



THREE SPRINGS SUSTAINABLE DEVELOPMENT PROGRAM  
DURANGO, COLORADO

Three || Springs

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We do make a difference—one way or another. We are responsible for the impact of our lives. Whatever we do with whatever we have, we leave behind us a legacy for those who follow. — *Stephen Covey*

# EXECUTIVE SUMMARY

## OVERVIEW

The Three Springs Sustainable Development Program (The Program) provides a comprehensive approach for sustainable community development for the benefit of present and future generations. The Program presents a balanced model to meet environmental, social, and economic needs of the community while accommodating the financial commitments and realities of the development environment. The policies, guidelines, and standards of The Program provide a wide range of activities that are reinforced by complementary sustainable design features included in the Three Springs Codes and Standards and the Three Springs Design Guidelines.

## SMART GROWTH DESIGN

Smart Growth Design with Traditional Neighborhood Development (TND) principles support sustainability by incorporating a mix of uses within a compact environmental footprint. Attributes of the neighborhood promote connectivity, walkability and diversity in both employment and housing choices. Centrally located neighborhoods, schools, parklands, trail systems, and gathering facilities become primary educational and social venues for community interaction. These combined attributes create a sense of place.

## SITE DEVELOPMENT

Consideration for the environment is translated into best management site development practices that include:

- Drainage and wetland enhancements
- Air quality measures
- Tree and vegetation relocation program
- Water quality and Stormwater Management Program
- Landscape irrigation conservation measures
- Raw water use programming
- Cultural/historical evaluations

## ENERGY EFFICIENCY AND GREEN CONSTRUCTION

Construction shall be guided by green building rating systems based on established principles and practices including Built Green Colorado® (Built Green) for residential construction and Leadership in Energy and Environmental Design (LEED) for non-residential construction.

## COMMUNITY PROGRAMS

A wide variety of community activities, events, and programs will help strengthen social networks and health initiatives. The Three Springs Metropolitan District shall provide long-term management for community programs and a Neighborhood Center with flexible and multi-use areas to facilitate social planning and business networking.

## ECONOMIC AND TRANSPORTATION

The TND mixed-use design encourages diverse and creative business opportunities for living and working in Three Springs and helps to reduce dependency on the automobile. Pedestrian and bike trails, bike storage areas and showers with changing facilities at work places encourage the use of alternative modes of transportation and may help to capture local internal trips within the community. Employment centers with transit and ride-share programs can also reduce vehicular use to and from Three Springs.

## EDUCATION AND RESEARCH

Education and awareness are central to building a sustainable community. Newsletters, campaigns, initiatives, events, forums, demonstration projects, and stewardship programs involve residents, workers, and visitors in an understanding of sustainable living practices. Ensuring a better built environment involves training and collaborating with designers, builders, and tenants regarding integrated design, evolving technologies, and construction practices.

Research and development of ongoing green construction activities, post occupancy assessments, and monitoring of annual operational costs will help to measure the effectiveness of the standards and practices. Neighborhood-wide targets will be used to evaluate performance and costs at Three Springs while assisting in identifying emerging technical resources for future applications. Baseline models created with key partnerships will establish and monitor average household water and energy usage, waste production, vehicle miles traveled, air quality and maintenance and operational costs at Three Springs.

## PERFORMANCE TARGETS

The strategies of The Program identify proposed targets and desired outcomes to work toward for energy efficiency, water conservation, construction standards, and trip reduction which will develop over time. These proposed targets and performance measures will be assessed annually:

<i>Component</i>	<i>Strategy</i>	<i>Proposed Target</i>
Energy Efficiency	Improved design and construction Reduced use of non-renewable resources	15-25% efficiency
Water Conservation	Water-wise landscaping and design Interior fixtures	30% reduction in use 20% reduction in use
Materials and Resources	Environmentally responsible materials Increased durability Reduced long term maintenance	TBD
Waste and Recycling	Construction waste recycling Influencing consumer practices	50% construction waste recycling
Indoor Air Quality	Efficient ventilation systems Low emitting materials	TBD
Trip Reduction	Enhanced public transit Bike trail and pedestrian network On-site employment	25% fewer internal vehicle trips

## COLLABORATION

The success of The Program relies on the collaboration and active participation of varying interests within the Durango community. Viable long-term partnerships shall be necessary to promote the vision and projects for sustainable living both at Three Springs and community-wide.

## IMPLEMENTATION AND MANAGEMENT

The Three Springs Sustainable Development Program is developed by the Master Developer, GRVP, LLC and shall be administered by the Three Springs Metropolitan District (District). Initially a Program Manager shall coordinate and implement the Program strategies. The Program is intended to evolve over time and shall be reviewed and revised on an annual basis to meet changing technologies and environmental, social, and economic conditions of the community

Approved June 19, 2006 by City Council, Durango, Colorado



## Three Springs Vision

The Three Springs Neighborhood is founded on the principles of Traditional Neighborhood Development (TND), a responsible land stewardship ethic, and the historic and cultural values of Durango and Southwest Colorado. Through its compact mixed use design, tree-lined thoroughfares, generous parks and compatible urban design qualities, Three Springs embodies the principles of neighborhood and community.

The Three Springs Neighborhood is also founded upon the principles of a sustainable community designed for the well-being of current and future generations. Both development and community living shall be guided by principles to:

- Incorporate the values of a sustainable world for conserving resources, preserving the environment, recycling, and creating healthy environments in both design and daily life
- Promote sustainability through economically viable planning guidelines, construction techniques, and maintenance operations
- Increase understanding of green building construction and promote educated design choices
- Build the capacity of residents, occupants, and guests to be informed and to be active participants in moving toward sustainability
- Foster partnerships for innovative demonstration projects and research development
- Create and maintain a sense of community through communication, culture, and gathering opportunities
- Accommodate economic self-sufficiency opportunities in mixed-use design and business networks
- Enhance the quality of daily life in healthy living and working environments

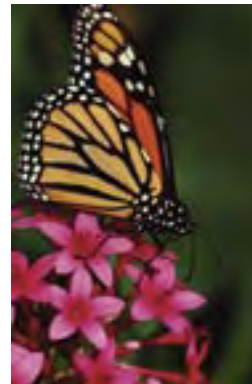
## Preface

The Three Springs Sustainable Development Program (Program) is intended to establish the general principles, guidelines, and standards for a comprehensive sustainable program for the Three Springs Neighborhood. The Program is also intended to provide model guidelines for the City of Durango regarding green building programs and policies. The Program is designed as an incremental system to develop over time to balance the changing environmental, social, and economic needs of the community. Furthermore, it is understood that elements of the Program must be financially viable to the participants to contribute effectively as a successful model. Both the design and development of the Three Springs Neighborhood are challenged to seek a balance among the following commitments and conditions:

- New and improved infrastructure serving the area
- Substantial dedications for municipal uses, neighborhood and community parks, schools, and hospital
- Production-style housing units to meet desired outcomes for market price points and to provide both affordable and attainable housing in the existing market environment
- Increasing construction costs
- Associated development impact fees

The creation, ongoing development, and success of the Three Springs Sustainable Development Program rely on the collaboration and active participation of varying interests and partnerships from within the Durango community which may include, among others, the City of Durango, La Plata Electric Association (LPEA) 9-R School District, Fort Lewis College, San Juan Basin Health Department, Sustainability Alliance of Southwest Colorado, Southwest Colorado Renewable Energy Society (SWCRES), Southern Ute Indian Tribe, Three Springs Metropolitan District and other agencies and organizations.

The management and operations of the Three Springs Sustainable Development Program assume the need for ongoing funding support through the Three Springs Metropolitan District, donations and contributions, additional matching grants, and coordination with local governments and initiatives.





# O V E R V I E W



**Mission:** To create a healthy, livable, and sustainable community with enhanced quality of life for present and future generations at Three Springs

## 1.1 BACKGROUND

The Three Springs Development Agreement between the City of Durango and GRVP, LLC, (Development Agreement) outlines the requirements for development of a Sustainable Development Program to “promote sustainability in the design, construction, and maintenance of facilities and improvements” in the neighborhood. The Three Springs Sustainable Development Program (Program) presented herein is based upon:

- Requirements of Section 4.07 Energy Conservation and Sustainability and Section 4.08 Water Management Program of the Three Springs Development Agreement
- Concepts of the Sustainable Development Implementation Strategy (Earthly Ideas) included in the approved Three Springs Conceptual Development Plan (PD)
- Elements of the U.S. Green Building Council’s draft Leadership in Energy and Environmental Design-Neighborhood Development (draft LEED-ND) and Green Building Rating System
- Elements of the Built Green Colorado® Program

## 1.2 PURPOSE

The Three Springs Sustainable Development Program provides developers, architects, homebuilders, and managing entities with integrated planning guidelines for sustainable community development, and ecological and social planning practices. The Program is intended to provide a comprehensive approach to ensure the long-term sustainability and vitality of the Three Springs Neighborhood.

## 1.3 SUSTAINABLE DEVELOPMENT DEFINED

Sustainable development is that “which meets the needs of the present without compromising the ability of future generations to meet their own needs.” (United Nations World Commission on Environment and Development). Sustainable development recognizes the complex balance for accommodating human needs without diminishing the health and productivity of natural systems of the shared world.

