



Reviews

Golden's Community Working Group  
Sustainability Initiative Recommendations to City Council



July 2007

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## Introduction to this Review

The following report was written to provide a general review of the City of Golden, Colorado's seven community working group's recommendations. The report was assessed on the following components.

1. Balance of Programs/Policies: NCS looked for a balance of policies between community-led and city-initiated programs.
2. Feasibility: Where applicable we have offered suggestions and case studies to support successful implementation of programs.
3. Language Evaluation: This report was written with conscious attempt to utilize appropriate vocabulary of the receiving audience.

Overall NCS was very impressed by the recommendations of the working groups. Their recommendations were well thought through, showed a strong knowledge of best practices and approached sustainability from a practical forward looking standpoint. Golden is incredibly fortunate to have a collection of well educated, professional citizens actively engaged with their city.

NCS' overall recommendation is to combine the seven areas identified to ensure an integrated whole-system approach to becoming a sustainable community. Taking a systemic approach will maximize success, insure costs effectiveness and increase longevity of Golden's implementation of the Sustainability Initiative. By taking a systematic approach the city will maximize effectiveness with program budgets and staff time, as well as increase value for the community (and staff) by addressing multiple sustainable topics as often as reasonably possible per scenario.

NCS recommends a review of potential federal and state climate change legislation. Politicians from both major parties have been regularly promoting the need for "global warming" legislation. NCS feels that the City of Golden is very likely to end up considering other environmental mandates linked to greenhouse gas emissions in the next few years. The recommendations in the below plans include tactics that could easily fulfill these mandates. NCS recommends that the City of Golden include "climate protection" language in their Sustainability Initiative plan to ensure that the eventual prioritization and implementation takes advantage of these tactics in fulfilling those potential requirements.

This report is designed to serve as an outside review to city council and to provide insight and recommendations of how the City of Golden should proceed with their sustainability initiative. NCS looks forward to being a part of this process.

To read more about Natural Capitalism Solutions see: [www.natcapsolutions.org](http://www.natcapsolutions.org)

Respectfully submitted,

*Brianna Buntje*

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# 1. Buildings

## Goals:

- Ensure that within 10 years, 90% of all new buildings constructed in Golden each year are built to green building standards
- Ensure that within 10 years, 50% of all remodels in Golden each year are built to green building standards
- Revise Golden's land use code, to reflect the best practices in sustainability, once every five years

## Recommendations:

### City Initiated:

- Sustainability practice review of codes (every 5 yrs)
- Adopt LEED standards for non-residential buildings and NGBS for residential buildings
- Point of sale green audit program for residential buildings
- Develop green building incentives to promote going beyond standards
- Develop residential upgrade strategies/ incentives / education

### Community Led:

- None, though community will likely participate in development of all programs, especially real estate community

## Evaluation Summary:

NCS was extremely impressed by the Building working group's recommendations. They revealed a strong understanding of best practices and how to accomplish the goals desired. Recommendations as laid out will enable city and community led agencies to address the initiative as a whole.

## After close review NCS offers the following specific comments:

1. NCS supports the recommendation to start with existing standards such as LEED and adapt them to higher energy efficiency standards that fulfill the City of Golden's building goals for new and existing buildings.

2. NCS agrees with the recommendation to review existing codes and eliminate codes that limit or prevent sustainable construction or remodel. Outdated codes that have not been modified are common and updating them can be a cost effective action that would encourage new green building. Codes commonly include: bans on white roofs, grass and watering requirements for lawn that discourage xeriscaping, zoning that discourages density, and prescriptive codes that discourage innovative ways to meet energy reductions.
3. NCS recommends the integration of building, transportation, water and energy plans so the City of Golden can take advantage of the cost effective synergy available from holistic sustainability planning. NCS' recommendation will be much more cost effective to implement successfully by including regional transportation planning to address Golden citizen commuter trends and business supply routes.
4. NCS recommends an integrated review of energy and building plans to ensure market structure does not provide incentives to builders who do not consider energy efficiency. And instead provides market mechanisms, incentives or zoning requirements to encourage climate protection and energy efficiency.
5. NCS recommends an investigation of the need for businesses to have off-balance-sheet capital sources (i.e. loan funds, public or non-profit Energy Service Corporations (ESCOs), and enhanced access to for-profit ESCOs for energy efficiency investments in existing buildings.
6. Offering incentives to exceed standards will only be effective once standards are securely in place. Although as the Building working group mentioned incentives to encourage green building, construction can be a cost effective tool. Common incentives include priority status in permitting and review process.
7. Point of Sale Audits can be a useful policy to enact, but may be more easily adopted after greater education of the community about building standards and energy efficiency. Considerations will need to be made for building owners that have neither the capital nor time to implement findings of the audit.
8. NCS recommends mention of climate change in the Building section of the City of Golden's Sustainability Initiative. Buildings in the U.S. account for almost half of greenhouse gas emissions and are a major contributor to climate change.

## Conclusion:

NCS feels the Building working group's recommendations are excellent and detail proven green building strategies. NCS feels that first evaluating and modifying existing codes that limit sustainable buildings and development is a high priority to eliminate out dated requirements. NCS also recommends establishing clear building requirements for existing and new residential and commercial buildings. This is essential for Golden to immediately begin working towards a sustainable community.

## **CASE STUDY: Frisco, Texas**

### **Green Building Standards**

While the town has been around for over 100 years, it has seen a significant amount of growth in the past few decades. As of 2007, this Dallas suburb has a population is 34,153 people. Since 2000, it has had a population growth of 102.4%. In its recent growth, sustainable practices have been a focus point for the city.

#### *Commercial Green Building Program*

The Commercial Green Building Program's purpose is to set minimum standards for energy efficiency, mitigation of the urban heat island effect, conservation of water and to use waste recycling for new construction when possible. The policy took affect for all new building plans on November 27, 2006, and applies to all new non-residential and multi-family building projects. Failure to follow the new building codes can result in fines from \$500 to \$2,000 per day, until building compliance is met.

#### *Public Facilities Initiative*

The Public Facilities Initiative is a commitment on the City's part to "build green" by using the LEED Green Building Rating System on all future public buildings. The City's goal is to have all new municipal buildings meet LEED Silver Certification. Studies show that a 2% increase in upfront costs for green design can yield an average life-cycle savings 20%. Through the Public Facilities Initiative, the City hopes to educate citizens and set an example for future development by showing the advantages of using alternative building technologies. The recently completed Public Works Facility includes two solar thermal water-heating systems that are more cost effective, energy efficient, and environmentally friendly than gas or electric models. Other projects include the new City Hall, Library, Police Headquarters and Recreation/Natatorium Center.

#### *Green Building Standards for New/Remodel Residential Construction*

In May 2001, Frisco became the first city in the U.S. to adopt a mandatory residential Green Building Program. The "Green Building" program mandates the Environmental Protection Agency's ENERGY STAR® program requirements as the minimum building standard for new homes. Any home final platted after May 23, 2001 is a "green" home. The Green Building Program focuses on several areas including: waste reduction, pollution reduction, water conservation, energy conservation and sustainable development.

#### *Resources*

- Green Building Welcome Page-  
[http://www.ci.frisco.tx.us/projects\\_programs/green\\_building/index.aspx?id=146](http://www.ci.frisco.tx.us/projects_programs/green_building/index.aspx?id=146)
- City Ordinance for Green Commercial Building Measures-  
[http://www.ci.frisco.tx.us/uploadedFiles/Departments/Planning\\_Development/Environment al/06-10-110\\_REPEALING%2004-05-41.pdf](http://www.ci.frisco.tx.us/uploadedFiles/Departments/Planning_Development/Environment%20al/06-10-110_REPEALING%2004-05-41.pdf)
- Public Facilities Initiative-  
[http://www.ci.frisco.tx.us/Projects\\_Programs/Green\\_Building/index.aspx?id=150](http://www.ci.frisco.tx.us/Projects_Programs/Green_Building/index.aspx?id=150)
- Residential Green Building Minimum Standards-  
[http://www.ci.frisco.tx.us/uploadedFiles/Departments/Planning\\_Development/Environment al/ResGreenBuildingMinimumStandards.pdf](http://www.ci.frisco.tx.us/uploadedFiles/Departments/Planning_Development/Environment al/ResGreenBuildingMinimumStandards.pdf)

## CASE STUDY: Oakland, California Green Building Design Criteria/Incentives

In 1998, the Oakland City Council adopted a Sustainable Development Initiative as an overriding set of principles guiding the city's economic development. The Initiative includes five action points that the Council identified as the best opportunities for implementing the ambitious plan. One of the action points is the integration of green building design in all new city-funded construction projects and major renovations. The city developed sustainable design guidelines that cover site selection and preparation, transportation to/around the location, water and energy use, indoor environmental quality, selection of building materials, and waste reduction. All projects that utilize the city of Oakland funds must meet these sustainable design standards.

