Environment and Energy
2008 City Council Retreat

Introduction

In 2005, the City completed the "Focus on Longmont" City-wide strategic planning process. This process, which solicited input from the community on many subjects, was to help City Council develop policies and direction for shaping Longmont's future. The Focus on Longmont plan, which was adopted by Council in January 2006, identified 5 major Policy Directions. Policy Direction 3, "Enhance the Natural Environment" stated that improving and sustaining our environment are key elements of a sustainable community. This Policy Direction contained several policies and suggested actions related to environmental sustainability, including recommendations to adopt green building standards and enhance the open space trails system. Council decided that the City should move ahead with a broad range of initiatives and programs to further the intent of Policy Direction 3 and at the 2007 retreat directed staff to pursue activities in the following areas:

- Energy efficiency/conservation
- Green build program
- Watershed protection
- Stream restoration
- Stormwater quality
- Water Conservation
- Enhanced recycling programs
- Continuation and use of open space tax funds
- Hiring an environmental coordinator to focus on environmental activities City-wide

Staff subsequently completed an integrated environmental work plan in 2007 and presented it to Council as part of Council's work plan for the year. The Integrated Environmental Plan (IEP) includes many items that involve several different departments in the City. A detailed description of the components of the IEP is presented later in this paper.

Strategies for sustainability

The common thread between all of the items in the IEP is the concept of sustainability, which refers to societal or organizational practices that meet the needs of the present without compromising the ability of future generations to meet their own needs. As such, sustainability must consider the economic and social factors that are tied to protecting and enhancing environmental resources. The IEP is intended to define the areas where City government can contribute to meeting the needs of citizens in the areas of environmental sustainability without compromising the abilities of the City to provide needed

services. The main strategies that the City can use to influence sustainability include the following:

- Reduce energy and water use
- Provide renewable and alternative energy sources
- Recycle and reuse materials to minimize waste and pollution associated with production and disposal
- Protect open space to preserve wildlife habitat
- Utilize land use controls to protect and preserve environmental resources
- Provide a water supply to meet the needs of people and their environment
- Reduce emissions of air and water pollutants
- Promote local agriculture

Questions for Consideration

The tasks in the IEP can be linked to these strategies and measurable goals or metrics can be defined for each task. All of the strategies will provide some environmental or cost benefit, but in some areas those benefits may occur over a long period of time. This makes it important to evaluate different tasks or activities from economic and social perspectives in addition to considering the environmental aspects. There are costs to Longmont citizens associated with implementing all of the strategies. Staff would like to have Council's input and direction for the following questions:

What is the vision for Longmont's energy and environmental sustainability?
Are staff activities as outlined in the IEP aligned with Council's vision and the direction provided by Focus on Longmont?
Which of the above strategy areas and associated IEP activities or programs are priorities?
What level of detail is desired regarding analysis of costs and cost recovery for each activity?
Are the proposed level and type of community involvement described in this paper adequate?

Staff would also like to discuss the scope and timing of an action plan to address environmental issues over the next several years. The last section of this paper describes a proposed action plan that includes options for implementation and setting priorities.

Current Integrated Environmental Plan

Many initiatives, programs and activities make up the Integrated Environmental Plan that was developed in 2007. These are described in more detail below and a summary of the activities and status as of the end of 2007 are shown in

Attachment A and also in the Council's 2007 Workplan, which is updated and reported on three times during the year.

1. Energy Efficiency and Conservation

a. Renewable Energy

Beginning in January 2007, Longmont Power & Communications (LPC) began purchasing electricity from qualified renewable resources in an amount equivalent to three percent of total annual retail electric sales.

Longmont also offers an optional Renewable Energy Program in which individual residents and businesses can subscribe to additional amounts of renewable energy for the premium retail price of 1.5 cents per kWh. In 2007, the optional Renewable Energy Program had sales of more than 6 million kWh, or about 0.75 percent of the city's total electric use. There are 602 residential and 30 commercial customers participating in the program, about 1.7% of all customers.

A June 2007 survey of 51 Colorado electric utilities shows that:

- LPC is one of 11 utilities statewide that include renewable energy in the rate base for all customers and ranks Number 8 with 3% of rate-based electricity coming from qualified renewable resources
- LPC is one of 10 utilities in the state with a renewable energy green pricing program and ranks Number 3 with 0.75% of electricity sold generated from qualified renewable resources.
- When combining renewable energy used in both the rate base and in green pricing programs, LPC ranks Number 8 in the state with 3.75% of total electricity coming from qualified renewable resources.

The complete survey results are in Attachment LPC1.

It should also be noted that about 18% of Longmont's electric supply is from hydroelectric generation facilities. Combining all generating resources, Longmont received about 22% of its total electric supply from non-fossil fuel resources in 2007.

b. Button Rock hydroelectric project

Preliminary work is continuing for a potential hydroelectric generating facility at the City-owned Button Rock dam located on the North St. Vrain creek west of Lyons. Current effort is focused on obtaining a conduit exemption from the Federal Energy Regulatory Commission (FERC) that would remove FERC jurisdiction over the hydropower plant and the associated water storage facilities. An application for this exemption is being drafted by Platte River Power Authority staff. In support of the application, preliminary hydro generation design parameters have been

established, land use and operating agreements are being developed (between Longmont and Platte River), discussions have taken place to evaluate options for transmission (with Poudre Valley REA and Tri-State G&T), and an environmental review has been initiated. Land use permitting efforts will begin with Boulder County once the FERC application has been accepted. Platte River staff hopes to have a draft application by Spring 2008 for FERC staff review.