## 1.4 ROLE OF THREE SPRINGS

As Master Developer, GRVP, LLC assumes leadership for economically viable, sustainable development at Three Springs by adopting policies, guidelines, and standards to:

- Seek and support practical applications of sustainable development moving from extractive and disposable practices
- Integrate restorative practices balancing quality of life, community well-being, and economic growth
- Develop and maintain long-term partnerships in the Durango community which support and further sustainable development
- Extend the model for profitable sustainable projects for future development in the region





Sustainability is equity over time. As value, it refers to giving equal weight in your decisions to the future as well as the present. You might think of it as extending the Golden Rule through time, so that you do unto future generations as you would have them do unto you. — *Robert Gilman*

# 2 A SUSTAINABLE FUTURE



**Mission:** To create a healthy, livable, and sustainable community with enhanced quality of life for present and future generations at Three Springs

## 2.1 FRAMEWORK

### ***Planning Foundation***

The planning and design process for development of Three Springs carefully integrates site-specific Traditional Neighborhood Development (TND) principles and sustainable site design practices guiding land use, urban form, design standards, and development schedules including:

- Three Springs Conceptual Development Plan (PD) (as amended)
- Development Agreement between the City of Durango and GRVP, LLC (as amended)
- Three Springs Master Plan (as amended)
- Three Springs Codes and Standards (as amended)
- Three Springs, Design Guidelines (as amended)
- Three Springs Metropolitan District Service Plans (as amended)





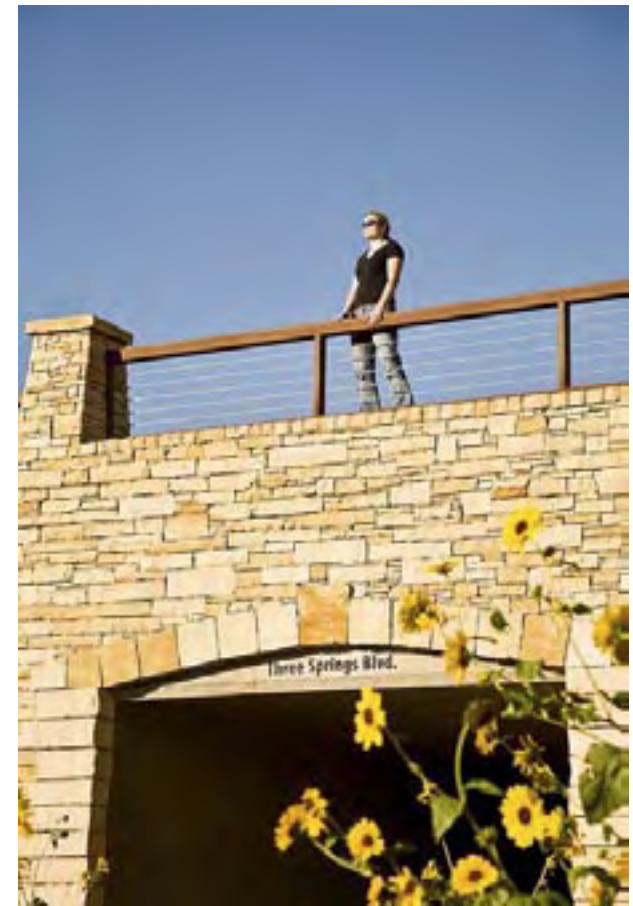
If we maintain the present, we are certain to lose a better future.  
To seize that better future, we must go beyond what is considered best today. — *Gunter Pauli*



## THREE SPRINGS MASTER PLAN

Based on Traditional Neighborhood Development (TND) Principles

- Sense of place
- Compact development pattern
- Mix of land uses
- Enhanced site environment
- Green space connections
- Neighborhood connections
- Community connections
- Livable, walkable streets
- Lively urban center
- Well defined public realm
- Housing and demographic diversity
- Employment diversity



## PROJECT TIMELINE

December 2001		September 2002		November 2002		January 2003		December 2003		January 2004	
Tierra Group, LLC purchases Grandview Parcel (681 acres)		Mercy Regional Medical Center announces relocation to Grandview Parcel		Wetland Delineation and Sensitive Species Assessment completed		Initial TND Master Plan by Duany Plater-Zyberk (DPZ) and Design Charette completed		Water quality monitoring begins		<ul style="list-style-type: none"> <li>• Grandview Area Plan Amendment to Comprehensive Plan (1997)</li> <li>• Grandview 1st Addition Annexation to the City of Durango</li> <li>• Three Springs Conceptual Development Plan (PD)</li> <li>• Mercy Regional Medical Center Phase 1 Conceptual Planned Development (PD)</li> </ul>	

## TRADITIONAL NEIGHBORHOOD DEVELOPMENT

### CODES AND STANDARDS –

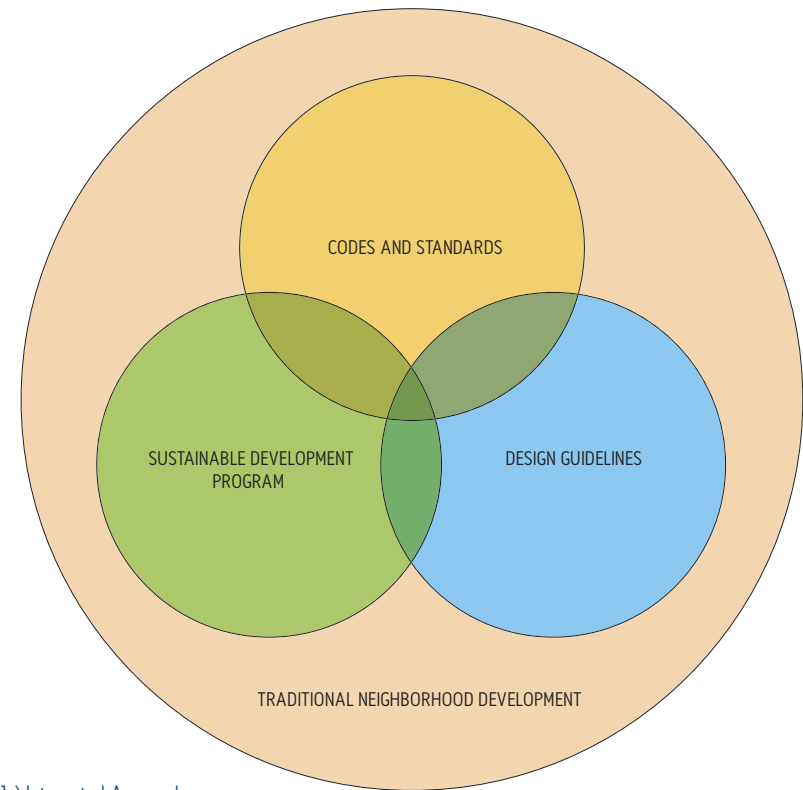
Regulates land use and urban form of buildings, urban spaces, thoroughfares, park lands and open spaces.

### DESIGN GUIDELINES –

Guides architectural and landscape design development of built environment incorporating universal sustainable design principles.

### SUSTAINABLE DEVELOPMENT PROGRAM –

Provides comprehensive community-wide policies and guidelines for sustainable development and construction promoting ecological and social planning practices.



(FIG 1.) Integrated Approach

<b>March 2004</b>  Three Springs Minor Subdivision Final Plat creates medical campus site (60 acres)	<b>April 2004</b>  USACOE Individual 404 Permit approval for Three Springs	<b>May 2004</b>  <ul style="list-style-type: none"><li>• USACOE Wetland Mitigation and Monitoring Plan approval for US 160/CR 233</li><li>• Construction of US 160 expansion and intersection improvements begin</li></ul>	<b>June 2004</b>  Groundwater Impact Study completion	<b>July 2004</b>  Mercy Regional Medical Center groundbreaking	<b>August 2004</b>  Grandview LPEA Substation Conditional Use Permit approval for infrastructure expansion serving Grandview region
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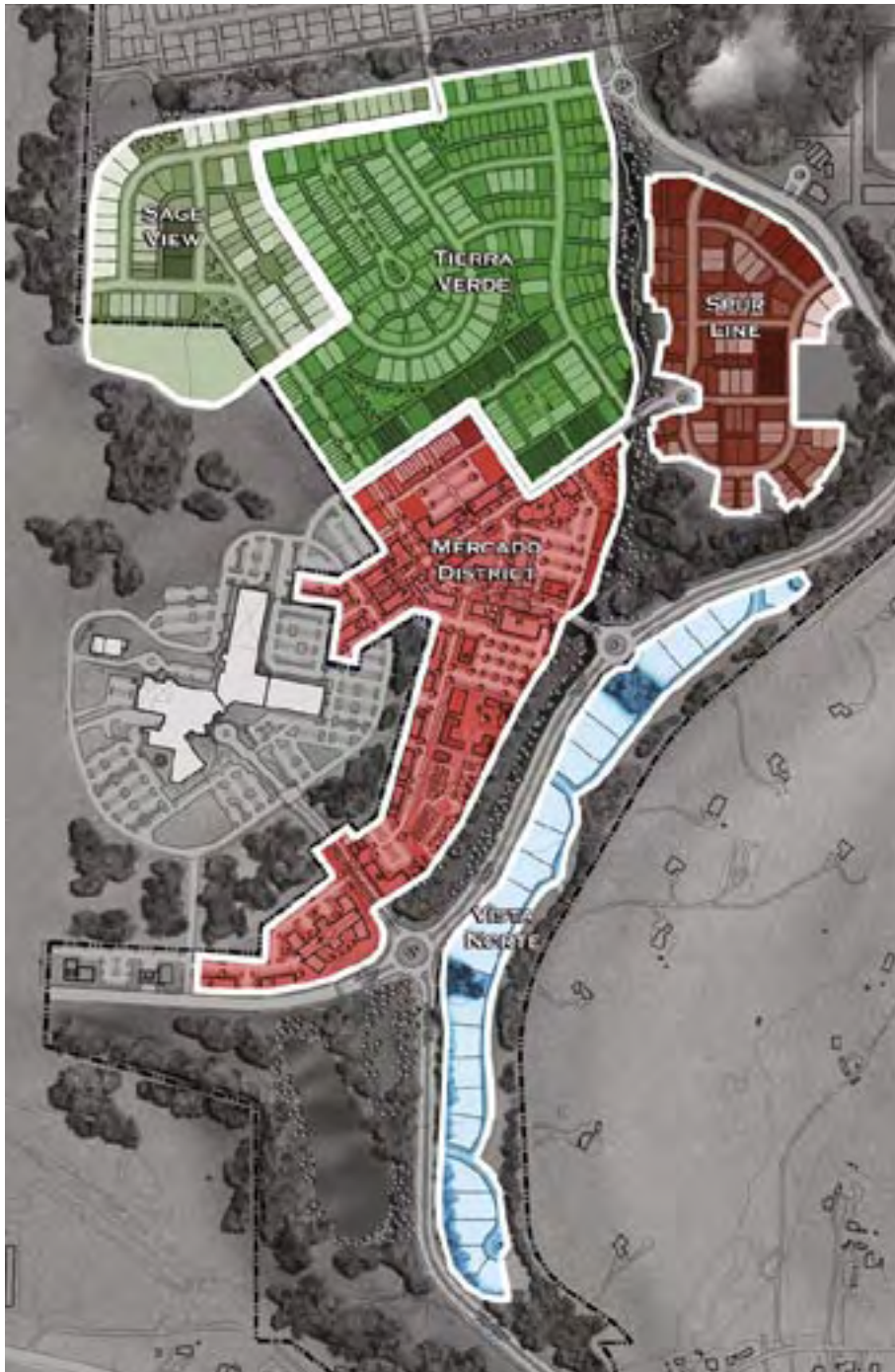


THREE SPRINGS MASTER PLAN

The design of a Traditional Neighborhood Development creates a sense of place-created by a specific vision of the neighborhood's physical form and the life it would generate... The design works together to make a neighborhood a delight- the kind of place that people visit just to be there and want to live and work there. — *Suburban Nation*

