

Environmental Issues - Development of an Integrated Environmental Protection/Enhancement Plan

Overview

The *Focus on Longmont* citywide strategic plan identified 5 policy directions. This paper provides Council with additional information concerning Policy Direction 3, “Enhance the Natural Environment.” The rationale for this policy notes that improving and sustaining our natural environment are key elements of a sustainable community. This policy supports the overall concept of sustainability, which includes minimizing impacts on the environment and conservation of our scarce natural resources. Meeting the environmental goals related to this policy will require the use of a variety of programs and strategies, and may also require a significant commitment of resources. The following activities or programs were identified for further consideration by Council in response to Policy Direction 3:

- Enhanced recycling programs
- Watershed protection
- Stream restoration
- Stormwater quality
- Green built program
- Energy efficiency/conservation programs
- Water Conservation programs
- Continuing the Open Space Tax

Although some of these items may seem to be unrelated, they can impact or influence each other. For instance, the Green Built program has the potential to improve energy efficiency, conservation of resources and even stormwater quality. Likewise, stream restoration has an effect on our watershed protection efforts, open space programs, and stormwater quality. Evaluating and understanding the areas of influence and impacts of the various programs can lead to several benefits, such as sharing of resources, data collection, timing, and prioritization of actions. Many other communities are either facing similar environmental challenges or have dealt with them for many years. One example related to water quality is New York City, which relies on watershed protection and land use management to maintain the purity of its water supplies. Because of this approach, New York does not have to filter its drinking water, and is actually known for its excellent water quality. Other examples include communities that have produced compost from diverted yard waste, food waste or biosolids and used the compost product for soil amendment and landscape reclamation. Adding compost to soil reduces erosion and stormwater runoff, thereby improving water quality. Clearly, further research into the best practices of other communities would be helpful in developing an integrated approach to environmental issues.

Staff will present information on current and proposed programs and activities in each of the areas listed above. Staff will then discuss with Council possible 2007 work plan items that relate to developing an integrated approach to the environmental challenges and opportunities our community is facing.

Questions to Consider:

The following questions are intended to focus our retreat discussion of each of the various environmental issues.

1. What additional information does City Council need concerning the decision drivers that could affect the City's approach to these environmental issues?
2. Does City Council have a preference or approach to developing the appropriate partnerships with outside agencies and what role does Council envision the City playing?
3. Does City Council have any preferences for prioritizing and/or integrating the City's efforts in these various environmental areas?
4. Does City Council want staff to further research and evaluate best practices used by other communities to address these environmental issues and how they could apply to Longmont?
5. Does the City Council want to ask the voters to increase the Open Space sales tax?

SOLID WASTE RECYCLING PROGRAMS

INTRODUCTION/BACKGROUND

The Solid Waste Division of the Public Works & Water Utilities Department provides a wide variety of recycling services and environmentally focused programs for Longmont residents. These services are essential for protecting public health, reducing the environmental impacts of disposable materials and providing reuse/recycling opportunities for what would have been considered waste materials in the past. Recycling and reuse are directly related to protection and enhancement of the environment because they conserve natural resources and divert materials from landfills, incinerators and other disposal methods that cause air and water pollution.

CURRENT PROGRAMS AND ACTIVITIES

The Solid Waste Division's current programs and services include:

1. Curbside Recycling: All residential sanitation customers are offered twice per month curbside recycling collection for clean paper, newspaper, catalogues, window envelopes, glass, aluminum, tin and specific plastics (numbers 1 and 2).
2. 24/7 Recycling Center: The recycling center accepts all materials above as well as phonebooks, chipboard (cardboard with a resin or plastic coating) and cardboard. The center also hosts several "hard to recycle" events throughout the year for items such as white foam block, computers, etc.
3. Tree Limb Diversion Center: Customers can bring their branches and leaves to the center at no cost. The branches and leaves are ground into mulch which is available to all sanitation customers at no additional cost. The site is also available to commercial and non-sanitation customers for a nominal fee.
4. Recycling of Motor Oil, Antifreeze and Batteries: This program offers curbside collection or drop-off recycling for these items.
5. Fall Leaf Collection: The annual Curbside leaf collection is an eight week program which collects bagged leaves and turns them into mulch. The City provides on average 30,000 compostable bags at no additional charge to customers.
6. Spring Branch Collection: This two week program offers curbside branch collection throughout the city at no additional cost to our customers and renders the branches into mulch which is available to all sanitation customers.
7. Christmas Tree Recycling: This two week program provides the opportunity for residents to recycle their Christmas trees at five locations throughout the city. The trees are ground into mulch.

8. The REACH Program: This program diverts items headed for the landfill that still have a useful life for someone in need. Working in conjunction with non-profit organizations during Stop-N-Drop events, the organizations select useful items and either give those items to people in need, or sell the items to fund their community services.
9. Household Chemical Drop-off Event: This service provides our customers with the opportunity to dispose of household chemicals in a safe and appropriate manner. This event is held once a year in partnership with the Boulder County department of Environmental Services Division. Items accepted are paints, pesticides, oils, vehicle fluids, ammunition and fertilizers.

These programs, which are provided in addition to basic trash collection, are clearly valued by customers as indicated by the 2006 customer satisfaction survey, which listed solid waste as the number one rated city service.

NEW OR EXPANDED PROGRAMS; LINKAGES AND POTENTIAL PARTNERSHIPS

Below are descriptions of some possible new programs or enhancements to existing programs. Opportunities for partnering with both internal and external parties are included in the descriptions. Staff will discuss these with Council along with the funding needs and other challenges.

- Work with Boulder County and their modified Material Recovery Facility (MRF) to begin single stream recycling: Single stream recycling eliminates the need for separating recyclables, making it easier for customers to recycle. It will also allow recycling of items that are currently prohibited. The MRF is expected to be complete in late 2007 or early 2008.
- Convert the Stop-N-Drop to a recycling event rather than a trash drop for the landfill. This will require separating items brought to the event and recycling as many of them as possible. Finding end users or markets for the materials will require working with different agencies and individuals in the City.
- Participate in the construction of the new Boulder County Hazardous Materials Management Facility to provide greater opportunities to properly dispose of chemicals. The new facility will be open five days a week and available for all Longmont residents. The Intergovernmental Agreement with Boulder County related to this facility will be presented to Council in early 2007.
- Evaluate the feasibility of requiring producer responsibility for certain materials. Producer responsibility requires retailers to take back for disposal items such as paints and pesticides. A disposal fee would be charged to the consumer at the time of purchase on the products. This program is designed to provide appropriate disposal for hazardous products and/or urge consumers to purchase less hazardous products. An example of producer responsibility is car battery purchases which have an added disposal fee at the time of purchase.

