



Boulder County Comprehensive Plan

SUSTAINABILITY ELEMENT

Introduction, Definition, Goals & Policies

The Meaning of Sustainability
*The concept of “sustainability”
 has been the subject of debate
 and discussion, particularly over the past
 20 years, as concern has grown from the
 global to the local level about whether the
 social, economic and physical resources we
 have come to depend on will be sufficient or
 available to future generations to meet
 their needs and aspirations...and what we
 in the present intend to do about it.*

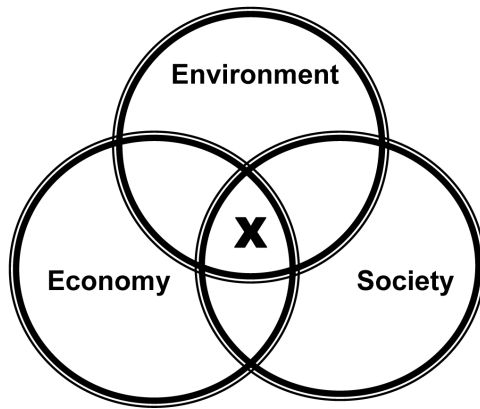
Introduction

The verb “sustain” is defined in Webster’s Third International Dictionary as meaning “to cause to continue...to keep up especially without interruption, diminution or flagging”. As a standard bearer, the most widely acknowledged definition came from the Brundtland Commission Report in 1987,¹ which described sustainability it as “...development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

Many institutions and organizations have worked at refining this description since that time, trying to perfect a universally acceptable definition or at least one that meets their particular agendas. But as Denise Lach, a sociology professor at Oregon State University, has argued, spending time and energy trying to find a common definition for “sustainability” may not gain us anything of real value “Sustainability is like love and democracy – multiple meanings, not always perfectly realized, but always struggled for, at least by most of us. I think we do agree, basically, on what it is. We disagree when we must make specific choices in our lives”.² We believe the crux of the issue is captured in her last sentence. How to go about reaching some broader consensus or acceptance of what to do and how to do it is the primary challenge that confronts us.

Sustainability links the issues of environment, economy and social equity together. An action or decision in any one of these areas will have consequences on the others whether anticipated or not. A sustainable community is one where an agreement has been reached on the design and implementation of plans that replace competition between issues with collaboration and forethought about achieving desired outcomes in the present while preserving options for those that will follow.





The X position is a simple illustration of where a sustainable community would be functioning in a balanced system.

Sustainability and the Boulder County Comprehensive Plan

Developing a sustainability plan requires taking a long view that goes well beyond the time-frames comprehensive plans have traditionally addressed. However, comprehensive plans are intended to be adaptable and dynamic documents that provide a central home for expressing the goals and desires of a community. It is therefore quite appropriate for the subject of sustainability to be included, particularly since in its fullest expression sustainability should influence and connect all of the other Elements in the Plan.

The original Boulder County Comprehensive Plan was adopted in 1978 in response to a growing alarm about the spread of development types and patterns that were having adverse, undesirable or irreversible negative impacts on the land. At its core, the Plan's intent was to provide guidance for (a) preserving the agricultural, forested and open lands environments and ecosystems found throughout the county by channeling urban development into and adjacent to urban areas; and (b) establishing and retaining diverse, compatible and functional land uses to prevent urban and rural decay.³ Subsequent

amendments and actions across the years have been developed with these goals in mind, and the county, with the persistent participation and support of its residents, has been quite successful in meeting them.

Refining the Plan to move beyond its roots in preservation to sustainability is an appropriate and important evolutionary step to take. As a specific example, the Boulder County Commissioners set the stage for this next step by adopting two resolutions directing the county's own operations to prepare and implement plans for achieving a Zero Waste Program and Sustainability Energy Path.⁴ Over 146 universities and colleges in 40 states, including six campuses in Colorado, have signed the American College and University Presidents Climate Commitment to making their campuses climate-neutral.⁵ On a broader front, the American Planning Association ratified a Policy Guide on Planning for Sustainability on April 17, 2000. In it, the Association identified several dimensions to the sustainability issue:

1. We want to sustain communities as good places to live, and that offer economic and other opportunities to their inhabitants.
2. We want to sustain the values of our society – things like individual liberty and democracy.
3. We want to sustain the biodiversity of the natural environment, both for the contribution that it makes to the quality of human life and for its own inherent value.
4. We want to sustain the ability of natural systems to provide the life-supporting 'services' that are rarely counted by economists, but which have recently been estimated to be worth nearly as much as total gross human economic product".

