



CODE
GREEN
BUILDING A
SUSTAINABLE
FUTURE



2009

Environmental
Sustainability
Strategic Plan





Executive Summary

As a tourism destination for outdoor activity, the Town of Vail relies heavily on the environment to provide natural beauty and recreational opportunities. Therefore, the state of the environment greatly affects the Town's economy. It is essential to maintain and improve the state of our environment to ensure that our natural resources are available to future generations. Vail's reputation as a resort industry leader lends itself to setting exceptional standards for environmental stewardship. While environmental protection is essential to the Town's vitality, a strong environmental program balances economic and social needs in order to achieve sustainability.

In 1998, the Town of Vail held the Vail Environmental Odyssey Search Conference, which served as the basis for the 1998 Town of Vail Environmental Strategic Plan. The Town of Vail Department of Community Development led the planning effort, *Vail 20/20: Focus on the Future*, in 2006 and 2007. The resulting document is the Vail 20/20 Strategic Action Plan, which includes goals, strategies and actions for eight topical areas, including the environment. Both plans serve as the foundation for the Vail Environmental Sustainability Strategic Plan.

The purpose of the Vail Environmental Sustainability Strategic Plan is to define a strategy that consists of measurable goals, objectives, and actions that will help the Town coordinate efforts to achieve the environmental vision of the community. Additionally, it will provide a framework for the municipality, partners, businesses, full- and part-time residents, and guests to take action to reduce the Town of Vail's impact on global climate change and work toward a sustainable future. The Town Environmental Team will manage the environmental sustainability program outlined in this plan with cooperation among stakeholders.

The Three Spheres of Sustainability



Goals

Goal #1: Solid Waste Stream Reduction and Recycling: Reduce the amount of Town of Vail landfill contributions by 10% within 5 years, and 25% within 10 years.

Goal #2: Energy Efficiency: Reduce the Town of Vail municipal and community energy use by 20% below 2006 levels by 2020, in order to effectively reduce the Town's contribution to greenhouse gas emissions and impact on global climate change.

Goal #3: Ecosystem Health: Ensure that the natural environment, specifically air and water quality, water quantity, land use and habitat are maintained to current or improved levels of biological health.

Goal #4: Sustainable Economic and Social Development: Lead programmatic efforts to promote sustainable and profitable business practices within the Town of Vail and the Vail community. Implement employee sustainability programs to maintain high quality of life.

Goal #5: Public Education and Communication: Increase public education and awareness, communication and environmental stewardship in the Town of Vail.

Goal #6: Transportation: Reduce the environmental impact of transportation by supporting efforts within the Eagle Valley to decrease total Vehicle Miles Traveled (VMT) by commuters and guests by 20% by 2020.

Contributors

Vail Town Council

Richard D. Cleveland, Mayor
Andy Daly, Mayor Pro-tem
Kevin Foley
Mark Gordon
Farrow Hitt
Kim Newbury
Margaret Rogers

Planning and Environmental Commission

Rollie Kjesbo
Michael Kurz
Sarah Paladino
Bill Pierce
Scott Proper
Susie Tjossem
David Viele

Administration Department

Stan Zemler, Vail Town Manager
Pam Brandmeyer, Assistant Town Manager
Matt Mire, Town Attorney
Judy Camp, Director of Finance
Kelli McDonald, Economic Development Manager

Department of Community Development

George Ruther, Director
Bill Carlson, Environmental Health and Planning
Kristen Bertuglia, Environmental Sustainability
Coordinator
Warren Campbell, Chief of Planning
Nina Timm, Housing Coordinator
Sean Koenig, GIS Specialist
Bill Gibson, Town Planner
Nicole Peterson, Town Planner
Rachel Friede, Town Planner

Department of Public Works

Greg Hall, Director
Tom Kassmel, Town Engineer

Vail Environmental Sustainability Advisory Committee

Caroline Byus, Water Quality and Regulations Division
Manager, Eagle River Water and Sanitation District
Luke Cartin, Environmental Manager, Vail Resorts
Anne Esson, Eagle River Watershed Council
Markian Feduschak, Executive Director, Gore Range
Natural Science School
Sarah Fleury, Water Conservation Officer, Eagle River,
Water and Sanitation District
Mark Gordon, Vail Town Council
Kevin Hocht, Sporting
Jim Lamont, Director, Vail Homeowners Association
Rob LeVine, General Manager, Antlers Lodge
Chris Romer, Marketing Director, Vail Valley
Partnership
Matt Scherr, Executive Director, Eagle Valley Alliance
for Sustainability

Vail Employee Environmental Focus Group

Gregg Barrie
Kristen Bertuglia
Greta Blamire
Bill Carlson
John Gallegos
Jamie Gunion, Vail Recreation District
Greg Hall
Jim Hervert
Susie Hervert
Todd Scholl
Diane Stanek
Ryan Sutter
Melvin Valdez
Stan Zemler

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I. Introduction

Surrounded by the White River National Forest, the Town of Vail totals 3,360 acres, and is 10 miles long and at most 1 mile wide. The Town itself is at 8,150 feet in elevation, while the peak of Vail Mountain is 11,450 feet. Of the 3,360 acres of land, almost 500 acres are occupied by I-70 and the Frontage Roads. Almost 1,000 acres are designated open space, with the remaining approximately 1,860 acres for residential and commercial uses. Gore Creek is the only major water body within the Town boundary, and it runs through the entire length of the Town and runs into the Eagle River just west of Vail in Dowd Junction. There are 1,200 acres of vacant land within the Town, but about 1000 acres of that vacant land is owned by the Town of Vail and has some preservation zoning designation. There are approximately 6,412 dwelling units in the entire Town. Nine percent or 624 units are deed-restricted employee housing units. A total of 1,520 households in Vail are occupied with residents working in Vail (Development Statistics, 2007).

Increasing population and the rapidly changing demographic profile of residents within the Town of Vail and Eagle County directly affects the amount of resources necessary to sustain the Town's needs. This trend was made clear in 2000 by the U.S. Census results, and has accelerated since then. Vail's current year-round population is approximately 4,800 residents, with about 6,400 total housing units. The Town's permanent population occupies roughly 2,300 housing units (37 percent of all units) with the remaining units vacant part of the year (63 percent); these are typically occupied by part-time (seasonal) residents. Vail is a town with relatively small households (2.09 persons compared to the Eagle County average of 2.73), which are unlikely to contain children. Only 13 percent of Vail households have one or more persons under 18, compared to 35 percent for the County as a whole, and 46 percent in Eagle. The data suggest that many of Vail's former resident families as well as large segments of the local work force are now living west of Vail and commuting to work in Vail. About 21 percent of Vail's population was over the age of 50 in 2000 compared to 15 percent for Eagle County. Recent estimates of population growth provided by the State of Colorado anticipate growth in Eagle County from about 50,000 residents in 2005 to almost 90,000 residents in 2030. Growth in the three-county region that includes Eagle, Pitkin and Garfield counties is projected to grow from 115,000 in 2005 to 246,000 in 2030. Vail's residents are relatively well educated (61 percent have Bachelor's or higher degrees compared to the County average of 43 percent). Vail has lower median household incomes than the County average (\$56,680 in 2000 compared to \$62,682 for the County) (Vail 20/20, 2007).

The Town is nearing the end of unprecedented redevelopment which began in 2004 and includes both public and private projects throughout Vail Village and Lionshead. Land use within the Town is largely guided by the Town of Vail

Comprehensive Plan, which comprises a number of adopted documents, some of which were adopted as long ago as 1979, and all of which designate legislated and preferred land use within the Town. The Vail Land Use Plan, which is part of the Comprehensive Plan, was adopted in 1986 and is intended to serve as a basis from which future land use decisions may be made within the Town of Vail. Within the plan, general types of land uses are defined which are then used to develop the Vail Land Use Map. The Land Use Plan was not intended to be regulatory in nature, but was intended to provide a general framework to guide decision-making. Land use is legally controlled by the Zoning Regulations, or Title 12 of the Vail Town Code.

It is essential to connect land use decisions with carrying capacity of utilities and municipal services. Carrying capacity is the maximum number of people who can use a site without an unacceptable alteration in the physical environment, an unacceptable decline in the quality of experience gained by visitors, and an adverse impact on the society, economy, and culture of the tourism area (Mathieson, Alister, and Geoffrey and Wall, 1982). In 1998, the Town of Vail conducted a carrying capacity study that identified ecological, physical, facility and social carrying capacity. While the study may lend itself to addressing current carrying capacity, the 10-year-old document needs to be revisited to fully understand the current situation as compared to the carrying capacity.