- Expand education and outreach programs in conjunction with Eco-Cycle. This would begin with an advertising campaign in the Times-Call to focus on education and current programs and services. Information will be produced in English and Spanish.
- Use City-sponsored clean-up events throughout the city in parks, open space and greenways to increase public awareness of and involvement in cleaning up the environment. This could also include neighborhood cleanup efforts in conjunction with the Community Services department.
- Improve education efforts and increase participation in municipal office recycling at all City facilities. This would involve working with all City departments to evaluate material acquisition and usage and continue promoting (or requiring) recycling of materials. This effort could also further educate City staff about use of recycled paper, elimination of Styrofoam products and making purchase decisions based on environmental considerations. Council could become involved in enacting applicable policies or ordinances.
- Work with Parks and LDDA to add recycling bins downtown and at other locations throughout the City.
- Evaluate public support and Council interest in participating in or adopting the principles of Boulder County's Zero Waste Initiative: The principles of this initiative are managing resources instead of waste; conserving natural resources through waste prevention and recycling; turning discarded resources into jobs and new products instead of trash; promoting products and materials that are durable and recyclable; and discouraging products and materials that can only become trash after their use.
- In conjunction with the private sector and Council, evaluate requiring private haulers working within city limits to provide unlimited recycling for their customers. This would apply to multi-family and commercial sectors.
- Support neighborhood revitalization efforts by providing multiple containers for neighborhood cleanups so that residents would separate the recyclable items for appropriate disposal. This would be done in conjunction with the Community Services Department and neighborhood groups.
- Evaluate the logistical and financial viability of starting a curbside food waste/yard waste collection and composting the collected wastes. This could be combined with diversion of yard waste from residences and parks and provide a reusable compost product for residents or commercial uses. Programs of this type have been successful in several cities in California.
- Begin a pilot roll-off dumpster disposal program which will promote recycling by providing customers with multiple bins. In addition to four cubic yard bins for trash, we would offer additional bins for recycling. An example would be offering these dumpsters to contractors so that they could separate their waste stream into separate containers for recyclables such as wood, metal and cardboard. This program would also align with the neighborhood revitalization efforts such as neighborhood cleanups.

- Evaluate the business case for a City-operated transfer station for trash and recyclables. A transfer station could reduce current disposal rates and also provide a single location for recycling of both conventional and hard-to-recycle materials, separation of compostable materials, and REACH drop-off. Potential cost savings and added convenience for Longmont residents are some of the reasons for evaluating a transfer station.

PUBLIC SUPPORT, FUNDING ISSUES AND CHALLENGES

Public input

In evaluating the feasibility of pursuing any of the programs discussed above, staff would research best practices in other communities; evaluate opportunities to provide the service to Longmont and obtain input from the public regarding the level of financial and community support needed for participation in the programs. Staff would also evaluate and document the costs and benefits of the programs to allow Council and the public to decide on whether or not the programs make sense for Longmont. Techniques that could be used to obtain citizen input could include a “Focus on Longmont” type of process for solid waste and recycling, citizen surveys, focus groups, advisory boards, and public presentations to civic and other groups such as neighborhood associations. Input would also be solicited from potential partners, both public and private.

Funding issues

Several of the programs and initiatives discussed above will require additional financial and staffing commitments. Increasing customer awareness and providing more convenient ways to recycle will necessitate more personnel in the areas of program management and field personnel. Contracted services may also increase depending on their cost-effectiveness. A transfer station and composting would also provide opportunities for revenues or offsetting costs. Partnering with other agencies, such as Boulder County, could also reduce the costs of some of the programs. If Council decides to have staff pursue some of these ideas, staff will provide funding and staffing impacts before proceeding further.

Other challenges

Providing enhanced recycling services and opportunities to support environmental goals will require clear direction from Council and the public because of the costs involved. In addition to public participation and education, which were discussed above, some other challenges identified are:

- Coordinating and integrating recycling with other City environmental programs
- Obtaining clear public direction regarding the type of services desired and the price customers are willing to pay
- How to provide the most efficient coordination of programs and activities
- Clearly identifying the benefits of enhanced recycling so that costs can be justified
- How regional, national and global environmental issues, such as energy use, global warming, etc., influence our decisions and affect the costs and benefits of the services we provide
- Working with private haulers and private customers to optimize recycling and reuse

WATERSHED PROTECTION, STREAM RESTORATION, STORMWATER QUALITY AND WATER CONSERVATION

BACKGROUND/INTRODUCTION

The St. Vrain Creek watershed is a significant environmental asset for the citizens of Longmont and others who live along the creek or any of its tributaries. St. Vrain Creek provides habitat for several state-listed species of fish that have been declining in population in other parts of the South Platte River Basin. The creek and ditch corridors in the watershed also create riparian areas that support many other types of wildlife and are used for both passive and active recreation. As population increases, changes in land use, development pressures and increased recreational demands place the natural environment of the creek in jeopardy. Preserving and enhancing the unique characteristics of the watershed will require attention to the following areas:

- Monitoring of water quality and aquatic life habitat throughout the watershed to identify pollutants and their sources
- Assessing the condition of streams and reservoirs in the watershed and the level of aquatic life they are able to sustain
- Removing or treating currently uncontrolled discharges of pollutants, such as septic tanks, abandoned storage yards or businesses, mine drainage, etc.
- Restoring and improving habitat for aquatic life
- Providing a high level of treatment for wastewater discharges
- Reducing the impact of stormwater discharges
- Providing increased stream flows to support aquatic life
- Protecting riparian areas and stream corridors by acquiring open space and managing development patterns
- Mitigating the impact of non-point source pollution on the stream

Several different departments and divisions in the City are involved in watershed-related activities. Public Works and Water Utilities (PW&WU) has been meeting State and Federal regulatory requirements related to drinking water and wastewater treatment for many years. However, like most other public utilities, PW&WU has focused on individual pollutant sources, such as the wastewater treatment plant. The regulatory agencies on both the national and State levels are moving away from this approach and focusing on entire watersheds. Stormwater regulations are an example of the new approach. These regulations include a mix of actions, such as public education, pollution prevention and treatment or mitigation of pollutant sources. The idea is to reduce many different sources of pollutants rather than concentrating only on direct discharges to the watershed.

Protection of the species of concern and the community's interest and investment in St. Vrain Creek and the St. Vrain Creek Greenway are only two of the reasons that the City should take whatever steps it can to protect and improve the environment in the St. Vrain Creek watershed. The following sections describe what is already being done and possible future programs that will enhance environmental quality.

CURRENT ACTIVITIES

PW&WU has several programs and activities planned or under way that relate to watershed assessment, restoration and protection. These include:

1. Environmental Assessment

PW&WU staff has been testing stream samples at various locations along St. Vrain Creek since 1982. Sporadic aquatic life evaluations have also been completed since that time, with more emphasis on benthic (stream bed) organisms in recent years. The Department also partnered with the USGS in 2005 and 2006 to complete an evaluation of aquatic communities and water chemistry, including emerging pollutants such as pharmaceuticals and antibiotics.

