

Section 2. Climate Sustainability through Energy Conservation

Consume less nonrenewable energy as a community in the future than we do today.

What does this section address:

Principle 2.1 - Reduce consumption of non-renewable energy

Principle 2.2 - Reduce energy consumption through land use

Principle 2.3 - Reduce energy consumption through transportation

Principle 2.4 - Increase energy efficiency in buildings

Principle 2.5 - Conserve energy through waste management and water conservation

Why is this section addressed?

The contribution to climate change from the consumption of nonrenewable energy is a perfect example of how seemingly insignificant individual actions can add up to a measurable impact at a larger scale. Global climate change cannot be addressed by our community alone, but the local, regional, and global impacts of climate change are inconsistent with our Common Values of Community Character and the community has chosen to address them to the greatest extent possible. A changing climate threatens the Greater Yellowstone Ecosystem by altering or eliminating habitats, making it harder for native species to survive. We will also experience local impacts to our Growth Management and Quality of Life Common Values as food, potable water and habitable land diminish across the world. The cost of bringing food into our remote location, demand for our water, and pressure to develop our valued open space will all increase.





Sustainability

is a system of practices that are healthy for the environment, community and economy and can be maintained for current and future generations.

However, the community sees climate change as an opportunity as much as a threat. Our stewardship legacy and international recognition provide the perfect chance for us to set an example of how the global issue of climate change can be addressed at the community level. We can become a model for energy conservation and energy independence for over 3 million visitors every year. We have hydro, solar, wind, and geothermal renewable energy resources available to us. Through the development and use of renewable resources and improved energy conservation we can limit our dependence on non-renewable energy resources.

Climate sustainability through energy conservation is included in this Plan because transportation and buildings constitute 95% of the community's energy consumption. In order to meaningfully address our climate impacts in the long-term, energy consumption (see Appendix B), land use, and transportation planning must be holistically addressed. The transportation and infrastructure required to sustain a sprawling development pattern requires far more energy consumption than a compact, connected series of Complete Neighborhoods where services and infrastructure already exist and residents can use alternate modes of travel to move within and between built areas. Our buildings can also be designed to be much more energy efficient than they are today.

Beyond reducing our contributions to climate change, energy conservation also makes economic sense for the community. Reliance on diminishing non-renewable resources will cause the cost of energy to increase. This will further increase the cost of living in our community and have detrimental effects on our Quality of Life. If we can reduce the amount of motor vehicle travel needed to move around the community, we will be less affected by rising gas prices. If we consume less power in the operation and construction of our public and private buildings and our management of waste, we can continue to have some of the lowest priced and most renewable power in the country. As we become a true example of sustainable energy consumption, visitors may be attracted to the area for our climate stewardship alone.

Awareness of the importance of energy conservation has recently gained momentum with an initiative to reduce Town and County energy consumption by 10% over the past five years and the completion of a communitywide emissions inventory through an unprecedented cooperative commitment between the Town, County and Lower Valley Energy. These, and similar future efforts will assist in meeting the community's energy consumption reduction goals. Moving forward, we realize that it is in the best interest of the ecosystem and the community to continue promoting climate sustainability through energy conservation.



Principle 2.1— Reduce consumption of non-renewable energy

In order to reduce the emission of greenhouse gases that contribute to climate change, the community should reduce its consumption of energy from non-renewable sources. The Town and County will lead by example and encourage reductions in energy demand and the use of renewable energy sources. However, it is the daily responsibility of the entire community to reduce consumption of non-renewable energy whether for climate, financial or other reasons.

Policy 2.1.a: Shift community energy consumption behavior

The community commits to shifting its behaviors to consume less energy. Reducing energy demand is the simplest way to consume fewer nonrenewable energy resources. Achieving communitywide energy conservation requires reducing individual consumption of energy with every decision. The Town, County, and partnering organizations will educate the community on best available methods for reducing energy demand and facilitate and encourage each community member to reduce personal energy consumption.

Policy 2.1.b: Encourage energy conservation through energy pricing

The Town and County will work with local energy providers to price energy to encourage conservation. Money is a significant motivator in all decisions, including energy conservation. The pricing structure should be set up to reward energy consumers contributing to the community goals of conservative and efficient use of energy without punishing households that cannot afford to upgrade energy inefficient structures.

