AGENDA
COMMUNITY SUSTAINABILITY ADVISORY BOARD
CITY OF GOLDEN, COLORADO

Regular Meeting
January 22, 2014
6:30 PM

City Hall Council Chambers
1445 10th Street

1. Roll Call & Sustainability Pledge

The mission of the Community Sustainability Advisory Board is to assist the City of Golden in achieving its ten-year sustainability goals as adopted in Resolution 1793. In order to facilitate achievement of these goals, the Board will lead, encourage, enable, and empower the citizens, visitors, and people who work in Golden, to live in a sustainable manner.

2. Approval of the Agenda

3. Approval of the Minutes from December 3, 2013

4. Public Comment

5. Staff and Board Updates

6. Action Items

   A. Current Project Review 7:00 – 7:30 pm

      Staff will provide information on the following current projects for Board discussion.
      - Website Updates
      - Net Metering Proposal
      - Sustainability Dashboard
      - Low Waste Events

   B. 2014 CSAB Work Plan 7:30 – 8:15 pm

      After reviewing progress made in 2013, the Board will create objectives for 2014. The Work Plan will be forwarded to City Council for consideration as part of the annual sustainability progress report.

7. New Business

   A. Agenda topics for next meeting February 26, 2014 8:15 – 8:30 pm

8. Adjourn
PRESENT: Kurt Bendl
Jeff Oxenford
Whitney Painter
Philip Saieg
Karen Smith

STAFF: Theresa Worsham, Sustainability Coordinator
Denise Hish, Administrative Assistant

ABSENT: Chuck Baroch

1. CALL TO ORDER – BUSINESS MEETING:

Phillip called the business meeting to order at 6:35.

2. APPROVAL OF AGENDA:

With a motion from Whitney and a second by Karen, the agenda was unanimously approved. Theresa is not ready to discuss the dashboarding and asked to table that until next meeting. Will also talk briefly about the Aqua Hawk program at this meeting.

3. APPROVAL OF MINUTES FROM OCTOBER 23, 2013:

One typo found by Jeff and changed by Denise. With a motion from Karen, and a second by Whitney, the minutes were unanimously approved.

4. PUBLIC COMMENT:

None
5. STAFF AND BOARD UPDATES

BOARD:

No board updates.
Jeff apologized for missing so many meetings due to work travel.

STAFF:

Solar project – have been doing some structural improvements to a few roofs that is taking place now. There have been a few cost savings that will hopefully bring the project under budget.

Downtown recycling – We are still have problems getting Waste Management to give us information and have not yet received any pricing. Theresa said she doesn’t feel there may not be an interest on their part for the project. We are seeing increasing problems with pickup and billing. We may need to consider going to another vendor for this service in the downtown area.

Farmers Market – Tent has been ordered and Kurt said he would be working on putting together a schedule for the 2014 year. He will solicit ideas for topics from members of this Board.

6. ACTION ITEMS:

A. Sustainability Goal Recommendations
The Board reviewed a second draft of recommended changes and updates to the ten-year goals. After finalization of the recommendations, CSAB will forward them to City Council for consideration as a Resolution.

Theresa said she didn’t receive any recent changes, so it’s similar to the first draft that was previously reviewed.

The Board reviewed this draft and had this discussion:

- Green building goals stay the same and will do some additional efforts
- Economic Health – How can we add metrics to measure our goals? CSAB should focus on #1 goal, with some changes and #2 should be evaluated by EDComm. Maybe EDComm can quantify employment in the Sustainability sectors.
- Education & Communication – Eliminated #2
- Energy Efficiency and Renewable Energy – Do we need to show previous goals and then show the amended goal in order to show the exact change in the timeline for the municipal energy goal from 10 to 15 years?
Discussion about ways to get to 50% and Philip added that the City currently gets 1% - after spending about $3M, the City will get about 10%. To get to 50% - we don’t have a path to that yet.

- Current goal is at 2017 and Whitney felt we should talk about extending even further to take advantage of future opportunities. After much discussion, the consensus felt that we should extend it to 2027.

- **Solid Waste & Recycling** – Option of increasing the goal, keeping the goal or add some metrics to quantify some of the projects we are pursuing.
- Eliminate Next Steps in the entire report and put them into the Progress Report instead
- **Alternative Transportation** – Discussed the measurable opportunities
- **Water** – Should show the old goal as a strikeout. Sub-goal #3 will be rephrased in a way to be more understood.
- Additional Recommendations – Recommendation from Karen to form a CATAC (Climate Advisory Task Committee).
- Strike last paragraph on page 10.

**B. Website Updates**
Staff provided information and a plan of action to update sustainability information and resources for the community.

Took a tour of the website and had a discussion of how it all worked and how things have been reorganized. Jeff suggested showing percentages of how much was done for each goal.

**C. Aquahawk Discussion**
Viewed the on-line application. Discussion:
- Does it help if an Average family usage was shown or possibly average usage for neighborhood
- This is very beneficial to the citizens to have real-time usage
- Kurt stated when he first tried to sign up with his tablet, he had issues – he will send screenshots to Theresa of areas that he felt would be more user-friendly and she agreed to talk to the vendor about improvements.

**D. Sustainability Communication**
The Board will consider different software programs (commonly referred to as a dashboard) for communicating sustainability progress to the public. The intent of the program is to embed the information on the City website and at various city facilities.

The Board agreed to table this discussion until the next meeting, but commited the $10,000 to the dashboard project to carry over to 2014.
7. **NEXT MEETING:**

*January 22, 2014*
- Dashboard project
- Goal Revisions and Council recommendations
- Work Plan 2014

**Future Agendas/Discussion:**
- Guidance and rules for zero waste events for 2014.
- Website updates & Downtown recycling as part of staff updates
- The 6-year term is up in Feb 2014 for Karen and Chuck, but will be extended to April 2014. Also have a vacancy to fill at the same time.
- Farmers Market – Kurt will be working on ideas of topics and a schedule and rotate them throughout the year. Put on February agenda to discuss.
- Sustainability awards should be discussed in February for April awards. Remind Board members to think of candidates when she sends out packet.

**ADJOURN:**
Meeting was adjourned at 8:30 pm.
Community Sustainability Advisory Board
Six Month Schedule - 2014

January 2014

February 2014

March 2014

Date | Agenda Item 1 | Agenda Item 2 | Agenda Item 3 | Agenda Item 4
--- | --- | --- | --- | ---
1/22 | Work Plan 2014 | Current Projects |  |  
2/13 | City Council meeting re: revised goals |  |  |  
2/26 | Chair/Vice Chair Elections | Farmer's Market Calendar of Events |  |  
3/26 | 2014 Sustainability Awards |  |  |  
4/23 |  |  |  |  

Future meeting topics:

Retreat?
# 2014 Sustainability Program Budget

<table>
<thead>
<tr>
<th>Description</th>
<th>Contractor</th>
<th>Budget</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>Professional Services</strong></td>
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<td><strong>remaining budget</strong> $5,000</td>
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<tr>
<td><strong>Sustainability Programs</strong></td>
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<td>$55,000</td>
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<td>CSAB Admin costs</td>
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<tr>
<td>A Greener Golden event</td>
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<tr>
<td>Bike Lockers for Light Rail Station</td>
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<td>plan for 2014</td>
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<td>Grad Student for water conservation metrics</td>
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<td>plan for 2014</td>
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<tr>
<td>Downtown Recycling Pilot Study</td>
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<td>plan for 2014</td>
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<td>Farmer's Market fees</td>
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<tr>
<td><strong>remaining budget</strong> $55,000</td>
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* 10% discretionary fund by Board

## 2013 Rollover

<table>
<thead>
<tr>
<th>Description</th>
<th>Budget</th>
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<tbody>
<tr>
<td>EV stations</td>
<td>$12,668</td>
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<tr>
<td>Farmer's Market giveaways</td>
<td>$3,000</td>
</tr>
<tr>
<td>Sustainability Dashboard project</td>
<td>$10,000</td>
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</table>
The mission of the Community Sustainability Advisory Board is to assist the City of Golden in achieving its ten-year sustainability goals as adopted in Resolution 1793. In order to facilitate achievement of these goals, the Board will lead, encourage, enable, and empower the citizens, visitors, and people who work in Golden, to live in a sustainable manner.

Community Sustainability Advisory Board
April 11, 2013
Letter from the Board

In 2007, City Council created the Community Sustainability Advisory Board with the purpose of assisting the City in achieving its ten-year sustainability goals in seven different focus areas: green building, education, economic health, energy alternative transportation, waste diversion, and water conservation. The Board continued work on numerous initiatives in 2012, both building upon previous efforts and starting up new ones. However, because 2012 marked the half-way point towards the City’s sustainability goals, the majority of the Board’s effort was focused on an evaluation of each of the goals, including adequacy of the metrics, availability of relevant information, progress towards the goals, and overall appropriateness of the goals.