LEGEND	
<b>GENERAL URBAN COLOR KEY</b>	
	CIVIC USE
	OFFICE USE
	MIXED (RESIDENTIAL W/ RETAIL)
	RETAIL
<b>RESIDENTIAL LOT COLOR KEY</b>	
	GREEN MEADOW LOT
	SHARED DRIVE LOT
	FRONT LOADED LOT
	ALLEY LOADED LOT
	VILLAGE LOT
	COTTAGE LOT
	GREEN COURT LOT
	CORNER DUPLEX LOT
	BACKYARD ROW HOUSE LOT
	HILLSIDE ROW HOUSE LOT
	FOUR UNIT APARTMENT LOT
	COURTYARD APARTMENT LOT
	DUPLEX LIVE WORK LOT
	MIXED-USE COURTYARD APARTMENT LOT
	LINER BUILDING LOT
	DOWNTOWN APARTMENTS
	AFFORDABLE / WORKFORCE HOUSING





NEIGHBORHOODS

The neighborhood is the fundamental building block of Three Springs. Each neighborhood is composed of residential lots or commercial parcels, blocks, thoroughfares, parks and open spaces. These components are arranged in a variety of ways to create unique places within the community. Five distinct neighborhoods have been identified for Village I each representing its own character based on location, topography, focal points, and a unique mix of uses. Together, the neighborhoods support the village center to create a special place and foster a sense of community. The future Village II will be designed in the same way, by incorporating the specific standards and the design principles of a traditional neighborhood. — *Three Springs Codes and Standards*



Vista Norte



Mercado District



Tierra Verde



Spur Line



SageView



## 2.2 GOVERNANCE AND MANAGEMENT POLICY

### Governance

The Board of Directors (Board) of the Three Springs Metropolitan District shall administer the Three Springs Sustainable Development Program. The Board shall employ a Sustainability Development Program Manager (SDP Manager) responsible for coordinating Community/Development Programs. The SDP Manager shall work closely with the Three Springs Director of Planning and Design, the Design Review Committee (DRC), and the Master Developer regarding the performance of design and construction policies and standards. GRVP, LLC shall define, initiate, and coordinate the Program in its initial stages and shall provide sufficient operating funds as needed during this period.

The Three Springs Sustainable Development Program shall address such matters as green construction and landscape design standards while allowing for a diversity of options for integration. Design Standards of the Program shall be applied by the Three Springs Design Review Committee (DRC) in accordance with internal governance mechanisms described in the Three Springs Development Agreement (April 2005) and the Master Declaration of Covenants, Conditions, Restrictions, and Reservations of Easements for Three Springs and the Three Springs Residential Association (RA) and Mixed-Use Association (MUA).

### Program Review and Evaluation

The Board of Directors of the Three Springs Metropolitan District shall evaluate proposed sustainability programs and assist in redefining new approaches and initiatives for implementation on an annual basis. The Board shall file a written report to the City of Durango as determined necessary for ongoing coordination.

## 2.3 PROGRAM COMPONENTS

The Guiding Principles of the Three Springs Vision shape the goals and action plans for eight (8) fundamental sustainable areas:

- 1) **Education**—To create ongoing awareness and understanding of sustainable design, construction, and daily practices and operations at all levels of the community
- 2) **Environment**—To develop the site with sensitivity to the natural and cultural elements
- 3) **Energy Efficiency**—To create an energy-conserving and energy-efficient community moving toward reduced impacts on the natural world
- 4) **Water Conservation**—To promote potable water economies and water quality and conservation measures for existing and future users in the community
- 5) **Materials and Waste**—To reduce the use of non-renewable resources, incorporate environmentally responsible materials, and minimize solid waste production
- 6) **Social**—To create a physically healthy and socially interactive community in a safe environment
- 7) **Economic**—To develop and support an innovative local business community involved in sustainable practices
- 8) **Transportation**—To reduce dependency on the automobile and encourage alternative transportation modes

<b>October 2004</b>	<b>February 2005</b>	<b>April 2005</b>	<b>June 2005</b>	<b>August 2005</b>	<b>September 2005</b>
South Durango Sanitation District sewage treatment plant upgrades to mechanical plant	Amendment to Three Springs Conceptual Development Plan (PD) approval expands Community Park and revises school sites	Three Springs Development Agreement with City of Durango approval defines development standards, responsibilities, dedications, and guarantees	<ul style="list-style-type: none"> <li>• CDOT US Highway 160 construction completion</li> <li>• City of Durango water lines, water storage, and dry utilities serve the site</li> </ul>	State of Colorado Discharge Permit Stormwater Permit	<ul style="list-style-type: none"> <li>• GRVP, LLC begins on-site wetland mitigation/enhancement and completes Village 1 tree rescue</li> <li>• City of Durango Village 1 Filing 2 Grading and Drainage Permit</li> </ul>

## 2.4 PROGRAM STRUCTURE

The goals of the eight sustainable areas are implemented into action through Principles, Guidelines, and Standards as defined:

- **Principles** explain the broad, general concepts of intended sustainable objectives
- **Guidelines** promote the intended objectives and typically use the term ‘should’ to indicate that compliance is not mandated, but is highly encouraged to achieve the overall vision for Three Springs
- **Standards** are specific performance criteria intended to aid the implementation and evaluation process. Standards are based on a stated sustainability intent or goal, and typically use the terms “shall” or “will” to indicate that compliance is mandated.

## 2.5 PROGRAM STRATEGIES

Specific Program strategies are discussed in Chapter 11 with central emphasis on the inclusion of green construction policies to guide design/construction. Vertical construction in Three Springs shall be guided by frameworks established in Built Green Colorado® (Built Green) and Leadership in Energy and Environmental Design (LEED) for assessing building performance and meeting sustainability goals to:

- Increase energy and water efficiency
- Decrease material waste
- Improve durability
- Utilize environmentally responsible materials
- Improve indoor air quality
- Reduce maintenance of the built environment



<b>November 2005</b> South Durango Sanitation District mains extend to site	<b>December 2005</b> Mercy Medical Center Office Building (MOB) opens	<b>March 2006</b> Village I Preliminary Plan for initial phase of development (267 acres) village including 872 residential units and 347,000 sf commercial	<b>May 2006</b> City of Durango Parks and Recreation Master Irrigation Plan completion to provide use of non-potable water for park lands	<b>June 2006</b> <ul style="list-style-type: none"> <li>• Three Springs Codes and Standards Ordinance</li> <li>• Three Springs Sustainable Development Program</li> <li>• Three Springs Design Guidelines</li> <li>• Village I Filing 2A (V1F2A) Final Plat/Plan approved for 221 residential units and 81,651 sf commercial</li> <li>• Mercy Regional Medical Center opens</li> </ul>	<b>July 2006</b> Three Springs Village 1 Filing 2A begins vertical construction
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# 3 EDUCATION



**Goal:** To create ongoing awareness and understanding of sustainable design, construction, operations, and daily practices at all levels of the community

## 3.1 COMMUNITY EDUCATION

### *Principle*

The vision for sustainability includes life-long learning opportunities to comprehend sustainable practices in daily living.

### *Guidelines*

- Education on sustainability issues should be an evolving and growing initiative utilizing a variety of resources and programs reaching out to all sectors of the community
- Education programs should serve to raise awareness, develop community ethic, and foster changes in consumer habits and behavior patterns
- Innovations in design, construction, and operations should be a central focus
- Promotion of active on-going collaboration through key partnerships is central to researching, developing, and monitoring programs and projects

### *Standards - Program Management*

The Three Springs Sustainable Development Program shall:

- Establish educational communication infrastructure to include a variety of resources such as community website, flyers, brochures, kiosks, and a regular newsletter
- Develop and implement community campaigns, events, and forums in the community on a regular basis to teach children, adults, and businesses about sustainable issues and innovations

- Develop demonstration projects in the community to showcase alternative design, green materials and building techniques, and usage efficiencies
- Establish on-going commitments to encourage City of Durango, Durango Fire and Rescue Authority, and 9-R School District to incorporate green building elements in the design and construction of civic and educational facilities with demonstration and experiential components
- Foster partnerships with 9-R School District to develop and implement education programs and projects in the Three Springs elementary and middle schools featuring ecological and conservation awareness
- Develop eco-awareness interpretive signage throughout the community including buildings, parks, and trails to educate the public about the natural environment, responsible design, efficiency, and conservation
- Collaborate with local and regional service providers and initiatives to promote sustainable education in forums, workshops, and conferences for the public, professionals, and decision-makers
- Collaborate with key partnerships which may include City of Durango, LPEA, Fort Lewis College, Sustainability Alliance of Southwest Colorado, and 4CORE (Four Corners Office for Resource Efficiency) to research baseline data (average household water and energy usage, solid waste production, and vehicle miles traveled) and obtain grant funded technical assistance programs



Education... is something very different from and higher than, mere instruction. Education sows seed which will bear fruit, some thirty, sixty, some one hundred fold. — *John Lubbock*

### 3.2 DESIGNER/BUILDER/TENANT EDUCATION

#### **Principle**

Sustainable design requires the commitment to strengthen responsibility for a better built environment through education and training.

#### **Guidelines**

- Involvement of designers, tenants, and construction professionals in the conceptual design, sustainable education training, and post-occupancy evaluation process is key to the delivery of environmentally responsible site design, construction, and maintenance.

#### **Standards – Program Management**

The Three Springs Sustainable Development Program shall:

- Participate with the Three Springs Director of Planning and Design and the Project Team (designers, builders, and tenants) during pre-application process to review economically viable site design opportunities, local alternative design resources, eco-friendly building materials, and design standards
- Establish pre-construction orientation program to review design standards, project goals, best management practices, and regulations with Project Team and subcontractors
- Create contractor and sub-contractor training program on design and installation practices to improve energy efficient practices and reduce waste
- Conduct construction-site training with construction professionals and trades contractors and staff to reinforce green building and environmental practices
- Review Builder's post-occupancy assessment of construction and circulate among the builder community for on-going education purposes in order to systematically evaluate products and systems for further Designer/Builder education

Seek constant improvement by the sharing of knowledge. Encourage direct and open communication between colleagues, patrons, manufacturers, and users to link long-term sustainable considerations with ethical responsibility, and re-establish the integral relationship between natural processes and human activity. — *Hannover Principles*

### 3.3 PURCHASER EDUCATION

#### **Principle**

Eco-awareness education for purchasers reinforces a sustainable culture for resource conservation and efficient household operations.

#### **Guidelines**

- Eco-awareness education for purchasers should take place during the marketing and sales process.

#### **Standards – Program Management**

The Three Springs Sustainable Development Program shall:

- Coordinate development of a Design Resource Center in conjunction with sales and builder education activities to include showroom and information on eco-friendly interior design choices, efficient fixtures and appliances, and general consumer applications
- Coordinate print collateral and website materials to continue the message of environmental consciousness whenever possible
- Develop and update a Resource Directory of regional design services, materials, and contractors for use in training and education



### 3.4 OCCUPANCY, OPERATIONS, AND MAINTENANCE

#### **Principle**

Post-construction education is critical to ensuring that buildings and landscapes operate as originally designed.

