Modify City CEQA standards to require analysis of project contribution to global warming pollution - Anticipated outcome: reduced global warming pollution, reduced energy consumption, community education.
- Incorporate renewable energy, food systems, and community health analysis into development review process (similar to state mandated water supply analysis) - Anticipated outcome: reduced global warming pollution, reduced energy consumption, community education.
- Reinitiate "city bike" program - Anticipated outcome: reduced global warming pollution, reduced energy consumption, community education.
- Reach out to Chamber of Commerce and Downtown Business Association to help educate the business community about ways they can implement change in their businesses - Anticipated outcome: community education.

*Immediate action items (examples of potential projects)*

- Form City inter-departmental climate change team to identify other early action items and coordinate existing programs – Anticipated outcome: organizational education.
- Appoint sustainability working group of staff to provide input on and assist with issue - Anticipated outcome: organizational education.

- Add public service messages to the City Channel to provide simple actions that the public can take to reduce global warming and provide information on what the City has/is doing to do the same. See Attachment 7 for outreach materials used in the City of Seattle’s climate protection program – Anticipated outcome: community education.
- Develop City web page and include information in other citywide public outreach to build local knowledge base - Anticipated outcome: community education.
- Add staff report section – Sustainability Impact Analysis. Anticipated outcome: organizational education.

The City can push these types of proposals as a package to achieve new levels of energy efficiency, global warming pollution reductions, and sustainability. These items may or may not require formal feedback/assessment mechanisms depending on the scope or objective. The short-term action plan will identify how these (and other) actions will be carried out and the anticipated results.

### 3. Mid-term action plan

Identify, plan for and implement multi-year cornerstone projects that use or build on existing City programs/projects. These projects are more complex and will potentially require significant investment of staff time and resources to fully scope and implement. Analysis of cost to benefit will be a key factor in guiding recommendations on these projects due to the City’s finite capacity to fund or manage multiple large initiatives. For the purposes of this report, primary measures of benefit would include how a particular project takes advantage of existing resource conservation/reduction projects and whether it moves the City toward a desired goal. For example, providing a free “city bike” to commuters and visitors arriving by train as part of a carbon reduction plan could be a cost effective way to increase use of the City’s existing bicycle network.

#### Global warming/carbon footprint

Reduction of the community’s contribution to global warming pollution is a clear priority for the Council and is the primary cornerstone project. There is now a near consensus in the scientific community that climate change is occurring and that human activities are playing a significant role in intensifying global warming. The potential effects of this urgent situation are widespread and have been well publicized. While preventative action at the local level alone cannot solve the problem, Davis is in a position to take both practical action and provide leadership in showing that reducing its global warming pollution can also lead to quality of life improvements.

Currently, a sub-committee of the Natural Resources Commission is developing recommendations on reducing the City’s contribution to global warming pollution. The City Managers Office will support the continuing work of the Natural Resources Commission and Public Works staff on this key issue and seek ways to expand the effort to engage a full range of public and private sector interests.

The following outline provides the major steps in carrying out this high priority cornerstone project<sup>1</sup>:

- Analyze greenhouse gas emissions levels. Determine current greenhouse gas emissions and forecast the growth in emissions that will occur without preventative action.
- Set a reduction target. The target is a specific reduction that Davis will strive to achieve by a designated year (e.g. meet or beat Kyoto Protocol's greenhouse gas emissions reduction target for the U.S.).
- Develop an action plan. This plan describes the policies and actions that Davis will take to achieve its target.
- Implement the action plan.
- Monitor the progress and report the results to measure the success of the program and adapt it if necessary.

This is a standardized approach to reducing a community's contribution to global warming pollution that has been adopted by a wide range of communities. Examples include the City of Arcata, Marin County, Salt Lake City, Seattle, Atlanta, etc.

#### *Other cornerstone projects*

There are many other potential cornerstone projects that can be readily identified. Recognizing that there are no criteria for identifying priorities at this time, staff has provided a menu of community factors that can assist in future efforts to identify and prioritize such projects.

The summary of community factors shown in Table 2 represents a menu of options that could guide identification of future cornerstone projects. It also illustrates that there are direct and indirect relationships between many community factors. Staff is not suggesting that the Council or other interested groups chose projects related to this or other lists at this time. Staff simply points out that there are many areas of work that the City and other private, public, and non-profit sector organizations could pursue. And that the benefits of carrying out those projects would likely be greater if the goals are clearly articulated and efforts are coordinated effectively. Identification of mid-term projects beyond the global warming initiative will be the subject of future Council reports.

Other cornerstone projects may include development of strategies to address<sup>2</sup>:

Table 2

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<sup>1</sup> Adapted from the Cities for Climate Protection Campaign

<sup>2</sup> Adapted from the Whistler 2020 Community Plan – Moving toward a sustainable future

| <b>Community factor</b>     | <b>Description</b>   |
|-----------------------------|--|
| Housing                     | How to meet the diverse housing needs of permanent residents, university students, and seasonal residents in an affordable and sustainable way.  |
| Food system                 | How to ensure that healthy food produced in a sustainable manner is available and affordable to all income levels in the community.  |
| Health and social systems   | How to meet and support the physical, mental, spiritual, and emotional needs of community members.   |
| Recreation and leisure      | How recreation and leisure activities for residents and visitors will be delivered to create a fulfilling life experience in a way that protects the environment.  |
| Arts, culture, and heritage | How to support and enhance a thriving art, culture, and heritage “scene” that capitalizes on what is unique about Davis.   |
| Learning                    | How to equitably meet resident and student needs for formal and informal lifelong learning.  |
| Built environment           | How to develop and renew buildings, neighborhoods, and facilities that will contribute to making Davis unique, livable, and sustainable.   |
| Transportation              | How to move people and materials in, out, and around Davis in an increasingly efficient manner.  |
| Energy                      | How to meet the energy needs of Davis in an efficient and reliable way while transitioning to renewable, less polluting sources.   |
| Materials and solid waste   | How to meet Davis’ need for material supply and disposal through the most efficient use and reuse of the most sustainable materials and keeping waste out of the natural environment.  |
| Water                       | How to provide a dependable supply of high quality water in a way that maintains healthy aquatic ecosystems and uses water efficiently.  |
| Natural areas               | How ecosystem integrity and biodiversity will be protected and where possible restored in the Davis area and the surrounding region.   |
| Economic                    | How Davis will create a strong, diversified economy and develop and maintain successful, resilient businesses and buy-local culture that help circulate wealth within the community and region and move the community toward success and sustainability. |
| Partnership                 | How Davis stakeholders collaborate and ultimately achieve Davis’ community vision, as well as complementary objectives of partners.  |
| Finance                     | How the community will finance the strategies and actions for moving Davis toward an integrated community vision while staying within its financial means.   |

4. Initiate a visioning process to define a sustainable Davis that guides future decisions.

Developing a community values based vision for Davis would be a complex and significant undertaking. It is a theoretical exercise that can consume time and resources with little or no immediate tangible effect. However, done effectively, regardless of the vision that emerges, it

can direct planning and action more efficiently allowing for wise investment of finite resources to achieve common goals. It also helps reveal the links between the seemingly disconnected community factors listed in Table 2 above. Recognizing those connections and taking advantage of them to improve quality of life in the community is a significant benefit to setting a common vision.

The list of community factors described in the previous section (and many more) are all worthy of focused analysis and action, but how to choose which combinations will provide the greatest benefit to the community? A clear statement of what the community aspires to be is a beginning point that focuses the analysis of what should or should not be done (next). It also helps reveal the connections between actions, programs, and projects and allows the community to achieve maximum benefit by identifying and incorporating those connections early in the project/program concept phase. This approach promotes efficiency in decision-making, communication, and project/program implementation. In short, a clear vision allows the community to move from unwanted present conditions to more desired conditions.

For example, if a city chose to center its vision on creating a healthy community, it might reveal the direct connections between the goal and factors such as air and water quality. It also can help identify indirect connections such as neighborhood engagement programs that promote social networks that can increase neighborhood safety and help create healthy places to live. In this example, the investment in neighborhood engagement programs to move toward the overall vision of a healthy community might become a priority.

Though a significant undertaking, establishing a broadly supported community vision is an essential and common element in each of the sustainability plans adopted by other communities researched by staff. For example, within the region, the Roseville City Council recently declared its intention to become “green-friendly” and a magnet for businesses engaged in the development of green technologies. The Sacramento City Council declared its vision to create the most sustainable city in the nation. Regardless of the motivations behind these actions or the definitions of “green” or sustainability, it shows that a clearly articulated vision is important in forming a platform for action and lasting results.

#### 5. Concurrent and ongoing – Community and organizational education.

Develop an outreach and “in-reach” program to provide and gather information. To be successful in any of the steps outlined in the strategy, the City must raise organization/community awareness and provide opportunities for meaningful input. To engage the organization and community and ensure active and lasting participation, staff believes that the visions and actions must accurately reflect the values of the organization and community. This will require a systematic and sustained effort to communicate with and gather input from the community and the City organization. With this input, investment in these important efforts is more likely to produce desired results.

#### **Conclusion**

Ultimately it is in the City’s own self-interests to take reasonable preventative actions to address the issues outlined in this report and encourage other jurisdictions to do the same. Individually,

the City's actions are not likely to make a significant difference. However, when combined with the efforts of a growing network of organizations and groups committed to similar goals, much greater benefits can be achieved at lower cost to the individuals.

If adopted, the recommended strategy moves the City toward its stated goals.

### **Next Steps**

Pending Council direction, staff will be pursuing the following near-term steps:

- Coordinate with the Natural Resources Commission and staff liaison to explore the creation of a community action team on global warming pollution prevention.
- Schedule monthly reports to the City Council on development of baseline information, status of the framework strategy, implementation of early action items, and community/organizational outreach.
- Develop a scope of work and budget for existing program/project inventory and assessment.
- Schedule a Council workshop on models of community sustainability.

### **Attachments**

1. Resolution - Davis Climate Protection/Community Sustainability Framework Strategy.
2. Davis Resolution to participate in the Cities for Climate Protection Campaign (1999)
3. Davis Resolution Endorsing the US Mayor's Climate Protection Agreement (2006)
4. Sample community plan – City of Arcata
5. Sample community plan – City of Santa Monica
6. Sample community plan – Municipality of Whistler, B.C.
7. Citizen information handout on climate change – City of Seattle



RESOLUTION NO. \_\_\_\_\_, SERIES 2007

RESOLUTION ADOPTING THE CITY OF DAVIS CLIMATE PROTECTION/COMMUNITY SUSTAINABILITY FRAMEWORK STRATEGY

WHEREAS, the Davis General Plan establishes visions, goals and policies that guide the community away from impacts on natural systems and toward sustainability; and

WHEREAS, the adopted City Council goals for 2007/08 provide clear direction that action on climate change and related issues is a City priority and that many of the other Council goals (downtown, housing, infrastructure, etc.) are related to and affected by the approach the community takes to sustainability; and

WHEREAS, the City has adopted resolutions supporting the Cities for Climate Protection Campaign in 1999 and the U.S. Mayor's Climate Protection Agreement in 2006; and

WHEREAS, these two resolutions outline the emerging global warming threat and encourage cities of all sizes to take preventative steps; and

WHEREAS, the City wishes to implement short and long term actions to address climate change and community sustainability.

NOW, THEREFORE, the Davis City Council does hereby Adopt the Davis Climate Protection/Community Sustainability Strategy Framework to direct City action. The Framework includes the following elements to be performed on parallel tracts when resources and sequencing permit:

1. Assess the City's current programs and projects that support resource conservation and community sustainability.
2. Develop a short-term action plan to identify early action items to be implemented in less than 18 months.
3. Develop a mid-term action plan to implement multi-year projects that build on existing City programs/projects to achieve the City's climate protection and sustainability goals.
4. Initiate a visioning process to define a sustainable Davis that guides future decisions.
5. Develop a related community outreach program to provide and gather information.

PASSED AND ADOPTED by the Davis City Council on this 3<sup>rd</sup> day of April, 2007 by the following vote:

AYES:

NOES:

ABSENT:

\_\_\_\_\_  
Sue Greenwald, Mayor

ATTEST:

\_\_\_\_\_  
City Clerk

**RESOLUTION NO. 8675 , SERIES 1999****RESOLUTION TO PARTICIPATE IN THE  
CITIES FOR CLIMATE PROTECTION CAMPAIGN**

**WHEREAS**, based on scientific evidence that carbon dioxide (CO<sub>2</sub>) and other greenhouse gases (ghg) released into the atmosphere are having a profound effect on the Earth's climate, the United States joined with 160 countries and signed the United Nations Framework Convention on Climate Change which calls on nations to reduce greenhouse gas emissions, and

**WHEREAS**, energy consumption, specifically the burning of fossil fuels, e.g. coal, oil and gas, accounts for more than 85% of U.S. greenhouse gas emissions; and

**WHEREAS**, local governments greatly influence their community's energy usage by exercising key powers over land use, transportation, building construction, waste management, and, in many cases, energy supply and management; and

**WHEREAS**, local government actions taken to reduce green house gas emissions and increase energy efficiency provide multiple local benefits by decreasing air pollution, creating jobs, reducing energy expenditures, and saving money for the City government, its businesses and its citizens; and

**WHEREAS**, the Cities for Climate Protection Campaign, sponsored by the International Council for Local Environmental Initiatives and the U.S. Environmental Protection Agency, has invited the City of Davis to become a partner in the Campaign;

**NOW, THEREFORE, BE IT RESOLVED**, that the City of Davis pledges to join with jurisdictions from all over the world in the Cities for Climate Protection Campaign and, as a participant in the Cities for Climate Protection Campaign, Davis pledges to:

1. Take a leadership role in increasing energy efficiency and reducing greenhouse gas emissions from municipal operations;
2. Develop and implement a local action plan which describes the steps your community will take to reduce both greenhouse gas and air pollution emissions; the plan will include:
  - ◆ A greenhouse gas emissions analysis and forecast to determine the source and quantity of ghg emissions within the jurisdiction;
  - ◆ a CO<sub>2</sub> or greenhouse gas emissions reduction target; and

- ◆ the strategy for meeting your jurisdiction's greenhouse gas reduction target, e.g. an outline of the programs and measures what will be implemented to achieve the target.

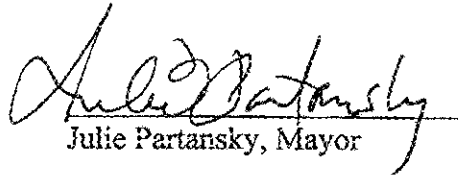
1. Monitor and evaluate progress and report results.

**PASSED AND ADOPTED** by the City Council of the City of Davis on this 29<sup>th</sup> day of September, 1999 by the following vote:

AYES: BOYD, FREEMAN, WAGSTAFF, PARTANSKY.

NOES: NONE.

ABSENT: FORBES.

  
Julie Partansky, Mayor

ATTEST:

  
Bette E. Racki, City Clerk

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**RESOLUTION NO. 06-57, SERIES 2006**

**RESOLUTION ENDORSING  
THE US MAYOR'S CLIMATE PROTECTION AGREEMENT**

WHEREAS, the U.S. Conference of Mayors has previously adopted strong policy resolutions calling for cities, communities and the federal government to take action to reduce global warming pollution; and

WHEREAS, the Inter-Governmental Panel on Climate Change (IPCC), the International community's most respected assemblage of scientists, has found that climate disruption is a reality and that human activities are largely responsible for increasing concentrations of global warming pollution; and

WHEREAS, recent, well-documented impacts of climate disruption include average global sea level increases of four to eight inches during the 20<sup>th</sup> century; a 40 percent decline in Arctic sea-ice thickness; and nine of the ten hottest; years on records on record occurring in the past decade; and

WHEREAS, climate disruption of the magnitude now predicted by the scientific community will cause extremely costly disruption of human and natural systems throughout the world including: increased risk of floods or droughts; sea-level rises that interact with coastal storms to erode beaches, inundate land, and damage structures; more frequent and extreme heat waves; more frequent and greater concentrations of smog; and

WHEREAS, on February 16, 2005, the Kyoto Protocol, an international agreement to address climate disruption, went into effect in the 141 countries that have ratified it to date; 38 of those countries are now legally required to reduce greenhouse gas emissions on average 5.2 percent below 1990 levels by 2012; and

WHEREAS, the United States of America, with less than five percent of the world's population, is responsible for producing approximately 25 percent of the world's global warming pollutants; and

WHEREAS, the Kyoto Protocol emissions reduction target for the U.S. would have been 7 percent below 1990 levels by 2012; and

WHEREAS, many leading US companies that have adopted greenhouse gas reduction programs to demonstrate corporate social responsibility have also publicly expressed preference for the US to adopt precise and mandatory emissions targets and timetables as a means by which to remain competitive in the international marketplace, to mitigate financial risk and to promote sound investment decisions; and

WHEREAS, state and local governments throughout the United States are adopting emission reduction targets and programs and that this leadership is bipartisan, coming from Republican and Democratic governors and mayors alike; and

WHEREAS, many cities throughout the nation, both large and small, are reducing global warming pollutants through programs that provide economic and quality of life benefits, such as reduced energy bills, green space preservation, air quality improvements, reduced traffic congestion, improved transportation choices, and economic development and job creation through energy conservation and new energy technologies; and

WHEREAS, mayors from around the nation have signed the U.S. Mayors Climate Protection Agreement which, as amended at the 73<sup>rd</sup> Annual U.S. Conference of Mayors meeting, reads:

#### The U.S. Mayors Climate Protection Agreement

- a. We urge the federal government and state government enact policies and programs to meet or beat the target of reducing global warming pollution levels to 7 percent below 1990 levels by 2012, including efforts to: reduce the United States' dependence on fossil fuels and accelerate the development of clean, economical energy resources and fuel-efficient technologies such as conservation, methane recovery for energy generation, waste to energy, wind and solar energy, fuel cells, efficient motor vehicles, and biofuels;
- b. We urge the U.S. Congress to pass bipartisan greenhouse gas reduction legislation that includes 1) clear timetables and emissions limits and 2) a flexible, market-based system of tradable allowance among emitting industries; and
- c. We will strive to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking action in our operations and communities such as:
  1. Adopt and enforce land-use policies that reduce sprawl, preserve open space, and create compact, walk able urban communities;
  2. Promote transportation options such as bicycle trails, commute trip reduction programs, incentives for car pooling and public transit;
  3. Increase the use of clean, alternative energy by, for example, investing in "green tags", advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste to energy technology;
  4. Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting and urging employees to conserve energy and save money;
  5. Purchase only Energy Star equipment and appliances for City use;
  6. Practice and promote sustainable building practices using the U.S. Green Building Council's LEED program or a similar system;
  7. Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling message; convert diesel vehicles to bio-diesel;
  8. Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production;
  9. Increase recycling rates in City operations and in the community;
  10. Maintain healthy urban forest, promote tree planting to increase shading and to absorb CO<sub>2</sub>; and

11. Help educate the public, schools, other jurisdictions, professional associations, business and industry about reducing global warming pollution.

NOW, THEREFORE, BE IT RESOLVED that The U.S. Conference of Mayors endorse the U.S. Mayors Climate Protection Agreement as amended by the 73<sup>rd</sup> annual U.S. Conference of Mayors meeting and urges mayors from around the nation to join this effort.

BE IT FURTHER RESOLVED, The U.S. Conference of Mayors will work in conjunction with ICLEI Local Government for Sustainability and other appropriate organizations to track progress and implementation of the U.S. Mayors Climate Protection Agreement as amended by the 73<sup>rd</sup> annual U.S. Conference of Mayors meeting.

PASSED AND ADOPTED by the City Council of the City of Davis on this eighteenth day of April 2006 by the following vote:

AYES: ASMUNDSON, GREENWALD, SAYLOR, SOUZA, PUNTILLO

NOES: NONE

ABSENT: NONE

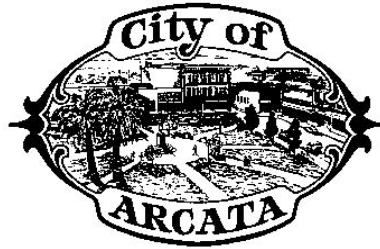
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TED PUNTILLO  
MAYOR

---

Margaret Roberts, CMC  
City Clerk

**City of Arcata**



**International Council on Local Environmental Initiatives  
Cities for Climate Protection Campaign**

## **Community Greenhouse Gas Reduction Plan**

Prepared by:

The City of Arcata

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Participants:

- The City of Arcata Energy Committee
- City of Arcata Environmental Services Department

August 2006

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## **EXECUTIVE SUMMARY**

A strong majority of the world's scientists have concluded that humans are changing the global climate primarily through the use of fossil fuels. This has serious consequences for all life on earth. In response, the City of Arcata has joined an international effort to reduce greenhouse gas emissions and has committed to decrease locally generated greenhouse gas emissions by 20% below year 2000 levels by the year 2010. To meet this goal, the City has developed a Community Greenhouse Gas Reduction Plan. The plan focuses on six action areas: energy efficiency, renewable energy, sustainable transportation, waste and consumption reduction, carbon sequestration and other methods, and cross-cutting approaches.

In addition to reducing greenhouse gas emissions it is expected that the implementation of this plan will offer many other community benefits. These include: energy cost savings with subsequent benefits to the local economy, cleaner air, less reliance on fossil fuels and imported energy sources, and a move toward a more sustainable energy economy. Implementation of this plan will also serve to fulfill numerous objectives that are stated in the Arcata General Plan: 2020, Policy RC-8, Energy Resources Management.

The Community Greenhouse Gas Reduction Plan was developed by the City of Arcata Energy Committee with support from the City of Arcata Environmental Services Department. A public forum was held to present the plan to the community and to gather public input. Public comment on the plan has also been received at the regular monthly meetings of the Energy Committee and via written submissions. The public comment has been reviewed and incorporated into the plan as appropriate.

Successful implementation of the plan will require strong community-wide participation. We hope that the community response is enthusiastic. By doing our part here in our small rural community we can help bring about the global change that will be necessary to avert the serious anticipated impacts of global climate change.

In 2008, the Plan will be amended to project out to the year 2020. Additional implementation measures will be listed to achieve further Greenhouse Gas reductions

## **I. SUMMARY OF RECOMMENDATIONS**

As part of the City of Arcata Community Greenhouse Gas Reduction Plan, we recommend the following greenhouse gas reduction measures in each of six program areas. The details and further recommendations can be found in Section V of this document.

### **A. Energy Efficiency**

- Encourage Energy Efficient Buildings and Retrofit of Older Houses.
- Decrease Community Water Usage.
- Improve Energy Efficiency in City Operations.
- Encourage Energy Efficiency Policies at All Levels.
- Encourage Personal Energy Conservation in Residences, Businesses and City Operations.

### **B. Renewable Energy**

- Encourage utility scale transitions to renewable energy.
- Conduct education and outreach.
- Adopt policies to encourage renewable energy.
- Install renewable energy systems on city facilities.
- Consider a locally-or regionally-owned green utility.
- Require “solar ready” buildings.
- Offer low interest loans for solar energy systems to participants in the First Time Home Buyers program.
- Examine the potential for wind energy and promote where feasible and compatible.

### **C. Sustainable Transportation**

- Incorporate Energy and Climate Policy into the City’s Transportation Plan and encourage policies at all levels for efficient and non-polluting transportation.
- Improve Bicycle infrastructure.
- Improve Pedestrian infrastructure (sidewalks, paths, and walkways).
- Improve Mass Transit Infrastructure.
- Educate to discourage driving and create incentives to lessen driving.
- Support local sustainable transportation efforts.
- Green the City Fleet.
- Promote “smart growth” policies and preserve rail rights-of-way where appropriate.

### **D. Waste and Consumption Reduction**

- Confirm an overall Waste/ Consumption Reduction Strategy, including the 3R’s – Reduce, Reuse, Recycle, with the goal of achieving zero waste.
- Continue to educate the public about the benefits of waste reduction.
- Adopt incentives that encourage waste reduction.
- Strengthen recycling programs, purchasing policies, and employee education.
- Join with other agencies and entities to implement waste reduction programs.

### **E. Carbon Sequestration and Other Methods**

- Continue to manage the Community and Jacoby Creek Forests to enhance carbon sequestration.
- Utilize biogas from the City’s wastewater treatment plant.
- Encourage policies for carbon sequestration at all levels.

### **F. Cross-Cutting Approaches**

- Develop a City-wide Green Building promotional campaign.
- Develop a City-wide collaborative effort between the City, Humboldt State University and College of the Redwoods.
- Promote economic development that encourages businesses that employ sustainable energy practices.
- Work with regional groups, such as Redwood Coast Energy Authority, to promote programs that will serve to reduce greenhouse gas emissions.

## II. INTRODUCTION

The City of Arcata has developed a Greenhouse Gas Reduction Plan to reduce locally generated greenhouse gas emissions. Carbon dioxide, methane, nitrous oxide, and other heat trapping gases naturally occur within the earth's atmosphere. *Greenhouse gas emissions* are releases, significantly beyond natural levels, of one or more of these gases. These emissions occur as a result of certain human activities (e.g. the burning of fossil fuels and deforestation), which ultimately lead to measurable changes in the global climate.

As a benefit, this plan may also help residents, businesses, and city government achieve energy cost savings (and thereby keep energy dollars in the local economy), promote cleaner air, rely less on fossil fuels and imported energy sources, and thus move us toward a more sustainable energy economy. This Greenhouse Gas Reduction Plan will also fulfill certain objectives outlined in the Arcata General Plan: 2020. These objectives include:

- reduce the net emissions of greenhouse gases from Arcata
  - reduce other negative impacts of energy production and use, including risks from nuclear power, air emissions, fuel spills, and wildlife and habitat destruction
  - reduce energy costs to the City and its residents
  - increase the percent of energy purchases from sources within our region
  - increase the City's and nation's energy security
  - reduce our vulnerability to changes in energy availability and price
  - increase public awareness of energy issues
  - encourage an energy conservation ethic; and
  - monitor the cost and effectiveness of Arcata's actions so we and others can learn from them.
- (Arcata General Plan: 2020, Policy RC-8, Energy Resources Management.)

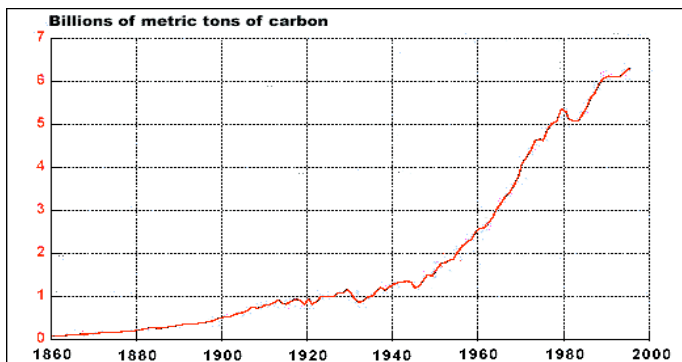
Implementing the suggested measures will require strong community-wide participation. It is our hope that this Greenhouse Gas Reduction Plan represents a giant step forward towards the above objectives; and that it will help our community act to avert the anticipated impacts of global warming.

## III. BACKGROUND

A strong majority of the world's scientists have concluded that humans are changing the global climate primarily through use of fossil fuel, as shown in Figure 1. (*Intergovernmental Panel on Climate Change, 2000*). This has serious consequences for all life on earth. Anticipated impacts include: an overall warming of the earth's climate, melting of ice and snow-pack, rising sea levels, increased frequency and intensity of storms, shifting ecological zones, spread of plant disease and mosquito-born illnesses, and related impacts to agricultural, social, and economic systems.

The scientific community also recognizes that fossil fuel use needs to be reduced 60 to 80 percent from current levels in order to stabilize atmospheric concentrations of carbon dioxide, the major greenhouse gas. Yet in the United States, and globally, carbon dioxide emissions are increasing. The Kyoto Protocol's target of a 5 percent reduction in industrial countries' carbon dioxide emissions below 1990 levels is a step in the right direction. The government of the United States, however, has chosen not to join the Kyoto Protocol. Therefore, in the United States, local governments must take the lead to stem the tide of global climate change that humans have set in motion.

Figure 1.



Data collected by Oak Ridge National Laboratory and published in "Trends '93: A Compendium of Data on Global Change" shows an overall increase in global carbon dioxide emissions from fossil fuels. (Graph courtesy of World Resources Institute)



## IV. THE CITIES FOR CLIMATE PROTECTION CAMPAIGN

In August of 2000, the City of Arcata joined the International Council on Local Environmental Initiatives (ICLEI) Cities for Climate Protection (CCP) campaign. The CCP campaign is a global coalition of local governments working to reduce greenhouse gases at the community level. As a part of this campaign, the City has voluntarily committed to complete the following “milestones”:

- A. Conduct a baseline emissions inventory and forecast of emissions growth.
- B. Set an emissions reduction target.
- C. Develop an action plan to meet the emissions reduction target.
- D. Implement the action plan
- E. Monitor and verify progress and results.

To date, the City has completed Milestones number One and Two. The Greenhouse Gas Reduction Plan represents the completion of Milestone Three. Implementation and monitoring will meet the last two milestones, Four and Five.

### A. Completion of Milestone One: Community Greenhouse Gas Inventory

In October 2001, the City completed the Community Greenhouse Gas Inventory (main body of report included in Appendix A, full report available from City of Arcata Environmental Services Department). Community data such as population, energy and fuel use, and vehicle travel patterns were entered into special computer software<sup>1</sup>.

The Inventory estimated that approximately 45 percent of the emissions coming from the entire Arcata community are generated in the transportation sector. The commercial sector generated 26 percent, the industrial sector 14 percent, and the residential sector an additional 14 percent. These findings are summarized in Fig. 2 and Table 1. The City of Arcata’s local government operations generate only 1 percent of the total emissions tonnage of the entire Arcata community. Emissions from local government operations, referred to as City of Arcata Corporate emissions, are broken down in Fig. 3 and Table 2.