2. Residential and Business Energy Conservation

Longmont has provided many successful residential and commercial energy efficiency and demand side management initiatives for several years. LPC's 2007 budget included $70,000 for energy efficiency incentives for the following programs:

a. Commercial Electric Efficiency Program

Provides financial incentives to commercial customers for installing efficiency measures that reduce electric consumption, such as lighting, heating, cooling, motors, compressors, manufacturing or process equipment, and other controls or technologies. LPC partners with Platte River Power Authority to market and provide incentives for this program. 14 customer projects were completed in 2007.

b. Appliance Rebate Program

LPC partners with Public Works and Water Utilities to provide financial incentives to customers for purchasing ENERGY STAR® rated clothes washers and dishwashers. The program was expanded in 2007 to provide year-around rebates. Rebates were provided on 550 appliances in 2007.

c. Residential Energy Audit Program.

LPC partners with Boulder County to provide discounted home energy audits to homeowners, with each entity contributing $50 towards the cost of a professional home audit. LPC also helps fund program administration and marketing through the Conservation ReSource Center of Boulder County. Twenty-five audits were completed.

d. Neighborhood Energy Efficiency Sweep Program

This is a new 2007 program provided in partnership with Boulder County that is targeted to low and moderate income neighborhoods with housing built prior to 1980. The objective is to help residents reduce energy and water use through the distribution of education materials and the installation of electric and water efficiency devices. The first Longmont sweep was conducted in October 2007 in the Kensington neighborhood. Volunteers distributed free compact fluorescent light bulbs and other materials to more than 200 households.

e. Compact Fluorescent Light (CFL) bulb discount

A new 2007 program provided in partnership with Platte River Power Authority offered discounts of $1.00 to $1.50 per bulb on a variety of CFLs through 6 local retailers from September 15 through December 15. Platte River provided the financial incentive. LPC provided the local advertising,

promotional materials, in-store displays and staffed 6 in-store events. Nearly 50,000 CFL products were sold.

f. Energy Hog Road Show

LPC sponsored presentation of the Energy Hog Road Show by the Colorado Energy Science Center at two Longmont elementary schools.

In addition to the above, approximately 90% of LPC's 2007 advertising budget of $21,000 was used for print advertising in support of energy efficiency and rebate programs. LPC also produced and distributed energy efficiency educational materials through community events, the City web site and other channels.

3. Green Building

Council's direction was to proceed with a building green program that would be implemented over a two year time frame. A green-build ordinance and "green points" system for building permits were approved by Council in July of 2007. Discussion was also started on requiring commercial construction to meet green build requirements. Energy savings in the commercial sector can reduce their operating costs and provide benefits to the environment.

4. Watershed Management and Water Quality

The environmental activities in the IEP related to water quality include the following:

a. Environmental Assessment

Sampling and testing of water quality in St. Vrain Creek continued in 2007 and was expanded to include baseline sampling of City reservoirs and open space ponds in coordination with the watershed management plan. Longmont also participated in two different water quality monitoring efforts on the St. Vrain Creek that were sponsored by the U. S. Geological Survey and Trout Unlimited.

b. Watershed Management

Reservoir monitoring was started in 2007 and identification and characterization of pollutant sources through the watershed are planned for 2008. These activities also tie into the State's requirement to prepare a Source Water Protection Plan and identify any possible mitigation of water quality impacts in the watershed.

c. Button Rock Preserve Forest Stewardship Program

This program improves forest health and mitigates wildfire dangers in the Button Rock Preserve watershed by selectively thinning the forest, which reduces the potential for runoff of sediments and other pollutants into the upper watershed and the City's water supplies. The program continued in 2007 with the assistance of grant funds.

d. Saint Vrain Creek Riparian Areas Protection Program

The City's CIP program includes a project to fund improvements along the St. Vrain Creek corridor. Several projects were identified late in 2007 and will be added to the 2008 major work items. Stream restoration and

habitat improvement projects will also continue to be evaluated under this program.

e. Storm Water Management:

Compliance with the City's stormwater permit defines most of the work in this area. City staff and the regional Keep It Clean Partnership performed many tasks to meet the requirements of the permit, which include 1) public education and outreach, 2) public participation and involvement, 3) Illicit discharge detection and elimination, 4) construction site stormwater runoff control, 5) post-construction stormwater management, and 6) pollution prevention and good housekeeping for municipal operations. In 2007, stormwater discharge sites were selected to begin monitoring background quality and assess any improvements in water quality that may result from implementation of the City's stormwater program. This will be expanded in 2008.

5. Water Conservation

The current water conservation goals are outlined in the City's Raw Water Master Plan Update:

> **Goal #7**: The City will develop and implement a water conservation policy that strives to achieve a sustainable use of its water resources.
> **Policy Statement**: The City will strive to achieve water conservation that results in water demands at build out of the Longmont Planning Area that are 10 percent lower than [pre-2004] projections.

