



City of Aspen

2011

Environmental

Sustainability Report

Data and information from 2010, published in 2011.



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A Message from Aspen's Mayor, Mick Ireland



The community of Aspen is proud of its environmental leadership. From the second-largest mass transit system in the state to Aspen's Global Warming Department, the Canary Initiative, the community has taken great steps to minimize its impact on the environment. We also face challenges to reducing our environmental impacts in several areas, which are discussed in this report.

We want to share our successes and our shortfalls in our environmental stewardship efforts. Measuring environmental improvements within our local government and community can be difficult, but by sharing the results with the community, we invite public participation in continuing to strive to be better. We are pleased to share our progress through this Environmental Sustainability Report. By looking at trends over recent years, we can see what we are doing well and where we need to work harder.

The City of Aspen's Environmental Policy








The City of Aspen employees will be leaders and role models of environmental stewardship. Employees will demonstrate the ability to recognize the environmental implications of actions and seek alternatives which minimize the impact of our daily routines, our programs and projects on the environment. The City of Aspen uses a system of measured goals and outcomes to manage and organize the city-wide environmental protection goals to assist us with our commitment for continued improvement.

As stewards of our environment, we will consider the environmental impact of the various alternatives, and favor actions and projects that enhance or protect the environment while still achieving our mission and goals.

We are committed to exceeding minimum compliance with applicable environmental laws, regulations and other relevant standards in all of our operations and to minimizing the environmental impacts of our activities.

We communicate this Environmental Policy and our actions to our employees and our community and welcome their participation.

Quick Summary

-  Electricity used in Aspen Municipal Electric area in 2010: 71,057,703 kWh (down from 71,605,981 in 2009).
-  Amount of Aspen Municipal Electricity that was renewable: 72%.
-  Highest particulate pollution reading in 2010: 116 millionths of a gram per cubic meter of air (up from 50 in 2009).
-  Number of high pollution days in 2010: 6 (up from 0 in 2009).
-  Amount of municipal solid waste taken to Pitkin County Landfill in 2010: 36,162 tons (down from 37,492).
-  Pounds of electronic waste collected for recycling in 2010: 12,486 (up from 7,542 in 2009).
-  Tons of greenhouse gases produced by Aspen community in 2008: 774,763 (most recent data)
-  Tons of greenhouse gases produced by city government in 2010: 5,773 (down from 6,964 in 2009).
-  Length of summer, or frost free period, in Aspen in 2010: 86 days (the historical length is 73 days).
-  Number below-zero days in 2010: 8.

Air Quality and Traffic

Ground Level Ozone

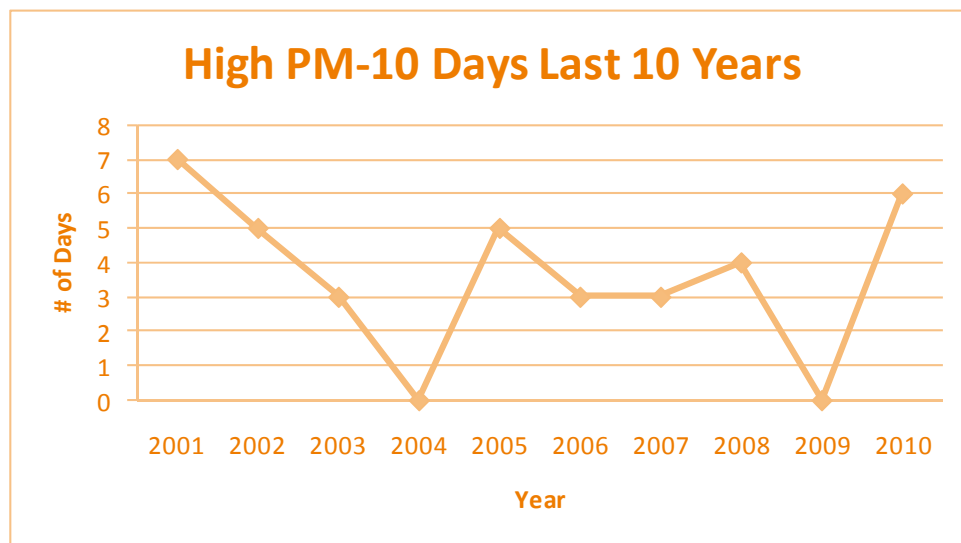
There are two types of ozone. Ozone up high, in the stratosphere, is naturally occurring and creates a protective layer against the sun's ultraviolet rays. Ozone down low, called ground level ozone, is produced by the effects of sunlight on air pollutants and at high levels is toxic to humans and the environment.

The primary goal for the City of Aspen's ground level ozone monitoring program is to determine whether ground level ozone is impacting the health of the community. Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. The two most common sources of ground level ozone in Western Colorado are believed to be natural gas drilling and production, and vehicle exhaust.

In 2010, Aspen had 10 days where the 8-hour average for ozone was at or above 60 parts per billion (ppb), with the highest 8-hour average being 66 ppb recorded on June 22, 2010. Currently, the National Ambient Air Quality Standard (NAAQS) for ozone is an 8-hour average of 75 ppb.