The changing demographics and increases in development have also led to increased traffic in Vail. The current level of service (LOS) that has been deemed acceptable is a LOS "C". LOS is a measure of effectiveness by which traffic engineers determine the quality of service related to transportation infrastructure with A considered the best, F, the worst. A "C" rating has slightly more congestion than an A or a B, yet most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. However, projections in the Transportation Master Plan, most recently updated in 2009, shows that future development will trigger lower levels of service. In order to meet service standards, and control traffic issues within the Town, it is essential to conduct road improvements while also providing additional alternative transportation options. The Town of Vail provides a free municipal bus system, an extensive paved pathway system, and hiking and biking trails for recreational movement. These alternatives, along with paid parking in the winter season, are intended to curb automobile usage and extend the ability of the current road system to provide adequate service.

As the number of vehicles traveling along I-70 through Vail increases, interstate noise pollution continues to increase. To address the issue, the Town has built sand

storage berms in East Vail that act as noise barriers. The Town continues to monitor noise levels and the Colorado Department of Transportation resurfaced I-70 from East Vail to West Vail with noise-reducing pavement in 2008.

According to the Eagle River Water and Sanitation District, water rights can be of concern when it comes to increasing density and population. However, the District confirms it has enough water rights to carry the demand of projected build-out scenarios. The primary source of domestic water in Vail is municipal wells, supplemented by surface water sources on Gore Creek and the Eagle River. Water diversion infrastructure and treatment facilities currently have excess capacity to serve demands in Vail. Additional capacity to divert and treat water is planned and will be implemented as demand for water increases. Vail's wastewater effluent is treated at the Vail and Avon Wastewater Treatment Plants. Excess capacity for treatment is currently available at both of these facilities. Additional capacity is planned and will be implemented as demand for treatment increases. Water and sewer main capacity in Vail has been studied and is adequate for current use and projected build-out of existing zoning within the Vail service area. A replacement and upgrade program is in place to address capacity issues and improve system efficiency. This program targets sources of groundwater that limit existing sewer collection system capacity. Water main replacement targets areas where inferior construction inhibits the reliability of water delivery. Upgrades required to meet increased demand from development is planned as specific development projects are approved.

Like many resort mountain communities, the Town of Vail faces several unique environmental challenges due to the sensitivity and value of the natural environment, and the strain that the excess energy, waste, and population fluctuation that the area endures during peak ski season. Key environmental challenges include:

- The implications of global climate change and Vail's contribution via snowmelt systems, excess heating loads from lodges, required snow removal equipment and excess fuel consumption.
- Construction and redevelopment impacts.
- I-70 Interstate road sanding pollution.
- Waste.
- Pine Beetle infestation and wildlife protection.
- Limited capacity and growing population.
- Limited affordable housing and excess vehicle miles traveled.
- Perception that sustainable practices are expensive and non-essential; economic instability and resistance to change.

II. Purpose of Plan

The purpose of this comprehensive environmental sustainability strategic plan is to define goals, objectives, and actions that will assist the Town in coordinating efforts to achieve the environmental vision of the community. It is essential to protect the environment in Vail not only because of the obligation to help mitigate climate change and preserve our natural resources, but also because of the role the environment plays in the economy, serving as the source of recreation and tourism. As a local government, the Town of Vail intends to serve as a model community for environmental health and sustainability by taking action to reduce carbon emissions and improve the state of the greater environment.

Vail and other resort communities are dependent on a healthy environment for recreational amenities that influence development, tourism, and economic viability. The complexity of Vail's ecosystem affects the sustainability of the natural environment and the community at large (Vail 20/20, 2007). Sustainability is traditionally defined as the ability of the present generation to meet its own needs without compromising the ability of future generations to meet their needs (World Commission, 1987). However, given the anthropocentric viewpoint of this definition, the Town recognizes the complexity of sustainability as it relates to socio-economic as well as environmental capital, therefore, sustainability might be further defined as the amount of consumption that can be continued indefinitely without degrading natural capital stocks. To sustain different areas of the world requires drastically different definitions and actions, so the definition is better served by example rather than words.

This plan defines the proposed path for environmental sustainability in Vail for the next two to five years. The plan is structured to present an overview of:

1. background information/key issues related to each environmental metric,
2. Town of Vail current initiatives or projects to address each environmental issue,
3. baseline data (presented where available),
4. environmental sustainability goal,
5. objectives identified to fulfill each goal,
6. action items,
7. environmental indicators/performance measures

The Environmental Sustainability Strategic Plan Matrix defines priority actions and an estimated timeframe for implementation.

III. GUIDING PRINCIPLES



1 Creating Partnerships and Fostering Cooperation: Involving all stakeholders will ensure coordination of program actions and implementation.

2 Building Awareness and Encouraging Community Participation: The community is also an essential stakeholder and community participation and sharing information fosters support from the public and a sense of place.

3 Planning Proactively: It is imperative to look ahead and plan for the known and the unknown factors in the future.

4 Achieving Balance: Finding a common ground between economy, society and the environment is critical to successful planning and actions.

5 Promoting Openness and Accessibility: Sharing information and providing access to Town resources is fundamental to an open society.

6 Behaving Responsibly and Accountability: Being accountable for one's actions and taking responsibility will ensure that all parties are acting in the best interest of the environment.

7 Advocating Actions Beneficial to the Environment: Encouraging and giving stakeholders the tools to take action that will benefit the environment and will allow for successful implementation of the plan.

8 Thinking Globally, Acting Locally: We can make an impact on global climate change by doing our share in the local community.

IV. Planning Background

The purpose of the 2006 Vail 20/20: Focus on the Future process was to identify ways to build upon Vail's successes, keep the resort community competitive and to seek opportunities to improve the community. This process identified a need to integrate a new environmental plan into Vail's strategies for the future, and one that transcends the administrations of Town staff, Vail Town Council and appointed boards and commissions (Memo to Vail Town Council, 2006).

The public input process for Vail 20/20 included two public workshops, a meeting with Vail's stakeholders, a workshop with Vail Mountain School students, and an open house to respond to a first draft of the Strategic Action Plan. Environmental sustainability, workforce housing, I-70 mitigation, wildfire preparedness and management of growth and redevelopment were identified during these meetings as top priorities for the Town. More than 300 voices were heard to assist in setting a direction for the future. At the same time, the 2007 community survey results were published, and both initiatives showed tremendous support for environmental initiatives.

Through the 20/20 process, the community identified environmental issues as one of its top concerns and expressed the need for a more sustainable community. Participants commented that an ongoing dialogue about the surrounding forest health between the Forest Service and the Town is an environmental strength. Participants expressed interest in developing more recycling opportunities, reducing the reliance on chemicals to handle maintenance issues such as snowmelt, ongoing work to address the mountain pine beetle outbreak and related fire hazard, and protection of Gore Creek. Other recommendations included adopting a green building code (Vail 20/20, 2007).

In the 2007 community survey, environmental resources were identified by eighty-two percent of respondents as very important with only 6 percent calling this issue unimportant. Respondents were asked to evaluate a list of 10 topics important to Vail's future. In this case, "environmental protection" received the highest score with a rating of 4.3 on a 5 scale (5 being "extremely important"), followed by "addressing the pine beetle infestation" which received a 4.1 score. Seventy-one percent of

respondents suggested the Town place a high priority on "enforcement of requirements for private property owners to remove dead beetle-infested trees." Satisfaction of environmental quality, which links both the natural and built environment within the Town, was ranked 3.8 of 5, which is just above average satisfaction (Town of Vail Community Survey, 2007).

Therefore, the Town Council directed Staff to promote a healthy environment in Vail and beyond through the development of an environmental sustainability strategic plan. The plan was created under the direction of the community through the 20/20 process, the Town Environmental Department, the Town Employee Environmental Focus Group, The Vail Environmental Sustainability Advisory Committee (formed in October, 2008 specifically to drive the goals and objectives of this plan), and the Town Council. Many of the environmental goals and recommendations are directed to the Town as a governing body because a broad range of environmental actions can be best focused promoted and coordinated within town operations, facilities, waste management, and regulations. However, the plan's action items also include partnership and community efforts that do not stop at Vail's geographical borders, in effort to work with valley and regional stakeholders toward environmental improvement through education, policies, and programs.