The following IEP activities are linked to the goal and policy statement.

a. Water Conservation Master Plan

The 10% water conservation policy equates to approximately 3,700 acre feet. The goal and policy and the corresponding acre feet of supply projected to be met through conservation will be evaluated in the 2008 update to the Water Conservation Master Plan. The Water Conservation Master Plan, which was originally completed in 1996, is the guiding document for meeting the City's water conservation goals. This will be its first comprehensive update and will reflect changes in water demands, supply conditions, conservation technologies, community needs, etc. The plan identifies a wide range of conservation strategies and evaluates different programs to achieve and sustain the City's goals. The plan update will also consider input from the public, Water Board and City Council. It will include an evaluation of the City's current water conservation efforts and metrics to monitor those efforts to determine if current and proposed conservation best management practices (BMPs) can meet the savings noted in the above goals and policy statement. For example, a cost benefit analysis of the City's toilet rebate program indicates this conservation program is competitive with other water supply

alternatives while providing economic savings for customers and a reduction of energy needed to treat and distribute the saved water.

b. Miscellaneous Water Conservation Programs

Water conservation programs and activities in 2007 included:

- Toilet, washing machine and dishwasher rebates
- Outreach and education at the Children's Water Festival and Rhythm on the River
- Irrigation system efficiency audits
- Garden-in-a-box xeriscape incentives
- Xeriscape seminars
- Soil amendment incentives
- Installation of low-flow toilets in all City buildings

c. Use of Raw Water on Parks, Greenways and Golf Courses

In 1995, the Parks and Recreation Division began an evolutionary process to change the then current practice of developing parks, golf courses and greenways from a standard of full head-to-head irrigation coverage with a turfgrass monoculture cover, to planting standards that required less water and are more drought tolerant. Landscaping standards have therefore been modified to reflect this new stewardship strategy, resulting over time in approximately 69 acres of parkland, 74 acres of golf course and 242 acres of greenway/arterials of public lands being installed with some variation of native grasses, xeric or low water plantings. Because of this strategy, over 16 million square feet of added public lands are using reduced or minimal supplemental water. Using the NCWCD standard that we apply to developed parkland of 18 gallons / sq ft. there is now a considerable reduction in municipal use of water.

In addition to the new landscape standards, the City has worked to convert public lands to raw water irrigation: today 72% of our developed parkland acres, 40% of greenways and arterial landscaping and 88% of golf course acres are irrigated using raw water as the primary source. Since 1995, when the City had 44 acres of primary greenway and arterial landscaping, 242 additional acres have been added. In 2008, a study will be undertaken to evaluate the possibility of converting the remaining acreage at Sunset to raw water irrigation as well.

6. Recycling

The IEP includes the following recycling programs and activities:

a. Curbside Recycling

b. 24/7 Recycling Center

c. Tree Limb Diversion Center

d. Recycling of Motor Oil, Antifreeze and Batteries
(Curbside and drop-off)

e. Fall leaf collection and spring branch collection

f. Christmas tree recycling

g. The REACH program

Divert usable items headed for the landfill to non-profit organizations

h. Household chemical drop-off event

Held once a year in partnership with the Boulder County department of Environmental Services

i. IGA with Boulder County for MRF

Execute an IGA with Boulder County to participate in a modified Material Recovery Facility (MRF) to begin single stream recycling

j. Recycling at Stop-N-Drop event

Convert the Stop-N-Drop to a recycling event rather than a trash drop for the landfill

k. Boulder County Hazardous Materials Management Facility

Participate in the construction of this facility to provide greater opportunities to properly dispose of chemicals

l. Producer responsibility

Evaluate the feasibility of requiring producer responsibility for certain materials such as paint

m. Expanding education and outreach

Work with with Eco-Cycle to improve education and outreach on recycling.

n. City-sponsored clean-up events

Sponsor events in parks, open space and greenways to increase public awareness of and involvement in cleaning up the environment

o. Municipal office recycling

Improve education efforts and increase participation in recycling at all City facilities

p. Provide more recycling bins

Add recycling bins downtown and at other locations, such as golf courses and parks, throughout the City

q. Zero Waste

Evaluate public support and Council interest in participating in or adopting the principles of Boulder County's Zero Waste Initiative

r. Private hauler recycling

Require private haulers working within city limits to provide recycling

s. Neighborhood cleanup

Support neighborhood revitalization efforts by providing containers for neighborhood cleanups to separate recyclable items for appropriate disposal

t. Curbside food/yard waste collection and composting

Evaluate the feasibility of a curbside food waste/yard waste collection and composting program

u. Roll-off dumpsters

Begin a pilot roll-off dumpster disposal program which will promote recycling by providing customers with multiple bins at construction sites

v. Transfer station

Evaluate the business case for a City-operated transfer station for trash and recyclables

7. Open Space

The environmental plan included options for continuing with the desire of citizens to provide a high quality and space and trails system for Longmont through the purchase and management of open space lands that:

- Preserve natural areas, wildlife habitat, biodiversity, wetlands, agriculture and visual corridors
- Link trails to provide access to public lakes, streams, parks and other usable open space and public lands, stream corridors and scenic corridors is along the existing highways
- Conserve natural resources including forced land, range lands, agricultural lands, aquifer recharge areas, water rights and others
- Provide District Parks devoted to low impact recreational uses sensitive to natural land values
- Provide urban shaping buffers between or around community service areas and create buffer zones between residential and nonresidential development

The open space program is made possible by leveraging the open space tax through bond financing. The tax was extended by Longmont voters in 2007. This extension and obtaining input and direction from Council and the Parks and Recreation Advisory Board were the main tasks for the year.