To move from these statements of intent into actions, sustainability requires a commitment to the following principles:

- (1) living within limits;
- (2) understanding the interconnections and interdependence of economic, societal and environmental decisions and actions;
- (3) sharing the distribution and stewardship of resources and opportunities equitably throughout the public and private sectors; and
- (4) fostering and activating the will to make necessary changes.

The goals of this Element have been written with these principles in mind and to provide guidance for subsequent amendments and additions to the Comprehensive Plan that address sustainability.

Scope of the Sustainability Element

What is generically called a systems-wide sustainability plan takes a careful accounting of the numerous and diverse components that provide the foundations for the quality of our environmental, economic and societal condition. The list is large – agricultural viability, forest health, energy production and use, resource consumption and preservation, decent housing, transportation, air and water quality, equitable educational and employment opportunities, meaningful public participation, and so on. At the time of adoption into the county’s Comprehensive Plan on May 16, 2007, the Element does not presume to cover all these factors. It is, however, to provide a place keeper in the Plan for the continuing inclusion of specific topics, policies and action plans relating to

sustainability as they are identified, agreed to, and developed through a public process.

On October 30, 2006 the Planning Commission and County Commissioners held a joint study session with the Land Use Department on sustainability and directed staff to focus first on (a) an expanded transferable development rights (TDR) program; (b) assessing possible structure size limitations and mitigating measures that would be appropriate for exceeding them; and (c) developing green building policies to shape the drafting of new codes and regulations. The formal authorization to proceed with these tasks was given with the adoption of Docket BCCP-06-001: Boulder County Comprehensive Plan Revision by the Planning Commission on November 15, 2006. What follows is a brief explanation of how these three themes relate to sustainability.

TDRs and Sustainability

The county has had a voluntary TDR program and regulations in place for the Plains area since 1995. In simple terms, TDRs permit the moving of development rights from lands identified as valuable or important for preservation to other sites that are more suitable for development. Since 1995 approximately 293 TDR certificates have been issued and more than 5,000 acres of agricultural and other important lands have been preserved from development. These lands will remain available for agricultural uses, wildlife habitat, wetlands/riparian corridor protection, open space and other functions that are complementary to the principles and goals of sustainability. Its voluntary nature also means that landowners who own property eligible for the removal of the development rights have a choice in deciding how their lands will be used.

Expanding a TDR program to include a larger geographical area of the county and a greater range of TDR options can promote additional sustainability decisions and outcomes being taken in a region and for a population that has not had those choices before.

Structure Size and Sustainability

The national average for single-family home sizes has increased from 983 square feet in 1950 to 2,434 square feet in 2005.⁶ In unincorporated Boulder County new single-family home sizes have gone from an average of 3,881 square feet in 1990 to 5,929 square feet in 2005, far exceeding the comparable national figures. Yet the average household size population in the county has declined during that same period.

The residential sector accounts for 22% of the energy and 74% of the water consumed in the United States while contributing 21% of the county's carbon dioxide emissions.⁷ An "average" size home contains 892 million Btu's of embedded energy (equal to 7,800+ gallons of gasoline) in its materials' manufacturing, transportation and assembly.

Not only has the growth in home sizes increased the use of energy and other natural resources, the impacts of these larger structures can negatively affect the rural character of Boulder County. In some areas, smaller cabins and dwellings are being replaced by permanent homes of a substantially larger size. Many residents of the county have an interest in the sustainability of their rural communities' character but find it difficult to do so faced with the high cost of property and the pressure to develop larger homes.

A set of policies that encourage smaller structure sizes, promotes the development of mitigation measures to offset the

consumptive impacts of larger homes, discourages the demolition of otherwise habitable dwellings, and promotes the preservation of rural communities with their typically smaller homes, will enable the county to meet many sustainability objectives.

Green Building (Boulder County BuildSmart) and Sustainability

Buildings use over 25% of the world's wood harvest and consume two-fifths of all energy and materials. In addition, 54% of the energy consumption in the United States is directly or indirectly related to buildings and their construction.⁸ The average American family produces about 100,000 pounds of carbon dioxide emissions per year and spends about \$1,500 on home energy bills. However, average green building consumes 30% less energy than its peers, which means lower costs, lower emissions and better air quality.⁹

Policies promoting the use of green building principles and practices including the preservation of existing structures where feasible, the reuse and recycling of materials from deconstructed buildings that have outlived their habitability, water and energy conservation, and the use of sustainable materials can reduce overall initial consumption of resources as well as introduce significant resource/financial efficiencies and savings into the operation, maintenance and lifetime usability of structures.