City LEED Mandate: Chapter 15.35 of the city of Oakland's Municipal Code<sup>1</sup> states:

*To promote economic and environmental health in Oakland, it is key that the city itself, through the design, construction, operations and deconstruction of its own facilities, provide leadership to both the private and public sectors in the arena of energy efficiency and "green" building practices. The most immediate and meaningful way to do this is to require the integration of green building strategies in as many public city buildings as feasible.*

*Therefore, the purpose of these provisions is to prescribe green building requirements to covered city building projects and traditional public works projects.*

The city of Oakland requires that all new buildings that cost more than \$3 million and all major renovations to existing buildings that cost more than \$3 million achieve LEED Silver certification or better. The law also stipulates that a LEED-accredited professional must be on the principal design team. The Oakland Sustainable Design Guide<sup>2</sup> is a tool that informs designers, builders, operations staff and occupants about the process of integrating green design into new and renovated city facilities. The Design Guide builds off of other green building rating systems, including LEED, Green Building Challenge '98, and BREEAM, but is uniquely tailored to fit the needs and priorities of the city of Oakland.

The Design Guide provides green building strategies that are organized according to seven environmental design topics, listed:

1. Site Strategies
2. Water Strategies
3. Energy Strategies
4. Interior Environmental Quality Strategies
5. Material Strategies
6. Waste Strategies
7. Transportation Strategies

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1 Full provisions of Chapter 15.35 available at [www.bpcnet.com/cgi-bin/hilite.pl/codes/oakland/ DATA/TITLE15/Chapter\\_15\\_35\\_GREEN\\_BUILDING\\_R.html](http://www.bpcnet.com/cgi-bin/hilite.pl/codes/oakland/ DATA/TITLE15/Chapter_15_35_GREEN_BUILDING_R.html), also archived, [www.climatemanual.org/Cities/Chapter5/BestBets/Buildings/Oakland\\_Chpt15.35.pdf](http://www.climatemanual.org/Cities/Chapter5/BestBets/Buildings/Oakland_Chpt15.35.pdf), 30 October 2006.

2 Oakland Sustainable Design Guide, [www.oaklandpw.com/page46.aspx](http://www.oaklandpw.com/page46.aspx), 19 September 2006.

Each of the strategies has performance indicators that must reach certain standards to obtain a specified number of points. There are a total of one hundred points that are distributed among the strategies according to the perceived environmental and human impacts and can be weighted to reflect the city's priorities. The scoring system can also be changed to account for specific opportunities and constraints of the project.

The Oakland Sustainable Design Guide is flexible enough to allow it to grow and change with the development of new technologies and new city priorities. It is a process-oriented guide that is easy to follow and addresses the entire life cycle of the buildings. The Guide makes it easy for everyone involved in the design, construction and use of new and renovated city buildings to incorporate the principles of sustainable design and meet the requirements that the city has established.

To promote the principles of the Sustainable Design Guide among local businesses and residents, Oakland created a Green Buildings Resource Center in February 2000. The Center offers a variety of resources on site design, building products, energy/water efficiency, and solid waste management. The city of Oakland also offers monthly lunch training sessions for city staff in green building & purchasing strategies.

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## CASE STUDY: Flower Mound, Texas Energy Efficient Incentives

Flower Mound's Green Building Program offers free advertising and referrals if builders comply with the town's criteria for more energy efficient green buildings. By voluntarily complying with green building criteria set forth by the town, participating contractors can display a certification emblem in their advertising and get free publicity on the town's website.<sup>3</sup>

In order to qualify, participants must use a minimum of 30 best management practices from the town approved list for each project, as well as meet the following minimum practices:<sup>4</sup>

- Building projects must be at least 25% more efficient than the guidelines set forth by current International Energy Conservation Codes.
- Builders must be LEED certified and demonstrate continuous compliance of those certification requirements.

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<sup>3</sup> Flower Mound Green Building website, [www.flower-mound.com/env\\_res/env\\_res\\_green.php](http://www.flower-mound.com/env_res/env_res_green.php), 3 October 2006.

<sup>4</sup> Flower Mound Green Building Program brochure, [www.flower-mound.com/env\\_res/green\\_building\\_program.pdf](http://www.flower-mound.com/env_res/green_building_program.pdf), also archived at, [www.climatemanual.org/Cities/Chapter5/BestBets/Businesses/FlowerMound\\_grnbuilding.pdf](http://www.climatemanual.org/Cities/Chapter5/BestBets/Businesses/FlowerMound_grnbuilding.pdf), 3 October 2006.

Before construction begins, builders must submit a waste reuse, recycling and reduction plan to be agreed upon by the city. Landscaping and paving requirements not directly pertaining to carbon reductions also apply. This program is an easy way to promote efficient building design with minimal use of public funds.

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## CASE STUDY: Berkeley, CA Point of Sale Audit

Berkeley requires energy saving retrofits when homes are sold or significantly upgraded, with improvements valued at more than \$50,000. Cost and energy-saving measures required by Berkeley's Residential Energy Conservation Ordinance (RECO) include insulating ceilings, water heaters, and hot water pipes; sealing furnace ducts; installing fluorescent lighting and weather stripping; blocking hot-air flow out of chimneys; and conserving hot water by installing low-flow shower heads. Approximately 12,000 residences (30% of the housing stock) have been certified as meeting RECO requirements.<sup>5</sup>

### Policy link

- Berkeley Residential Energy Conservation Ordinance:  
[http://www.ci.berkeley.ca.us/bmc/Berkeley\\_Municipal\\_Code/Title\\_19/16/index.html](http://www.ci.berkeley.ca.us/bmc/Berkeley_Municipal_Code/Title_19/16/index.html)
- Commercial Buildings—Energy Conservation Measures:  
[http://www.ci.berkeleyca.us/bmc/Berkeley\\_Municipal\\_Code/Title\\_19/72/index.html](http://www.ci.berkeleyca.us/bmc/Berkeley_Municipal_Code/Title_19/72/index.html)

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<sup>5</sup> Apollo Alliance New Energy for Cities, Energy-Saving & Job Creation Policies for Local Governments  
[http://www.apolloalliance.org/docUploads/new\\_energy\\_cities.pdf](http://www.apolloalliance.org/docUploads/new_energy_cities.pdf)

## 2. Economic Health

### Goals:

- 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
- Create/ Attract new jobs and businesses in the sustainability sectors

### Recommendations:

#### **City Initiated:**

- Develop sustainable business cluster in the city
- Develop a sustainable business incubator
- Business energy audits
- Signs promoting local businesses
- Encourage private wind turbines and solar electricity generators
- City government wind/ solar electricity generation
- City sustainable development staff
- Sustainable business certification
- Sustainable business expo and/ or living fair

#### **Community Led:**

- Any of the adjacent list, when delegated to a community-based organization excepting city installations of distributed sustainable energy and city sustainable development staff (though this could also be positioned at the Commission)

### Evaluation Summary:

Recommendations have the potential to balance city-initiated and community-led programs. The recommendations outlined a strong systematic approach to economic development for Golden. The plan reveals how Economic Development efforts need to target companies on the sustainability journey—understanding their needs for facility and building systems that may include specialized sustainable business training, renewable energy sources. The working group recommendations provide the mechanics for considering how to maximize sustainability strategies of businesses through incentives, and public education. NCS believes these efforts can influence decision-making policy with new facilities and further provides sustainable energy and inputs. The recommendations outlined also show how this working group captured the awareness and need for broad sustainability strategy promotion and the “sustainability sector.” In addition, CWG recommendations included programs that should be coordinated with Energy Efficiency & Renewable Energy (EE & RE) and Buildings.