Figure 2.  
Community Greenhouse Gas Emissions by Sector in 2000  
in Equivalent CO<sub>2</sub> (%)

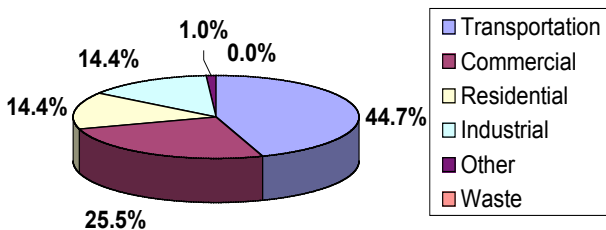


Table 1. Community Greenhouse Gas Emissions 2000  
Base Year Sector Summary by eCO<sub>2</sub> and Energy

| Potential Sources | Equiv CO <sub>2</sub> (tons) | Energy (million Btu) |
|-------------------|------------------------------|----------------------|
| Transportation    | 111,239                      | 1,292,795            |
| Commercial        | 63,494                       | 600,337              |
| Residential       | 35,874                       | 572,077              |
| Industrial        | 35,736                       | 559,478              |
| Other             | 2,471                        | 0                    |
| Waste             | -4,268                       | 0                    |
| <b>Subtotal</b>   | <b>244,546</b>               | <b>3,024,688</b>     |
| <b>Measures</b>   |                              |                      |
| Arcata Forest     | -9844                        | 0                    |
| <b>TOTAL</b>      | <b>234,703</b>               | <b>3,024,688</b>     |

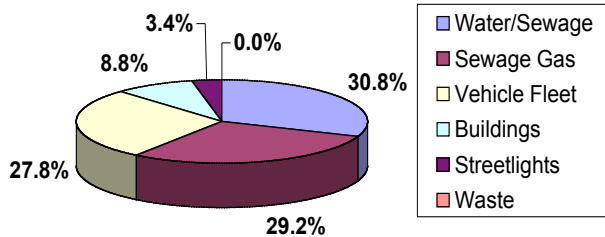
<sup>1</sup> This software was developed for the ICLEI’s CCP campaign by Torrie Smith and Associates. This software generated detailed reports, identifying the sources and estimated quantities of locally generated greenhouse gas emissions (expressed as tons of carbon dioxide equivalent, called “eCO<sub>2</sub>”), for the base year of 2000. The software allows for a community-wide analysis, as well as a detailed analysis of local government operations, which are included in the community-wide analysis. Reduction measures can also be included in the software analysis. The detailed inventory methodology and results are available in the Community Greenhouse Gas Inventory, 2001, through City offices.

**Table 2. City of Arcata Corporate Greenhouse Gas Emissions 2000 Base Year Activity Summary by eCO2 and Energy**

| Potential Sources        | Equiv CO2 (tons) | Energy (million Btu) |
|--------------------------|------------------|----------------------|
| Water/Sewage             | 644              | 6,108                |
| Wastewater (Methane Gas) | 611              | 0                    |
| Vehicle Fleet            | 582              | 6,707                |
| Buildings                | 184              | 3,335                |
| Streetlights             | 71               | 1,329                |
| Waste                    | -28              | 0                    |
| <b>Subtotal</b>          | <b>2,064</b>     | <b>17,479</b>        |
| <b>Measures</b>          | 0                | 0                    |
| <b>TOTAL</b>             | <b>2,064</b>     | <b>17,479</b>        |

**Figure 3.**

**City of Arcata Corporate Greenhouse Gas Emissions in 2000 in Equivalent CO2 (%)**



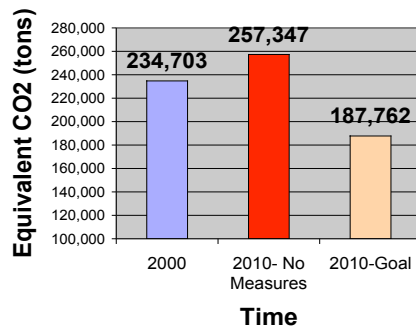
Note that the Arcata Forest and the Waste sectors in Tables 1 and 2 show negative emissions of greenhouse gases. This is because the sustainable management of the Arcata Community Forest and the recycling of paper and wood products serve to sequester carbon. One of the large-scale processes that influence the cycling of carbon is the uptake or release of carbon from forests. When trees are cleared for agriculture or other activities, carbon is released. In contrast, when forests are planted and allowed to continue growing, they absorb atmospheric CO2 and store it in the form of cellulose and other materials. When the rate of uptake exceeds the rate of release, carbon is said to be sequestered. (US EPA, Greenhouse Gas Emissions from Management of Selected Materials in Municipal Solid Waste, July 2002).

The Arcata Community Forest acts as a carbon sink because the growth of immature trees exceeds the effects of timber removal. Similarly, when paper and wood products are recycled or source reduced, trees that would otherwise be harvested are left standing. In the short term, this reduction in harvesting results in a larger quantity of carbon remaining sequestered.

## B. Completion of Milestone Two: Set an Emissions Reduction Target

After completing the Inventory, the City chose Reduction Goals to be achieved by the year 2010. The City has established a reduction goal of 20 percent below year 2000 levels of greenhouse gas emissions by the year 2010. The computer software estimated emissions to be produced in 2010 in Arcata if no new reduction measures are taken. Figure 4 shows the greenhouse gas emissions for 2000 and the projected emissions for 2010 with and without the reductions.

**Figure 4. Arcata Community Greenhouse Gas Emissions in Equivalent CO2 (tons)**



### **C. Milestone Three: Arcata's Greenhouse Gas Reduction Plan**

The City next developed this draft Community Greenhouse Gas Reduction Plan, with input from the City's Energy Committee, staff, and the community, to achieve the stated reduction goals by 2010. Plan development included: 1) a research phase, which looked at other community plans and actions, 2) the creation of a master list of possible measures, 3) detailed ranking of measures based on certain criteria, and 4) final selection of measures to be included in the Plan. The ranking was based on the following criteria:

- greenhouse gas reduction potential
- cost feasibility
- other feasibility issues
- other costs or benefits associated with the measure

A complete list of all the measures that were considered and how they were ranked is included in Appendix B. Section V of this document outlines the measures that were selected for inclusion in the Plan. A brief description of each measure is given.

Once the draft Community Greenhouse Gas Reduction Plan was developed it was made available through the City's website and through the Environmental Services Department. A public forum was held to present the draft plan to the community and to solicit public input. Public input was also received at the regular monthly meetings of the Energy Committee and via written submissions to the Environmental Services Department. All public input was reviewed and incorporated into the plan as appropriate.

### **D. Milestone Four: Implementation Plan**

The measures that have been selected for Arcata's Greenhouse Gas Reduction Plan are too numerous to be implemented all at once. Instead, a small number of key measures have been chosen for implementation in the first year or two (see Appendix D). Once these measures have been acted upon, then the Plan will be revisited and a second set of measures will be chosen for implementation. This process will be repeated on an annual basis (June of each year) until the City's greenhouse gas reduction goals are met.

During each implementation cycle, certain measures will be chosen and implementation plans will be developed for each measure. These implementation plans will be developed, with public input, by the City's Energy Committee and City staff, and will define: 1) what is to be done, 2) how it is to be accomplished, 3) who is responsible for what, 4) where the necessary resources will come from, and 5) when it will be accomplished by.

In the year 2000, the City of Arcata established the Energy Committee and joined the ICLEI Cities for Climate Protection campaign. Since that time the City has implemented a number of greenhouse gas reduction measures. Appendix C provides a list of greenhouse gas reduction measures that the City of Arcata has already implemented. Appendix D provides a brief, near-term implementation plan that lists the next set of greenhouse gas reduction measures the City will work to implement.

### **E. Milestone Five: Monitoring and Evaluation**

Once measures are implemented, efforts must be employed to track their progress in reducing greenhouse gas emissions. City staff will perform this work. Staff will use the ICLEI/CCP greenhouse gas reduction software and will follow the methods recommended by ICLEI/CCP for tracking greenhouse gas reductions. The next Community Greenhouse Gas Inventory for the City of Arcata will be completed no later than 2010.

## **V. DETAILS OF ARCATA'S GREENHOUSE GAS REDUCTION PLAN (MILESTONE THREE)**

This section of the report describes the measures that have been chosen to reduce locally generated greenhouse gas emissions. The selected measures are grouped into six program areas, including five major areas of emission reduction, plus a sixth approach which cuts across several of the five areas. The six program areas are:

- A. Energy Efficiency
- B. Renewable Energy
- C. Sustainable Transportation
- D. Sustainable Consumption and Waste
- E. Carbon sequestration and other Methods
- F. Cross-Cutting Approaches

### **A. Energy Efficiency**

Fossil fuels (coal, oil, natural gas, and propane) are the main "culprits" in emitting greenhouse gases. They are also the primary energy sources for space heating, water heating, and electricity generation in the United States. Measures that conserve energy or reduce electricity and gas use will thus reduce greenhouse gas emissions. They also reduce energy costs, and can be highly cost-effective. Methods that the City can take to reduce energy use are:

#### **1. Encourage Energy Efficient Buildings, Building Construction, and Retrofit**

Homes, businesses and industries have significant impacts on energy consumption. According to the US Green Building Council, building construction and use accounts for 65 percent of electricity consumption and 30 percent of greenhouse gas emissions. Making structures more energy efficient will help reduce greenhouse gas emissions. Efficient design and materials also result in substantial energy savings.

##### **Recommend that the City:**

- a) Develop land use regulations and building codes designed to encourage energy efficiency. Areas in which policy can promote energy efficiency in commercial or residential buildings include heating systems, lighting, insulation, building materials, and landscaping, among others.
- b) Encourage documented energy audits to improve building energy efficiency prior to building sale.
- c) Develop codes and regulations for new developments to minimize increase in community net energy use.
- d) Modify the City's land use and development guidelines to include energy efficiency standards in the design review process.
- e) Encourage commercial building guidelines to reach beyond CA Title 24 Building Energy Code.
- f) Encourage co-generation projects on commercial & industrial facilities.
- g) Give awards for the most energy efficient buildings.
- h) Streamline permitting and provide incentives for energy efficient building construction.
- i) Require energy audits to be performed when residential and commercial buildings are sold and that information regarding the opportunities for energy efficiency improvements be presented to the buyer.
- j) Work with local lenders to promote energy efficient mortgages. Require that energy efficient mortgage information be presented to all buyers of commercial and residential properties at the time mortgages are secured.

#### **2. Decrease Community Water Usage**

Household water use in the United States is over 70 gallons per person per day. Energy is required to pump and process water. Much is wasted through leaks, inefficient fixtures, and inefficient habits. Water conservation will result in less greenhouse gas emissions, by decreasing the energy required to pump and process water.

##### **Recommend that the City:**

- a) Conduct City-sponsored education to reduce the amount of water wasted in industrial processes, homes, and landscaping.
- b) Strengthen land use and development guidelines for new buildings and retrofits. The permitting process for developers and contractors can include clear parameters for integrating water conservation infrastructure and technologies, including low-flush toilets and low-flow showerheads.
- c) Increase water storage capacity to allow for off-peak pumping of water.

### **3. Improve Energy Efficiency in City Operations**

The City has already begun to lead by example. Through the integration of energy conservation and efficiency into municipal buildings and day-to-day operations, the City can become a showcase for community energy efficiency, while also reducing its costs. City buildings should go beyond energy efficiency regulatory standards set forth for commercial and residential buildings.

Arcata is at the forefront of California cities recognizing the urgency and the advantages of integrating energy efficiency into city policy and community pursuits. Arcata should also urge regional, state, and national decisionmakers to embrace energy efficiency as a guiding policy force.

#### **Recommend that the City:**

- a) Continue to implement lighting efficiency upgrades, such as replacing incandescent lighting.
- b) Continue to use energy audits to identify needed insulation and heating systems retrofits.
- c) Develop purchasing policies that require purchase of energy-efficient products with an Energy Star rating, where available. (NOTE: City staff should research industrial appliances for Energy Star ratings as well.)
- d) Initiate in-service training for City staff.
- e) Require that any buildings purchased in whole or in part with City funds meet the following energy efficiency requirements: 1) newly constructed commercial buildings must meet U.S. Green Building Council LEED™ criteria, 2) newly constructed residential buildings must meet the U.S. Environmental Protection Agency's ENERGY STAR® New Homes Program, 3) all newly constructed buildings incorporate passive solar design features (such as daylighting and passive solar heating), where feasible, and 4) existing buildings must be retrofitted to meet the current requirements of California's Title 24 Building Energy Code.

### **4. Encourage Energy Efficiency Policies at All Levels**

#### **Recommend that the City:**

- a) Direct letter writing by City officials to encourage regional, state and national policies to boost energy efficiency.
- b) Partner with local organizations on energy-related projects; and
- c) Develop relationships with other cities that are integrating energy efficiency in their municipal plans.

### **5. Encourage Personal Energy Conservation in Residences, Businesses and City Operations**

Energy conservation may mean adjusting personal behavior and living patterns so that less energy is required for daily needs. For example, turning down the thermostat a few degrees, or putting on another layer of clothing, are examples of this kind of energy conservation. Using compact fluorescent instead of incandescent lighting is another example.

#### **Recommend that the City:**

- a) Promote education and outreach. A well-informed citizenry will take positive action. Educational activities and outreach at local events, schools, and businesses, will increase community awareness of energy efficiency and conservation services, policies, products, rebates, and incentive programs.



- b) Encourage efficiency practices. For example, office equipment such as computers, faxes, and printers, left on all day, every day, waste energy when not in use. Save energy in offices by replacing obsolete equipment with power-saving models. Through education and outreach the City can also encourage equipment vendors to sell more energy-efficient equipment.
- c) Incorporate an Energy Star appliance requirement into contract specifications where possible.

## **B. Renewable Energy**

One of the ways to reduce greenhouse gas emissions is to replace fossil fuels with cleaner energy sources such as solar and wind energy. This can take place at the utility scale and at the individual home or business. At the utility scale, wind farms and solar electric power plants can generate electricity, to be sold to consumers as “green electricity.” Locally, home and business owners can install renewable energy systems such as rooftop solar panels. Municipal buildings should also transition to renewable energy, thus reducing the City’s emissions and moving the City toward energy resources less subject to price volatility and political instability.

### **Recommend that the City promote renewable energy via the following activities:**

1. Encourage utility scale transitions to renewable energy. Educate citizens about “green electricity” purchasing options. (NOTE: Although California consumers cannot currently choose to purchase “green power,” this option will likely be available in the future.) The City should also choose to purchase “green electricity” when this option becomes available.
2. Conduct education and outreach. Inform residents about options and incentives for installing and utilizing renewable energy such as rooftop solar.
3. Adopt policies to encourage renewable energy. The City’s Land Use Code revision contains policies that promote the use of solar energy. Incentives for promoting renewable energy should also be considered. City help should be offered to those wishing to access state and federal incentive programs.
4. Install renewable energy systems on city facilities. The City should install renewable energy systems where possible on City facilities. (NOTE that the City is installing a 10-kilowatt solar electric system on City Hall.)
5. Consider a locally- or regionally-owned green utility, perhaps in coordination with the RCEA or regional approaches. Consider implementing the Community Choice Aggregation (CCA) model as a means of aggregating the city’s electricity loads and purchasing renewable electricity to meet the city’s electricity needs. (Note: CCA would serve all electricity users in the City, including residents, businesses and municipal facilities, except those who choose to “opt out”).
6. Solar ready buildings. Require that, where feasible, all new buildings be constructed to allow for the easy, cost-effective installation of future solar energy systems. “Solar ready” features should include: proper solar orientation (south facing roof area sloped at 20° to 55° from the horizontal), clear access on the south sloped roof (no chimneys, heating vents, plumbing vents, etc.), electrical conduit installed for solar electric system wiring, plumbing installed for solar hot water system, and space provided for a solar hot water storage tank.
7. Low interest loans. Provide low interest loans for residential solar energy systems in conjunction with the City’s First Time Home Buyers Program.
8. Wind energy. Work with Humboldt State University to assess the potential for wind energy in the City of Arcata. Promote the development of wind energy systems where feasible and compatible with zoning regulations.
9. Retrofit Wood Stoves. Develop a woodstove retrofit program to bring woodstoves up to EPA omission/efficiency standards.

## C. Sustainable Transportation

The transportation sector (autos, public transport, trains, airplanes, etc) is one of the largest sources nationally of greenhouse gas emissions. Likewise, in Arcata, vehicular travel is the largest source. Reduced automobile travel, more efficient vehicles and cleaner transportation fuels would help to reduce Arcata's greenhouse gas emissions. The City should support cleaner and alternative transportation to lower emissions and energy costs, to create energy independence, and to improve citizen health.

**Recommend promotion of sustainable transportation via the following seven measures:**

1. Incorporate Energy and Climate Policy into the City's Transportation Plan and Encourage Policies at all Levels for Efficient and Non-Polluting Transportation. Policies that address the importance of energy efficiency and lower emissions should be added to the City Transportation Plan to ensure a wide range of measures to reduce emissions.
2. Improve Bicycle Infrastructure. Create more bike lanes on existing roads and make bridges and intersections more bicycle-friendly. Bicycle parking should be easily accessible, plentiful, and protected from rain where possible.
3. Improve Pedestrian Infrastructure (sidewalks, paths, and walkways). Sidewalks need to be wide enough so people can walk comfortably side by side and be able to pass others. Walkways need to be well marked, accessible and continuous, so that walkers can safely share the roadways with cyclists and autos.
4. Improve Mass Transit Infrastructure. Bus stops and bus lanes should be convenient and efficient. Bus stops should be clearly marked, and frequently used stops should have a covered shelter for people to stay dry while waiting. Purchase more energy-efficient transit buses that run on less fuel. Consider also increasing service, more effective hours, and serving unserved arteries. Schedule and coordinate with the Transit Authorities.
5. Educate to Discourage Driving and Create Incentives to Lessen Driving. For both health and environmental reasons, the City should promote walking, bicycling, taking public transportation, ride sharing, alternatively fueled vehicles, and telecommuting. Create programs that encourage and reward walking, cycling or taking public transit. Consider disincentives including parking fees, traffic taming and gas taxes.
6. Support Local Sustainable Transportation Efforts. The City should support programs and efforts such as the Arcata Library Bike Program, the Bike-to-Work-Day and the Car-Free Day, which promote sustainable transportation.
7. Green the City Fleet. Use fuels or energy sources which emit fewer greenhouse gases, such as electricity or natural gas. Create a purchasing policy for acquiring new City vehicles that are more fuel efficient such as hybrids. The City should purchase a variety of vehicles, such as bicycles, electric bicycles, small electric vehicles, and energy efficient automobiles, and should institute policies that require that the most energy-efficient vehicle be used for each City purpose.
8. Smart Growth. The City should promote "smart growth" development strategies. These include: compact, mixed-use development, higher density development, and infill. The City should consider relaxing parking space requirements in new developments.
9. Rail Right-of-Way. The City should preserve existing rail rights-of-way where appropriate and should encourage the development of existing rail rights-of-way as "rails-to and with-trails."

## D. Waste and Consumption Reduction

Energy is used to produce and package consumer goods. Methane, a potent greenhouse gas, is produced when organic material breaks down in landfills. Good planning should consider industrial

ecology, and should examine local, regional, and global uses and flows of materials and energy in products and processes. Efforts should be made to reduce environmental burdens throughout product life cycle. Measures that reduce waste in consumption, and encourage recycling and reuse in purchasing will also reduce greenhouse gas emissions.

**Recommend that the City:**

1. The City should continue to support policies at all levels for waste and consumption reduction with a goal of zero waste.
2. Expand education to the public about the benefits of waste reduction, via informational materials, organized events and workshops, including backyard composting workshops, office paper recycling programs, and organized brush drop-off programs.
3. Continue to promote incentives that encourage waste reduction, such as city-subsidized recycling and free composting bins.
4. Strengthen recycling programs, purchasing policies, and employee education, to reduce the amount of city waste produced.
5. Partner with other agencies and entities, such as the Humboldt Waste Management Authority, to implement waste reduction programs and develop other beneficial programs. The City does not landfill locally, but ships all of its solid waste to an out-of-state facility. The City should begin regional efforts to ensure that proper landfill gas collection practices are being observed at the landfill and that cogeneration is used where possible. Efforts should be made to reduce the carbon emissions from transportation to the site. Efforts should also be made to pursue regional waste reduction programs.

**E. Carbon Sequestration and Other Methods**

Vegetation, trees, and healthy soil remove and store, or “sequester,” carbon dioxide from the atmosphere. Thus, an increase in carbon sequestration capacity can reduce greenhouse gas emissions. Measures that reduce greenhouse gas emissions through strategies other than energy efficiency, renewable energy, transportation, or waste reduction, are also included in this section.

**Recommend that the City:**

1. Continue to Sustainably Manage the Community Forest to increase timber inventory and biomass over time. Currently the Forest Plan allows for harvest of one-half the annual growth increment, thus, accrual of carbon occurs over time. Thirty five percent of the Community and Jacoby Creek Forests are set aside in reserve that will allow for old growth conditions and increased carbon storage to occur as well. Adding additional area to the ACF and JCF will likely increase carbon sequestration potential as the City Management Policy calls for growing long-rotations of 120+ years. The City should, in its Open Space policies, promote the carbon sequestration benefits of increased vegetation and continue to expand riparian forests along urban streams.
2. Utilize Biogas. The City’s wastewater treatment plant (WWTP) has a cogeneration<sup>2</sup> system that was designed to utilize biogas<sup>3</sup>. It was built over twenty years ago, but was shut down due to operational problems. Currently much of the City’s biogas is used to meet heating loads at the WWTP. However, not all of the biogas is utilized, and the excess is flared to convert it to carbon

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<sup>2</sup> Cogeneration refers to the production of electricity and useful heat from a common fuel source. For example, when fuel is burned in an internal combustion engine generator to produce electricity, the waste heat can be captured and utilized.

<sup>3</sup> Biogas is produced as a by-product of the wastewater treatment process. It consists of approximately 60% methane (natural gas), and therefore can be used as a fuel source.

dioxide rather than release methane directly to the atmosphere.<sup>4</sup> It is possible that the flared biogas could also be used as a fuel source. In order to determine if this is a viable option, metering equipment would need to be installed to measure how much biogas is currently being flared. The City could then determine whether it makes sense to capture the excess biogas for use as a fuel.

3. Encourage policies at all levels for carbon sequestration. The City can bring pressure to bear on state and national forest regulators to better manage logging practices by reducing non-sustainable timber harvesting, and promoting reforestation.

## **F. Cross-Cutting Approaches**

Many strategies for reducing greenhouse gas emissions involve several of the above areas. Measures and strategies that involve two or more of the categories discussed above are listed in this section. Regardless of the strategy chosen, these cross-cutting approaches should consider involving tactics of education, outreach, training and promotion; adopting municipal codes, affecting changes in City operations such as purchasing and best practices, engaging in regional partnerships such as the Redwood Coast Energy Authority; and influencing regional, state and national policies.

### **Recommend that the City:**

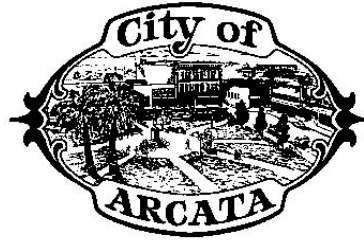
1. Develop a city-wide Green Building promotional campaign, which might involve educating city staff and policy makers about best practices, preparation and provision of checklists and specification guidelines for contractors, amending purchasing protocols, preparing a website, and offering opportunities for in-service and professional training. It should involve several City departments, including Public Works (for City buildings and infrastructure); Community Development; and Building and Planning (for construction permits and long-range planning). Detailed aspects of the Energy Efficiency, Renewable Energy, Waste Reduction, and other sections discussed above would then be utilized where appropriate for the entire Green Building Program.
2. Develop a city-wide collaborative effort between the City and the University in greenhouse gas reduction, as well as those of the regional authority, and other state and regional efforts. Such a crosscutting effort might adopt any number of the recommendations found in the first five sections.
3. Support green economic growth. The City should promote economic development policies that encourage businesses that employ sustainable energy practices. This could include: businesses that co-locate to make use of each others waste products (such as waste heat or waste materials), businesses that employ cogeneration, distributed generation or district heating technologies, and businesses that are furthering the research, development, promotion and sale of sustainable energy products, technologies, and services.
4. Develop regional educational programs, incentive programs, and partnerships, as appropriate. The City should work with regional groups, like the Redwood Coast Energy Authority, to promote energy efficiency, renewable energy, sustainable transportation, waste reduction, and other programs that will serve to reduce greenhouse gas emissions in our community.

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<sup>4</sup> Methane (CH<sub>4</sub>) is not only the primary constituent of natural gas, but is generally the product of anaerobic decomposition that takes place in landfills and primary wastewater treatment. On a per unit basis, methane has approximately 20 times the greenhouse impact of carbon dioxide, so it can be inferred that reduction or carbon sequestration of one unit of methane from any source is equivalent to the reduction or carbon sequestration of 20 units of carbon dioxide. This enhances the importance of proper operation of landfills and wastewater treatment plants. Methane from landfills and wastewater treatment plants is generally captured and flared, converting it to carbon dioxide. If the methane is instead used as a fuel, it can displace an alternative fuel source and offset the CO<sub>2</sub> generation associated with the other fuel.

**Appendix A:**  
**Community Greenhouse Gas Inventory and Forecast**

The City of Arcata



International Council on Local Environmental Initiatives  
Cities for Climate Protection Campaign

## Community Greenhouse Gas Inventory and Forecast

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Prepared for:  
The City of Arcata



Prepared by:

Kathy Jack, Energy Program Specialist  
Environmental Services Department  
City of Arcata

August 2002

## Acknowledgements

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**Brian Kang**, City of Arcata GIS Specialist

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**Gary Markegard**, Farm Advisor, University of California Cooperative Extension

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**Stephen Tyler**, Director of Environmental Services

**George Wright**, Plant Operations for Humboldt State University

Special thanks go to

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**City of Arcata Energy Committee**, for their work in reviewing this document and in creating a plan to reduce local greenhouse gas emissions.

**Sean Kinghorn**, Natural Resources Planning and Interpretation Graduate Student at Humboldt State University, and National Wildlife Federation Fellow with the Center for Environmental Economic Development, for several hours of number crunching and for sharing data he gathered for the City fleet, HSU energy use, and community propane use.

Special thanks also goes to the City of Arcata Energy Committee, for their work in reviewing this document and in creating a plan to reduce local greenhouse gas emissions.

**Melissa Royael, Ryan Bell** and other **ICLEI** staff for their endless support!

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***Copies are available at the City of Arcata Environmental Services Department***



# Introduction

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## Background

By Dan Ihara, PhD.

A consensus of the world's scientists have concluded that humans are changing the global climate primarily through our use of fossil fuel (Intergovernmental Panel on Climate Change, 2000). This has serious consequences for all life on earth.

The scientific community also recognizes that fossil fuel use needs to be reduced 60 –80% from current levels in order to stabilize atmospheric concentrations of carbon dioxide, the major greenhouse gas. Yet in the United States, and globally, carbon dioxide emissions are increasing. The Kyoto Protocol's target of a 5% reduction in industrial countries' carbon dioxide emissions below 1990 levels is a step in the right direction. The government of the United States, however, has chosen not to join with the other nations of the world in trying to solve this global problem. Because the U.S. has forsaken its planetary responsibilities, it has fallen on local governments, especially in the United States, to take the lead to stem the tide of global climate change that humans have set in motion.

## ICLEI's Cities for Climate Protection Campaign

In August of 2000, the City of Arcata adopted a proclamation (**Appendix IV**) supporting the International Council on Local Environmental Initiatives' (ICLEI) Cities for Climate Protection (CCP) campaign. The CCP campaign is a global effort to reduce greenhouse gases, at the community level. As a part of the City's participation in the CCP campaign, the city has voluntarily committed to complete the following "milestones":

- 1) Conduct a baseline emissions inventory and forecast of emissions growth.
- 2) Set an emissions reduction target.
- 3) Develop an action plan to meet the emissions reduction target.
- 4) Implement the action plan.
- 5) Monitor and verify progress and results.

## 7 by '07

With this same proclamation, the City of Arcata voluntarily committed to reduce community greenhouse gas emissions to 7% below 1990 levels by 2007. The U.S. Environmental Protection Agency has estimated that U.S. greenhouse gas emissions have increased by 11% from 1990 to 2000. Based on this estimation, the community of Arcata would need to reduce greenhouse gas emissions by approximately 18% below 2000 levels by 2007, to achieve the "7 by '07" goal.

## Reduction Goal

In line with the City Council's "7 by '07" proclamation, and consistent with other community greenhouse gas inventories which have set reduction targets for 2010, the City of Arcata seeks to reduce locally generated greenhouse gas emissions by 20% below 2000 levels, by the year 2010.

## Purpose

The purpose of the inventory is to present a clear picture of how our community uses energy and to highlight those activities and sectors producing the most greenhouse gases. This will allow the City to better target our greenhouse gas reduction activities. Because greenhouse gas emissions are largely associated with energy use, this tool will also help the City to target energy conservation activities.

# Methodology

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## Overview

The CCP methodology allows communities to systematically track energy and waste related activities in the community, and to calculate the relative quantities of greenhouse gases produced by each activity and sector. The methodology performs two assessments: a communitywide assessment (including local government activities) and a separate inventory of local government facilities and activities. This information can then be used to target appropriate areas for effective reduction of greenhouse gases.

The methodology also allows a community to calculate projected greenhouse gas emissions, which would be produced in the future if the community were to implement no emissions reduction measures. This could be considered the “business as usual” scenario.

The baseline greenhouse gas emissions inventory for 2000, along with the “business as usual” projection for 2010, will guide the City in setting a course to reach the reduction goal of 20% below 2000 levels by 2010.