2. Watershed Management

PW&WU has prepared a draft watershed management plan that initially focuses on increasing the monitoring and assessment of water quality throughout the watershed. Starting in 2007, pollutant sources and water quality in the upper watershed that affect Longmont's drinking water supplies will be identified and potential mitigation measures proposed. Stream and reservoir monitoring are also part of the plan. The intent is to begin monitoring conditions and quality in the watershed from the continental divide to the confluence of the St. Vrain and Boulder Creeks. The Department has started working with the USGS and the Colorado Division of Wildlife to identify critical portions of the watershed that support wildlife, including several fish species that are not found in other Front Range streams. The monitoring and assessment steps in the watershed management plan will help determine the most effective ways to improve water quality and support aquatic life. Reducing or eliminating pollutant sources, improving in-stream habitat conditions and public education are some of the steps that need to be taken to meet these goals. Ongoing monitoring will also be required to determine if watershed initiatives are showing the intended results.

3. Button Rock Preserve Forest Stewardship Program

In 2003, City Council approved the Button Rock Preserve Forest Stewardship Plan, which is focused on improving forest health and mitigating wildfire dangers in the Button Rock Preserve watershed by thinning of the forest to open the under story. This reduces the potential for runoff of sediments and other pollutants into the upper watershed and the City's water supplies.

4. Saint Vrain Creek Riparian Areas Protection Program

For several years, the City's CIP has included a project to fund improvements along the St. Vrain Creek corridor. Some small improvements have been constructed, but the scope of the project may need to be expanded to include protection and restoration of aquatic habitat

5. Stream Restoration and Habitat Improvements

Stream restoration improvements have been constructed in St. Vrain Creek and Left Hand Creek. Improvements on the St. Vrain include stream bank stabilization and wetland enhancements near the wastewater treatment plant and in-channel habitat enhancements between Main Street and Boston Avenue. These improvements were done in response to discharge permit compliance issues. Improvements to Left Hand Creek from Main Street to

the extension of Ken Pratt Boulevard were constructed as part of a stormwater management project, but they also help improve the water quality in St. Vrain Creek.

6. Stormwater Management

Stormwater runoff has been identified as a major pollutant source since the 1970s. However, specific stormwater regulations were not enacted until the 1990s and initially concentrated on industries and large municipalities. In 2003, the City became subject to federal and state Phase II stormwater regulations. The regulations require the following actions to address stormwater pollution: 1) public education and outreach, 2) public participation/involvement, 3) illicit discharge detection and elimination, 4) construction site stormwater runoff control, 5) post-construction stormwater management and 6) pollution prevention/good housekeeping for municipal operations. The City has adopted stormwater ordinances, updated stormwater standards and implemented inspection programs for construction activities and internal good housekeeping. Future work will involve monitoring stormwater quality to evaluate the effectiveness of the various actions. The City is a partner in the Keep It Clean Partnership (previously called Watershed Approach to Stream Health), which is a cooperative effort with Boulder County and several other cities to jointly work on meeting the portions of the stormwater regulations that are common to all the parties. This partnership is an example of a cooperative way to address regional environmental issues.

7. Water Conservation

Conserving water enhances the environment by making more water available for other uses, such as augmentation of stream flow. Conservation also reduces the need for and size of future raw and treated water storage and delivery systems, thereby reducing environmental impacts associated with construction of those systems. The City's Raw Water Master Plan Update included the following goal and policy regarding water conservation:

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 City has adopted a water conservation master plan and will update that plan in 2007 with input from the public, water board and City Council. The master plan update will include an evaluation of the City's current water conservation efforts to determine if current and proposed conservation best management practices (BMPs) can meet the 10 percent savings noted in the above policy.

NEW OR EXPANDED PROGRAMS; LINKAGES AND POTENTIAL PARTNERSHIPS

The new watershed-based approach to enhancing environmental quality will require input and assistance from other City departments, including planning and land use, open space, parks and recreation. Input will also be solicited from other public and private entities within the watershed. Obviously, the levels of funding and staff effort will also have to be aligned with the needs and desires of our citizens.

The following are possible directions that could be taken to improve the quality of the St. Vrain watershed.

- Partnering with other County, State and Federal agencies and volunteer groups to increase the amount of monitoring and provide better information to evaluate conditions and needed improvements in the watershed
- Working with the Parks Division to expand the scope of in-stream improvements in the St. Vrain Greenway corridor to provide better habitat for aquatic life
- Working with the Town of Lyons on combined watershed protection efforts in the upper watershed
- Continuing and expanding the use of open space funds to purchase and preserve buffer zones along stream corridors to protect riparian areas
- Revising land use codes in conjunction with Community Development to include more consideration of water quality and watershed protection
- Changing building codes to encourage low impact development, which reduces stormwater pollution
- Further improving City maintenance operations in all City Departments. These operations include street sweeping, ditch and inlet cleaning, material storage and facilities maintenance. Providing more opportunities to recycle materials would be part of this effort
- Managing forests in the watershed in cooperation with the Colorado Forest Service
- Creating a watershed association or similar type of legal entity to address regional watershed issues and improve the ability to obtain grant funds

PUBLIC SUPPORT, FUNDING ISSUES AND OTHER CHALLENGES

Public input

Several techniques could be used to better understand how our citizens view the City's role in improving water quality and providing better management of the watershed. We need to understand what the level of support is, both philosophically and financially. One approach is a public process similar to Focus on Longmont but limited to the topics of watershed enhancement and water quality. Other methods could include additional citizen surveys, focus groups, citizen advisory boards, and public presentations to civic and neighborhood groups. The challenge is to receive input that reflects what the citizens want and not necessarily the desires of special interest groups.

It is also important to receive input from and work with partners that have an interest in watershed protection. Some partners were listed in the above discussion of possible activities. Others that have been identified and the areas that they might be involved in are:

- Advisory boards – Providing contacts with community or organizational resources that could help fund watershed efforts
- Colorado Division of Wildlife – Helping to identify critical portions of watershed and prioritize resources, possibly assisting with grant funds
- USGS – Assistance with stream quality and aquatic life assessment, providing grant funds
- Boulder County – Help with identifying pollutant sources
- St. Vrain Corridor Committee – Providing public input, participation in developing increased in-stream flows in the Saint Vrain Creek corridor, coordination between governmental and private organizations interested in the health of the St. Vrain Creek

- Colorado Department of Public Health and Environment – Source of grant funds
- Various special interest groups, such as Trout Unlimited, Sierra Club, etc. – Possible sources of volunteer help and additional public input

Funding issues

Implementing both new and existing programs will require more funds for capital projects, staff time and contracted work. Additional staff will probably be needed and it is likely that the work done by existing staff may be redirected or reprioritized. Some of the areas where more resources will probably be needed include:

- Increased monitoring and assessment of the watershed, which could cost \$100,000 to \$200,000 per year depending on the level of sampling, testing and data analysis.
- New capital improvement projects associated with stream restoration and habitat improvements. Based on projects that have been completed, stream improvements can cost upwards of \$200,000 per stream mile. The benefits of these projects would need to be clearly identified.
- Coordination and management of environmental projects, along with public outreach and education, may require staff dedicated to these tasks. The level of staffing would depend on the extent to which Council and the public want to see the City involved in these areas.
- More outreach and education regarding water conservation goals will result in more staff time along with continuing and expanding contracted services. Additional staff would also be needed if more attention to compliance with the City's water conservation requirements is desired.