**After close review NCS offers the following specific comments:**

1. As mentioned above, strong education for all businesses in Golden that “sustainability” means greater global/ local competitiveness is essential to a successful program and this working group has developed that concept. The recommendations further outline that providing incentives for the licensing requirements opens the pathway to education around sustainability strategies. NCS recommends that the City and its private sector financial community explore the role of the City ensuring that its own financial dealings are with sustainability-oriented financial institutions as well. This would be a unique feature for a city, and would amplify the message that Golden is about sustainable business development.
2. In the global, highly competitive market-place sustainable business are outcompeting their peers. NCS agrees that sustainability incubator and sustainability clusters are excellent. Researching and developing a cluster will reveal potential barriers to sustainability performance for all businesses. Also, cluster-based economic development is a proven system. This should be done regionally if possible.
3. NCS encourages the recommendation that sustainable business strategies are included in education in Golden, including high school curricula such as business education classes; community college business classes; and university level. NCS strongly recommends that all public and school education efforts be integrated into one comprehensive plan as stated in our review of the education and communication plan.
4. Signage supporting local businesses and attractions can be a cost effective option.
5. NCS supports the idea to put on an expo, but suggests fostering greater regional cooperation. Expos provide an opportunity for community engagement, innovation and the formation of partnerships.
6. NCS recommends mention of climate change in the Economic Health section of the City of Golden's Sustainability Initiative. A 2006 study by University of California professors recently found the renewable energy industry consistently generated more jobs per average megawatt generated in construction, manufacturing and installation, in operations and maintenance and in fuel processing, than the fossil fuel industries.

**Conclusion:**

Overall the Economic Health working group has proposed a solid system that will support a great area for progress. It is important that before work begins on these various initiatives the city first conducts an analysis of barriers for Golden's ability to grow a sustainable business sector and/ or achieving greater sustainability performance in all businesses. Conducting an analysis on business clusters should reveal this and therefore should be considered a high priority. Other cost effective recommendations that NCS sees as high priorities include signage and conducting an expo.

## CASE STUDY: Bellingham, Washington Expos & Partnerships

The City of Bellingham, Washington utilizes an external non-profit organization to establish and support their sustainable healthy economy. They have partnered with Sustainable Connections, a non-profit business network of local, independently owned businesses, on numerous projects to establish and support their sustainable local economy.<sup>6</sup>

Sustainable Connections is a nonprofit business network establishing and supporting local-living economies that sustain themselves, their communities and the health of the environment. Sustainable Connections acts as another Bellingham Chamber of Commerce with an emphasis in sustainability. They work to facilitate local sustainable economies through providing education and technical assistance to local businesses and governments in how to participate in their local sustainable economy, the connection of businesses to each other and the market, and providing market development opening opportunities for sustainable economy businesses.

The *Sustainable Connections'* Spring Conference and Holiday Party are a prime example of successful expos engaging and educating businesses. The conferences educate participating businesses through lectures, speakers, peer-to-peer discussion, as well as providing networking opportunities. These two conferences have been going on for five years and have hosted speakers such as Bill McKibben and David Korten. The conferences have had received very positive feedback and increasing participation.<sup>7</sup>

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6 City of Bellingham Environmental Resources Department  
<http://www.cob.org/pw/environment/leadership.htm>  
Sustainable Connections  
<http://sustainableconnections.org/>  
7 <http://www.sconnect.org/bizdev/conference/>

## CASE STUDY: Portland, Maine

### **Business Signage Support**

Portland, Maine's, local purchasing program<sup>8</sup> went into effect in the summer of 2006. For a \$20 membership fee, qualifying businesses (the business must be registered in Portland, and the owners must live locally) can obtain a window decal and poster to be displayed at their business that reads "Buy Local: Keep Portland Independent". The fees also go toward maintaining the website, administrative costs and local media advertising.

The Portland Buy Local campaign is a non-profit group led by a coalition of local business owners, pro-business organizations, city officials and consumer activists. The city of Portland marketing and economic development staff has helped guide and support this effort. As of 2006, the Buy Local campaign has around 160 participating local businesses.

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<sup>8</sup> Portland Buy Local Campaign, [www.portlandbuylocal.org/index.html](http://www.portlandbuylocal.org/index.html), 27 September 2006

### 3. Education and Communications

#### Goals:

Increase 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:

- Create effective, ongoing two-way communication that informs, educates and inspires community involvement in city-wide sustainability efforts
- Support the Community working groups in crafting community action plans that effectively foster sustainable behavior

#### Recommendations:

##### **City Initiated:**

- Sustainability Director
- Branding the Effort (potentially)
- Education and Communications Strategies (potentially)
- Evaluating Success (potentially)

##### **Community Led:**

- Citizens Sustainability Group
- Branding the Effort (potentially)
- Education and Communications Strategies (potentially)
- Evaluating Success (potentially)

#### Evaluation Summary

NCS finds the Education and Communications working group's recommendations exemplary. The group has provided a comprehensive approach to public education that is well-led and thoughtfully developed with appropriate checks and balances will insure that the initiative is effectively delivered. Their recommendations are founded on proven social movement strategies such as Doug Mackenzie-Mohr's "Community Based Social Marketing." The balance of permanent city sustainability staff and citizen commissions to oversee implementation is an example of the solid thinking of the working group. The inclusion of branding and a unified educational strategy in their recommendations integrates public education and social marketing and positions the City of Golden to achieve sustainable results. The specific focus on including existing community resources to partner with city efforts is both cost effective and educationally exemplary. The development of authentic evaluation and assessment tactics are certain to insure an effective use of public funds and delivery highly effective public education.

**After close review NCS offers the following specific comments:**

1. NCS applauds the recognition given to two way communication and long term involvement of the community. This encourages shared responsibility between citizens and government for the success of Golden's Sustainability Initiative education and communications efforts. There is an abundance of well thought through, creative program concepts that if fully implemented should provide an incredible foundation for achieving the goals of Golden's Sustainability Initiatives.
2. The recommendation to organize the Education and Communications strategies into one cohesive social marketing campaign is extremely sound. Successful educational opportunities take into consideration the various demographics of the community, the time commitment and the skill level that a community group member, family or individual will be required to undertake. Therefore NCS recommends further articulating the different educational programs into a scale of program depths and duration, as well as audience appropriateness to ensure programs achieve the prioritization of the learning objectives.
3. As part of the Community Based Social Market (CBSM) stakeholder/ barrier approach NCS recommends further development of prioritized sustainability learning objectives that build upon Golden's diverse stakeholders and increase desired knowledge, skills and behavior. As part of this process NCS suggests a review of other regional sustainability indicators and consideration of adoption of similar evaluation measurement tools.
4. NCS would like to emphasize the development of a city- and community-wide systematic approach to public education to enable seamless integration of the sustainability message. This would include existing city programs such as public safety, public works and community branding i.e. "Where the west lives!," as well as with existing community-based programs.
5. This integration builds upon the working group's exemplary recommendation to actively develop a partnership between city programs, regional, state and federal agencies, local non-profits, academic institutions and business. A coordinated approach not only maximizes city and community investments and existing activities, the integration will help insure message consistency, increase the value of partnerships and maximizing the cross purpose marketing within existing city-wide public education messages.
6. As part of this city-wide public education review NCS recommends a review of all public education messages to insure that programs are synergistic and not counterproductive in their messages. Be sure to eliminate education campaigns with competing goals. Whereas one department advocates to capture litter to reduce storm-water pollution (end goal is to put more trash in landfill) and the second department is working to reduce amount of waste going to landfills.