8. Environmental Coordinator

Creation of this position was included in the environmental plan to provide coordination of the environmental activities that are taking place throughout the City and in the region. A coordinator was hired in late 2007 and will start work in March 2008.

2008 Integrated Environmental Plan

The final sections of this paper refer to surveys that show strong public support for the items outlined in the integrated environmental plan. However, a periodic review of ongoing and proposed programs and activities should to be done to insure that they align with the Council's current policies and priorities. The new Environmental Sustainability Coordinator will be keeping Council informed of progress on the various environmental activities and will also coordinate Council and public input to make sure the IEP continues to reflect the City's needs

At this time, based on the work done in 2007 and input from Council, staff has identified the following new and expanded areas to potentially be included in the IEP in 2008. These are in addition to activities that carry over from 2007.

1. Energy efficiency

Longmont Power & Communications and the City Fleet Services division are including energy efficiency initiatives in their 2008 budgets.

Longmont Power & Communications

LPC's 2008 budget includes $190,000 to expand the programs in the 2007 IEP and add the following new energy efficiency programs:

a. Small Business Energy Efficiency

This program, offered in partnership with Boulder County, is designed to help overcome barriers to energy efficiency improvements in small business. Partners for a Clean Environment (PACE) staff will introduce energy efficiency opportunities and incentive program materials to small businesses. An independent energy expert will assist participating small businesses with the process of identifying energy efficiency measures, estimating costs, selecting contracts, managing projects and applying for incentives.

b. Refrigerator/freezer Recycling

This pilot program will provide incentives for residents to dispose of refrigerators and freezers produced prior to 1995, which use 3-4 times more electricity than current models and contain refrigerants and foam insulation that deplete the ozone layer and contribute to atmospheric pollution if not disposed of properly. This program will remove older appliances from the market place, reduce electric consumption, dispose of pollutants such as mercury and PCBs, and recycle metal, glass and plastic materials. Based upon an evaluation of customer participation, cost-effectiveness and other factors, this program could be expanded in 2009.

c. LED Holiday Lighting

This program will provide consumer discounts on the purchase of LED holiday lighting through local retailers and the recycling of standard holiday lights. CFL and LED lighting incentive programs could be expanded to include a larger variety of bulbs over a longer period of time.

LPC's 2008 budget also includes funding for a new Energy Services Engineer position to manage energy efficiency and renewable energy programs. The 2008 budget also contains an additional $12,600 for energy efficiency program materials and advertising.

Fleet Services

Energy efficiency is being promoted through Fleet vehicle practices. In 2008, the City will purchase 5 additional hybrid vehicles, 14 E-85 vehicles and 2 partial zero emission vehicles. This will bring the fleet totals for more environmentally responsible vehicles to 9 hybrid vehicles, 20 E-85 vehicles and 2 partial zero emission vehicles. These 31 vehicles make up 8% of the automotive and truck fleet of 388 units that could make use of alternative modes of fueling. This year the City will evaluate fueling E-85 vehicles at the two local suppliers. There will

also be an evaluation of infrastructure needs and the cost / benefit of switching to Bio-Diesel fuel at the main Service Center fueling location.

2. Renewable energy

Expanding the use of renewable energy in Longmont's electric resource mix is one option for further reducing the environmental impacts associated with the use of fossil fuels. To facilitate both short and long-term planning, staff requests Council direction on the timing and amount of renewable energy to include in Longmont's electric resource mix.

The following background is provided as a basis for discussion:
Longmont is not a qualified utility (40,000 or more customers) under the Colorado Renewable Portfolio Standard (RPS) and therefore does not have a mandated renewable energy requirement. The Colorado RPS currently requires qualified municipal utilities to obtain 1% of total annual electric sales from renewable resources in the first three years after becoming a qualified utility, with incremental increases in the renewable energy requirement to a maximum of 10% over a 13-year period. Current growth projections indicate that Longmont will reach 40,000 electric customers in 2013 and will need to meet Colorado RPS requirements beginning in 2014.

Key points:

- At 3%, Longmont currently exceeds the amount of renewable energy required for qualified municipal utilities
- Under current law, Longmont will not have a state mandated renewable energy requirement for several years
- Council has complete discretion in determining the amount and timing for renewable energy in Longmont's electric resource mix

Attachment LPC2, Renewable Energy Supply for Longmont, graphically displays three possible renewable energy purchase scenarios for Longmont:

1) Maintain the current level of purchases at 3%
2) Adopt the state RPS renewable requirement when it applies beginning in 2014
3) Adopt the state RPS renewable requirement immediately, as if Longmont were already a qualified utility
4) Establish an independent renewable energy goal for Longmont with incremental increases in annual renewable energy purchases

A decision about future renewable energy purchases should be made in context with the current and estimated cost of renewable energy and the projected impact on ratepayers. Renewable energy is more expensive than our standard power supply and is expected to remain more expensive for the foreseeable future. In fact, renewable energy costs are expected to increase in the short term as demand drives up the price for Renewable Energy Certificates and as Platte River invests in the construction of new renewable generation facilities.