## CCP Software

ICLEI contracted with Torrie Smith & Associates, to create a software package incorporating the CCP methodology. The software calculates the equivalent carbon dioxide emissions (eCO<sub>2</sub>) resulting from all energy and waste inputs. The emissions coefficients and methodology employed by the CCP software is consistent with National and International inventory standards established by the International Panel on Climate Change (*1996 Revised IPCC Guidelines for the Preparation of National Inventories*) and the U.S. Voluntary Greenhouse Gas Reporting Guidelines (EIA form 1605). **Appendix III** includes an overview of the methodology employed by the CCP software for emissions calculations.

The City of Arcata has used the CCP software to conduct our Community Greenhouse Gas Inventory, and “business as usual” Forecast into the year 2010. We will continue to employ the CCP software to track our emissions and emission reducing measures, over time.

## Application

The community wide analysis performed by the software includes an electrical and heat- fuel emissions analysis for the residential, commercial, and industrial sectors; a transportation emissions analysis; and a waste emissions analysis. The local government inventory, referred to as the “corporate” analysis in the software, takes a more detailed inventory of electrical, heat, and other fuel related emissions, as well as waste emissions for local government activities.

All software analyses required the input of information from a variety of sectors and sources. Most data collected for the baseline inventory is from the calendar year 2000. Some data, however, is from the fiscal year 2000- 2001. When data was not available for 2000 or 2000-2001, the most representative data was used and adjusted to reflect time.

Rather than describe the methodology and assumptions made for each sector and activity here, the data sources and calculations (including assumptions) are described in detail (in chart format) in **Appendix II**.

# Inventory Results

## Summary

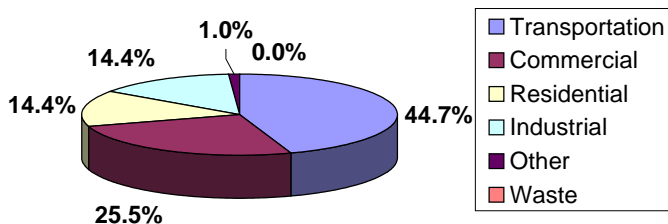
### Community

In the base year 2000, the community of Arcata generated approximately **234,703 tons** of CO<sub>2</sub> equivalent emissions. As **Table 1** exhibits, the transportation sector produced the largest portion of greenhouse gases and was also the largest energy consumer, followed by the commercial, residential, and industrial sectors, and other miscellaneous sources. The details of each sectors greenhouse gas generation and energy consumption are listed by source and quantity in the reports section (**Appendix I**). The waste sector is usually a significant contributor of the greenhouse gas methane. However, due to the excellent methane recovery rate at the landfill, the waste sector end up serving as a greenhouse gas "sink." This process is further described in **Appendix III**. The total greenhouse gases reported here include the carbon "sequestration" capacity of the Arcata Community Forest (detailed in **Appendix II**).

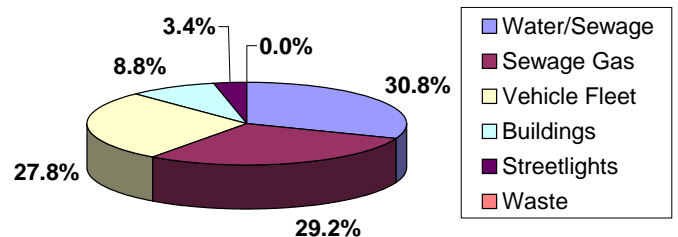
**Table 1. Arcata Community Greenhouse Gas Emissions 2000  
Base Year Sector Summary by eCO<sub>2</sub> and Energy**

| Potential Sources | Equiv CO <sub>2</sub> (tons) | Energy (million Btu) |
|-------------------|------------------------------|----------------------|
| Transportation    | 111,239                      | 1,292,795            |
| Commercial        | 63,494                       | 600,337              |
| Residential       | 35,874                       | 572,077              |
| Industrial        | 35,736                       | 559,478              |
| Other             | 2,471                        | 0                    |
| Waste             | -4,268                       | 0                    |
| <b>Subtotal</b>   | <b>244,546</b>               | <b>3,024,688</b>     |
| <b>Measures</b>   |                              |                      |
| Arcata Forest     | -9844                        | 0                    |
| <b>TOTAL</b>      | <b>234,703</b>               | <b>3,024,688</b>     |

**Community Greenhouse Gas Emissions by Sector in 2000  
in Equivalent CO<sub>2</sub> (%)**



**City of Arcata Corporate Greenhouse Gas Emissions in 2000  
in Equivalent CO<sub>2</sub> (%)**



### Corporate

In the base year of 2000, the City of Arcata "Corporate" local government generated **2,064 tons** of eCO<sub>2</sub> emissions. The City's "sustainable" management of the Community Forest is considered a community measure, rather than a corporate measure, because carbon is sequestered from the entire region. Large energy savings and greenhouse gas emission reduction opportunities remain within City operations, and the City is committed to reducing City energy consumption and greenhouse gas emissions. A detailed breakdown of City energy consumption and greenhouse gas emissions by activity are also included in the reports section (**Appendix I**).

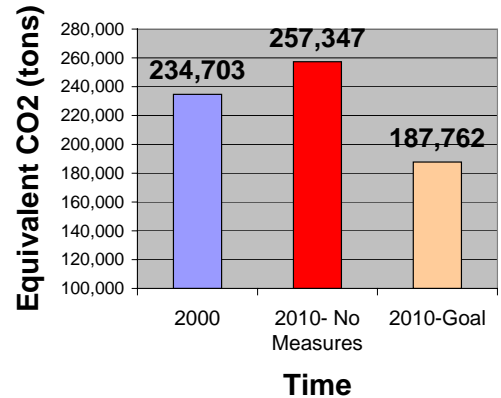
**Table 2. City of Arcata Corporate Greenhouse Gas Emissions 2000  
Base Year Activity Summary by eCO<sub>2</sub> and Energy**

| Potential Sources        | Equiv CO <sub>2</sub> (tons) | Energy (million Btu) |
|--------------------------|------------------------------|----------------------|
| Water/Sewage             | 644                          | 6,108                |
| Wastewater (Methane Gas) | 611                          | 0                    |
| Vehicle Fleet            | 582                          | 6,707                |
| Buildings                | 184                          | 3,335                |
| Streetlights             | 71                           | 1,329                |
| Waste                    | -28                          | 0                    |
| <b>Subtotal</b>          | <b>2,064</b>                 | <b>17,479</b>        |
| <b>Measures</b>          | 0                            | 0                    |
| <b>TOTAL</b>             | <b>2,064</b>                 | <b>17,479</b>        |

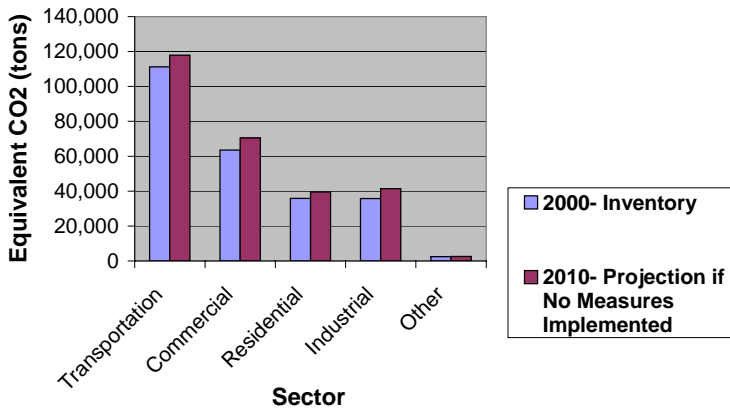
### Projection to Target Year 2010

The City of Arcata has voluntarily committed to reducing locally generated greenhouse gases by 10% below 1990 levels, or an estimated 20% below 2000 levels by 2010. Based on inventory results, this would mean a 20% reduction from **234,703 tons**. The Community of Arcata's target for the year 2010 is **187,762 tons** of CO2 equivalent. The CCP software allows users to estimate future greenhouse gas emissions that will be generated if no further reduction measures are implemented in the community. Using growth rates estimated by planners for the various sectors of Arcata (see **Appendix II**), greenhouse gas emissions were estimated for Arcata in 2010 (our target year), given no emissions reduction activities. To achieve a 46,941 ton reduction from 2000 levels, the Community will need to make a 69,585 ton reduction, through measures, from the business as usual scenario. A detailed breakdown of the "no measure" scenario for 2010, is also included in the reports section (**Appendix I**).

### Arcata Community Greenhouse Gas Emissions in Equivalent CO2 (tons)



### Arcata Community Greenhouse Gas Emissions in Equivalent CO2 (tons)



### Table 3. Arcata Community Greenhouse Gas Emissions 2010 Target Year "No Measures" Sector Summary by eCO2 and Energy

| Potential Sources | Equiv CO2 (tons) | Energy (million Btu) |
|-------------------|------------------|----------------------|
| Transportation    | 117,913          | 1,370,363            |
| Commercial        | 70,479           | 666,375              |
| Residential       | 39,462           | 629,285              |
| Industrial        | 41,454           | 648,994              |
| Other             | 2,578            | 0                    |
| Waste             | -4,695           | 0                    |
| <b>Subtotal</b>   | <b>267,191</b>   | <b>3,315,017</b>     |
| <b>Measures</b>   |                  |                      |
| Arcata Forest     | -9844            | 0                    |
| <b>TOTAL</b>      | <b>257,347</b>   | <b>3,315,017</b>     |

### Software Reports

The software reports are included as **Appendix I**. These reports are produced by the CCP software, and encompass the detailed reporting of emissions sources, including reference notes, for the community and corporate inventories and the 2010 "no measures" projection. The detailed reports are followed by summary reports, which indicate greenhouse gas estimates by sector and source.

## Emissions Reduction Action Plan

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The next step in reducing local emissions of greenhouse gases is to develop a cohesive plan, based on the information revealed from this study. Several initiatives have taken place since the baseline inventory year.

The City has developed an Energy Program that promotes “clean and secure energy resources for Arcata through conservation and generation (see [www.arcatacityhall.org](http://www.arcatacityhall.org)).” The scope of this program includes working to “reduce the net emissions of greenhouse gases from Arcata (General Plan 2020 Policy RC-8).” Further activities to reduce local GHG emissions, will be promoted through the City Energy Program.

The City has joined the International Council on Local Environmental Initiatives’ Cities for Climate Protection Campaign, and City staff and the Arcata Energy Committee are working with ICLEI to develop a local Emissions Reduction Action Plan.

The City is working with the Humboldt Energy Task Force to promote conservation and renewable energy use in the area. The Arcata City Council has set a goal that 25% of the City fleet be alternative fueled vehicles by 2005, and 50% by 2010.

The City Wastewater treatment plant is no longer directly venting methane, but is combusting the methane to heat the digester. Excess methane is also combusted, reducing its potency as a greenhouse gas. The City is investigating the use of micro-turbines to utilize digester excess methane for electrical production.

The City is also participating with ICLEI and the USEPA to reduce local greenhouse gases associated with organic waste (see **Appendix V**), although as estimated by the CCP software, this sector represents a “negative” source of greenhouse gases for the area. With the next phase of greenhouse gas reduction “planning”, the City will focus on those activities producing the largest quantities of greenhouse gases community-wide, and in municipal facilities.

**Note:**

**The appendices for the Community Greenhouse Gas Inventory and Forecast (Appendix A) are not included in this document. They can be obtained in hard copy format from the City of Arcata Environmental Services Department.**

**Appendix B:**  
**Complete List of Measures That Were Considered for Inclusion in the City of**  
**Arcata's Greenhouse Gas Reduction Plan**

Measure Group Measure ID Measure Name Ongoing, Expanded, Total New Score\*

| Measure Group     | Measure ID | Measure Name   | Ongoing, Expanded, Total New | Score* |
|-------------------|------------|--|------------------------------|--------|
| Energy Efficiency | <b>E1</b>  | <b>Encourage Energy Conservation in Residences &amp; Businesses (Behavior, Management, Small-Scale Retrofits)</b>                  | Expanded                     | 15.6   |
|                   | E1.1       | Education/Outreach: Materials, Presentations, Events, PSA's Targeted at Residents, Businesses, Schools/Students & Community Groups | Expanded                     | 13.8   |
|                   | E1.1a      | Promote existing energy efficiency programs  | Expanded                     | 14.8   |
|                   | E1.1b      | Energy Efficient appliances, powerstrips, office equipment compact fluorescents, water-heating blankets, weatherstripping, etc     | Expanded                     | 13.5   |
|                   | E1.1b-1    | Compact Fluorescent Program  | New                          | 14.5   |
|                   | E1.1c      | Load shifting.   | Expanded                     | 12.2   |
|                   | E1.2       | Energy Efficient Equipment Purchasing Policies   | New                          | 14.3   |
|                   | E1.3       | Incentives/ Rewards  | New                          | 13.2   |
|                   | E1.3a      | Reward/Acknowledge Businesses who achieve reductions   | New                          | 14.8   |
|                   | E1.3b      | Create a Fund for Energy Efficiency Upgrades   | New                          | 12.7   |
|                   | E1.3b-1    | Revolving loan fund for community investment in energy efficiency  | New                          | 12.2   |
|                   | E1.3c      | Aide to Low Income Households for Energy Efficiency Projects   | Expanded                     | 13.0   |
|                   | E1.3d      | Redwood Community Action Agency low income weatherization  | Expanded                     | 13.7   |
|                   | <b>E2</b>  | <b>Develop Energy Efficient Housing &amp; Commercial Building Design/Stock (New and Existing Infrastructure)</b>                   | New                          | 16.5   |
|                   | E2.1       | Develop/Promote Community Services to increase Energy Efficiency   |                              | 14.4   |
|                   | E2.1a      | Promote Energy Audits for Residents and Businesses   | New                          | 15.5   |
|                   | E2.2       | Create Policy requiring Upgrades in New & Existing construction  |                              | 14.3   |
|                   | E2.2a      | Include/Enforce Energy Efficiency in Building & Land Use Codes   | Expanded                     | 15.7   |
|                   | E2.2a-1    | Go "Beyond" Title 24 for new & retrofit construction   | New                          | 13.3   |
|                   | E2.2b      | Green Building Practices   | New                          | 15.3   |
|                   | E2.2c      | Mandate Solar Passive Design & Day Lighting in Construction of All New Buildings   | New                          | 16.2   |
|                   | E2.2d      | Require energy audits and efficiency upgrades at the time of building sale   | New                          | 12.8   |
|                   | E2.3       | Professional Training  | New                          | 11.8   |
|                   | E2.3a      | Weatherization: training/ programs   | Expanded                     | 13.0   |
|                   | <b>E3</b>  | <b>Energy Efficiency in City Operations (see E 6.2 also)</b>   | Expanded                     | 15.2   |
|                   | E3.1       | Retrofitting Municipal Buildings   | Expanded                     | 13.9   |
|                   | E3.2       | Standards for New Municipal Construction   |                              | 14.5   |
|                   | E3.2a      | Green Building Standards for City Buildings  | New                          | 15.2   |
|                   | E3.3       | Efficiency in Street Lighting  | Expanded                     | 14.3   |
|                   | E3.4       | Load Management/ Energy Management   | Expanded                     | 14.0   |
|                   | E3.5       | Employee Training  | Expanded                     | 13.0   |
|                   | E3.6       | Purchasing Policy  | New                          | 14.5   |
|                   | E3.7       | Create Sustainable funding mechanism for Energy Efficient Upgrades   | New                          | 13.4   |
|                   | <b>E4</b>  | <b>Regional Partnerships/Collaboration</b>   | Expanded                     | 13.5   |
|                   | E4a        | District Heating & Cooling Systems   | New                          | 11.0   |
|                   | <b>E5</b>  | <b>Lobbying/Political Action for Energy Efficiency</b>   |                              | 16.1   |
|                   | E5a        | Work to improve Local Representation/Accuracy in Title 24 criteria   | Expanded                     | 14.7   |



Measure Group Measure ID Measure Name Ongoing, Expanded, Total New Score\*

| Measure Group    | Measure ID   | Measure Name  | Ongoing, Expanded, Total New | Score* |
|------------------|--|---|------------------------------|--------|
|                  | <b>E6</b>  | <b>Community Water Conservation</b>                         | Expanded                     | 15.4   |
|                  | E6.1   | Education Materials/Outreach                                | Expanded                     | 11.8   |
|                  | E6.2   | City Retrofits  | Expanded                     | 13.2   |
|                  | E6.3   | Improved Stormwater Drainage                                | Expanded                     | 10.1   |
|                  | E6.3a  | Encourage porous paving/surfaces                            | Expanded                     | 10.0   |
| Renewable Energy | <b>RE1</b>   | <b>Encourage Purchase of RE (if possible).</b>              | New                          | 15.8   |
|                  | RE1.1  | Education/Outreach: Materials, PSA's, presentations, events | Expanded                     | 11.9   |
|                  | RE1.2  | City purchase of renewable energy (if possible).            | Renew                        | 13.0   |
|                  | <b>RE2</b>   | <b>Encourage Installation of RE/Solar</b>                   | Expanded                     | 15.1   |
|                  | RE2.1  | Education/Outreach: Materials, PSA's, presentations, events | Expanded                     | 13.4   |
|                  | RE2.1a   | Promote existing programs                                   | Expanded                     | 13.3   |
|                  | RE2.1b   | Solar Works promotional program                             | Expanded                     | 13.2   |
|                  | RE2.1c   | Professional Training                                       | New                          | 11.3   |
|                  | RE2.1d   | Resource library  | Expanded                     | 11.2   |
|                  | RE2.1e   | Cogeneration  | New                          | 12.2   |
|                  | RE2.2  | Promote renewable energy in Building and Land Use Codes     | Expanded                     | 15.0   |
|                  | RE2.2a   | Incentives, requirements, solar rights                      | Expanded                     | 13.8   |
|                  | RE2.2b   | Active implementation of solar shade control act            | Expanded                     | 13.3   |
|                  | RE2.3  | Financial Incentives/Rebates to Solar Installers            | Expanded                     | 14.1   |
|                  | RE2.3a   | Promote existing programs                                   | Expanded                     | 14.8   |
|                  | RE2.3b   | Create a Renewable Energy Fund                              | New                          | 12.3   |
|                  | RE2.3b-1   | Revolving loan fund for community investment in RE          | New                          | 12.7   |
|                  | RE2.3c   | Production Incentives for PV Installations                  | New                          | 12.8   |
|                  | RE2.3d   | City involved with bulk purchase                            | New                          | 11.7   |
|                  | <b>RE3</b>   | <b>Install Renewable Energy on City Facilities</b>          | Expanded                     | 14.8   |
|                  | RE3.1  | Physical Installations                                      |                              | 14.1   |
|                  | RE3.1a   | Place solar electric systems on city facilities             | Expanded                     | 14.3   |
|                  | RE3.1a-1   | PV on City Hall   | New                          | 14.2   |
|                  | RE3.1b   | Solar Hot Water Systems in Municipal Buildings              | New                          | 12.5   |
|                  | RE3.1c   | Biogas use @ wastewater treatment facility                  | Expanded                     | 13.5   |
|                  | RE3.2  | Create Funding Plan for renewable energy on City Facilities |                              | 12.9   |
|                  | RE3.2a   | Create a Renewable Energy Fund                              | New                          | 10.1   |
|                  | <b>RE4</b>   | <b>Regional Partnerships/Efforts</b>                        | Expanded                     | 14.0   |
|                  | RE4a   | Participate with Redwood Coast energy Authority (RCEA)      | Expanded                     | 13.3   |
|                  | RE4a-1   | Join Million Solar Roofs Campaign via RCEA                  | New                          | 13.5   |
| RE4b             | Promote Regional renewable energy Commercial Development | New   | 12.8                         |        |
| RE4c             | District Heating & Cooling Systems                       | New   | 11.0                         |        |
| <b>RE5</b>       | <b>Lobbying/Political Action for renewable energy</b>    |   | 13.7                         |        |

Measure Group Measure ID Measure Name Ongoing, Expanded, Total New Score\*

| Measure Group  | Measure ID | Measure Name   | Ongoing, Expanded, Total New | Score* |
|----------------|------------|--|------------------------------|--------|
| Transportation | T1         | <b>Incorporate Energy/Climate Policy into City Transportation Plan</b>   | Expanded                     | 17.4   |
|                | T1.1       | General  | Expanded                     | 13.8   |
|                | T1.1a      | Spokes-of-the wheel design   | New                          | 11.8   |
|                | T1.1b      | Infill   | Ongoing                      | 13.3   |
|                | T1.1c      | Mixed-Use  | Ongoing                      | 13.5   |
|                | T1.1d      | Change parking policies  | Expanded                     | 14.7   |
|                | T1.2       | Improved Bicycle Infrastructure  | Expanded                     | 15.9   |
|                | T1.2a      | Bicycle Plan   | Expanded                     | 16.3   |
|                | T1.2b      | Extend/Improve bike lanes  | Expanded                     | 15.2   |
|                | T1.2b-1    | Car-free paths   | New                          | 14.3   |
|                | T1.2b-2    | Connected City/ Regional Lanes   | Expanded                     | 14.5   |
|                | T1.2b-2a   | Bike Lanes between Eureka / McKinleyville & Arcata   | Expanded                     | 15.3   |
|                | T1.2c      | Bike lockers/bike stations/stands  | Expanded                     | 14.3   |
|                | T1.3       | Improve Pedestrian Infrastructure  | Expanded                     | 14.6   |
|                | T1.3a      | Pedestrian Master Plan   | Ongoing                      | 15.2   |
|                | T1.3b      | Extend/Improve sidewalks & pedestrian safety   | Expanded                     | 13.8   |
|                | T1.3c      | Widen sidewalks  | Expanded                     | 12.7   |
|                | T1.3d      | Beautify pedestrian zones  | Expanded                     | 13.8   |
|                | T1.3e      | Create Car-free zones  | New                          | 13.2   |
|                | T1.4       | Improve Mass Transit Infrastructure  | Expanded                     | 15.5   |
|                | T1.4a      | Use Public Parking Fees to Fund further subsidized public transit  | Expanded                     | 15.2   |
|                | T1.4b      | Extend hours of service & frequency of buses to Arcata Outskirts   | Expanded                     | 16.0   |
|                | T1.4c      | Cleaner fueled Transit   | New                          | 14.2   |
|                | T1.5       | Improve Infrastructure for Alternative Fueled Vehicles   | New                          | 12.9   |
|                | T1.5a      | Provide public renewable charging stations   | New                          | 11.8   |
|                | T1.5b      | Collaborate Regionally .   | Expanded                     | 11.8   |
|                | T2         | <b>Promotion/Educational Campaign to Discourage Driving:</b> Promote walking, bicycling, taking public transport, ridesharing, alternative fueled vehicles, telecommuting. | Expanded                     | 14.9   |
|                | T2.1       | Support Existing Local Sustainable Transportation Efforts  | New                          | 16.2   |
|                | T2.2       | Events: car free days/events, bike to work day   | Expanded                     | 13.5   |
|                | T2.3       | Promote Car Sharing  | New                          | 14.3   |
|                | T2.3a      | Carpool/ carshare programs   | New                          | 14.5   |
|                | T2.3b      | Collaborate regionally in transport planning   | Expanded                     | 14.3   |
|                | T2.3c      | Commuter Trip Reduction Program  | New                          | 14.2   |
|                | T3         | <b>Incentives for People not to Drive/Disincentives for those who drive</b>  | Expanded                     | 14.6   |
|                | T3a        | Parking incentives to drivers of AV's  | Expanded                     | 14.0   |
|                | T3b        | Preferential parking   | New                          | 13.8   |
|                | T3c        | Subsidize transit  | Expanded                     | 13.8   |
|                | T3d        | Employees incentives to take transit, carpool, etc.  | New                          | 15.7   |
|                | T3e        | Incentives to Businesses to reduce employee vehicle use  | New                          | 15.0   |
|                | T3f        | Tax Businesses that utilize public parking for employees   | New                          | 14.2   |
|                | T3g        | Incentives for carless people  | New                          | 13.7   |
|                | T3h        | Finance Carpooling   | New                          | 12.2   |
|                | T3i        | Rideshare Trust Fund:  | New                          | 12.7   |

Measure Group Measure ID Measure Name Ongoing, Expanded, Total New Score\*

|                   |           |   |          |      |
|-------------------|-----------|---|----------|------|
|                   | T3j       | Subsidize Arcata's Library Bike Program (shop space, employment)                                      | Ongoing  | 13.0 |
|                   | T3k       | Encourage car insurance companies to offer pay by the mile  | New      | 11.5 |
|                   | <b>T4</b> | <b>City Fleet Greening</b>  | Expanded | 14.7 |
|                   | T4.1      | Policy of purchasing fuel efficient new vehicles/ alternative fuel vehicles                           | Expanded | 15.7 |
|                   | T4.2      | Make modifications to city fleet  | Expanded | 14.4 |
|                   | T4.2a     | "Downsizing" the fleet  | Expanded | 14.7 |
|                   | T4.2b     | Retire old & underused vehicles   | Expanded | 15.3 |
|                   | T4.2c     | Efficient use of vehicles   | Expanded | 17.3 |
|                   | T4.3      | "Green" mass transit  | New      | 14.6 |
|                   | T4.4      | City contracts with haulers,etc. specify alternative fuel vehicles                                    | New      | 13.2 |
|                   | <b>T5</b> | <b>City Employee Transportation Program</b>   | Expanded | 13.2 |
|                   | T5.1      | Infrastructure development  |          | 13.9 |
|                   | T5.1a     | Provide bike locker stations for City employees   | New      | 13.0 |
|                   | T5.1b     | Car pooling network for city employees  | New      | 14.8 |
|                   | T5.2      | Incentives  |          | 12.9 |
|                   | T5.2a     | Allocate library bikes to City employees  | Ongoing  | 12.3 |
|                   | T5.3      | Education/Events  |          | 12.8 |
|                   | T5.3a     | Establish "Bike to work day" once a month: City employees   | New      | 13.3 |
|                   | <b>T6</b> | <b>Regional Partnerships/Collaboration</b>  | Expanded | 14.1 |
|                   | T6a       | Become a DOE Clean City's Partner   | New      | 13.5 |
|                   | T6b       | Improve Regional Infrastructure for Cleaner vehicles  | New      | 13.0 |
|                   | T6c       | Improve Regional Bicycle infrastructure   | Expanded | 14.0 |
|                   | <b>T7</b> | <b>Lobbying/ Political Action for Efficient and Non-Polluting Transportation Options/Alternatives</b> | Expanded | 16.2 |
|                   | T7a       | Lobby for alternative fuel vehicle legislation  | Expanded | 17.5 |
|                   | T7b       | Lobby for improved CAFÉ standards   | Expanded | 17.7 |
| Waste/Consumption | <b>W1</b> | <b>Create Waste/ Consumption Reduction Strategy (R's)</b>   | Expanded | 13.9 |
|                   | W1.2      | Implement recommendations of City Waste Reduction Task Force  | Expanded | 13.4 |
|                   | <b>W2</b> | <b>Include Waste Reduction in Community Building &amp; Planning</b>                                   | Expanded | 13.6 |
|                   | W2.1      | Industrial Ecology (waste to use siting/planning)   | New      | 14.9 |
|                   | W2.2      | Incorporate waste/consumption reduction in municipal codes.   |          | 15.6 |
|                   | <b>W3</b> | <b>Education/Outreach: Materials, events, training, etc. on R's, Composting, brush-drop</b>           | New      | 13.8 |
|                   | W3a       | Backyard Composting workshops   | Expanded | 13.2 |
|                   | W3b       | Office Paper Recycling  | Expanded | 13.7 |
|                   | <b>W4</b> | <b>Incentives</b>   | Expanded | 13.2 |
|                   | W4a       | City Subsidized Recycling   | Expanded | 12.5 |

| Measure Group        | Measure ID  | Measure Name   | Ongoing, Expanded, Total |        |
|----------------------|---|--|--------------------------|--------|
|                      |   |  | New                      | Score* |
|                      | W4b   | City provide free composting bins  | Ongoing                  | 11.8   |
|                      | <b>W5</b>   | <b>Municipal Waste Reduction</b>   | Expanded                 | 12.9   |
|                      | W5.1  | Recycling in City Facilities   | Expanded                 | 13.6   |
|                      | W5.2  | Purchasing Policies  | New                      | 14.8   |
|                      | W5.3  | Employee education   | Expanded                 | 13.4   |
|                      |   |  |                          |        |
|                      | <b>W6</b>   | <b>Regional Partnerships/Collaboration</b>   |                          | 15.5   |
|                      | W6a   | Humboldt Waste Management Authority  | Expanded                 | 13.3   |
|                      |   |  |                          |        |
|                      | <b>W7</b>   | <b>Lobbying/Political Action for Waste/ Consumption Reduction</b>  |                          | 14.0   |
| Sequestration/Other  | <b>O1</b>   | <b>Sequestration</b>   | Expanded                 | 15.0   |
|                      | O1.1  | Community Forest   | Ongoing                  | 15.7   |
|                      | O1.2  | Urban Tree Planting  | Expanded                 | 15.5   |
|                      | O1.2a   | Create a Plan for in-town City Forestry/Planting   | Expanded                 | 14.8   |
|                      |   |  |                          |        |
|                      | <b>O2</b>   | <b>Methane Reduction</b>   | Expanded                 | 12.2   |
|                      | O2a   | Install biogas generator at wastewater treatment plant.  | New                      | 13.7   |
|                      |   |  |                          |        |
|                      | <b>O3</b>   | <b>Regional Partnerhips</b>  |                          | 13.7   |
|                      |   |  |                          |        |
|                      | <b>O4</b>   | <b>Lobbying/Political Action for Carbon Sequestration</b>  | Expanded                 | 13.6   |
| O4a                  | Support Statewide Reforestation Efforts & Reduce Non-Sustainable Timber Harvest Plans | Expanded   | 14.8                     |        |
| <b>Cross-Cutting</b> | <b>M1</b>   | <b>PR campaign/ 20 % challenge: Targeting all categories of GHG Emissions:</b><br>Residential, Commercial, Schools, Consumers, Churches & Community Groups, etc.<br>Waste and consumption reduction, organics, carbon-neutral purchasing, best practices, water efficiency | Expanded                 | 15.7   |
|                      |   |  |                          |        |
|                      | M1.1  | Education events   | Expanded                 | 12.6   |
|                      | M1.2  | Develop materials  | Expanded                 | 10.6   |
|                      | M1.3  | Develop a thorough Business Outreach program   | New                      | 13.5   |
|                      | M1.3a   | Best practices strategies  | Expanded                 | 13.2   |
|                      | M1.3b   | Acknowledge Commercial Efforts to Reduce GHG   | New                      | 14.3   |
|                      | M1.4  | Climate/Energy Education in Schools  | New                      | 13.6   |
|                      | M1.4a   | Support "greening schools" programs  | New                      | 12.3   |
|                      | M1.5  | Create a city staff and policy makers education campaign   | New                      | 14.6   |
|                      |   |  |                          |        |
|                      | <b>M2</b>   | <b>Green Building: Promote Sustainable Building</b>  | New                      | 16.4   |
|                      | M2.1  | Municipal Green Building Policy-City-Wide  | New                      | 14.2   |
|                      | M2.2  | Municipal Green Building Policy-City Buildings   | New                      | 14.6   |
|                      | M2.3  | Professional Training  | New                      | 11.8   |
|                      | M2.4  | Development of Outreach Materials/ Guidelines  | New                      | 13.0   |

Measure Group Measure ID Measure Name Ongoing, Expanded, Total New Score\*

|  |           |  |          |      |
|--|-----------|--|----------|------|
|  | <b>M3</b> | <b>Incorporate Climate Strategies into Municipal Codes (See following sections for specific recommendations)</b> | Expanded | 16.4 |
|  | M3a       | Building Codes   | New      | 15.0 |
|  | M3b       | Land Use Codes   | Expanded | 15.0 |
|  | M3c       | Commercial standards for resource reduction  | Expanded | 14.7 |
|  | M3d       | Design/Project review process that promotes Climate Concerns   | Expanded | 15.0 |
|  | <b>M4</b> | <b>City Operations Strategy (See following sections for specific recommendations)</b>                            | Expanded | 14.8 |
|  | M4.1      | Purchasing Policies  | Expanded | 13.2 |
|  | M4.1a     | Equipment  | Expanded | 14.5 |
|  | M4.1b     | City purchase of carbon offsets  | New      | 10.5 |
|  | M4.2      | Best practices strategies  | Expanded | 13.1 |
|  | <b>M5</b> | <b>Regional Partnerships</b>   | Expanded | 14.9 |
|  | M5.1      | Create Partnerships with Other Communities   | Expanded | 12.1 |
|  | M5.2      | International Council for Local Environmental Initiatives  | Ongoing  | 13.7 |
|  | M5.3      | Encourage/Support HSU GHG reduction initiatives  | New      | 15.6 |
|  | M5.4      | Redwood Coast Energy Authority   | Ongoing  | 15.4 |
|  | M5.5      | Humboldt county Organization of Governments  | Expanded | 13.1 |
|  | M5.6      | Humboldt Waste Management Authority  | Expanded | 13.1 |
|  | <b>M6</b> | <b>Lobbying/Political Action for Greenhouse Gas Reduction (specific recommendations under each topic)</b>        | Expanded | 14.4 |

\* Maximum total score = 20. Higher score indicates the measure is more desirable.