7. To achieve quicker adoption of sustainability education NCS recommends the creation of easy-to-access, real-time performance displays to provide citizens and city employees the cumulative impacts the programs are having on their own lives and their community. For instance a community carbon footprint thermometer that lowers with the City of Golden's collective greenhouse gas emissions is likely to achieve results similar to the government led water conservation campaigns in Southern Californian in the 1980's when total urban water use was durably reduced by a significant amount.

## Conclusion:

The knowledge and talent of the citizenry of Golden is well represented in the quality of their working group recommendations. Long term active participation on the part of more citizens will be necessary to achieve the goals of Golden's Sustainability Initiative. NCS encourages Golden's evaluation of success be considered a high priority to establish a mature foundation for all education and communication activities. NCS also feels it is important for the city and the community to develop integrated education and communication strategies. Once the above are established NCS supports the Education and Communications working group's priorities for recommendations.

## CASE STUDY: Santa Monica, California Sustainability Coordinator and Task Force<sup>9</sup>

### *Santa Monica Sustainability Coordinator*

The Santa Monica Sustainability Coordinator position, which has been in place since 1994, is charged with the responsibility of realizing the goals of the Sustainable City Plan (SCP). It is a full time position that is housed within the department of Environmental and Public Works Management. This position coordinates regularly with other city departments, significant stakeholders within the community, as well as the Sustainable City Task Force (SCTF). The significant community stakeholders of Santa Monica are established in the SCP goals as being: elected and appointed officials, City staff, and representatives of neighborhood organizations, schools, the business community and other community groups. The Sustainability Coordinator serves as the liaison between the City Staff and the SCTF.

When asked whether or not they feel that having a staff member specifically responsible for sustainability management has helped their initiatives, Shannon Parry (Santa Monica's current Sustainability Coordinator) answered the following: "Absolutely. It provides the city with an opportunity to educate and provide resources the community. It also serves as a lens through which the whole city does its sustainability work". Parry also recommends the following for any city initiating their own Sustainability Coordinator position: "Keep funding out the general fund, so that you are not the first to go in lean times. Make sure the program

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<sup>9</sup> Information Sources: phone interviews with Shannon Parry and Jim Ries, Santa Monica's Environmental Programs Division website (<http://www.smgov.net/epd/index.htm>), and Santa Monica's Sustainable City Plan ([http://www.smgov.net/epd/scp/pdf/SCP\\_2006\\_Adopted\\_Plan.pdf](http://www.smgov.net/epd/scp/pdf/SCP_2006_Adopted_Plan.pdf))

is disseminated from the city manager's/ mayor's office. Top down exertion of power is most effective".

*Santa Monica Sustainable City Task Force Chair*

According to the SCP, The SCTF was created in 2003 to provide leadership and guidance for implementation of the SCP. The SCTF is an expert panel of 11 volunteer members appointed by City Council that serve a five year term, each with specific expertise in one or more of the following areas: Planning, Housing, Recreation and Parks, Social Services, Environmental Policy, Education and Health care. In addition, City Council has required that composition of the group ensure fair representation of the following community stakeholder groups: Business, Labor and Neighborhoods.

According to current SCTF Chair, Jim Ries, the majority of significant community stakeholders are represented within the SCTF. Based on the SCP, the city staff completed a gap analysis to identify who the key community stakeholders were. The goals set in the SCP were compared to the conditions that existed within the goal areas and the areas where the greatest amount of change was needed were identified, as well as the most influential stakeholders in that area (i.e.: Schools are the areas largest energy consumers, along with large property owners).

The SCTF is charged with the responsibility of spreading the word of the SCP. According to Ries, this is done on two levels: first is to raise awareness of and support for the plan; second is to collaborate with the community to attain the goals of the SCP. The SCTF does this by:

- Assisting in networking between grassroots initiatives and city resources, interfacing proposals.
- Identifying low hanging fruit that can be taken advantage of, as well as barriers that need to be addressed.
- Supporting grassroots initiated sustainability projects by offering feedback on projects in the developmental stages, proposing new projects, or making a motion to the city to support a new project.

Though the SCTF is not currently required to produce regular progress reports, when asked whether or not this would be helpful, Ries replied that, "Yes, it would be helpful in keeping things focused. The theme of sustainability is so broad and can easily become unfocused and unproductive."

The SCTF has been successful in being able to establish a fund for itself. According to Ries, "The city needed to understand that as volunteers, the SCTF was short on time and resources." Because of action taken by the SCTF, the city has since put money aside for the group and even hired a private consultant. This position takes a proactive approach to meeting all the stakeholders and functions as the sustainable city liaison to the community.

*Additional Information Worth Noting:*

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

comprehensive implementation plan for meeting Sustainable City goals and targets, and for coordinating implementation, both interdepartmentally and between the City and community stakeholder

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## CASE STUDY: Central Texas

### Indicators

Sustainable indicators have been used by a handful of cities to measure, track and communicate their progress in achieving their goals. Some of these cities are San Francisco, CA, Santa Monica, CA (the most established program) Boulder, CO, Jacksonville, FL and Central Texas.

Indicators can vary for every city and for more information on how to establish them and utilize them look at [www.sustainablemeasures.com](http://www.sustainablemeasures.com). The main categories Central Texas chose were, Public Safety, Education and Children, Social Equity, Civic Engagement, Economy, Health, Environment and Land Use/ Mobility. Below are a few of the indicators Central Texas has established:

#### *Economy*

- Household Income
- Diversity of Industries
- Exporting Industries
- Diversity of Employers
- Entrepreneurship
- Job Availability
- Labor Availability
- Technological Innovation

#### *Environment*

- Water—Consumption
- Water—Quality
- Energy Use
- Air Quality
- Solid Waste
- Hazardous Material

#### *Land Use/Mobility*

- Density of New Development
- Rural Land
- Publicly-Owned Open Space
- Attractiveness of Landscape
- Vehicle Miles Traveled
- Time Spent Commuting

## **CASE STUDY: Dedham, MA**

### **Performance Displays**

In 2004, the Town of Dedham, Massachusetts set out to increase participation in its curbside recycling program. The Town piloted an innovative outreach campaign in its Oakdale neighborhood.<sup>10</sup>

Oakdale residents, who took part in the campaign from late March through the end of June, increased their recycling even more than the Town had hoped. The campaign challenged residents to recycle 3,700 bins full of recyclables by the end of June. Residents smashed that goal, recycling 4,575 bins full, or 17% more than another similar part of town that was used as a comparison. Seven and a half months after the campaign ended, Oakdale residents were still recycling 10.5% more than they had been before the campaign began.

In late March, each household on the Tuesday B recycling route, which encompasses a section of Oakdale neighborhood close to the Oakdale Elementary School, received a door hanger informing them of the campaign and challenging them to meet the 3,700 bin goal by the end of June. Another door hanger was delivered about every two weeks thereafter, providing a recycling tip and displaying a thermometer that showed progress towards the goal.

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<sup>10</sup> The Oakdale Neighborhood Recycling Campaign Report,  
<http://www.acetiassociates.com/pubs/DedhamIIReportBody.pdf>

## 4. Energy Efficiency and Renewable Energy (EE & RE)

### Goals:

The EE & RE working group recommends that city Council adopt the following as its preliminary ten-year goals for energy use in Golden, subject to evaluation in the future:

- Reduce the City of Golden's overall energy usage as an organization by 25% and increase to 50% the proportion of its energy use derived from renewable energy sources by 2017
- Reduce overall community-wide energy usage in Golden by 20% and increase to 20% the proportion of its energy use derived from renewable energy sources by 2017

### Recommendations:

#### City Initiated:

- City Action Plan for EE & RE
- City-sponsored incentives for Sustainable Energy Investments
- Solar Access Ordinance
- Increase use of Alternative Fuels in Transportation
- Funding EE Improvements and Rehab of Existing Homes
- Energy Audit and Implementation Program
- Dark Skies Initiative/ Community Lighting Standards
- Promoting Use of Compact Fluorescent Lightblubs (CFLs)

#### Community Led:

- Sub-recommendations for increased use of alternative fuels #s 4B, C and D have community-led components (including leadership by Xcel)
- Xcel varied electric rates (to promote EE)
- Energy Audit and Implementation Program could be private-sector led (the key is affordable/accessible audits, which may not require City intervention)
- Promoting Use of CFLs could be led by Xcel and/or other private sector vendors or non-profits

## Evaluation Summary:

NCS finds the energy efficiency and renewable energy strategies are very well thought-through. There is some overlap with Buildings, Water and Transportation that should be integrated/ reconciled at the earliest opportunity. Brief mention is made of two areas that are closely related to EE & RE and deserve greater discussion and integration of plans: (1) life-cycle approach to saving energy via purchase of sustainable products and (2) water efficiency.