PM-10

In Aspen, 83% of the PM-10 (particulate matter smaller than 10 microns in size) on a high-pollution day comes from traffic driving over dirt on the roads.



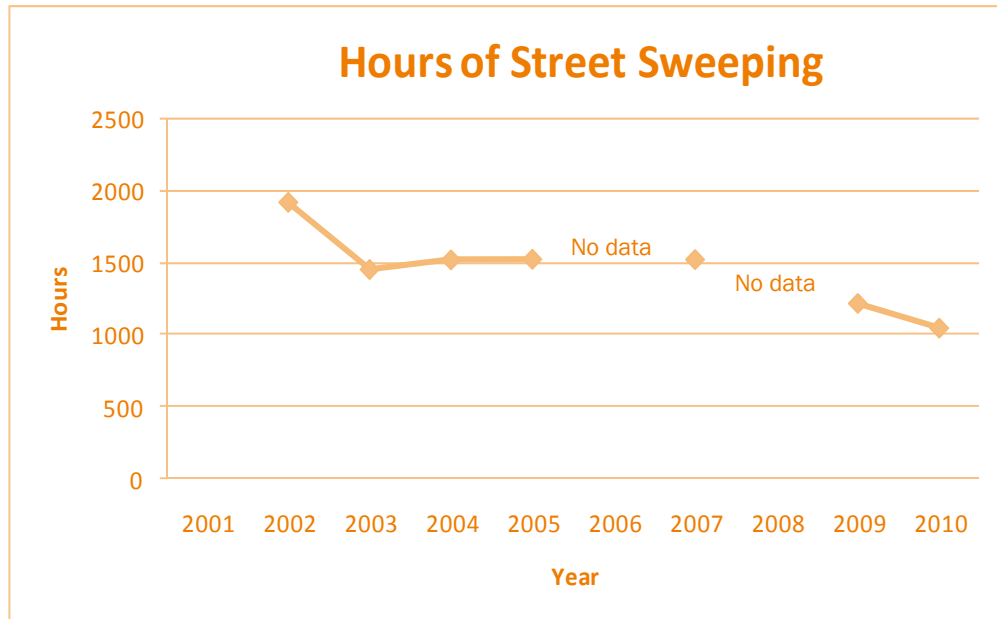
For more info on Aspen's PM-10, visit

[www.aspenpitkin.com/Departments/Environmental-Health/Air-Quality/Particulate-Matter-\(PM-10\)](http://www.aspenpitkin.com/Departments/Environmental-Health/Air-Quality/Particulate-Matter-(PM-10))

Air Quality and Traffic

Sand Sweeping

To help prevent PM-10 production, caused by dirt on the roads, employees of the Streets Department spend time in vacuum trucks picking up the debris.