Policy 2.1.c: Increase local use and generation of renewable energy

Using solar, wind, geothermal, and/or hydro energy that has less impact to the climate is the community's preference. The community will work with local utilities and other agencies, non-profits, and businesses to identify local renewable energy generation opportunities so that it is not necessary to add non-renewable energy sources to the community's energy portfolio. Integration of renewable energy into the community's energy portfolio should be done consistently with the community's Vision.

Policy 2.1.d: Allow and encourage onsite renewable energy generation

Production of energy from renewable sources on individual properties should be allowed and encouraged. The transmission of electricity is extremely inefficient. Reducing that component of our energy infrastructure could result in a large cumulative decrease in demand for non-renewable energy. Exemptions to Town and County regulations should be considered to facilitate the installation of on-site renewable energy sources. The community will also explore incentives for on-site renewable energy, utilizing best available practices.



Principle 2.2— Reduce energy consumption through land use

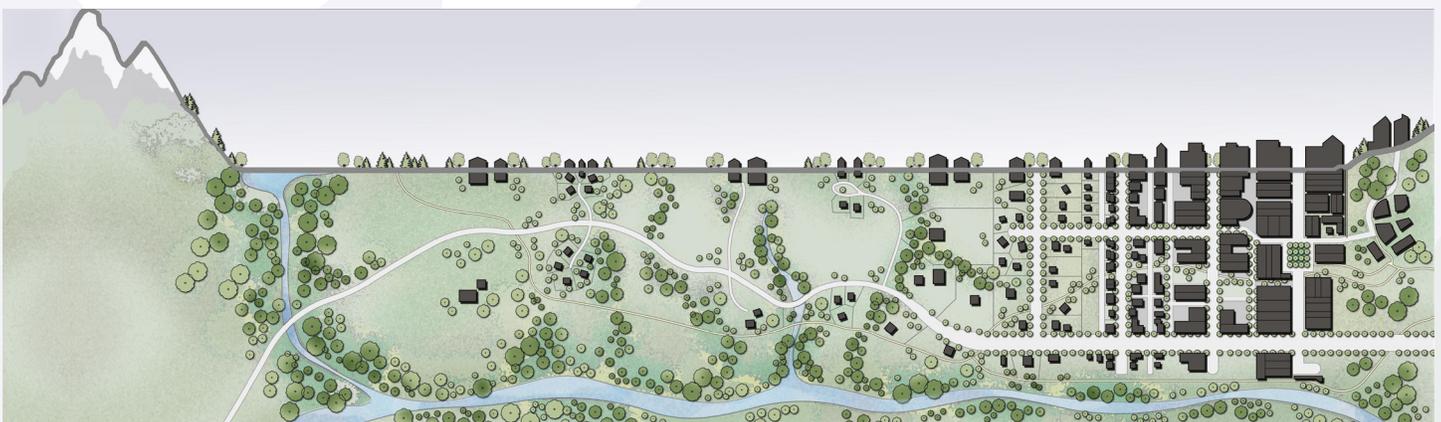
Land use patterns have a great effect on the community's overall energy consumption and should be designed with energy efficiency in mind. Complete Neighborhoods require less energy consumption for travel within and around the community; and compact mixed use infill and redevelopment requires less energy in the provision of services and infrastructure.

Policy 2.2.a: Enhance suitable locations as Complete Neighborhoods

Principle 3.2 details the community's policies to encourage development, infill, and redevelopment that enhances suitable locations as Complete Neighborhoods that contain: defined character and quality design; public utilities; quality public space; a variety of housing types; schools, childcare, commercial, recreation and other amenities within walking distance; and connection by complete streets. Complete Neighborhoods contain the greatest potential for low energy consumption living because of the close proximity of residences to services and jobs. Complete Neighborhoods in the Town and County will lead to energy conservation through a reduction in motor vehicle miles traveled and consolidation of waste disposal and other infrastructure.

Policy 2.2.b: Direct growth out of habitat, scenery, and open space

Principles 1.4 and 3.1 detail the community's commitment to conservation of wildlife habitat, habitat connections, scenic viewsheds, and open space. Development of these areas would not only negatively impact wildlife and scenery but also require far more energy to install and maintain infrastructure and transport people and energy around the community. As the climate changes, preserving open spaces from development will also ease the pressure on wildlife as they adapt to a changing ecosystem.