#### **Guidelines**

- Builders should educate occupants, owners, maintenance professionals, and equipment managers about the sustainable design elements incorporated into the building.

#### **Standard – Design and Construction**

Designers/Builders shall:

- Develop manuals including Occupancy and Operations Manuals for residential occupants, and Operations/Maintenance Manuals for governing associations of mixed-use, commercial, and civic buildings to provide:
  - building and equipment warranties
  - general operations and troubleshooting
- Develop post-occupancy assessment of construction in order to systematically evaluate products and systems for further designer/builder education

#### **Standards- Program Management**

The Three Springs Sustainable Development Program shall:

- Coordinate with Designers/Builders to develop Operations and Maintenance manuals for residential occupancy and non-residential use to include:
  - conservation and efficiency recommendations
  - landscaping recommendations
  - community resource directories
  - links to additional regional resources
  - eco-friendly maintenance practices



# 4 ENVIRONMENT



**Goal:** To develop the site with sensitivity to the natural and cultural elements



## 4.1 PLANNING AND SITE DESIGN

### *Principle*

Effective site design recognizes and respects the interdependent natural systems of the site in planning for the built environment.

### *Standards*

The Three Springs Master Plan and the governing documents (Amended Conceptual Development Plan (PD), Development Agreement and Codes and Standards) ensure:

- Concentration of mixed-use development to reduce regional sprawl
- Efficient and compact design of infrastructure within City service areas
- Consideration of natural viewsheds/vistas which tie the community with the natural environment
- Development of networks of open space, greenbelts, and stream corridors protected from development
- Linkage of dedicated green spaces and trails for recreation and wildlife movement
- Protection of drainage and wetland areas
- Landscape concepts planned in context with the regional landscape setting





Man shapes himself through decisions that shape his environment. — *Rene Dubois*

## 4.2 ECOLOGY AND DESIGN

### **Principle**

Effective site planning analyzes impacts on water quality, wetlands, and wildlife habitats.

### **Guidelines**

In order to protect and enhance wetlands and riparian habitats, development plans and activities should:

- Plan and design to strengthen open space habitat systems
- Select specific plants and materials to support habitat
- Create conditions for supporting biodiversity
- Link green spaces to support wildlife movement through corridors
- Minimize the impacts of both construction and occupancy on sensitive ecosystems

### **Standards – Site Development**

The Master Developer shall:

- Develop the site in conformance with the Development Agreement, the Codes and Standards, and the Master Plan with open space and park land dedications and development permit requirements
- Develop the site under the conditions of the USACOE 404 Permit
- Develop the site in conformance with Section 5.0 Landscape Standards and Appendix A of the Codes and Standards including water conservation planning and methods for weed control, insect/pest control, and wildlife management
- Develop the site utilizing Best Management Practices (BMPs) or a variety of effective methods in control of soil erosion, management of surface runoff, and conservation of irrigation water during development of the overall site. Best Management Practices may include among others:
  - planning to incorporate drought tolerant native and/or Xeriscape plantings with low maintenance and provide for establishment and long term care
  - creating vegetated swales fed by stormwater runoff from roadways that help sustain new plantings and clean stormwater before it reaches the existing wetlands in Wilson Gulch

- planning a trail system to be located on old farm roads where possible, to minimize disturbance
- incorporating irrigation systems designed for establishment of native plantings with the capability to turn off when plants' root systems are established and to turn on again during periods of drought, if necessary
- implementing bioengineering techniques, such as willow staking, to stabilize the toe of slope in some drainage channels

## 4.3 AIR QUALITY AND MICROCLIMATE

### **Principle**

Development and habitation of the site should recognize and strive to mitigate associated impacts on both microclimate and atmospheric conditions.

### **Guidelines**

- The Master Plan design for the mixed-use community provides for pedestrian-friendly street networks, bicycle paths, and transit stops, and fosters work opportunities in the community
- Thoroughfare planning and design should incorporate vegetation along planned thoroughfares
- Development should protect against wide-spread pollutants from site work and construction activities
- Habitation of the site should seek to avoid associated pollutants from heating/ventilation/cooling systems
- Long term background monitoring of local air quality conditions can serve to provide data regarding air quality conditions



### ***Standards – Site Development***

The Master Developer shall:

- Develop the site in conformance with Three Springs Development Agreement and the Master Plan with mixed-use community design, trail networks, and bike routes
- Install thoroughfare landscaping in conformance with the Street Tree Master Plan (as amended)
- Require landscape designs/installations to conform to the Codes and Standards and the Design Guidelines to reduce the heat island effect of buildings and parking lots
- Control disturbance during site preparation and construction per local permit standards for dust control
- Restrict use of wood-burning stoves as stipulated in the Codes and Standards
- Review background air quality data from San Juan Basin Health Department's on-site monitoring system

## **4.4 TOPOGRAPHIC FEATURE PRESERVATION**

### ***Principle***

The outstanding natural characteristics inherent in uplands and wetlands should be protected from development.

### ***Guidelines***

- Site development should avoid soil erosion and loss of hillside vegetation associated with development of steep slopes.
- Site development should avoid damage to fragile wetlands and associated ecosystems.

### ***Standards – Site Development***

The Master Developer shall:

- Develop the site in conformance with Three Springs Development Agreement, the Codes and Standards, and the Master Plan, with preservation of steep slope areas (over 30%) and wetlands in dedicated lands
- Identify specific mature trees located within a proposed grading plan and transplant to outlying park/open space areas
- Stockpile and reuse on-site topsoil
- Employ bio-engineering techniques for slope stabilization in disturbed areas, where practical



## 4.5 STORMWATER MANAGEMENT

### **Principle**

Effective resource management and application of emerging technologies for stormwater systems can improve water quality, increase groundwater recharge, and nourish the watershed.

### **Guidelines**

To minimize the water quality problems associated with stormwater runoff and release of excess nutrients, planning and site development should:

- Reduce flood impacts by dispersing and regulating flood flows
- Implement an overall stormwater management plan
- Incorporate best management practices to address water quality
- Protect drainages and wetlands with landscape buffers
- Minimize impervious surface through design and material selections
- Treat water quality through series of focused treatment structures and basins.
- Redirect runoff to support landscaping
- Monitor water quality
- Develop maintenance guidelines to minimize use of chemical fertilizers/pesticides



### **Standards – Site Development**

The Master Developer shall:

- Develop the site in conformance with the Codes and Standards, and the Master Plan with careful design of impervious surface areas, pocket parks, and landscape edges
- Develop the site in conformance with USACOE Individual 404 Permit for Three Springs which governs drainage, water quality, and wetland development and planning with protection and mitigation measures. Mitigation measures include construction of new water treatment areas to filter stormwater through natural features for enhancement and support of diverse wetland and meadow plantings.
- Develop the site under the conditions of Stormwater Management Plan of the USACOE 404 Permit to maintain stormwater volume rates, such that the post-project development discharge volume does not exceed the pre-project development discharge volume
- Require Developers to design and construct according to the Design Guidelines with limitations on lawn coverage in order to control urban pollutants and possible impacts to stormwater

### **Standard – Education, Research, and Demonstration**

The Three Springs Sustainable Development Program shall:

- Coordinate community projects promoting the experiential elements of water management in the green spaces of the community. Projects may include such educational venues as: interpretive areas, bird roosts and wildlife viewing blinds, boardwalk trails, and water quality monitoring, planting displays within treatment areas, permeable pavements for parking areas, and treatment option demonstrations.
- Coordinate Operations and Maintenance manuals for civic, commercial, and educational projects to address practices to minimize stormwater contamination

## 4.6 WILDFIRE MANAGEMENT

### ***Principle***

Maintenance of vegetative zones is a key factor in decreasing the risks of wildfire in semiarid environments.

### ***Guidelines***

To minimize the risk of wildfire, developers and occupants should:

- Create defensible space strategies and management practices
- Implement wildfire resistant landscaping guidelines

### ***Standards – Site Development***

The Master Developer shall:

- Develop the site and maintain the site in conformance with the Codes and Standards Appendix A requirements for wildfire management.



## 4.7 CULTURAL HERITAGE

### ***Principle***

Cultural resources are tangible and valuable reflections of past cultural, historical, and environmental influences.

### ***Guidelines***

In order to protect cultural resources and interpret cultural values, planning and site development should:

- Investigate site's cultural resources and the significance of such resources, if any
- Incorporate methods for protecting or preserving significant resources over the long term either on-site or off-site
- Reflect cultural heritage of the locality or region in building and landscape design
- Interpret historical environmental practices of the site

### ***Standards – Site Development***

The Master Developer shall:

- Survey the site and coordinate with the Colorado State Historical Society and their assessments and recommendations
- Incorporate historic and/or cultural forms in architectural and landscaping patterns in the Design Guidelines
- Incorporate indigenous and cultural elements in the Three Springs Public Art and Culture Master Plan

### ***Standards – Education, Research, and Demonstration***

The Three Springs Sustainable Development Program shall:

- Coordinate materials, signage, and programs relevant to sites with cultural values and historic daily living patterns

# 5 ENERGY



**Goal:** To create an energy-conserving and energy-efficient community moving toward reduced impacts on the natural world

## 5.1 ENERGY EFFICIENCY

### *Principle*

The most critical mission for ensuring a sustainable future is to reduce building energy consumption through responsible design implementation and construction.

### *Guidelines*

- The design and construction for energy efficiency should adhere to the proven guidelines in U.S. Green Building Leadership in Energy and Environmental Design (LEED) and Built Green Colorado® programs
- Designers and Builders should be strongly encouraged to achieve exemplary energy performance
- The value of energy efficient homes should be translated effectively to prospective purchasers

### *Standards – Design and Construction*

Designers and Builders shall:

- Work closely with the Three Springs Director of Planning and Design and the DRC in the pre-design phase to incorporate energy savings through improvements to building shell, thermal insulation, HVAC systems, water heating, daylighting, and shading, and incorporate the Three Springs Energy Efficiency Standards

### *Residential Energy Efficiency Standards:*

Designers and Builders shall meet the current Built Green Colorado® requirements for energy efficiency on all residential units including requirements for Energy Star® ratings and commit to the testing procedures for verification.

- Built Green Colorado® requires the selection of options from each of the following Energy Efficiency categories:
  - X. Mechanical Heating and Cooling System
  - XI. Heating Ventilation Air Conditioning Systems (HVAC) Distribution Systems
  - XVI. Lighting
- Install Energy Star® qualified appliances, if appliances are provided. Installation of Energy Star® qualified light bulbs and fixtures are recommended including the Energy Star® Advanced Lighting Package (ALP). If appliances are not provided, a list of energy efficient appliances shall be provided to the purchaser.