Future Sustainability Measures

The Boulder County Comprehensive Plan has served its residents and environment well in providing checks and balances to the relentless consumption of land and the loss of the many types of sustaining resources that those lands provide. There is now new and important work to do, new steps to take. Mahatma Gandhi said, “You must be the change you want to see in the world”. This Element is intended to stimulate and accommodate the expansion of sustainability planning throughout the county in partnership with other public institutions and private sector interests willing to bring their talent, expertise and ideas to the table. The county should take a leadership role in promoting these efforts.

Definition, Goals, & Policies

Boulder County Comprehensive Plan Definition of Sustainability

“Sustainability” means the use, development and protection of all our resources in a manner that does not deplete them while enabling the residents of Boulder County to meet their current needs and maintain a fulfilling quality of life without compromising or foregoing the ability of and opportunity for future residents to do the same.

In this context, “resources” includes the land, air, and water along with the inherent value of the natural resources, biodiversity, and life-supporting functions associated with them; energy and materials for development and habitation; the essential rural, low-density character of the unincorporated county; the special historic, cultural and geographic composition of distinct rural communities within the county; the diversity of economic activities

and opportunities available to individuals; and the people who live within and continue to shape our developed and natural environment.

Sustainability Action Statement

Sustainable actions are those that support, maintain, conserve and enhance the environmental, economic and social systems on which we depend. Achieving sustainability may demand substantial departures from past and present actions as well as a fundamental commitment to conserving finite resources. Sustainability thus requires a coordinated approach to planning and public policy that involves public participation. Success depends on the widespread understanding of the critical relationship between people and their environment, an appreciation of the interrelationships between the systems that sustain human existence, and the will to make necessary changes.

Sustainability Element Goals

- (1) The county recognizes and accepts that weighing individual wants and needs with those of the larger public and society is a complex but essential responsibility of government. Implementing the Comprehensive Plan involves the need to balance competing goals and policies in cases where they cannot be harmonized. With that understanding in mind, Boulder County’s land use management tools and practices should be designed to promote decisions and actions supporting outcomes that are consistent with the principles of sustainability.

- (2) Boulder County contains a highly diverse and complex mixture of ecosystems, landforms, development patterns, human activities, cultural and economic characteristics and jurisdictions. While the principles of sustainability bind them all together, the county recognizes that the development of programs and initiatives specifically designed to meet needs within different areas of the county may be warranted and appropriate.
- (3) Sustainability actions or programs undertaken by the county should address the following factors:
- the origins or causes of wasteful resource practices as well as the harmful effects of such practices;
 - the interrelationship of systems and forces that dictate how resources are used, and;
 - the social constituencies and partners that should be involved in and served by sustainability efforts.
- (4) The county considers global climate change to be a matter of paramount concern, and a potential threat to any sustainability efforts that may be undertaken. In recognition of this concern and to implement the Board of County Commissioners' Resolution 2005-137 regarding a Sustainable Energy Path for Boulder County, the county should take a leadership role in identifying and implementing actions that will lead to a diminishment in the county's contribution to total greenhouse gas emissions from both stationary and mobile activities or sources through an increase in energy efficiency, a reduction in vehicle miles traveled a reduction in waste generation, and other measures.
- (5) The preservation of the built and contextual character of Boulder County's diverse rural landscapes, neighborhoods and communities should be fostered and promoted through encouraging participation by the residents and property owners in those areas to identify the characteristics that are of importance to them and assist in development of land use strategies and tools for maintaining those characteristics.
- (6) The preservation and viability of the increasingly precious resources of open and rural lands, whether devoted to agriculture, forestry, open space, or plant and wildlife habitat, as well as the sustainability of uses that provide for the long-term preservation of such lands, should be fostered and promoted through innovative regulatory and acquisition programs, public-private partnerships, and public education, outreach and participation.
- (7) Conversion and recycling of waste materials into useful products, as well as reductions in the generation of waste streams, are recognized as sustainability actions providing benefits to society and the environment. With the adoption of Resolution 2005-138 by the Board of County Commissioners, the county has committed itself to a Zero Waste program as a guiding principle for all county operations and for outreach and actions on a countywide scale. The policies of the Boulder County Comprehensive Plan should therefore be applied in a manner that furthers achieving a Zero Waste outcome.