Principle 2.3— Reduce energy consumption through transportation

Transportation accounts for approximately 80% of the total carbon emissions in the community (see Appendix B) and should be a focus of the community's efforts to reduce energy consumption. Reducing fuels consumed for transportation and using renewable fuels has the greatest potential to reduce the community's overall carbon emissions and consumption of non-renewable resources.

Policy 2.3.a: Meet future transportation demand through the use of alternative modes

Principle 7.1 details the community's policies to promote the use of alternative modes over use of the single occupancy motor vehicle. The use of single occupancy motor vehicles is the least energy efficient mode of transportation, as only one person is transported and road and parking infrastructure is required for each individual.

Policy 2.3.b: Create a safe, efficient, interconnected multimodal transportation network

Principle 7.2 details the community's policies to provide a multimodal network to meet our future transportation demand. The community will develop an integrated transportation management plan that will look at all modes of travel and the most effective solutions for transportation in the community, considering long-term impacts such as consumption of non-renewable fuels and the energy costs of transportation infrastructure.



Principle 2.4— Increase energy efficiency in buildings

It is the community's goal to achieve carbon neutral buildings by 2030. Increasing the energy efficiency of buildings and reducing the energy used for the construction of buildings will greatly increase the community's energy conservation efforts, as the construction and operation of buildings currently accounts for close to 15% of energy use in Jackson and Teton County (see Appendix B). Publicly funded construction projects will lead by example in implementing this policy, and incentives will be provided to reduce the energy demand of new and existing private buildings.

Policy 2.4.a: Construct energy efficient buildings

The community should improve the energy efficiency of its buildings. Buildings with tight building envelopes that minimize the loss of energy are more energy efficient because they require less energy yet provide the same level of comfort as buildings with other designs. The Town and County should adopt the most recent energy codes or similar regulations in order to maximize the energy efficiency of new construction and improvements to existing buildings. Additionally, the Town and County will explore requirements and incentives for building design that employ best practices for energy efficiency in new and retrofitted buildings.

Policy 2.4.b: Renovate and reuse existing buildings

Where appropriate, the community should renovate, reuse, and repurpose existing buildings. The energy required to extract, produce, transport, and assemble building materials is known as the “embodied energy” of a building. The easiest way to reduce the embodied energy of a structure is to reuse a structure that already exists. The community will encourage the reuse, repurposing and renovation of existing buildings where a safe, energy efficient building can be achieved without constructing a new building.

Policy 2.4.c: Use and reuse construction material sustainably

Where it is not practical to renovate an existing building as described in Policy 2.4.b, the embodied energy of a building should be reduced through the recycling and reuse of building materials or use of sustainable, local materials. The Town and County should lead by example when constructing public buildings and subsidized housing units by giving preference to recycled and local materials and local

contractors, within reasonable performance and cost limits. The Town and County should also explore providing locations for materials recycling that make it more cost-effective to recycle than to dispose of material.

Policy 2.4.d: Use energy efficient building systems and appliances

Practices to reduce energy consumption should continue throughout the use of a building, regardless of the energy efficiency of a building's design or the amount of energy initially used to create the building. The Town and County will provide standards for high efficiency heating, ventilation and air conditioning (HVAC) equipment, lighting fixtures, appliances, and other building systems. Where possible, programs will encourage the use of the best available energy efficiency technology for building systems and appliances.

Policy 2.4.e: Encourage smaller buildings

The Town and County will encourage the construction of smaller, energy efficient buildings to improve energy conservation communitywide. Energy efficiency and the amount of energy required to construct a building is directly related to overall building size. Smaller buildings require less material to achieve high energy efficiency and contain less volume to condition, light, and maintain. The community will explore regulations and incentives to encourage the construction of smaller buildings.



Principle 2.5 – Conserve energy through waste management and water conservation

The community will reduce the amount of energy required to distribute, clean, and dispose of water and waste through conservation efforts. Our current water consumption and waste management practices will have long-term adverse impacts on the ecosystem and the community’s energy demand if conservation measures are not pursued.