There is no substitute for energy. The whole edifice of modern society is built on it... It is not 'just another commodity' but the precondition of all commodities... — *E.F. Schumacher*



### ***Non-Residential Energy Efficiency Standards:***

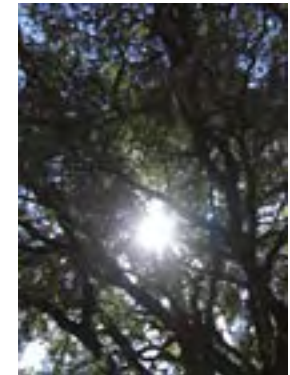
Designers and Builders of non-residential (commercial, educational, or civic) projects are strongly encouraged to meet Leadership in Energy and Environmental Design (LEED) criteria for LEED-NC (New Construction) or LEED-CS (Core and Shell)-Certified Energy and Atmosphere Prerequisites and Credits for energy performance. At minimum, Designers and Builders shall incorporate the following:

- Meet the 2003 International Energy Conservation Code adopted by the City of Durango including specifications of Chapter 8, Design by Acceptable Practice for Commercial Buildings-Climate Zone 15. Designers and Builders are encouraged to meet the specifications of Chapter 7 of the 2003 International Energy Conservation Code over Chapter 8 and provide 15-25% better efficiency than the American Society of Heating, Refrigeration and Air-Conditioning Engineers/Illuminating Engineering Society of North America (ASHRAE/IESNA) Standards 90.1-2004.
- Install Energy Star® qualified appliances, if appliances are provided. Installation of Energy Star® qualified light bulbs and fixtures are recommended. The installation of the Energy Star® Advanced Lighting Package (ALP) is highly recommended.
- Incorporate parking lot landscape planting islands per Three Springs Design Guidelines Parking Standards to reduce heat island effect. Installation of paving materials with a Solar Reflectance Index (SRI) of 29 is recommended.
- Building shading and green roofs (approximately 50% of roof area) are highly encouraged to reduce energy loads. Installation of roofing materials having a Solar Reflectance Index (SRI) equal to or greater than LEED-NC requirements is encouraged.

### ***Standards – Education, Research, and Demonstration***

The Three Springs Sustainable Development Program shall:

- Collaborate with other entities to establish a reliable and comprehensive baseline of current energy use in La Plata County by household
- Collaborate with the building community to host building science workshops to provide design, construction techniques, and compliance methodology with Energy Star® and/or LEED energy performance optimization technologies
- Develop programs and exhibits in the Design Resource Center to educate prospective purchasers about the characteristic features of an Energy Star® labeled home and provide recommendations for consumer efficiency products and operations
- Develop and promote consistent energy saving campaigns aimed at consumer habits



and appliance efficiencies

- Coordinate with LPEA and 4CORE to promote alternative energy options, rebates, and Local Clean Energy Fund Programs
- Coordinate with designers, builders, and owners of high-profile community buildings (Neighborhood Center, Schools, Civic Buildings, etc.) to feature demonstration projects/ programs about the building's design and operational optimization

## **5.2 ENERGY ALTERNATIVES**

### ***Principle***

The integration of alternative energy use is critical to reducing the environmental impacts of operations and lessening reliance on finite resources.

### ***Guidelines***

- All building design should consider the site opportunities for optimal solar orientation and the available technology for active or passive solar use.
- High-profile community buildings are encouraged to incorporate alternative energy methods. Grouped buildings should consider the campus approach for district heating systems utilizing renewable energy sources (i.e., geothermal, bio-mass co-gen, etc).
- Temporary onsite facilities (construction trailers) should consider the practical use of solar power on job sites.
- Implemented alternative energy projects offer opportunities for demonstration projects to further ongoing renewable energy education.

- The solutions and technological advances of renewable energy alternatives are evolving and, where feasible, should be researched for applicability in the community.

### ***Standards – Design and Construction***

Designers and Builders shall:

- Work closely with the Three Springs Director of Planning and Design, the SDP Manager, and the DRC, to identify the feasibility of incorporating solar, geothermal, wind, biomass, district generation, fuel cells, photovoltaic cells as energy sources for construction
- Coordinate with the SDP Manager to develop and promote incorporated applications in demonstration projects

### ***Standards - Education and Research***

The Three Springs Sustainable Development Program shall:

- Collaborate with service providers, local and regional initiatives, and educational and governmental entities to develop economically viable energy efficient programs and policies favoring more alternative energy solutions
- Develop collaborative partnerships agreements or Memos of Understandings (MOU) among key partners (City of Durango, LPEA, 9-R School District, and other agencies) to secure commitments and funding for proposed programs.

Buildings consume at least 40% of the world's energy... and account for about one-third of the emissions of heat-trapping carbon dioxide from fossil fuel burning...Climate sensitive design using available technologies in the U.S. could cut total energy use by 60% in commercial buildings. — *Roodman and Lessen, 1995*



# 6 WATER CONSERVATION



**Goal:** To promote potable water economies, water quality, and conservation measures for existing and future users in the community

## 6.1 POTABLE WATER CONSERVATION

### *Principle*

The most significant water conservation measures in this semi-arid environment can be achieved through a reduction of landscape irrigation followed by a reduction in household consumption.

### *Guidelines*

- The use of non-treated water for irrigation of public and common landscaping is a viable solution to conserving potable water
- Consumer water conservation measures should be guided by the proven design and construction measures in the Built Green Colorado® and LEED criteria
- Designers and builders should be strongly encouraged to achieve optimal water savings
- The efficiencies of water conservation plans, devices, and operations should be communicated to prospective buyers and occupants

### *Standards – Public Landscaping*

The Master Developer shall establish irrigation policies for governing associations and coordinate with the City of Durango Parks and Recreation Department to implement practices which comply with:

- The Landscape Standards of the Codes and Standards define the Community Water Conservation Program and principles and standards for common or public landscape, irrigation, and maintenance
- The Raw Water Master Plan which defines the overall system approach for supplying non-treated water to community parks, neighborhood parks, and major streetscapes with considerations for zoning and master controllers

### *Standards – Construction*

Designers, Builders, and Tenants shall:

- Work closely with the Three Springs Director of Planning and Design, the SDP Manager, and the DRC to review Design Guideline standards and identify water saving measures. Designers and Builders shall be required to establish water budgets for the project and incorporate the Three Springs Water Management Standards.



The frog does not drink up the pond in which he lives — *A proverb*





### ***Residential and Non-Residential Landscape Design Standards:***

Designers and Builders are encouraged to reduce potable water consumption for landscape irrigation by at least 30% from a calculated mid-summer baseline case and at minimum shall include the following standards:

- **Design Alternatives**—provide single-family home purchasers with a minimum of three (3) sample water-wise landscape designs for front and side yard areas for installation at time of home purchase when landscaping is not installed. Property owners may be required to install private backyard landscapes within 12 months of home purchase. Water-wise landscapes are strongly encouraged for private backyard landscapes.
- **Landscape Plans**—design drought tolerant landscapes that require a maximum of 15 gallons/square foot per year when fully established in addition to natural precipitation
- **Soil Amendment**—install at least three cubic yards of soil amendment (coarse organic material) per 1000 square feet of installed landscape area, based on soil analysis. Amendment must be tilled 4-6" below the surface prior to installation of any further topsoil, seed, or sod/turf.
- **Rainwater Reuse**—direct rainwater toward landscaping needs where practical. Landscapes receiving redirected water must be at least five feet from the building foundation.
- **Turf**—prohibit water consumptive turf areas (unless noted otherwise in the Design Guidelines) and promote water conserving landscape principles. Limit the installation of turfgrass in areas less than 8' wide and slopes greater than 4:1 (25%). Drought tolerant turfgrass alternatives are encouraged.
- **Bedding Areas**—install bedding areas with clean, disease-free, recycled content mulch or compost to a depth of 4" discouraging use of rock materials in landscape bedding.
- **Irrigation Systems**—install irrigation system to include soil moisture or rain sensor devices. Efficient drip, bubbler and/or spray irrigation systems are required.





Outside water uses including landscape irrigation in the City of Durango may consume between 35%-57% of the total annual water usage.

*City of Durango Public Works Department*

#### ***Residential and Non-Residential Interior Uses Standards:***

Designers and Builders are encouraged to employ strategies that use at least 20% less water than the water use baseline calculated for the building (not including irrigation) and at minimum shall include the following fixtures:

- Install low-flow shower heads (<2.5 gpm); alternative is a venturi-type valve
- Install low flow toilets (1.6 gpf) with a maximum performance factor greater than 400 grams/flush. Dual-flush, pressure or vacuum assist toilets averaging 1.1 gpf are highly recommended.
- Install Energy Star® dishwashers and clothes washers where these appliance are provided
- Faucets fitted with aerator restricting flow in bathrooms (1.8 gpm or less) and kitchens (2.0 gpm) are highly recommended

#### ***Standards – Education, Research, and Demonstration***

The Three Springs Sustainable Development Program shall:

- Develop programs and exhibits in the Design Resource Center to educate prospective purchasers about the household fixtures, Energy Star® water saving appliances, and water conserving landscape designs
- Develop and promote consistent water-saving campaigns aimed at consumer habits and appliance efficiencies
- Coordinate with Builders and governing associations to ensure Occupancy and Operations Manuals (residential) and Operations and Maintenance Manuals (non-residential) include site specific guidelines regarding landscape planting materials, irrigation, and efficiencies for users
- Coordinate demonstration and community projects research and promote water conservation that may include water reuse, water harvesting systems, planting displays with comparative water needs, gardens, arboretums, and permaculture plantings

# 7 MATERIALS & RESOURCES



**Goal:** To reduce the use of non-renewable resources, incorporate environmentally responsible materials, and minimize solid waste production

## 7.1 MATERIAL USE

### *Principle*

A conscientious, creative design approach is necessary in the incorporation of environmentally responsible materials for construction projects in the community.

### *Guidelines*

- The adaptive reuse of project buildings and materials is highly encouraged.
- Designing for durability, flexibility, and adaptability is a priority.
- The wise material use ethic promotes using less, reusing materials, and making careful selections.
- Designers, builders, purchasers, and consumers should be educated about appropriate regional materials and resource use.