Average Daily Traffic

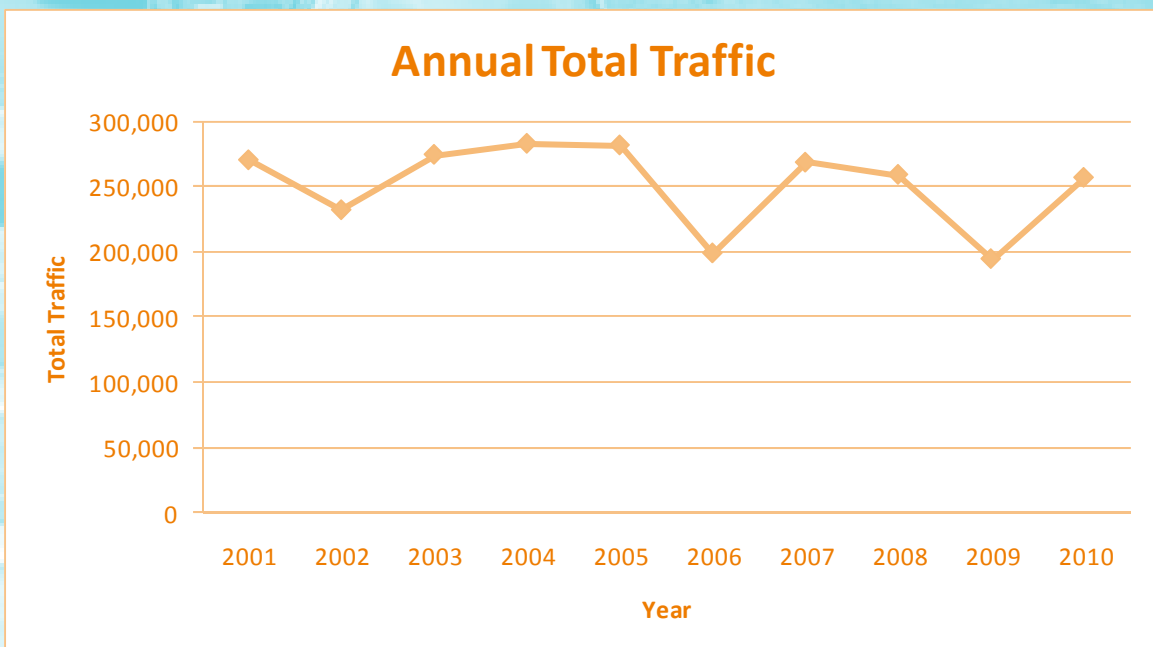
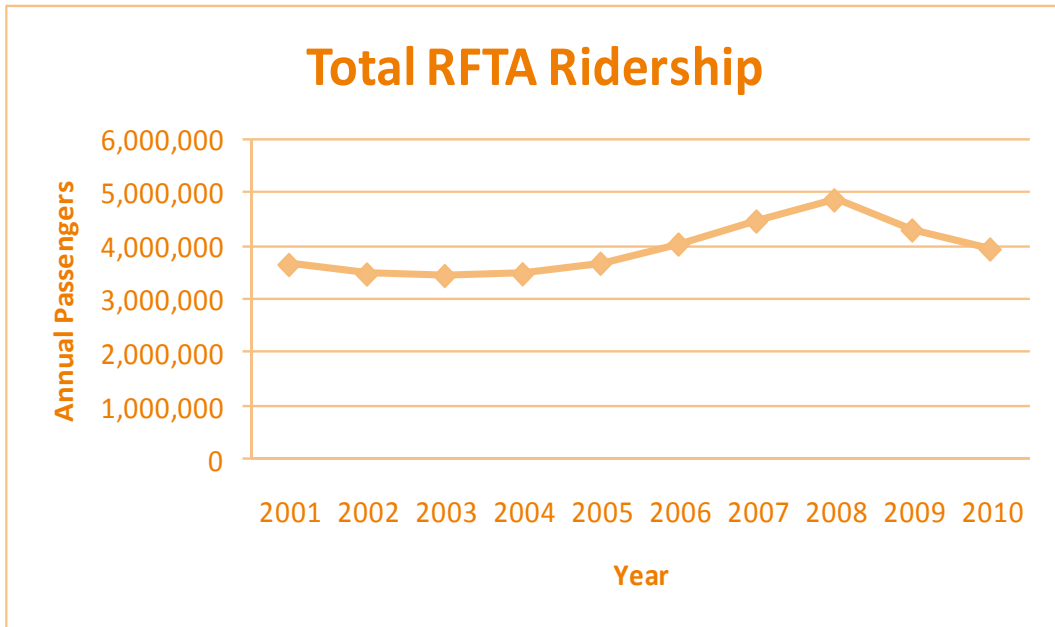
The City of Aspen strives to keep average daily traffic levels at or below 1993 levels. Here are some initiatives that help towards that goal:

- expanded mass transit
- carpool incentives
- HOV lanes
- paid parking

Drops in traffic were seen with the dotcom and 9-11 drops in economic activity, extensive Highway 82 construction, and the recent recession. 2010 traffic levels were 9.79% below 1993 levels. 2010 traffic levels were 1% below 2009 levels, however, beginning in July, 2010 traffic was greater than the same months in 2009, with December traffic up 8% over the year before.

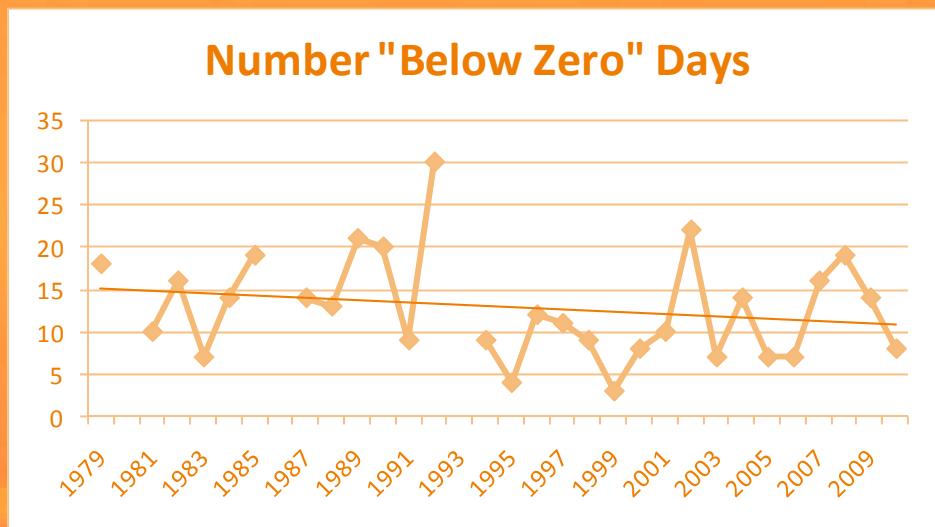
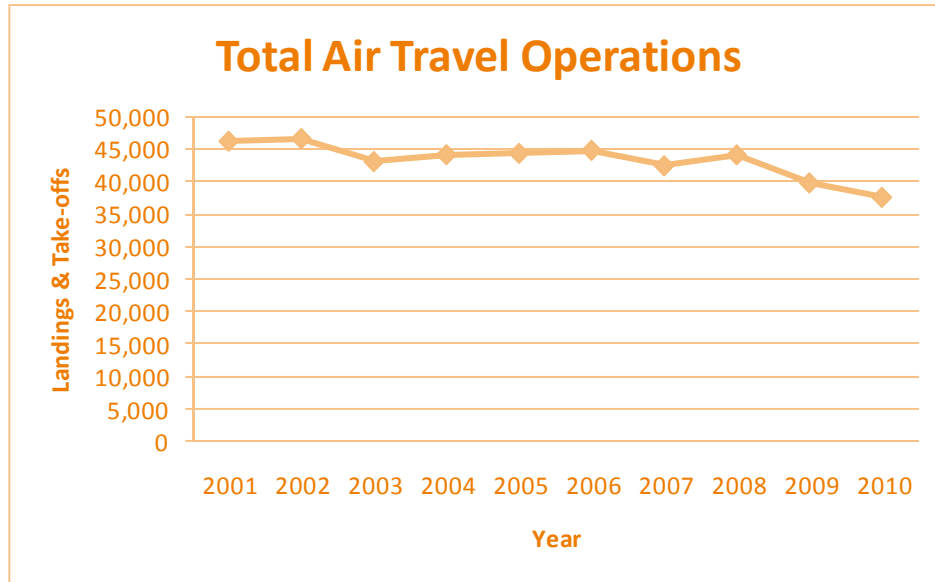
Air Quality and Traffic