### **After close review NCS offers the following specific comments:**

1. Capital available for investment in energy-saving or renewable energy investments. NCS agrees with the recommendation to review Energy Service Companies (ESCOs) and suggests reviewing long-term city bonding when necessary.
2. NCS highly recommends the city investigating the necessary amount of city incentives to support sustainable energy investments. As the EE & RE working group points out there may be different levels of need for various incentives. The legality of city incentives needs to be thoroughly examined, and source of money for them identified. The City of Golden does not presently collect a revenue stream that is a natural fit for use for energy saving incentives (this was an important consideration by the City of Boulder for its Climate Tax).
3. NCS applauds the solar access ordinance recommendations as a low cost strategy that can be implemented immediately. NCS recommends community input be secured as part of the ordinance and zoning process to insure the aesthetic and noise desires of residential neighborhoods are maintained. NCS recommends researching the potential for including wind energy in the same ordinance.
4. NCS finds the alternative fuels recommendations comprehensive. We recommend integration of these goals with the sustainability transportation recommendations to insure taking advantage of the considerable economic benefit of urban planning to reduce fuel consumption, as versus to simply shifting form one fuel source to another.
5. NCS recommends further study on alternative fuel life-cycle costs to explore the cost sharing of infrastructure expenses and potentially economy of scale benefits.
6. NCS agrees with the EE & RE working group that sliding energy rates based on per capita consumption will economically encourage energy and greenhouse gas reduction.
7. NCS agrees with the recommendation for "Dark skies" and suggests they be moved to the building recommendations.

8. NCS recommends a review of potential federal and state climate change legislation. Politicians from both major parties have been regularly promoting the need for global warming legislation. NCS feels that the City of Golden is very likely to end up responsible cap and trade standards and other environmental mandates linked to greenhouse gas emissions in the next few years. The recommendations in the EE & RE, Building and other plans includes tactics that could easily fulfill these mandates. NCS recommends that the City of Golden include "climate protection" language in their sustainability initiative plan to insure that the eventual prioritization and implementation takes advantage of these tactics in fulfilling those potential requirements.

## Conclusion:

NCS finds the Energy Efficiency and Renewable Energy working group recommendations extremely feasible and well prioritized. NCS encourages the community to work to find a balance between performance based programs and technology based programs. Although technology based education programs can be an effective way to educate citizens about their energy use and options available.

## CASE STUDY: Various Cities Sustainable Energy Incentives

- Thief River Falls, Minnesota, offers low interest loans and incentives to customers who install ground-source heat pumps—a less electricity intensive system for heating and cooling buildings.<sup>11</sup>
- Santa Clara, California, rents solar hot water systems to citizens and businesses.<sup>12</sup>
- Honolulu, Hawaii, offers 0-2% loans to homeowners to install solar hot water systems.<sup>13</sup>
- The municipal utility in Bowling Green, Ohio, led a collaborative effort among ten municipal utilities to finance a wind-energy farm.<sup>14</sup>
- Mason City, Iowa, changed zoning ordinances to allow appropriately sized wind turbines to be installed in residential zones.<sup>15</sup>
- The city of Chicago and 47 other local government agencies formed the Local Government Power Alliance. Through it, they negotiated lower-cost electrical service that includes higher levels of renewable energy.<sup>16</sup>

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11 Apollo Alliance, "New Energy for Cities – Energy Saving and Job Creation Policies for Local Governments," p.6, [www.apolloalliance.org/docUploads/new%5Fenergy%5Fcities%2Epdf](http://www.apolloalliance.org/docUploads/new%5Fenergy%5Fcities%2Epdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/LongTermInitiatives/SustainableEnergy/ApolloAlliance\\_EnergyforCities.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/LongTermInitiatives/SustainableEnergy/ApolloAlliance_EnergyforCities.pdf), 30 October 2006.

12 Ibid. p. 4.

13 Ibid. p. 5.

14 Ibid. p. 7.

15 Ibid. p. 7.

16 "Customer Aggregation: An Opportunity for Green Power?" by Edward Holt of Ed Holt & Associates, and Lori Bird of the National Renewable Energy Laboratory, 2001: [www.eere.energy.gov/greenpower/resources/pdfs/lb29408.pdf](http://www.eere.energy.gov/greenpower/resources/pdfs/lb29408.pdf), 30 October 2006.

## **CASE STUDY: Medford, MA Street Lighting/ Dark Skies Initiative**

The city of Medford has approximately 4,600 streetlights. Although the local electricity utility owns the majority of the streetlights, the city pays the electricity bill. It has worked closely in conjunction with Massachusetts Electric to convert all of the city's old mercury vapor lamps to HPS lamps.<sup>17</sup> According to the city of Medford's Climate Action Plan,<sup>18</sup> the city expects to save nearly \$20,000 annually on its electricity bill and will reduce its CO<sub>2</sub> emissions by 148 tons.

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## **CASE STUDY: Shoreview, Minnesota Solar Access Ordinance**

Shoreview, Minnesota has had a solar access protection ordinance since the 1970's (mandated by the state for all municipalities). The city has incorporated the ordinance in the Shoreview Comprehensive Guide Plan 2000.<sup>19</sup>

The existing codes that are quoted below are from the CGP 2000. The City's Development Ordinance regulates solar access protection for those developments that choose to use passive or active solar energy systems. All new subdivisions and planned unit developments are encouraged to be designed to accommodate the present or future use of passive and active solar energy systems with special attention given to street, lot and building orientation. Energy efficient buildings are also encouraged. New buildings should be designed and fitted to permit the addition or conversion of the hot water heating system to solar energy. Builders and developers must demonstrate their ability for incorporating active and passive solar energy systems in new buildings, installing energy-efficient appliances and lighting systems, and using exterior landscaping to reduce the energy demands of new construction.

The Development Ordinance also provides an incentive for developers who incorporate solar energy systems in their development projects. A density bonus of up to 5% may be given to developments that use passive energy systems on at least 80% of the dwelling units. And a density bonus of up to 10% may be given to all developments that use active energy systems for space heating, air conditioning and/or domestic hot water heating on at least 30% of the dwellings.

The course of action the city decided to take was to continue to enforce the ordinance and to educate the general public on the benefits of renewable energies and efficiency.

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17 Medford Clean Energy Committee, [www.medfordcleanenergy.org/index.html](http://www.medfordcleanenergy.org/index.html), 30 October 2006.

18 Medford Climate Action Plan 2001, [www.massclimateaction.org/pdf/MedfordPlan2001.pdf](http://www.massclimateaction.org/pdf/MedfordPlan2001.pdf), also archived at, [www.climatemanual.org/Cities/Chapter5/BestBets/Infrastructure/MedfordPlan2001.pdf](http://www.climatemanual.org/Cities/Chapter5/BestBets/Infrastructure/MedfordPlan2001.pdf), 25 September 2006.

