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ENVIRONMENTAL STEWARDSHIP

A. ENVIRONMENTAL STEWARDSHIP VISION

BROOMFIELD IS A LEADER IN IMPLEMENTING ENVIRONMENTAL STEWARDSHIP POLICIES THAT HELP CREATE A DESIRABLE AND SUSTAINABLE COMMUNITY NOW AND FOR FUTURE GENERATIONS.

B. CURRENT SITUATION & FUTURE TRENDS

While global and national environmental policies continue to be debated, people in our region are concerned about the protection of open space, the increased demand for water in a semiarid climate, and the threatened habitats of a variety of plant and animal species. Other concerns include air and water pollution, municipal solid waste, and environmental toxins.

Broomfield residents, like many Coloradans, highly value the natural environment and consider it a primary factor in contributing to quality of life. The [2015 Citizen Survey](#) revealed that conservation is very important to citizens and that 9 out of 10 residents at least “somewhat” support Broomfield’s use of rebates and voluntary water audits to encourage conservation.

Historically, Broomfield has a strong record of complying with national, state and regional environmental laws and policies and prides itself on that. It is active in pollution prevention programs, stormwater and air quality programs, and watershed protection. It helped monitor Rocky Flats remediation efforts. Also, to promote environmental stewardship among its citizens, Broomfield developed local recycling and educational programs including City Recycling events, Kid’s Earth Day Science Camp, Spring Clean-up, paper-shredding, and the Broomfield Recycling Center. The [2015 Citizen Survey](#) found that the popularity of these programs increased between 2012 and 2015.



Since becoming a county in 2001, Broomfield allocated additional resources to county functions, including environmental health efforts to prevent and monitor pollution and to clean up hazardous chemicals. It has state-of-the art wastewater treatment facilities and practices. It leases solar power for a number of major buildings. Efforts have also been under way in terms of “wellness collaboration” to promote “healthy community initiatives” and an active lifestyle for residents and Broomfield staff. Moreover, the Enhance Broomfield Program provides incentives to small businesses (50 or less employees) to improve their energy and water efficiency. Grants are available up to \$25,000 and require at least a dollar-for-dollar match by a business.

The [2005 Open Space, Parks, Recreation and Trails \(OSPRT\) Master Plan](#) envisioned acquiring, developing and managing open lands (parks, open space and conserved land), and as of 2015, 1,611 acres were added to Broomfield’s open lands. Although closely related to environmental stewardship, OSPRT dedicates its efforts to the public (and publicly accessed) land resources that Broomfield owns or will obtain. Environmental stewardship focuses on all other aspects of the physical community and its environmental health. [Map 29](#) shows the breadth of Broomfield’s existing open lands and its environmentally sensitive floodplains areas.

The [2011 Sustainability Plan](#) linked environmental stewardship with community sustainability. That plan includes Transportation and Economic and Financial Sustainability sections, as well as Resource Conservation, Renewable Energy, and Community Education sections. Nonenvironmental sections from that plan have been reintegrated into other more appropriate sections of this 2016 Comprehensive Plan.

Although Broomfield has made many strides in protecting the environment, Front Range ambient air quality presently exceeds the National Ambient Air Quality Standard for atmospheric ozone concentration and is close to exceeding the standard for fine particle concentration. Both standards are established by the Environmental Protection Agency (EPA) to protect human health. Because this is a regional health issue, Broomfield must work together with the Colorado Air Quality Control Commission and the Regional Air Quality Council to design and implement programs to reduce ozone and fine-particle air pollution. Reducing greenhouse gases is also important; although some citizens debate this, the vast majority of climate scientists believe that greenhouse gases contribute to climate change and increase the likelihood of severe weather patterns.