This Progress Report & Work Plan provides insight into the Board’s actions for the coming year. First, we present a score card on page 5 that summarizes our progress in each focus area. Then, starting on page 6, we provide more details on where we are with respect to each goal and where we plan to go next. For each goal, we identify the metrics by which we evaluate success, provide a measure of how we are progressing towards the established goal, and identify a suite of activities we propose to undertake in the coming year. In addition, on page 17, we present a set of recommendations to City Council, including conclusions drawn regarding the appropriateness of each goal.

Over the past year, we have realized several significant achievements across the focus areas. Highlights include:

- Completion of the refurbishment of the new public works building at 1445 10th Avenue in accordance with the requirements for LEED Silver certification and planning for the addition of a roof-top solar energy system that will allow the City to attain LEED Gold certification and become a net zero energy building.1
- Review and identification of suitable locations for installing roof-top solar energy systems on City buildings with a total generation capacity of 450 kW.
- Active pursuit of potential site locations for a 500 kW community solar garden.
- Adoption of the 2012 International Building Code that establishes new standards that will maximize the energy efficiency of new buildings and major building renovations in Golden.
- Adoption of a flexible permitting process for meeting new fire-related building standards while allowing for optimal design and installation of roof-top solar energy systems.
- Hosting the Economic Health Summit to initiate discussions with existing groups dedicated to promoting Golden’s economic development in order to develop a common vision of “sustainable economic health” for our community.
- Support of local community gardens through startup funding for the Mitchell Elementary School and East Street gardens.
- Support of the first annual Golden Solar Home Tour through City sponsorship of the Golden Earth Days Council effort.

In the context of developing a sustainable community, Golden continues to lead on many fronts. The Council, City staff, and other Boards are to be commended for the commitments being made in this arena. Significant progress is being made, but significant challenges remain, particularly in the focus area of energy efficiency and renewable energy development. As we move into the second half of this

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1 LEED is the Leadership in Energy Design Standard published by the U.S. Green Building Council and adopted by the City of Golden for municipal buildings through Resolution No. 1937.
initiative, the Board is optimistic that Golden will continue to make significant progress towards its vision.

In closing, the Board would like to acknowledge the considerable efforts of key staff who have done most of the “heavy lifting” to make our ideas and thoughts reality. We thank Denise Hish, Administrative Assistant; Steve Glueck, Community & Economic Development Director; Anne Beierle, Deputy Public Works Director; and most of all, Theresa Worsham, Golden’s Sustainability Manager.

Community Sustainability Board Members

From left, Mark Campanelli, Karen Smith, Chuck Baroch, Whitney Painter, Kurt Bendl Phillip Saeig. Missing: Jeff Oxenford

<table>
<thead>
<tr>
<th>Member</th>
<th>Position</th>
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<tbody>
<tr>
<td>Chuck Baroch</td>
<td>Community-At-Large</td>
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<tr>
<td>Kurt Bendl</td>
<td>Public Research Facility Representative</td>
</tr>
<tr>
<td>Mark Campanelli</td>
<td>Education Professional</td>
</tr>
<tr>
<td>Jeff Oxenford</td>
<td>Community-At-Large</td>
</tr>
<tr>
<td>Whitney Painter</td>
<td>Small Business Owner Representative</td>
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<tr>
<td>Phillip Saeig, Vice Chair</td>
<td>Sustainability Industry Professional</td>
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<tr>
<td>Karen Smith, Chair</td>
<td>Community-At-Large</td>
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</tbody>
</table>

Approach

The Board defines Sustainability as living or acting in a manner that balances improving our quality of life, a healthy vibrant community, and mindful stewardship of the natural resources and environment while protecting the ability of future generations to do the same. With this in mind, the Board recognizes that sustainability efforts are not an end goal, but endeavors to continually strive toward improvement.
CSAB 2012 SCORE CARD

The Golden Sustainability Initiative has many goals and each of them are important with ongoing progress should continue. However, in 2013, some require greater focus and will have a higher priority for the Board.

<table>
<thead>
<tr>
<th>FOCUS AREA</th>
<th>STATUS</th>
<th>2013 PRIORITY</th>
<th>ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Buildings</td>
<td>100% Complete</td>
<td>Low</td>
<td>Golden building owners and the development community have come together to achieve this goal 5 years into the 10-year term. Updated building codes and the new Green Menus offer budget-friendly sustainable building solutions and will continue to ensure that all new construction and major remodels meet our green building goals.</td>
</tr>
<tr>
<td>Education &amp; Communication</td>
<td>50%</td>
<td>Medium to High</td>
<td>Communication of the community goals is critical to the overall Sustainability Initiative. The Board will lead, encourage, enable, and empower the public to live and work in a sustainable manner.</td>
</tr>
<tr>
<td>Economic Health</td>
<td>25%</td>
<td>Medium</td>
<td>After a successful Economic Health Summit in 2012, the Board will work with other city groups to increase green jobs and encourage business sustainability.</td>
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<tr>
<td>Energy</td>
<td>10%</td>
<td>High</td>
<td>In 2013, the Board will focus a lot of attention toward this goal. The goals to reduce energy consumption and increase renewable energy have proven difficult to achieve. 2013 brings long awaited projects including community solar, municipal solar and a pilot program for citywide energy efficiency.</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>80%</td>
<td>Low</td>
<td>Creation of the Pay As You Throw program in 2009 yielded significant cost savings for homeowners. Next steps include consideration of a PAYT ordinance to expand recycling access citywide.</td>
</tr>
<tr>
<td>Alternative Transportation</td>
<td>90%</td>
<td>Medium</td>
<td>While the City is funding annual upgrades to biking and pedestrian routes, a significant movement forward in reducing vehicle miles traveled (VMT) is expect in 2013, when RTD’s West Light Rail Line and Golden’s Call &amp; Ride bus become available.</td>
</tr>
<tr>
<td>Water</td>
<td>80%</td>
<td>Low</td>
<td>3 out of 4 goal targets are achieved annually. Water conservation should remain a priority, with a new target set by Council.</td>
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2013 Work Plan
Throughout the document, the Board has identified “Next Steps” for each goal area, which are proposed to City Council as the Board’s near term work plan. Other administrative projects also include:
- Review and update Strategic Plan, with an emphasis on developing new projects to be funded by the Board to further the City’s sustainability goals.
- Develop an improved understanding of climate adaptation needs and opportunities and consider the application of new approaches and methods to assist the community, particularly in the context of green buildings and water use.
GREEN BUILDING GOALS

100% complete

To improve the energy efficiency and reduce the environmental impact of new and existing buildings in Golden. Specifically:

1) Ensure that within ten years 90% of all new buildings constructed in Golden each year are built to green building standards.

2) Ensure that within ten years 50% of all remodels in Golden each year are built to green building standards.

3) Revise Golden’s land use code to reflect the best practices in sustainability once every five years.

Notable Achievements

✓ Keeping up with the latest energy efficiency building codes. Adoption of the 2009 and 2012 International Building Codes

✓ Creation and adoption of the Green Menus, a list of sustainable best practices for developers and homeowners to choose from as prerequisites for building permits.

What is a Green Building Standard?
All construction projects that equate to 25% or more of a building are required to achieve 25 points within the City’s commercial or residential “Green Menus”. Since adoption, all building projects triggered by this process have resulted in 100% compliance.

2012 – By the Numbers

Electrical Technologies
16145 Table Mountain Parkway

- 11,400 ft² office & light industrial facility
- Insulated concrete form construction for a tighter building envelope
- 30kW solar photovoltaic system
- Geothermal heat
- 20% more trees than required
- Electric vehicle plug-ins
- Double bike racks, employee showers

Gunslinger Custom Paint
830 Pine Ridge Road

- 32,000 ft² painting & collision facility
- Certified at the Bronze level for the State’s Environmental Leadership Program
- Lighting retrofit in main facility.
- 20% more trees on site
- 5,000 ft² of porous pavement
- Insulated Wall Panel construction
GREEN BUILDING GOALS CONTINUED

- LEED for city buildings. Adoption of the U.S. Green Building Council’s LEED standard for municipal buildings and the City’s first LEED project: the Public Works Administrative Building.
- Annual amendments to the Land Use Code (See Table 1).

Table 1 – Green building legislation

<table>
<thead>
<tr>
<th>Year</th>
<th>Ordinance 1845: Dark Sky lighting regulations</th>
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<tbody>
<tr>
<td>2009</td>
<td>Ordinance 1847: Allowing renewable energy systems</td>
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<td>Ordinance 1855: Energy-efficient building codes</td>
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<td>2010</td>
<td>Ordinance 1867: Commercial Green Menu</td>
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<td>Ordinance 1868: Residential Pay-As-You-Throw</td>
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<td>Ordinance 1874: Incentives for infill development</td>
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<td>Ordinance 1882: Allowing Accessory Dwelling Units</td>
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<td></td>
<td>Resolution 2059: Adopted Complete Streets policy</td>
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<tr>
<td>2011</td>
<td>Ordinance 1896: Allowing urban chickens</td>
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<td>2012</td>
<td>Ordinance 1913: Residential Green Menu</td>
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<td></td>
<td>Ordinance 1914: Allowing Community Solar Gardens</td>
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<tr>
<td>2013</td>
<td>Ordinance 1931: Energy-efficient Building codes</td>
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Next Steps

Although we have met 100% of the goals in this focus area, there are still important efforts that the City and community can do to promote green building design and construction:

1. Promote existing businesses in Golden that use green building strategies.
2. Develop new approach for providing the community with targeted expert advice on improving home energy efficiency and installing renewable energy systems (i.e., to replace previous efforts to launch a Home Energy Advisor program).
3. Identify green building approaches and methods that can be used to plan for and respond to challenges presented by climate change and climate adaptation.
4. Identify city projects that include green infrastructure: bioswales, landscaping, recycled asphalt or concrete.
5. Attain LEED Gold certification for the new public works building.
6. Research incentive strategies to exceed the Green Building standards.