### *Standards – Design and Construction*

Designers, Builders, and Tenants shall:

- Work closely with the Director of Planning and Design, the SDP Manager, and DRC, in the design phase to review designs which incorporate economically viable options for:
  - flexible and adaptable features to enhance building longevity
  - space efficiency to minimize overall size in construction

- simple building geometry to optimize standard building material sizes and avoid waste from over-design, where practical
- alternative materials including salvaged, reused, and recycled materials
- responsible building materials
- locally or regionally produced building materials to reduce transportation costs/impacts
- At minimum, Designers and Builders shall be required to incorporate the Three Springs Materials Standards







We are far better at making waste than making products. — *Paul Hawken*

***Residential Construction Materials Standards:***

- All concrete mixture applications shall include a minimum 20% Class F fly ash material as a substitute for Portland cement.
- Built Green Colorado® requires the selection of at least one option from each of the following Material Resource Efficiency categories:
  - XVIII. Framing
  - XXIII. Exterior Wall Finishes

***Non Residential Construction Materials Standards :***

- New Construction shall meet LEED-NC Materials & Resources prerequisites and select at minimum one credit option for Materials and Resources criteria for implementation from Building Reuse, Resource Reuse, Recycled Content, Regional Materials, Rapidly Renewable Materials, and Certified Wood criteria.
- All construction shall include a minimum 20% Class F fly ash as a substitute for Portland cement in concrete mixture applications.

***Standards – Education, Research, and Demonstration***

The Three Springs Sustainable Development Program shall:

- Establish eco-friendly materials and education in the Design Resource Center including:
  - Local and regional alternative design resources and building material sources
  - Interior design choices for purchasers/consumers
  - Promote awareness of wise material use selection in daily living for both environmental and health benefits





## 7.2 MATERIALS AND INDOOR ENVIRONMENTAL HEALTH

### **Principle**

The selection of building materials affects indoor environmental quality and productivity of construction personnel and occupants.

### **Guidelines**

Designers, builders, purchasers, and consumers should be educated about environmentally sensitive materials and application practices in order to improve and enhance comfort and productivity of both construction personnel and occupants.

### **Standards – Design and Construction**

Tenants, Designers, and Builders shall:

- Work closely with the Three Springs Director of Planning and Design, SDP Manager, and the DRC in the design phase to create healthy indoor environments and shall incorporate the Three Springs Indoor Environmental Health Standards.

### **Residential Indoor Environmental Health Standards:**

- Install at grade, conditioned, insulated crawl space with an airtight, minimum 10ml continuously sealed ground cover. If slab on grade foundation is used, frost protected foundations shall be installed
- Built Green Colorado® requires the selection of at least one option from XII Improved Indoor Air Quality

### **Non-Residential Construction Indoor Environmental Health Standards:**

- Include at least two (2) credit options to implement from Indoor Environmental Quality including Outdoor Air Delivery Monitory, Increased Ventilation, Construction IAQ Management Plan, Low Emitting Materials, Indoor Chemical and Pollutant Source Control, Controllability of Systems, Thermal Comfort, Daylight and Views.

### ***Standards – Education, Research, and Demonstration***

The Three Springs Sustainable Development Program shall:

- Develop a partnership with a local builder to feature a model home designed to exhibit materials and construction practices to promote healthy indoor environments.

## **7.3 WASTE MANAGEMENT**

### ***Principle***

A comprehensive waste management system reduces landfill destined solid waste and promotes recycling and reuse in the community.

### ***Guidelines***

- Unavoidable construction waste should be separated for recycling purposes, where feasible
- Domestic and commercial waste management should include infrastructure for consumer recycling, composting, and considerations for hazardous waste products
- Community education should promote recycling as a way of life and develop a culture for reuse

### ***Standards – Construction Waste***

The Master Developer shall:

- Collaborate with a service provider to establish an on-site waste and construction recycling facility to reduce the construction waste diverted from the landfill. The facility should be capable of sorting and recycling wood, metals, brick/concrete, and corrugated cardboard and provide products for re-use from crushed aggregate materials and mulch. All Builders/Contractors and Subcontractors at Three Springs shall contract for these services. The facility may also be utilized by other construction contractors in the area.

### ***Standards – Design and Construction***

Builders and Contractors shall:

- Provide outdoor recycle pick-up bins in screened enclosures per Design Guidelines Standards for non-residential buildings where practical or coordinate with other buildings on joint-use centers





### ***Standards – Community Waste***

The Master Developer shall:

- Coordinate with the City of Durango Public Works Department responsible for managing the community waste and pre-sorted waste recycling programs
- Coordinate with the City of Durango Public Works Department and San Juan Basin Health for hazardous waste disposal

### ***Standards – Education, Research, and Demonstration***

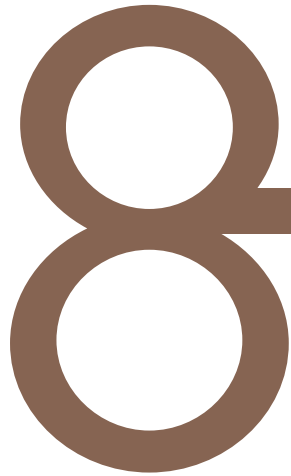
The Three Springs Sustainable Development Program shall:

- Coordinate with City of Durango Public Works Department to promote recycling campaigns and programs community-wide
- Collaborate with 9-R School District on recycling, reuse, and wise material use programs in the schools
- Promote applied material use efficiencies in construction demonstration projects in the built environment
- Coordinate with City of Durango Public Works Resource Conservation Department, Soil Conservation Service, and local nurseries to educate and encourage the community-at-large to compost organic waste for targeted use in both community and individual gardens
- Establish reuse initiatives throughout all sectors of the community through notifications in newspaper, website, and kiosk postings for free offerings, garage sales, mending services, and repair directories
- Develop information programs which encourage low waste shopping (minimum packaging)
- Investigate community programs for delivery/pickup services
- Investigate and plan cooperative centers for shared services, i.e., shared tools, computers, etc.

Up to 25% of an average landfill is construction and demolition waste. (Denver AIA)

Americans today generate over four pounds of household waste per person per day; only 17% is recycled. (Built Green®)





## S O C I A L



**Goal:** To create a physically healthy and socially interactive community in a safe environment

### 8.1 SENSE OF COMMUNITY

#### **Principle**

Sensible mixed-use land planning fosters smart-growth community development patterns that promote social, educational, and recreational gathering.

#### **Guidelines and Standards**

The Three Springs Master Plan is designed to provide:

- Livability and walkability in compact and efficient neighborhoods designed to a pedestrian scale with schools, neighborhoods, civic, and community parks located within 1/2 mile walking distance of residential units and the urban center
- Social interaction opportunities in the vibrant urban center—Village I Mercado District and the future Village II Homestead District with central plazas, shops, restaurants, sidewalk cafés, offices, and live/work units
- Neighborhood gathering facilities in a central campus including a Neighborhood Center and potentially a branch library
- Pocket parks and community gardens providing resources for gathering and interaction

### 8.2 RESIDENTIAL DIVERSITY AND AFFORDABILITY

#### **Principle**

Residential development should enable citizens from a wide range of economic levels and age groups to interact in the community.

#### **Guidelines**

Community planning and design should provide for:

- Sufficient variety of housing sizes and types, and a mix of demographic socio-economic layers
- Proportion of affordable and attainable housing units integrated into the community
- Options for elderly housing including transitional and assisted care facilities
- Co-housing and cluster developments providing additional layers of social interaction and engagement

#### **Standards – Planning**

The Master Developer shall incorporate planning and design considerations in compliance with:

- Codes and Standards (Urban Standards) and provisions for seventeen (17) residential and mixed-use lot types in single-family detached, duplex, row house, apartments, live/work, apartments, accessory dwelling units (ADUs), and urban village mixed use configurations
- Section 3.08 of the Three Springs Development Agreement assurance for the ratio and timing of development of attached units (multi-family)



Public open spaces are places where the seeds of sustainable communities take root—where people become neighbors. — *Trust for Public Lands/Green Cities Initiatives*

- Section 4.10 of the Three Springs Development Agreement assurance for development of affordable and attainable units. The Master Developer shall develop partnerships with housing providers that may include, among others, the Regional Housing Authority, Habitat for Humanity, Colorado Housing, Inc., Mercy Housing, and Housing Solutions of the Southwest.
- Assisted Living housing projects for an aging population shall be investigated in partnerships with housing providers. The principle of decentralized care and support programs for independent elderly living in the community shall also be investigated.

### **Standards – Education**

The Three Springs Sustainable Development Program shall investigate:

- Viability of Energy Efficient Mortgages (EEM) that incorporate the energy efficient improvements as added present value when evaluating a home's market value
- Tax Incentives Assistance Project to assist consumers and businesses with applicable information regarding Federal income tax incentives for energy efficient products and technology

## **8.3 HEALTH AND WELL-BEING**

### **Principle**

Healthy living and productivity for occupants and residents alike are promoted through physical activity and health networks in the community.

### **Guidelines**

- Convenient recreation and outdoor activities should be incorporated into daily living
- Improved and enhanced indoor environmental quality should contribute to both comfort and productivity
- Ongoing health programs and initiatives are necessary to support individual and community well-being

### **Standards – Recreation / Outdoor Activities**

The Three Springs Sustainable Development Program shall:

- Encourage occupants, residents, and visitors to utilize the community's convenient network of hiking and biking trails through tours and walking/biking clubs

- Coordinate with the City of Durango Parks and Recreation to promote the Community and Neighborhood Parks with their facilities and fields for active recreation, fitness programs, and/or playgrounds
- Develop competitive events and programs for all ages to provide incentives to stay fit

### **Standards – General Health and Welfare**

The Three Springs Sustainable Development Program shall:

- Develop partnerships with local healthcare providers and health initiatives to incorporate regular wellness related programs, campaigns, and site-specific projects. Programs may include health fairs, nutrition, blood drives, inoculation clinics, well-child care, elderly assistance, and family support networks.
- Establish communal gardens located in common pocket parks and green spaces conveniently located near each neighborhood

## **8.4 ARTS AND CULTURAL**

### **Principle**

The concept of creating an enriching social environment includes gathering together to experience a variety of arts, cultural, and educational events.

### **Guidelines**

- A diverse arts and cultural calendar should include lectures, exhibits, performance, and educational programs.
- A program should build upon the city's reputation as an arts-centered community

### **Standard – Programming**

- Arts, cultural, and musical programs shall be coordinated in compliance with an approved Master Plan for Arts Programming
- Programs shall be developed by the Arts and Culture Advisory Committee of the Three Springs Metropolitan District.





## 8.5 NEIGHBORHOOD CENTER

### **Principle**

Social sustainability depends upon a commitment to provide centralized community facilities and management infrastructure to establish and maintain long-term program development.

### **Guidelines**

- A flexible indoor facility for meetings, social functions, activities, and education should be located in the heart of the community
- Coordinated programs for communication networks, education and health programs, and arts/cultural program planning should be developed to serve the community

### **Standards – Planning and Design**

The Master Developer shall:

- Design and construct a Neighborhood Center (Building G-H Approximately 11,000–13,000 sf) located in the heart of Village 1 with indoor and outdoor reception areas, meeting spaces, business center, activity rooms, reading areas, kitchen, and restrooms in a flexible design

### **Standards – Program Management**

The Three Springs Metropolitan District shall:

- Manage and operate the Neighborhood Center
- Administer the Three Springs Sustainable Development Program through a SDP Manager responsible for managing ongoing research, informational, educational, health, cultural, and economic sustainability programs and initiatives. The Master Developer shall initiate and provide coordination of the Program during the time prior to establishment of the Metropolitan District.