Bus Ridership



Air Quality and Traffic

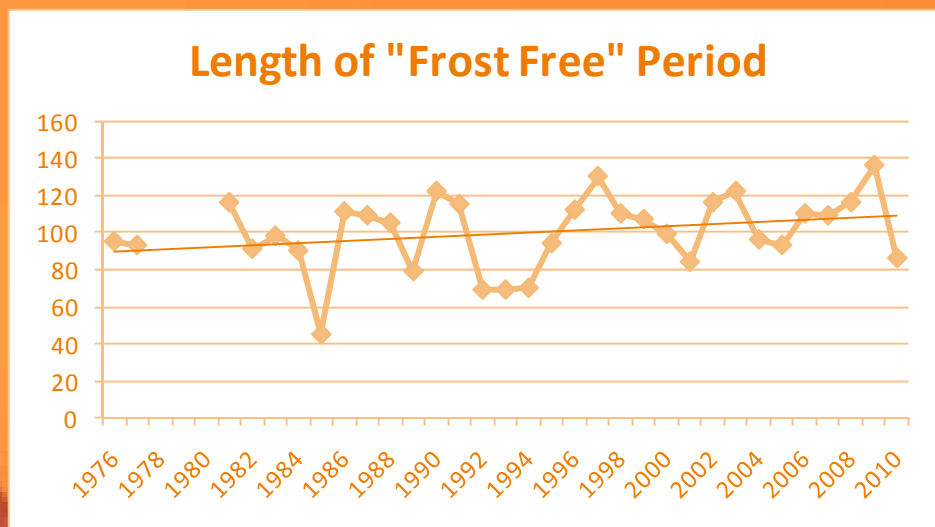
Air Travel - Pitkin County Airport



The number of cold days influences the length of the ski season, ability to make snow, and how long ski areas can stay open. Below-zero days in Aspen have dropped from 22 days each year 50 years ago to around 10 days each year now.