2012 – By the Numbers

Golden Storage
732 Hog Back Drive
- Installed 100 new LED lights to replace old high energy use lamps
- 37% electricity savings and 50% monthly bill savings
- Energy savings equates to 10 homes each year.

City of Golden Public Works
1445 10th Street
- 6,000 ft² repurposed building
- 50% recycling of construction waste
- 20% reduced lighting power through the use of LEDs
- 60% restoration of open space that includes a public fruit orchard and demonstration areas for xeriscape plants
- 100% of electricity is offset by wind and solar energy credits.
EDUCATION & COMMUNICATION GOALS

To increase our community’s awareness of and encourage commitment to actively take part in sustainability as a public value that supports cultural, economic and environmental health for all citizens. Specifically:

1) Create effective, ongoing two-way communication that informs, educates and inspires community involvement in city-wide sustainability efforts; and
2) Support the Community Working Groups in crafting community action plans that effectively foster sustainable behavior.

Notable Achievements

- K-12 education projects, including annual elementary school Earth Day art shows featuring recycled art, recycling facility tours and a reusable bag fundraising project.
- Ongoing CSM student collaboration projects through the EPICS classes, including VMT modeling, cost-benefit analysis for LED streetlights, industrial ecology studies, and small wind turbine feasibility studies for 10 Golden business owners.
- Financial support of the Golden Tour of Solar Homes, Colorado Environmental Film Festival, Golden Earth Days Council, and the Renewable Energy Demonstration Center.

Next Steps:

- Prioritize outreach in the form of website content, a Farmers Market presence, and a workshop series to communicate the message of what community members can do to be part of the sustainability solution.
- Effectively engage the Golden community in climate adaptation or climate disruption issues.
- Develop new website solely dedicated to promoting sustainability in our community, providing information about specific Golden programs and links to reliable online consumer-oriented resources specific to sustainability.
- Publicize availability of the Golden homeowner’s Energy Efficiency Guide (currently available online).
ECONOMIC HEALTH GOALS

To improve the economic health of our community by increasing business opportunities focused on energy efficiency and renewable energy and by reducing the energy costs of all Golden businesses. Specifically:

1) Encourage local businesses to improve their sustainability and profitability by developing their offerings of sustainable products and services and their use of sustainable products, services, and practices.

2) Create/Attract new jobs and businesses in the sustainability sectors.

Notable Achievements

✓ Held an Economic Health Summit in November 2012 to collaborate with community economic groups and identify cross-benefit projects and relationships. Key conclusions include:
  o Pooling messages – how can we promote programs with similar goals?
  o Work on group synergy for better communication and collaboration
  o Define economic health through the Golden Vision 2030 process.

Next Steps

- Further pursue a common vision for “sustainable economic health” in Golden by partnering with other existing groups dedicated to economic growth and health.
- Support Shop Local efforts by continuing the Reusable Bag program to promote local business and reduce plastic bag waste.
- Implement the LED grant program to help businesses take advantage of expiring lighting rebates from Xcel Energy.
- Work with GURA to promote its energy efficiency grants for downtown buildings.
- Reward businesses for increasing their use of alternative transportation both for operations and for employee use.

Infinite Harvest
4688 Highway 93
Is developing a hydroponic vegetable farming system using shipping containers, solar, wind, and LED lighting to help grow veggies in almost any climate.
www.infinite-harvest.com

Williams Form Engineering
215 Rooney Road
Manufactures anchoring systems using recycled plastics and is the largest customer of the only plastics recycler on the Front Range.
www.williamsform.com

2012 – By the Numbers
To increase our community’s energy efficiency and our use of renewable sources of energy. Specifically:

1) Reduce the City of Golden’s energy usage by 25% and increase to 50% the proportion of its energy use derived from renewable energy sources within ten years (25 x 50 in 10).

2) Reduce overall community energy usage in Golden by 20% and increase to 20% the proportion of its energy use derived from renewable energy sources within ten years (20 x 20 in 10).

Notable Achievements

✓ Effective use of state and national experts in renewables to make recommendations to Golden for the best renewable energy strategy – aka the Renewable Energy Technical Advisory Committee (RETAC) report.

✓ 2007 Greenhouse Gas Emission Inventory indicated energy use by sector and provided direction for community programs.

✓ Traffic signals retrofitted to LED.

✓ 90 panels of solar thermal installed on the Community Center roof to supplement pool heating.

Source: Xcel Energy
ENERGY GOALS, CONTINUED

✓ Occupant sensors installed in all city facilities to conserve energy.

Next Steps

- Continue to review recommendations of the Renewable Energy Technical Advisory Committee and identification of priority projects.
- Evaluate opportunities to encourage greater energy efficiency and installation of renewable energy systems by commercial and industrial energy users in Golden.
- Conduct outreach with the largest commercial energy consumers in Golden to take advantage of current energy rebate programs.
- Assemble a solar photovoltaic package for Council consideration to make progress toward the municipal energy goals and take advantage of the remaining Xcel Energy solar incentives.
- As part of a 4-year effort, finalize a community solar garden proposal through City Council and submit to Xcel Energy in June 2013. The ideal community solar garden will be 500kW, sited on 3-5 acres, and provide wide access to the public for long and short term solar investment.

2012 – By the Numbers

Solar Permits, total

Electricity consumption in Golden by Sector

Source: City of Golden Building Department

Source: 2007 City of Golden GHG Inventory Report

Over 70% of the commercial energy use is attributed to 6 companies in Golden.
SOLID WASTE & RECYCLING GOALS

To reduce our solid waste stream contribution through the expanded use of recycling programs, waste diversion programs, and other tools. Specifically:

1) Reduce our solid waste stream contribution by 25% in ten years.

Notable Achievements

✓ More than 3,400 households participate in the single hauler PAYT program.
✓ Regular pharmaceutical roundup events to divert drugs from the local landfill and prevent groundwater contamination.

Next Steps:

• Advance efforts to implement zero-waste event requirements for public events held in Golden, building upon preliminary guidance provided to event sponsors last year. Define what zero-waste means to Golden.
• Provide recommendations to City Council for the adoption of a city-wide pay-as-you-throw ordinance in order to affect solid waste generation by sectors of the community not currently impacted by the Waste Management pay-as-you-throw service.
• Support the development and implementation of recycling services for downtown businesses.

2012 – By the Numbers

PAYT Program Diversion Rate

Source: EDS Waste Solutions

Pounds of household hazardous waste collected

Source: Rooney Road Household Hazardous Waste Report, 2007-12
• Find assistance for elderly users who need yard waste collection (getting materials to the curb). Tap schools and scouts for help.

• Research partnerships to bring back a satellite compost operation. Rooney Road closure of A-1 Organics.

• Promote a second Reusable bag program as a fundraiser for schools and promotion of local retailers.

What is e-waste?
Discarded electrical or electronic devices, including scrap such as discarded computers, phones, & entertainment devices.

2012 – By the Numbers

Pounds of green waste composted

Source: Rooney Road Household Hazardous Waste Report, 2007-12
ALTERNATIVE TRANSPORTATION GOALS

To increase the ability of Golden residents and visitors to travel to and through Golden using alternative transportation. Specifically:

1) Reduce the communities total Vehicle Miles Traveled by 15% in ten years.

Notable Achievements

- Adoption of the Complete Streets design for street reconstruction projects.
- Implementation of Walkability and Bike Task Force recommendations through capital planning efforts.
- Support for the Community Call & Ride Bus.
- Bike Corrals. Constructed through the 2011-2012 USA Pro Cycling Challenge events in Golden, new bike rack systems with a capacity to store more than 300 bikes are now available for large city events.
- Bike Storage at the W Rail Line. Racks are available at the platform, bike storage containers are inside the parking garage, and all of the community circulator buses and the light rail trains allow bikes.
- Participation and promotion of DRCOG’s annual Bike To Work Day.

Next Steps

- Recalculate VMT after the new W Light Rail line is operational. Include ridership using new Community Call and Ride bus.
- Assist in the promotion and implementation of the new Community Call and Ride bus system.
- Analyze increasing alternative transportation amenities along South Golden Road through Pleasant View to better promote shopping in Golden.
- Encourage Complete Streets projects through the South Golden Road corridor.

Source: CSM EPICS Program model
WATER CONSERVATION GOALS

To ensure that Golden sustains a clean, stable water supply into the future. Specifically:
1) Reduce Golden's per capita water use by 15% in 5 years. (target: 157 gal/day)
2) Maintain better than regulatory water quality from water treatment plant to end-user.
3) Increase the efficiency of the water delivery system.
4) Improve the health of the ecosystem associated with the Golden waterways.