Longmont currently pays a premium price of 1.2 cents per kilowatt-hour (kWh) for renewable energy. The additional cost of 3% renewable energy in 2007 and 2008 is approximately $310,000 annually. Based on current renewable energy purchase commitments from its owner cities for 2008-2027, Platte River estimates that the premium price for renewable energy will increase to 2.3 cents/kWh in 2010, 2.5 cents/Kwh in 2012, 2.6 cents/kWh in 2015, and to 2.7 cents/kWh in 2016. See Attachment LPC3 for information about renewable premium cost estimates.

A decision about future renewable energy purchases should also consider normal LPC operating cost increases that are expected to impact ratepayers over the next few years. Based on current known conditions and assuming continued renewable energy purchases equal to 3% of total electric sales, staff has prepared an estimate of LPC operating cost increases and the associated increase in customer rates for 2009-2013. See Attachment LPC4 for information about estimated average electric rate increases.

The estimated cumulative increase in retail electric rates for the 5-year period is about 21.7%, primarily due to increases in wholesale purchased power costs and renewable energy costs. Staff estimates that each additional renewable energy purchase equal to 1% of total electric sales will result in a customer rate increase of about 2.0% at the end of the 5-year period.

3. Energy and water efficiency incentives

In September of 2006, staff introduced for Council consideration a proposal to increase the LPC annual budget for energy efficiency and demand side management incentive programs to equal 0.5% of annual revenues. Based on an informal survey of larger Colorado municipal utilities at that time, 0.5% to 1.0% of annual revenues is a typical range of budget allocation for energy efficiency programs. LPC's 2008 budget for specific energy efficiency incentive programs is $190,000, or about 0.4% of projected annual revenues. LPC also budgeted about $13,000 for marketing materials and advertising to support energy efficiency in 2008, bringing the total annual budget for energy efficiency programs to about 0.42% of annual revenues.

As a detail, staff requests Council direction on budget planning for energy efficiency programs in 2009 and beyond and whether 0.5% of annual revenues (about $250,000 in 2009) is an adequate target for energy efficiency expenditures.

Staff believes there are several opportunities for expanding 2008 incentive programs or adding new incentive programs in 2009, including:

a. Partner with Governor's Energy Office

Co-sponsor the Colorado ENERGY STAR New Homes Program in partnership with Boulder County and the City of Boulder, with matching

funds available from the Governor's Energy Office. This program provides training to local home builders, contractors and code officials on energy efficient new home construction and consumer education on the benefits of ENERGY STAR homes.

b. Revolving loan fund

There may be an opportunity to partner with the state or county in establishing a revolving loan fund to provide no/low interest loans to homeowners to finance energy efficient home improvements and solar photovoltaic system installations. This program has proved very successful in other areas of the country.

c. Solar photovoltaic systems

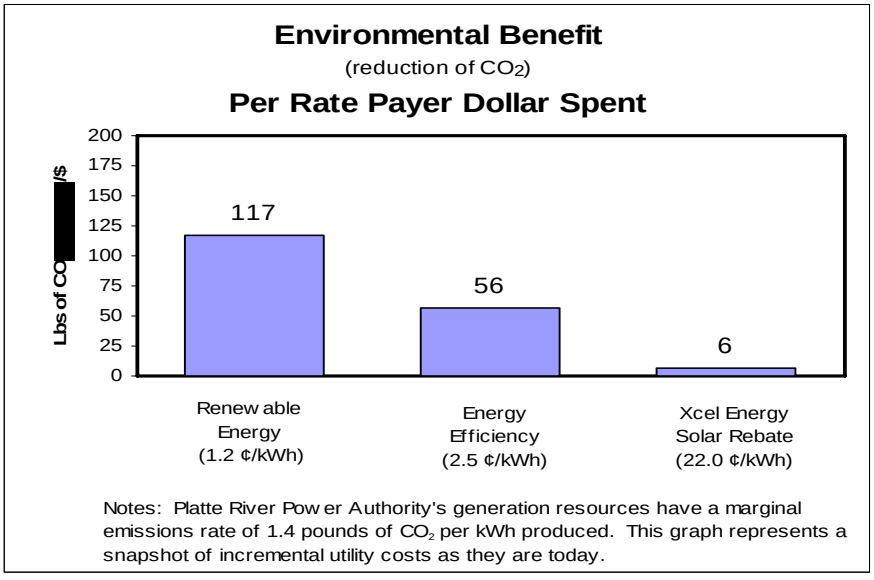
Partner with the Governor's Energy Office on incentives for residential solar PV installations. This program will be available in 2008 and may be expanded in 2009, depending on state funding. Program details are in development.

d**. ClimateSmart Education Campaign**

Partner with Boulder County and other county municipalities in a coordinated campaign to educate residents and businesses on energy efficiency, renewable energy and sustainable practices to reduce greenhouse gas emissions.

A key part of the discussion on utility investment in renewable energy and energy efficiency should focus on the overall objective of these initiatives and the relative cost-benefit of each approach. If the overall objective is to decrease greenhouse gas emissions by decreasing the use of fossil fuels for electric generation, then first priority should be placed on measures that have the highest emissions reduction per dollar invested.

Below is a chart showing current incremental utility costs for renewable energy, energy efficiency and solar incentives, and the environmental benefit per dollar invested.



Other potential areas for possible program enhancements include additional water conservation programs such as in line residential water heaters; rain sensor rebates; water audits for commercial customers. One item staff is interested in pursuing is revising the City ordinances pertaining to rebate programs in order to allow additional program flexibility at the administrative level that enables more efficient and timely implementation of new initiatives given the rapid rate of change occurring in the overall conservation arena.