## **Appendix C:**

### **List of Greenhouse Gas Reduction Measures the City of Arcata has Already Implemented**

#### **A. Energy Efficiency**

##### ***Energy audits for City facilities***

##### ***Energy-efficiency retrofits for City facilities***

###### **City Hall**

10 kW PV System  
2 kW PV Expansion  
Relamped all interior lights to T8 Lamps w/ Low Ballast Factor Electronic Ballasts  
Converted Interior/Exterior Incandescent Fixtures to HPS or Fluorescent Fixtures  
Replaced EXIT Signs w/ LED Fixtures  
Installed all Programmable Thermostats

###### **D St. Center**

Relamped all interior lights to T8 Lamps w/ Low Ballast Factor Electronic Ballasts  
Converted Interior/Exterior Incandescent Fixtures to HPS or Fluorescent Fixtures  
Replaced EXIT Signs w/ LED Fixtures  
Installed all Programmable Thermostats

###### **Judo Hut**

Relamped all interior lights to T8 Lamps w/ Low Ballast Factor Electronic Ballasts  
Converted Interior/Exterior Incandescent Fixtures to HPS or Fluorescent Fixtures  
Replaced EXIT Signs w/ LED Fixtures  
Installed all Programmable Thermostats

###### **Corp Yard**

Installed all Programmable Thermostats

###### **Redwood Lodge/Lounge**

Converted Interior/Exterior Incandescent Fixtures to HPS or Fluorescent Fixtures  
Replaced EXIT Signs w/ LED Fixtures  
Installed all Programmable Thermostats

###### **Service Center**

Replaced EXIT Signs w/ LED Fixtures

##### ***Private development projects that involved City sponsorship on affordable housing grants***

- Solar electric and solar hot water systems on Windsong low-income housing
- Solar hot water systems on the Courtyard apartments
- Energy efficiency measures in City funded low-income housing

##### ***Co-sponsorship of energy efficiency workshop in Arcata with RCEA***

## **B. Renewable Energy**

### ***Solar electric promotion and education***

The City and the Humboldt Energy Task Force conducted a public forum in 2002 and produced an informational booklet called "Solar Works" to help promote rooftop solar electric systems. This document is now available from the City of Arcata Environmental Services Department. An updated version of this document is available from the Redwood Coast Energy Authority

### ***12 KW Rooftop solar electric system on City Hall with educational display***

## **C. Sustainable Transportation**

### ***Greening of the City fleet***

The City has purchased or leased the following energy-efficient or alternative fueled vehicles for it's fleet: (3) Toyota Prius gasoline/electric hybrid vehicles, (1) Honda gasoline/electric hybrid vehicle, (3) compressed natural gas pick-ups with a slow-fill, natural gas fueling station, (4) GEMS electric vehicles for meter readers and the wastewater treatment plant, (4) Nissan HyperMini electric vehicles for parking meter readers, and biodiesel fuel is used in the street paving machine.

### ***City-sponsored electric vehicle charging station to be installed downtown***

### ***Bike/Ped Master Plan***

### ***Land Use Code update***

"Smart growth" planning policies (infill, work/live, spokes of wheel, bike/ped friendly, etc.)

## **D. Waste and Consumption Reduction**

Waste reduction/diversion of 51% since 1990. Continued efforts to reach zero waste by recycling, waste reduction and reuse. City recently passed Environmentally responsible purchasing ordinance.

## **E. Sequestration and Other Methods**

### ***Community forest management***

Management Plan emphasizing carbon sequestration by growing trees on extended rotations, designating reserves and adding forest acres that could otherwise be developed.

### ***Riparian forest establishment***

Established more that 100 acres of new riparian forest along creeks and bottom lands

### ***Salt Marsh Project***

The McDaniel Slough Marsh Restoration Project expects to sequester additional carbon on a 240-acre site. Estimates are in progress.

### ***Urban Forestry Program***

Active program to expand planting of trees in the urban landscape including parks, the plaza, roadside greenways etc.

## **F. Cross-Cutting Approaches**

Energy committee input to the new Land Use Code

Energy committee input to the Design Review Commissions Design Review Manual

Established relationship with the Redwood Coast Energy Authority

Education and outreach events (GHG public forum, sustainable energy fair, other local fairs)



## Appendix D:

### Near-term Implementation Plan for Arcata's Community Greenhouse Gas Reduction Plan

| Implementation Measure   | Responsible Party  | Time Frame   | Program Area(s)   |
|--|--|--|---|
| <p><b>Green Building Program</b><br/>           "Green building" is a holistic approach to designing and constructing buildings that emphasizes quality construction, energy efficiency, resource conservation, good indoor air quality, and livable communities. The City will research what other communities are doing to promote green building and will work toward adoption of a local green building program. Key steps in this effort will include the following:</p> <ol style="list-style-type: none"> <li>1. Form a green building team (with potential members from the Energy Committee, Design Review Commission, Planning Commission, and City staff from the Environmental Services Department and the Building Department),</li> <li>2. Identify key stakeholders</li> <li>3. Educate key stakeholders</li> <li>4. Assess and leverage existing resources</li> <li>5. Distribute educational materials</li> <li>6. Adopt established green building guidelines as an official reference guide</li> <li>7. Organize green building educational program for professionals and homeowners</li> <li>8. Remove barriers to and develop incentives for green building</li> <li>9. Develop a green building award program</li> </ol> | <p>Energy Committee (lead),<br/>           Design Review Commission,<br/>           Planning Commission,<br/>           City staff</p> | <p>Steps 1-6 in 2006-2007,<br/>           Steps 7-9 in 2007,<br/>           on-going program</p> | <p>Energy Efficiency,<br/>           Renewable Energy,<br/>           Waste and Consumption Reduction</p> |
| <p><b>Time-of-Sale Program</b><br/>           The time-of-sale program will establish a voluntary, pilot program that will offer energy audits at the time-of-sale of residential properties and will provide audit information, energy efficiency upgrade opportunities, and financing options to prospective buyers. Key steps in this effort will include:</p> <ol style="list-style-type: none"> <li>1. Form a time-of-sale team (members from Energy Committee, RCEA, City staff)</li> <li>2. Identify key stakeholders (e.g. realtors, lenders, energy professionals)</li> <li>3. Develop a plan for the time-of-sale pilot program (involve key stakeholders)</li> <li>4. Develop promotional/educational materials</li> <li>5. Educate key stakeholders and broader community</li> <li>6. Adopt a City resolution in support of the time-of-sale program</li> <li>7. Engage an energy auditor for the pilot program</li> <li>8. Promote and implement the time-of-sale program</li> <li>9. Monitor the program and evaluate its effectiveness</li> </ol>   | <p>Energy Committee (lead),<br/>           Redwood Coast Energy Authority (RCEA),<br/>           City staff</p>                        | <p>Pilot program 2006-2008<br/>           on-going program</p>                                   | <p>Energy Efficiency</p>  |

## Appendix D:

### Near-term Implementation Plan for Arcata's Community Greenhouse Gas Reduction Plan

| Implementation Measure  | Responsible Party                       | Time Frame  | Program Area(s)  |
|---|---|---|--|
| <p><b>Solar Roof Program</b><br/>Participate in efforts to promote the installation of rooftop solar energy systems. Activities may include:</p> <ol style="list-style-type: none"> <li>1. Establish a City goal for the number of new solar energy installations</li> <li>2. Adopt a resolution in support of rooftop solar energy systems</li> <li>3. Develop/compile educational literature promoting the installation of solar energy systems</li> <li>4. Provide promotional information to homeowners and builders</li> <li>5. Add promotional information to the City's solar electric display at City Hall</li> <li>6. Develop incentives for solar energy system installations</li> <li>7. Sponsor educational workshops promoting solar energy</li> </ol> | <p>Energy Committee,<br/>City staff</p> | <p>2006-2007<br/>development,<br/>on-going program</p>                | <p>Renewable Energy</p>  |
| <p><b>City Report on Energy Consumption</b><br/>Prepare an annual report detailing energy usage in all City facilities and operations. Use this information as an educational tool and to track the City's energy efficiency efforts. Tasks for this effort will include:</p> <ol style="list-style-type: none"> <li>1. Develop an energy consumption report format</li> <li>2. Develop a process for compiling the necessary information and preparing the report</li> <li>3. Collect data and prepare the report</li> <li>4. Publicize the report</li> </ol>  | <p>Energy Committee,<br/>City staff</p> | <p>2006 development,<br/>on-going program</p>                         | <p>Energy Efficiency,<br/>Renewable Energy,<br/>Sustainable<br/>Transportation</p> |
| <p><b>Alternative Fuel Vehicles</b><br/>Continue to obtain alternative fuel vehicles for Arcata's vehicle fleet where possible. This will include hybrid-electric vehicles and electric vehicles. Near-term efforts will especially focus on electric vehicle replacements for the City's parking enforcement fleet. Efforts may generally be expanded to promote the use of electric vehicles and other alternative fuel vehicles in the community.</p>  | <p>Energy Committee,<br/>City staff</p> | <p>Parking enforcement<br/>vehicles in 2006,<br/>on-going program</p> | <p>Sustainable<br/>Transportation</p>  |
| <p><b>Energy Ordinance for City Funded Projects</b><br/>Establish an ordinance establishing energy efficiency standards for all City funded projects. Tasks will include:</p> <ol style="list-style-type: none"> <li>1. Research various energy efficiency standards</li> <li>2. Develop an energy efficiency standard that meets the goals stated in General Plan 2020</li> <li>3. Adopt energy efficiency standard</li> <li>4. Enforce the energy efficiency standard</li> </ol>  | <p>Energy Committee,<br/>City staff</p> | <p>2006 development,<br/>on-going program</p>                         | <p>Energy Efficiency,<br/>Renewable Energy</p>                                     |

## Appendix D:

### Near-term Implementation Plan for Arcata's Community Greenhouse Gas Reduction Plan

| Implementation Measure  | Responsible Party                                  | Time Frame   | Program Area(s)      |
|---|--|--|----------------------|
| <p><b>Improve Arcata's Energy Program Website</b><br/>           Improve and update the City's Energy Program website. Keep the information current. Add information about current activities in the City's Energy Program. Provide energy information resources.</p>   | <p>Energy Committee,<br/>           City staff</p> | <p>2006 development,<br/>           on-going program</p> | <p>Cross-cutting</p> |
| <p><b>Coordinate with Local Energy Groups</b><br/>           Coordinate our activities with those of other local energy groups, especially RCEA. Attend other energy group meetings, invite their members to our meetings, or otherwise keep informed about their activities and leverage our efforts to better meet each groups needs.</p> | <p>Energy Committee</p>                            | <p>on-going</p>  | <p>Cross-cutting</p> |

Note: This implementation plan will be reviewed annually in June. Accomplishments will be noted and new implementation measures will be brought forward as appropriate.

# SANTA MONICA SUSTAINABLE CITY PLAN

Adopted September 20 1994

Update Adopted October 24 2006



## **Introduction**

We live in a time in which increased population growth, high levels of consumption and the desire to feed growing economies have created escalating demands on our resources - natural, human and social - on a local, regional, and global scale. These demands negatively impact the natural environment, our communities and the quality of our lives. In the face of these challenges, people worldwide have developed a growing concern for the environment and a desire to live sustainably.

In 1994 the Santa Monica City Council took steps to address these pressures locally by adopting the Santa Monica Sustainable City Program. The Sustainable City Program was initially proposed in 1992 by the City's Task Force on the Environment to ensure that Santa Monica can continue to meet its current needs – environmental, economic and social - without compromising the ability of future generations to do the same. It is designed to help us as a community begin to think, plan and act more sustainably – to help us address the root causes of problems rather than the symptoms of those problems, and to provide criteria for evaluating the long-term rather than the short-term impacts of our decisions – in short, to help us think about the future when we are making decisions about the present.

The program includes goals and strategies, for the City government and all sectors of the community, to conserve and enhance our local resources, safeguard human health and the environment, maintain a healthy and diverse economy, and improve the livability and quality of life for all community members in Santa Monica. To check our progress toward meeting these goals, numerical indicators were developed and specific targets were set for the city to achieve by the year 2000 in four goal areas – 1) Resource Conservation, 2) Transportation, 3) Pollution Prevention and Public Health Protection, and 4) Community and Economic Development.

Following eleven years of implementation the Santa Monica Sustainable City Program has achieved much success. Many of the initial targets have been met or exceeded and Santa Monica is now recognized as worldwide role model for sustainability. However, we are not “there” yet. While we have made progress in the right direction, Santa Monica’s economy and the activities of its residents, businesses, institutions and visitors continue to negatively impact human health and the environment. And our community does not yet provide for the basic needs of all its members. Many challenges remain before Santa Monica can truly call itself a Sustainable City.

### **Sustainable City Update Process**

In reviewing the progress made since the 1994 adoption of the program, the Task Force on the Environment recognized the need to update and expand the Sustainable City goals and indicators to provide a more complete picture of community sustainability, and to develop new indicator targets for 2010. The Task Force felt that a comprehensive update would allow Santa Monica to build on its initial success and to better address the challenges to sustainability that remain.

The update process began in July 2001 with the formation of the Sustainable City Working Group - a large group of community stakeholders that included elected and appointed officials, City staff, and representatives of neighborhood organizations, schools, the business community and other community groups. The Working Group met numerous times over the course of 15 months to discuss the myriad issues related to the sustainability of the community. They evaluated the long-term sustainability of Santa Monica using a framework comprised of three forms of community capital that need to be managed with care in order to ensure that the community does not deteriorate. These include natural capital – the natural environment and natural resources of the community; human and social capital – the connectedness among people in the community and the education, skills and health of the population; and financial and built capital – manufactured goods, buildings, infrastructure, information resources, credit and debt.

The group proposed significant changes to the initial Sustainable City goals and indicators, and assisted with the creation of new indicator targets. Early drafts of the proposed update were revised based on a large amount of public input received during the summer of 2002.

The result of this process is this updated Santa Monica Sustainable City Plan, which represents the community’s vision of Santa Monica as a sustainable city. The change in name from Sustainable City Program to Sustainable City Plan was made to better reflect the long-term comprehensive nature of Santa Monica’s vision and the community’s efforts to become a sustainable city.

### **Sustainable City Plan Structure**

The Santa Monica Sustainable City Plan is founded on nine **Guiding Principles** that provide the basis from which effective and sustainable decisions can be made. These Guiding Principles have been revised and updated from the versions initially adopted in 1994.

The Plan has also been expanded to include eight **Goal Areas**:

- Resource Conservation
- Environmental and Public Health
- Transportation
- Economic Development
- Open Space and Land Use
- Housing
- Community Education and Civic Participation
- Human Dignity

Within each Goal Area are specific **Goals** which comprise the core of the community vision and represent what Santa Monica must achieve in order become a sustainable city.

For each goal specific **Indicators** have been developed to measure progress toward meeting the goals. Indicators are tools that help to determine the condition of a system, or the impact of a program, policy or action. When tracked over time indicators tell us if we are moving toward sustainability and provide us with useful information to assist with decision-making. Two types of indicators are tracked as part of the Sustainable City Plan. **System level indicators** measure the state, condition or pressures on a community-wide basis for each respective goal area. **Program level indicators** measure the performance or effectiveness of specific programs, policies or actions taken by the City government or other stakeholders in the community.

Many of the goals and indicators measure more than one area of sustainability. A **Goal / Indicator Matrix** has been included to demonstrate the linkages between these areas. The amount of overlap shown by the matrix demonstrates the interconnectedness of our community and the far ranging impact of our decisions across environmental, economic and social boundaries.

Specific **Targets** have been created for many of the indicators. The targets represent aggressive yet achievable milestones for the community. Unless otherwise noted, the targets are for the year 2010 using 2000 as a baseline. For some indicators no specific numerical targets have been assigned. This was done where development of a numerical target was determined to be not feasible or where limits on data type and availability made it difficult to set a numerical target. In many of these cases a trend direction was substituted for a numerical target.

Terms throughout this document that may be unfamiliar to the general reader are defined in a **Glossary**. Words or phrases defined in the glossary are shown in *italics* the first time they appear in the document.

### **Leadership, Guidance and Implementation of the Sustainable City Plan**

The City's Task Force on the Environment assumed the initial leadership role on behalf of the community for the Sustainable City Program. With the update and expansion of the Sustainable City Plan into new and more diverse goal areas, the Task Force on the Environment recommended the creation of a Sustainable City Task Force (SCTF) that includes broad representation from community stakeholders with expertise in all of the

SCP goal areas The Sustainable City Task Force was created in 2003 to provide leadership and guidance for implementation of the SCP.

At the City staff level, an interdepartmental Sustainability Advisory Team (SAT) was created to coordinate existing City activities so they are consistent with the Sustainable City goals and facilitate the future implementation of innovative programs and policies to achieve the goals. Members of this group serve as Sustainable City liaisons to their respective departments.

Between them, the SCTF and the SAT are responsible for developing a comprehensive implementation plan for meeting Sustainable City goals and targets, and for coordinating implementation, both interdepartmentally and between the City and community stakeholder groups.

### **Reporting**

Following the City Council adoption of the Sustainable City Plan, the SCTF , SAT and city staff will present Council with a baseline indicators report and a Sustainable City Implementation Plan. The indicators report will be updated and presented to Council annually. The report is intended to provide useful information to City Council, City staff and community members on progress being made toward meeting goals and targets of the Plan, and will provide a basis for decision-making about policies and actions that influence the City's ability to meet the goals and targets.

## **Santa Monica Sustainable City Plan GUIDING PRINCIPLES**

### **1. The Concept of Sustainability Guides City Policy**

Santa Monica is committed to meeting its existing needs without compromising the ability of future generations to meet their own needs. The long-term impacts of policy choices will be considered to ensure a sustainable legacy.

### **2. Protection, Preservation, and Restoration of the Natural Environment is a High Priority of the City**

Santa Monica is committed to protecting, preserving and restoring the natural environment. City decision-making will be guided by a mandate to maximize environmental benefits and reduce or eliminate negative environmental impacts. The City will lead by example and encourage other community stakeholders to make a similar commitment to the environment.

### **3. Environmental Quality, Economic Health and Social Equity are Mutually Dependent**

Sustainability requires that our collective decisions as a city allow our economy and community members to continue to thrive without destroying the natural environment upon which we all depend. A healthy environment is integral to the city's long-term economic and societal interests. In achieving a healthy environment, we must ensure that inequitable burdens are not placed on any one geographic or socioeconomic sector of the population and that the benefits of a sustainable community are accessible to all members of the community.

### **4. All Decisions Have Implications to the Long-term Sustainability of Santa Monica**

The City will ensure that each of its policy decisions and programs are interconnected through the common bond of sustainability as expressed in these guiding principles. The policy and decision-making processes of the City will reflect our sustainability objectives. The City will lead by example and encourage other community stakeholders to use sustainability principles to guide their decisions and actions.

### **5. Community Awareness, Responsibility, Participation and Education are Key Elements of a Sustainable Community**

All community members, including individual citizens, community-based groups, businesses, schools and other institutions must be aware of their impacts on the environmental, economic and social health of Santa Monica, must take responsibility for reducing or eliminating those impacts, and must take an active part in community efforts to address sustainability concerns. The City will therefore be a leader in the creation and sponsorship of education opportunities to support community awareness, responsibility and participation in cooperation with schools, colleges and other organizations in the community.



6. **Santa Monica Recognizes Its Linkage with the Regional, National, and Global Community**

Local environmental, economic and social issues cannot be separated from their broader context. This relationship between local issues and regional, national and global issues will be recognized and acted upon in the City's programs and policies. The City's programs and policies should therefore be developed as models that can be emulated by other communities. The City will also act as a strong advocate for the development and implementation of model programs and innovative approaches by regional, state and federal government that embody the goals of sustainability.

7. **Those Sustainability Issues Most Important to the Community Will be Addressed First, and the Most Cost-Effective Programs and Policies Will be Selected**

The financial and human resources which are available to the City are limited. The City and the community will reevaluate its priorities and its programs and policies annually to ensure that the best possible investments in the future are being made. The evaluation of a program's cost-effectiveness will be based on a complete analysis of the associated costs and benefits, including environmental and social costs and benefits.

8. **The City is Committed to Procurement Decisions which Minimize Negative Environmental and Social Impacts**

The procurement of products and services by the City and Santa Monica residents, businesses and institutions results in environmental, social and economic impacts both in this country and in other areas of the world. The City will develop and abide by an environmentally and socially responsible procurement policy that emphasizes long-term values and will become a model for other public as well as private organizations. The City will advocate for and assist other local agencies, businesses and residents in adopting sustainable purchasing practices.

9. **Cross-sector Partnerships Are Necessary to Achieve Sustainable Goals**

Threats to the long-term sustainability of Santa Monica are multi-sector in their causes and require multi-sector solutions. Partnerships among the City government, businesses, residents and all community stakeholders are necessary to achieve a sustainable community.

10. **The Precautionary Principle Provides a Complimentary Framework to Help Guide City Decision-Makers in the Pursuit of Sustainability**

The Precautionary Principle requires a thorough exploration and careful analysis of a wide range of alternatives, and a full cost accounting beyond short-term and monetary transaction costs. Based on the best available science, the Precautionary Principle requires the selection of alternatives that present the least potential threat to human health and the City's natural systems. Where threats of serious or irreversible damage to people or nature exist, lack of full scientific certainty about cause and effect shall not be viewed as sufficient reason for the City to not adopt mitigating measures to prevent the degradation of the environment or protect the health of its citizens. Public participation and an open and transparent decision making process are critical to finding and selecting alternatives.

**Santa Monica Sustainable City Plan  
GOALS, INDICATORS AND TARGETS**

**RESOURCE CONSERVATION**

**Goals**

Across all segments of the *community*:

1. Significantly decrease overall community consumption, specifically the consumption of *non-local, non-renewable, non-recyclable* and *non-recycled* materials, water, and energy and fuels. The City should take a leadership role in encouraging *sustainable procurement, extended producer responsibility* and should explore innovative strategies to become a *zero waste* city.
  
2. Within renewable limits, encourage the use of local, non-polluting, *renewable* and recycled resources (water, energy – wind, solar and geothermal – and material resources)

**Indicators – System Level**

**Targets**

|  |   |
|--|---|
| <p><b>Solid waste generation</b></p> <ul style="list-style-type: none"> <li>▪ Total citywide generation (also report per capita and by sector)</li> <li>▪ Amount landfilled</li> <li>▪ Amount diverted (recycled, composted, etc) from landfill</li> </ul> | <p>Generation: Do not exceed year 2000 levels by 2010</p> <p>Diversion: Increase amount diverted to 70% of total by 2010</p>  |
| <p><b>Water use</b></p> <ul style="list-style-type: none"> <li>▪ Total citywide use (also report per capita and by sector)</li> <li>▪ Percent local vs. imported</li> <li>▪ <i>Potable</i> vs. non-potable</li> </ul>                                      | <p>Reduce overall water use by 20% by 2010. Of the total water used, non-potable water use should be maximized</p> <p>Increase percentage of locally-obtained potable water to 70% of total by 2010</p> |
| <p><b>Energy use</b></p> <ul style="list-style-type: none"> <li>▪ Total citywide use (also report per capita and by sector)</li> </ul>   | <p>(Target pending completion of Greenhouse Gas Emission Reduction Strategy in 2003)</p>  |

|  |   |
|--|---|
| <p><b>Renewable Energy use</b><br/>Percent of citywide energy use from <i>renewable</i> and more efficient sources</p> <ul style="list-style-type: none"> <li>▪ Total renewable energy use (also report by sector)</li> <li>▪ Total energy use from <i>clean distributed generation</i> sources in SM (also report by sector)</li> </ul> | <p>By 2010 25% of all electricity use in Santa Monica should come from renewable sources</p> <p>By 2010 1% of all electricity use should come from clean distributed generation sources in Santa Monica</p> |
| <p><b>Greenhouse Gas Emissions</b></p> <ul style="list-style-type: none"> <li>▪ Total citywide emissions (also report per capita, by source and by sector)</li> </ul>  | <p>At least 30% below 1990 levels by 2015 for City Operations</p> <p>At least 15% below 1990 levels by 2015 citywide</p>  |
| <p><b>Ecological Footprint for Santa Monica</b></p>  | <p>downward trend</p>   |
| <p><b>Indicator of Sustainable Procurement</b></p>   | <p>Indicator and target to be developed by 2007</p>   |

**Indicators – Program Level**

**Targets**

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|--|--|
| <p><b>“Green” Construction</b><br/>Total number of <i>LEED</i><sup>TM</sup> certified buildings in Santa Monica as a percent of new construction</p> | <p>100% of all buildings* greater than 10,000 square feet eligible for <i>LEED</i><sup>TM</sup> certification constructed in Santa Monica in the year 2010 shall achieve <i>LEED</i><sup>TM</sup> certification or its equivalent. Of these, 20% should attain <i>LEED</i><sup>TM</sup> Silver, 10% <i>LEED</i><sup>TM</sup> Gold and 2% <i>LEED</i><sup>TM</sup> Platinum certification or equivalent. In addition, 50% of all new, eligible buildings* less than 10,000 square feet constructed in 2010 shall achieve <i>LEED</i><sup>TM</sup> certification or its equivalent.</p> <p>*including all municipal construction</p> |
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## ENVIRONMENTAL AND PUBLIC HEALTH

### Goals

1. Protect and enhance environmental health and public health by minimizing and where possible eliminating:
  - The use of *hazardous* or *toxic materials*, in particular *POPs* (*persistent organic pollutants*) and *PBTs* (*persistent bioaccumulative & toxic chemicals*), by residents, businesses and City operations;
  - The levels of pollutants entering the air, soil and water; and
  - The risks that environmental problems pose to human and ecological health.
  
2. Ensure that no one geographic or socioeconomic group in the City is being unfairly impacted by environmental pollution.
  
3. Increase consumption of fresh, *locally produced*, organic produce to promote public health and to minimize resource consumption and negative environmental impacts.