Notable Achievements
✓ Pilot program for advanced meter infrastructure (AMI) – replacing old water meters with new technology which will increase household access to water consumption data.
✓ Completed the Golden Ecosystem Health Plan, prioritizing waterways and drainage areas for conservation and revegetation.
✓ Annual waterwise programs for the public, including the Greener Golden event; Garden-In-A-Box discounts, free irrigation audits, and periodic water conservation seminars.
✓ Proactive water infrastructure leak detection and repair programs.

Next Steps
• Prioritize and provide funding assistance to projects within Ecosystem Health Compliance Plan.

2012 – By the Numbers

Water consumption per capita (gal/day)

Source: City of Golden Water Department

Water Conservation Program Participants

Source: Center for ReSource Conservation Annual Reports
• Address climate adaptation related to water use and identify approaches and methods that can be used to plan for and respond to challenges presented by climate change.
• Support for AMI infrastructure funding and provide community education and outreach in advance of implementation.
• Evaluate the data in context with industry calculations for weather normalization, realizing that the success of the water conservation goal varies from year to year given the variable amount of annual precipitation.
• Strengthen efforts to educate residents about ways to reduce outdoor water use.
• Evaluate a water loss program for residential and commercial consumers.

[Graph showing Pharmaceutical Roundups from 2009 to 2012]

Source: Golden Police Department

Golden’s water treatment plant received the Director’s Award from the Safe Water program for exceeding EPA and CDPHE standards.
MID TERM GOAL REVIEW & RECOMMENDATIONS

Based on its review of each of the sustainability goals, the Board makes the following recommendations:

1. **Green Buildings: Retain current goals.** Current goals have been met; no changes are needed. The green building goals set a standard for the development community to meet and should remain in place. Additionally, the prescriptive requirements of the goal commit the City to adopting up-to-date building codes and amending the zoning code to integrate innovative green building practices.

2. **Education & Communication: Retain the first goal to create effective, ongoing two-way communication.** Drop the 2nd goal about supporting the Community Working Groups; this goal is no longer relevant because the Working Groups are no longer seated. The Board will continue to refer back to the Working Group recommendations.

3. **Economic Health: Retain goal** to assist business sustainability and adopt different metrics to measure growth in the green employment sector.

4. **Energy Efficiency and Renewable Energy Development: Retain current goals, but extend the timeline for the municipal energy goal.**
   - Milestones needed
   - RETAC recommendations

5. **Solid Waste & Recycling: Retain current goal.** From the available data, the Board believes that the City has met the waste diversion goal, however, the City should continue with efforts targeting all sources of waste to meet the 25% goal in each area. In 2013, the Board will forward a recommendation to expand access to recycling services through a PAYT ordinance. Although it is not possible at this time to quantify the entire community’s waste volume and diversion, the Board will continue to include metrics that demonstrate diversion as time and the budget allows. CSAB will pursue initiatives that make sense and continue with programs that the Board believes will further our progress toward this goal.

6. **Alternative Transportation: Retain current goal.**
   - VMT model needs to be rerun. Consider the difficulty of recognizing Golden’s pedestrian and bike amenities within the VMT calculation. Propose and adopt a more simplified metric to measure local VMT.
7. Water

- **Set new water efficiency goal;** deadline has passed. Identify additional metrics that include weather normalized data since water conservation is directly affected by annual precipitation. Efficiency should be changed to “unaccounted water”. Consider other industry standards such as “non-revenue water” Consider adopting the Colorado standard for water loss. This may include an energy conservation benefit with line loss improvements: less treatment = less kW/gal. “watergy”.

- **Retain goal subsets 2, 3, and 4.** These objectives set an expectation for ongoing efforts with annual increases or targets.

**Additional Recommendations**

The Board thoroughly considered the emergence of the local food concept as a priority that could be added to the City’s goals. However, there was a consensus that the topic of local food did not warrant an entirely separate goal because of its impact in many sustainability realms: water, education, VMT, energy. The Board concluded that additional metrics should be added to the existing goals, such as x% of community food supply comes from local/regional sources or x square feet of local gardens per capita. In 2013, the Board will develop these additional metrics, time permitting.

We are aware that there are many in our community that would like to serve as a member of our Board. Although the Board composition will continue to evolve over time, the reality is there will continue to be more volunteers than seats on the Board. We recommend that Council encourage these community members to consider sitting on other boards in order to serve as proponents of sustainability across all of the City’s initiatives. As the breadth of the goals indicates, sustainability doesn’t fit into a single box and it has value in everything we do.

Although no action is needed at this time, the Board also recommends that Council begin to consider the potential value of making the Community Sustainability Advisory Board a permanent board. Although the City is making great progress towards its ten-year goals, as discussed in the “Mit Term Goal Review & Recommendations” section above, it appears that at least a couple of the goals may need to be allotted additional time. Thus, the Board could provide value to the City at least through the course of the extended timelines, should they be approved by Council. Moreover, sustainability is inherently intended to be an enduring condition and the existence of an advisory board will help ensure that Golden’s sustainability achievements are lasting and durable. The City’s and community’s needs in terms of sustainability programs and initiatives undoubtedly will evolve with time as conditions, needs, and realities change. We anticipate that there will always be members of our community eager to volunteer their time to work on these important issues. We encourage Council to continue to invest in this great initiative.
City of Golden Sustainability Strategic Plan
November 4, 2010

Executive Summary
The purpose of this Strategic Plan is to investigate, identify, and develop a process of programs, investments, and initiatives that could facilitate the City’s achievement of its ten-year sustainability goals. The strategic plan will help assess the effectiveness and degree of difficulty of various approaches, providing prioritizations in the plan. The plan will be used as the basis for CSAB’s advice, suggestions, and assistance to the City in achieving its sustainability goals.

What is Sustainability?
In Golden, and indeed across the U.S. and other nations, we are faced with impacts as a result of population growth, resource consumption, and energy needs. Golden is also affected by regional impacts such as the economy, the structuring of local tax revenues, and competing needs for resources by adjacent communities.

Balancing these factors, the Community Sustainability Advisory Board has adopted the definition of sustainability as living or acting in a manner that balances improving our quality of life, a healthy vibrant community, and mindful stewardship of the natural resources and environment while protecting the ability of future generations to do the same.

CSAB Mission Statement
The mission of the Community Sustainability Advisory Board is to assist the City of Golden in achieving its ten-year sustainability goals as adopted in Resolution 1793. In order to facilitate achievement of these goals, the Board will lead, encourage, enable, and empower the citizens, visitors, and people who work in Golden, to live in a sustainable manner.

The Community Sustainability Advisory Board is made up of seven Golden residents who bring a broad perspective of sustainability expertise: Tom Atkins (chair), Karen Smith (vice chair), Susan Buhr, Hillary Mizia, Scott Morrissey, Gunter Ritter, and Chuck Baroch. CSAB meets twice each month and invites members of the public to attend and provide comments. For more information on Golden’s sustainability programs and meeting dates and times, please visit www.cityofgolden.net/sustainability.

Introduction
Under the leadership of the Golden City Council, with support from the Community Sustainability Advisory Board and participation by citizens, the City has made a long-term commitment to sustainability and environmental stewardship. With the ten-year goals, Golden recognizes both the operational challenges and opportunities that it will face in upcoming years. Nevertheless, Golden is committed to creating a set of governmental and community policies, metrics, and benchmarks that will assure that the community, businesses and residents are able to take proactive steps to meet ongoing challenges as well as capitalize on new opportunities. The City of Golden recognizes that it will obtain significant economic, social, and environmental benefits through successful integration of sustainability into our operations, investments, and day-to-day living.
In 2006, the Golden Sustainability Initiative began with over 200 residents who attended the first sustainability open house on a cold and snowy night. After four months of work, recommendations by seven community working groups were adopted by City Council in 2007. The adoption of fifteen goals over seven topic areas forms the basis for this Strategic Plan.

Among the initiatives featured in the Plan are:

- Encouraging energy efficient buildings
- Improving economic health
- Providing thorough and relevant sustainability education and communication
- Reducing energy consumption
- Increasing our commitment to renewable energy
- Reducing our solid waste
- Finding alternative methods of transportation
- Conserving water and improving water quality

Detailed goals can be found in each section of this Plan and in Resolution No. 1793, adopted by City Council on August 23, 2007 and included in Appendix A.

**Intent**

The purpose of this Strategic Plan is to identify programs, investments, and initiatives that will make measurable progress toward the ten-year sustainability goals. CSAB recognizes that the path to becoming a sustainable city is a long-term commitment which has no finite end. In striving to become more sustainable, these strategies will provide direction in the city’s consideration for new ideas and emerging technologies.