A. EXISTING ENVIRONMENTAL PLANNING DOCUMENTS

The following documents were created to guide environmental policy and actions:

Comprehensive Open Lands Plan

Adopted in 1994, the Comprehensive Open Lands Plan identifies and develops strategies for acquiring or protecting remaining open lands in Vail that would be valuable for recreation, protecting sensitive environmental resources, extending or connecting trails, providing adequate neighborhood open space and creating a small amount of contingency land for unseen needs. This plan expired in 2000.

Environmental Strategic Plan (1994)

Adopted in 1994, the Environmental Strategic Plan established a long-term environmental protection work plan. The plan expired in 1998.

Eagle River Water Quality Management Plan

Adopted in 1996, this document is still relevant and is used by stewards of the watershed to understand the current situation, the initiatives taken and future actions needed to protect the region's aquatic health.

Community Wildfire Protection Plan

The purpose of the Community Wildfire Protection Plan (CWPP) is to implement a seamless, coordinated effort in determining an appropriate fire management work plan within the Town, complementing local agreements for wildfire protection. Adopted in 2007, the CWPP is still being utilized to guide forest health projects.

Vail Energy Audit/Action Plan

The Energy Audit identified the baseline energy usage by the municipality, and categorized sources of energy use. The audit made recommendations to improve energy efficiency and conservation, many of which are in this document.

Vail 20/20

Vail 20/20, Focus on the Future is designed to keep the resort community competitive. It identifies commonly shared values in the community, creates a clear vision for Vail and coordinates Vail's strategies for the future.

B. Town of Vail Values

The Town of Vail Values were adopted by the Vail Town Council as part of the Vail 20/20 Strategic Action Plan (2007) and represent what is important to the community and our partners.

- 1. Premier Resort Community:** Vail values its role as a premier resort community, which recognizes the interdependent relationship between the resort, community and municipality. Vail's success as a resort depends largely on its success as a community which fosters relationships between locals and visitors. We make plans and take actions that are investments in the experience and lives of many different generations, today and into the future. It takes work and reinvention to stay No. 1, and Vail is committed to innovation and creativity to achieve our goals.
- 2. Diversity:** Vail values maintaining a diverse population of residents, workers and visitors, with a broad representation of age, family composition, ethnic background and economic means.
- 3. Activities Benefit Individuals and the Community:** Vail values a vibrant community life supportive of spiritual and physical well-being and encouraging of intellectual and cultural growth. This value includes providing a wide variety of educational, recreational, entertainment, art and cultural opportunities. These offerings are accessible to all and appeal to residents and guests of all ages, incomes and interests. These activities promote the development of relationships that strengthen the community.
- 4. Natural Environment:** Vail values the environment as a source of health, beauty, recreation and economic strength that makes Vail a special place to live, work and play. As stewards of the environment, Vail is committed to promoting sustainable environmental practices in every aspect of the community.
- 5. Participation and Cooperation:** Vail values the participation of its citizens in community life, decision making and planning for the future. A sense of ownership and responsibility is achieved through open communication and cooperation between community members, businesses, interest groups and local and regional governments. Cooperation is essential to addressing issues that extend beyond town boundaries.
- 6. Leadership:** Leadership: Vail values a transparent, fiscally responsible and ethical municipal government that engages community members, private partnerships, municipalities and other entities throughout the region to make sound decisions that serve all interested parties for the long term.
- 7. Healthy Economy:** Vail values world-class service and a vibrant, diverse, year-round economy that caters to full and part-time residents, visitors and business owners and operators. A growing employment and revenue base supports the economy, which thrives on environmental sustainability, amenities and events, transportation and other infrastructure.
- 8. Sense of Place and Character:** Vail values the strong history of the Town and its unique character and legacy while acknowledging the importance of reinvention. This is reflected in the high quality of the built environment with design and features that endure over time.
- 9. Safety and Health:** Vail values a sense of personal security for its citizens and their children, as well as for property. Quality healthcare and physical activities support the health of the community.
- 10. Transportation and Transit Network:** Vail values a sustainable, multi-modal transportation system that effectively provides ease of access to residents, visitors and the workforce in an environmentally and technologically forward manner.

V. Policy Statement

“The Town of Vail shall serve as a nationally recognized leader in sustainability through a commitment to community partnerships and balanced stewardship of human, financial and environmental resources in policy and daily operations.”

GOALS



SOLID WASTE STREAM DIVERSION & RECYCLING

Goal 1: Reduce the amount of Town of Vail landfill contributions by 10% within 5 years, and 25% within 10 years.

1

ENERGY EFFICIENCY

Goal 2: Reduce the Town of Vail municipal and community energy use by 20% below 2006 levels by 2020, in order to effectively reduce the Town's contribution to greenhouse gas emissions and impact on global climate change.

2

ECOSYSTEM HEALTH

Goal 3: Ensure that the natural environment, specifically air and water quality, water quantity, land use and habitat are maintained to current or improved levels of biological health.

3

SUSTAINABLE ECONOMIC & SOCIAL DEVELOPMENT

Goal 4: Lead programmatic efforts to promote sustainable and profitable business practices within the Town of Vail and the Vail community. Implement employee sustainability programs to maintain high quality of life.

4

PUBLIC EDUCATION & COMMUNICATION

Goal 5: Increase public education and awareness, communication and environmental stewardship in the Town of Vail.

5

TRANSPORTATION

Goal 6: Reduce the environmental impact of transportation by supporting efforts within the Eagle Valley to decrease total Vehicle Miles Traveled (VMT) by commuters and guests by 20% by 2020.

6

SOLID WASTE STREAM DIVERSION & RECYCLING

Background / Key Issues

Like many resort mountain communities, the Town of Vail faces unique challenges related to waste diversion, and recycling:

- Resort communities generate more trash per capita than the state average. The 1998 (Eagle County) waste composition study data showed that the Town generated four times the amount of trash (6.8 tons of solid waste per capita), compared to the state average of 1.7 tons per capita in 2004, according to Colorado Department of Health and Environment estimates. Though Vail's per capita generation does not include seasonal employees and guests, the average annual tonnage of waste generated is still estimated to be significantly higher than the state average.
- Vail has a population of about 4,750 year-round residents, which can soar to over 30,000 during peak ski season. This strains existing waste and recycling infrastructure.
- Lack of data: cost-benefit analysis on curbside trash and recycling versus drop off. For example, recycling of some materials such as glass is heavy and possibly not cost-effective.
- Public resistance to adding additional containers in small residential dwellings and possible increased costs for trash disposal.
- Private waste haulers, wildlife concerns, and no existing mandatory curbside recycling program calls for ordinance changes within the Town.
- Multi-family residential units and lodges require specific infrastructure and additional education for a unique programs such as Pay as You Throw to be effective.
- The Town encourages employees and guests to use the free public bus system. While this reduces the Town's carbon footprint, it creates a barrier to participation in public recycling drop off sites.

According to Eagle County (2008), the Eagle County Landfill is a Colorado State-approved Subtitle D solid waste disposal facility. Of the 61 acres approved for development, 31 are in use. This site will reach capacity in 14 to 17 years, depending on waste levels. However, future expansion could increase the capacity of the landfill. Recycling drop-off centers are managed by

the Town through a contract with a local trash hauler, and curbside recycling is made available twice a month by the two local waste haulers. The recycling service is not a direct charge, other than the cost of the recycling containers.

Current Initiatives

- The Town continues to manage the free recycling drop-off program in Vail.
- A cardboard recycling system was installed and is operational as of September 2008.
- The Town sponsored its first electronic recycling event in 2007 collecting over 8,000 lbs of electronic waste. Electronic recycling will continue in Vail until the Eagle County MRF is able to accept electronic waste.
- The Town requires special events to incorporate recycling in their event planning.
- The Town Environmental Department works with Eagle County Landfill management in planning for the 2009 \$6 million Materials Recovery Facility (MRF) at the Wolcott landfill, which will increase the Valley's recycling capacity by 2-4 times, greatly improving the economics of local recycling.
- Each quarter the Town offices, through the Information Technology Department, recycle all outdated and obsolete computers and electrical equipment with a certified electronic equipment recycler.
- In 2007 the Town implemented an electronic document and records management system designed to reduce staff dependency on paper and encourage information sharing internally and with the public. Since July of 2007, the Town has scanned and recycled over 225 boxes of paper and has 27,067 electronic records, or 582,473 images.