Temperature Trends

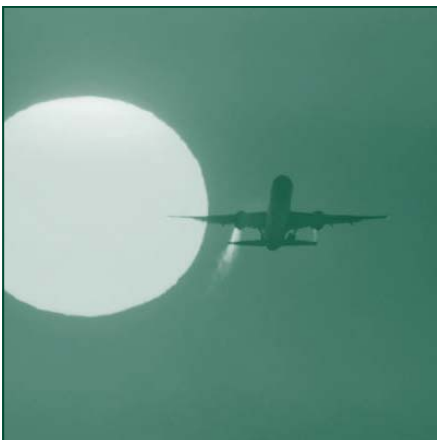
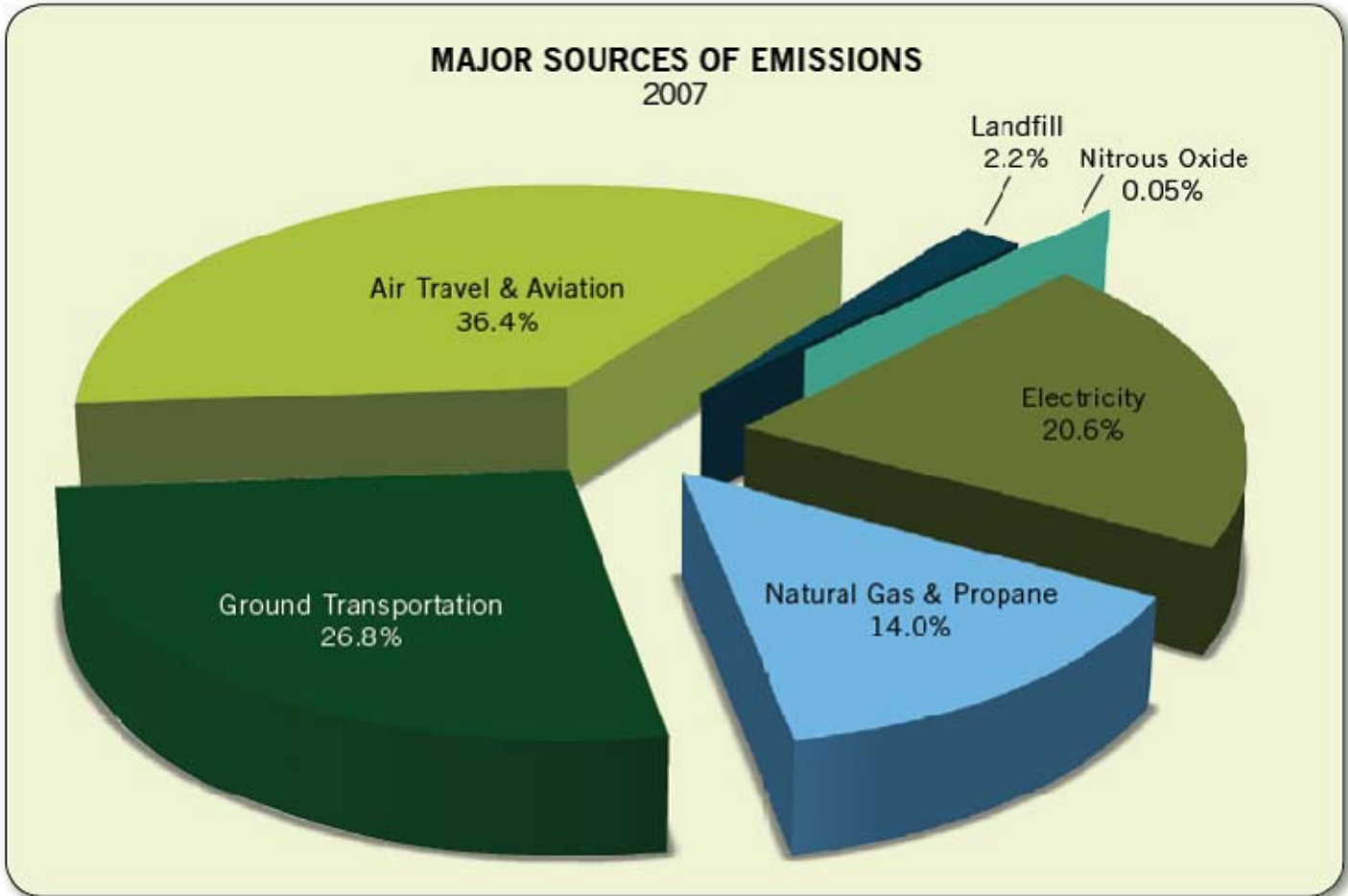
- 2010 was the warmest year on record (globally).
- In the last 25 years, the amount of precipitation falling as snow in Aspen has decreased 18%.
- In the last 25 years, average temperatures have risen and total precipitation has fallen.
- Continued growth in global greenhouse gas emissions is projected to end skiing in Aspen by 2100 and possibly well before then. Reducing emissions could preserve skiing at middle and upper elevations.
- Spring (last freeze) comes earlier each year - in Aspen, by over a week in the last 50 years - while fall (first freeze) is arriving 17 days later than 50 years ago. Seemingly small changes in average global temperature add up over time and cause these significant effects.



Aspen's official summer (frost-free period) used to be an average of 73 days. The graph above shows how much longer Aspen's summers have become. Now, the average length of summer in Aspen is 107 days.