As Golden implements the initial policy initiatives, CSAB is committed to continually reviewing its policy goals in light of new technologies, scientific advances and changing local, regional, and national objectives. As a necessary part of fulfilling its mission and evaluating progress, CSAB intends to include the following:

- Review the Sustainability Strategic Plan on an annual basis and update as necessary
- Review goals and metrics in 5 years (2012), or sooner, if warranted.
- Trend performance through successive calendar years and provide an annual Sustainability Report

In future versions of the Sustainability Strategic Plan, CSAB will look for opportunities to revise or expand sustainable policies to address Golden’s current needs and abilities. Consideration of all proposed initiatives and programs will include a rigorous cost-benefit analysis and CSAB will recommend that Council adopt policies and programs that offer the greatest benefit to Golden residents and businesses.
GREEN BUILDINGS

Goals

Improve the energy efficiency and reduce the environmental impact of new and existing buildings in Golden. Specifically:

Goal 1: Ensure that within ten years 90% of all new buildings constructed in Golden each year are built to green building standards.
   Metrics: Annual report listing total number of new buildings triggering compliance with green standards. For buildings exempt from the City’s building permit process (including public schools and university buildings), data collected from each entity will be used.
   Baseline: Zero percent (0%) of new buildings meeting the green building standard.

Goal 2: Ensure that within ten years 50% of all remodels in Golden each year are built to green building standards.
   Metrics: Annual report listing total number of remodels and those triggering compliance with green standards. For buildings exempt from the City’s building permit process (including public schools and university buildings), data collected from each entity will be used.
   Baseline: Zero percent (0%) of remodels meeting the green building standard.

Goal 3: Revise Golden’s land use code to reflect the best practices in sustainability once every five years.
   Metrics: Number of amendments to Title 18 of the Municipal Code pertaining to sustainability best practices, measured annually.
   Baseline: One (1) sustainability-related code amendment in 2007.

Strategies

To better develop strategies, buildings have been divided into four general building types, recognizes that there are many more building types than the four general areas defined.

- **New and Remodeled Residential** – New construction, remodels (requiring a building permit), expansions, or upgrades for any kind of residential buildings where a building permit is required.

- **Existing Residential** - All other existing residential buildings where changes or upgrades may be made, but no building permit is required.

- **New and Remodeled Commercial/Non-Residential** - New construction, remodels, expansions, or upgrades for any kind of non-residential buildings where a building permit is required.

- **Existing Commercial/Non-Residential** - All other existing non-residential buildings where changes or upgrades may be made, but no building permit is required.
Strategies by Building Type:

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Methodology</th>
<th>Projects</th>
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</thead>
<tbody>
<tr>
<td><strong>New and Remodeled Residential</strong></td>
<td></td>
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</tr>
<tr>
<td>Review existing code, fees, HOA restrictions and Zoning</td>
<td>Maintain state of the art standard, prevent law and rule conflicts hampering sustainable practice.</td>
<td>Develop review schedule and enforce. Develop liaison with partner community for solution exchange.</td>
</tr>
<tr>
<td>Adopt Green Building Standards for New/Remodel Residential Construction</td>
<td>Maintain state of the art standard sustainable practice.</td>
<td>Identify candidate standards and involve stakeholders in selection process. Develop stakeholder discussion forum, on-line or with meeting series.</td>
</tr>
<tr>
<td>Adopt Incentive Strategies to exceed New/Remodel Construction Green Standards</td>
<td>Reduce barriers with financial incentives (fee and tax reductions), privilege incentives (exceptions), PR incentives (plague on the wall)</td>
<td>Fee waivers; develop super &quot;Sustainable Building Walk&quot;.</td>
</tr>
<tr>
<td><strong>Existing Residential</strong></td>
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<tr>
<td>Adopt Upgrade Strategies for Existing Residential Homes</td>
<td>Reduce barriers for owners to facilitate upgrade, engineering-, management-, and financial barriers</td>
<td>Develop template designs for common building types, including contract documents, identify financial incentives.</td>
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### New and Remodeled Commercial/Non-Residential

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### Existing Commercial/Non-Residential

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### Past Initiatives and Accomplishments

- Adoption of the 2009 International Building Codes, including the International Energy Conservation Code, which is estimated to be 15% more energy efficient than the previous version.
- Joint efforts with the Planning Commission, on integrating sustainability best practices into new construction and remodels for multi-family and commercial buildings and support for amendments to the Site Development Standards of the zoning section of the Municipal Code.
- Adoption of the U.S. Green Building Council’s LEED Silver standard for new municipal building projects.
- Contracted with an energy service provider, McKinstry to make energy efficiency improvements and guarantee savings for municipal buildings. The City received $500,000 from the Department
of Local Affairs to offset costs for this project, which included a new solar thermal system at the Golden Community Center.
ECONOMIC HEALTH

Goals

Improve the economic health of our community by increasing business opportunities focused on energy efficiency and renewable energy and by reducing the energy costs of all Golden businesses. Specifically:

Goal #1: Encourage local businesses to improve their sustainability and profitability by developing their offerings of sustainable products and services and their use of sustainable products, services, and practices.

Intent: This goal refers to businesses improving the sustainability of their offerings and their processes and practices (e.g., retail businesses increasing their offerings of sustainable products, manufacturing businesses improving the sustainability of their processes).

Metric: Number of outreach efforts to provide information, resources, and assistance to encourage sustainability.

Baseline: Thirty-nine (39) outreach efforts in 2007 to provide information, resources, and assistance to encourage sustainability.

Goal #2: Create/Attract new jobs and businesses in the sustainability sectors.

Intent: “Sustainability sectors” refers to any and all businesses that not only contribute to the sustainable growth of Golden as a small town community, but also promote awareness and contribute to sustainable goods and services, such as jobs in the renewable energy sector, environmental engineering, sustainability and environmental consulting, composting, organic gardening, goods made from recycled materials, outdoor education, eco building supplies manufacturing and sales, etc. City Council, staff, and Sustainability Advisory Board should interpret this goal to mean a 20% increase in the number of sustainability sector jobs in the greater Golden area, meaning the Golden city limits and the unincorporated Jefferson County commercial areas immediately adjacent to the city.

Metric: Percent growth in employment in sustainability sectors.

Baseline: Jobs identified through the Colorado State Demographer’s office and classified as sustainability-related jobs meeting the above definition. Additional work to define the number of jobs in 2007 is required.

Strategies

Several of the economic health strategies defined in this section also support the energy efficiency/renewable energy and alternative transportation goals due to the interrelated nature of these objectives.

Strategy #1: Create an effective leadership and awards program that encourages energy efficiency, use of renewable energy, and overall sustainable business practices.

Methodology: Partner with the Colorado Department of Public Health and Environment’s Environmental Leadership Program to bring Golden-based businesses to the forefront of the sustainability movement in Colorado.

Projects: Create an Economic Leadership program by working with businesses interested in participating and working with CDPHE to understand the challenges and work to design an appropriate program for Golden.
Strategy #2: Increase participation in Xcel’s WindSource program.
Methodology: Talk with local businesses about WindSource and encourage them to sign up, work with Xcel to provide information to the appropriate decision makers.
Projects: Hold informational sessions about WindSource at businesses.

Strategy #3: Encourage energy efficiency.
Methodology: Inform local businesses about Xcel’s existing Demand-Side Management programs.
Projects: Create a business-to-business local resource guide with energy auditors, manufacturers and retailers of energy efficient equipment, etc. and make this available to all businesses within Golden. Tie this directly to the awards/leadership program.

Strategy #4: Reward businesses for increasing their use of alternative transportation both for business transactions and within the employee base.
Methodology: Inform businesses of the Circulator Bus and how it can work in their favor. Tie this to the awards/leadership program.
Projects: Promote a program, such as the existing Best Workplaces for Commuters, DRCOG Ride Arrangers program, or Fort Collins’ Drive Less Challenge, to all businesses.

Strategy #5: Develop a local living economy.
Methodology: Get involved with the Business Alliance for Local Living Economies (BALLE) and meet with the three Colorado-based BALLE programs currently in action (Be Local in Fort Collins, Mile High Business Alliance in Denver, and Local First in Durango and La Plata County).

Strategy #6: Create a friendly environment to on-site renewable energy projects.
Methodology: Reduce or waive permitting costs to such projects. Publicize businesses that are undertaking on-site renewable energy.
Projects: Pilot projects involving renewable energy on-site.

Strategy #7: Recruit new businesses/start-ups to Golden that fill a specific community need.
Methodology: Identify gaps within locally provided services, potential partnerships with existing businesses to create synergy and industrial ecology, and large waste streams that could be turned into material for new businesses.
Projects: Analyze local waste streams to determine if specific materials could have local use.

Strategy #8: Partner with Economic Development Commission and the Golden Urban Renewal Authority for joint promotions.
Methodology: To avoid duplicative efforts, the Board will meet periodically to develop programs that fulfill the needs of each Board.
Projects: Promotion of the Shop Local program, downtown recycling, renewable energy cooperatives for businesses and pilot renewable energy projects. Consider adoption of additional
metrics to measure business retention.