## 8.6 COMMUNITY STEWARDSHIP

### **Principle**

Proactive sustainability activities involving volunteers are encouraged to further community service and environmental causes.

### **Guidelines**

- A community grant program for non-profit organizations should be established to support new or ongoing sustainable programs
- Experiential learning opportunities in the community should be developed to foster participation by students (elementary through college) in sustainable practices

### **Standards – Program Management**

The Three Springs Sustainable Development Program shall:

- Establish a grant program for non-profit organizations providing services which further the sustainable mission of Three Springs
- Encourage the development of a foundation to support sustainability initiatives
- Develop programs for service learning in the community for college students, 9-R students, and the medical and business communities



# g

## E C O N O M I C



**Goal:** To develop and support an innovative local business community involved in sustainable practices

### 9.1 EMPLOYMENT DIVERSITY

#### **Principle**

A viable business community consists of diversity, creativity, and entrepreneurial spirit.

#### **Guidelines**

- Master planning and infrastructure should provide opportunities for residents to live and work in the neighborhood
- Business development should focus on established local/regional enterprises, and entrepreneurial ventures, as well as, non-profit organizations

#### **Standards – Master Developer / Planning**

The Master Developer shall develop a business community in Three Springs in compliance with:

- The Urban Standards of the Codes and Standards with definition of the mixed-use lot types, lodging, office, and commercial/retail uses allowed throughout the community. Live/Work and accessory dwelling units (ADUs) offer small business and home office uses.
- The Three Springs Master Plan delineation of two mixed-use Urban Centers including:
  - Village I -Mercado District with retail, restaurants, office, residential and civic uses with a mixed-use shared parking program
  - Village II -Homestead District with neighborhood-serving uses

- Section 3.07 of the Three Springs Development Agreement regarding the establishment and timing of retail components.

#### **Standards – Business Development**

The Master Developer shall:

- Install fiber optic cable lines throughout the community to enhance live/work opportunities
- Encourage business development and the establishment of :
  - local businesses providing medical service, retail, and other services
  - local and regional office centers
  - non-profit organizations and sustainable initiatives in cooperative settings





The fortunes of local economies, communities, and ecosystems go hand in hand. — *Northwest Report*





## 9.2 SUSTAINABILITY FOCUS

### **Principle**

Businesses that promote and practice optimal efficiencies in green building techniques are showcases for innovation with added exposure for the community overall.

### **Guidelines**

- Business development should pursue local or regional eco-oriented businesses committed to innovative design and operations

### **Standards – Sustainable Business Development**

The Master Developer shall:

- Encourage businesses and partnerships interested in outreach and demonstration of building design, programs, or activities which economically integrate:
  - optimal energy efficiency
  - water conservation
  - alternative building materials
  - mutual waste/reuse benefits

The Three Springs Sustainable Development Program shall:

- Coordinate public relations locally and regionally for demonstration projects





### 9.3 BUSINESS NETWORKS

#### ***Principle***

A healthy and growing business sector contributes directly to the viability of living and working in the community.

#### ***Guidelines***

- Community planning should incorporate business support areas including:
  - centralized meeting space for business education, job fairs, and training
  - small business center with computer, copying, and faxing services for common use
- Operations in the community should provide general information about local and community business services and programs

#### ***Standards – Master Developer / Planning***

The Master Developer shall:

- Design the Neighborhood Center to include:
  - small and large meeting rooms with break-out capabilities and kitchen support areas
  - business center room with common general office uses including computer, copying, and faxing equipment

#### ***Standards – Program Management***

The Three Springs Sustainable Development Program shall:

- Coordinate business related information to the community through the website with business/education links, community newsletter, and kiosks
- Coordinate with the Durango Chamber of Commerce to provide lunch session workshops of interest to the business community



# 10 TRANSPORTATION

**Goal:** To reduce dependency on the automobile and encourage alternative transportation modes



## 10.1 PEDESTRIAN AND BICYCLE NETWORKS

### **Principle**

Interconnected walkways and multi-use trails promote viable alternative transportation modes such as bicycling and walking within the community.

### **Guidelines**

- The pedestrian and biking experience should be pleasant, convenient, and connect neighborhoods, businesses, schools, amenity areas, and adjoining properties

### **Standards – Master Plan**

The Access and Circulation Plan of the Three Springs Master Plan defines:

- Thoroughfare network system designed for limited and slowed traffic through neighborhoods with pedestrian crossings, underpasses, and shared on-street bike routes
- Tree-lined thoroughfares with sidewalks adjoining landscaped environments
- Braided network of paved shared-use pathways served by multiple underpasses at certain roadway intersections
- Secondary footpaths connecting neighborhoods to integrated community amenities, adjoining public lands, and the proposed regional SMART 160 trail linking Durango, Three Springs, and Bayfield





Green development addresses and seeks to mitigate the broad land use impacts of land development. As more examples emerge... people will become less willing to put up with sprawl, and lost productivity from commuting that are so prevalent in much of the country. —*Environmental Building News*

## 10.2 PUBLIC TRANSIT

### **Principle**

Public transit is an environmentally responsible solution to reducing single-occupancy driving.

### **Guidelines**

- Transit routes and transit stops throughout the community for public transportation should be convenient and centrally located

### **Standards - Master Developer / Planning**

The Master Developer shall provide coordinated facilities and services according to:

- Sections 5.15 and 6.06E of the Three Springs Development Agreement requiring construction of two (2) covered public transit stops (hubs) dedicated to the City of Durango
- The Access and Circulation Plan of the Three Springs Master Plan designates a public transportation fixed route with four (4) transit hubs serving the MRMC campus, Mercado District at the Neighborhood Center, Village II urban center, and the Community Park with an additional transit stop located near the Middle School

The Master Developer shall:

- Coordinate with the City of Durango Transit (T) and the Road Runner (Ignacio) to establish transit services at the time the community residential and business density is able to support regular services

### **Standards – Program Management**

The Three Springs Sustainable Development Program shall:

- Communicate public transportation information through the internet site, newspaper, kiosks, and signage

## 10.3 ALTERNATIVE TRANSPORTATION INCENTIVES

### **Principle**

The key incentives for considering alternative transportation modes are access, convenience, and financial savings.

### **Guidelines**

- All levels of the community should be involved in promoting creative means of supporting alternative transportation to the single-occupant vehicle

### **Standards – Master Developer / Planning**

GRVP, LLC shall design community infrastructure to ensure:

- Public shower and locker facilities in the Neighborhood Center
- Teleconference centers in the Neighborhood Center
- Fiber optic communication installation for tele-work and home shopping

### **Standards – Design and Construction**

Tenants, Designers, and Builders of Non-Residential buildings shall:

- Incorporate bicycle storage areas in the building and bike racks outside near the building entrance. Changing rooms including storage, showers, and lockers are highly encouraged.

### **Standards – Program Management**

The Three Springs Sustainable Development Program shall:

- Coordinate with the medical and business communities to
  - Design alternative work shifts to avoid peak rush hour
  - Encourage financial incentives for employees who rideshare, bicycle, or walk to work
  - Encourage employee-based transit subsidy pass programs
  - Facilitate rideshare networks
- Assist with community wide rideshare matching
- Investigate the feasibility of a small bicycle fleet for common use in the business community
- Promote bicycle maintenance through regular maintenance workshops
- Promote community service activities located within walking distance including health, child care, and recreation



## 10.4 ADVOCACY

### **Principle**

The role of reducing air pollution and CO2 emissions through alternative fuels and transportation modes requires committed involvement.

### **Guidelines**

- The development of sustainable transportation should extend beyond the boundaries of the community

### **Standards – Program Management**

The Three Springs Sustainable Development Program shall:

- Support regional initiatives to promote alternative fuel markets (Region 9 Economic Development and the Coalition for Clean Cities Program)
- Coordinate with Trails 2000 to raise funds to extend the SMART 160 Trail and assist in building other trail connectors in the Grandview area
- Showcase innovative technologies in the community, i.e., hybrid auto shows/test drives



# 11 IMPLEMENTATION PLANS



**Goal:** To integrate planning guidelines into projects, initiatives, and practices supporting an evolving sustainable community.

## 11.1 GREEN CONSTRUCTION STANDARDS

As Master Developer, GRVP, LLC shall establish green construction standards and procedures for residential and non-residential development in the Three Springs Neighborhood. The standards incorporate applicable criteria established by Built Green Colorado® (residential) and Leadership in Energy and Environmental Design-LEED (non-residential) for assessing building performance and meeting sustainability goals. Applicable green construction standards shall be evaluated annually and updated, as necessary, to include appropriate revisions as approved by Built Green Colorado® and/or LEED which address desired outcomes.

- Built Green® Colorado requires the selection of at least one option from each of the following Energy Efficiency categories:
  - X. Mechanical Heating and Cooling System
  - XI. Heating Ventilation Air Conditioning Systems (HVAC) Distribution Systems
  - XVI. Lighting
- Install Energy Star® qualified appliances, if appliances are provided. Installation of Energy Star® qualified light bulbs and fixtures are recommended including the Energy Star® Advanced Lighting Package (ALP). If appliances are not provided, a list of energy efficient appliances shall be provided to the purchaser.

## 11.2 RESIDENTIAL CONSTRUCTION (SINGLE-FAMILY AND MULTI-FAMILY):

Designers and Builders shall register, construct, and certify buildings under the guidelines of Built Green Colorado® (Built Green) program with the current random field verification for compliance with Built Green®. All single-family detached residences and multi-family residences shall meet a minimum cumulative 90 points following the current Built Green Colorado® Checklist requirements and options. Builders shall be encouraged to exceed the 90-point minimum. In addition, Designers and Builders shall also comply with the specific following Three Springs Standards:

### ***Energy Efficiency Standards:***

Designers and Builders shall meet the Built Green Colorado® requirement for energy efficiency on all residential units by the Built Green® Checklist including requirements for Energy Star® proficiency.