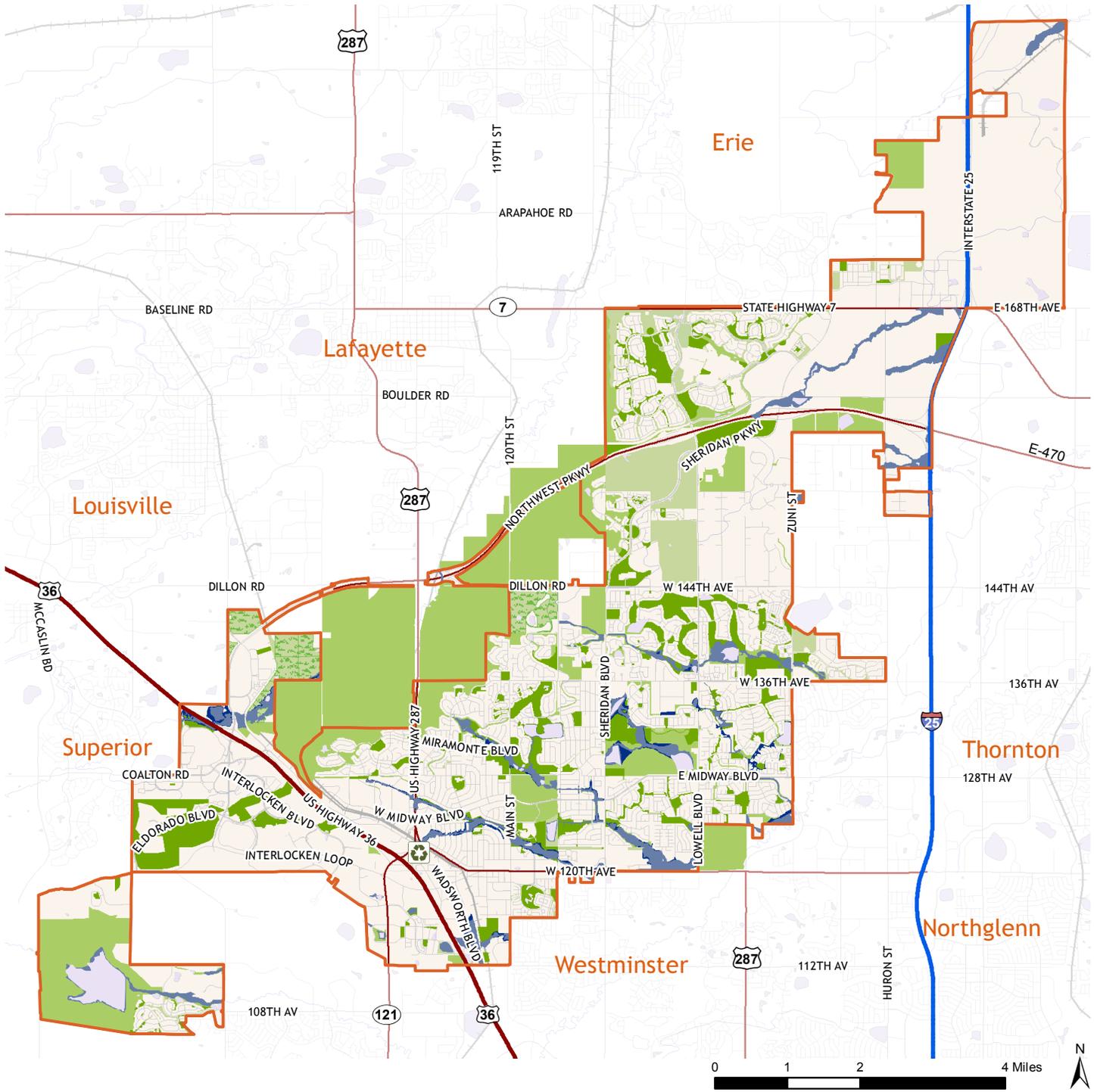
Broomfield’s residential waste in non-HOA areas is currently handled by eight different companies, some of which have a history of being bought out by other companies. Commercial and industrial waste is handled

by 13 companies. This makes it difficult to set goals and measure progress in reducing waste, where air pollution, traffic, and road waste are issues, where residents tend to pay more than residents in neighboring cities with more integrated services, and where opportunities to recycle and compost are limited. As the metro area grows, there is also concern about the amount of land needed for landfills and the pollution that landfills generate.

As Broomfield continues to develop, stewardship of environmental resources will continue to be challenging and important. Its boundaries are finite and its resources are finite and sometimes vulnerable to overuse and misuse, not only locally but also regionally and globally. To sustain natural resources, it will be important to have goals, policies, and actions steps that guide Broomfield and educate and support residents and businesses regarding environmental needs and challenges. This will involve a holistic and complex understanding of long-term costs and benefits of action and inaction as well as short-term costs and benefits. This understanding includes the permaculture principles of working with nature to maximize efficient and sustainable use of resources (Colorado State University Extension and Broomfield offer permaculture classes; there are also many books and much online information about permaculture). It will also involve staying current with scientific findings and technological developments.