Baseline

According to Eagle County Landfill data, Eagle County generated 115,489 tons of solid waste in 2007. Of this, compacted waste (trash) accounted for 49,679 tons, and construction and demolition waste accounted for 50,701 tons. The last data point for solid waste generation for the Town of Vail was 1995, where it accounted for 31,025 tons of trash, equating to 37% of Eagle County's waste. Current baseline data are needed to quantify the effectiveness of waste diversion efforts.

Goal 1: Reduce the amount of Town of Vail landfill contributions by 10% within 5 years, and 25% within 10 years.



Objectives

1. Create a culture of waste reduction by delivering a clear and consistent message of resource efficiency through Town actions, community messages and guest experiences.
2. Develop education program(s) to increase waste diversion, reuse, and recycling program participation rates of Town employees and the Vail community.
3. Implement a "Pay as you Throw" (PAYT) curbside waste pickup and recycling program in town.
4. Promote and eventually require recycling of construction waste and building material.
5. Collaborate with Garfield, Pitkin and Eagle Counties on the regional solid waste diversion recycling program that streamlines waste reduction and recycling.

ENERGY EFFICIENCY

Background/Key Issues

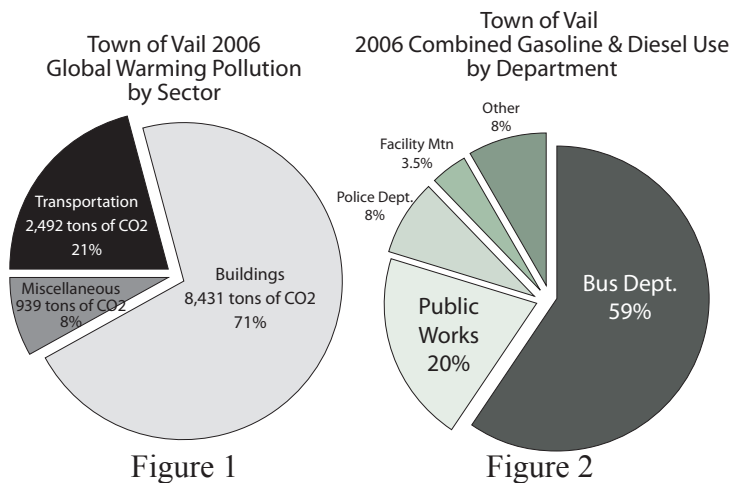
According to the Southern Rockies Ecosystem Project (2007), the earth's surface has undergone unprecedented warming over the last century, particularly over the last two decades. The future climate of the Rockies will likely be dominated by human-induced warming under "business as usual" carbon emissions, so accurately characterizing the regional response is vital to the Rockies' future sustainability. According to Vail Resorts (2007), the snow season on Vail Mountain is approximately 15 days shorter than what it was 25 years ago. In 2008, the Town completed a streetscape project that includes heated pavers in Vail Village and Lionshead in the pedestrian core areas. These pavers make it safer for pedestrians to walk in the winter and remove the need for snow removal trucks and plows in the village cores. However, according to the Streetscape Master Plan (2005), an additional 1,357 tons of greenhouse gases are emitted into the atmosphere each winter season from melting snow. To offset this energy use, the Town has purchased wind energy credits equal to 100% of its electricity consumption. Also, funds from the Town's Real Estate Transfer Tax (RETT) have been designated for use on renewable energy projects. The 2007 Town of Vail Energy Action Plan provides general recommendations to reduce municipal energy use over the next few years. However, opportunity exists to coordinate energy conservation programs among residents and businesses.

Current Initiatives

- In 2007, the Town installed 4.53 kw photovoltaic grid-tied solar panels on the Vail Village Information Center as a pilot project for solar on municipal buildings, which produces the equivalent of 20-25% of the buildings' electricity.
- In 2007, the Town purchased wind power credits for 100 percent of municipal power to offset carbon emissions from electricity use. This contract is renewable in 2009.
- The 2007 Energy Action Plan established a baseline of 2006 general energy use. The Plan is being used to review recommendations for reducing energy consumption, and track potential financial savings through efficiencies.
- The Department of Community Development building has been retrofitted with energy efficient lighting, timers, and motion sensors.

Baseline

The 2007 Town of Vail Energy Action Plan includes a municipal energy inventory use for 2006 which will serve as the baseline against which the Town will measure the success of Goal 2, in reducing the Town's energy consumption and contribution to global warming pollution. Several municipal buildings present opportunities for inexpensive lighting, and heating and cooling upgrades to achieve significant energy savings, notably the Lionshead Parking Structure and Vail Transportation Center, as well as the Municipal Building (Table 1).



Though the Town will focus efforts on reducing overall carbon emissions, it is also helpful to evaluate energy and/or carbon intensity so that incremental progress is easier to identify. It is likely that as services increase and/or buildings are added or expanded, so will energy use. In order to gauge energy intensity, metrics, or useful comparisons must be identified. The following may be useful to track carbon intensity (Schmueser-Gordon-Meyer, 2007).

Total tons of CO² can be compared to total Town operating expenditures* 11,863 tons of CO² per \$1,000 of expenditure = 0.27 tons in 2006. In other words, for every \$1,000 the Town spends, it emits 0.27 tons of CO².

Another possible metric includes comparing dollars spent on energy to: Total Town operating expenditures* on electricity, natural gas & water. \$1,442,610 per \$1,000 of expenditure = \$32.94 in 2006

In other words, for every \$1,000 the Town spends, it spent \$32.94 on energy and water.

*(2006 total Town of Vail expenditures = \$43,800,000)

Goal 2:

Reduce the Town of Vail municipal and community energy use by 20% below 2006 levels by 2020, in order to effectively reduce the Town's contribution to greenhouse gas emissions and impact on global climate change.

Plan Review Process Baseline

According to the Four Seasons project development team, printing costs for current major development projects in the Town of Vail are estimated at \$14,000 per set of plans, containing several thousand sheets of paper. Most large scale projects print multiple sets, and can total over \$90,000, not including time and energy spent driving to and from the Town of Vail Community Development Department offices, and shipping costs. Converting to electronic plan review would reduce waste, and greatly increase energy efficiency and reduce carbon emissions by decreasing driving and shipping of plans. Electronic plan review will also streamline the plan review process, increasing customer satisfaction. Fire and police operations will have instant access to building plans for emergency incidences.

Objectives

1. Track and reduce the Town of Vail municipal and community energy use and GHG emissions.
2. Implement a sustainable building code program that requires new construction and major renovations to achieve designated resource and energy efficiency targets.
3. Implement energy efficiency and conservation measures for municipal facilities.
4. Increase fuel efficiency, reduce fuel and oil consumption and create a viable program for alternative fuels within the Town fleet.
5. Implement community energy efficiency and renewable energy program.

Table 1. 2006: Total Global Warming Pollution and Cost of Energy	Electricity (kWh)	Natural Gas (CCF)	Water (kgal)	Annual Energy Expenditure	Annual tons of CO ₂ emissions
Buzzard Park Housing	73,440	11,500	-	\$15,175	118.53
Colorado West Mental Health	-	-	255	\$599	0.04
Com Dev Building	85,560	6,552	66	\$12,653	103.61
Creekside	120,181	-	-	\$11,233	99.15
Donavan Park Pavillion	50,600	16,449	2,515	\$30,670	125.02
East Vail Fire Station (1)	85,252	5,303	407	\$11,486	97.12
EMD Boiler Room - Snowmelt	-	286,710	-	\$251,357	1,444.59
Ford Ampitheater	68,281	-	3,489	\$20,802	56.89
Library	388,000	20,260	399	\$43,842	422.24
Lionshead Parking Structure	673,990	5,471	-	\$53,563	583.61
Municipal Building	782,040	16,270	271	\$61,992	727.20
Public Works Administration	633,152	78,400	1,068	\$106,968	2,390.16
Town Manager's Residence	10,780	1,858	109	\$2,056	9.38
Vail Fire Station (2)	79,407	5,492	272	\$12,098	93.23
Vail Transportation Center	2,596,800	-	1,547	\$157,530	2,142.61
Misc Housing	21,571	-	-	\$2,068	17.80
Total Buildings	5,669,054	454,265	10,398	\$794,091	8,431.17
Miscellaneous	485,753	169	4,034	\$56,121	401.66
Misc. - Irrigation	6,804	-	150	\$1,583	5.62
Misc. - Street Path / Lights	644,956	-	-	\$60,114	532.09
Total Public Works	1,137,513	169	4,184	\$117,818	939.4
Sub-total	6,806,567	454,434	14,582	\$911,909	10,309.9
	Gasoline (gal)	Diesel (gal)	Air Travel		
Transportation	51,272	177,848	-	\$530,701	2,492.3
Annual Totals				\$1,442,610	11,862.9

ECO-SYSTEM HEALTH

Background/Key Issues

Drought, warmer temperatures and the infestation of the mountain pine beetle have led to increased wildfire danger in and surrounding Vail. According to the U.S. Forest Service, as of 2007, the beetle has infested over 70% of the trees from Lionshead to Dowd Junction and during the next five years, the area surrounding Vail will lose hundreds of thousands of pine trees from this infestation. The dying and dead trees are more susceptible to catch fire and thus, increase the danger of spreading wildfires. The Town will spend over \$1.5 million on addressing the beetle outbreak and wildfire preparedness through 2010.