### Indicators – System Level

### Targets

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|--|---|
| <p><b>Santa Monica Bay</b><br/>           Number of days Santa Monica beaches are posted with health warnings or closed.<br/>           Measure for both:</p> <ul style="list-style-type: none"> <li>▪ Dry weather months (April -October)</li> <li>▪ Wet weather months (November-March)</li> </ul> | <p>0 warnings and closures at any Santa Monica beach location during dry weather months</p> <p>No more than 3 days with warnings or closures at any Santa Monica beach location on non-rainy days during wet weather months (a target for <i>rainy days</i> during these months will be determined in 2003)</p> |
| <p><b>Wastewater (sewage) generation</b></p> <ul style="list-style-type: none"> <li>▪ Total citywide generation (also report per capita, and by sector)</li> </ul>   | <p>Reduce wastewater flows 15% below 2000 levels by 2010</p>  |
| <p><b>Vehicle miles traveled</b></p> <ul style="list-style-type: none"> <li>▪ Total</li> <li>▪ Local vs. drive-through</li> </ul>  | <p>Downward trend<br/>           (no target for local vs. drive through)</p>  |
| <p><b>Air Quality</b><br/>           Percent and demographic profile of Santa Monica residents who live within a ½ mile radius of <i>significant emissions sources</i></p>   | <p>By 2007 all significant emissions sources in Santa Monica should be identified</p>   |

**Indicators – Program Level****Targets**

|   |   |
|---|---|
| <p><b>Residential household hazardous waste</b></p> <ul style="list-style-type: none"> <li>▪ Total volume of <i>household hazardous waste</i> (HHW) collected from Santa Monica residents</li> <li>▪ Number and Percent of Santa Monica households using the City’s <i>HHW collection facility</i></li> <li>▪ Cumulative number and percent of Santa Monica households using the City’s HHW collection facility since 2000</li> </ul> | <p>50% cumulative participation rate at the City’s HHW collection facility by S.M. households by 2010 (i.e. by 2010 50% of all households in the city will have delivered HHW to the facility since 2000)</p> |
| <p><b>City purchases of hazardous materials</b><br/>Volume and toxicity of hazardous material (including POP &amp; PBT containing materials) purchased by the City</p>  | <p>(Target to be developed by City staff by 2007)</p>   |
| <p><b>Toxic air contaminant (TAC) releases</b></p> <ul style="list-style-type: none"> <li>▪ Number of facilities in SM permitted to release TACs</li> <li>▪ Total volume of TACs emitted in SM annually</li> </ul>  | <p>Complete feasibility study for data availability and collection by 2007</p>  |
| <p><b>Urban Runoff Reduction</b><br/>Percent of permeable land area in the City</p>   | <p>Upward trend</p>   |
| <p><b>Fresh, Local, Organic Produce</b><br/>Percent of fresh, <i>locally-produced</i>, organic produce that is served at City facilities and other Santa Monica institutions (including hospitals, schools, Santa Monica College, and City-sponsored food programs)</p>   | <p>Annual increase over baseline</p>  |
| <p><b>Organic Produce – Farmers Markets</b><br/>Total annual produce sales at Santa Monica farmers’ markets</p> <ul style="list-style-type: none"> <li>▪ Percent organically grown</li> <li>▪ Percent grown using low-chemical methods</li> <li>▪ Percent conventionally grown</li> </ul>   | <p>Annual increase in percent of organically grown and low-chemical produce sales over baseline</p>   |
| <p><b>Restaurant produce purchases</b><br/>Percent of Santa Monica restaurants that purchase ingredients at Santa Monica farmers’ markets</p>   | <p>Annual increase over baseline</p>  |
| <p><b>Food choices</b><br/>Percent of Santa Monica residents who report that vegetable-based protein is the primary protein source for at least half of their meals</p>   | <p>Annual increase over baseline</p>  |

## TRANSPORTATION

### Goals

1. Create a *multi-modal* transportation system that minimizes and, where possible, eliminates pollution and motor vehicle congestion while ensuring safe mobility and access for all without compromising our ability to protect public health and safety.
2. Facilitate a reduction in automobile dependency in favor of affordable *alternative, sustainable modes of travel*.

### Indicators – System Level

### Targets

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|--|--|
| <p><b><i>Modal split</i></b></p> <ul style="list-style-type: none"> <li>▪ Number of trips by type, citywide</li> <li>▪ <i>Average vehicle ridership (AVR)</i> of Santa Monica businesses with more than 50 employees</li> </ul>  | <p>An upward trend in the use of sustainable (bus, bike, pedestrian, rail) modes of transportation</p> <p>AVR of 1.5 by 2010 for Santa Monica businesses with more than 50 employees</p> |
| <p><b>Residential use of sustainable transportation options</b></p> <p>Percent of residents who have intentionally not used their car but have instead used a sustainable mode of transportation in the past month</p>   | <p>Upward trend</p>  |
| <p><b>Sufficiency of transportation options</b></p> <p>Percent of residents who perceive that the available sustainable modes of transportation in Santa Monica meet their needs</p>   | <p>Upward trend</p>  |
| <p><b><i>Bicycle lanes and paths</i></b></p> <ul style="list-style-type: none"> <li>▪ Percent of total miles of city arterial streets with bike lanes</li> <li>▪ Total miles of bike paths in Santa Monica</li> </ul>  | <p>35% by 2010</p> <p>No net decrease</p>  |
| <p><b>Vehicle ownership</b></p> <p>Average number of vehicles per person of driving age in Santa Monica</p> <ul style="list-style-type: none"> <li>▪ total number of vehicles per person</li> <li>▪ percent of total that are <i>qualified low emission / alternative fuel vehicles</i></li> </ul> | <p>10% reduction in the average number of vehicles per person by 2010</p> <p>Upward trend in % of qualified low emission / alternative fuel vehicles</p>                                 |

**Indicators – Program Level**

**Targets**

|   |   |
|---|---|
| <p><b>Bus ridership</b></p> <ul style="list-style-type: none"><li>▪ Annual ridership on Santa Monica Big Blue Bus (BBB)</li><li>▪ Percent of residents who have ridden the BBB in the past year</li><li>▪ Percent of residents who have ridden the Tide shuttle in the past year</li><li>▪ Annual ridership on MTA routes originating in Santa Monica</li></ul>   | <p>Upward trend</p> <p>Upward trend</p> <p>Upward trend</p> <p>Upward trend</p> |
| <p><b><i>Alternative fueled vehicles</i></b><br/>Percent of the City’s non-emergency fleet vehicles using alternative fuels</p> <ul style="list-style-type: none"><li>▪ Public works vehicles</li><li>▪ BBB vehicles</li><li>▪ Non emergency police and fire vehicles</li></ul>   | <p>(City staff to develop target by 2007)</p>                                   |
| <p><b>Traffic congestion</b></p> <ul style="list-style-type: none"><li>▪ Number of signalized intersections with unacceptable motor vehicle congestion (<i>LOS D, E or F</i>) during peak hours</li><li>▪ <i>Level of service (LOS)</i> for sustainable modes of transportation at impacted intersections</li><li>▪ Locally classified streets that exceed City thresholds for traffic levels</li></ul> | <p>Downward trend</p> <p>Upward trend</p> <p>Downward trend</p>                 |
| <p><b>Pedestrian and bicycle safety</b><br/>Number of bicycle and pedestrian collisions involving motor vehicles</p>  | <p>Downward trend</p>   |
| <p><b>Traffic impacts to emergency response</b><br/>Average emergency response times for public safety vehicles</p> <ul style="list-style-type: none"><li>▪ Police</li><li>▪ Fire</li></ul>   | <p>No upward trend</p>  |

## ECONOMIC DEVELOPMENT

### Goals

1. Nurture a diverse, stable, *local economy* that supports basic needs of all segments of the community.
2. Businesses, organizations and local government agencies within Santa Monica continue to increase the efficiency of their use of resources through the adoption of sustainable business practices. The City takes a leadership role by developing a plan by 2005 to increase the adoption of sustainable practices by Santa Monica businesses and encouraging *sustainable businesses* to locate in Santa Monica.

### Indicators – System Level

### Targets

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|---|---|
| <p><b>Economic Diversity</b><br/>Percent of total economic activity/output by business sector (expressed as a percent of total wages)</p>   | <p>No single sector shall be greater than 25% of total economic activity/output; and the top three sectors shall not be greater than 50% of total economic activity/output.</p> |
| <p><b>Business reinvestment in the community</b><br/>(indicator to be developed by 2007)</p>  | <p>Annual increase in reinvestment by businesses</p>  |
| <p><b>Jobs / Housing Balance</b></p> <ul style="list-style-type: none"> <li>▪ Ratio of the number of jobs in Santa Monica to the amount of housing</li> <li>▪ Percent of Santa Monica residents employed in Santa Monica</li> </ul> | <p>Ratio should approach 1</p> <p>Increasing trend</p>  |
| <p><b>Cost of Living</b><br/>Santa Monica household incomes in relation to <i>Santa Monica cost of living index (SMCOLI)</i></p>  | <p>(no target)</p>  |
| <p><b>Quality Job Creation</b><br/>Number of net new jobs created in Santa Monica that pay greater than or equal to the SMCOLI as a percent of total new jobs created</p>   | <p>Increasing trend</p>   |



|   |   |
|---|---|
| <p><b>Income Disparity</b></p> <ul style="list-style-type: none"> <li>▪ Percent of Santa Monica households earning less than \$25,000/year</li> <li>▪ Percent of households earning more than \$100,000/year</li> </ul>                                       | (no target)                                 |
| <p><b>Resource efficiency of local businesses</b></p> <ul style="list-style-type: none"> <li>▪ Ratio of energy use to total economic activity by business sector</li> <li>▪ Ratio of total water use to total economic activity by business sector</li> </ul> | <p>Downward trend</p> <p>Downward trend</p> |

**Indicators – Program Level**

**Targets**

|   |             |
|---|-------------|
| <p><b>Local employment of City staff</b></p> <ul style="list-style-type: none"> <li>▪ Percent of City employees who live in SM</li> <li>▪ Distance City employees travel to work</li> </ul> | (no target) |
|---|-------------|

## OPEN SPACE AND LAND USE

### Goals

1. Develop and maintain a sufficient *open space* system so that it is diverse in uses and opportunities and includes *natural function/wildlife habitat* as well as *passive* and *active recreation* with an equitable distribution of parks, trees and pathways throughout the community.
2. Implement land use and transportation planning and policies to create compact, *mixed-use projects*, forming *urban villages* designed to maximize affordable housing and encourage walking, bicycling and the use of existing and future public transit systems.
3. Residents recognize that they share the local ecosystem with other living things that warrant respect and responsible stewardship.

### Indicators – System Level

### Targets

|  |  |
|--|--|
| <p><b>Open Space</b></p> <ul style="list-style-type: none"> <li>▪ Number of acres of public open space by type (including beaches, parks, public gathering places, gardens, and other public lands utilized as open space)</li> <li>▪ Percent of open space that is permeable</li> </ul> | <p>Upward trend</p><br><p>Upward trend</p>                           |
| <p><b>Trees</b></p> <ul style="list-style-type: none"> <li>▪ Percent of tree canopy coverage by neighborhood</li> <li>▪ Percent of newly planted and total trees that meet defined sustainability criteria*</li> </ul> <p>*to be developed by 2007</p>                                   | <p>Upward trend</p><br><p>Target to be developed by 2007</p>         |
| <p><b>Parks - Accessibility</b></p> <p>Percent of households and population within ¼ and ½ mile of a park by neighborhood</p>  | <p>Upward trend in park accessibility for Santa Monica residents</p> |
| <p><b>Land Use and Development</b></p> <p>Percent of residential, mixed-use projects that are within ¼ mile of <i>transit nodes</i> and are otherwise consistent with Sustainable City Program goals</p>   | <p>Upward trend</p>  |
| <p><b>Regionally Appropriate Vegetation</b></p> <p>Percent of new or replaced, non-turf, public landscaped area and non-recreational turf area planted with regionally appropriate plants</p>  | <p>Target to be developed in 2007</p>                                |

## HOUSING

### Goals

1. Achieve and maintain a mix of *affordable*, *livable* and *green* housing types throughout the city for people of all socio-economic / cultural / household groups (including seniors, families, singles, and disabled).

### Indicators – System Level

### Targets

|   |  |
|---|--|
| <p><b>Availability of Affordable Housing</b><br/>Percent of all existing and new housing in Santa Monica affordable to <i>very low</i>, <i>low</i>, <i>moderate</i>, and <i>upper income</i> households</p> | <p>(Target to be developed by City staff in 2008 with the next update of the City’s Housing Element)</p> |
| <p><b>Distribution of Affordable Housing</b><br/>Distribution of low income housing by neighborhood</p>   | <p>(no target)</p>   |

### Indicators – Program Level

### Targets

|   |   |
|---|---|
| <p><b>Affordable Housing for <i>Special Needs Groups</i></b><br/>Number of new or <i>rehabilitated affordable housing</i> units for families, seniors, the disabled and other special needs groups as a percentage of all new or rehabilitated affordable housing development</p>   | <p>Upward trend</p>                       |
| <p><b>Production of “Livable” Housing</b></p> <ul style="list-style-type: none"> <li>▪ Number of new housing units in non-residential zone districts as a percentage of the total new housing</li> <li>▪ Percent of new units within ¼ mile of:             <ul style="list-style-type: none"> <li>• transit stop</li> <li>• open space</li> <li>• grocery store</li> </ul> </li> </ul> | <p>Upward trend<br/><br/>Upward trend</p> |
| <p><b>Production of “Green” Housing</b><br/>Percent of new and substantially-rehabilitated housing that complies with Green Building Ordinance #1995 as a percentage of the total new and rehabilitated housing</p>   | <p>Upward trend</p>                       |

## COMMUNITY EDUCATION AND CIVIC PARTICIPATION

### Goals

1. Community members of all ages participate actively and effectively in civic affairs and community improvement efforts.
2. Community members of all ages understand the basic principles of sustainability and use them to guide their decisions and actions - both personal and collective.

### Indicators – System Level

### Targets

|   |   |
|---|---|
| <p><b>Voter Participation</b><br/>Percent of registered Santa Monica voters who vote in scheduled elections. Compare to voter participation rates at the regional and national levels.</p>  | <p>Increase SM voter participation to 50% in off year elections by 2010</p> |
| <p><b>Participation in Civic Affairs</b><br/>Percent of Santa Monica residents who have attended a city-sponsored meeting of any kind in the past year, including City Council meetings, City Commission meetings, or special-topic workshops</p>             | <p>Upward trend</p>   |
| <p><b>Empowerment</b><br/>Percent of Santa Monica residents who feel that they have the opportunity to voice their concerns in the city on major community decisions that affect their lives</p>  | <p>Upward trend</p>   |
| <p><b>Community Involvement</b><br/>Percent of Santa Monica residents who attend community events such as the Santa Monica Festival, a summer concert at the Pier, an event at Virginia Avenue Park, a neighborhood block party, a weekly farmers' market</p> | <p>Upward trend</p>   |
| <p><b>Volunteering</b><br/>Percent of Santa Monica residents volunteering and total hours volunteered in selected City funded public benefit programs</p>   | <p>Upward trend</p>   |

|   |                     |
|---|---------------------|
| <p><b>Participation in Neighborhood Organizations</b><br/>Percent of Santa Monica residents that are active members in <i>recognized neighborhood organizations</i> (by neighborhood)</p>   | <p>Upward trend</p> |
| <p><b>Sustainable Community Involvement</b><br/>Percent of Santa Monica residents who are aware of the Ecological Footprint for Santa Monica and understand their contribution to it</p>  | <p>25% by 2010</p>  |
| <p><b>Sustainable Community Involvement</b><br/>Percent of Santa Monica residents who have an understanding of how each Sustainable City goal area is a component of a sustainable community and the extent to which this affects their decisions</p> | <p>Upward trend</p> |

## HUMAN DIGNITY

### Goals

Santa Monica will be a community in which:

1. All its members are able to meet their basic needs and are empowered to enhance the quality of their lives; and
2. There is access among community members to housing, health services, education, economic opportunity, and cultural and recreational resources; and
3. There is respect for and appreciation of the value added to the community by differences among its members in race, religion, gender, age, economic status, sexual orientation, disabilities, immigration status and other special needs.

### Indicators – System Level

### Targets

|  |   |
|--|---|
| <p><b>Basic Needs – Shelter</b></p> <ul style="list-style-type: none"> <li>▪ Number of homeless living in Santa Monica</li> <li>▪ Percent of Santa Monica homeless population served by the city shelter that transition to permanent housing</li> </ul>   | <p>(no target)</p> <p>Upward trend</p>  |
| <p><b>Basic Needs – Health Care</b></p> <ul style="list-style-type: none"> <li>▪ Percent of residents with health insurance</li> <li>▪ Capacity of local health service providers to meet the basic health care needs of Santa Monica residents</li> </ul> | <p>Upward trend</p> <p>Upward trend</p> |
| <p><b>Basic Needs – Economic Opportunity</b></p> <p>Percent of Santa Monica residents who work more than 40 hours per week in order to meet their basic needs</p>  | <p>Downward trend</p>                   |
| <p><b>Basic Needs – Public Safety</b></p> <p>Crime rate per capita – report by neighborhood/reporting district, and by type (property, violent, hate)</p>  | <p>Downward trend</p>                   |

|  |   |
|--|---|
| <p><b>Residents' perception of safety</b><br/>Percent of residents who feel that Santa Monica is a safe place to live and work</p>   | <p>Upward trend</p>   |
| <p><b>Incidents of Abuse</b></p> <ul style="list-style-type: none"> <li>▪ Number of incidents of abuse (domestic, child, and elder abuse)</li> <li>▪ Percent of cases prosecuted</li> </ul>  | <p>Downward trend</p> <p>Upward trend</p>   |
| <p><b>Incidents of Discrimination</b></p> <ul style="list-style-type: none"> <li>▪ Number of reports regarding Employment and housing discrimination</li> <li>▪ Number of cases prosecuted</li> </ul>  | <p>Downward trend</p> <p>Upward trend</p>   |
| <p><b>Education/Youth</b></p> <ul style="list-style-type: none"> <li>▪ SMMUSD student drop-out rates</li> <li>▪ SMMUSD student suspension rates</li> <li>▪ SMMUSD student substance abuse rates</li> <li>▪ Percent of SMMUSD students who feel safe at school</li> <li>▪ Percent of SMMUSD students that enroll in college or university</li> <li>▪ SMMUSD students enrolled in advanced placement courses and percent that receive passing grades</li> </ul>  | <p>Downward trend</p> <p>Downward trend</p> <p>Downward trend</p> <p>Upward trend</p> <p>Upward trend</p> <p>Upward trend</p> |
| <p><b>Empowerment</b><br/>Women, minorities and people with disabilities in leadership positions</p> <ul style="list-style-type: none"> <li>▪ business</li> <li>▪ local government</li> <li>▪ non-profit organizations</li> </ul>  | <p>Upward trend</p>   |
| <p><b>Ability to Meet Basic Needs</b><br/>Percent of residents who perceive that needs are not being met for:</p> <ul style="list-style-type: none"> <li>▪ Individual and family counseling</li> <li>▪ Emergency food, clothing, shelter</li> <li>▪ Employment services and job training</li> <li>▪ Recreation and services for youth</li> <li>▪ Health care</li> <li>▪ Substance abuse treatment / prevention</li> <li>▪ Affordable housing</li> <li>▪ Seniors and people with disabilities</li> <li>▪ Transportation and mobility</li> </ul> | <p>Downward trend in all areas</p>  |

## Santa Monica Sustainable City Plan GOAL / INDICATOR MATRIX

The matrix below lists all of the Sustainable City indicators down the left side and the eight Sustainable City goal areas across the top. For each indicator dots are shown for every goal area that the indicator provides information about. While each indicator was developed to measure progress toward meeting goals in one goal area, this matrix shows that many of the indicators measure the conditions, impacts or effectiveness of our actions in several goal areas. This demonstrates the linkages between each of the goal areas and the impact of our decisions across environmental, economic and social boundaries.

|   | Resource Conservation | Environmental and Public Health | Transportation | Economic Development | Open Space and Land Use | Housing | Community Education and Civic Participation | Human Dignity |
|---|-----------------------|---------------------------------|----------------|----------------------|-------------------------|---------|---|---------------|
| <b>Resource Conservation Indicators</b>           |                       |                                 |                |                      |                         |         |   |               |
| Solid waste generation                            | ●                     |                                 |                | ●                    |                         |         |   |               |
| Water use   | ●                     | ●                               |                | ●                    |                         |         | ●   |               |
| Energy use  | ●                     | ●                               | ●              | ●                    |                         | ●       |   |               |
| Renewable energy use                              | ●                     | ●                               |                | ●                    |                         |         | ●   |               |
| Greenhouse gas emissions                          | ●                     | ●                               | ●              | ●                    | ●                       | ●       |   |               |
| Ecological Footprint for Santa Monica             | ●                     | ●                               | ●              | ●                    | ●                       | ●       |   |               |
| Indicator of sustainable procurement              | ●                     | ●                               |                | ●                    |                         |         |   |               |
| “Green” construction                              | ●                     | ●                               | ●              |                      |                         | ●       |   |               |
| <b>Environmental and Public Health Indicators</b> |                       |                                 |                |                      |                         |         |   |               |
| Santa Monica Bay – beach closures                 |                       | ●                               |                |                      | ●                       |         |   |               |
| Wastewater (sewage) generation                    | ●                     | ●                               |                | ●                    |                         |         |   |               |
| Vehicle miles traveled                            | ●                     | ●                               | ●              |                      | ●                       | ●       |   |               |
| Air quality                                       | ●                     | ●                               | ●              | ●                    |                         |         |   |               |
| Residential household hazardous waste             |                       | ●                               |                |                      |                         |         |   |               |
| City purchases of hazardous materials             |                       | ●                               |                |                      |                         |         |   |               |
| Toxic air contaminant releases                    |                       | ●                               |                |                      |                         |         |   |               |
| Urban runoff reduction                            | ●                     | ●                               | ●              |                      | ●                       |         |   |               |
| Fresh, local, organic produce                     |                       | ●                               | ●              | ●                    |                         |         |   |               |
| Organic produce – Farmer’s markets                |                       | ●                               | ●              | ●                    |                         |         |   |               |
| Restaurant produce purchases                      |                       | ●                               | ●              | ●                    |                         |         |   |               |
| Food choices                                      | ●                     | ●                               | ●              | ●                    |                         |         |   |               |
| <b>Transportation Indicators</b>                  |                       |                                 |                |                      |                         |         |   |               |
| Modal split                                       | ●                     | ●                               | ●              |                      | ●                       |         |   |               |
| Residential use of sustainable trans. options     | ●                     | ●                               | ●              |                      | ●                       |         | ●   |               |
| Sufficiency of transportation options             |                       |                                 | ●              |                      |                         |         |   |               |
| Bicycle lanes and paths                           |                       |                                 | ●              |                      | ●                       |         |   |               |
| Vehicle ownership                                 | ●                     | ●                               | ●              | ●                    |                         |         |   |               |



|   | Resource Conservation | Environmental and Public Health | Transportation | Economic Development | Open Space and Land Use | Housing | Community Education and Civic Participation | Human Dignity |
|---|-----------------------|---------------------------------|----------------|----------------------|-------------------------|---------|---|---------------|
| Bus ridership   | ●                     | ●                               | ●              |                      |                         |         |   |               |
| Alternative fueled vehicles – City fleet                      | ●                     | ●                               | ●              |                      |                         |         |   |               |
| Traffic congestion  |                       |                                 | ●              | ●                    | ●                       |         |   |               |
| Pedestrian and bicycle safety                                 |                       |                                 | ●              |                      |                         |         |   |               |
| Traffic impacts to emergency response                         |                       |                                 | ●              | ●                    | ●                       |         |   |               |
| <b>Economic Development Indicators</b>                        |                       |                                 |                |                      |                         |         |   |               |
| Economic diversity  |                       |                                 |                | ●                    |                         |         |   |               |
| Business reinvestment in the community                        |                       |                                 |                | ●                    |                         |         | ●   |               |
| Jobs / Housing balance  |                       |                                 | ●              | ●                    |                         | ●       |   | ●             |
| Cost of living  |                       |                                 |                | ●                    |                         | ●       |   | ●             |
| Quality Job Creation  |                       |                                 |                | ●                    |                         |         |   | ●             |
| Income disparity  |                       |                                 |                | ●                    |                         |         |   | ●             |
| Resource efficiency of local businesses                       | ●                     | ●                               |                | ●                    |                         |         |   |               |
| Local employment of City staff                                |                       |                                 | ●              | ●                    |                         | ●       |   |               |
| <b>Open Space and Land Use Indicators</b>                     |                       |                                 |                |                      |                         |         |   |               |
| Open Space  |                       | ●                               |                |                      | ●                       |         |   |               |
| Trees   | ●                     | ●                               |                |                      | ●                       |         |   |               |
| Parks - Accessibility   |                       |                                 | ●              |                      | ●                       | ●       | ●   |               |
| Land Use and Development                                      |                       |                                 | ●              |                      | ●                       | ●       |   |               |
| Regionally appropriate vegetation                             | ●                     |                                 |                |                      | ●                       |         |   |               |
| <b>Housing Indicators</b>                                     |                       |                                 |                |                      |                         |         |   |               |
| Availability of affordable housing                            |                       |                                 |                | ●                    |                         | ●       |   | ●             |
| Distribution of affordable housing                            |                       |                                 |                | ●                    | ●                       | ●       |   | ●             |
| Affordable housing for special needs groups                   |                       |                                 |                |                      |                         | ●       |   | ●             |
| Production of “livable” housing                               | ●                     |                                 | ●              | ●                    | ●                       | ●       |   |               |
| Production of “green” housing                                 | ●                     | ●                               |                |                      |                         | ●       |   |               |
| <b>Community Education and Civic Participation Indicators</b> |                       |                                 |                |                      |                         |         |   |               |
| Voter participation   |                       |                                 |                |                      |                         |         | ●   |               |
| Participation in civic affairs                                |                       |                                 |                |                      |                         |         | ●   |               |
| Empowerment   |                       |                                 |                |                      |                         |         | ●   | ●             |
| Community involvement   |                       |                                 |                |                      |                         |         | ●   |               |
| Volunteering  |                       |                                 |                |                      |                         |         | ●   |               |
| Participation in neighborhood organizations                   |                       |                                 |                |                      |                         |         | ●   |               |
| Sustainable community involvement 1                           | ●                     | ●                               | ●              |                      | ●                       |         |   |               |
| Sustainable community involvement 2                           | ●                     | ●                               | ●              | ●                    | ●                       | ●       | ●   | ●             |
| <b>Human Dignity Indicators</b>                               |                       |                                 |                |                      |                         |         |   |               |
| Basic Needs - Shelter   |                       |                                 |                |                      |                         | ●       |   | ●             |

|                                    | Human Dignity | Community Education and Civic Participation | Housing | Open Space and Land Use | Economic Development | Transportation | Environmental and Public Health | Resource Conservation |
|------------------------------------|---------------|---|---------|-------------------------|----------------------|----------------|---------------------------------|-----------------------|
| Basic Needs – Health Care          | ●             |   |         |                         |                      |                |                                 |                       |
| Basic Needs – Economic Opportunity | ●             |   |         |                         | ●                    |                |                                 |                       |
| Basic Needs – Public Safety        | ●             |   |         |                         |                      |                |                                 |                       |
| Residents’ perception of safety    | ●             |   |         |                         |                      |                |                                 |                       |
| Incidents of abuse                 | ●             |   |         |                         |                      |                |                                 |                       |
| Incidents of discrimination        | ●             |   | ●       |                         | ●                    |                |                                 |                       |
| Education / Youth                  | ●             |   |         |                         |                      |                |                                 |                       |
| Empowerment                        | ●             |   |         |                         | ●                    |                |                                 |                       |
| Ability to meet basic needs        | ●             |   | ●       | ●                       | ●                    |                |                                 |                       |

## Santa Monica Sustainable City Plan GLOSSARY

**active recreation:** recreational opportunities including sports and other activities that typically require playing fields, facilities or equipment.

**affordable housing:** any housing that is deed restricted for, and occupied by, households earning less than 120% of the Los Angeles County median family income.

**alternative fuel vehicles:** vehicles that operate on fuels other than gasoline or diesel. Alternative fuel vehicles include those that operate using compressed natural gas (CNG), liquid natural gas (LNG), propane, electricity, hybrid of gasoline and electricity, and hydrogen.

**alternative (and/or sustainable) modes of transportation:** for the purpose of this document *alternative* (and/or sustainable) modes of transportation include transportation by public transit (bus or rail), bicycle, walking, or alternative fuel vehicles.

**average vehicle ridership (AVR):** a measurement of vehicle occupancy indicating the average number of persons traveling in a measured number of vehicles. AVR is an indicator of the effectiveness of and participation in ridesharing programs

**bike lane/path/route:** As defined in the City’s Bicycle Master Plan, a *bike lane* is a signed and striped lane along a roadway for use by bicycles. Other types of bicycle ways in the city are *bike paths* and *bike routes*. A bike path is a dedicated bicycle way that completely separates bicycles from motor vehicles. Bike routes are signed routes which bicyclists share with motor vehicles. Bike routes differ from bike lanes in that routes do not include any striping on the roadway - they are only designated by signage.

**community:** for the purpose of this document, whenever the term *community* is used it is meant to include the following groups: individuals of all ages, races and abilities; organizations; government agencies; businesses; employers; employees; residents; property owners; renters; visitors; schools; students; public and private service agencies; faith communities; and local media.

**companion animals:** animals kept by residents in their homes, yards, or other properties, for purposes of providing mutual companionship.

**clean distributed generation:** distributed generation refers to generation of electricity at or near the location where that electricity will be used. This differs from traditional electricity generation, which occurs at centralized power plants and is distributed over hundreds of miles to millions of customers through the electricity “grid”. For the purpose of this document, *clean* distributed generation (in order of preferred technology type) refers to 1) renewable distributed generation, including electricity generated by solar photovoltaic systems, fuel cells (powered by hydrogen generated from solar, wind, or

other non-fossil fuel, renewable energy technologies), and small wind generators; 2) electricity generated by high efficiency (i.e., meeting or exceeding efficiency of large natural gas power plants) natural gas generators and fuel cells using hydrogen generated through a natural gas catalyst; and 3) medium scale, high-efficiency co-generation systems (powered by natural gas) serving many properties located within close proximity of each other. Clean distributed generation does not include electricity generated by gasoline or diesel powered generators.

**diversion:** in reference to solid waste, *diversion* refers to all waste that is kept out of a landfill through recycling, beneficial reuse, composting, or other means.