Policy 2.5.a: Encourage water conservation

While our community is lucky to have abundant water supplies, water conservation should still be pursued in order to conserve energy and manage natural resources responsibly. As fresh water resources are depleted, the energy required to provide potable water increases. Conservation of water saves aquifer supplies for future generations, protects habitat, and respects downstream users. To better encourage water conservation, municipal pricing should reflect the true long-term cost of production and encourage water conservation. The Town and County will also encourage practices that demand less water, such as landscaping with native species.

Policy 2.5.b: Manage our waste stream for sustainability

The community will minimize the amount of solid waste it directs to landfills with a goal of “zero waste” by increasing efforts such as recycling and composting of waste. Disposing of solid waste in landfills requires energy for waste transportation, land moving, and other landfill operations. Landfill disposal also requires increased disturbance of otherwise open spaces due to the length of the decomposition process. The community will increase opportunities for recycling, reuse, and composting and seek productive uses for solid waste such as waste-to-energy solutions to minimize the solid waste that must be placed in a landfill. In addition, the Town and County will lead by example by using products that can be recycled or composted and encouraging all members of the community to do the same.

Policy 2.5.c: Reduce energy consumption in wastewater treatment

The community should utilize the most energy efficient wastewater treatment methods and technology to discharge effluent that meets or exceeds the quality of the receiving waters at any time. Wastewater treatment is extremely important to the health of the ecosystem and the community, but can be an enormous consumer of energy. The Town and County will lead by example in attempting to exceed State discharge requirements while limiting the amount of energy consumed by wastewater treatment processes.



Strategies

The community should undertake the following strategies in initial implementation of the policies of this Common Value. This list is only a starting point, and is not all inclusive. As strategies are completed and/or new best practices, technology and information become available, the community may pursue additional strategies. Prioritization of the strategies to be implemented will occur annually as described in Policy 9.2.b.

Strategies to reduce consumption of non-renewable energy (Principle 2.1)

- 2.1.S.1:** Coordinate with the wide range of organizations working on energy conservation to educate the community about the benefits of reducing consumption of energy from non-renewable sources.
- 2.1.S.2:** Work with partners to distribute technological devices, such as home area networks, into the community to raise awareness of the amount of energy being consumed and opportunities for reduced consumption.
- 2.1.S.3:** Partner with organizations such as the Yellowstone-Teton Clean Energy Coalition to educate residents and guests about the negative impacts of vehicle idling.
- 2.1.S.4:** Work with local energy providers to develop a sliding scale energy pricing structure where unit cost increases with total energy consumption.
- 2.1.S.5:** Evaluate and update land use regulations to support renewable energy generation in the community.
- 2.1.S.6:** Coordinate education efforts to avoid private Codes, Covenants & Restrictions (CC&Rs) that prohibit on-site renewable energy generation and other sustainable practices.

Strategies to reduce energy consumption through land use (Principle 2.2)

See Strategies 3.1.S.1 through 3.1.S.4 and 3.2.S.1 through 3.2.S.8.

Strategies to reduce energy consumption through transportation (Principle 2.3)

See Strategies 7.1.S.1 through 7.1.S.11 and 7.2.S.1 through 7.2.S.6.



Strategies to increase energy efficiency in buildings (Principle 2.4)

- 2.4.S.1:** Adopt the most recent International Energy Conservation Code or similar regulation.
- 2.4.S.2:** Develop a comprehensive sustainable building program that includes requirements and incentives for government operations and new private construction to use energy efficiency best practices.
- 2.4.S.3:** Develop a program of incentives and financing options for owners of existing buildings to participate in a communitywide energy retrofit program.
- 2.4.S.4:** Develop a program to facilitate the reuse and recycling of building materials and raise awareness of the benefits of the use of sustainable construction materials.
- 2.4.S.5:** Develop a program to encourage the use of the most energy efficient building systems and appliances.
- 2.4.S.6:** Evaluate and update regulations on building size to encourage smaller, more energy efficient buildings and consume less energy.

Strategies to conserve energy through waste management and water conservation (Principle 2.5)

- 2.5.S.1:** Implement a sliding scale water pricing structure.
- 2.5.S.2:** Increase awareness and opportunities for recycling, reuse, and composting, including communitywide curbside recycling.