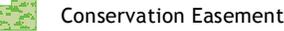
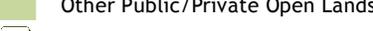


Map 29. Environmental Stewardship



Source: Broomfield GIS Department; CDOT; FEMA

LEGEND

-  City and County of Broomfield
-  Interstate
-  Highways
-  Streets
-  Railroad
-  Creeks, Ditches and Canals
-  Waterbody
-  500-Year Floodplain
-  100-Year Floodplain
-  City Parks
-  Conservation Easement
-  Open Space
-  Other Public/Private Open Lands
-  Broomfield Recycling Center

C. GOALS & POLICIES

Goal ES-A: Resource Conservation

Protect the environment through preservation of plant and wildlife habitats; reduction of waste; conservation of water; and enhancement of land, water, and air quality. (also see Open Space Parks Recreation and Trails [Policy OP-D.8](#))

Policy ES-A.1: Establish and use standards, policies, and practices that encourage and support the reduction of waste and toxins in the environment through recycling, reuse, and composting.

Action Step ES-A.1.1: Maintain and strengthen the household hazardous waste pickup program, and ensure that the program expands as Broomfield grows.

Action Step ES-A.1.2: Examine and consider adopting zero-waste standards, policies, and practices by reviewing what has been successfully implemented in other cities regionally and nationally. A good resource, besides learning from nearby communities, is the Best Practices Guide at www.usmayors.org. These policies usually involve setting and monitoring measurable goals that increase recycling, reuse, and composting and decrease waste sent to landfills over a period of time.

Action Step ES-A.1.3: Consider developing a waste-reduction task force including interested community members, council members, staff, and Eco-cycle Solutions to explore options and develop plans and action steps to implement zero-waste policies and to gain public support.

Action Step ES-A.1.4: As zero-waste policies are being developed, continue to encourage the community to recycle, reuse, and compost. This can include working with businesses to reduce landfill waste such as plastic bags, other nonrecyclable containers, and construction and demolition debris; working with builders to use concrete made of recycled materials such as concrete aggregate, fly ash or other industry best practice materials; continuing to encourage grocery donation of near-expiration food to food banks; educating the public about waste reduction and home composting; and creating incentives to reduce waste in collaboration with interested businesses and groups.

Action Step ES-A.1.5: Continue to improve operations of the Broomfield Recycling Center and ensure that its capacity grows proportionately to population. Continue to develop the potential of Metzger Farm to accept tree and yard waste for mulching and composting. Consider developing a satellite recycling center in the northeastern quadrant.

Action Step ES-A.1.6: Update relevant Municipal Codes (e.g., Ch. 17-34-060) to support zero-waste policies.

Action Step ES-A.1.7: Maintain and strengthen Broomfield's role in modeling waste reduction and informing the public about that effort. Continue programs such as Spring Clean-up, Zero-Waste Broomfield Days, Household Hazardous Waste disposal, and paper shredding; and consider how to increase recycling, reuse, and composting through those and other programs.

Policy ES-A.2: Establish and use standards, policies, and practices that encourage and support water conservation, reuse, and quality.

Action Step ES-A.2.1: Continue to encourage water conservation through programs that promote and incentivize residents and businesses to use water-efficient appliances, xeriscaping, and water use monitoring. Consider investigating the use of alternative rate structures.

Action Step ES-A.2.2: Establish minimum water conservation standards for both public and private landscape and irrigation systems to minimize water usage, including rain sensors on irrigation systems, efficient irrigation practices, use of compost, and xeriscaping.

Action Step ES-A.2.3: Continue state-of-the-art practices at wastewater treatment facilities to maximize conservation, energy efficiency, reuse of processed wastewater and biosolids, and treatment of pharmaceutical and oily wastes.



Action Step ES-A.2.4: Encourage proposed developments to utilize the reuse water system when possible.

Action Step ES-A.2.5: Continue to adopt standards at or above national model codes, such as the International Plumbing Code, that encourage water efficiency for all new construction developments.

Action Step ES-A.2.6: Continue to review and develop water conservation practices for use during drought conditions by government, residents and businesses, which are either voluntary or mandatory depending on the severity of drought and availability of water.

Action Step ES-A.2.7: Continue to coordinate with surrounding communities and regional groups to conserve water and protect its quality, develop effective watershed management strategies, and deal with solid waste.

Action Step ES-A.2.8: Within the parameters of DRCOG urban growth boundaries, strive to provide municipal water and sewer service to all citizens to discourage use of septic systems and domestic wells.