Other challenges

Maintaining and improving conditions in the St. Vrain watershed will present other challenges, some of which have been briefly discussed above. Challenges that we have identified include:

- Effectively integrating watershed and water quality concerns with other environmental initiatives and programs
- How to best solicit and receive public input regarding funding
- Determining the most effective ways to educate and inform the public of watershed issues
- Efficient and effective coordination of projects, programs and activities
- Ability to demonstrate to the general public the improvements and benefits in relation to expenditures
- Evaluating how our activities are affected by national or global issues, such as energy usage, green house gases, global warming, etc., and to what extent we want these issues to influence our priorities
- Resolving any conflicts between urban, agricultural and mountain perspectives regarding goals for the watershed
- Identifying and working with non-governmental agencies to minimize non-point source pollution
- Increasing in-stream flows without jeopardizing current water supplies

Meeting these challenges, the costs involved and how to fund them, and the benefits or drawbacks of an integrated approach with other environmental programs are topics for discussion.

ENERGY EFFICIENCY/CONSERVATION

ENERGY EFFICIENCY/CONSERVATION

Energy efficiency and conservation have emerged as central policies of economic, social and environmental change at the national, state and local levels. Energy demand continues to grow despite historically high energy prices and growing concerns over energy security, air pollution and global climate change.

Current projections anticipate U.S. energy demands to increase by more than one-third by 2030, with electricity demand alone rising by more than 40 percent (U.S. Energy Information Administration, *Annual Energy Outlook 2006*).

Energy efficiency refers to using less energy to provide the same or improved level of service in an economically efficient way (example: adding building insulation to reduce conditioned air loss). Energy conservation refers to reducing the level of service to save energy (example: adjusting the thermostat).

According to the National Action Plan for Energy Efficiency, a report issued by a national stakeholder group in partnership with the Department of Energy and the Environmental Protection Agency, energy efficiency “is one of the most constructive, cost-effective ways (to) lower energy bills, reduce demand for fossil fuels, help stabilize energy prices, enhance electric and natural gas system reliability, and help reduce air pollutants and greenhouse gases.”

Energy efficiency is considered a critical element of resource planning by most government and industry leaders. The American Council for an Energy-Efficient Economy and the U.S. Energy Information Administration estimate that the average life-cycle cost per kilowatt-hour (kWh) saved through many energy efficiency programs is 50 to 75 percent of the typical cost of building new power sources. In other words, it costs less to reduce energy consumption through efficiency improvements than to provide more power (the above data reflect national averages and may not accurately portray costs and savings potential in our region).

Well-designed energy efficiency programs can deliver annual energy savings on the order of 1 percent of electricity and natural gas sales. These savings can help are helping to offset 20 to 50 percent of expected growth in energy demand in some areas (Nadel et al., *The Technical, Economic and Achievable Potential for Energy Efficiency in the U.S.* (2004), and U.S. Energy Information Administration, *Annual Energy Outlook 2006*.)

Energy efficiency will not eliminate the need for new energy resources, but it can help:

- defer the development of new energy infrastructure
- reduce consumer energy bills
- re-direct investment into other activities that enhance national and local economies
- reduce the environmental impacts of energy production
- improve energy system reliability

THE ROLE OF UTILITIES IN PROMOTING ENERGY EFFICIENCY

Successful and sustainable energy efficiency requires a long term commitment and the collaborative effort of several stakeholders, including policy-makers (government), utilities, consumer advocate organizations, businesses and others.

Government agencies, utilities and non-profit consumer organizations are generally the prime movers for energy efficiency initiatives. Government typically provides policy direction, regulation, broad scale program initiatives, consumer education and funding. Utilities typically provide consumer education, program implementation and funding. Non-profit consumer organizations typically provide education resources and some program implementation, although they rely primarily on government and utilities for funding.

Utilities are considered to be in a unique position to play a leading role in energy efficiency because they have 1) energy expertise and experience, 2) consumer confidence and recognition as energy professionals and, 3) direct contact with consumers through utility bills and service connection and maintenance.

All energy efficiency programs have direct financial costs that exceed direct financial benefits for the utility. In addition to incentives paid out by the utility, costs include marketing and promotion, administration, and reduced sales revenues and franchise fees (due to lower sales). Direct financial benefits include reduced purchased power costs and, longer term, some deferred capital costs.

However, it is generally agreed that energy efficiency programs provide non-financial benefits to utilities and the public that are difficult to quantify. Those benefits include the reduced environmental impact of electric generation, enhanced customer service, economic development and improved public relations.

The Department of Energy estimates the national average life-cycle cost of a kWh saved through energy efficiency programs at \$0.03, but points out that costs can vary widely depending upon the region, type of program, utility rate design and other factors.

Locally, the cost of specific demand side management and energy efficiency programs administered by Platte River Power Authority and Fort Collins Utilities in the last four years has ranged between \$0.005 and \$0.028 per kWh saved.

THE CURRENT SITUATION

In 2006, the City of Longmont created a part-time contract position to provide regular support for its Energy Management Program (EMP). The EMP is intended to assess the current use of energy, identify opportunities for reduced consumption and facilitate future energy efficient and green-building strategies for City facilities. An Energy Management Team (EMT) has been established and has implemented an Energy Policy Statement and a Thermal Comfort Standard. These items reinforce the City's commitment to conserving resources for employees and citizens alike. The EMT has created a database for all electric and natural gas usage for municipal facilities. The database will establish the baseline energy use and also quantify future changes in those utilities. The EMT is

working in a collaborative manner and integrating the EMP with cross-functional disciplines within the City. Efforts are in place to ensure energy efficient products and building systems are procured and used. Basic tenets of energy conservation will also be encouraged through employee outreach efforts. The EMT reports quarterly to the City Manager and Leadership team.

The EMT is also working with a local representative of the Governor’s Office of Energy Management and Conservation (OEMC). The OEMC has developed the Rebuild Colorado program to help building owners identify and assess energy-saving projects in buildings, and help make those projects a reality. Rebuild Colorado representatives offer free services for municipal buildings including feasibility studies for energy efficiency and performance contracting projects. Performance contracting is a method by which municipalities finance energy efficiency upgrades using the utility cost saving generated by the energy efficiency upgrades. The EMT has scheduled feasibility studies with the local Rebuild Colorado representative for five high-energy use City facilities.