Past Initiatives and Accomplishments

- Partnership with the Shop Local committee for joint projects highlighting reasons to support local businesses and joint marketing efforts.
- Promotion of downtown business through the City’s First Friday events.
- As part of efforts within the private marketplace, several sustainability-related business have located in Golden:
  - Proterra – a fuel cell bus manufacturer located in the Coors Technology Center.
  - Solar photovoltaic and solar thermal providers – Nine companies operate within the city limits and provide solar expertise to building owners within Golden and adjacent communities.
EDUCATION

Goals
Increase our community's awareness of and encourage commitment to actively take part in sustainability as a public value that supports cultural, economic and environmental health for all citizens. Specifically:

Goal 1: Create effective, ongoing two-way communication that informs, educates and inspires community involvement in city-wide sustainability efforts.

   Metrics: Performance Indicator: Percent change in level of knowledge of community efforts and city actions taken through community surveys.
   Baseline: A level of knowledge of community efforts and city actions to be determined through future community surveys.

Goal 2: Support the Community Working Groups in crafting community action plans that effectively foster sustainable behavior.

   Metrics: Performance Indicator: Percent of Community Working Group recommendations that have been adopted.
   Baseline: Eight (8) Community Working Group recommendations were implemented in 2007.
   Note: This goal area is considered a mechanism for achieving the other sustainability initiative areas.

Strategies and Methodologies

Strategy #1: Communication infrastructure – Develop mechanisms and resources for communication

   • Use city-wide communication avenues regularly (ex. Informer, newsletters)
   • Develop electronic means of communicating with sustainability-attentive people in Golden (ex. listserves, website)
   • Identify short to mid-term education events on basis of existing opportunities and needs and establish a schedule for developing education/communication events that focuses on the sustainability goals roughly one at a time over a two-year period. The intent is to promote a specific issue by making it the focus of a series of closely connected events.
   • Piggyback on existing well-attended venues to increase attendance (e.g. farmer’s markets, art festivals, and other Chamber events.)
   • Develop long-term strategy for two-way influence: education events that actively shape the Sustainability Initiative. The program should be informed by input from participants.
   • Develop means for visitors to Golden to engage in sustainable behavior (e.g. signage)

Strategy #2: Public – Provide on-going opportunities for people in Golden to participate in sustainability-oriented community events and initiatives

   • Provide a suite of workshops and events in which Golden residents and visitors participate
   • Promote sustainability as an element of public events in Golden
   • Develop sustainability-oriented communities to inform and support sustainable behaviors
Strategy #3: K-12 and Informal Education – Develop mutually beneficial relationships with local schools and with environmental education providers

- City staff and CSAB members regularly communicate with local educators
- Local students are engaged in sustainability initiatives
- Local education providers are engaged in community workshops and events
- Develop sustainability science fair projects to integrate sustainability into local curriculums
- Sponsor a sustainability art contest (e.g. using renewable or recyclable materials.)

Strategy #4: Higher Education – Engage higher education students in city sustainability initiatives

- Local undergraduate and graduate students are engaged in sustainability initiatives, as a means of learning and as participants
- CSAB and CSM Sustainability Board are aware of and support one another’s initiatives

Strategy #5: Commercial sector – Develop sustainability-oriented partnerships and communication avenues with commercial sector entities.

- Use sustainability communication mechanisms to support the commercial sector in Golden
- Develop communication partnerships between CSAB and community commercial organizations

Strategy #6: Evaluation – Use sound evaluation practices to improve the CSAB education program and to measure outcomes.

- Establish and implement an evaluation plan
- Review findings regularly and incorporate into CSAB programming

Past Initiatives and Accomplishments

- Regular inclusion of sustainability information in the Informer, Golden Transcript and electronic newsletters and news items.
- A new look. CSAB created a logo that represents the many interests of sustainability and provides resources through the sustainability section of the Golden Informer.
- City-wide educational / promotional campaign were implemented for reducing solid waste, energy reduction (promote CFL use), alternative transportation and water consumption.
- Engage School of Mines EPIC students in wind turbine study; engage CU Boulder and CU Denver graduate students in sustainability planning and research
- CSAB has supported Shop Local campaigns through communication and coordinated efforts (ex. Community gardeners are encouraged to shop at Meyer’s Hardware)
- CSAB holds joint meetings with the Economic Development Commission and Planning Commission in order to identify mutually beneficial activities such as local business development through sustainability-related projects and green building codes.
- In 2009, the City hosted a series of free sustainability workshops to provide resources and encouragement to Golden residents. Topics included learn to compost, compost with worms, improving the energy efficiency of your home, and sew your own reusable bag.
- CSAB identified support of a community garden citizen group as one of its priorities, and provided support to the group that subsequently emerged. That group established the Golden
Community Garden, which uses a vacant city parcel and provides rental plots, education, and community interaction to Golden residents.

- Annual Sustainability Awards: Individuals and businesses in Golden are honored through the annual sustainability award.
- Energy efficiency tools can be borrowed from the City’s library of products such as a Kill-A-Watt meter which measures the electric consumption of any appliance in your home or a digital infrared thermometer to identify sources of leaks around windows, doors, or vents.
ENERGY EFFICIENCY & RENEWABLE ENERGY

Goal
Increase our community’s energy efficiency and our use of renewable sources of energy. Specifically:
This goal has two components: reducing energy consumption and increasing the use of renewable energy sources (e.g., solar photovoltaic and thermal systems, wind, hydropower, geothermal, and biomass).

Goal #1: Reduce the City of Golden’s energy usage by 25% and increase to 50% the proportion of its energy use derived from renewable energy sources within ten years (25 x 50 x 10).
Metrics: For municipal energy consumption: annual consumption of electricity (MWh), natural gas (therms), and gallons of transportation fuel (both gasoline and diesel). For municipal use of renewable energy: the ratio of energy derived from renewable versus non-renewable sources.
Baseline: Electricity: 10,121 Megawatt Hours
Natural gas: 235,416 Therms
Percent electricity from renewable energy: 0%
Transportation fuel: 80,088 gal

Goal #2: Reduce overall community energy usage in Golden by 20% and increase to 20% the proportion of its energy use derived from renewable energy sources within ten years (20 x 20 x 10).
Metrics: For community energy consumption: annual consumption of electricity (MWh), natural gas (therms), and vehicle fuel efficiency (average miles per gallon for privately-owned vehicles). For community use of renewable energy: energy derived from sum total of all private solar installations captured by the City’s building permit system, other renewable energy projects, Xcel WindSource subscriptions, and Excel Energy RPS standard achievements.
Baseline: Electricity: 259,081 Megawatt Hours
Natural gas: 16,145,250 Therms
Percent electricity from renewable energy: 0.1%
Fuel efficiency: 25 mpg

Strategies and Methodologies

City of Golden:
Strategy #1. Continue with energy efficiency and renewable energy investments for city-owned facilities.
• Follow-up with additional recommendations from the performance contract with McKinstry Inc.
Strategy #2. Seek partnerships with local organizations adjacent to city-owned reservoirs to determine feasibility of large-scale renewables.
Strategy #3. Comply with adopted standard of LEED Silver for large renovations and strive for high energy performance in new construction.

Community:
Strategy #1. Increase Energy Reduction through Sector-Specific Initiatives
• Analyze energy consumption by sector (e.g., residential, non-municipal governmental, commercial, industrial) to determine relative contributions to energy use.
• Establish priorities for sustainability initiatives to target sectors responsible for greatest energy consumption.
• By the end of 2011, develop and implement 2-3 new initiatives related to energy conservation targeting the top 3 priority sectors.

Potential projects include:
• Promote use of home energy meters to help consumers monitor electricity use and encourage behavioral change.
• Promote Xcel Energy’s demand-side management (DSM) program to help industrial businesses maximize their energy efficiency.

Strategy #2. Increase Distributed Generation of Renewable Energy
• Use the results from Task 1 to develop strategies to increase distributed generation among top 3 priority sectors.
• Determine which technologies to emphasize (e.g., which of solar PV, solar thermal, geothermal heat pump, and wind technologies are most viable at the distributed generation scale).
• By end of 2011, develop and implement 2 new initiatives related to distributed generation targeting the top 3 priority sectors.

Potential projects include:
• Develop program to educate homeowners and small businesses on the basics of installing renewable energy, including incentives, financing options, and applicable laws (e.g., HOA provision of HB1270).
• Investigate the potential for a public/private partnership to develop a Community Solar Garden in Golden.

Strategy #3. Increase Renewable Energy Subscriptions
• Develop campaign to increase the number of households and businesses subscribing to Xcel’s WindSource program by 10% by the end of 2011, with 3% increases in enrollment in each of the subsequent years.

Strategy #4. Evaluate Community-Scale Renewable Energy Opportunities
• In 2011, conduct a study assessing the potential for developing a large scale renewable energy project on City property, on County property, or on land that could be purchased by the City and/or County.
• Seek support from the DOE Office of Energy Efficiency and Renewable Energy Technical Assistance Program.