**ecological footprint:** The ecological footprint is a tool to help measure human impacts on local and global ecosystems. The ecological footprint of a given population (household, community, country) is the total area of ecologically productive land and water used exclusively to produce all the resources (including food, fuel, and fiber) consumed and to assimilate all the wastes generated by that population. Since we use resources from all over the world and affect far away places with our wastes, the footprint is a sum of these ecological areas — wherever that land and water may be on the planet. Thus the ecological footprint of Santa Monica is that area of productive land inside and outside its borders that is appropriated for its resource consumption or waste assimilation. There is a finite area of ecologically productive land and water on the Earth, which must be shared among 6 billion people as well as all of the planet's other species. The amount of ecologically productive land available globally at today's current population is approximately 5 acres per person. The ecological footprint of the average American is approximately 25 acres, far exceeding the "fair earthshare". The ecological footprint is an excellent tool for illustrating the magnitude of the change necessary for our world to become sustainable. It is also useful for evaluating and comparing the total environmental impact of specific activities and in this way, helpful for decision-making.

**environmentally preferable:** a product, service, activity or process that has a lesser or reduced effect on human health and the environment when compared to other products, services, activities or processes that serve the same purpose.

**extended producer responsibility:** responsibility of producers or manufacturers across the entire life cycle of their products, particularly to the post-consumer stage (after products are discarded and become waste). Typically once a product is sold to a consumer the responsibility of disposing of that product becomes the responsibility of the consumer. Extended producer responsibility requires that the producer of the product maintain responsibility for recycling or proper disposal of the product once it has surpassed its useful life.

**green:** for the purpose of this document, *green* is used as shorthand to refer to any environmentally preferable product, activity, service or process.

**green housing:** housing that meets or exceeds the requirements of the City's Green Building Design and Construction Guidelines.

**greenhouse gas (GHG):** greenhouse gases are natural and manmade gases in the earth's atmosphere that allow incoming solar radiation to pass through the atmosphere and warm the earth but trap radiant heat given off by the earth. The radiant heat absorbed by these gases heats the atmosphere. This is a natural process known as the "greenhouse effect" that keeps the earth habitable. The four primary greenhouse gases are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and chlorofluorocarbons (CFCs). Since the onset of the industrial period, human activities have led to sharp increases in the levels of GHGs in the atmosphere, enhancing the greenhouse effect and contributing to rising global temperatures.

**hazardous material:** a material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment.

**hazardous waste:** a waste or combination of wastes which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may cause or significantly contribute to an increase in serious, irreversible, or incapacitating reversible illness or pose a substantial present or potential hazard to human health, safety, welfare or to the environment when improperly treated, stored, transported, used or disposed of, or otherwise managed.

**household hazardous waste (HHW):** hazardous waste that is generated by residents through the use of hazardous or potentially hazardous products in the home. Typical household hazardous wastes include spent batteries, cleaning products, pesticides, paints and solvents.

**HHW collection facility:** a permanent facility maintained by the City for the collection and proper recycling or disposal of hazardous waste generated by Santa Monica residents and small quantities of hazardous waste generated by Santa Monica businesses. This is provided as a free service to Santa Monica residents. The facility is located at 2500 Michigan Avenue. Call (310) 458-8255 for more information.

**Income levels:** With respect to the indicators of housing affordability the following are definitions of the income levels mentioned in this document:

**Very low income:** annual earnings between 0 and 50% of the Los Angeles County Median Family income (MFI)

**Low income:** annual earnings between 51 and 80% MFI

**Moderate income:** annual earnings between 81 and 120% MFI

**Upper income:** annual earnings above 120% MFI

**LEED™ certification (Leadership in Energy & Environmental Design):** A rating system developed by the United States Green Building Council (USGBC) that sets definitive standards for what constitutes a *green* or *environmentally preferable* building. The certification system is self-assessing and is designed for rating new and existing commercial, institutional, and high-rise residential buildings. It evaluates environmental performance of the entire building over the building's life cycle. LEED certifications are awarded at various levels (certified, silver, gold, and platinum) according to a point-based scoring system.

**level of service (LOS):** a concept used to describe street intersection operating conditions. It is based on average vehicle delay measurements and/or the volume/capacity ratio of the intersection in question. LOS grades range from A to F with A representing excellent (free-flow) conditions and F representing extreme traffic congestion. For the purpose of this document, LOS grade D represents marginally acceptable levels of traffic and grades E and F represent unacceptable levels. A definition of level of service for sustainable modes of transportation will be developed as part of the update of the Circulation Element of the City's General Plan scheduled for adoption in 2003.

**livable housing:** housing that is within close proximity to neighborhood serving commercial areas, transit stops and community resources such as parks and open space.

**local:** the term *local* has different definitions depending upon the context in which it is used in this document. These are described below:

- 1) Where *local* is used in reference to the economy ("local economy" or "local businesses") it refers to Santa Monica's economy or businesses located within Santa Monica.
- 2) *Local government agencies* refer to any agencies or departments of the Santa Monica city government.
- 3) Where *local* refers to food production ("locally produced") it refers to food grown in the southern half of the state of California
- 4) Where *local* refers to resources, it refers to resources obtained or impacted within a 500-mile radius of Santa Monica.

**mixed-use projects:** developments which incorporate both residential and commercial uses.

**modal split:** the split in use of various transportation modes including: single passenger vehicles; carpools of more than one passenger; bus; rail; bicycle; and pedestrian modes.

**multi-modal transportation system:** a transportation system that includes affordable, alternative modes of transportation such as public transit, and infrastructure and access for alternative fueled vehicles, bicycles and pedestrians, in addition to standard vehicular transportation.

**native species:** plant or animal species native to the southern California bioregion.

**natural function/wildlife habitat:** geographic areas that provide life-supportive functions associated with atmospheric, biological, biochemical and hydrological processes that keep our air and water clean, process waste and support survival and reproduction of plant and animal life.

**non-renewable resources:** natural resources that have a finite availability worldwide. Examples include coal, oil and other petroleum products.

**open space:** for the purpose of this document *open space* refers to all land uses defined as open space in the Open Space Element of the City of Santa Monica's General Plan. These include beaches, parks, public gathering places, usable green open space in street medians, scenic highway corridors, gardens, and other publicly accessible land.

**passive recreation:** recreational opportunities that occur in a natural setting which require minimal development or facilities, and the importance of the environment or setting for the activities is greater than in developed or active recreation settings.

**PBTs (persistent bioaccumulative toxics):** chemicals that are toxic, persist in the environment and bioaccumulate in food chains and, thus, pose risks to human health and the environment. The term PBT is used primarily by the US Environmental Protection Agency (EPA), as part of its preparation of a list of such chemicals that will receive special regulatory emphasis in the United States.

**POPs (persistent organic pollutants):** Organic chemical substances that persist in the environment and bioaccumulate in food chains and pose a risk of causing adverse effects to human health and the environment. The term POPs is commonly used in the context of the United Nations Environment Program (UNEP) and are subject to international negotiations aiming toward their global elimination.

*Note: The primary difference between the PBTs and POPs is that the list of PBTs includes non-organic toxins that are not included on the list of POPs.*

**potable:** suitable for drinking

**qualified low emission / alternative fuel vehicles:** Vehicles recognized by the State of California as being low emission and/or alternative fuel vehicles. These vehicles exceed the basic standards all new vehicles must meet to be sold in California and include low emission vehicles (LEVs), ultra low emission vehicles (ULEVs), super ultra low emission vehicles (SULEVs) and zero emission vehicles (ZEVs). Additional information about these vehicle designations can be found on the internet at <http://www.arb.ca.gov/msprog/ccbg/ccbg.htm>

**rainy day:** for the purpose of this document, a *rainy* day is any day with recorded precipitation greater than .1" in 24 hours.

**recognized neighborhood organization:** Tax-exempt, non-profit organization representing a commonly recognized neighborhood in Santa Monica.

**regionally appropriate vegetation:** plant and tree species that are environmentally appropriate for the Southern California region and that do not negatively impact native plants or animals. A specific list of regionally appropriate vegetation for Santa Monica will be developed in 2003.

**rehabilitated housing:** rehabilitation that increases by 25% or more the after-rehab value of the property; or a rehabilitation in which at least fifty percent of exterior walls have been removed or relocated for any duration of time.

**renewable limits:** harvesting resources within *renewable limits* refers to harvesting a renewable resource at a rate that is lower than the rate the resource can replace itself (e.g. catching fish at a rate that will allow the fish population to be maintained over time. If too many fish are caught, exceeding renewable limits, the fish population will decline). The terms *renewable limits* and *sustainable limits* are synonymous.

**renewable resources:** natural resources that have an unlimited supply (such as solar radiation) or that can be renewed indefinitely if ecosystem health is maintained (e.g. fisheries or forests).

**routine:** for the purpose of this document, *routine*, when describing generation of hazardous waste by City government operations, refers to regular and consistent operational practices such as vehicle maintenance, regular cleaning procedures, etc. Non-routine refers to hazardous waste generated during unanticipated events such as chemical spills or leaks.

**Santa Monica cost of living index (SMCOLI):** Los Angeles County cost of living for a two-person household adjusted for the cost of housing in Santa Monica. SMCOLI for 2000 is \$21,800 (LA County cost of living) x 1.46 = \$31,828. The 1.46 multiplication factor refers to the relative cost of housing in Santa Monica as compared to the average for Los Angeles County, based on the Housing Authority Survey of Rents.

**significant emissions source:** sources of toxic air contaminants and other air emissions that pose a threat to human health and the environment. A specific list of significant emission sources within Santa Monica will be developed in the course of tracking this indicator.

**SMMUSD:** Santa Monica-Malibu Unified School District

**special needs groups:** with respect to affordable housing, *special needs groups* refers to the elderly, disabled persons, large families, female-headed families, and the homeless.



**sustainable:** *sustainable* can mean slightly different things depending on the context in which it is used. For the purpose of this document, the following definitions are used:

**sustainable** (in reference to resource use): a method of harvesting or using a resource so that resource is not depleted or permanently damaged.

**sustainable business:** for the purpose of this document, *sustainable business* refers to a business that provides goods and services, and/or has incorporated into its daily operations practices that result in cleaner air and water, less waste and pollution, conservation of energy and natural resources, less traffic, improved quality of life for residents and workers, and contribute to a strong and viable local economy.

**sustainable community/city:** a community or city that meets its present needs without sacrificing the ability of future generations to meet their own needs. More specifically, a sustainable community is one that improves and enhances its natural, social and economic resources in ways that allow current and future members of the community to lead healthy, productive and satisfying lives.

**sustainable modes of transportation/travel:** same as *alternative modes of transportation* above

**sustainable procurement:** procurement of environmentally preferable goods and services in a way that also takes into consideration social responsibility and sustainable economic development issues in the manufacture, transportation, sale and use of those goods and services.

**toxic material:** a substance that causes illness, injury or death by chemical means. A poison.

**toxic air contaminants (TACs):** air pollutants which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health.

**transit node:** a station for public transportation along a regional transit corridor (usually rail or rapid bus) with access routes for buses, taxis, automobiles, bicycles and pedestrians.

**urban villages:** mixed-use developments in walkable, livable and transit-oriented districts that balance the need for sufficient density to support convenient, high-frequency transit service within the scale of the adjacent community.

**vehicle miles traveled (VMT):** one vehicle traveling one mile constitutes a vehicle mile. VMT is primarily an indicator of automobile use. Increasing VMT typically corresponds with increases in traffic and vehicle-related pollution.

**zero emissions vehicle (ZEV):** motor vehicle that produces neither tailpipe nor evaporative pollutant emissions.

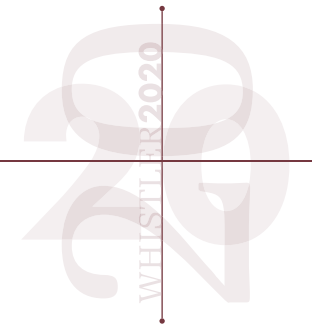
**zero waste:** recycling or reuse of all natural and man made materials back into nature or the marketplace rather than sending those materials landfills or similar disposal options.

# WHISTLER2020

Moving Toward a Sustainable Future







Whistler holds a special place in the hearts of the people who live, work and play here, and a competitive position within the international destination resort market.

Together, we can continue our success as a mountain resort community and move toward a sustainable future.

Whistler community member, partner and stakeholder contributions are essential for achieving our vision as defined by Whistler 2020 – Moving Toward a Sustainable Future.

*Please join us in Whistler's journey.*

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**WHISTLER 2020 IS PRESENTED IN THREE VOLUMES:**

- **Volume I** describes what Whistler aspires to be in the year 2020: our values, sustainability principles, vision, priorities and directions that define success and sustainability for the resort community. It also provides background on the Whistler 2020 strategic plan, explaining what it is, why and how it was developed, and who was involved in the planning process.
- **Volume II** outlines how Whistler will achieve the 2020 vision: the strategies and actions that move us in the right direction. It also contains targets and a monitoring program to help the resort community assess whether we are on the right track, and to correct our path if we are not.
- **Volume III** includes the appendices and background information necessary to fully understand the Whistler 2020 development process and to plan for implementation and moving forward.

Visit [www.whistler.ca](http://www.whistler.ca) for Whistler 2020 updates and for Volume II and III.

**COMMENTS OR QUESTIONS?**

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# ACKNOWLEDGEMENTS

Whistler 2020 – Moving Toward a Sustainable Future was developed by the Resort Municipality of Whistler with significant contributions and commitments from many individuals and organizations.

We would like to acknowledge and thank all those who participated in the process to develop Whistler 2020, through workshops, task force meetings, open houses, surveys, and in other capacities. Your contribution was invaluable and helped to shape this plan. Any errors or misinterpretations are ours, and we apologize should this have happened.







## RENEWING **WHISTLER'S** VISION

Whistler was built by visionaries: from those who first settled here in the early 1900s and those who established the resort in the mid '70s, to those who brought us through the trying times of the early '80s and the growth and development of the '90s.

Today, Whistler holds a special place in the hearts of the people who live, work and play here, and a competitive position within the international destination resort market. Together, we can continue our success as a mountain resort community and move toward a sustainable future.

Whistler's 2002 vision, created in 1997, first articulated our desire to be the premier mountain resort community and has helped to guide us into the millennium. Building on this, Whistler 2020 renews our values,

vision for the future, priorities and directions, and includes the strategies and actions for moving forward. Extending to 2020, it sets a 15-year vision and emphasizes the need for a sustainable future.

The journey toward a successful and sustainable future will not be easy. It requires that we to set out on a bold course today, working collaboratively and innovatively with our partners. Ready for this challenge, we embrace the opportunity to create the future we choose.







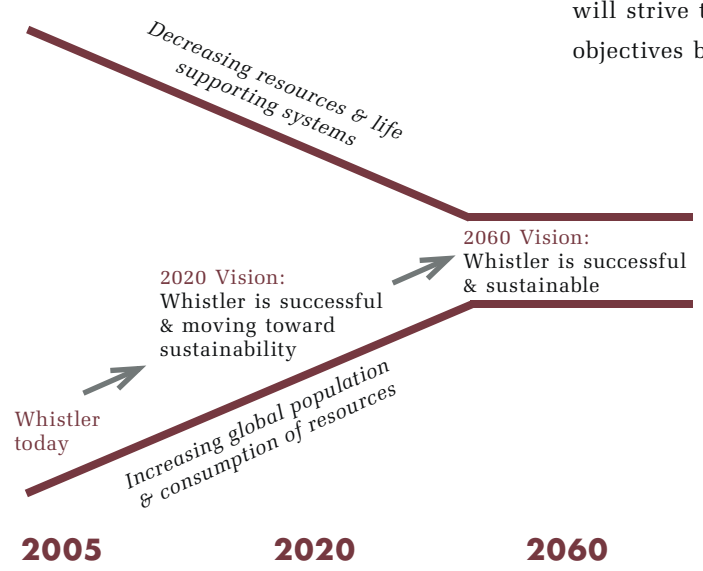
# LOOKING TOWARD 2060

Whistler 2020 is the vision and strategic plan for Whistler's continued success to the year 2020 – and an ambitious step on our longer journey to a sustainable future. We are committed to achieving sustainability, yet recognize that this will take time and cannot happen in isolation from the rest of the world. As part of a larger global effort, we believe that we can achieve sustainability by 2060 and that this timeline provides us with a realistic target.

### WHY SUSTAINABILITY BY 2060?

Most things in our world will change significantly within the next 50 or so years. In this period, technological advances, political shifts and increased pressures from global challenges, including those related to energy, water, food, and climate change, will require society to adapt its social, economic and infrastructure systems accordingly. During this time, almost

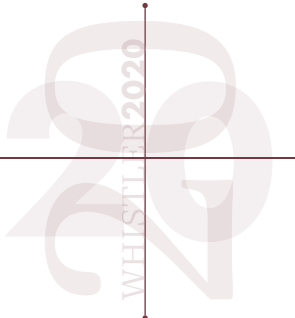
all of our infrastructure systems will have passed their useful life and will have been replaced or retrofitted. We must identify and act on opportunities to ensure that the new systems are integrated and sustainable. Recognizing that there is limited time to implement such fundamental societal changes, we will strive to achieve our sustainability objectives before 2060.



### Why Worry About Sustainability?

Whistler does not function in isolation. It is part of a global network, ecologically, economically and socially. Sustainable living is important to Whistler in several ways. We value the natural environment and society and do not wish to contribute to global degradation. Also, unsustainable practices worldwide threaten Whistler's financial, social and environmental well-being. For example, declining natural resources mean higher fuel costs—higher costs for all goods and services—and less inclination by visitors to travel long distances. Whistler must respond and adapt to meet the sustainability challenges presented by today's society and systems.

WHISTLER 2020 MOVING TOWARD  
**A SUSTAINABLE FUTURE**



**WHAT IS WHISTLER 2020?**

Whistler 2020 is our long-term, overarching, community-wide plan that is guided by our values and sustainability principles, and sets out a shared vision of what the resort community will look like in a successful and sustainable future. It also outlines how we will achieve this vision.

What Whistler is aiming to be in the future is defined by our vision, priorities and directions. How we plan to get there is determined by our strategies and actions. Progress toward success and sustainability is determined by the Whistler 2020 monitoring and reporting system, which helps us to learn and adapt as required.

**HOW IS WHISTLER 2020 BEING USED?**

Whistler 2020 replaces Whistler 2002 – Charting a Course for the Future in guiding community decision-making and activities. Amendments to Whistler’s Official Community Plan (OCP) are being enacted to ensure that municipal policies are aligned. As a community-wide plan, relevant components of the Whistler 2020 framework and its overarching principles are being adopted by Whistler partners and incorporated into their policies and plans.

**THE WHISTLER 2020 FRAMEWORK**

**Values:** Our values represent what is important to us as a resort community and are the foundation for all we do.

**Vision:** Our vision is what we aspire to be. By describing Whistler in the year 2020, it helps guide our strategic planning and actions over time.

**Priorities:** Priorities are the key areas around which we focus our efforts in moving toward achieving Whistler’s vision of the future.

**Directions:** Our directions describe where Whistler aims to be with respect to each priority. They define what success and sustainability will look like. Moving toward meeting our Sustainability Objectives based on the Natural Step is fundamental to all directions.

**Strategies and Actions:** The strategies and actions set out how Whistler will achieve success and sustainability, as defined by the directions (see Volume II of Whistler 2020).

*See page 61 for a chart of this framework.*

**WHY IS WHISTLER 2020 IMPORTANT?**

The global and local challenges that currently face Whistler highlight the need for an overarching sustainability-based approach to long-term planning. Traditional planning processes tend to focus on isolated pieces rather than on interconnected systems, and are generally not able to solve complex problems in a proactive manner. Whistler 2020 moves beyond traditional planning and has been developed to address social, economic and environmental challenges in an integrated and upstream way (see textbox). Local values and the Natural Step sustainability principles guide visioning, planning, decisions and actions.

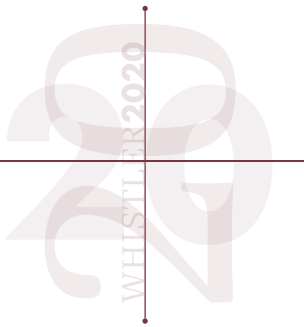
**HOW WAS WHISTLER 2020 DEVELOPED?**

Whistler 2020 was developed in four phases. During Phase 1, success factors were identified. In Phase 2, five alternative futures were explored and assessed with respect to sustainability. Phase 3 involved crafting a blended future and developing the draft strategic plan, guided by Whistler’s values and sustainability principles. In Phase 4, the blended future was transformed into Whistler’s vision and the draft plan was completed and named Whistler 2020 – Moving Toward a Sustainable Future. Public engagement was key and shaped each phase of the planning process. Task forces of community members and experts participated in workshops to develop the long-term strategies and identify actions, and will continue to hold an important role in achieving our vision. (See Whistler 2020 Volume III for more background information.)

*Why an upstream and systems-based approach?*

*An ‘upstream’ approach to planning anticipates and avoids problems before they occur, as opposed to a ‘downstream’ approach, where resources are used to deal with the results of the problems. For example, buying a product without packaging is an upstream action, whereas recycling the packaging is a downstream action. A system is made up of many different parts that work together and share a set of basic principles. Identifying and avoiding problems upstream requires an integrated ‘systems’ approach, which involves understanding the connections and relationships among different parts of the entire system, rather than looking only at individual parts.*





# GLOBAL AND LOCAL CHALLENGES

## WHO IS RESPONSIBLE FOR WHISTLER 2020?

Whistler 2020 is the resort community's strategic plan. To effectively achieve our vision, it must be owned and actively supported by the individuals who live, work and play here, along with major stakeholder groups and partners. There are a number of local partners who are key to the success of Whistler 2020 and will take lead roles on various strategies and actions. These include the Resort Municipality of Whistler, Tourism Whistler, Whistler Blackcomb, Chamber of Commerce, local businesses, the Whistler Housing Authority, Whistler Community Services Society, Vancouver Coastal Health and other health agencies, committees and providers, School District #48 and other education partners, One Whistler, Whistler Arts Council, Whistler Museum and Archives, Maurice Young Millennium Place, Whistler Public Library, Association of Whistler Area Residents for the Environment (AWARE), Whistler Naturalists, Whistler Fisheries Stewardship Group, among others.

## MONITORING PERFORMANCE

By monitoring our performance and continually adjusting our strategies and actions over time, the resort community tests the assumptions used in developing the plan and ensures progress is made toward the Whistler 2020 vision. To be accountable and to encourage learning, annual performance and progress is publicly reported and the community is engaged in the process (see Whistler 2020 Volume II).

## GLOBAL AND LOCAL CHALLENGES FACING WHISTLER

Global trends set the context for influencing and shaping the futures of communities such as Whistler. General trends such as changing climate, resource availability and ecosystem quality, increasing globalization and wealth gaps, changing population, demographics and technology will have increasing impacts on Whistler into the future, presenting both challenges and opportunities. For example, climate change could affect the tourism industry in many ways. Changing weather patterns threaten winter sports and vegetation, and global policies addressing climate change may increase fuel costs, which would affect travel patterns. Please refer to the text box for other trends.

Locally, some of these trends and Whistler's success as a destination resort pose immediate and fundamental challenges to the sustainability of the community and surrounding natural areas. Since the OCP review in 1989, leaders have recognized that continued rapid growth would ultimately destroy Whistler's social fabric and the area's natural ecology, the very things that attracted people in the first place. As a result, a cap on development within the municipality was set at 55,500 bed units, including resident housing.

Close to reaching this cap and facing continued pressures for growth, Whistler is also presented with new hurdles that require decisions and direction. Some local challenges faced by the resort community and addressed in this strategic plan include:

- Escalating living, housing and business costs, making Whistler unaffordable for many local people
- Increasing pressures to grow and expand the physical size of Whistler
- Changing travel patterns and fluctuating visitor numbers
- Changing demand for resident and visitor products and services as a result of demographics and market trends
- Changing climate from greenhouse gas emissions that may result in the erosion of winter sports and snow-based activities
- Dependence on limited and increasingly costly natural resources such as energy for visitor travel and resort operations
- Health issues, currently known and unknown, from substances that build up in nature and pollute air, soils and water.





A new way of planning is required that focuses on building a forward looking and adaptable resort community, integrating innovative solutions to address local and global challenges from a systems perspective. Recognizing external trends and understanding their potential impacts is a critical part of this strategic plan. Whistler 2020 strategies include actions that influence these trends where possible, as well

as actions that position Whistler to adapt to impacts and take advantage of related opportunities. For example, the strategies take steps toward addressing climate change through actions such as use of greener energy sources, carbon offset programs and energy efficiency initiatives.

#### GLOBAL TRENDS

##### Economic & Tourism

- Changing value of the Canadian dollar
- Globalization
- Growing competition among destination resorts
- Changing tourism patterns
- Increasing service demands by resort visitors

##### Social

- Growing wealth gap
- Changing demographics and population
- Global socio-political insecurity
- Rapid technological change

##### Environmental

- Changing climate
- Declining natural resources, ecosystem services, natural habitat and biodiversity
- Accumulating substances that affect health and pollute nature

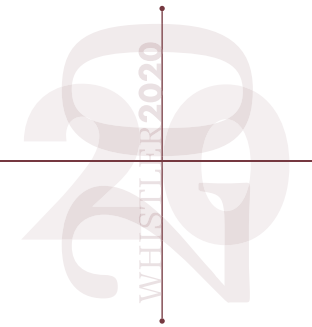


#### Why do we need a Healthy Economy?

*A strong, healthy economy is an essential component of a healthy community, today and into the future. While economic activity and sustainability are often seen as conflicting objectives, in reality, they can be complementary. They are linked and one cannot be achieved without the other. Maintaining economic health and vitality is a powerful strategy for achieving sustainability. The outcomes of economic activity help pay for meeting social needs and for implementing strategies that reduce and restore negative impacts on nature. On the other hand, without a healthy environment and a strong social fabric, ongoing economic activity cannot successfully take place. In this way, economic systems and sustainability principles reinforce and support one another. Whistler's economic health and continued renewal is essential as we move toward sustainability.*



# YESTERDAY **AND** TODAY



The story of Whistler is about place, people and an Olympic dream. Whistler is a special place, nestled among the snow-capped Coast Mountains, surrounded by natural beauty and defined by forests, mountains, rivers and lakes. Only 120 kilometers north of one of Canada's largest urban areas, and 40 kilometers inland from the Pacific Ocean, Whistler provides a west-coast mountain experience with snowy winters and moderate temperatures.

First Nations people inhabited the land surrounding Whistler for thousands of years, hunting and gathering to support their nomadic lifestyles. The valley itself was an isolated wilderness, frequented by the Lil'wat Nation from the Mount Currie area and the Squamish Nation. In 1877, a trail was completed, linking the Pemberton Valley to the Pacific coast, drawing prospectors and trappers. One trapper, John Millar, enticed Myrtle and Alex Philip from Vancouver to the north shore of Alta Lake. There they built the successful Rainbow Lodge, which became the most popular honeymoon spot west of Jasper by the 1940s. The tiny community of Alta Lake was lively and sociable throughout the mid-century.

In the 1960s, a group of Vancouver businessmen launched a bid to host the 1968 Olympic Winter Games. The bid failed, but the dream spurred one member, Franz Wilhelmsen, to open the Garibaldi Lift Company on the west side of Whistler Mountain in 1966. Avid skiers began the trek up the old hydro road, paved that same year, and built A-frame cabins around the Whistler Creek base.

By the mid '70s, local visionaries, again dreaming of the Olympics, began plans for an international mountain resort. The second bid failed, but

Whistler Village, along with Blackcomb Mountain and the north side of Whistler Mountain opened for business in December 1980. Times were lean in the early '80s, but the economy picked up and by 1992 Whistler was named the Number One Ski Resort in North America by Snow Country Magazine. The accolades continued, as locals strategized and planned their growing resort community, adding summer amenities and a mix of recreational pursuits. Whistler grew to almost 10,000 permanent residents and around two million annual visitors.

And today, the resort community, and its partners, including the Lil'Wat and Squamish First Nations, are working on their Olympic legacy. On July 2, 2003, the dream at last came true, as 5,000 cheering residents jammed Village Square to hear the International Olympic Committee select Vancouver/Whistler to host the 2010 Winter Olympic and Paralympic Games.

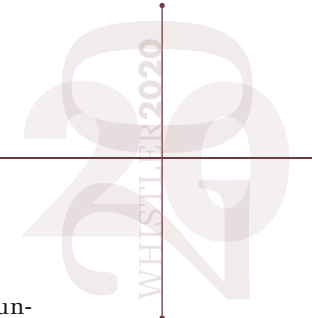


# OUR VALUES & SUSTAINABILITY PRINCIPLES

## WHAT WE VALUE

Our values are the foundation for all we do. They represent what is important to us as a resort community. Guided by our values, we are able to make difficult decisions about Whistler's future, and formulate the priorities and actions necessary to achieve our vision.

- A sustainable community – where social and ecological systems are sustainable and supported by a healthy economy, today and in the future.
- A strong, healthy community – where the needs of residents are met, where community life and individual well-being are fostered, where the diversity of people is celebrated, and where social interaction, recreation, culture, health services and life-long learning are accessible.
- A well-planned community – where growth and development are managed and controlled.
- Our natural environment – and our role as responsible stewards of it, respecting and protecting the health of natural systems today and for generations to come.
- A strong tourism economy – where a healthy, diversified tourism economy is sustainable through thoughtful, long-range planning, strategic marketing and business partnerships.
- A safe community – where diverse residents and guests are comfortable and secure.
- The people who live, work and play here – our families, children, neighbours, colleagues and friends.
- Our guests – and our desire to provide exceptional service in all we do.
- Our partners – and the positive, co-operative relationships that recognize the values of all the communities in the corridor.



## OUR SUSTAINABILITY PRINCIPLES

Whistler aspires to achieve environmental and social sustainability, and a healthy economy, locally and globally. What does sustainability actually mean for Whistler, and for society?

To strategically progress toward sustainability, Whistlerites need a shared understanding of what sustainability is, and a compass to frame and guide decision-making and planning.