Gore Creek is the only major tributary that runs through the Town, and supports both recreational and sanitation needs. The extent of Gore Creek flowing through Vail has been subjected to numerous disturbances over the past 30 years including increased sediment from sanding of I-70 during the winter. Monitoring the effects of sand sedimentation and other pollutant sources on the Gore Creek is underway and the Town works with the Eagle River Water and Sanitation District on watershed management programs to improve and protect the future stream health conditions of Gore Creek, which is designated a Gold Medal Trout fishery.

The Gore Creek Macroinvertebrate and Stream Health Monitoring Report: 2004-2006 Monitoring prepared for the Eagle River Watershed Council, stated that when compared to other healthy reference sites on Gore Creek and the Eagle River, aquatic insect numbers in certain reaches of Gore Creek flowing through Vail are in poor condition. Data summarized from various reports (Eagle River Inventory and Assessment 2005, Hydrosphere 2005, Wynn et al. 2001) indicate that in the past decade a downward trend in stream health is occurring in Gore Creek, typical of increasing urbanization.

Current Initiatives

- Since 2000, the Town has been an active member of the Black Gore Creek Steering Committee and a project funding partner for source control and monitoring.
- The Town supported the planning and construction of 63 sedimentation basins on I-70 Vail Pass over the past five years.

- In 2007, the Town assisted in funding the Colorado Department of Transportation's Sedimentation Basin of Last Resort project located at mile marker 183 on Vail Pass.
- The Town supports Gore Creek water quality monitoring efforts by the Forest Service.
- The Town supports, promotes, and adhere to the guidelines put forth by the Eagle River Water and Sanitation District Water Conservation Program.
- The Town supports the implementation of Black Gore Creek Total Maximum Daily Loads (threshold for pollution rates that still meet water quality standards) to identify sediment load reduction projects and implementation plans.
- The Town is partnering with U.S. and Colorado State Forest Service and Eagle County on the Vail Valley Forest Health Project, which seeks to reduce wildfire hazard by creating a fire break around the Town by removing beetle infested trees and working on re-vegetation programs. In 2007, the Town hired a six person wildfire mitigation crew for fire prevention education and cutting/thinning projects on Town-land adjacent to U.S. Forest Service lands.
- The Town finalized its Community Wildfire Protection Plan in 2007, which outlines how Vail can protect itself from the threat of wildfire.
- New regulations in 2007 require Class A roof assemblies or roof covering materials on all new roofs and re-roofs in Vail, and prohibit wood shake and wood shingles for all structures.

Objectives

1. Maintain Gore Creek watershed as a Gold Medal Fishery, while working to maintain tributaries; meet and/or exceed aquatic life standards set by the state of Colorado through the management of urban stormwater.
2. Re-initiate Trees for Vail program as a forest restoration and Town of Vail beautification project to improve the community and the environment through tree planting.
3. Promote water conservation practices in businesses, community and municipality.
4. Address tree disease in the Town of Vail through public outreach and education.

Goal 3:

Ensure that the natural environment, specifically air and water quality, water quantity, land use and habitat are maintained to current or improved levels of biological health.



SUSTAINABLE ECONOMIC and SOCIAL DEVELOPMENT

Background/Key Issues

Historically, environmental, social, and economic goals have been pursued somewhat separately from one another in the Town of Vail. The recently renewed environmental movement in the United States has prompted businesses and municipalities to begin to identify how environmentally friendly business practices and green building design can be profitable and sustainable, creating happier and healthier employees.

The following vision statement describes how the community envisions Vail's perfect economy according to the Vail Economic Development Strategic Plan:

Vail's economy is supported through a year-round viable business environment that meets the market demands of both residents and visitors. The major redevelopment of much of the Town has expanded and enhanced Vail's pedestrian and commercial areas, which provides a strengthened tax base. A diversity of retail, lodging, dining, special events and service businesses and both indoor and outdoor recreation opportunities funds a growing employment and revenue base. The Town's strong infrastructure, environmental stewardship and its cooperation with economic and community partners benefits Vail's economy. Through prudent cost-management and balancing of diversified revenue sources, the municipality has sustainable funding for its capital and operational needs.

Recognizing that Vail's economy, social health and environment are not mutually exclusive, the Environmental Team has begun work with the Economic Development Team and the Economic Advisory Council to support the Vail Economic Strategic plan goals, while ensuring sustainable business practices.

Current Initiatives

- The Vail Economic Development Strategic Plan provides a detailed outline of necessary steps and initiatives launched under the recommendations of the Vail Economic Advisory Council, Planning and Environmental Commission and local businesses to improve economic health in the Town of Vail. Several economic indicators identified are also indicators of environmental health, such as stream levels, air pollution, noise, and snow pack, because they can impact the willingness of guests to visit Vail. The Economic Development and Environmental Departments work together to track and share data and keep track of impacts and trends on the economy and the environment.
- To improve social well-being and health, the Town contributes to an employee wellness benefit, which provides a subsidy for recreational passes and athletic club memberships. The Town also provides free bus passes and hold yearly employee recognition and appreciation events.

Objectives

1. Promote sustainable business practices through the Vail Valley Partnership (VVP) and Town of Vail Destination Preservation sustainable business program.
2. Promote overall employee wellness through strategic partnerships.
3. Work with the Commission on Special Events (CSE) to require all events to reduce waste, purchase sustainable and biodegradable products, and promote Colorado Carbon Fund offsets.

Goal 4:

Lead programmatic efforts to promote sustainable and profitable business practices within the Town of Vail and the Vail community. Implement employee sustainability programs to maintain high quality of life.



PUBLIC EDUCATION & COMMUNICATION

Goal 5:

Increase public education and awareness, communication and environmental stewardship in the Town of Vail.



Background/Key Issues

The Town of Vail currently hosts or participates in several environmental stewardship events per year. Currently, the events do not contain an educational element, nor are there any formal Town of Vail environmental education programs. Several issues related to public education and communication exist: participation rates for Town environmental events have been relatively low, lack diversity of events; lack of educational element at events; difficulty reaching second homeowners and tourists given their limited time in Vail.

Current Initiatives

- Town of Vail Clean Up Day – The annual Clean Up Day event has been occurring for over thirty-one years, to clean the Town following the spring melt. For several years, the Town has offered a \$25 donation to local charities in the name of each volunteer.
- River Clean Up Day – Sponsored by the Eagle River Watershed Council (ERWC), Town Staff act as stream team leaders, and take a section of Gore Creek and lead clean up efforts.
- I-70 Highway Clean Up Day - Sponsored by Eagle River Watershed Council, the I-70 Highway Clean Up is the largest highway cleanup in the U.S. with approximately 1,200 volunteers each year, that clean up over 40 miles of highway each way. The Town Environmental Team organizes clean up efforts on roughly 3 miles of highway.
- Electronic Waste Recycling Event – “Get the Lead Out” is an annual electronic waste collection event sponsored in partnership with the Town, Eagle Valley Alliance for Sustainability and Eagle County that allows the community to recycle their electronics and divert toxic chemicals and equipment from the landfill.
- Town of Vail website, public service announcements, press releases, Plum TV, TV 8, radio and other local media, are ongoing methods of effective communication to the community.

Objectives

1. Direct the Town of Vail Employee Environmental Focus Group in driving Town sustainability practices through educational initiatives.
2. Develop Town of Vail environmental sustainability public education campaign through collaborative partnerships.

TRANSPORTATION

Goal 6:

Reduce the environmental impact of transportation by supporting efforts within the Eagle Valley to decrease total Vehicle Miles Traveled (VMT) by commuters and guests by 20% by 2020.