19 Shoreview, Comprehensive Guide Plan, <http://www.ci.shoreview.mn.us/ZoningAndInspections/Comp%20Plan%202/Comprehensive%20Plan%20Front%20Pages%202.html>

## 5. Solid Waste and Recycling

### Goals:

The specific goal of the Solid Waste Reduction and Recycling working group is to reduce solid waste stream contribution through reduced consumption, the expanded use of recycling programs, waste diversion programs and other tools by:

- Reducing solid waste stream contribution by 25% in 10 years

### Recommendations:

#### City Initiated:

- Single-stream recycling
- Pay As You Throw
- Organic composting—central drop location (potentially private)
- Single vendor solid-waste franchising
- Downtown recycling bins (potentially private)
- Organic composting curbside pickup
- Plastic shopping bag ban
- Event recycling (potentially private)

#### Community Led:

- Organic composting—central drop location (potentially private)
- Downtown recycling bins (potentially private)
- Event recycling (potentially private)

### Evaluation Summary:

The recommendations of the City of Golden's Sustainability Initiative Solid Waste and Recycling working group represent some of the best solid waste reduction and recycling strategies available. The balance of waste reduction, recycling and composting strategies cost effectively addresses a large percentage of the waste stream. The recommendations provide a balance of government mandated and voluntary programs combined with infrastructure and recommendations for regulations.

#### After close review NCS offers the following specific comments:

1. NCS recommends clarifying the 25% waste stream reduction goal to include either a per-capita reduction of 25% or an absolute reduction of 25% regardless of increases in population or commerce.

2. NCS concurs with the working group's recommendation that Single Stream Recycling (SSR) has multiple benefits. Most jurisdictions using SSR experience significant increases in the recovery of recyclables and reduction in truck traffic, greenhouse gas emissions, etc. Another alternative being used effectively in some municipalities is single source waste stream, which is worth also considering. The use of "dirty" Material Recovery Facilities (MRFs), where recyclables are sorted out of landfill garbage by paid employees, further reduces truck transportation and in most cases significantly increase the percentage of recyclable materials recovered.
3. If SSR is enacted NCS recommends the budget be allocated to produce effective public education. Accurate public participation in SSR can significantly reduce the cost of sorting at "clean" MRFs by reducing the percentage of material contamination (food on paper products) or inclusion of non-recyclable materials (ie: #3, 4, 5, 6 and 7 plastic). NCS recommends this education be folded into the rest of the of the Communication and Education working group recommendations.
4. Sliding Pay As You Throw (PAYT) fees have worked effectively across the western U.S. to reduce solid waste by tying the volume of waste disposed to the size of waste bills. NCS agrees this philosophy aligns with the City of Golden's Sustainability Initiative by promoting personal responsibility and providing positive economic feedback to households that reduce their waste disposal. To help build support for the PAYT, NCS recommends the working group consider adding a similar sliding scale to recycling bins. After reducing waste, reducing recycling is the next step towards sustainable use of natural resources.
5. In addition to drop-off and curbside organic material recycling NCS recommends an education program to encourage residents to compost green waste and food scrapes on their own property. Mulching can reduce water consumption in landscaping by 40%. Many jurisdictions have had great success by buying in bulk, then making food-scrape composters available to the citizens at cost. Like the PAYT strategy NCS feels household composting is aligned with the public participation goals of City of Golden's Sustainability Initiative. This may require hiring a compost program educator or creating partnerships that will fulfill the educational role.
6. The Waste Reduction and Recycling recommendations are valid about the extraneous costs of plastic bags which escape the waste stream, however before implementing a no-plastic bag ordinance, NCS recommends a life cycle analysis of plastic bags and the alternatives be conducted. This is due to the fact that the environmental cost of paper or plastic is not simple. Cradle to cradle, paper bags have a much higher energy footprint (and often carbon footprint) than plastic and while cloth bags are a great alternative to promote, non-organic cloth bags are often woven out of cotton from some of the more polluted agricultural practices in the U.S. In addition, involving the local businesses into the process will understand the business implications and possible implementation issues.

7. There have been numerous creative approaches to reducing the waste at public events that have met with mixed success. NCS recommends a pilot project approach to test, evaluate and eventually fine tune strategies that are the most appropriate for the City of Golden. In addition to providing event coordinators with recommendations or mandates recommended by the working group, NCS suggests the possible use of "feebates."
8. NCS recommends mention of climate change in the Solid Waste & Recycling section of the City of Golden's Sustainability Initiative. Landfills emit a very potent GHG, methane, reduction of landfill will greatly reduce Golden's climate impact.

## Conclusion:

NCS was impressed by the expertise represented in the Solid Waste Reduction and Recycling working group recommendations. Because of its public education benefit and environmental benefits NCS recommends the inclusion of home site organic composting options in the top tier priorities. Adding that program with the Single Stream Recycling (SSR), Pay As You Throw (PAYT), and Single Vendor Solid Waste Franchising will create higher participation, minimizes carbon emissions associated with solid waste handling and a reduction in the amount of waste and recyclables going to the landfill. We concur with the rest of the priorities and with one note to be considered in regards to the downtown recycling bins. While this recommendation is a low-cost and highly visible, ongoing management of the bins has to be emptied by volume as opposed to scheduling due to the potential for overflow on high visitor days and weekends.

## CASE STUDY: Denver, Colorado Single-stream recycling

A recent article in Waste News showed the success of Denver's Single-Stream Recycling Program. In June 2005, the city and county of Denver introduced the new recycling program. Since then the recycling program has experienced an 18% increase in tonnage collected and an increased excitement around recycling in the city. In 2006, 21,800 tons of materials were recycled in Denver and kept out of our waste stream.<sup>20</sup>

Along with the move to single-stream, there is a phased-in effort to automate the collection of recyclables. Phase one was completed in October 2005 with the purchase of three automated collection trucks and the delivery of 12,000 new 65-gallon purple recycling carts.

The concern of decreased revenue was addressed with the knowledge that increased volume would allow the program to offset a lower dollar-per-ton value. The concerns about single-stream processing capabilities were put to rest when the city issued a request for proposals and received three very strong proposals. The recyclable materials collected in 2006 generated more than \$680,000 in revenue for the city

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20 Denver Residential Recycling Program, <http://www.denvergov.org/recres/ResultsofYourEfforts/tabid/425368/Default.aspx>.

The concerns about material quality are now beginning to ease as the city works with the processing contractor and partner, Waste Management Recycle America. Preliminary findings demonstrate an increasing satisfaction in the processing operations and the level of commitment provided by them.

The quality of the end product is also greatly affected by the quality of material delivered. Staff just completed the first material sort from a sampling of 1,200 homes using the new recycling carts. The results of the sort showed that less than 1% contamination is being delivered, and when run through the single-stream sort line, less than 2% was lost as residue.

Although it is expected that contamination will increase as the rest of the program is automated, the city is committed to minimizing contamination through education and route audits.<sup>21</sup>

## CASE STUDY: Northwest Indiana

### Public Education

In 2004, the Northwest Indiana Solid Waste District Board<sup>22</sup> began offering education grants for schools in the six-county district. The funds are available for schools to support waste reduction education and recycling. \$30,000 is appropriated each year with each county receiving up to \$5,000. This augments funding the district has had available for cities and towns since 1997.

Each year, the District Board allocates \$120,000 for the Cities and Towns Grant Program to implement or expand waste management programs that coincide with the District's objectives for waste reduction.<sup>23</sup> The purpose of the grant is to support integrated waste management programs around source reduction, recycling, composting and education. \$20,000 is allotted for division among the successful applicants from each county. Cities and towns must match grants given by the board by 25%; however, education grants given to schools do not have a matching requirement.

The Board is involved in outreach and education projects throughout the district. Funding for the Board and for grants comes from landfill tipping fees collected in the district. The District encourages creativity and unique planning for projects. A short list of some suggestions is provided here:

- Starting a curbside recycling program—purchasing bins and promotion
- Starting a drop-off recycling program—purchasing equipment and promotion

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21 Single-stream dip going swimmingly", Charlotte Pitt, Waste News, February 13, 2006  
<http://www.wastenews.com/arcshow.html?id=06021300901>

22 Northwest Indiana Solid Waste District, [www.nwiswd.org](http://www.nwiswd.org), 5 October 2006.

23 Northwest Indiana Solid Waste District Grants, [www.nwiswd.org/grants/citiesandtowns.pdf#search=%22cities%20waste%20reduction%20goals%22](http://www.nwiswd.org/grants/citiesandtowns.pdf#search=%22cities%20waste%20reduction%20goals%22), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/LongTermInitiatives/WasteManagement/NorthwestIndiana\\_grants.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/LongTermInitiatives/WasteManagement/NorthwestIndiana_grants.pdf), 4 October 2006.