4. Energy-related partnerships

The following partnerships may provide opportunities for cost-sharing or other efficiencies in implementing energy-related programs:

a. Governor's Energy Office

The Colorado Governor's Energy Office (GEO) has announced several new energy efficiency and renewable energy programs that offer matching fund opportunities in 2008. Staff is evaluating GEO programs to identify potential opportunities for Longmont, including:

- Colorado Carbon Fund, supports new clean energy and greenhouse mitigation projects
- ENERGY STAR New Homes Program, seeks cities and counties to partner in training and education programs to support construction and testing of new energy efficient single family homes built to ENERGY STAR standards
- Event and General Organization Sponsorship, supports energy efficiency and renewable energy events and non-profit organizations
- High Performance Design Program, seeks partners for High Performance Design options for commercial buildings
- Income Based Energy Efficiency Services for Residents, seeks cities/counties for program participation
- Insulate and Seal Colorado Program, seeks partners for program participation
- Performance Contracting Program, seeks participants in performance contracting for public/commercial buildings
- Residential Solar Rebate Program, seeks partners for program implementation

b. Platte River Power Authority. Longmont will continue to partner with Platte River in implementing programs for commercial energy efficiency incentives and for high efficiency lighting incentives.

5. Green build for commercial buildings

Last year, the Board of Environmental Affairs (BEA) developed a residential green-build program (Green Points) that was adopted as an ordinance by Council in July of 2007. Staff has been working with the BEA to evaluate commercial green building programs in Colorado and across the country with the

intent of proposing a commercial program for Longmont. At this time it appears that the LEED program (Leadership in Energy and Environmental Design Green Building Rating System™) is the best choice. LEED is a nationally-accepted program that promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED provides systems to rate the environmental aspects of new construction, existing buildings, commercial interiors, core and shell construction and retail design and construction.

6. Global warming/climate change and water supply

A study of the potential effects of climate change on our water supply is budgeted for 2008 and will be started in the first quarter. The time for completion will depend on the scope of the study and whether or not modeling is involved. Recommendations from the study may be incorporated into future water management plans and CIP projects.

7. CO2 reductions/climate change/carbon footprint

There are both local and regional activities in this area. In 2008, the City will continue with an evaluation of its own facilities, completing and expanding on the existing inventory of carbon emissions associated with heating and cooling City buildings. The City has established a utility database to mitigate and track natural gas and electric usage for all City-owned buildings and facilities. From the utility database, the City can estimate CO2 emissions from energy use. Annual CO2 emission estimates from City buildings and facilities were reported to Boulder County this year.

Staff will also work on selecting an Energy Services Company to help identify projects for improving energy efficiency in City facilities and determine the payback periods for the investments that will be required. A related project in 2008 will be working with an engineering company to map energy intensity for all utility accounts in the City in order to better understand the relative environmental effects associated with different land uses and activities. Education of City staff on their personal contributions to energy savings will also continue.
On the regional side, the Boulder County Consortium of Cities has completed an Energy Sustainability Plan that includes several strategies, many of which are already under way or planned to be implemented in Longmont. These strategies include:

a. Offer compact fluorescent bulb (CFL) discounts
b. Conduct neighborhood energy awareness sweeps
c. Develop residential green building codes
d. Implement Partners for A Clean Environment (PACE) Energy Performance Project
e. Develop commercial green building codes
f. Promote industrial combined heat and power technologies

8. Air quality

In late 2007, the Regional Air Quality Council issued a list of recommended actions to reduce emissions of ozone-forming pollutants. Longmont's participation in implementing these or other recommendations will be evaluated in 2008. One of the actions that could be taken in Longmont is promoting low-emission landscaping practices.

Whether it is electricity used for lighting or natural gas for heat, the fossil-fuel derived portion of energy used in City-owned buildings and facilities contribute to the local "smog" (or ground-level ozone) problem. The City's on-going energy management program should mitigate unnecessary ozone-forming pollutant emissions. In addition to specific energy efficiency measures being evaluated, employees now have access to monthly building and facility energy use on the City intranet. Further understanding of real energy use by employees should foster additional conservation.

9. Green-build standards for City facilities

The City is planning to construct two new facilities that will reflect green-build requirements. The first, a centralized Facilities Maintenance and Operation shop (unfunded CIP project PB-161) may provide an opportunity to incorporate both green-build standards and LEED concepts. The project would be used to evaluate the capital and maintenance costs of available technologies and evaluate the longevity and reliability of systems. This information could help set standards for more sustainable construction of new or remodel projects within the City.

The second project is the new Fire Station at 11th Avenue and Terry Street. This project has incorporated green building concepts from the start, including:

- A significant amount of the existing masonry, roof structure and concrete will be recycled
- All of the single pane windows will be replaced with insulated windows
- Passive solar gain will be accomplished by minimizing glass in the north-facing garage doors and adding several rows of glass in the south-facing garage doors
- Solar pre-heating of domestic hot water will be utilized
- Insulation will exceed code requirements by 50%
- High efficiency furnaces will be installed
- Passive solar pre-heated fresh air intake will be utilized
- ENERGY STAR appliances and compact fluorescent light bulbs will be used

10. Sustainable land use and transportation practices

The City will continue to implement a variety of Goals and Strategies in the Longmont Area Comprehensive Plan (LACP) that have made Longmont one of the more densely populated cities in the country. Longmont has, to a large

degree, adhered to Land Use and Urban Design Goal LUD-1 which states "Achieve a compact urban form that uses land efficiently, is aesthetically pleasing, and minimizes undesirable impacts to the environment."