Background/Key Issues

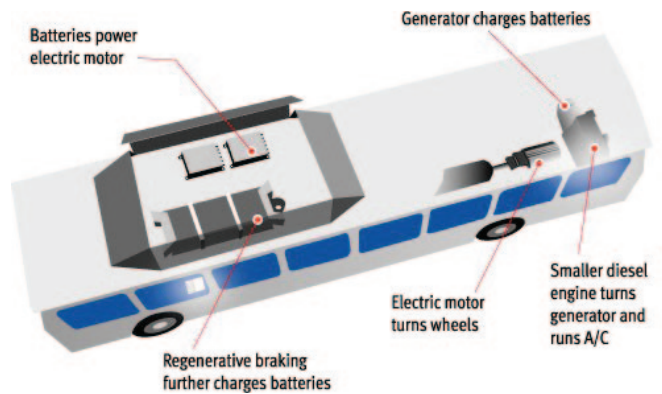
The Town of Vail operates the largest free mass transit system in North America, yet over 2 million vehicles pass through Town on I-70 each year. The highway running through the center of Town presents challenges; highway noise, stormwater runoff, and vehicle emissions.

Current Initiatives

- There are several informal active Town employee carpools.
- The Town participates in the I-70 Coalition ongoing dialogue on the highway transportation plan.
- The Town purchased seven hybrid buses in 2008, for a total of eight in the fleet, costing over \$3.5 million.
- The Town has abundant bicycle routes running from East to Intermountain and throughout Vail Village and Lionshead.

Objectives

1. Increase employee and guest van and carpool use.
2. Establish collaborative partnerships for improved use of mass transit.
3. Increase bicycle use and alternative low impact modes of transportation.



XII. Implementation Matrix

GOAL	OBJECTIVES	ACTION ITEMS	ENVIRONMENTAL INDICATORS	PRIORITY (A=High)	RESOURCES
Goal #1: Solid Waste Stream Reduction & Recycling: Reduce the amount of TOV landfill contributions by 10% within 5 years, and 25% within 10 years.	1. Create a culture of waste reduction by delivering a clear and consistent message of resource efficiency through Town actions, community messages, and guest experiences.	<p>1.1 Track solid waste and recycling levels in Town through partnerships with waste haulers.</p> <p>1.2 Identify participation rates of 1) Town departments, 2) Public, 3) Commercial in public drop-off recycling program.</p> <p>1.3 Develop Town policy to ensure the implementation of process improvements which focus on reducing reliance on paper documents in all areas of Town government, and replacing existing paper forms and documents with electronic versions.</p> <p>1.4 Develop a commercial cardboard recycling collection program for Vail businesses.</p> <p>1.5 Promote and support Vail grocery tote bag program in partnership with the Colorado Association of Ski Towns (CAST) to reduce plastic bag disposal.</p> <p>1.5.1 Form Bag Challenge Steering Committee.</p> <p>1.5.2 Conduct outreach with local retailers and schools to increase awareness of the environmental impacts of disposable bags and promote the use of reusable bags.</p>	<ul style="list-style-type: none"> • Solid waste landfill volumes • Recycled Materials volumes • Cardboard and co-mingled recycling hauls • Number of businesses community members and employees who participate in recycling programs. 	C - Q3 2009	Env. Team Staff Time, \$2,500 (reusable bags and promotion)
	2. Develop education program(s) to increase waste reduction, reuse, and recycling program participation rates of TOV employees and the Vail community.	<p>2.1 Work with the Eagle Valley Alliance for Sustainability and other local partners to host recycling events for hazardous materials, electronic waste, and promotion of waste reduction.</p> <p>2.2 Hold brown-bag lunch information sessions for Town employees and the public on waste reduction practices and recycling opportunities.</p>		B - Q2 2009 (ongoing)	Env. Team Staff Time, partnership, volunteer time, signage.
	3. Implement a "Pay as you Throw" (PAYT) curbside waste pickup and recycling program in TOV.	<p>3.1 Contract with PAYT consultant to: conduct feasibility study for PAYT, develop Steering Committee, obtain public comment and obtain feedback and buy-in from valley waste haulers for system configuration, planning and rate structure; hold community information session.</p> <p>3.2 Investigate complementary programs such as composting (curb/drop off).</p>		A - Q1 2009 - Q42009	Env. Team Staff Time, consulting fee (matching NWCCOG grant - \$5,300)
	4. Promote and eventually require recycling of construction	<p>4.1 Develop Town policy to ensure that all building permits will require a waste management plan that identifies sources of waste and methods to reduce, reuse and recycle.</p> <p>4.2 Partner with RECON and Habitat for Humanity for TOV deconstruction materials delivery.</p> <p>4.3 Promote construction and building contractor waste reduction and recycling education in the TOV.</p>		B - Q2 2009 (ongoing)	Env. Team Staff Time, stakeholder involvement, and promotion - \$8,000 (est.)
	5. Collaborate with Garfield, Pitkin and Eagle Counties on the regional solid waste diversion program that streamlines waste reduction and recycling.	<p>5.1 Form a Tri-County Partnership with Eagle, Garfield, and Pitkin Counties.</p> <p>5.2 Develop and complete a waste characterization study; pursue U.S. Department of Agriculture Solid Waste Management grant to fund the project.</p> <p>5.3 Lead a tri-county community survey to identify attitudes and practices related to waste diversion and recycling.</p>		A - Q1 2009 - Q4 2009	Env. Team Staff Time, USDA funding

Implementation Matrix (cont.)

GOAL	OBJECTIVES	ACTION ITEMS	ENVIRONMENTAL INDICATORS	PRIORITY (A=High)	RESOURCES	
<p>Goal #2: Reduce the Town of Vail municipal and community energy use by 20% below 2006 levels by 2020, in order to effectively reduce the Town's contribution to greenhouse gas emissions (GHG) and impact on global climate change.</p>	<p>1. Track and reduce the Town of Vail municipal and community energy use and GHG emissions.</p>	<p>1.1 Track municipal energy use using Energy Tracker software. 1.2 Conduct community-wide GHG emissions inventory to establish baseline. 1.3 Join ICLEI's Local Governments for Sustainability Cities for Climate Protection Campaign, committing to reducing GHG emissions and achieving the "5 milestones" identified in the agreement: 1. Conduct a baseline emissions inventory. 2. Adopt an emissions reduction target for the forecast year. 3. Develop a Local Action Plan. 4. Implement policies and measures. 5. Monitor and verify results.</p>	<ul style="list-style-type: none"> GHG emissions inventory (community, TOV) TOV energy bills (fuel, electricity, natural gas) 	<p>A - Q1 2009</p>	<p>Env. Team Staff Time, software, consulting fees \$6,000 (est.)</p>	
	<p>2. Implement a sustainable building code program that requires new construction and major renovations to achieve designated resource and energy efficiency targets.</p>	<p>2.1 Implement a high performance building code or program for all new development and Town facilities (e.g. LEED for New Construction, Green Built Colorado, or similar program). 2.2 Develop and adopt energy and resource-efficient building standards for all existing Town facilities. 2.2.1 Require all Town-funded remodel projects to exceed the International Energy Conservation Code by at least 15% on retrofits. 2.2.2 Require Energy Star or better products when available for all new equipment. 2.2.3 Utilize strategic tree planting to reduce cooling loads of buildings. 2.3 Educate the public on the adopted green building program and provide information and services at the Department of Community Development.</p>	<p>2.1 Implement a high performance building code or program for all new development and Town facilities (e.g. LEED for New Construction, Green Built Colorado, or similar program). 2.2 Develop and adopt energy and resource-efficient building standards for all existing Town facilities. 2.2.1 Require all Town-funded remodel projects to exceed the International Energy Conservation Code by at least 15% on retrofits. 2.2.2 Require Energy Star or better products when available for all new equipment. 2.2.3 Utilize strategic tree planting to reduce cooling loads of buildings. 2.3 Educate the public on the adopted green building program and provide information and services at the Department of Community Development.</p>		<p>A - Q1 2009 - Q3 2009</p>	<p>Building and Env. Team Staff Time, stakeholder involvement, promotion and materials. Training for employees \$30,000 (est.).</p>
	<p>3. Implement energy efficiency and conservation measures for municipal facilities.</p>	<p>3.1 Work with the Town Facilities Team to instill a culture of conservation. 3.2 Contract for an 'investment-grade' audit for all facilities that perform 20% or more below the national average, as identified in Table 2. 3.3 Obtain a performance contract for Town-owned buildings through an energy service contractor if appropriate, or invest in upgrades with reasonable payback periods, particularly the Vail Village Parking Structure, Vail Transportation Center and the Vail Public Library. 3.4 Educate Town staff and the community on global warming impacts. 3.5 Conduct feasibility study of a biomass heat and power plant in the Town of Vail using beetle killed trees, waste wood and landfill waste to offset streetscape natural gas requirements. 3.6 Research additional alternative energy options, such as solar, micro-hydro, geothermal, and wind power generated for municipal facilities. 3.7 Require life cycle cost analysis for all major equipment purchases and replacement. 3.8 Facilitate the replacement of outdated HVAC systems and other outdated equipment. 3.9 Promote the consideration of the energy and global warming pollution trade-off of new facilities and additional streetscape by evaluating impacts and providing analysis to the Town Council and management.</p>	<p>3.1 Work with the Town Facilities Team to instill a culture of conservation. 3.2 Contract for an 'investment-grade' audit for all facilities that perform 20% or more below the national average, as identified in Table 2. 3.3 Obtain a performance contract for Town-owned buildings through an energy service contractor if appropriate, or invest in upgrades with reasonable payback periods, particularly the Vail Village Parking Structure, Vail Transportation Center and the Vail Public Library. 3.4 Educate Town staff and the community on global warming impacts. 3.5 Conduct feasibility study of a biomass heat and power plant in the Town of Vail using beetle killed trees, waste wood and landfill waste to offset streetscape natural gas requirements. 3.6 Research additional alternative energy options, such as solar, micro-hydro, geothermal, and wind power generated for municipal facilities. 3.7 Require life cycle cost analysis for all major equipment purchases and replacement. 3.8 Facilitate the replacement of outdated HVAC systems and other outdated equipment. 3.9 Promote the consideration of the energy and global warming pollution trade-off of new facilities and additional streetscape by evaluating impacts and providing analysis to the Town Council and management.</p>			<p>Env. Team Staff Time, software, consulting fees \$6,000 (est.)</p>