- Starting a yardwaste collection program—purchasing equipment and promotion
- Starting a backyard composting program—organizing a sale of bins and education
- Equipment purchases—to expand current recycling or waste reduction programs
- Market enhancement activities—organizing events to promote recycled items
- Educational or promotional activities—fairs, festivals, etc.
- Buying recycled products—large items for public places to promote recycled items

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## CASE STUDY: San Jose, CA Pay As You Throw

San Jose has been one of the leaders in creating incentives for reducing waste by implementing “pay as you throw”<sup>24</sup> policies. Citizens are charged to dispose of garbage and the rate is based on the size of garbage carts. Recycling is unlimited at no charge.

As San Jose website states “By recycling as much as you can, you will be able to use the smaller garbage cart sizes, which cost less.”<sup>25</sup>

San Jose is one of the few cities that recycles more than 64% of their solid waste. Since the curbside recycling started the city has recycled:

- 372,000 tons of newspaper
- 277,000 tons of mixed paper
- 132,000 tons of glass
- 135,000 tons of mixed recyclables
- 1,900,000 tons of yard trimmings

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## CASE STUDY: Rapid City, SD City Composting Facility

With the realization that their landfills were quickly filling Rapid City, South Dakota, initiated an aggressive composting and recycling programs. A Solid Waste Plan was first passed by the City Council in 1992, but it was not until 2003 that the plan became fully operational.<sup>26</sup>

<sup>24</sup> EPA Pay as You Throw Program [www.epa.gov/payt/](http://www.epa.gov/payt/), 4 October 2006.

<sup>25</sup> San Jose Pay as you Throw Program, [www.epa.gov/epaoswer/non-hw/payt/tools/ssanjose.htm](http://www.epa.gov/epaoswer/non-hw/payt/tools/ssanjose.htm), 5 October 2006.

<sup>26</sup> Rapid City Solid Waste Operations, [www.rcgov.com/pubworks/solidwaste/04\\_solidwaste\\_report.pdf](http://www.rcgov.com/pubworks/solidwaste/04_solidwaste_report.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/LongTermInitiatives/WasteManagement/RapidCity\\_solidwaste\\_report.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/LongTermInitiatives/WasteManagement/RapidCity_solidwaste_report.pdf), 19 October 2006.

According to Barbara Petroff, project manager for USFilter's IPS Composting System, which was used in the facility, these efforts will extend the life of the landfill by 30 years and enable the city to avoid the purchase of over 1,000 additional acres.

The system composts wastewater biosolids, food, paper, yard waste and other organic residuals and is designed to convert 213 tons of waste into compost per day. A chemical scrubber and biofilter treat the processed air generated at the composting building to remove odors. The city sells the compost for use in golf courses, nursery potting soil, reclaiming land and other applications, for about \$20-30 yard. These sales help pay for operating the compost facility, which uses no tax dollars to maintain operations.<sup>27</sup>

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<sup>27</sup> Turning Cash into Trash, [www.dnrec.delaware.gov/NR/rdonlyres/BB472D80-ECCC-4397-9EAF-B7BE6A544A9E/63/RapidCitySDTurningTrashIntoCashcomposting.pdf](http://www.dnrec.delaware.gov/NR/rdonlyres/BB472D80-ECCC-4397-9EAF-B7BE6A544A9E/63/RapidCitySDTurningTrashIntoCashcomposting.pdf), also archived at, [www.natcapsolutions.org/ClimateManual/Cities/Chapter5/LongTermInitiatives/WasteManagement/RapidCity\\_TurningTrashIntoCash.pdf](http://www.natcapsolutions.org/ClimateManual/Cities/Chapter5/LongTermInitiatives/WasteManagement/RapidCity_TurningTrashIntoCash.pdf), 4 October 2006.

## **CASE STUDY: Peel Region, Canada**

### **Residential Compost Program**

#### *Peel Region Organics Recycling Program<sup>28</sup>*

The Region of Peel, which is comprised of three municipalities just west of the City of Toronto, introduced an organics recycling program on April 2, 2007, to all 290,000 households receiving curbside collection in the Cities of Brampton and Mississauga and the Town of Caledon. The new program diverts household organic material such as food waste from disposal and turns it into a rich, renewable resource – finished compost.

A green bin for curbside collection and a smaller kitchen container for indoor collection have been delivered to residents. In order to encourage high participation rates, residents are permitted to line their organics containers with compostable liners, such as paper or compostable plastic bags certified by the Biodegradable Products Institute (BPI). Polyethylene plastic bags, which are not compostable and since the program launched, we have collected over 8,000 tonnes of organic material for composting. We are continuing communications and outreach initiatives to raise that number as the Region works towards achieving its goal of diverting 70% of waste from landfill by 2016.

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<sup>28</sup> Region of Peel, Organics and Recycling, <http://www.peelregion.ca/pw/waste/organics1/index.htm>, 23 July 2007.

## 6. Transportation

### Goals:

The specific goal of the Transportation working group is to increase the ability of Golden residents and visitors to travel to and through Golden using alternative transportation by:

- Reducing the community's total Vehicle Miles Traveled by 15% in 10 years— translating into 25% reduction on per capita basis

### Recommendations:

#### City Initiated:

- Integrated pedestrian transit
- Bike Transit Network
- Timely, efficient Public Transit Network
- Education and Cultural Awareness

#### Community Led:

- Sub-recommendation: Bike Lockers and Showers
- Sub-recommendation: tourist trolley
- Demand management

### Evaluation Summary:

The City of Golden Sustainability Initiative Transportation working group does an excellent job of balancing public access, alternatives to single vehicle transit and long term growth. To achieve the goal will require strong work with commuters in Golden as well as residents, which may deserve more mention than it has received. NCS commends the goal to reduce miles traveled, recognizing that it is ambitious in the present culture, but worthwhile of taking a whole-system approach that includes land use and parking planning.

#### **After close review NCS offers the following specific comments:**

1. NCS recommends inclusion of an integrated review of the County growth plan, public transit, alternative transportation options, parking and road zoning requirements, storm-water runoff, flood control and sustainability initiative water, alternative energy and energy efficiency and public education plans.
2. NCS applauds the pedestrian and other human-powered transit recommendations.
3. NCS recommends a regional approach to prioritization of transit expenditures; ability of existing and future density to support the forms of transit that stimulate people to use it as an auto-substitute (fast, frequent, convenient, safe, etc.).

4. Like energy efficiency, reductions/ conservation are the most cost effective means of achieving sustainability performance. The working group provided some good implementation strategies that are worth considering in addition to city support of broadband communication, alternative work week scheduling and teleworking.
5. NCS suggests the public education recommendations be moved over to the communication and education working group plan.
6. As mentioned in our energy recommendations, NCS recommends a review of potential "global warming" legislation in the transportation section of the City of Golden's Sustainability Initiative. New regulations may affect city transportation planning. The recommendations included in the working groups plan cover many of the strategies being employed by local jurisdictions to address these new benefits.

## Conclusion:

NCS finds the transportation working group plans well detailed, feasible and prioritized for success. With an integrated sustainability approach the ancillary benefits of the transportation working group's recommendations on energy efficiency, water pollution prevention and increases in the quality of life are considerable.

## CASE STUDY: Burlington, Vermont

### **Demand Reduction and Conservation**

Burlington, Vermont created a plan to reduce demand for personal transportation. Their plan includes:

- Expand and further develop park and ride stations to encourage ride sharing and shuttle services
- Expand public transit routes, increase frequency of service and provide free shuttle for large events
- Initiate a commuter rail service
- Encourage increased employer initiatives that promote ride-sharing, telecommuting and bicycling

So far, they have

- In 2003, 2004, and 2005/6 added additional commuter routes servicing St. Albans, Montpelier, and Middlebury to Burlington. Costing them 60,000 round trip per route per year.
- As 2 AM and PM routes to each city
- Added one employee shuttle that operates from a park and ride and services "The Hill" which is the University of VT's center, and also services the Medical Center
- Started an "Unlimited Access Program" which allows students, faculty, and staff of the University of VT free public transit (CCTA bills the University monthly) and can use ID cards in fare boxes, records times and routes

Burlington has not quantified the results, but said they have seen less people drive individually with the new routes and the employee shuttle has been greatly utilized.