Longmont Power & Communications (LPC) currently has two primary budget programs to encourage consumer electric efficiency measures, which are:

The Commercial Electric Efficiency Program (Longmont Municipal Code, Section 14.32.160) has a 2007 budget of \$40,000 and provides financial incentives to commercial customers for installing electric efficiency measures that reduce either energy consumption or energy demand. LPC partners with Platte River to promote and provide incentives for this program.

The Appliance Rebate Program (Longmont Municipal Code, Section 14.32.220 Q. Rebates) has a 2007 budget of \$25,000 and provides financial incentives to customers for purchasing ENERGY STAR rated appliances, specifically clothes washers and dishwashers. LPC partners with the Public Works and Water Utilities to fund these appliance rebate programs.

The 2007 budget also includes \$5,000 to fund Longmont participation in a Boulder County Residential Energy Audit program.

The budgeted amount for energy efficiency programs does not include staff wages. It also does not include customer service, education and marketing efforts to assist with and encourage energy efficiency. Those efforts include free residential and commercial energy audits, bill and rate analysis, free publications, print advertising, web site resources and community events.

LPC’s 2007 budget of \$70,000 for energy efficiency programs equals about 0.15% of projected annual electric sales revenues. LPC staff actively involved in administering energy efficiency programs is the equivalent of .5 FTE. For comparison, dedicated funding and staffing of energy efficiency programs at other Colorado municipal utilities in 2006 is as follows:

| Utility | % of revenues | Budget \$* | FTE | # of Customers |
|---------------|---------------|-------------|-----|----------------|
| Longmont | 0.15% | \$70,000 | 0.5 | 36,000 |
| Loveland | 0.4% | \$125,000 | 0.5 | 30,000 |
| Fort Collins | 1.0% | \$750,000 | 4.0 | 61,000 |
| Colo. Springs | 0.4% | \$1,200,000 | 5.0 | 167,000 |

* Does not include staff salaries and benefits

NOTE: Loveland Utilities and Colorado Springs Utilities are considering plans to increase energy efficiency program budgets to 1 percent of annual retail sales by 2008 and 2009, respectively.

REGIONAL ENERGY EFFICIENCY PARTNERSHIP OPPORTUNITIES

There are several state and regional energy efficiency programs and initiatives currently existing or proposed that provide partnership opportunities for Longmont to leverage energy efficiency resources.

Platte River Power Authority

Platte River Power Authority, our wholesale power provider, has adopted a 2007-2011 Integrated Resource Plan that includes increased funding for demand side management and energy efficiency programs. The 2007 budget for energy efficiency is \$780,000 and will increase annually by \$180,000 to about \$1,500,000 in 2011. Platte River's total 5-year budget for energy efficiency programs is \$5.8 million. Platte River estimates its energy efficiency efforts will result in demand savings of about 12 megawatts (MW) and energy savings of about 32,000,000 kWh per year by the end of 2011. Energy efficiency programs will be targeted to all customer classes and provide LPC a significant opportunity to partner with Platte River for joint funding, marketing, promotion, customer education and staff support for these programs in Longmont. Programs in place or in development include commercial incentives for building and equipment upgrades, commercial lighting upgrades and a residential compact fluorescent light bulb incentive.

Estimated City funding: \$40,000-\$50,000 per year.

Boulder County Consortium of Cities

The Boulder County Consortium of Cities is scheduled (January 10, 2007) to consider an Energy Strategy Task Force recommendation to adopt several "early action" programs for energy efficiency. Member municipalities are encouraged to participate in any or all of the programs in a collaborative county-wide effort to increase energy efficiency. The recommended programs, and estimated municipal funding levels, include:

- Residential Energy Audit Program. The Center for ReSource Conservation (CRC), a Boulder-based nonprofit, is providing low-cost energy efficiency evaluations for Boulder County homeowners with matching funds from County and City governments. The home energy evaluations are conducted by local energy services professionals. Cost for each audit is \$200 to \$350, based on the size of the home. Boulder County is contributing \$50 for the cost of each audit; participating municipalities each contribute \$50 for the cost of each audit; and the homeowner pays the remainder. Government partners also reimburse the CRC for staff labor, materials and marketing costs. A pilot program in 2006 received excellent results, with participants reporting plans to invest \$1,000-\$5,000 in energy efficiency upgrades as a result of the audit.

Estimated City funding: Approximately \$106 per audit (includes professional auditor, CRC administration, materials and marketing). LPC is participating in this program in 2007 at a budgeted level of \$5,000, which will support about 50 home audits within the city.

- Neighborhood Energy Efficiency Sweep Program. The objective of this program is to lower residential energy and water use through the distribution of education materials and energy and water conservation tools. Identified neighborhoods will receive brief home visits to

distribute energy and water conservation kits. The kits contain eight CFL bulbs, water reduction aids, and energy and water conservation literature in English and Spanish. After receiving the conservation kit, residents can request a free one-hour home energy audit. The home visits are conducted by University of Colorado students and Boulder County senior tax workers.

Estimated City funding: Approximately \$50 per home visit (includes conservation kit and labor).

- Commercial Operations Resource Audits, coupled with Partners for a Clean Environment (PACE). This program is targeted to the small business community, which is slow to adopt energy efficiency measures even with financial incentives and free audits that identify upgrades to that will reduce future energy bills. PACE currently provides pollution prevention audits for small to medium-sized businesses in Boulder and Longmont. PACE staff will conduct an initial energy assessment and provide energy efficiency incentive program materials to with businesses as part of its regular visits. Interested businesses will be referred to an energy efficiency expert for assistance at no cost. An outside consulting firm will provide the energy expert who will guide the business through energy efficiency options, costs, estimated paybacks, scheduling and oversight of projects, completion of installations and completing all necessary paperwork. Local government will pay labor costs for PACE staff and the energy consultant. The assessments will focus on reducing electricity use.

Estimated City funding: Approximately \$50 per business visit (PACE staff) and up to \$500 per energy efficiency business project (energy consultant).

- Consumer Education and Outreach. This project will provide residents with information on how to increase energy efficiency, reduce energy consumption and reduce transportation costs. Educational materials will include printed materials, web-based resources and home auditing tools. Some educational materials will be targeted specifically to children.

Estimated City funding: \$2,000 to \$5,000.

- In-store discounted compact fluorescent lamp incentive. This program is a coordinated county-wide CFL incentive to residents in partnership with CFL manufacturers and retailers. CFL's will be offered at about \$1 per bulb, with county and municipal participants subsidizing a portion of the cost along with manufacturers and retailers. Details are not yet finalized.

Estimated City funding: \$10,000 to \$20,000.

Colorado Energy Science Center

The Colorado Energy Science Center (CESC) is a non-profit organization funded primarily through the Governor's Office of Energy Management and Conservation, federal grants and utility contributions. The CESC provides a variety of energy efficiency resources and programs for homeowners and schools, including workshops, education programs and science curriculum (teacher and student materials for both elementary and middle school). The CESC will conduct specific workshops and school programs for local schools with funding support from the local utility.