Strategy #5. Increase Use of Alternative Fuel or High Fuel Efficiency Vehicles
• Support local fueling stations for electric vehicles and alternative fuel vehicles.
• Research priority parking program for alternative or high efficiency vehicles.
• Evaluate potential programs providing incentives to consumers to purchase alternative fuel or high fuel efficiency vehicles (e.g., priority parking spots around town).
• Evaluate infrastructure requirements to support broader use of alternative fuels vehicles (e.g., electric outlets in parking lots, alternative fuel retailers).
• Develop education program regarding the cost and benefits of alternative fuel or high fuel efficiency vehicles.
Past Initiatives and Accomplishments

For City buildings:
- Projects implemented as part of the Performance Contract by McKinstry Inc include lighting upgrades, a Community Center pool lighting retrofit, exterior light upgrades, solar pool heating and pool systems optimization, replacement of rooftop air handlers, heating and building comfort optimization and improvements, replacement of inlet guide vanes with variable frequency drives, controls upgrade centralization, installation of vending misers, and domestic hot water system optimization.
- Creation of a comprehensive database of energy consumption, including electricity, natural gas, and diesel use and overall annual carbon measurements. The database is used to analyze departmental energy use and to measure impacts of individual energy reduction efforts.

For Community-wide programs:
- *Increase Energy Reduction through Sector-Specific Initiatives: Home Energy Audits.* The City of Golden provided $60 rebates to 50 homeowners who obtained an energy audit through Xcel Energy program. Homeowners were able to use the audits to make informed decisions about the best energy efficiency projects for their homes. The City of Golden is using data collected from the audits to plan for future programs.
- *Increase Energy Reduction through Sector-Specific Initiatives: Free Energy Efficiency Kits.* In 2009, Golden partnered with Xcel Energy to provide free energy efficiency kits to 400 residents. Volunteers canvassed the Golden Hills and Golden Heights neighborhoods to deliver kits that contained six compact fluorescent light bulbs, two sink aerators, and a low-flow showerhead.
- *Increase Energy Reduction through Sector-Specific Initiatives: University of Colorado Denver (UCD) Greenhouse Gas (GHG) Emissions Inventory Study.* The City of Golden partnered with the UCD’s Center for Sustainable Infrastructure Systems and the Colorado Municipal League, through a Wal-Mart donation, to prepare a GHG emissions inventory for the City of Golden for the baseline year of 2007. As part of this study, the UCD researchers quantified energy use and renewable energy generation by three key sectors (residential, commercial, and industrial) and identified specific actions that can be implemented to simultaneously reduce GHG emissions and assist the City’s efforts to meet its community goals related to energy efficiency and renewable energy. This report will be instrumental in establishing sector-specific initiatives for energy reduction (and for increased use of renewable energy).
- *Increasing Distributed Generation of Renewable Energy: Small Wind Pilot Project.* In early 2010, 450 Colorado School of Mines students were paired with ten Golden business owners to recommend and design a commercial wind renewable energy system.
- *Increasing Distributed Generation of Renewable Energy: Solar Permit Fee Waivers.* In 2009 and 2010, CSAB provided funding to offset the cost of building permit fees for homeowners who installed solar photovoltaic or solar thermal systems. Through this effort, over 40 homeowners took advantage of more than $30,000 in fee waivers.
SOLID WASTE & RECYCLING

Goal
Reduce our waste stream contributions by 25% in ten years.

Metrics
Reduce our solid waste stream contributions through expanded use of recycling plans, waste diversion programs and other tools. Measure volume/tons of garbage, recycle and green waste materials (Editors note: Having one waste hauler will make it simpler to measure the volume of waste today. Earlier data on volume/tonnage may be harder to quantify accurately)

Baseline
The baseline that has been established from which to measure progress is about 29.7 million tons in 2007. This includes all types of waste that has been going to the land fill. It may not include the waste, such as aluminum and glass that was recycled by Coors, Foss etc.

Strategies:

Strategy #1: Monitor the new Pay-As-You-Throw trash program
   Closely monitor the new trash program and evaluate whether it is meeting all of the objectives considered in developing and launching the program. Specific elements to monitor include cost to residents, overall quality of service, subscription preferences, final disposition of recyclable materials, and more.
   Methodology: Analyze annual reports from waste hauler to measure volume by neighborhood area and implement recycling incentive program as described in the waste hauler contract to increase participation in recycling services.

Strategy #2: Develop a comprehensive recycling program for downtown merchants and other commercial/industrial businesses
   Evaluate cost-effective methods for providing recycling service to downtown merchants to meet an already identified need. In addition, the City should evaluate potential programs to promote recycling by other commercial/industrial businesses in Golden.
   Methodology: Address lack of space concerns through a block-by-block approach to facilitate ease of participation and allow intra-block cooperation for collection service.

Strategy #3: Evaluate next steps for Pay-As-You-Throw program.
   The Board will research a city-wide PAYT ordinance to address multi-family complexes of 8 or more units and commercial buildings.
   Methodology: Research cost-benefits of a city-wide PAYT ordinance to allow large multi-family residential areas and commercial areas to have access to recycling service and survey residents for additional needs of expanded service.

Strategy #4: Promote Zero Waste events in Golden
   Establish Zero Waste standards for all events held in Golden.
Methodology: Work with event organizers to eliminate or reduce the use of disposables and have comprehensive waste stations (recycle, compost, trash) at all events.

Strategy #5: Endorse a shopping bag reuse program.
This program will target consumers and retailers to use cloth or plastic bags for use, primarily to transport products from the stores to home.
Methodology: Create a fundraiser bag program to benefit R-1 schools, with costs offset by retailer sponsorships. Partner with Shop Local group, Golden public schools, and Golden retail outlets to sell bags and create awareness for waste reduction.

Strategy #6: Create a compost program.
The city/waste hauler will set up a program to collect material for composting (grass clippings, organic wastes) and transport it to a local commercial compost operation.
Methodology: Provide resources for residents to compost at home. Research cost and benefits for a local drop-off site, possibly in partnership with A-1 Organics or a local commercial compost operator. Evaluate opportunities to use end-product compost locally.

Strategy #7: Park Recycling Pilot Program
To determine the viability of adding recycling collection service to all city parks, the Board will fund a pilot program to add recycling service to one or more of the City parks.
Methodology: Implement recycling program for a trial period and evaluate the results to potentially expand recycling service to other city parks. Partner with local youth groups to implement the pilot program.

Past Initiatives and Accomplishments

- Expand access to recycling service. In 2010, the City entered into a contract with EDS Waste Solutions for waste and recycling service, in part, to provide curbside service to all residential households in the program. In addition, optional services to collect compost at the curb and a twice-annual collection of yard waste are included.
- Adopt a Pay-As-You-Throw (PAYT) program. In September 2010, the City implemented the PAYT to allow residents more control over their waste collection costs and to help the city achieve the solid waste goals of 25% by 2017.
- Encourage downtown recycling. As part of a Golden Urban Renewal Authority initiative in 2010, GURA placed containers to collect waste and recycle material Washington Avenue as part of a streetscape project.
ALTERNATIVE TRANSPORTATION

Goal
Increase the ability of Golden residents and visitors to travel to and through Golden using alternative transportation. Specifically:

- Reduce the community’s total Vehicle-miles Traveled by 15% in ten years

Although this goal specifies only a reduction of vehicle-miles traveled (VMT), it also calls for promotion of the use of alternative means of transportation. The goal is not broken down into City and community components, but we may want to monitor City VMT as a key component. The transportation goal also contributes directly to the energy reduction goals from fuel consumption.

Metrics
1. Annual vehicle-miles traveled within the City of Golden on trips either originating or terminating in Golden.
2. Total gallons of fuel consumed through municipal operations, annually.

Baseline
Using the EPICS model described below, we have estimated the community total VMT in 2007 to be 486,003, which incorporates the regional DRCOG data. Based on vehicle fuel efficiency provided by DRCOG, the average fuel efficiency in 2007 was 25 mpg. The total gallon of fuel consumed through municipal operations in 2007 was 80,088 gal.

Strategies
Strategy 1: Use the Excel metrics model developed in 2010 to monitor VMT annually and determine the need for additional VMT-reduction programs.

Strategy 2: Provide input to the Energy goals by ascertaining an average vehicle fuel efficiency that can be reasonably used to represent travel in Golden. Use the fuel efficiency values along with VMT to estimate total fuel consumed as input to the Energy goals.

Strategy 3: Support the use of alternative transportation
- Monitor the Golden Circulator Bus studies and support as needed. Encourage use of the circulator bus for local transportation needs beyond light rail.
- Encourage light rail use in Golden as soon as it is available
- Work with the Colorado School of Mines to encourage them to provide on-campus circulator bus facilities, especially from Mines Park to the main campus
- Support bike-to-work (and bike-to-shop) efforts as appropriate
  - Endorse and support an effort by the Golden Optimist Club which provides clean, used bikes to any resident who requests one. A component of the Optimists’ program provides bikes to students of the Colorado School of Mines, thus reduces the need for using a car on campus.
  - Recommend additional bicycle facilities at RTD stops to encourage commuters to use the bus system
  - Evaluate and support efforts to provide a connected bike trail system that can function well for bike-to-work.
o Investigate Best Workplaces for Commuters (BWFC), a program initiated by DOT and EPA and run by National Center for Transit Research at the University of San Francisco. Determine whether we could enlist the participation of several top employers.
o Determine whether a City-wide education effort could influence residential drivers’ behavior to increase their use of public transportation and bicycles. Coordinate timing with RTD’s LRT startup and the possible Golden circulator bus.