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## CASE STUDY: Larkspur, California Bicycle Path Improvement

In 2004, Larkspur California adopted a Bicycle and Pedestrian Master Plan. Since then they have:

- Put in East/ West bikeway
- Improved other pathway links to neighboring communities
- Improved signage
- On going work on abandoned railroad
- Constantly improving/adding bike paths in conjunction with pedestrian walkways

The city has spent \$40,000+ a year on bike improvements. This has come from general funding as well as grants, such as: Safe Routes to School, Safe Pathways to School and a new non-motorized grant. Larkspur acknowledges that improvements are an ongoing process, but believes the city needs to stick with it.

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## CASE STUDY: Wake Forest, North Carolina Pedestrian Improvement

Wake Forest received a grant from the NCDOT for \$24,150 in 2004 with which they adopted the Pedestrian Plan, evaluated new developments for sidewalks and allocated a sidewalk fund. The Pedestrian Plan's goal is to: make an accessible, safe, convenient, interconnected and functional pedestrian transportation system, ultimately contributing to a higher quality living environment. The city's first step to implementation of the plan was to formally adopt the plan. They are now in the process of taking action steps. First off they have built additional sidewalks with some of the funds, and are in the process of following through with their Pedestrian Plan.<sup>29</sup>

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<sup>29</sup> The detailed plan can be found at [http://wakeforestnc.gov/Residents/PlanningZoning\\_Plans.aspx?section=government](http://wakeforestnc.gov/Residents/PlanningZoning_Plans.aspx?section=government)

## 7. Water

### Goals:

The specific goal of the Water working group is to ensure that Golden sustains a clean, stable water supply into the future by:

- Reducing Golden's per capita water use by 15% in 5 years
- Maintain better than regulatory water quality from water treatment plant to end-user
- Increase the efficiency of the water delivery system
- Improve the health of the ecosystem associated with the Golden waterways

### Recommendations:

#### City Initiated:

- Encourage water-conserving landscape practices
- Clarify and seek legal extensions to ability to use gray water/ rainwater
- Expand city "dead-line" program and reduce time in system
- Increased water quality testing and performance

#### Community Led:

- Reduce indoor use by incentives and education (public sector *support* for community action—so this is more community-led)
- Education and incentives for backflow/ cross-contamination prevention (public sector support for community action—so this is more community-led)

### Evaluation Summary:

These water conservation goals are extremely well delineated with sufficient proven strategies to provide NCS extreme confidence in the success of the working group's recommendation if fully implemented. It should also be noted that achieving unilateral support by the City's utility is highly commendable. The riparian health section, if expanded to include federal and state Clean Water Act legislation, can be powerfully integrated into the overall Sustainability Initiative paradigm using watershed management approaches.

**After close review NCS offers the following specific comments:**

1. Starting with the community to encourage water-conserving landscape practices is an excellent key strategy. Landscaping is often a source of heavy summer water (and energy) use. Green waste from lawns also adds to the organic waste that needs to be hauled for composting or landfilling. Xeriscaping is functionally an excellent strategy for water conservation, energy and source reduction. In addition, native landscaping tends to use less water and increases habitat for native wildlife. NCS suggests a review of the role of water and landscaping within the context urban ecology be added as a low priority goal.
2. Engaging the community in reducing indoor use process, as outlined in recommendation 2, furthers the community involvement. To add to that, NCS recommends integrating energy conservation goals with water conservation goals. i.e. ENERGY STAR® water efficient washing machines. The multiple benefits achieved will fulfill more than one sustainability goal arena.
3. NCS' initial review of federal, state and regional storm-water pollution regulations and programs pointed to several water quality issues which might deserve further research. The Denver Regional Council of Governments "2006 Clean Water Plan: Policies, Assessments and Management Programs" includes several references to the City of Golden. It covers details on Clean Water Act NPDES Phase II regulatory requirements.<sup>30</sup>
4. For goal 2, recommendation B, it should be noted that water quality testing can be also applied as a community engagement/ education strategy. NCS recommends the inclusion of volunteer monitoring programs as a part of water quality testing because of its civic engagement and public education added value. However, NCS suggests that all public education and K-12 education recommendations be reviewed for inclusion in the implementation of the Education and Communications working group recommendations.
5. NCS affirms the recommendation for the City develops a systemic protocol to assess leakage in the system. This will increase water efficiency and therefore costs efficiencies for the city and residents.
6. An additional item of consideration for the water section is the quality of water in Golden NCS recommends a review of bottled water reduction as a strategy to increase the success of the City of Golden's waste and energy reduction goals.

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30 See: <http://www.drcog.org/documents/06CWPFinal.pdf>

## **Conclusion:**

NCS finds the priorities and recommendations of the Water working group to be well thought through and well presented. Some key recommendations that NCS strongly supports include prioritizing the exploration of the legal extensions with regional partners to use gray-water and rainwater catchment systems, maximizing Golden's influence with Xcel to provide incentives to the community to encourage water-conserving landscape practices and for Golden to create the "business case" for xeriscaping for building owners. Other recommendations would be prioritizing the maintenance of high efficiency and energy conserving water system pumps which are cost-effective as energy rates rise and developing and implementing an overall action plan for management of the Golden drainage basins.

## **CASE STUDY: Ashland, Oregon Energy Conservation & Water Conservation Goals**

The city of Ashland, Oregon offers an Indoor Water Analysis to all its citizens. The City's Water Conservation Analyst will visit individual homes and determine the efficiency of the plumbing fixtures, replace the showerheads, faucet aerators and retrofit toilets if needed. Citizens also receive information on appliance rebates as well as state tax credits.

In addition to the analysis, the city of Ashland offers rebates for washing machines, dishwashers, refrigerators, electric water heaters and toilets. All of these rebates are easily displayed on the city website.<sup>31</sup>

One rebate includes:

Washing Machine Rebates are given to customers who purchase resource efficient clothes washers. These machines use up to 40% less water and up to 50% less energy. Clothes washers with the ENERGY STAR® label qualify for an \$80 City rebate if the home has an electric water heater and \$40 if the home has a gas water heater. More efficient clothes washers found on Oregon Dept. of Energy's list of models qualifying for state tax credits are eligible for a \$100 City rebate if the house has an electric water heater and \$50 if the water heater is gas.

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<sup>31</sup> City of Ashland Conservation Division, <http://www.ashland.or.us/Page.asp?NavID=1366>.

## CASE STUDY: Redwood, California Water Leakage Assessment

The city of Redwood, CA offers a free SMART Home Water use house call service to its citizens.<sup>32</sup> The service allows individuals to schedule house calls for convenient times. The city then sends out a technician to evaluate water use efficiency and to install high-efficiency water fixtures, if needed. House calls are available Monday through Friday, during daylight hours, and on selected weekends.

SMART Home Water Use House Calls can help residents conserve from 10% to 35% of their water use. The City technician will examine both indoor and outdoor uses.

### *The indoor inspection includes:*

- Leak detection: check toilets, showers and faucets for leaks.
- Evaluation of water fixtures: Measures showerhead and faucet flow rates.
- Installing high-efficiency showerheads and faucet aerators, if needed, for free.
- Demonstration of "How to Read Your Water Meter."
- Smart Water-Use recommendations and water saving tips.

### *The outdoor inspection includes:*

- Evaluation of your irrigation system.
- Measurement of the landscaped areas.
- A recommended watering schedule.
- Demonstration of "how to shut off your water in an emergency."
- Smart Water-Use recommendations and water saving tips

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**NCS looks forward to supporting the implementation of the City of Golden's sustainably initiatives.**

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<sup>32</sup> Redwood City, Conservation Program, <http://www.ci.redwood-city.ca.us/publicworks/water/smart%20home%20house%20call.html>