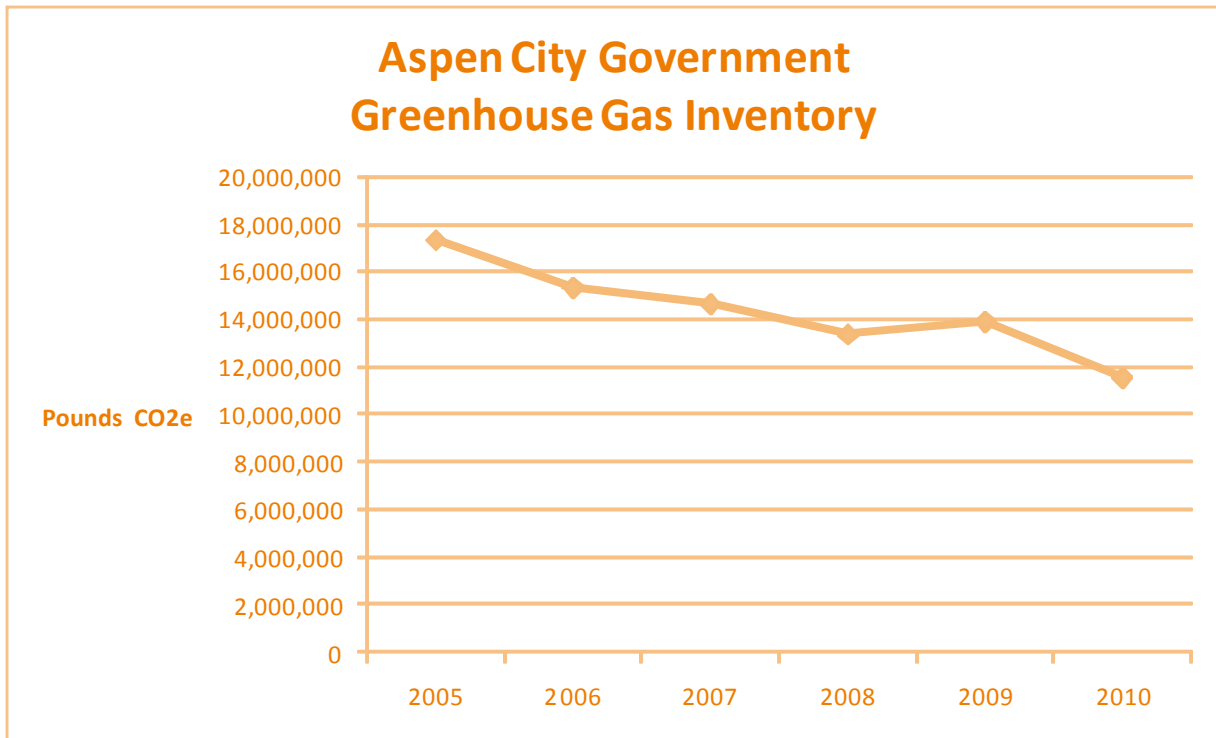
Greenhouse Gas Reduction

Aspen's Greenhouse Gas Emission Inventory [2007 is the most recent data]

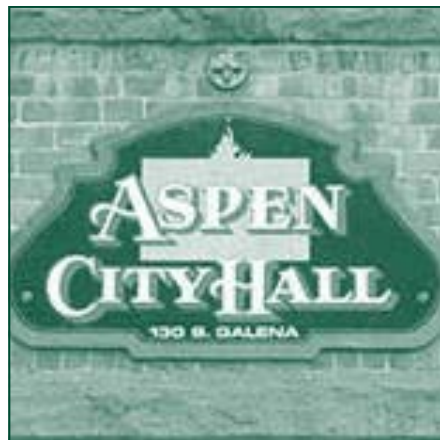


Greenhouse Gas Reduction

City Government Greenhouse Gas Emissions



The graph above includes greenhouse gas emissions from all city operations, including all city buildings, gasoline and diesel use for snowplowing and other operations, electricity use, all business related travel, and natural gas use.



Water Quality

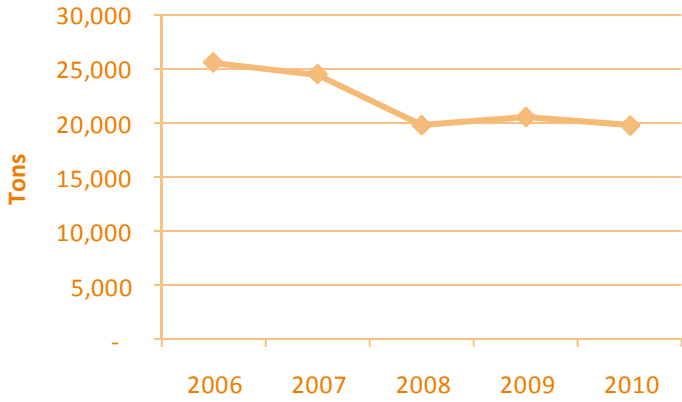
The most significant accomplishments of the stormwater program in 2010 were:

- Adoption of the updated Urban Runoff Management Plan. The plan serves as the guiding document for drainage design for development and redevelopments in Aspen. The Plan now requires that each individual new development incorporate long-term water quality improvement practices that remove pollutants from stormwater before it is released from the site. To accomplish this, sites are required to consider environmentally preferable design and green approaches for stormwater management.
- Installation of a diversion pipe that carries stormwater from the Mill Street pipe to the Jenny Adair wetlands. The Mill Street pipe discharges stormwater runoff into the Roaring Fork River without any treatment to remove pollutants. The nearby Jenny Adair wetlands were built with extra capacity. Therefore, the stormwater program built a diversion and connection to pass small stormwater flows to the wetlands for pollutant removal before release into the river.