In 2000, the resort community adopted the Natural Step framework (TNS framework) to guide its progress toward sustainability. The TNS framework is a 'systems perspective lens' for looking upstream to understand and plan for a sustainable society. It covers all aspects of sustainability, where the ultimate goals are social and ecological sustainability, and a vibrant economy is the means to ensure that we achieve these goals. The framework helps us to understand





the state of our currently unsustainable community and society; provides us with basic principles that define minimum requirements for a sustainable society; and outlines a planning process for moving forward.

While there are many unknowns about Whistler's future, we do know the four basic TNS principles that we need to respect for this future to be sustainable. These were developed by identifying the ways that humans destroy natural and social systems. These mechanisms were then changed to principles that specify how to avoid this destruction. They are based on scientific consensus, are concrete and non-overlapping, define our sustainability goals, and guide our thinking and planning.

As with any goal, the best way to achieve it is to envision ultimate objectives and then take step-by-step actions to get there. This process is called backcasting.

### SUSTAINABILITY PRINCIPLES

In a sustainable society, nature is not subject to systematically increasing:

-  1 concentrations of substances extracted from the Earth's crust;
-  2 concentrations of substances produced by society;
-  3 degradation by physical means; and in that society,
-  4 people are not subject to conditions that systematically undermine their capacity to meet their needs.



Whistler will take steps to move toward four ultimate sustainability objectives, based on the TNS sustainability principles. These are to eliminate Whistler's contribution to:



Progressive build-up in concentrations of waste derived from the Earth's crust. For example, the resort community transitions to renewable energy sources for transportation and heating.



Progressive build-up in concentrations of materials produced by society. For example, the resort community implements community-wide landscape management standards that eventually eliminate the use of chemical fertilizers and pesticides.



Ongoing physical degradation of nature. For instance, the resort community uses eco-certified building materials (e.g., sustainably harvested wood).



Undermining of other people's ability to meet their needs. For example, the resort community uses resources more efficiently and addresses resident affordability issues.

The non-prescriptive nature of Whistler's sustainability objectives should help to unleash the creativity of all Whistlerites in identifying opportunities for moving toward sustainability. The resort community has used these objectives to develop Whistler 2020 and encourages their use in all decision-making.



### *Recognizing and Managing Tradeoffs*

*As we strive toward social and environmental sustainability and a healthy economy in the long-term, we recognize that there will be short-term tradeoffs along the way. Tradeoffs occur when a step toward one aspect of success and sustainability means a lack of progress toward, or even a step away from another element of success and sustainability. Therefore, tradeoffs must be short-term and the initiatives that cause tradeoffs must be stepping-stones for future progress toward sustainability so that the tradeoff can eventually be avoided completely. These tradeoffs must also be managed to ensure that critical aspects are not compromised.*

*For example, sufficient and affordable housing for residents is fundamental to a healthy and socially sustainable community. However, building more housing to accommodate residents often requires the development of natural areas. This tradeoff is sometimes necessary to maintain the vibrancy and economic vitality of the resort community. At the same time, encroachment on critical natural areas must be avoided, and other impacts must be minimized and mitigated (e.g., by restoring natural areas elsewhere so no net loss results). Encroachment on nature must also be limited to the short term, not continuing on an ongoing basis.*

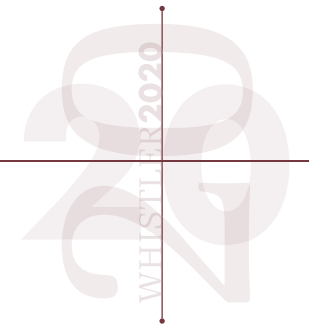
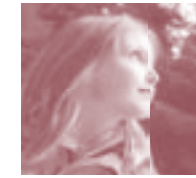


# OURVISION

Whistler will be the premier mountain resort community – as we move toward sustainability.

We are committed to achieving social and environmental sustainability and a healthy economy. We will continue to build a thriving resort community that houses 75 percent of the workforce in Whistler. We will continue to offer world-class recreational and cultural opportunities for our visitors and residents. We will foster sustained prosperity in our local tourism economy and retain our local businesses. We will continue to strive to protect the ecological integrity of our natural environment. We will meet the social, health and learning needs of residents and visitors.

We will be a safe community that provides peaceful enjoyment of our activities and places. We will foster cooperation between regional communities and the provincial government on initiatives to expand prosperity and well-being for all. We will monitor our performance at achieving Whistler’s vision and report back to the community on an ongoing basis.



Framed by our five priorities, our vision takes us forward 15 years and we imagine Whistler as though we are living in the future. By 2020, the Whistler community has achieved a comfortable stability, in which a close-knit population of permanent, short-term, and part-time residents work and recreate, sharing their passion and life experience with visitors from the region and around the world. The rapid growth and change that took place as the resort achieved international prominence through the 1990s and early 2000s transitioned into a period of slower, managed development with a focus on economic viability, affordability and protection of the community character and surrounding environment.

Every strategy, program, policy and partnership, indeed most day-to-day actions, is assessed and evaluated using the principles of sustainability as defined by the Natural Step framework. Whether it is delivering affordable housing and recreation and leisure activities or building and operating infrastructure to planning land uses, the community is working together to ensure we preserve our natural and social capital, and to protect our economic engine as we move toward the year 2020.







OUR PRIORITIES

# ENRICHING COMMUNITY LIFE

In the year 2020, the community is attractive and liveable with a strong social fabric, as the majority of the local workforce and many long-time members of the community make Whistler their home. Residents are able to access and enjoy Whistler's wide range of activities and amenities, the very reason they were drawn here. They mix with visitors in the village and on the mountain, sharing in the resort vibrancy and cosmopolitan atmosphere.

To ensure that locals can enjoy life in Whistler, a supply of resident employee housing was planned and built in phases as needs were demonstrated through the results of the Whistler 2020 annual monitoring program. This includes a mix of resident housing types with a range of prices offering affordable options to both short-term and long-term employees over time. This new resident housing helped achieve the overall goal of maintaining 75 percent of Whistler's employees living in the resort community, and has remained within the 6,650 resident housing bed units allocated through Whistler 2020 as a maximum for new housing.

As preferred by the majority of the community in 2004, community vibrancy has been maintained by securing resident housing within the existing corridor between Function Junction and Emerald Estates. This type of relatively compact development has avoided excessive urban sprawl into natural areas, reduced commuter congestion on the highway, and helped to reduce Whistler's greenhouse gas emissions. New development locations preserve important open space and natural buffers that maintain the mountain character and ecological systems. Enhancements, upgrades and renovations have kept Whistler's neighbourhoods appealing and liveable.

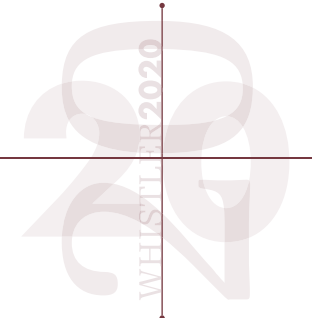
To pay for resident housing, a variety of tools were developed. Each resident housing project was evaluated on its particular circumstances. The appropriate range of financial tools was



carefully considered and the public was consulted. The first resident housing beds were secured in existing subdivisions through expanded non-cost housing initiatives, such as duplexes, lot splits and multiple suites. At least 1,000 bed units have been secured through this initiative since 2004, meeting the resort community's non-cost initiative goals. As well, privately owned and Crown land sites were identified and analyzed using environmental assessments and smart land use planning principles. A housing needs assessment was conducted and a strategy prepared. Housing development commenced as the needs were determined, which resulted in pockets of housing within and adjacent to established neighbourhoods, such as those between Alpine and Emerald as well as the new neighbourhood in the Lower Cheakamus.

The new and expanded neighbourhoods were designed for liveability, with live-work opportunities, common gardens, playgrounds, parks and access to nature that make Whistler a desirable place to live, and draw enthusiastic and community-oriented residents. The neighbourhoods are mixed-use, compact and pedestrian

friendly, offering easy access to convenience retail, community facilities, transit and connections to the Valley Trail. Creatively placed community spaces encourage personal interaction. The new neighbourhoods, built in phases, were buffered from any existing subdivisions and preserved trails and ecologically sensitive areas. The design of the transportation thoroughways, including roadways, pathways and trails connecting to the established neighbourhoods, reduces traffic volumes and speed, preserving the character and pace of life for both old and new. The Lower Cheakamus, planned as a complete neighbourhood, first served as the Athlete Village for the 2010 Winter Games and was later expanded based on the neighbourhood plan and the demand for additional housing. Building recreation amenities and playing fields on the reclaimed landfill site avoided development of another ecologically intact area. The neighbourhood's playfields, indoor community facilities, services and retail options reduce reliance on automobile travel for daily needs.



These new buildings and model communities are recognized demonstration areas for progressive urban design techniques and building best practices. They were built to high performance green building standards and established close to existing infrastructure, services and amenities to maximize convenience and minimize costs and environmental impacts. New and innovative design standards have improved the efficiency of indoor and outdoor living spaces, and fostered ecologically sensitive and healthy dwellings. Whistler Green, Whistler's new green building standard, has been applied to new buildings and renovations.

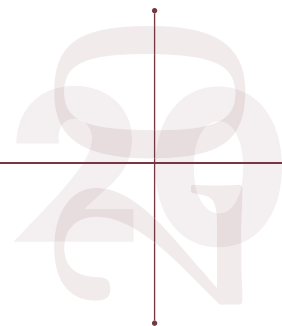
Systems and infrastructure that support resort community services (e.g., water, energy, transportation) demonstrate best practice in sustainable design and technologies, mimicking natural systems as much as possible to protect ecosystem integrity. The community is recognized for ambitious and innovative demand-side management programs that reduce the quantity of services required as much as possible, before investing in expensive infrastructure to provide more supply. Energy and transportation systems are reliable, affordable and use clean and renewable resources wherever possible. Water is supplied and treated efficiently and sustainably, and the effluent leaving the system is approaching fresh water quality as treatment techniques are advanced.

As a result, Whistler enjoys excellent air and water quality, and residents and visitors have access to affordable municipal services.

The community has addressed other aspects of affordability in addition to housing. A variety of strategies pursued over the past 15 years by Whistler businesses and organizations have provided opportunities for residents to shop and recreate locally, within their means. Affordability initiatives extend to the cost of recreation, childcare, food, learning, training and transportation. The Whistler Card continues to be a popular choice for locals to access discounts at Whistler establishments.



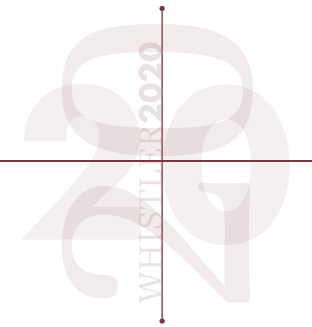
*A Diversity of 'Resident Employee Restricted Housing' Types*  
Meeting the diverse housing needs of Whistler employees will require both rental and ownership opportunities ranging from apartments and townhouses, to duplexes, single family dwellings and seniors housing. Within these types, there is a range of price-point and tenure options. Covenant options include occupancy, price and rent restrictions. The purpose of these restrictions is to ensure that the housing remains affordable to employees over time.





Families are choosing Whistler so that their children may participate in the healthy school climate. The resort community's education system is designed to support students who are striving to achieve excellence in all aspects of education, including fine arts, athletics, academics, trades and technology, along with personal growth, self esteem and individuality. Lifelong learning opportunities have expanded for both residents and visitors, and the Whistler Public Library, the Museum, MY Place and the Whistler Centre for Sustainability are hubs for these activities. Many creative learning opportunities are available, such as speaker series, conferences, post-secondary courses and community forums, providing opportunities for interaction between the community and resort members, both online and at local facilities.

Our focus on health has evolved to treating the physical body, mind and spirit holistically, and the community made the connection between a healthy environment and healthy people long ago. Our programs promote healthy lives and communities – complete physical, mental and social well-being, not only to residents, but also to visitors. Whistler's medical health system is viable and provides high-quality service that meets the diverse needs of residents and visitors. The community's focus on general well-being is a natural extension from its roots in recreation and staying active. The resort community demonstrates its preference for recreation that, if motorized, is quiet and uses clean energy.



Public safety and peaceful enjoyment of local activities and places are primary objectives, and a number of successful and innovative initiatives such as First Night, are in place in the village. Programs foster a sense of ownership and responsibility, through partnering with business and engaging short-term and permanent residents in village life. In the residential neighbourhoods, individuals and families support and know each other, maintaining a sense of security and well-being. Nightly rentals in residential neighbourhoods continue to be limited and guided by clear policy.

Residents' spirit and pride, indeed Canadians' pride, in Whistler grew as the 2010 Olympics approached. Post Olympics, Whistler was recognized for hosting the most successful Winter Games and advancing the sustainability of Olympic events and venues, while preserving the community's unique character and natural splendor. Years later, residents are proud of their community's ongoing hosting of world-caliber sport, arts, culture and learning events, that draw locals and visitors alike. The volunteerism that was nurtured over the years continues as a Whistler legacy, contributing to the resort community's strong social fabric and engaged community members.

Along with creating lasting legacies, the 2010 Winter Olympic and Paralympic Games also brought accessibility to the forefront of Whistlerites' consciousness. Emphasis has been placed on meeting the needs of all ages and abilities.







**OUR DIRECTIONS**

The community is vibrant and attractive; there is a sense of community pride and spirit

- A diverse resident base exists that is of sufficient size to maintain a vibrant resort community
- Cultural heritage and history are retained and celebrated
- Natural areas and features that are important to residents are protected
- The built environment is attractive and reflects the community's character and the natural environment
- Community spaces facilitate opportunities for personal interaction
- Local creativity, ideas and achievements are celebrated and communicated
- A variety of opportunities exist for residents to participate in community activities
- ❖ The community moves continuously toward meeting the sustainability principles

The resort community is affordable and liveable to both permanent and short-term residents and employees

- A sufficient quantity and range of affordable, convenient and accessible housing is available for permanent and short-term residents

- Residents have access to affordable goods and services that meet their needs
- Diverse and affordable opportunities for recreation, leisure, arts and culture exist
- Food is healthy and affordable, and production and distribution systems protect the natural environment
- Working and living conditions support healthy, balanced lifestyles
- ❖ The community moves continuously toward meeting the sustainability principles

Social, spiritual and physical health programs meet the diverse needs of groups and individuals within the resort community

- Diverse and affordable lifelong learning opportunities exist
- Opportunities for religious and spiritual pursuits are available
- A viable health care system meets the needs of residents and visitors
- Social services and informal networks support the well-being of community members
- The community is safe for both residents and visitors
- ❖ The community moves continuously toward meeting the sustainability principles

Land use and infrastructure systems are integrated to protect biodiversity and meet basic needs

- Infrastructure systems mimic natural processes and protect natural areas and biodiversity
- Developed areas are designed and managed to be sensitive to the surrounding environment and avoid continuous encroachment on nature
- Local air and water quality is above required standards

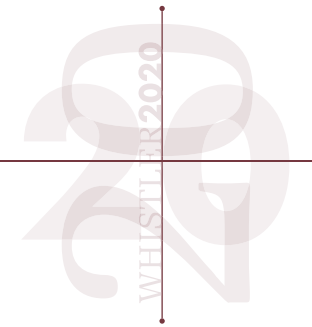
- The important link between land use and sustainable transportation patterns is respected and integrated into all land-use planning decisions
- Energy supply is affordable, reliable and sustainable
- ❖ The community moves continuously toward meeting the sustainability principles





OUR PRIORITIES

# ENHANCING THE RESORT EXPERIENCE



In the year 2020, the resort experience continues to exceed expectations. From the moment visitors communicate with the resort about their trip until their return home, they are impressed by the seamless services provided by Whistler. New visitors, drawn by the resort community's unique and authentic sense of place, and diverse and continually renewed offerings, return for many more visits. Services are provided at a range of price points and offer excellent value. These features, along with our world-class infrastructure and legacies from a successful Winter Olympic Games, have helped to build and preserve Whistler's international position and reputation in the marketplace.

The municipality, Tourism Whistler, the Chamber of Commerce, One Whistler, Whistler Blackcomb, First Nations and other local groups and organizations continue to work together to develop and implement innovative and effective economic strategies and partnerships. These strategies were developed by understanding external trends that influence the economy and Whistler's attractiveness as a destination resort. Having a better understanding of these factors and working together to build an adaptive resort community, we have been able to continually position Whistler as the destination of choice. As a result, Whistler has remained at the leading edge of tourism trends and customer service.

The resort is appealing, lively and vibrant. The village, Creekside and other amenities continue to evolve, with enhancement projects, public art installments, reinvestment in properties and a high level of ongoing maintenance. Visitors are greeted and guided by volunteers with the Village Host program, and enjoy the Village Kiosks that provide an interactive information link to the Whistler web site. Centralized concierge services offer a convenient meeting place with one-stop problem solving and check-in services.

Whistler is an international leader in recreation. Lakes, trails, ski areas, golf courses and other amenities exhilarate all who use them. A variety of recreation opportunities and amenities contribute to Whistler's appeal, bringing world-class sporting events to the resort on a regular basis. The resort community's array of facilities have been supplemented with Olympic legacies, such as the Whistler Sliding Centre, the Whistler Nordic Skiing and Biking Centre, as well as a second ice rink. The range of products and services, which are strategically and sensitively located throughout the resort community, contribute toward economic viability and an enhanced mountain resort experience. Numerous backcountry areas are easily accessible, where residents and visitors can enjoy a quiet walk, snowshoe or hike. The Sea to Sky trail provides non-motorized access to a corridor-wide network of attractions for mountain bikers, hikers and snow sport enthusiasts. End-of-trip stations provide welcomed shower and change facilities and places to store bikes for commuters and recreationists alike.

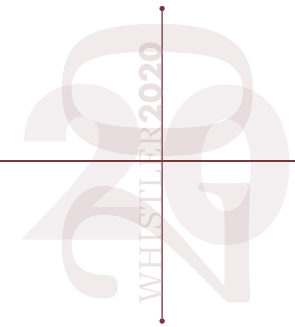
Internationally known for the arts along with recreation, residents and visitors alike enjoy the original and diverse expressions of culture unique to Whistler. Courses inspire young artists and continue to build and expand skills and ideas. Art has truly become part of the resort community's identity, and on any given day in the village, one may stroll through a local heritage festival, past entertainers and intricately designed buildings, to the Whistler Museum, MY Place and public galleries. First Nations culture is authentically shared in engaging ways, and our place in nature is celebrated to foster learning and caring for the environment. Organizations and people continue to work together to grow and communicate arts, culture and heritage opportunities in Whistler, which have become another economic engine for the resort. Departing visitors return home with an appreciation of these experiences and a greater understanding of sustainability.



Whistler's customer service exceeds expectations through initiatives such as the Village Host and Whistler Spirit programs and the Whistler Card. Employee Welcome Week activities have been expanded and help to connect new employees to the community and permanent residents, and to create engaged and responsible citizens and resort ambassadors. The resort experience is accessible to diverse visitors, including aging and physically disabled individuals.

Travel to, from and within Whistler is safe and seamless, and a highlight of the visitor experience. The Sea to Sky highway provides a spectacular journey, and road improvements contribute to this experience and increased safety. The variety of transportation alternatives and operators has been expanded, including rail service that has enabled Whistler to attract the cruise industry. Air carriers service the Whistler area and for those arriving from international destinations, the new and significant presence at the Vancouver airport ensures speedy transfers to Whistler-bound transportation. At the outskirts of Whistler, a new welcome center prepares visitors for their arrival at the resort. Fewer and fewer visitors rely on cars and those who do tend to park them for the duration of their stay,

preferring the convenience and affordability of Whistler's public transit system and the scenery offered by the Valley Trail for travel within the resort community. The transportation systems are powered primarily by clean and renewable energy, and Whistler encouraged and supported this transition from dependence on fossil fuel. While supporting technological progress toward more sustainable transportation, the resort recognizes the negative impacts of air travel, and has established a number of innovative initiatives to minimize impacts, including a carbon offset program that engages visitors and residents.



### OUR DIRECTIONS

The sense of place that makes the resort community experience special and unique is respected and enhanced

- The built environment is attractive and reflects the community's character and the natural environment
- Cultural heritage and history are retained and celebrated
- The scenic quality of the natural landscape is protected
- The village center invokes a feeling of excitement and hosts a variety of activities for everyone to enjoy
- Visitors and community members interact and share experiences
- A vibrant and diverse resident base exists
- ❖ The community moves continuously toward meeting the sustainability principles

Visitors are offered a resort experience that exceeds their expectations

- Visitors feel genuinely welcome
- The retail, hospitality and activity experience is unique, diverse, imaginative and continually renewed
- Visitors are offered good value and high quality services and products at a range of price points
- Visitors have many opportunities to actively learn about the resort community, the natural environment and First Nations culture

- Visitors can readily immerse themselves in nature, free from noise, light and air pollution
- A comfortable carrying capacity of the resort, its amenities and the surrounding natural environment is defined and respected
- The resort is safe, clean and well-maintained
- ❖ The community moves continuously toward meeting the sustainability principles

The seamless journey to and within the resort is an important part of the visitor experience.

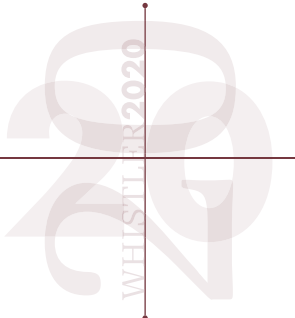
- Regional partnerships enhance the journey to the resort as part of the experience
- Virtual travel to and communication with the resort is seamless and convenient
- The journey to, from and within the resort community is safe, seamless, enjoyable and affordable
- Transportation alternatives are promoted and supported that minimize the impacts of visitor travel
- Walking, cycling and other non-motorized transportation options within Whistler are prioritized in policy planning and development
- ❖ The community moves continuously toward meeting the sustainability principles





OUR PRIORITIES

# PROTECTING THE ENVIRONMENT



In 2020, Whistler residents continue to understand the importance of the natural environment to the success of the resort and to the health of current and future generations. Visitors adopt the stewardship ethic held by residents as they see it integrated into everything around them.

A sustainable ecosystem management approach and the Precautionary Principle were adopted to ultimately minimize Whistler's physical degradation of natural areas, and where possible, to restore and ultimately maintain ecological integrity and biodiversity. An ecologically viable network of critical areas and wildlife habitat with connecting corridors is protected and remains healthy, along with exceptional scenic and recreation areas. Terrestrial Ecosystem Mapping in Whistler has identified critical areas for protection and further study, and the Protected Areas Network protects these areas as part of a comprehensive regulatory framework.

The municipal boundaries were expanded to include the Whistler Interpretive Forest and other areas, enabling protection of the surrounding environment to the north and south. Resource, recreation and scenic interests in the backcountry are effectively coordinated through planning processes such as land and resource management plans. Environmentally sustainable resource use and an integrated resource management approach in Whistler's Community Forest are protecting ecological viability, viewsheds, watersheds, and contributing to the local community through sustainable economic activity. Ongoing studies and monitoring of biodiversity, habitat suitability, ecological health and user impacts have provided the necessary information and framework for effective environmental stewardship.

Natural features within recreation areas are retained and restored as much as possible, providing important connections between natural areas for wildlife. Native vegetation remains in Whistler's developed and recreation areas, helping to support wildlife suited to these areas while minimizing water use and the need for chemical pest management. Education programs promote a stewardship ethic among users of Whistler's natural areas, and include instructions for the proper use of trails and recreation areas, interpretive signs regarding critical areas, wildlife and habitat, and naturescaping information.

Whistler's land use goals are complemented by the integration of sustainable technologies and best practices into all infrastructure and systems that support the resort community. Whistler's water provision and discharge practices and infrastructure emulate natural systems, not drawing more water than nature is able to provide. Volumes of effluent discharged into the Cheakamus River are lower than they were in the past, and the wastewater is clean and readily assimilated without disturbing aquatic habitat or downstream water uses.





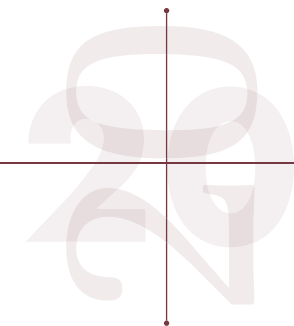
The resort community is committed to its Zero Waste Goal, which was launched in the same year the landfill was closed to provide new resident housing. Visitors and new residents find it easy to recycle, aided by positive communication, education and convenient facilities. Most notice that this is simply “the Whistler way” – for instance, few people buy products without reading the ingredient list first. Whistler continues to be a leader in materials and solid waste management, with progressive pricing structures, educational programs, regulation and other programs such as comprehensive purchasing policies and the Environmental Legacy Fund that directs revenues to support local environmental initiatives. As a result, the resort community’s solid waste stream is continually reduced through purchasing decisions, recycling and composting options, and innovative ways of using waste as a resource. Demonstration projects in the resort community show how the output of one process can be a useful input for another, and have resulted in ideas for new economic development and cost savings. Substances and chemicals harmful to our health and the natural environment are being phased out or managed to continually reduce their emission into nature.

Strolling through town, one can see that Whistler is also an energy smart community. For example, homes and buildings are designed to capture maximum sunlight, some have solar water heaters, and the energy system is moving toward clean and renewable sources. Remote generation facilities are being replaced by on-site infrastructure systems that are integrated into the fabric of the built environment. Innovative energy technology and practices benefit residents and businesses and inspire visitors, who value the creative new ideas that they can apply at home.

Our neighbourhoods, particularly the former Athlete Village, are model communities. They display residential and commercial buildings with innovative technologies and high-performance standards that are healthy for occupants

and attractions for learning vacationers, experts and other communities. In different neighbourhoods, one can see green roofs on commercial and residential buildings. Visitors enjoy learning about the simple and effective methods used to capture and reuse rainwater. The Whistler Green standard is applied to new homes, and older structures have been retrofitted to meet Whistler sustainability objectives.

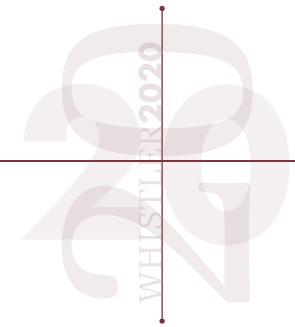
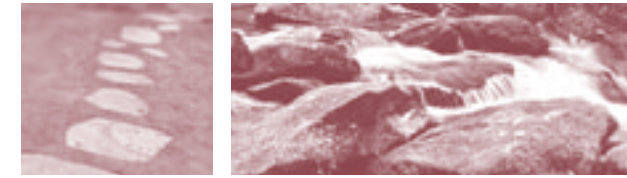
Whistler’s focus on sustainability has resulted in a strong economic competitive advantage for the resort and individual businesses. Innovative businesses and individuals proactively seek opportunities that benefit nature as well as the economy, resulting in a strong health and wellness market, eco-tourism products and other ventures.





Transportation to, from and within Whistler enhances the resort experience for both residents and visitors, and protects the natural environment and air quality. Neighbourhoods are relatively compact and incorporate nodal design, avoiding sprawl and containing encroachment on nature with minimal roadways. They are easily accessed by transit and the Valley Trail. Keen to enjoy the convenience of Whistler's local transportation system, a decreasing number of visitors arrive in personal vehicles, and most that do leave them parked for the duration of their visit. Residents understand the importance of the natural environment and the impact that traffic congestion has on their quality of life and the success of the resort community. They also prefer the convenience and affordability of local transportation alternatives.

The Whistler Centre for Sustainability establishes sustainability programs applicable to mountain resort communities and has positioned Whistler globally as a leader in sustainable practices, developing and sharing pilot projects, training and resources. It continues to build the awareness and capacity of residents and visitors alike to move toward a sustainable future.



## OUR DIRECTIONS

The resort community recognizes and manages the natural environment as one of its most important assets

- An ecologically viable network of critical areas are protected, and where possible, restored
- Use of critical natural areas is avoided and use of surrounding areas is limited to ensure ecosystem integrity
- Parks and the Protected Areas Network are preserved and enhanced
- Community members and visitors act as stewards of the natural environment
- Resources are used sustainably and efficiently to meet current and future needs of society
- Ecologically harmful substances and practices are replaced with more sustainable alternatives
- Continual learning about natural areas and wildlife informs appropriate restoration and protection efforts
- ❖ The community moves continuously toward meeting the sustainability principles

The resort community protects its air quality, natural waterways, scenic and recreational areas.

- Local air and water quality is above required standards
- Backcountry areas are protected from overuse and degradation
- Developed and recreation areas are designed and managed to protect as much of the natural environment within and around them as possible
- Opportunities exist within developed and recreational areas for people to learn about the natural environment
- ❖ The community moves continuously toward meeting the sustainability principles





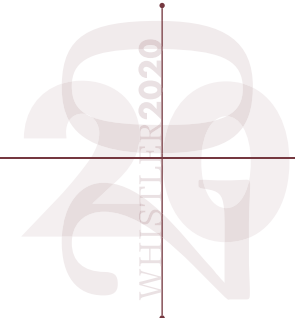
OUR PRIORITIES

# ENSURING ECONOMIC VIABILITY

In 2020, tourism remains the primary economic driver of Whistler’s ongoing success. To build and stabilize customer visits, the resort has successfully expanded into ventures that complement tourism and that move the resort community toward sustainability.

The resort community partners have tracked external trends such as changing demographics, climate change, globalization, emerging resorts and growing competition, along with other tourism trends that influence the economy and Whistler’s attractiveness as a destination resort. By looking forward and outward, we have been able to positively influence and adapt to these trends, and successfully retain existing markets while capturing new and emerging tourist markets, providing increased destination visits throughout the year. Whistler’s resilience and ongoing success is supported by partnerships, leading technology and an educated workforce. Whistler positively affects the lives of visitors, promoting meaningful and vibrant experiences and offerings that are aligned with the resort community’s values and commitment to sustainability.

Diverse recreation opportunities continue to be the heart of the resort experience. Whistler Blackcomb’s long-term strategy has been successfully implemented, contributing significantly to the local economy and well-being of the community. The two mountains continue to be a mecca for skiing, snowboarding, hiking, and mountain biking.