Strategy 4: Support a “shop local” campaign to encourage residents to reduce travel for as many shopping needs as possible.
- Work with GURA and the Downtown Merchants Association to promote awareness of the sustainability benefits of supporting shops that provide services for local residents, as opposed to targeting only tourists.

Strategy 5: Evaluate additional future programs to encourage VMT reduction
- Individualized Travel Marketing Program.
- Travel offsets
- Pay-as-you-drive auto insurance
- Transit-oriented development policies

Past Initiatives and Accomplishments
- VMT baseline analysis by Colorado School of Mines students in the EPICS program
- Initial support for the Golden Circulator bus
- Collaboration with local efforts to support electric charging stations at the Jefferson County Light Rail Station
- Develop a metrics model to measure VMT that can be used to monitor VMT on an annual basis.
- Methodology:
  o Use the City’s vehicle count data, which is measured annually at consistent sites, along with a descriptive model of the City’s street network, to calculate VMT by extrapolation and interpolation.
  o Engage CSM EPICs class to develop a model for these calculations. An Excel-based model is currently in use.
  o Rough-check the model against the DRCOG estimates.
  o Exclude pass-through traffic in order to restrict the analysis to trips that start or terminate in Golden. This allows the inclusion of residents, visitors, and employees, while excluding traffic passing through Golden without stopping (e.g. travelers on freeways such as U.S. 6, S.H. 58, S.H. 93, etc.).
WATER

Goals: Ensure that Golden sustains a clean, stable water supply into the future. Specifically:

Goal 1: Reduce Golden’s per capita water use by 15% in 5 years. (Applies to treated water as consumed by all uses within city limits.)

  Metrics: Number of gallons, annually, for residential uses.

  Baseline: 2007 Actual: 1,292,329,100 Gal consumed; 982,299,000 Gal treated.

Goal 2: Maintain better than regulatory water quality from water treatment plant to end-user. (Stricter than both state and federal standards)

  Metrics: Compliance with Clean Water Act (CWA) regulations, A Partnership Through Clean Water Agreement, daily water sampling procedures, water monitoring station results, and amount of emerging contaminant education.

  Baseline: Water quality data that demonstrates compliance with the adopted metrics.

Goal 3: Increase the efficiency of the water delivery system. Includes water infrastructure (pipes, valves, pump stations) from reservoir to plant and to end user, which is a reflection of public and private water line losses.

  Metrics: Number of projects targeting reductions in water loss, dollars of investment in water infrastructure maintenance (including asset management and capital investment), and projects to reduce private side service line losses.

  Baseline: 2007: 76% efficient

Goal 4: Improve the health of the ecosystem associated with the Golden waterways. Health will be defined by more than one specific metric to cumulatively measure ecosystem indicators

  Metrics: Number of projects shown to promote the health of the Golden waterway ecosystem, number of stream or ditch restoration projects, channel maintenance programs, and erosion control plans for in-city locations and adjacent to city reservoirs

  Baseline: To be determined.

Strategies

Strategy #1: Educate residents about ways to reduce outdoor water use.

Methodology: Provide seasonal tips in water bills, provide information on City sustainability website, publicize rules to reduce irrigation evaporation (i.e. acceptable hours, watering days).

Projects: Develop seasonal water tips, develop City water conservation website

Strategy #2: Tie water pricing to consumption to send market signal to curb wasteful use.
Methodology: Work towards long-term billing improvements to allow eventual shift to inverted block rates
Projects: Investigate monthly meter-reading software, commission analysis of revenue implications of tiered rates, and identify areas of potential financial savings.

Strategy #3: Use City parcels to publicize the aesthetic value and environmental benefits of low-water landscapes.
Methodology: Evaluate potential areas of opportunity for turf replacement or demonstration xeric gardens.
Projects: Work with the Parks and Recreation Board to identify potential parcels, fund vegetation mapping.

Strategy #4: Provide increased and well-publicized opportunities for residents to report water waste
Methodology: Increase awareness and importance of reducing water waste. Reduce barriers to allow citizens to recognize and act on water waste.
Projects: Create and publicize a water waste hotline.

Strategy #5: Take steps to better understand to better understand the impact of state water laws on Golden, and advocate for Golden’s participation in forthcoming pilot projects.
Methodology: Lobby state legislature in favor of additional pilot projects to support gray water and rainwater use in Golden.

Strategy #6: Provide incentives to reduce indoor water use.
Methodology: Provide rebates for high-use appliances; provide free/reduced cost faucet aerators and low-flow showerheads to residents
Projects: Develop rebate program, find discount opportunities or bulk purchases of efficient fixtures, and explore partnerships with nonprofits to provide resources to residents.

Strategy #7: Target high water use industries
Methodology: Develop voluntary car wash certification program, with additional industries to be certified in the future.
Projects: Develop a certification program to provide appropriate water conservation goals and recognize companies for their conservation efforts.

Strategy #8: Set rules to reduce water use within new developments
Methodology: Require soil amendments to reduce irrigation needs
Projects: Evaluate existing landscaping code requirements for effectiveness and make recommendations to Planning Commission. Assemble a water-wise informational packet for landscapers and developers.

Past Initiatives and Accomplishments
• Annual compliance with the City’s Partnership For Safe Drinking Water agreement, to exceed Clean Water Act requirements.
• Annual partnership with the Center for ReSource Conservation to provide water conservation communication and consultant expertise
• Annual free irrigation audits to Golden residents through the Slow The Flow program
• Annual discount program for Golden residents to purchase xeric plants through the Garden In A Box program each spring.
• Earth Day promotion in 2009 to provide water conserving fixtures such as low-flow showerheads and sink aerators to over 400 Golden residents.
Appendix A – RESOLUTION NO. 1793

A RESOLUTION OF THE GOLDEN CITY COUNCIL SETTING CITY-WIDE SUSTAINABILITY GOALS FOR THE NEXT TEN YEARS

WHEREAS, the Golden City Council recognizes the current threat to our environment and resolved in early 2007 to place Golden in the forefront of global communities willing to do their part to help make a difference, and

WHEREAS, the City Council recognizes that local government actions taken to reduce greenhouse gas emissions and increase energy efficiency provide multiple local benefits by decreasing air pollution, creating jobs, reducing energy expenditures, and saving money for the local government, its businesses, and its residents, and

WHEREAS, Golden defines sustainability as an attempt to meet the needs of the present without compromising the ability of future generations to meet their own needs, and

WHEREAS, Council wants to begin an aggressive ten-year program with clear goals, and

WHEREAS, since February of this year more than 60 citizens have devoted countless hours to refining Council's original proposed goals and suggesting programs for achieving them.

THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GOLDEN, COLORADO:

Section 1. Golden intends to meet the following Sustainability Goals:

a. Improve the energy efficiency and reduce the environmental impact of new and existing buildings in Golden. Specifically:
   1) Ensure that within ten years 90% of all new buildings constructed in Golden each year are built to green building standards.
   2) Ensure that within ten years 50% of all remodels in Golden each year are built to green building standards.
   3) Revise Golden's land use code to reflect the best practices in sustainability once every five years.

b. Improve the economic health of our community by increasing business opportunities focused on energy efficiency and renewable energy and by reducing the energy costs of all Golden businesses. Specifically:
   1) Encourage local businesses to improve their sustainability and profitability by developing their offerings of sustainable products and services and their use of sustainable products, services, and practices.
   2) Create/Attract new jobs and businesses in the sustainability sectors.

c. Increase our community's awareness of and encourage commitment to actively take part in sustainability as a public value that supports cultural, economic and environmental health for all citizens. Specifically:
1) Create effective, ongoing two-way communication that informs, educates and inspires community involvement in city-wide sustainability efforts; and

2) Support the Community Working Groups in crafting community action plans that effectively foster sustainable behavior.

d. Increase our community's energy efficiency and our use of renewable sources of energy. Specifically:

1) Reduce the City of Golden's energy usage by 25% and increase to 50% the proportion of its energy use derived from renewable energy sources within ten years (25 x 50 in 10).

2) Reduce overall community energy usage in Golden by 20% and increase to 20% the proportion of its energy use derived from renewable energy sources within ten years (20 x20 in 10).

e. Reduce our solid waste stream contribution through the expanded use of recycling programs, waste diversion programs, and other tools. Specifically:

1) Reduce our solid waste stream contribution by 25% in ten years.

f. Increase the ability of Golden residents and visitors to travel to and through Golden using alternative transportation. Specifically:

1) Reduce the communities total Vehicle Miles Traveled by 15% in ten years.

g. Ensure that Golden sustains a clean, stable water supply into the future, Specifically:

1) Reduce Golden's per capita water use by 15% in 5 years.

2) Maintain better than regulatory water quality from water treatment plant to end-user.

3) Increase the efficiency of the water delivery system.

4) Improve the health of the ecosystem associated with the Golden waterways.

Adopted this 23rd day of August, 2007.