

BROWNFIELDS AND ENVIRONMENTAL SUSTAINABILITY

A Colorado Brownfields Foundation White Paper

June 2008

Introduction

Colorado's pristine environment has always been one of the state's key attractions and is critical to the state's economy. Panoramic vistas, cascading rivers, and untrammelled wilderness beckon to tourists and residents alike. A recent survey of likely voters by the Economic Developer's Council of Colorado underscores this point. The survey results noted that the state's quality of life - defined by amenities like clean air and water and abundant open space - was one of the most important issues to citizens.

However, sprawling development, resource extraction, and population growth have begun to threaten that quality of life. Environmental contamination, from a myriad of sources (past and present), is impacting both air and water quality in many areas of the state. Elected and appointed officials at every level of government are looking for sustainable development options that will help protect Colorado's natural heritage and conserve natural resources while promoting economic development. To date, the integral role that the cleanup and redevelopment of brownfield properties plays in enhancing environmental sustainability in Colorado has not yet been wholly defined.

The myriad of benefits resulting from brownfields cleanup and redevelopment feed the very core of environmental sustainability. The cleanup and reuse of a polluted site is a real world example of "recycling" at its best. Brownfield redevelopment is a central tenet of the smart growth and sustainability movement. At a local level, issues of water quality and adequate water quantity continue to be key concerns of Colorado's citizens. Yet the potential benefits of brownfields redevelopment remain misunderstood by both the general populace and policy makers.

Defining the Issue

Incorporating brownfields redevelopment into environmental sustainability programs can enable development options that will help preserve and restore Colorado's natural heritage while furthering economic development.

Sustainable brownfields redevelopment addresses such issues as:

- Water quality
- Water quantity
- Urban, suburban, and rural sprawl
- Air quality
- Energy conservation
- Green building construction

There is a strong connection between brownfields cleanup and improved water quality. By cleaning up these environmentally impaired sites, we remove both surface threats (everything from drums of hazardous materials to buildings contaminated with hazardous substances) and subsurface threats (contaminated soils and groundwater) which, if left unchecked, would affect both surface water bodies and aquifers.

The connection between brownfields cleanup and the water quantity issue is not so apparent. Redevelopment and reuse of brownfields - specifically in infill areas - allows communities to control their urban growth outward into the countryside. By controlling their urban footprint a community reduces the amount of impervious surfaces (like sidewalk and streets) and increases the recharge of stormwater to aquifers and surface water bodies. Infill redevelopment and reuse also allows for the replacement of existing impervious surfaces in the urban area with more porous surfacing materials (landscaping instead of cement; water infiltration instead of runoff) that allow more stormwater to penetrate the surface and recharge the aquifer.

More compact development achieved partially through the reuse of infill brownfields sites, directly lessens sprawl pressure and encourages better land use planning in urban, suburban, and rural locales. Many planners suspect that federal transportation planning models may be overestimating road use. This can result in over-stated parking requirements, as evidenced by the "sea of empty parking lots" phenomena. Updated transportation modeling may reduce parking requirements for new development, save development costs, allow for more environmentally friendly site improvements, and further reduce sprawl pressure. This is accomplished by recycling existing sites. Additionally, reducing sprawl and promoting more compact development typically improves neighborhood walkability and supports economies of scale in energy use, thus helping to lower overall energy demands.

Cleanup and reuse of brownfields also helps communities improve their air quality. The more compact development enabled through infill redevelopment (as opposed to growing outside the established urban area) means fewer car trips and fewer vehicle miles traveled – both of which equate to a reduction in CO2 emissions and better overall air quality. Carbon dioxide also contributes to global warming, so reducing these emissions also helps communities address concerns about climate change. Finally, brownfield cleanups prevent the release of other onsite hazards such as asbestos into the air.

The U. S. Green Building Council and Congress for the New Urbanism also recognize the value of brownfields redevelopment. The evaluation framework for the Leadership in Energy and Environmental Design (LEED) Green Building Rating System actually awards points toward LEED project certification to developers who locate their buildings on brownfield sites; the rationale again being to reduce pressure on undeveloped land. This LEED certification process has become a national model in the sustainable development movement.