The City will also need to evaluate Low Impact Development (LID) concepts and techniques in 2008. LID involves revised urban design concepts that minimize pollutant generation and transport. The Federal stormwater regulations require that development and land use practices be reviewed and changes made to reduce water pollution. This may require revisions to the development and land use codes. Some proposed developments in Longmont could also be an opportunity for private developers and the City to demonstrate the effectiveness of LID design.

The City Council has also accepted mixed use development-transit oriented design regulations that should encourage that type of project to promote a more efficient land use – transportation system that will result in a more sustainable community by having residents living and working in the same neighborhood.

11. Open Space program

In the November 2007 election, Longmont voters approved a 13-year extension of the existing 2/10¢ Open Space Sales Tax. This will provide additional funding for land acquisition and projects.

The Parks and Recreation Advisory Board reviewed the open space program during their January 2008 meeting and recommend a balanced strategy; focusing on land acquisition, trail/district park development and maintenance. In regard to our community buffer they indicated that the Boulder Creek Corridor is important because of rich riparian habitat and that the Union Reservoir buffer should be firmed up whenever opportunities arise.

12. Urban tree canopy

Public Works and Water Utilities Department and Longmont Power & Communications will team with the Parks, Open Space & Public Facilities Division to complete an initial evaluation of the urban forest and tree canopy. The evaluation will be done using the CityGreen GIS software which helps to quantify benefits that the urban forest provides in the areas of stormwater runoff, air quality, summer energy savings, carbon storage and avoidance and tree growth.

Community Involvement

Staff would like to discuss with Council a variety of community involvement opportunities and strategies associated with the development of the community's integrated environmental sustainability plan. Community involvement efforts to date include surveying public support to pursue and fund a wide variety of

environmental programs. Environmentally focused questions were included in the Citywide Customer Satisfaction Surveys in 2005, 2006, and 2007. Please see the attached excerpts from each of the surveys. The annual Consumer Confidence Report issued by the Water Utility has also solicited customer feedback on a survey included with the report for the past several years. Both surveys indicated strong community support to pursue environmental programs and also fund the programs primarily through water and electric rates. Council may want to receive additional community feedback as the integrated plan continues to be developed and as the process to prioritize sustainability programs commences. One approach to gather the community and focus our efforts could be through hosting an environmental summit this year. Several on-going options exist including additional public surveys; town hall meetings; electronic polling of demographically representative groups of community members; focus groups, etc. This process could also include soliciting feedback and partnership opportunities with other communities, agencies; state and federal governmental bodies; and interest groups. It is intended to task the new environmental sustainability coordinator with overseeing this process. Staff also anticipates a significant role for the City's Board of Environmental Affairs in the on-going implementation of the integrated plan.

Depending upon Council's preference, the community involvement process(s) should be timed to provide feedback and information in a timely manner to influence the decision making process – especially as it relates to the prioritization and overall implementation strategies. Staff would envision an on-going community involvement feedback loop that continues as programs are identified and initiated. This process could also provide a check on the effectiveness of the programs once they have been in place for some time.

Staffing and Resources

In 2007, Council approved the creation of the Environmental Sustainability Coordinator position. This new position was created through a reallocation of vacant positions in several funds including the water, electric, sanitary sewer, sanitation, storm sewer, and general funds. This position will be responsible for the overall coordination of the City's environmental programs. It is clear to staff that our ability to pursue a wide range of initiatives will also require the realignment of additional staff resources. The extent of this realignment and whether or not it can be accomplished within our existing overall staffing levels will of course depend upon the number and magnitude of new programs as well as how rapidly Council wishes to implement them. Staff believes up to two additional FTEs can be allocated to work on the implementation efforts.

The 2008 Budget includes the following funding for environmental programs and actvities:

Water Utilities

Water Conservation:

• Irrigation system efficiency audits	$ 10,500
• Xeriscape Seminars	$ 3,000
• Garden in a Box	$ 4,000
• Conservation/landscaping consultation	$ 5,000
• Children's Water Festival	$ 2,700
• Soil amendment program	$ 35,000
• Washing machine Rebate Program	$ 20,000
• Toilet Rebate Program	$ 20,000
• Urban Tree Canopy Study (PWWU share)	$ 10,000
• Water Supply – Impacts of Climate Change	$ 25,000
• South Platte Endangered Species Recovery Program	$ 75,000
• Colorado River Endangered Species Recovery Program	$ 1,500
• St. Vrain Creek Riparian Protection Program (All funds)	$100,000
• Keep It Clean Partnership (Regional stormwater compliance Activities)	$137,500
• Partners for a Clean Environment (PACE) contract for pollution prevention services)	$ 27,000

Total Water Programs **$476,200**

Given the strong public support shown in the 2007 Citywide Customer Satisfaction Report, staff will identify the water and sanitary sewer rate impacts associated with a range of environmental programs in the on-going rate and fee study. Staff anticipates presenting the initial findings of the study to Council later this spring for consideration and direction.