Action Step ES-A.2.9: Continue to develop effective strategies and regulations to address stormwater pollution. Explore using natural biological systems to treat stormwater runoff.

Policy ES-A.3: Establish and use standards, policies, and practices that encourage and support air quality and comply with state and federal regulations.

Action Step ES-A.3.1: Continue to coordinate with state and regional agencies to evaluate current conditions and implement means to reduce air pollution and greenhouse gases by local sources, both mobile and stationary. Set measurable goals for this when possible.

Action Step ES-A.3.2: Continue to inspect areas of land disturbance to enforce Colorado best management practices and regulations for the control of fugitive dust caused by erosion from disturbed sites.

Action Step ES-A.3.3: Continue to inspect oil and gas wells to ensure that they are meeting methane and volatile organic compound (VOC) emission regulations, and applicable state and federal regulatory requirements including air quality, (i.e. groundwater, soil, noise, etc.).

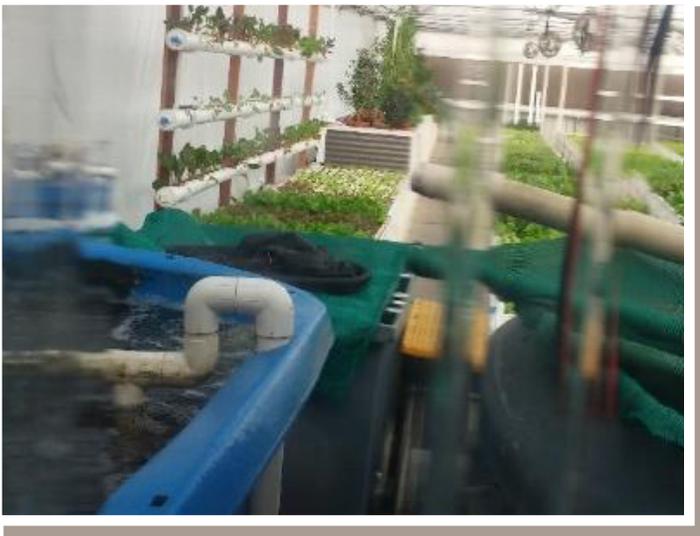
Action Step ES-A.3.4: Continue to lead by example and support upgrades in Broomfield's vehicle and equipment fleet to use Tier 4 engines to decrease nitrogen oxides (NOx) and VOC emissions. Also, consider using electric vehicles and stay current with technological advances. Help staff to decrease fuel usage (e.g., through anti-idling policies and planning ahead to minimize usage).



Action Step ES-A.3.5: Consider upgrading emergency generators to use Tier 4 engines.

Action Step ES-A.3.6: Educate the public and reinforce State Health Department advisories regarding fine-particle emissions (from burning of wood and other organic matter) that contribute to the “brown cloud” and health issues.

Action Step ES-A.3.7: Continue to weigh costs and benefits in de-icing roads using sand and liquid deicers. When sand is used and is not swept up, “brown cloud” dust is emitted. When liquid deicers are used, water quality issues may occur in stormwater runoff.



Policy ES-A.4: Establish and use standards, policies, and practices that preserve and enhance land and support open land acquisition.

Action Step ES-A.4.1: Encourage and develop permaculture standards and practices for developers, property owners, and the City and County to sustain healthy soil and plant life and conserve resources.

Action Step ES-A.4.2: Encourage higher-density development so that larger tracts of open land are preserved.

Action Step ES-A.4.3: Encourage and develop standards for developers, property owners, and the City and County to preserve trees and support the use of trees to improve appearance, make areas more pleasantly walkable, reduce stormwater flow and air pollution, and conserve water and energy. Encourage the planting of trees suitable for our climate.

Action Step ES-A.4.4: Consider revisions to the [Broomfield Municipal Code](#) to foster restoration of native vegetation in disturbed areas.

Action Step ES-A.4.5: Encourage local food production and use by residents, businesses, and nearby farmers to support soil health, pollinator health, and public health. This will also help decrease the many costs of transporting and packaging food. This goal can be accomplished by a variety of means without using land needed for other purposes (e.g., farmers’ markets; home, patio, and “victory” gardens; hydroponic and aquaponic businesses that create jobs and efficiently use water; community gardens where appropriate, selling of regionally produced food by grocers; and planting of edibles in public areas).