Estimated City funding: \$500 per workshop; \$500 per elementary school program (Energy Hog Traveling Road Show assembly and materials); \$2,500 per middle school program (multi-week classroom materials and Home Energy Investigation Contest).

Other program opportunities

The Environmental Protection Agency (EPA) is seeking utility partners for its Responsible Appliance Disposal Program. Older household refrigerators and freezers (produced prior to 1995) consume three to four times more energy than newer units. These older units also use refrigerants and foam insulation within the cabinet walls that both deplete the ozone layer and contribute to global climate change if emitted to the atmosphere. This program removes older appliances from the marketplace, recovers and disposes of pollutants such as mercury and PCBs, and recycles metal, glass and plastic materials. Utility partners typically offer an incentive (\$25 - \$35) to appliance owners for their old units, hire a third-party contractor to collect and dispose of the appliances, and provide consumer education and marketing of the program. Fort Collins Utilities conducted an appliance recycling program in 2004 with the following results:

- 699 units collected; average age 28 years
- Net unit energy savings of 1,172 kWh; annual program energy savings of 819,228 kWh; lifetime (8 years) program energy savings of 6,553,824 kWh; peak demand savings of 94 kW
- Annual customer utility bill savings of \$55,000
- 75.3 tons of metal, plastic, glass, insulation and refrigerants recycled or destroyed
- Avoided greenhouse gas emissions of 4,378 tons
- Program costs of \$162 per unit; cost of saved energy was 2.1 cents per kWh

Estimated City funding: \$160 per appliance. Based on population, an appliance disposal program in Longmont is projected to collect and recycle about 400 units annually at a cost of about \$64,000.

ENERGY STAR appliance rebates

LPC and Public Works and Water Utilities have offered limited-time rebates on certain ENERGY STAR appliances in each of the last four years. In 2003, 2004 and 2005, a \$50 rebate on the purchase of ENERGY STAR clothes washers was offered for three months during each year. In 2006, a \$50 rebate on clothes washers was offered for six months during the year. Also in 2006, the utilities offered a \$50 rebate on ENERGY STAR dishwashers for three months. Through December 31, 2006, 260 rebates had been issued at a cost of \$13,000. ENERGY STAR rated clothes washers save an estimated 600 kWh and 6,354 gallons of water per household per year, while ENERGY STAR rated dishwashers save an estimated 940 kWh and 360 gallons of water per household per year. The single biggest complaint from Longmont residents about these rebate offers is that the appliances must be purchased within the time restrictions determined by the utilities. Most consumers do not plan ahead for major appliance purchases to coincide with the utility programs. ENERGY STAR clothes washer and dishwasher rebate offers could be expanded to include other types of appliances and made available on a year-round basis. If rebates were available year-round, the number of qualifying purchases is projected to more than double from 2006.

Estimated City funding: \$30,000 annually.

BUILDING GREEN PROGRAM

The City Council, based on a recommendation from and the Board of Environmental Affairs approved a building green program that would be implemented over a two year timeframe and would be necessary to comply with in order to receive a residential building permit. The program is similar to the City of Boulder's and also being pursued by Boulder County. This program was chosen over others because many contractors and builders in the County will be familiar with it and therefore should reduce implementation time. Staff has prepared a draft Ordinance that is currently being reviewed by the Master Board of Appeals. The Board of Environmental Affairs will review it at its January 25, 2007 meeting. Staff will also be meeting with the Colorado Homebuilders Association representatives to listen to their concern that a mandatory program will be a disincentive to those builders who are already implementing building green principles. The City Council should then be reviewing the Ordinance at one of its February meetings

The actual proposed green point program can be reviewed at the following City web site:
http://www.ci.longmont.co.us/bldginsp/adopted/documents/green_build.pdf.pdf

OPEN SPACE PROGRAM

In November of 2000, the citizens of Longmont voted for a 0.2¢ sales and use tax, lasting for twenty years, generating revenue for the acquisition, improvement and maintenance of open space land in and around Longmont. The focus of the program is to provide a high-quality space and trails system for the citizens of Longmont by:

- 1) Preserving natural areas, wildlife habitat, biodiversity, wetlands, agriculture and visual corridors
- 2) Linking trails to provide access to public lakes, streams, parks and other usable open space and public lands, stream corridors and scenic corridors along the existing highways
- 3) Conserving natural resources including forested land, a range lands, agricultural lands, aquifer recharge areas, water rights and others
- 4) Designing District Parks devoted to low impact recreational uses, sensitive to natural land values
- 5) Providing urban shaping buffers between or around community service areas and creating buffer zones between residential and non-residential development

As of December 2006, the City of Longmont has protected a total of 2006 acres of Open Space which it manages: 1464 acres owned outright and 237 acres in conservation easements were afforded by the 2000 Open Space Bond Fund. The remaining 305 acres are associated with Lake McIntosh. The City also holds 788 acres in conservation easements for Boulder County. There are 415 acres that comprise the Union Reservoir buffer and 801 acres are under agricultural leases to five tenants that grow a variety of crops. The Open space program has also acquired 1092 acres that are associated with the St. Vrain Greenway. Attachment #2 identifies the open space acquisitions to date.

These acquisitions were made possible by leveraging the open space tax through bond financing. The City has used about \$19 million of the original \$22 million bond issue which will be paid off in 2020. The policy question for the Council is, given our current limited resources, is there any interest in asking the voters to extend the existing 0.2 tax to enhance additional bonding capability or to add 0.1 in 2008 that would last until 2020, at which time the tax would be reduced to 0.03. This would add over \$25 million to the Open Space Fund to be used for additional acquisitions, capital projects, district park improvements or other related purposes.

In addition to land acquisitions, the Open Space program has been responsible for the staffing and management of the Sandstone Ranch Nature/History Center and the District Park development at Lake McIntosh. The Nature /History Center at Sandstone open in June of 2004 provides environmental and historical programming for scouting groups, home school programs, pre-schoolers and a variety of other programs for group that request such programs. Volunteers play a key role in the operation of the center, since 2004 we have seen a 128% increase in volunteer hours and increased visitation of nearly 300%. The development of Lake McIntosh included a 3.5 mile loop trail around the Reservoir as well as two boat ramps and an additional parking area. The first year the loop trail was opened park staff recorded approximately 44,000 visitor uses. This project was made possible because funds were made available through the Open Space funds.

A major policy question for the Council to consider would be whether or not another acquisition intensive bond program should be used or a pay-as-you-go approach.

The following is a contrast of the two approaches for Council consideration.