- (8) Efficient use of renewable resources and the reduction in consumption of non-renewable resources used in construction and its associated infrastructure should be promoted through policy and education, and implemented as appropriate through regulations.
- (9) Opportunities for individuals and institutions to design, develop, and apply sustainability practices and techniques should be provided and promoted.
- (10) The county's rich and varied natural features, scenic vistas, ecosystems, and biodiversity should be protected from further intrusion, disruption, consumption and fragmentation
- (11) To assess progress in meeting the goals and policies for sustainability, the county should develop benchmarks or indicators that will measure successes or shortcomings in these efforts and report them to the public.
- (12) The county should continue to engage in conversations and development of partnerships with the public and private sectors through intergovernmental agreements, memoranda of understanding, public outreach and information programs, and other initiatives or relationships to advance the principles and practices of sustainability across the county.
- (13) The county should promote and support the use of local products, technologies, expertise, and other locally available resources that contribute to the advancement of these goals.
- (14) The county should continue to analyze all county activities and responsibilities for areas where this Element could incorporate policies to implement the sustainability goals, and to add those policies through a public process as appropriate.

Policies

A. Transfer of Development Rights Program

- (1) A new voluntary transferable development rights (TDR) program for unincorporated properties, including those located in the unincorporated mountainous (Forestry zoned) portion of the county, may be developed and included into the Boulder County Land Use Code. The program may consider the use of fractions of TDRs to achieve the goals of the BCCP.
- (2) This TDR program should consider facilitating the attainment of any or all of the following objectives:
 - preserving vacant lands identified in the Comprehensive Plan as having significant environmental, agricultural, visual or cultural values;
 - maintaining the character of established rural communities;
 - avoiding or reducing the fragmentation and disturbance of important ecological and environmental areas including but not limited to significant plant and wildlife habitats, wetlands and riparian areas, and Environmental Conservation Areas;
 - avoiding development in hazardous areas;

- providing incentives for the promotion and retention of a diverse housing stock;
 - protecting and securing scenic corridors and vistas;
 - promoting the county's goals of achieving sustainable land uses and reducing the impacts of the built environment; and
 - encouraging the voluntary participation of landowners.
- (3) The TDR regulations should be crafted with a focus on preserving vacant, rural, and environmentally sensitive lands, mitigating the impacts of the built environment, and providing incentives to property owners to participate in the program.
- (4) The TDR regulations should also be crafted with a focus on preserving the existing stock of moderately sized, seasonal, and older residences that reflect the diversity and rural character of both mountain and plains homes and communities. Incentives should be provided to owners of these kinds of properties to participate in the program.
- (5) A further understanding of how any program that transfers the ability to develop property may affect land values, assessments and taxation will be undertaken in consultation with the County Assessor's Office. This information will be taken into consideration when preparing regulations and implementation tools.
- (6) TDR incentives for landowners to voluntarily build smaller, lightly impacting homes or structures on vacant lands should be considered as part of the countywide TDR program.
- (7) To assist parties interested in participating in the TDR program the county may consider establishing a bank or information clearing house in order to provide a central location through which the acquisition and sale of development rights may be facilitated or conducted.
- (8) Any county bank/clearing house may be authorized to both buy and sell development rights. Transaction revenues received by the bank should be dedicated to furthering the goals of the BCCP through the acquisition of development rights to preserve other appropriate open lands and reduce density in order to mitigate the impacts of future development from the built environment within the county.
- (9) In establishing this new TDR program, the county, through an open public process, will develop criteria for establishing sending and receiving sites. Criteria for making such determinations may be incorporated into the Land Use Code and should take into consideration the following attributes:
- Status as a legal building parcel
 - Physical characteristics and constraints of the property
 - Status as a platted subdivision lot
 - The presence of resources, values or features designated through the Boulder County Comprehensive Plan on the property

- Location as an enclave within or adjacent to BCCP-designated Environmental Conservation Areas, United States Forest Service or other publicly held lands, or lands with a conservation easement protecting them from further development
 - Legal access to the property
 - Location of the property with respect to existing development, including location in an existing rural community or platted subdivision
- (10) The county should continue to engage in conversations with its municipalities about their continuing and expanded participation in the county’s TDR programs through consideration of options such as a) designating additional potential receiving sites; b) requiring a TDR component for new residential or other development within existing corporate limits or on lands proposed for annexation; c) providing additional county TDR bonuses to landowners who sell their TDRs to developments within municipalities or on municipally-designated receiving sites; or d) in other ways that further both the county’s and municipalities’ interests in maintaining a distinct difference between municipal and rural areas.

include smaller scale development; development which includes the conservation of lands, materials, energy and other resources in its design, construction and infrastructure; and that preserves the rural character of the county as well as the distinctive character of the community in which development may be located.