Pitkin County Trash & Recycling Generation

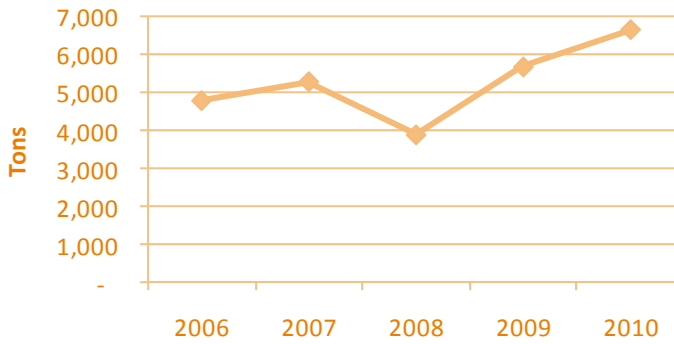
Compacted Trash



Construction & Demo Waste



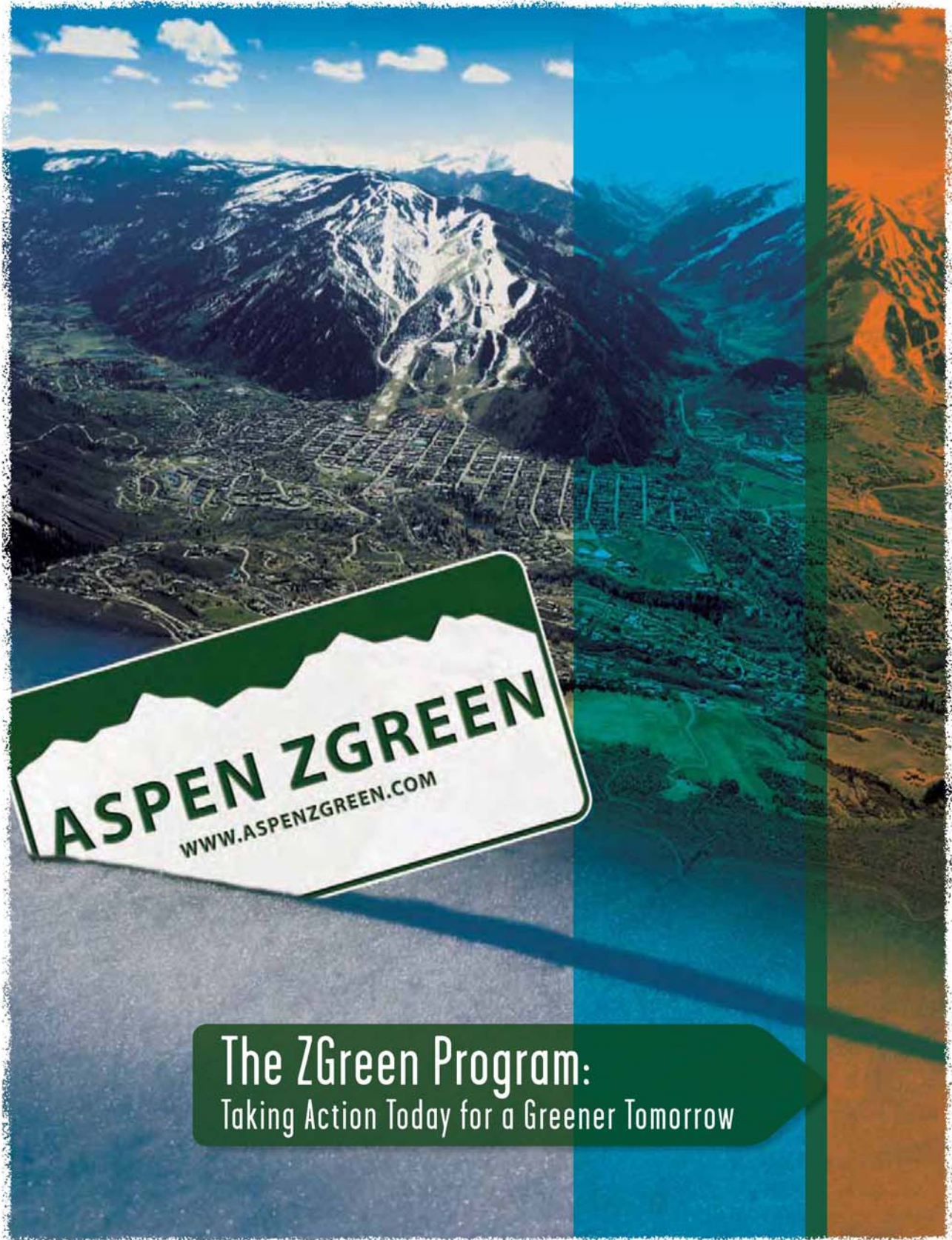
Wood & Yard Debris Compost



Total Recycling



ZGreen Progress Report



The ZGreen Program:
Taking Action Today for a Greener Tomorrow

ZGreen Progress Report

Taking ACTION!

ZGreen protects and enhances Aspen's environment by engaging the community in natural resource conservation and waste reduction. By reaching out to Aspen's residents, businesses, and events, ZGreen is making Aspen a more sustainable community.



Tackling Climate Change

IT'S A FACT: Aspen's winters are 28 days shorter, on average, than they were 25 years ago. ZGreen reduces global-warming carbon dioxide emissions by promoting energy and water conservation and waste reduction.