Implementation Matrix (cont.)

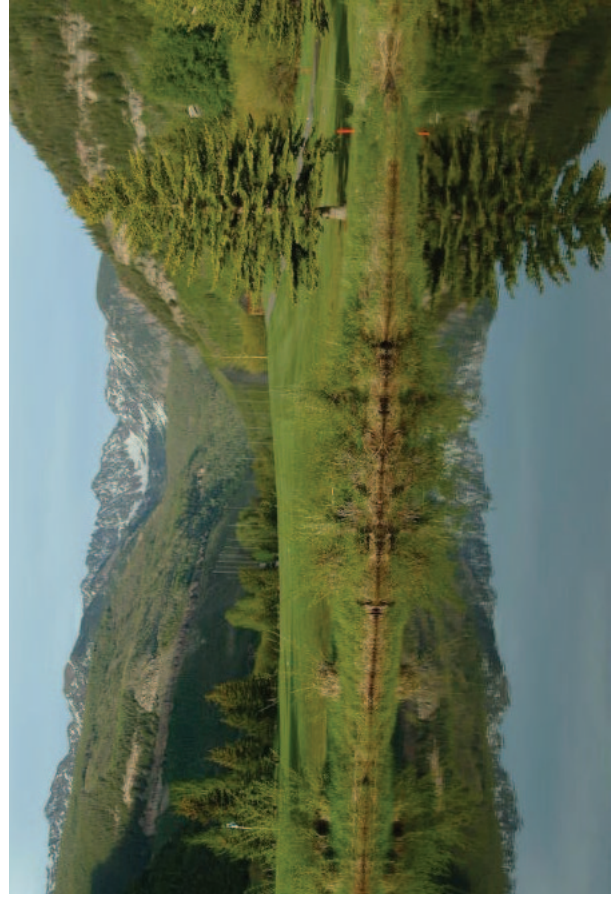
GOAL	OBJECTIVES	ACTION ITEMS	ENVIRONMENTAL INDICATORS	PRIORITY (A=High)	RESOURCES
Goal #2 continued.	<p>4. Increase fuel efficiency, reduce fuel and oil consumption and create a viable program for alternative fuels within the Town fleet.</p> <p>5. Implement community energy efficiency and renewable energy program.</p>	<p>4.1 Research alternative fuel options (e.g. biodiesel or natural gas) for Town transit/fleet operations. Obtain additional fuel tank if necessary.</p> <p>4.2 Work with Public Works Department Staff to develop fuel efficient policies and standard operating procedures (e.g. no idling policy, carpooling, appropriate use, consolidating trips).</p> <p>5.1 Work with community businesses to increase overall Town energy efficiency, and establish partnership with the Governor's Energy Office (GEO) and Holy Cross Energy to support renewable energy projects on private property.</p> <p>5.2 Require or promote the use of a local carbon offset program (e.g. the GEO Colorado Carbon Fund, or other renewable energy fund) that links a fee to global warming pollution contributions.</p>		<p>A - Q1 2009 - Q3 2014</p> <p>A - Q1 2009 - Q3 2013</p>	<p>Hybrid vehicle investment, additional fuel tank, staff time, (Env. / Fleet) - \$100,000.</p> <p>Renewable energy (solar state grant match) \$100,000.</p> <p>Biomass district heating project - land donation/capital. Efficiency upgrades - \$1,000,000 (est.)</p>
Goal #3: Ensure that the natural environment, specifically air and water quality, water quantity, land use and habitat are maintained to current or improved levels of biological health.	<p>1. Maintain Gore Creek watershed as a Gold Medal Fishery, while working to maintain tributaries; meet and/or exceed aquatic life standards set by the state of Colorado through the management of urban stormwater.</p> <p>2. Re-initiate Trees for Vail program as a forest restoration and Town of Vail beautification project to improve the community and the environment through tree planting.</p> <p>3. Promote water conservation practices in businesses, community and municipality.</p> <p>4. Address tree disease in the Town of Vail through public outreach and education.</p>	<p>1.1 Implement pollution prevention, stream and stormwater monitoring and public education actions and strategies through the Gore Creek Pollution Prevention Program (WQPP).</p> <p>1.1.1 Determine resources and support needed to implement WQPP.</p> <p>1.1.2 Partner with stakeholders such as the U.S. Forest Service, recreational groups and Vail Resorts to prevent the discharge of sediment into Gore Creek.</p> <p>1.1.3 Monitor Gore Creek water quality through education and outreach through partnerships with the Colorado Watershed Assembly and Vail Mountain School to implement the River Watch Program.</p> <p>2.1 Establish a tree planting committee and develop project resources needed, purpose, mission, vision and scope of work. Assign tasks and responsibilities to committee members.</p> <p>2.2 Determine project budget and explore grant opportunities and other funding sources.</p> <p>2.3 Determine time line and present project summary to Town Council.</p> <p>2.4 Complete tree plantings and submit project report to Town Council.</p> <p>3.1 Conduct public awareness campaign along with ERWSD to promote reduction in water use.</p> <p>3.2 Promote Xeriscape and native plant use that can reduce water used for irrigation.</p> <p>4.1 Monitor tree disease and infestation in partnership with the U.S. Forest Service.</p> <p>4.2 Communicate preventative measures related to pine beetle and spruce scale infestations to the public.</p>	<ul style="list-style-type: none"> The presence, condition, and numbers of species of fish, insects, algae, plants and other aquatic life. Ground level ozone levels, (smog conditions). Number of trees planted and participation in Trees for Vail project. Community water use (through ERWSD). 	<p>B - 2009 - 2010 (ongoing)</p> <p>A - Q2 2009 (ongoing)</p> <p>C - Q3 2009 - 2010</p> <p>C - Q3 2009 - 2011</p>	<p>Env. Team Staff Time, investment, and promotion of SWPP program, consulting fees \$50,000 (est.)</p> <p>Env. Team Staff Time, lunch, promotion (\$5,000)</p> <p>Env. Team Staff Time, faucet aerators, show-erheads, other equipment.</p> <p>Env. Team Staff Time, work-shop/printing costs - \$1,500 (est.)</p>

Implementation Matrix (cont.)