There are a host of other reasons to come and visit Whistler year-round: from numerous festivals, events, and arts and cultural activities that keep Whistler vibrant and animated, to professional development programs, spa and wellness retreats, lifelong learning opportunities, eco-tours, summer camps and cooking seminars. The Whistler Conference Centre, the Athlete Development Centre and the Whistler Centre for Sustainability have attracted new markets that return on a regular basis, complemented by a range of accommodations and top-of-the line communications technology. Longer-term learning vacations extend visitor stays and include immersion programs and experiential

training opportunities connected to Whistler’s areas of expertise, such as tourism, sustainability, and green building construction and trades. Whistler also capitalized on opportunities presented by changes to the health care system as they emerged.

The Whistler Public Library, Museum, MY Place and the First Nations Cultural Centre are key attractions. Whistler’s arts and culture scene has developed to complement and enhance the resort’s recreation and leisure focus, contributing to the health of the economy and the vibrancy of the resort community.

Tourism Whistler, Whistler’s marketing association, has been successful in targeting destination visitors and positioning through effective brand management including secondary messages about ease of access, the friendliness and safety of our culture, and the healthy lifestyle of the region. These messages have increased and stabilized visitation over the years, along with existing and new attractions, technology and facilities, that contribute to Whistler’s year-round appeal.



The 2010 Winter Olympic and Paralympic Games provided a tremendous amount of energy and momentum towards Whistler's economic development objectives, with Tourism Whistler capturing new marketing opportunities and the Chamber of Commerce coordinating local business opportunities. Whistler 2020 strategies provided roadmaps for programs and facility development that complement our economy. The legacies from the Games, including the improved transportation network and new facilities, have elevated regional and international interest and activity in Whistler.

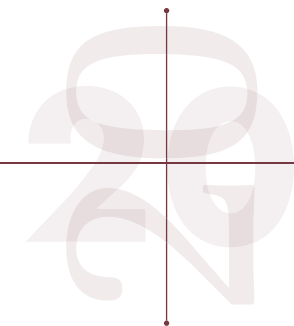
Locally owned and operated businesses are key to Whistler's innovation, character and success. They are supported through a variety of initiatives and share resources to

reduce operating costs and improve visitor offerings. A range of businesses engage in retail, hospitality and leisure activities offering value at a variety of price points to residents and visitors (see text box). The resort community engages in business practices that contribute to the success and sustainability of Whistler as well as to the region, and has achieved a healthy balance between the number of businesses, recreation, and accommodation capacity for both residents and visitors.

At a time when many other resorts are struggling due to factors such as affordability challenges, increasing scarcity and costs of natural resources, Whistler is ahead of the curve. Leading in practices that supply affordable housing, and minimize resource needs and pollution, its economic system continues to be successful within ecological and social limits. Local businesses flourish and generate sustainable livelihoods for residents and dollars are spent and circulated within Whistler and the region as much as possible. Businesses purchase many of their goods and services from within the community and the corridor, fostering economic health and providing an authentic and unique tourism experience.



*Whistler's Value Equation: value = price + service + product*  
Maintaining Whistler's value across the full range of price points is critical to achieve economic viability. Resort visitors typically rate their experience by the value received for the money spent on goods and services during their stay. Value is a key consideration in choosing to visit and return to a destination, as well as in recommending the resort community to others.







User pay continues to be a municipal financial policy for services such as recreation and utilities, so that the quality of service remains high and operational costs are borne by those who use the services. To ensure that true financial, environmental and social costs are considered in decisions,

the resort community has worked toward a full-cost and life-cycle accounting system. These and other financial tools ensure that the burden of maintaining infrastructure to the standards of an international destination resort is shared prudently and equitably among visitors and residents.

#### WHY A TOURISM ECONOMY?

Why is Whistler focusing on a tourism economy when traditional economic development principles promote diversification across sectors, and when certain global trends appear to be moving in a direction contrary to our tourism focus? There are fundamental reasons why a tourism economy is the right decision for Whistler. Whistler is very different from traditional communities because it was designed specifically as a destination resort and has many specialized tourism amenities. Economic diversification that undermines the value of these amenities and natural surroundings could irreversibly destroy our tourism economic base. Our tourism focus provides us with strong incentives to protect the environment and community health and vibrancy that both residents and visitors enjoy.

#### HOW WILL WHISTLER ADDRESS THE CHALLENGES ASSOCIATED WITH A TOURISM ECONOMY?

Economic diversification compatible with tourism and community values is actively encouraged, to help create year-round economic activity and better use existing facilities and infrastructure. Additionally, Whistler 2020 recognizes global trends such as climate change. As a result of this 15-year strategic plan, the resort community is acting to improve the direction of these trends and, where Whistler is not able to influence their direction, to help the community adapt to a changing environment. Finally, it is important to view economic and social development from a regional perspective and to identify synergies and complementary activities among corridor communities. Whistler will continue to build partnerships that strengthen economic health beyond municipal boundaries and that diversify the region.

#### OUR DIRECTIONS

The resort community integrates its economic health with the economic viability of the resort

- Long-term investments made in the resort community are protected
- The resort community lives within its financial means
- The cost of maintaining the resort community as a destination resort is equitably shared
- The core visitor accommodation base is maintained and protected
- A buy-local culture helps to circulate wealth within Whistler and the region
- ❖ The community moves continuously toward meeting the sustainability principles

The tourism economy is diversified and proactively adapts to the changing needs of the marketplace

- Tourism is the primary product of the resort community
- Businesses compatible with community values and the tourism economy are encouraged
- The tourism economy is diverse and continually renewed to attract new and returning visitors
- Continued training and skill development contributes to a stable and adaptable workforce
- ❖ The community moves continuously toward meeting the sustainability principles

The community recognizes recreation and leisure as cornerstone attractions

- A range of year-round recreational and experiential opportunities for all ages and abilities are offered
- High-value activities exist at a variety of price-points and of a quality that exceeds expectations
- The resort community is globally recognized as a leader in innovative recreation products and services
- ❖ The community moves continuously toward meeting the sustainability principles

Entrepreneurial spirit is recognized as an important component of community vitality and is encouraged to flourish

- Locally owned and operated businesses are recognized as important to the economic viability of the community and are encouraged to reinvest
- Business taxation is fair and equitable
- Diverse and unique businesses engage in retail, personal service, education, entertainment, hospitality and leisure activities
- ❖ The community moves continuously toward meeting the sustainability principles

# PARTNERING FOR SUCCESS

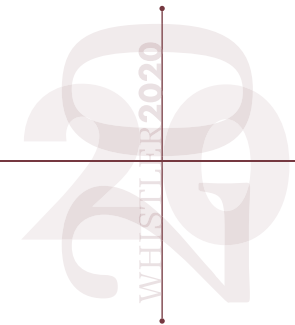
The spirit of cooperation and support among residents, business owners and other stakeholders flourishes in Whistler from years of working together and encouraging each other to achieve the shared vision.

Whistler partners, including Tourism Whistler, the RMOW, the Chamber of Commerce, Whistler Blackcomb, One Whistler, the Whistler Housing Authority, Whistler Community Services Society, School District #48 and other learning partners, health organizations, environmental groups, as well as arts, culture and heritage organizations work together, along with First Nations, Squamish, Pemberton, the Squamish Lillooet Regional District, and provincial and federal governments and agencies, toward shared goals and mutual benefit. The result is a stronger local resort community and a more sustainable society.

Community members and interested individuals also work together, in formal and informal networks. Local non-profit organizations are critical to Whistler's success and are supported by an active and engaged volunteer population. Financial support is

provided through Whistler's Community Enrichment Program, which funds local initiatives that contribute to achieving Whistler's vision of success and sustainability.

Guiding principles assist partners in decision-making and partnership agreements clearly communicate expectations. Transparent and regular communication promotes clear understanding of and alignment with stakeholder goals and interests, encourages broad public engagement, informed participation and decision-making, and builds trusting, cooperative and adaptable relationships. Whistler's support of grassroots community groups has helped to foster a spirit of reciprocity within and outside of the resort.



Whistler continues to contribute to the success of the region. Effective collaborations are especially noticeable between the corridor communities on initiatives such as the implementation of the Regional Growth Strategy and the Land and Resource Management Plan, as well as the shared commitment and learning related to sustainable community and regional development. A partnership was also established with an emerging resort community in a developing country to share knowledge and Whistler's resources.

The 2010 Winter Olympic and Paralympic Games also created a legacy of cooperation among regional partners and all levels of government. Remembered as a key contributor toward advancing sustainability within the Olympic movement, the 2010 Winter Games helped to develop a shared commitment to sustainability and ingrain these objectives in the strategies and plans of all partners.

Working together with neighbouring First Nations continues to build local solutions that strengthen the respective communities. The First Nations Cultural Center is a prime attraction, contributing to cultural pride, Whistler's vibrancy and mutual understanding between the two communities. Whistler also continues to work with other BC resort communities and the provincial government, sharing ideas and finding solutions to resort community issues.

The Whistler 2020 monitoring program tracks our performance at achieving Whistler's shared vision, and publicly reports the results on a regular basis. Every step we have taken was assessed against Whistler's vision of success and the TNS sustainability principles to ensure that we become a stronger and healthier community.



## OUR DIRECTIONS

Residents, taxpayers, business and local government hold a shared vision for the resort community and work in partnership to achieve that vision

- Stakeholders work together to compete in the destination resort market
- Stakeholders work together on decisions that affect them and cooperate with neighbouring municipalities and First Nations
- Decision-making is transparent and decision-makers are accountable
- Leaders throughout the community have the skills and support systems to implement the vision
- Community members are engaged and have the capacity to support the vision
- ❖ The community moves continuously toward meeting the sustainability principles

Regional, provincial and federal governments understand and support the tourism economy, and the role destination resorts play

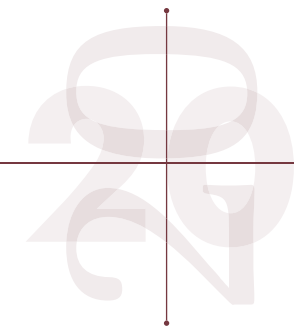
- Tools required to compete in the international marketplace are available and continuously improved
- The municipality participates in policy making and other decisions at various levels of government where relevant
- The resort community works collaboratively with First Nations to support the tourism economy and ensure that they share equitably in the benefits
- ❖ The community moves continuously toward meeting the sustainability principles

The community accepts responsibility for, and has the interest and capacity to work towards, social, economic and environmental sustainability

- Creative and innovative solutions are sought for issues and learning is shared with others
- There is a commitment to continuous improvement
- The long-term consequences of decisions are carefully considered
- Decision-making considers the community's values and the social, economic and environmental consequences
- Residents understand what sustainability means and accept shared responsibility for achieving progress in this direction
- ❖ The community moves continuously toward meeting the sustainability principles





*Partnerships are Fundamental to Achieving Whistler 2020*  
Whistler 2020 is a community-wide plan. For Whistler to effectively achieve the plan, it must be owned and actively supported by the individuals who live, work and play here, along with major stakeholder groups and local and regional organizations.





OUR STRATEGIES FOR  
**ACHIEVING THE VISION**


Whistler's 2020 vision is an inspiring picture of the type of community we want to have in the future. How this vision is implemented is key to achieving success and sustainability, requiring thoughtful and innovative actions identified and delivered through the shared creativity and expertise of diverse individuals, stakeholders and partners. Key strategy areas setting out how we will move toward our vision have been identified to focus our sustainability planning.


 **1. Resident Housing Strategy:** How to meet the housing needs of diverse permanent residents and seasonal employees in an affordable and sustainable way, primarily through resident restricted housing and including a variety of ownership and rental opportunities.


 **2. Resident Affordability Strategy:** How to make living and playing in Whistler affordable for residents.


 **3. Health & Social Strategy:** How to meet the health and social needs (including physical, mental, spiritual and emotional) of the resort community.

 **4. Recreation & Leisure Strategy:** How recreation and leisure activities for both residents and visitors will be delivered to exceed expectations while protecting the environment.


 **5. Arts, Culture & Heritage Strategy:** How arts, culture, and heritage will be supported, enhanced and delivered.


 **6. Learning Strategy:** How to meet resident and visitor needs for formal and informal lifelong learning.


 **7. Built Environment Strategy:** How to develop and renew buildings, neighbourhoods and facilities that will contribute to making the resort community unique, liveable and sustainable.


 **8. Transportation Strategy:** How to move residents, employees, visitors, and materials to, from and within the resort community in a more sustainable manner.





 **9. Energy Strategy:** How to meet Whistler's energy needs in an efficient, sustainable and reliable way, while managing greenhouse gas emissions and air quality.

 **10. Materials & Solid Waste Strategy:** How to meet Whistler's need for material supply and disposal through the most efficient use and reuse of the most sustainable materials and keeping waste out of the natural environment.


 **11. Water Strategy:** How to provide a dependable supply of high quality water in a way that maintains healthy aquatic environments and uses water efficiently.

 **12. Visitor Experience Strategy:** How Whistler visitors are welcomed and serviced before their visit, upon arrival, during their stay, and through their departure.

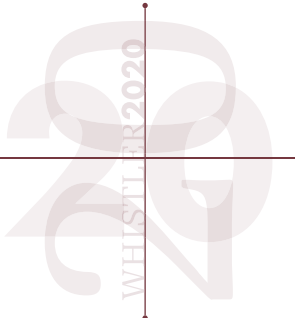
 **13. Natural Areas Strategy:** How ecosystem integrity and biodiversity will be protected and where possible restored in Whistler and the surrounding region.

 **14. Economic Strategy:** How Whistler will create a strong, diversified tourism economy and develop and maintain successful, resilient businesses that help move the resort community toward success and sustainability.

 **15. Partnership Strategy:** How Whistler stakeholders collaborate to ultimately achieve Whistler's vision, as well as the complimentary objectives of partners.

 **16. Finance Strategy:** How the resort community will finance the strategies and actions for moving Whistler toward meeting the vision for 2020.

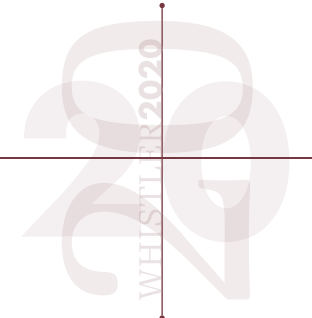
Our strategies and related actions are contained in Volume II of Whistler 2020, which can be found at [www.whistler.ca](http://www.whistler.ca)







# GLOSSARY OF TERMS



**BACKCASTING:** A basic planning approach where one begins with a vision of success in the future (i.e., a sustainable society) and then uses the question “what shall we do to move from where we are today toward our vision?” to identify strategic actions.

**BIODIVERSITY:** The diversity of plants, animals, and other living organisms in all their forms and levels of organization, including genes, species, ecosystems, and the evolutionary and functional processes that link them. (Whistler Environmental Strategy, 2002)

**CLEAN ENERGY:** Clean energy, also referred to as green energy, is defined here as non-polluting energy from renewable sources.

**CLIMATE CHANGE:** Warming of the Earth’s climate resulting from the buildup of greenhouse gases (e.g., carbon dioxide, methane) in our atmosphere due to human activities (primarily the combustion of fossil fuels). (Environment Canada)

**COMFORTABLE CARRYING CAPACITY:** the optimum number of guests accommodated by a resort at any one time, which affords a high quality recreational experience.

**CRITICAL NATURAL AREAS:** These areas incorporate unique and sensitive habitats such as streams, lakes, wetlands, old growth forests, alluvial forests, riparian areas, and the corridors connecting them (Whistler Environmental Strategy, 2002). These areas are the focus for protection by the Protected Areas Network (defined below).

**DESTINATION RESORT:** Self-contained development providing visitor-oriented accommodations and developed recreational facilities in a setting with high natural amenities. (Jackson County Land Development Ordinance)

**ECONOMIC DIVERSIFICATION:** The characteristic of business variety in the economy both across and within individual business sectors.

**ECOSYSTEM:** A functional unit of any size consisting of all the living organisms (i.e., plants, animals, and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. (Whistler Environmental Strategy, 2002)

**ECOSYSTEM INTEGRITY/VIABILITY:** The soundness or wholeness of the processes and organisms composing the ecosystem. (Whistler Environmental Strategy, 2002)

**ECOSYSTEM MANAGEMENT:** A holistic approach to managing our environment and making land-use decisions. It meshes human purposes with natural systems, always asserting the protection of ecological integrity as its foremost environmental priority. (Whistler Environmental Strategy, 2002)

**EMPLOYEE:** In Whistler, this term includes both employees and retirees, where someone is considered an employee if they work a minimum average of 20 hours per week within Whistler. A retiree is someone who was employed in Whistler for five of the six years prior to ceasing employment. (Whistler Housing Authority) Employee Restricted Housing: See ‘resident employee restricted housing’ below.

**EMPLOYEE WELCOME WEEK:** A week-long series of events each fall that welcome new residents to Whistler, connecting these people to each other and to the permanent population.

**FIRST NIGHT:** An alcohol-free family event on New Year’s Eve, which includes entertainment and children’s activities.

**FULL-COST ACCOUNTING:** A process where a project is assessed based on the best available understanding of its estimated social, environmental and economic costs and benefits. These may include quantitative and qualitative measures. (Whistler Environmental Strategy, 2002)

**INTEGRATED RESOURCE MANAGEMENT (IRM):** A planning and decision-making process that coordinates resource use so that long-term sustainable benefits are optimized and conflicts among users are minimized. IRM brings together resource groups (e.g., parks, forests, fisheries, wildlife) rather than each working in isolation.

**LIFE-CYCLE ACCOUNTING:** Assessing the impacts of a product or project throughout its lifetime, from the extraction of material or fuel for power to production, transportation, marketing, use and disposal. (Whistler. It’s Our Nature Community Sustainability Toolkit, 2001)

**LIFELONG LEARNING:** All learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective. (European Commission definition)



**LIVE-WORK SPACE:** Residential units that have space designed as an office or studio (Smart Growth BC)

**MIXED-USE:** Developments that combine residential and commercial space in the same building or development. Residences above shops and live-work residences (defined above) are examples of mixed-use developments. Mixed-use developments enable people to live close to work and amenities. (Smart Growth BC)

**NATURESCAPING:** Landscaping to create ecologically sound, sustainable, and aesthetically pleasing urban landscapes through the predominant use, but not exclusive use of plant species native to the region. (Naturescape British Columbia)

**OFFICIAL COMMUNITY PLAN (OCP):** A bylaw adopted by Council that “a statement of objectives and policies to guide decisions on planning and land use management, within the area covered by the plan, respecting the purposes of local government.” (Local Government Act)

**PRECAUTIONARY PRINCIPLE:** The key element of this principle is avoidance of environmental risk in the face of uncertainty.

**PROTECTED AREAS NETWORK (PAN):**

A contiguous network of representative ecosystem types, delineated in a managed landscape. PANs emphasize retention and management of ‘critical natural areas’ (defined above) such as streams, lakes, wetlands, riparian areas, significant stands of old growth forests, a large percentage of alpine and sub-alpine areas, and connections between these ecosystems. (Whistler Environmental Strategy, 2002)

**RENEWABLE ENERGY:** Energy from sources that produce electricity or thermal energy without depleting resources. Renewable energy includes solar, wind, water, earth and biomass power, and energy from waste. (Natural Resources Canada)

**RESIDENT EMPLOYEE RESTRICTED**

**HOUSING:** This housing is available only for Whistler employees (defined above), which includes family members and retirees. Covenant options include occupancy, price and rent restrictions. The purpose of these restrictions is to ensure that the housing remains affordable to employees over time.

**SMART LAND USE PLANNING PRINCIPLES (I.E. SMART GROWTH PRINCIPLES):**

A collection of urban development strategies to reduce sprawl that are fiscally, environmentally and socially responsible. Smart growth is development that enhances our quality of life, protects our environment, and uses tax revenues wisely. (Smart Growth BC website)

**STAKEHOLDER:** All individuals, groups, and interests that are affected by and/or affect Whistler and its activities. This includes the natural environment and future generations.

**SUSTAINABILITY PRINCIPLES:** See ‘Our Sustainability Principles’ on page 18.

**TERRESTRIAL ECOSYSTEM MAPPING:**

This type of mapping stratifies the landscape into map units, according to a combination of ecological features and enables a biological and ecological framework for land management.

**THE NATURAL STEP FRAMEWORK:** A definition of sustainability and a long-term planning approach. See ‘Our Sustainability Principles’ on page 18.

**TRANSPORTATION ALTERNATIVES:**

Commonly referred to as modes of transportation other than single-occupant gas or diesel powered vehicles.

**CORRIDORS (WILDLIFE HABITAT):**

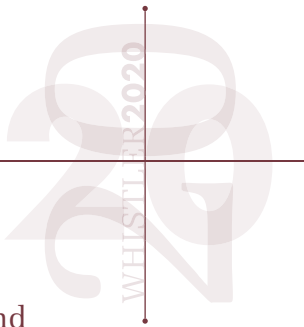
Linear habitat embedded in unsuitable habitat, that connects two or more larger blocks of suitable habitat and which is proposed for conservation on the ground that it will enhance or maintain the viability of wildlife populations in the habitat blocks.

**WHISTLER CARD:** Provides value and savings at local businesses for Whistler residents and employees.

**WHISTLER SPIRIT PROGRAM:** A resort general-knowledge and customer-service orientation workshop (and review) for resort employees, in exchange for a discounted Unlimited Whistler Blackcomb Season Pass, or 15-day Spirit Pass.

**VILLAGE HOST PROGRAM (ALSO KNOWN AS IHOST):**

A community-based volunteer service that provides way finding assistance and general information, demonstrates pride of our community and reflects a genuine interest in having a positive impact on all visitors to the resort.



# REFERENCES AND CONTRIBUTIONS

## REFERENCES

Characteristics of Successful Destination Resort Communities (2002), prepared by Design Workshop Inc., BBC Research and Consulting, Brent Harley & Associates and CH2M Hill

Characteristics of Sustainable Destination Resort Communities (2002), prepared by Warren Flint, Ford Frick, Ann Duffy, Jean Brittingham, Kim Stephens, Patrick Graham and Cathy Borgmeyer

## CONTRIBUTIONS

The development of Whistler 2020 – Moving Towards a Sustainable Future was led by the Resort Municipality of Whistler with significant contributions from many individuals and organizations. We would like to acknowledge and thank everybody who participated in the Whistler 2020 process, including:

|  |                                |                                       |
|--|--------------------------------|---------------------------------------|
| Association of Whistler Area Residents for the Environment   | Mature Action Committee        | Whistler Community Services Society   |
| BC Hydro   | Mike Purcell                   | Whistler Forum for Dialogue           |
| Capilano College   | One Whistler                   | Whistler Homebuilders Association     |
| Carney's Waste Systems   | RCMP                           | Whistler Housing Authority            |
| Dave Waldron   | School District #48            | Whistler Museum & Archives            |
| Envision Sustainability Tools  | Terasen Gas                    | Whistler Naturalists                  |
| Expert Panel: The Natural Step Canada, Holland Barrs Planning Group Inc., The Sheltair Group, and reSource | The Natural Step Canada        | Whistler Public Library               |
| Healthy Communities  | The Natural Step International | Whistler Secondary Students           |
| Karyo Communications   | Tourism Whistler               | Whistler Off Road Cycling Association |
|  | Whistler Arts Council          |                                       |
|  | Whistler Blackcomb             |                                       |
|  | Whistler Chamber of Commerce   |                                       |

Implementing the Comprehensive Sustainability Plan using the Natural Step Framework – a Guidebook (2003), prepared by David Waldron and Esther Speck

CitiesPLUS: a 100-Year Sustainability Plan for Greater Vancouver (2002), prepared by the Sheltair Group, International Center for Sustainable Cities, Liu Institute for Global Issues and the Greater Vancouver Regional District

Special thanks goes to individual community members that contributed valuable personal time to help envision and plan Whistler's future through their involvement on the current and previous Council, the Community Advisory Committee, and the Strategy Task Forces. We look forward to working with you through the community-wide implementation of Whistler 2020.

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**DESIGN BY** Origin Design + Communications Ltd.

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**WHISTLER 2020 FRAMEWORK**

VOLUME I

VOLUME II

| Vision, Values and Sustainability Principles |                          |                                 |                            |                             |                        |
|--|--------------------------|---------------------------------|----------------------------|-----------------------------|------------------------|
| Priorities                                   | Enriching Community Life | Enhancing the Resort Experience | Protecting the Environment | Ensuring Economic Viability | Partnering for Success |
| Directions (see Volume I)                    |                          |                                 |                            |                             |                        |
| Strategies (& Actions)                       |                          |                                 |                            |                             |                        |
| Resident Housing                             | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Resident Affordability                       | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Visitor Experience                           | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Economic                                     | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Natural Areas                                | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Health & Social                              | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Arts, Culture & Heritage                     | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Recreation & Leisure                         | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Learning                                     | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Transportation                               | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Built Environment                            | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Energy                                       | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Water  | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Materials & Solid Waste                      | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Finance                                      | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Partnership                                  | ✓                        | ✓                               | ✓                          | ✓                           | ✓                      |
| Detailed Plans (& Actions)                   |                          |                                 |                            |                             |                        |

All strategies support each of the priorities directly ✓ or indirectly ✓

**ECO AUDIT**

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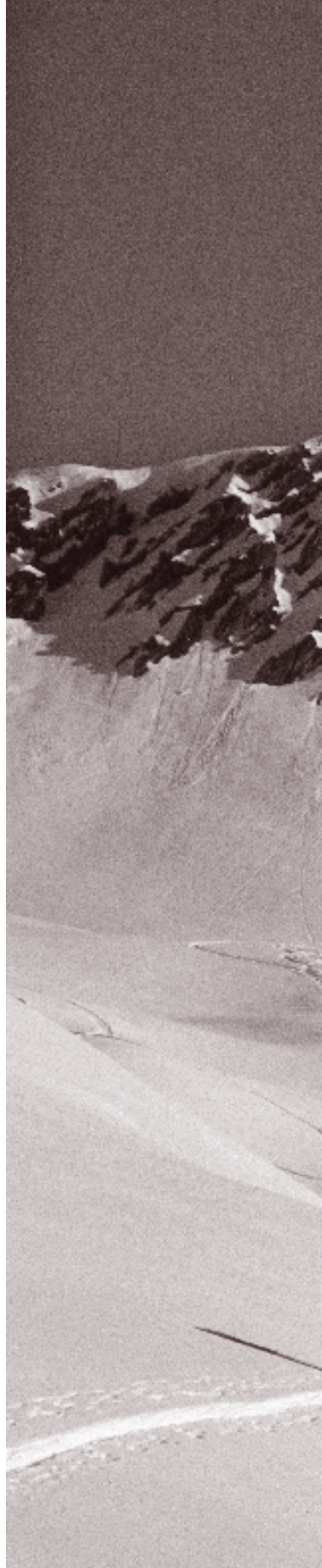
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## Top Ten Things YOU Can Do To Reduce Global Warming!

Most climate pollution that causes global warming comes from fuels used to produce energy—gasoline, diesel, coal and natural gas. Here are the top ten things you can do to reduce climate pollution:

- 1. Drive less.** Walk, bike, take a bus, carpool and combine errands. Do whatever it takes to reduce your time behind the wheel.
- 2. Drive smart.** Keep your car tuned and tires properly inflated. Don't idle when you're stuck in a line. About 15 seconds is the break even point. Forget the jack rabbit starts. And on the freeway, keep your top speed at about 60 mph.
- 3. Be fuel efficient.** Not only will you save gas, money and reduce emissions, but driving a fuel-efficient car that gets at least 32 miles per gallon leads to a real reduction in climate pollution. If you drive a diesel vehicle, the more biodiesel you use, the fewer the emissions you produce.
- 4. Reduce, reuse and recycle.** It's not just about paper vs. plastic. Nearly every product on the market requires energy to produce, distribute and manage the resulting waste. Choose pre-owned products, products that have recycled content and products that are sold with less packaging. Check out one of Seattle's many salvage yards, construction demolition stores and consignment or thrift shops.
- 5. Use a push or electric mower.** Gasoline mowers are one of biggest polluters in the neighborhood. Go manual or electric this season.
- 6. Stay out of hot water.** A hot water tank is the second largest user of energy in a home. So, set your tank at about 120°F, take shorter showers, use water-efficient washing machines and wash clothes in cold water. You'll save energy, water and money.

- 7. Be a star, buy ENERGY STAR.** Look for the ENERGY STAR label, an EPA rating system awarded to only the most energy-efficient appliances, computers, light fixtures and many other electrical conveniences.
- 8. Turn down, turn off and unplug.** Set thermostats at 68°F when you're home and 55°F or lower when you're away or at night. Turn off lights in empty rooms and use compact fluorescent bulbs in place of standard light bulbs. Unplug electronics such as DVDs and cell phone chargers that aren't in use. Bring back the old clothes line to dry your wash.
- 9. Befriend your utility.** Both Puget Sound Energy (1-800-562-1482) and Seattle City Light (206-684-3800) have great energy conservation programs and can provide more information, technical assistance and even some rebates. You can find them on the web at [www.seattle.gov/light/conserve/](http://www.seattle.gov/light/conserve/) and [www.pse.com/solutions/ForYourHomeLanding.aspx](http://www.pse.com/solutions/ForYourHomeLanding.aspx).
- 10. Shout it out!** You can make a difference. Start by taking the steps above and then let others know of your commitment. Tell people where you shop and where you work that climate protection matters.

When it comes to global warming, cities are both the problem and the solution. World wide, cities account for 78 percent of all greenhouse gas emissions. But because cities are where the people are, your climate protection actions really can make a difference.

Mayor Nickels is committed to substantially reducing Seattle's contributions to climate pollution with actions that make sense for our city, our environment and economy. But it is an effort that depends on community-wide action—individuals, businesses, schools, commuters, governments—in short, everybody.

We cordially invite you—and everyone you know to join the effort. For more information on Mayor Nickels' climate initiative, please visit

[www.seattle.gov/climate](http://www.seattle.gov/climate).