The following electronics and appliances have been replaced by participating ZGreen businesses, producing an estimated lifetime CO₂ reduction of an estimated 255,554 tons:

- 100 washing machines
- 51 dishwashers
- 75 refrigerators
- 12 computers

When one tugs at a single thing in nature, he finds it attached to the rest of the world.

– John Muir

Through ZGreen:

- 104 businesses recycle.
- 13 businesses offer free or subsidized bus passes.
- 9 businesses have low-flow toilets, faucets, or showers.

Protecting Air Quality

In 1988, the EPA declared that Aspen had levels of PM-10 air pollution high enough to affect human health, creating the brown cloud that once existed in Aspen. Today, PM-10 pollution in Aspen is still a concern, as it is primarily created by traffic. ZGreen helps the Aspen community improve air quality.

- 16 ZGreen businesses use fuel-efficient vehicles or participate in Car-to-Go, Aspen's carshare program.
- 8 businesses use electric cars or hybrids in their fleets.

98 citizens have committed to walking, biking, and busing to reduce air pollution.



ZGreen Progress Report

Reducing Waste

ZGreen helps businesses, events, and community members reduce waste through reusing, recycling, and composting. Diverting waste from the landfill not only saves energy and natural resources, it also adds years of life to the Pitkin County Landfill. ZGreen event requirements became mandatory in 2009.

Since 2007, with help from ZGreen:

- 34 events collected food / paper waste for composting.
- 137 people committed to reducing waste by one or more of the following: recycling batteries, using rechargeable batteries, reusing packaging materials, purchasing products made from recycled paper, stopping their junk mail, or using reusable bags and water bottles.

82 events have recycled a total of 138 tons of waste.

It's easy to make a buck.

It's a lot tougher to make a difference.

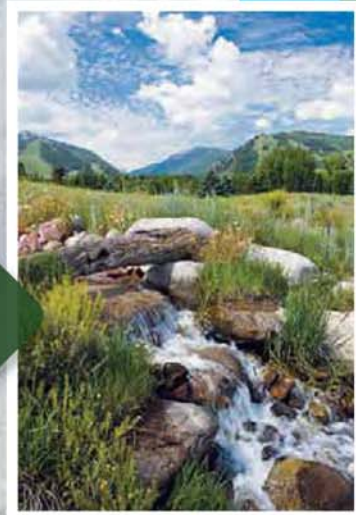
– Tom Brokaw



Conserving Water

- Since 2007, 146 citizens have committed to actions that reduce water use.
- Since 2007, 73% of all ZGreen businesses have committed to using commercial car washes to wash their fleet vehicles.

45% of ZGreen businesses have installed water-saving fixtures in their buildings.



28 events have used Sunny the Solar Roller, the City's free portable solar generator, as a clean, green way to meet their power needs.

ZGreen Progress Report

How wonderful it is that nobody need wait a single moment before starting to improve the world.

– Anne Frank



220 children and adults attend ZGreen community outreach events each year.

Public Outreach and Awards

With free volunteer and staff training for events and businesses, ZGreen has reached:

- 1,055 event staff
- 22 businesses
- 60 employees
- 25 City of Aspen staff

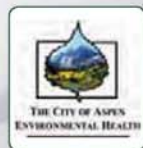
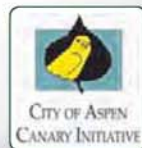
ZGreen also meets with nearly every event planner required to meet the ZGreen criteria, hosts a regular Green Drinks event where people with environmental interests can network, and publishes a monthly E-newsletter with 400 subscribers.

National and international organizations have recognized the ZGreen Program for leadership and innovation:

- In May of 2010, ZGreen was awarded the EPA Clean Air Excellence Award.
- In September, 2010 ICLEI, Local Governments for Sustainability, recognized ZGreen for Energy Efficient Innovation.



WWW.ASPENZGREEN.COM



The ZGreen Program is brought to you by the City of Aspen's Canary Initiative and the Environmental Health Department.

For more information: ZGreen@ci.aspen.co.us



Grants & Awards

2009 City Grants & Awards Received

ZGreen program received an EPA Clean Air Excellence Award

Aspen Golf Course received Audubon recertification

President's Award for the Jennie Adair Regional Storm Water Quality Project, by the Associated Landscape Contractors of Colorado,

First American government to be asked to join the Mountain Partnership to protect mountain environments,

2010 City Grants & Awards Received

ZGreen program received a Sustainability Leadership Award from the International Council for Local Environmental Initiatives for engaging the community in energy resource conservation through outreach.

Radon test kit and demonstration radon remediation grant from the State of Colorado

EPA diesel retrofit grant for trash hauler trucks

\$96,000 compost grant from the State of Colorado

2010 City & County Employee Funded Green Team Grants Awarded

\$1,000 Wheeler Opera House - Hot Water System Retrofit

\$300 Transportation - Winter Biking Instruction Classes

\$650 Kids First - Yellow Brick Building HVAC Improvements

\$150 Community Development - Rechargeable Battery Station

\$150 Aspen Pitkin County Housing Authority—Courthouse Plaza Window Garden