Longmont Power & Communications

The 2008 LPC budget includes a new position of Energy Services Engineer to administer energy efficiency and renewable energy programs for end-use customers. This position will evaluate, implement and manage LPC energy efficiency and renewable energy programs in collaboration with other City departments, Platte River Power Authority, other government agencies (county and state) and nonprofit agencies.

The 2008 LPC budget also includes the following energy efficiency program funding:

• Commercial Electric Efficiency Program	$ 50,000
• Appliance rebate programs	$ 30,000
• Boulder County Residential Energy Audit Program	$ 10,000
• Neighborhood Energy Efficiency Sweep Program	$ 10,000
• Small Business Energy Efficiency Program (PACE)	$ 10,000
• Colorado Energy Science Center (school programs)	$ 10,000
• Refrigerator/freezer recycling program	$ 65,000

• Holiday LED light incentive program	$ 5,000
Sub-total	**$190,000**
• Energy efficiency-DSM consulting	$ 2,500
• Tree Canopy Study (LPC share)	$ 10,000
• Energy efficiency program advertising	$ 5,100
• Energy efficiency program support materials	$ 7,500
Sub-total	**$ 25,100**
Total LPC programs	**$215,100**

Community Development

The Parks, Open Space and Public Facilities Division is housed within the Community Development Department and includes a number of operational expeditures related to environmental and conservation efforts, including:

Facility Operations and Maintenance Services	
• City-wide implementation of Green-certified custodial supplies and paper products. (no added cost over existing practices)	$ 0
• Implementation of the HVAC Preventative Maintenance program	$ 12,000
Sub-total	**$ 12,000**
Energy Management Program	
• Energy Management Coordinator	
Parks and Forestry Services	
• Tree Canopy Study (Parks share)	$ 10,000
• Noxious weed abatement	$ 20,000
• Arbor Day	$ 7,000
• City-wide Clean-Up Green-Up	$ 2,500
• Adopt a Park – Greenway Program	$ 2,000
• Green Products – disinfectants, trash bags – made of 80% recycled materials vs 100% virgin materials	$ TBD
Sub-total	**$ 41,500**
Open Space and Trails Service	
• Noxious weed abatement	$ 15,000
• Russian Olive removal program	$ 35,000
• Wildlife Management program	$ 40,000
• Sandstone Ranch Visitor Center – environmental education	$ 15,000

• Fisheries management coordination with Dept. of Wildlife	$ 5,000
Sub-total	**$110,000**
Total Community Development Programs	**$163,500**
Citywide Total Program Expenses	**$854,800**

Potential Action Plan for the Next 2-3 Years

As indicated in prior community surveys, Longmont citizens are supportive of funding programs that enhance and protect the environment. The attached 2007 Customer Satisfaction Survey indicates very strong citizen support for the City to rely on user fees. Support in excess of 85% of the respondents was indicated in the areas of enhanced recycling programs; water quality efforts; rebates for solar power; use of storm drainage funds to treat storm water runoff; and educational programs. At last year's retreat, Council initiated the development of the City's integrated environmental protection plan. The first year's work on the integrated plan consisted of a concerted effort to begin the process of identifying the variety of environmental initiatives being conducted by the City – either alone or in partnership with other agencies governmental bodies. Additionally, several programs were enhanced including the percentage of the City's power supply provided by renewable energy sources; expansion of the water and electric rebate programs and making them available on a year round basis; and the City moving forward to contract with an ESCO through the Governor's Energy Office.

It would appear that given limited resources and revenues to fund programs, a process of prioritization may be valuable to undertake in 2008. In keeping with the initial Focus on Longmont Strategic Plan this effort would include significant participation and involvement by the community. Development of a clear and compelling vision together with a set of goals should be completed in each of major environmental focus areas of energy; water; air quality; recycling; and building standards.

Once the vision and goals have been developed by Council and the community at large, the next step would involve a prioritization process. In order to adequately prioritize programs, it is necessary to have a shared, thorough understanding of the relative benefits of the programs as well as the possibility of cross leveraging one program with others – on a local as well as a regional basis. While staff has worked to conduct rough cost benefit analyses on the on-going programs, we believe more work is needed to more fully evaluate the full range of the "Triple Bottom Line" benefits including economic, environmental, and social aspects. Expressing known and anticipated benefits in clear understandable metrics needs to be undertaken in a comprehensive manner. It

is hoped this work will also reveal areas of overlap and opportunities to cross leverage programs for greater overall benefit.

Staff has attached excerpts from Boulder County's Consortium of Cities Sustainable Energy Plan for Council's reference. Many other communities have developed their environmental sustainability or protection plans that staff could also research and glean ideas from for possible approaches that may work for our community. Many of these plans include a performance measurement aspect such as an environmental report card that is used to monitor progress and effectiveness of programs and provide an effective means of communicating with the general public and soliciting their input.

Attachments

1. Attachment A – Summary of the 2007 Environmental Plan Activities
2. LPC1 - Renewable Energy Survey Results
3. LPC2- Renewable Energy Supply summary
4. LPC3 – Renewable Premium Cost Estimates
5. LPC4 – Estimated Average Electric Rate Increases
6. Excerpts from the 2005, 2006, and 2007 Customer Satisfaction Surveys relating to water and energy conservation
7. Boulder County Consortium of Cities Sustainable Energy Plan – Dec 2007
8. Open Space Program Update - 2007 Brochure
   Variety of water and energy conservation and water pollution prevention brochures