(2) An analysis should be conducted to determine whether the regulation of structure size is appropriate to meet the stated goals of the Comprehensive Plan. As a part of this analysis the county may consider:

- the level of regulation that would be appropriate for different communities, regions or locations within the unincorporated areas relative to existing development patterns, established rural character, scenic/natural/resource values, visual impacts, presence of significant physical constraints or natural hazards, availability of services and facilities, proximity to adopted Municipal Influence Areas, and other factors;
- the appropriate mitigation methods or actions which could be taken by a property owner in order to mitigate any impacts associated with development; and
- the consumption of energy and materials associated with larger structures and what caps or requirements may be applied to offset, constrain or reduce that usage.

B. Structure Size Limitations

- (1) In accordance with the mission statement of the county’s Sustainability Initiative and definition of “sustainability” contained in this Element of the BCCP, the county should develop options and tools to promote more sustainable development. Sustainable development would

- (3) In conducting a structure size limitation analysis, special attention should be paid to the built, historic and contextual character of existing established rural communities and neighborhoods. Where appropriate or requested by residents of these communities and neighborhoods, a designation of “Special Community Character Area,” a Rural Conservation District overlay zoning, or other appropriate categorization may be applied for purposes of preparing tailored guidelines, policies and regulations to address proposed changes to the scope and scale of development in the designated area.

C. Green Building

- (1) Green building techniques and practices that conserve energy, water, materials, land area and other resources and divert construction materials from land disposal through recycling and reuse should be incorporated into the county’s regulations and codes. A points system or other quantifiable/graphic system should be developed to provide those applying for permits a clear and easy to understand guide to the requirements for meeting green building standards.
- (2) Any program developed by the county should strike an effective balance between incentives and mandates to work towards an ultimate goal of “zero energy” construction throughout the county.
- (3) The county may link any green building program it adopts to regulations addressing structure size, Transfer of Development Rights, or other sustainability measures, as deemed appropriate through further study of these concerns and as developed through the public regulatory amendments process.
- (4) In developing a green building program the county should consider and identify minimum requirements that need to be met as well as incentives for exceeding those requirements. The program will offer property owners flexibility and options in determining which materials and techniques meet their needs and desires for complying with the standards set by regulations and codes.
- (5) Information and resources about green building requirements and incentives contained in the county’s codes and regulations should be distributed to all county departments that have some review or approval authority over land use proposals requiring permits from the county’s Land Use Department.
- (6) Renovation of existing structures, as opposed to replacement of that structure with a new one, should be encouraged in order to limit use of new primary and secondary resources and to conserve, reuse and recycle materials otherwise destined for disposal. Remodeling and retrofitting otherwise structurally sound buildings with more sustainable materials, techniques, and systems should be promoted.
- (7) If renovation of an existing structure is not practicable or possible, that existing structure should be deconstructed such that the maximum amount of material is either reused in the new structure, resold or donated for reuse, or recycled, with the goal of diverting material from being sent to the landfill. Demolition of existing structures should only occur in extreme circumstances.

- (8) The county shall provide information to the public and technical assistance regarding green building techniques to persons applying for a land use activity that requires issuance of a building permit. The county shall take a leadership role in making this information broadly available to the public for their use in promoting the values and principles of sustainable development and green building.
- (9) Any green building program adopted by the County will include a method for applicants to propose alternative techniques, systems, materials and construction methods that can meet or exceed the required standards.
- (10) In order for Boulder County’s green building program to be successful, the county will have to stay informed and knowledgeable about changes in green building practices and principles and must make that information available to both applicants and the public.
- (11) While the county’s green building program will be appropriate to the type of development seen in the unincorporated area of Boulder County, it will strive to be consistent with green building programs adopted by the municipalities within the county to insure ease of use by the public. Boulder County will in turn provide assistance to any municipality intending to develop a green building program with consistency and compatibility being the desired outcome.

Footnotes:

- 1 World Commission on Environment and Development. United Nations. Convened in 1983.
- 2 “The Definition of Sustainability Depends On Who Is Speaking”. Andy Duncan. Pg. 3. Oregon State University Extension Service Publication EM 8784. November 2001.
- 3 Goals A. 1 and A. 3, “Design of the Region”, *Boulder County Comprehensive Plan*. March 22, 1978.
- 4 Resolutions 2005-137 and 138. November 22, 2005.
- 5 <http://www.presidentsclimatecommitment.org> May, 2007.
- 6 Data from the National Association of Homebuilders.
- 7 US Green Building Council, LEED for Homes Pilot Rating System. January, 2007.
- 8 Telluride Green Building Resources Guide.
- 9 Center for ReSource Conservation (<http://www.conservationcenter.org>)