The Colorado Brownfields Foundation needs to inform policy makers and interested parties about the crucial role brownfields can play in achieving **environmental sustainability**. This advocacy role needs to stress not only the smart growth aspects of brownfield cleanup and redevelopment (potentials for infill development and LEED certification) but also to dispel lingering concerns regarding landowner liability and responsibility for cleanup.

Recommended Action Plan

- **Enlist the aid of the environmental community in promoting brownfields.** The environmental community is a strong proponent of both sustainable land use and carbon emission reduction and could be a valuable ally in raising public awareness about the benefits of brownfield redevelopment. In some instances, where complete cleanup is cost prohibitive, brownfields practitioners use risk based closure as a safety net for protecting human health and the environment rather than allowing an environmental threat to remain. We recommend that brownfields practitioners and the environmental community at large maintain an open dialogue to maximize both community and environmental benefits and achieve an effective level of environmental protection.
- **Increase awareness of brownfields' role in improving environmental quality.** Encourage the Governor's Policy Office and Energy Office to adopt a more proactive attitude toward brownfield redevelopment to increase the exposure and knowledge of how remediation of contaminated properties can enhance environmental quality. Other groups with similar agendas and interests (e.g., land use planners, green builders/LEED certifiers, etc.) should be educated through outreach as well.
- **Investigate the possibility of installing renewable energy facilities on brownfields.** Work with the Governor's Energy Office to formalize an approach to capitalize on the potential of using rehabilitated brownfields as renewable energy generating sites. One option is co-generation of methane from landfills. Another option is using brownfields as solar collector or wind generation sites. For example, the Colorado Brownfields Foundation is currently evaluating solar farm potential at a landfill in El Paso County. Brownfield properties, depending on the levels of contaminants on site, could very easily lend themselves to renewable energy production. This may also create more opportunities for less costly (and therefore more economically viable) cleanups, as the required cleanup would not be as great for such sites.
- **Expand application of existing tax credits.** A concept has been proposed to expand the existing brownfields tax credit to make more brownfield sites eligible and/or include the use of geothermal, solar, wind, or other suitable alternative energy sources, as part of sustainable redevelopment. This proposal would need to be further defined by a stakeholder group and other interested parties.
- **Work to dispel misconceptions and fears about liability.** There have been long-running concerns about landowner liability for potentially contaminated properties. These concerns – largely unfounded thanks to several policy provisions put into place at the federal level in recent years - have clouded the issue of brownfield efficacy. To dispel liability misconceptions, education needs to continue and expand among the real estate, development, and lending communities as well as local governments, to inform them about legislation-based liability relief measures.

- **Local governments should incorporate sustainable brownfields approaches in their planning and policy initiatives.** Environmental conditions can impact the type of land reuse and costs of allowing various types of development. Comprehensive and neighborhood planning, economic development strategies, zoning decisions, and sustainability policies will all benefit by incorporating sustainable brownfields concepts. To this end, environmental impacts on land use should be a component of local government visioning and policy initiatives. For example, infill development and brownfields should be considered in evaluating the need for and range of growth boundaries. Eliminating or considering environmental conditions can lead to more efficient and cost effective redevelopment and streamline the process of creating both public and private spaces.

Public discourse regarding environmental sustainability should explicitly include the role of land use, and in particular the role of brownfields redevelopment. Brownfields cleanup enables site reuse for commercial, residential, community, and open space uses. More importantly, brownfields activities facilitate the application of concepts including compact development, infill development, resource protection and conservation, alternative energy development and conservation, and improved land use planning. A course of action that defines the role of brownfields redevelopment in enhancing environmental sustainability in Colorado is recommended.

###

Colorado Brownfields Environmental Sustainability Task Force

Eric Bergman, Colorado Office of Smart Growth, Colorado Department of Local Affairs

Raena Blumenthal, Colorado Brownfields Foundation

Stacey Erickson, US Environmental Protection Agency/City & County of Denver

Debra Phenicie, Your Earth Solutions

Jesse Silverstein, Colorado Brownfields Foundation

Mark Walker, Colorado Department of Public Health & Environment