1) **Extending the tax:**

The maximum length of time for a City bond issue per the City Charter is 25 years. If the existing 0.20 tax was extended for 13 years through 2033 then bonds could be issued in 2008 to restructure the existing 2001 bond issues and also provides approximately \$14.4 million in 2008 for new open space projects. If the revenue were to grow at 3.5% annually, then revenue in excess of debt service and O&M expense would be significant in 2021 (over \$1.8 million per year) which would give the ability to do more open space projects between now and then (possibly another bond issue or pay-as-you-go); reduce the tax rate at that time; or even lower the rate of the tax requested to be extended beginning in 2021.

2) **Increasing the tax:**

A tax increase allows for more of a pay-as-you-go approach. A possible scenario would be to increase the 0.20 tax by 0.10 to a total of 0.30 between 2008 and 2020. This would provide approximately \$25 million during that period of time starting with in excess of \$1.5 million per year to make additional open space purchases on a pay-as-you-go basis. Then in 2021 all of the tax would sunset except for 0.03 which would continue without sunset for purposes of covering operating and maintenance costs. Using this approach instead of bonding would allow for the opportunity to direct all funds towards purchases, projects or operational costs avoiding having monies being spent on paying interest. Please see Attachment #3 for an illustration on how this might work.

The PRAB has discussed the desire to protect additional properties; particularly in Weld County. The attached map (Attachment #4) illustrates acquisition desires that are reflected in the “Weighted Values” and “Public Vision” maps in the City of Longmont Open Space & Trails Master Plan adopted in May of 2002. The attached map is not intended to represent a specific parcel by parcel acquisition program totaling \$25 to \$30 million in costs, but rather present areas that meet the above criteria and therefore eligible for acquisition. The total acreage depicted on the map is in excess of 3000 acres. Staff estimates that approximately 830 to 1450 acres, depending upon partnerships, conservation easements, grants, etc. could potentially be acquired with these additional dollars. Another important concept to keep in mind when reviewing the map is that the Open Space acquisition program has always been grounded to the principle of willing sellers; clearly not all property owners depicted in the map would be assumed to be willing sellers.

The Parks & Recreation Advisory Board reviewed these two approaches at its January 8, 2007 meeting and passed the following motion unanimously. It should be noted that the PRAB did not have the most current information on a tax extension and were informed that it would only generate \$5 million for new projects.

The PRAB has reviewed the information drafted for the white paper on this topic and is in agreement with the general intent of the outlined program which focuses on a pay-as-you-go approach. Further, the Board feels this approach is in agreement with the trend of positive public support for both the park system and the Open Space Program in recent Customer Satisfaction Surveys and found within the Focus on Longmont strategies. We recommend that the Council ask the voters to pursue this tax increase proposal.

- Attachment 1: Information from Customer Satisfaction Surveys
- Attachment 2: Open Space Acquisition Chart
- Attachment 3: Open Space Tax Increase Charts
- Attachment 4: Open Space Map

Attachment 1 Information from the Customer Satisfaction Surveys

Community Support for Renewable Energy Resources and Energy Efficiency

In the Longmont Policy Exploration Survey of 2005, survey respondents were asked to what extent they support or oppose the City of Longmont implementing various environmental or resource conservation policies or solutions. A majority of respondents supported each action presented. Solutions with the most support were: the use of renewable energy resources and continuing rebate programs for energy or water efficient fixtures. Selected survey results are shown on the following pages.

ENVIRONMENTAL ISSUES

SUPPORT FOR OR OPPOSITION TO IMPLEMENTATION OF ENVIRONMENTAL/RESOURCE CONSERVATION POLICIES/SOLUTIONS

Survey respondents were asked to what extent they supported or opposed the City of Longmont implementing various environmental or resource conservation policies or solutions (see Figure 16: Support for or Opposition to the City Implementing Environmental or Resource Conservation Policies or Solutions). A majority of respondents said that they supported each possibility. Solutions with the most support were the use of renewable energy resources and continuing rebate programs for energy or water efficient fixtures (washers, toilets, air conditioners). More than 90% of respondents reported support, with more than half in "strong" support.

Figure 16: Support for or Opposition to the City Implementing Environmental or Resource Conservation Policies or Solutions

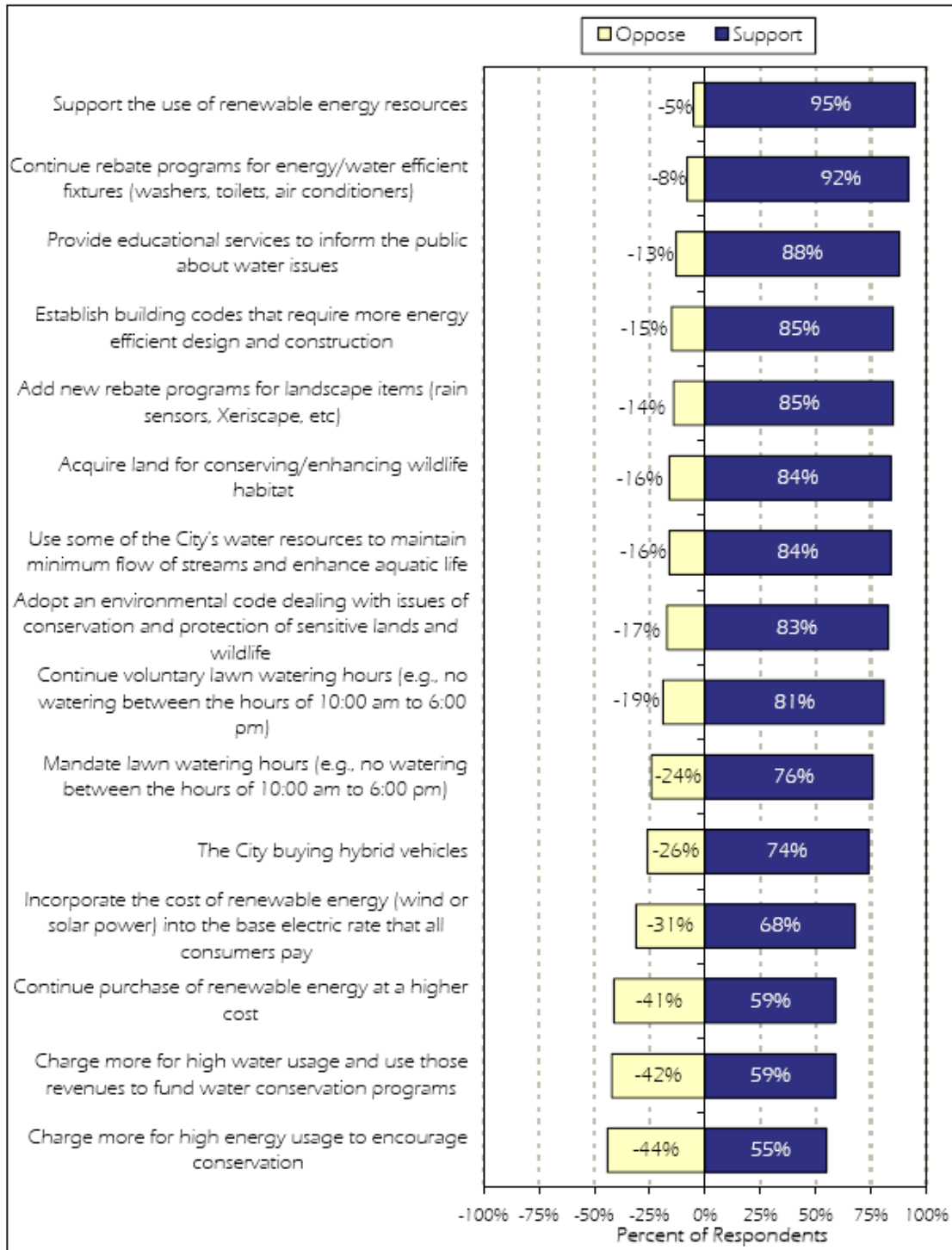


Table 9: Support for or Opposition to the City Implementing Environmental or Resource Conservation Policies or Solutions