Goal ES-B: Energy Conservation and Efficiency

Utilize technological solutions, building practices, education and incentives to encourage conservation and efficient use of energy.

Policy ES-B.1: Utilize incentives, education, and public/private collaboration to increase energy conservation efforts throughout the community, including use of technological solutions and a reduction in consumption.

Action Step ES-B.1.1: Encourage energy efficiency through programs (such as current information and rebate and incentive support from local energy utility companies, Department of Energy, and the Environmental Protection Agency) that encourage and/or reward citizens to use energy-efficient appliances, insulation, windows, etc. Help citizens become aware of costs and cost-savings in making changes.

Action Step ES-B.1.2: Stay up to date with and promote technological solutions to help people monitor and decrease consumption (e.g., sensors that reduce heat and lighting loads when not needed).

Action Step ES-B.1.3: Consider ways to set common goals and to measure outcomes in increasing efficiency and reducing energy consumption in the community and publicize and follow up on these periodically to keep the initiative going.

Action Step ES-B.1.4: Continue to interact with regional groups and the state to keep current with energy-related legislation, policies, and programs.

Policy ES-B.2: Establish and use standards, policies, and practices for new development and redevelopment that support energy conservation and efficiency.

Action Step ES-B.2.1: Set an example by ensuring Energy Star and LEED (Leadership in Energy and Environmental Design) or similar ratings on all new City and County construction and major renovations. Retrofit historical buildings to be more energy efficient, when possible and appropriate.

Action Step ES-B.2.2: In construction and remodeling of buildings, continue to enforce the International Energy Conservation Code, which requires insulation and design that conserves and efficiently uses energy over the useful life of a building.

Action Step ES-B.2.3: Encourage and negotiate with larger development projects to participate in energy efficiency and conservation programs.



Goal ES-C: Use of Renewable Energy

Serve as a role model to the community by evaluating and utilizing renewable energy and emerging technologies.

Policy ES-C.1: The City and County will lead by example by utilizing new and emerging technologies.

Action Step ES-C.1.1: Continue to increase use of solar power and consider buying rather than leasing solar arrays when possible.

Action Step ES-C.1.2: Investigate negotiating with energy companies to increase reliance on renewable energy sources through them.

Action Step ES-C.1.3: Consider what other communities have done to increase use of renewable energy throughout their communities.

Action Step ES-C.1.4: Set goals, measure progress, and publicize goals and progress. Consider net-zero

options and strategies and technologies that enable monitoring and adjusting of usage. Colorado State University and the City of Fort Collins have expertise in this area and could be potential resources.

Policy ES-C.2: Continue to monitor relevant federal, state, regional, and local environmental laws, standards, policies, and goals with the understanding that these will evolve with updates in scientific findings and technological development.

Action Step ES-C.2.1: Maintain compliance with local, state and federal environmental mandates and legislation and move as quickly as possible to implement them and new technologies.

Goal ES-D: Community Practices of Environmental Stewardship

Inform and encourage community participation in environmental stewardship practices by individuals and businesses.

Rationale:

Because care of natural resources largely depends on the attitudes and practices of individuals and businesses, it is important to inform and encourage community participation in stewardship practices.

Policy ES-D.1: Encourage community involvement through education about the importance of sustainable environmental practices and choices that they can make to be good stewards of environmental resources.

Action Step ES-D.1.1: Continue to support education and other incentives, such as rebates and help with water and energy conservation, so that residents and businesses will be informed of best practices”and will be able to adopt practices that conserve and protect natural resources.

Action Step ES-D.1.2: Continue to increase efforts to reach the public through multimedia means and make educational materials and programs easily and conveniently available. Continue to offer weekday and weekend programs. Consider increasing focus on stewardship understanding and resources by enhancing a positive presence and ease of access via the Internet. Consider the needs of multilingual audiences.

Action Step ES-D.1.3: Continue to work in collaboration with businesses, community organizations, schools, and other sectors of local government (e.g., library, cultural affairs, and OSPRT) to generate stewardship themes and events.

Action Step ES-D.1.4: Consider investigating how other communities have successfully engaged the public and attained goals.

Policy ES-D.2: Recognize individuals, businesses, and nonprofits for outstanding stewardship behaviors and practices.

Action Step ES-D.2.1: Consider ways to highlight sustainable practices by working with nonprofits and businesses to offer awards and create events like garden, home, and business tours.

Action Step ES-D.2.2: Consider creative ways to recycle trash, such as “trash to art” programs.