GOAL	OBJECTIVES	ACTION ITEMS	ENVIRONMENTAL INDICATORS	PRIORITY (A=High)	RESOURCES		
<p>Goal #4: Lead programmatic efforts to promote sustainable and profitable business practices within the Town of Vail and the Vail community. Support employee wellness programs to ensure a high quality of life.</p>	<p>1. Promote sustainable business practices through the Vail Valley Partnership (VVP) and Town of Vail Destination Preservation sustainable business program.</p>	<p>1.1 Work with VVP to finalize and implement Destination Preservation. 1.2 Support Destination Preservation by providing energy audits and guidance to Vail businesses on energy efficiency, conservation, waste reduction, and green purchasing.</p>	<ul style="list-style-type: none"> • Destination Preservation participation rates and progress reports. • Employee wellness program participation rates and progress reports. • Compliance with CSE sustainability checklist. 	<p>A - Q1 2009 - ongoing</p>	<p>Env. Team Staff Time (30 min. consultations), equipment, promotion, \$5,000/yr.</p>		
	<p>2. Promote overall employee wellness through strategic partnerships.</p>	<p>2.1 Form employee wellness program task force through Human Resources and local health care agencies to develop an initiative to promote the improvement of employee quality of life.</p>				<p>C - Q3 2010 - Q3 2012</p>	<p>Env. Team Staff Time, partnership with HR, Hospital, promotion - \$4,000/yr</p>
	<p>3. Work with the Commission on Special Events (CSE) to require all events to reduce waste, purchase sustainable and biodegradable products, and promote Colorado Carbon Fund offsets.</p>	<p>3.1 Develop sustainability checklist for special events and review and approve permits for compliance. 3.1.2 Assist CSE and event producers with sustainable practices guidelines and conduct field follow-up.</p>				<p>A - Q1 2009 - ongoing</p>	<p>Env. Team Staff Time, promotion and producer assistance - \$5,000 / yr (est.)</p>
<p>Goal #5: Increase public education and awareness, communication and environmental stewardship in the Town of Vail.</p>	<p>1. Direct the Town of Vail employee Environmental Focus Group in driving Town sustainability practices through educational initiatives.</p>	<p>1.1 Establish regular meeting schedule, expand membership. 1.2 Set priorities for 1st year, and develop internal action plan. 1.3 Recognize accomplishments, develop incentive program. 1.4 Develop employee education initiative (e.g. "green thinks" signage, quarterly environmental education program – rotating environmental topics, monthly employee newsletter).</p>	<ul style="list-style-type: none"> • Reductions in fuel, electricity and energy use. • Adherence to no idling policy by community and Town of Vail employees. • Participation rates (River Watch Program, employee information sessions, public workshops and participation in programs such as recycling drop off, commercial participation in Destination Preservation). • Successful marketing (website hits, surveys, radio spots, presentations) 	<p>A - Q1 2009 - ongoing</p>	<p>Env. Team Staff Time, incentive bonus - \$1,000/yr (est.)</p>		
	<p>2. Develop Town of Vail environmental sustainability public education campaign through collaborative partnerships.</p>	<p>2.1 Build awareness of the Vail ecosystem by coordinating the promotion of outdoor recreation amenities with Vail Recreation District and other local stewards of the environment. 2.1.1 Build awareness of Vail's ecosystem and sustainability efforts among elected officials, key decision makers and the public through partnerships with: Gore Creek Natural Science School, Eagle Valley Alliance for Sustainability, Vail Resorts and the Discover and Nature Centers, Vail Recreation District. 2.1.2 Identify, promote, and encourage participation in educational opportunities for land use decision-makers.</p>				<p>B - Q4 2009 - Q4 2014</p>	<p>Env. Team Staff Time, grant funding, \$10,000/yr (est.)</p>

25 Implementation Matrix (cont.)

GOAL	OBJECTIVES	ACTION ITEMS	ENVIRONMENTAL INDICATORS	PRIORITY (A=High)	RESOURCES		
Goal #6: Reduce the environmental impact of transportation by supporting efforts within the Eagle Valley to decrease per capita Vehicle Miles Traveled (VMT) by commuters and guests by 20% by 2020.	1. Increase employee and guest van and carpool use.	<p>1.1 Identify barriers to carpooling through employee/public survey.</p> <p>1.2 Develop incentive programs for employees who participate in the reduce VMT challenge.</p> <p>1.3 Partner with local marketing efforts to encourage guest use of mass transit and carpooling.</p> <p>1.4 Track participation through annual surveys and ridership statistics.</p>	<ul style="list-style-type: none"> Total VMT by employees annually. Percent increase in carpool and bus ridership. Total VMT by guests. 	B - Q4 2009 - Q4 2012 ongoing	Env. Team Staff Time, incentives \$500/yr (est.)		
	2. Establish collaborative partnerships for improved use of mass transit.	<p>2.1 Work with the Eagle County bus transit (ECO) to identify barriers to bus use through community and employee surveys.</p> <p>2.2 Identify mechanism to increase ridership (e.g. incentives, additional routes, pickup and drop-off times, etc.)</p>				C - Q1 2009 - Q4 2009	Env. Team Staff Time, \$TBD
	3. Increase bicycle use and alternative low impact modes of transportation.	<p>3.1 Identify barriers to bicycling to work through employee surveys.</p> <p>3.2 Work with management to accommodate bicycling employees with needed infrastructure (Town bicycles, helmets, shower facilities).</p> <p>3.3 Develop incentive programs for bike to work days.</p>				C - Q3 2009 - Q4 2014	Env. Team Staff Time, \$TBD



XIII. Funding

In order to launch major sustainability initiatives in the Town of Vail including energy upgrades and renewable energy projects, educational initiatives, waste reduction and other programs, capital investment and initial resources will be required, though in many cases long term return on investment is the goal. The Town of Vail Environmental Team will continue to identify partnership opportunities to offset the capital investment required from the Town budget to drive priority projects. Collaborative efforts will facilitate successful programs, community involvement, and environmental stewardship.

The Town will collaborate through partnerships, grant funding, volunteerism or information-sharing with local, state, and federal organizations including but not limited to the following: The Town of Vail and Valley businesses, Eagle County, Eagle River Water and Sanitation District, Holy Cross Energy, Xcel Energy, Valley non-profit organizations; education community, State of Colorado (e.g. Governor's Energy Office, Colorado Department of Health and Environment, U.S. Forest Service, U.S. Department of Agriculture), Governmental organizations (e.g. Northwest Colorado Council of Governments).



XIV. Reporting

The Town of Vail Environmental Team will create an annual Environmental Sustainability Report, as part of the Town Annual Report, which will use the environmental indicators identified in this plan to provide information on Town energy use, GHG emissions, waste diversion calculations and program progress.

XV. Essential Next Steps

- Continue to meet with the Environmental Sustainability Advisory Committee made up of key community members and stakeholders, to seek feedback on planned action items.
- Continue to present environmental programs to the Planning and Environmental Commission to incorporate environmental goals within the planning and approval process of Town projects.
- Develop a communications plan.
- Work with the Vail Valley Partnership to roll out the Destination Preservation Program.
- Identify partnerships and funding mechanisms to leverage Town funds for sustainability initiatives (e.g. renewable energy, performance contracting and building upgrades, PAYT program)



References

- Carlson, Bill. (2006) Memo to Vail Town Council dated 01/17/06. Town of Vail.
- Colorado Department of Transportation . (2008) www.cotrip.org Information on I-70 Resurfacing Projects. Accessed 4/3/08
- Eagle County. (2006) Eagle County Landfill Fact Sheet
- Eagle River Water and Sanitation District. (2006) Memo to Town of Vail, dated 11/1/2006.
- Eagle River Watershed Council. (2007) The Gore Creek Macroinvertebrate and Stream Health Monitoring Report: 2004-2006.
- Felsburg Holt and Ulevig. (2007) Town of Vail Transportation Master Plan. Town of Vail.
- Gore Creek Watershed Management Plan (2006)
- Mathieson, Alister, and Geoffrey and Wall. (1982) Tourism: Economic, Physical and Social Impacts, New York: Longman. p. 21
- RRC Associates. (2007) Town of Vail Community Survey Results.
- Schmueser, Gordon and Meyer (2007). Town of Vail Energy Action Plan. Town of Vail.
- Southern Rockies Ecosystem Project. (2007) State of the Southern Rockies Ecoregion. <http://www.restoretherockies.org/report.html> Accessed 4/5/08
- State of Vail Report. (2007). Town of Vail.
- Town of Vail Department of Community Development. (2007) Development Statistics 2007.
- Town of Vail Public Works Department (2005). Streetscape Master Plan Background Information. Town of Vail.
- United Nations. (1987) "Report of the World Commission on Environment and Development." General Assembly Resolution 42/187. Accessed 4/01/08.
- Vail 20/20: Focus on the Future: Strategic Action Plan (2007). Town of Vail.



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