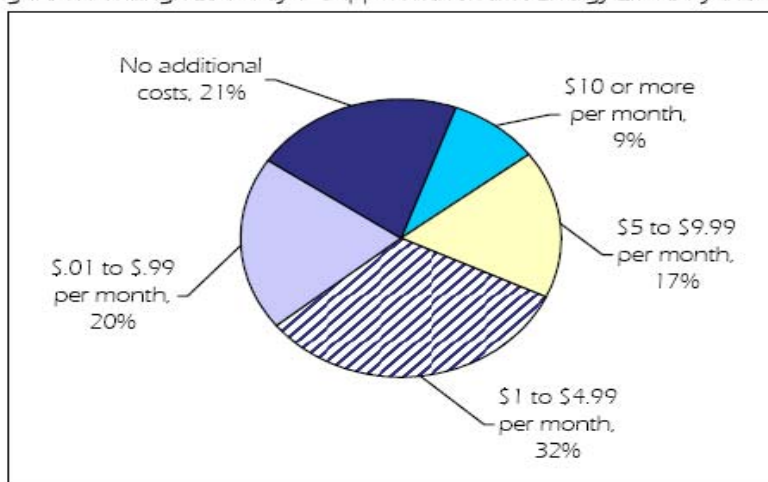
| Please indicate to what extent you support or oppose the City of Longmont implementing each of the following environmental/resource conservation policies/solutions: | Strongly support | Somewhat support | Somewhat oppose | Strongly oppose | Total |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-----------------|-----------------|-------|
| Support the use of renewable energy resources | 54% | 41% | 4% | 1% | 100% |
| Continue rebate programs for energy/water efficient fixtures (washers, toilets, air conditioners) | 60% | 32% | 6% | 2% | 100% |
| Provide educational services to inform the public about water issues | 36% | 52% | 11% | 2% | 100% |
| Add new rebate programs for landscape items (rain sensors, Xeriscape, etc) | 45% | 40% | 11% | 3% | 100% |
| Establish building codes that require more energy efficient design and construction | 42% | 43% | 12% | 3% | 100% |
| Use some of the City's water resources to maintain minimum flow of streams and enhance aquatic life | 34% | 50% | 12% | 4% | 100% |
| Acquire land for conserving/enhancing wildlife habitat | 46% | 38% | 11% | 5% | 100% |
| Adopt an environmental code dealing with issues of conservation and protection of sensitive lands and wildlife | 38% | 45% | 14% | 3% | 100% |
| Continue voluntary lawn watering hours (e.g., no watering between the hours of 10:00 am to 6:00 pm) | 47% | 34% | 11% | 8% | 100% |
| Mandate lawn watering hours (e.g., no watering between the hours of 10:00 am to 6:00 pm) | 48% | 28% | 14% | 10% | 100% |
| The City buying hybrid vehicles | 33% | 41% | 18% | 8% | 100% |
| Incorporate the cost of renewable energy (wind or solar power) into the base electric rate that all consumers pay | 24% | 44% | 17% | 14% | 100% |
| Charge more for high water usage and use those revenues to fund water conservation programs | 17% | 42% | 20% | 22% | 100% |
| Continue purchase of renewable energy at a higher cost | 17% | 42% | 28% | 13% | 100% |
| Charge more for high energy usage to encourage conservation | 19% | 36% | 27% | 17% | 100% |

The survey clearly indicates strong community support for the use of renewable energy resources (95%) and the continuation of rebate programs for energy and water efficiency (92%). There is a majority of support, although less strong, for including the cost of renewable energy in the base electric rate (68%) and for purchasing renewable energy at a higher cost (59%).

After indicating support for or opposition to various resource conservation policies or solutions, respondents were asked to select the maximum amount they would be willing to pay for such programs. While 21% of respondents said they are not willing to pay any additional costs for renewable energy and resource conservation, 79% are willing to pay up to \$0.99 more per month and 59% are willing to pay up to \$4.99 more per month. The specific responses are shown below.

After indicating their support for or opposition to the City implementing various environmental or resource conservation policies or solutions, respondents were then asked to select the maximum amount that they would be willing to pay to support renewable energy efforts by the City. About 10% said they would be willing to pay \$10 or more per month, 17% said they would pay \$5 to \$9.99, about a third reported they would pay \$1 to \$4.99, 20% said less than \$1 and 21% they would not be willing to pay any additional costs.

Figure 17: Willingness to Pay to Support Renewable Energy Efforts by the City



In the 2006 Survey, citizens were asked if they would support up to \$.50 more on their monthly water bills to pay for increasing the flow of water in St. Vrain Creek. The responses are shown below.

WATER

The survey explained that Longmont has a history of working to improve the fish and stream habitat along St. Vrain Creek and that the amount of water in the creek is important to making further improvements. Survey respondents were then asked to indicate the extent to which they would support or oppose an increase of up to 50 cents to their monthly water bill to manage the City’s water resources to increase the flow of water in the creek. Sixty percent of residents completing the survey said that they at least “somewhat” support this idea, with about one in five in strong support. A similar proportion of respondents (21%) also were in strong opposition to an increase in their monthly water bill to manage the City’s water resources to increase water flow in the creek. Note: about 12% of those completing the questionnaire did not give an opinion.

Table 49: Support for or Opposition to an Increase to Monthly Water Bill to Manage Water Resources and Increase Water Flow in the St. Vrain Creek

| The City has a history of working to improve the fish and stream habitat along St. Vrain Creek. The amount of water in the creek is important to making further improvements. Please indicate the extent to which you would support or oppose an increase of up to \$0.50 to your water bill per month to manage the City’s water resources to increase the flow of water in the creek. | Percent of respondents |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Strongly support | 21% |
| Somewhat support | 39% |
| Somewhat oppose | 19% |
| Strongly oppose | 21% |
| Total | 100% |

Figure 47: Support for or Opposition to an Increase to Monthly Water Bill to Manage Water Resources and Increase Water Flow in the St. Vrain Creek