Small actions and choices can have major, although unpredictable effects in determining what comes next. — *Sarah Van Gelder*

## ***Water Management Standards:***

### ***Landscape Design Standards:***

Designers and Builders are encouraged to reduce potable water consumption for landscape irrigation by at least 30% from a calculated mid-summer baseline case and at minimum shall include the following standards:

- **Alternative Plans**-provide single-family home purchasers with a minimum of three (3) sample water-wise landscape designs for front and side yard areas for installation at time of home purchase when landscaping is not installed. Property owners are required to install private backyard landscapes within 12 months of home purchase. Water-wise landscapes are strongly encouraged for private backyard landscapes.
- **Landscape Designs**-design water-wise landscapes that require a maximum of 15 gallons/square foot per year when fully established in addition to natural precipitation.
- **Soil Amendment**-install at least three cubic yards of soil amendment (coarse organic material) per 1000 square feet of installed landscape area, based on soil analysis. Amendment must be tilled 4-6" below the surface prior to installation of any further topsoil, seed, or sod/turf.
- **Rainwater Reuse**-direct rainwater toward landscaping needs where practical. Landscapes receiving redirected water must be at least five feet from the building foundation.
- **Turf**-prohibit water consumptive turf areas (unless noted otherwise in the Design Guidelines) and promote water conserving landscape principles. Limit the installation of turfgrass in areas less than 8' wide and slopes greater than 4:1 (25%) or in areas that are difficult to efficiently irrigate and manage. Drought tolerant turfgrass alternatives are encouraged.
- **Bedding Areas**- install bedding areas with clean, disease-free, recycled content mulch or compost to a depth of 4" discouraging use of rock materials in landscape bedding.
- **Irrigation**--install irrigation system to include soil moisture or rain sensor devices. Efficient drip, bubbler, and/or spray irrigation systems are required.

### ***Interior Use Standards:***

Designers and Builders are encouraged to employ strategies that use at least 20% less water than the water use baseline calculated for the building (not including irrigation) and at minimum shall include the following fixtures:

- Install low-flow shower heads (<2.5 gpm); alternative is a venturi-type valve
- Install low flow toilets (1.6 gpf) with a maximum performance factor greater than 400 grams/flush. Dual-flush, pressure or vacuum assist toilets averaging 1.1 gpf are highly recommended.
- Specify and install Energy Star® dishwashers and clothes washers where these appliances are provided.
- Faucets fitted with aerator restricting flow in bathrooms (1.8 gpm or less) and kitchens (2.0 gpm) are highly recommended.

### ***Materials Standards:***

- All concrete mixture applications shall include a minimum 20% Class F fly ash material as a substitute for Portland cement.
- Built Green Colorado® requires the selection of at least one option from each of the following Material Resource Efficiency categories:
  - XVIII. Framing
  - XXIII. Exterior Wall Finishes
- Contract and utilize the on-site construction waste and recycling center services to reduce construction waste and divert it from the landfill.





### **Indoor Environmental Health Standards**

- Install at grade, conditioned, insulated crawl space with an airtight, minimum 10 mil continuously sealed ground cover. If slab on grade foundation is used, a frost protected shallow foundations shall be installed.
- Built Green Colorado® requires the selection of at least one option from the XII. Improved Indoor Air Quality category

### **Levels of Green Program Standards:**

- Designers and Builders of semi-custom residences shall provide two additional levels of green with options including higher energy efficiency standards, water conservation standards, and environmentally friendly material choices.

## **11.3 NON-RESIDENTIAL CONSTRUCTION**

Designers and Builders of all non-residential projects are highly encouraged to develop documentation for certification as a Leadership in Energy and Environmental Design (LEED) building. LEED is a voluntary green building rating system based on accepted energy and environmental principles with established green building practices and emerging concepts. Designers and Builders of commercial, educational, or civic projects shall be guided by the current LEED Green Building Rating System criteria for LEED-NC (New Construction) or LEED-CS (Core and Shell) and certification levels (Certified, Silver, Gold, or Platinum). At minimum, all projects shall comply with the following specific Three Springs Standards:

### **Energy Efficiency Standards:**

Designers and Builders of non-residential (commercial, educational, or civic) projects are strongly encouraged to meet Leadership in Energy and Environmental Design (LEED) criteria for LEED-NC (New Construction) or LEED-CS (Core and Shell)-Certified Energy and Atmosphere Prerequisites and Credits for energy performance. At minimum, Designers and Builders shall incorporate the following:

- Meet the 2003 International Energy Conservation Code adopted by the City of Durango including specifications of Chapter 8, Design by Acceptable Practice for Commercial Buildings-Climate Zone 15. Designers and Builders are encouraged to meet the specifications of Chapter 7 of the 2003 International Energy Conservation Code over Chapter 8 and provide 15-25% better efficiency than the American Society of Heating, Refrigeration and Air-Conditioning Engineers/Illuminating Engineering Society of North America (ASHRAE/IESNA) Standards 90.1-2004.



“a balance between people living in a community and the jobs available there; a balance between renewable resources continuously available locally and local consumption patterns; a balance between maintaining the natural environment in good health and the needs of the human community which lives within it. Like an individual in balance, a sustainable community will be healthy: socially, economically, and biologically.”

— Calthorpe and Van der Ryn

- Install Energy Star® qualified appliances, where these appliances are provided. Installation of Energy Star® qualified light bulbs and fixtures are recommended. The installation of the Energy Star® Advanced Lighting Package (ALP) is highly recommended.
- Incorporate parking lot landscape planting islands per Three Springs Design Guidelines Parking Standards to reduce heat island effect. Installation of paving materials with a Solar Reflectance Index (SRI) of 29 is recommended.
- Building shading and green roofs (approximately 50% of roof area) are highly encouraged to reduce energy loads. Installation of roofing materials having a Solar Reflectance Index (SRI) equal to or greater than LEED-NC requirements is encouraged.

### **Water Management Standards:**

#### **Landscape Design and Standards:**

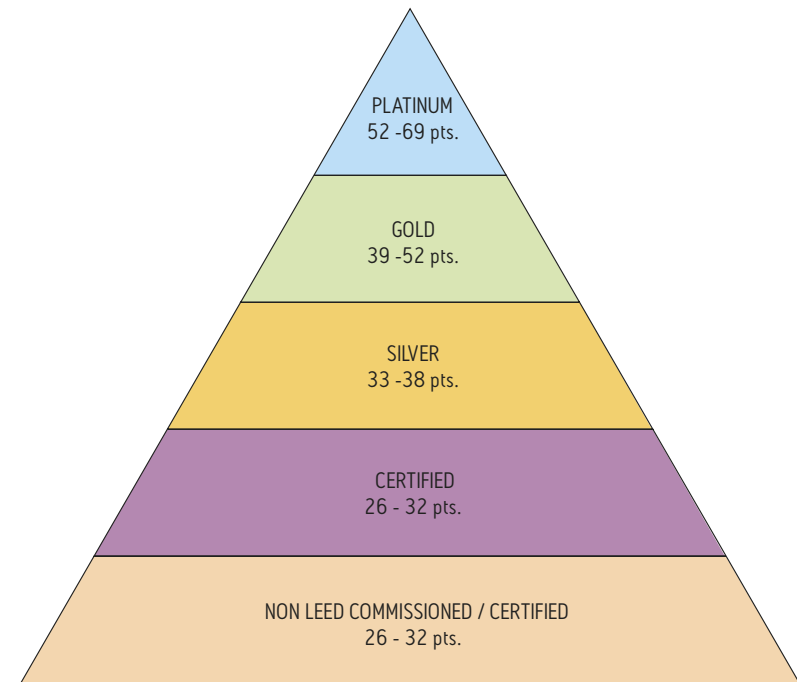
Designers and Builders are encouraged to reduce potable water consumption for irrigation by at least 30% from a calculated mid-summer baseline case and at minimum shall include the following features:

- Landscape Designs-design water-wise landscapes that require a maximum of 15 gallons/ square foot per year when fully established in addition to natural precipitation.
- Soil Amendment-install at least three cubic yards of soil amendment (coarse organic material) per 1000 square feet of installed landscape area, based on soil analysis. Amendment must be tilled 4-6" below the surface prior to installation of any further topsoil, seed, or sod/turf.
- Rainwater Reuse-direct rainwater toward landscaping needs where practical. Landscapes receiving redirected water must be at least five feet from the building foundation.
- Turf-prohibit water consumptive turf areas (unless noted otherwise in the Design Guidelines) and promote water conserving landscape principles. Limit the installation of turfgrass in areas less than 8' wide and slopes greater than 4:1 (25%). Drought tolerant turfgrass alternatives are encouraged.
- Bedding Areas-install bedding areas with clean, disease-free, recycled content mulch or compost to a depth of 4" discouraging use of rock materials in landscape bedding.
- Irrigation-install irrigation system to include soil moisture or rain sensor devices. Efficient drip, bubbler, and/or spray irrigation systems are required.

#### **Interior Uses:**

Designers and Builders are encouraged to employ strategies that use at least 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements and at minimum shall include the following fixtures:

- Install low-flow shower heads (<2.5 gpm); alternative is a venturi-type valve
- Install low flow toilets (1.6 gpf) with a maximum performance factor greater than 400 grams/flush. Dual-flush, pressure or vacuum assist toilets averaging 1.1 gpf are highly recommended.
- Install Energy Star® dishwashers and clothes washers where these appliances are provided
- Faucets fitted with aerator restricting flow in bathrooms (1.8 gpm or less) and kitchens (2.0 gpm) are highly recommended.



(FIG 2.) LEED-NC Green Building Certification Levels

### ***Materials and Resources Standards:***

- New Construction shall meet LEED-NC Materials & Resources prerequisites and select at minimum one credit option for Materials and Resources criteria for implementation from Building Reuse, Resource Reuse, Recycled Content, Regional Materials, Rapidly Renewable Materials, and Certified Wood criteria.
- Provide outdoor recycle pick-up bins in screened enclosures per Design Guidelines recommendations where practical or coordinate with other buildings on joint outdoor recycle use areas.
- Contract and utilize the on-site construction waste and recycling center services to reduce construction waste and divert it from the landfill.
- All construction shall include a minimum 20% Class F fly ash as a substitute for Portland cement in concrete mixture applications.

### ***Indoor Environmental Health Standards:***

Builders and Designers of New Construction and Core and Shell projects are highly encouraged to meet the applicable LEED Prerequisites for Minimum Indoor Air Quality Performance and Environmental Tobacco Smoke (ETS Control) and at minimum shall include:

- At least two (2) credit options for implementation from Indoor Environmental Quality including Outdoor Air Delivery Monitory, Increased Ventilation, Construction IAQ Management Plan, Low Emitting Materials, Indoor Chemical and Pollutant Source Control, Controllability of Systems, Thermal Comfort, Daylight and Views.

#### **11.4 COMMERCIAL INTERIORS**

Designers and Builders of shell commercial buildings with tenant improvement spaces (primarily retail and office uses) shall comply with the standards of the Three Springs Tenant Improvements Guidelines.

#### **11.5 EDUCATION AND ASSESSMENT**

Post-construction education is critical to ensuring that buildings and landscapes operate as originally designed. Designers and Builders of all projects shall educate occupants, owners, maintenance professionals, and equipment managers about the sustainable design elements incorporated into the building through Operations/Maintenance Manuals which shall include:



- building and equipment warranties
- general operations and troubleshooting
- conservation and efficiency recommendations
- landscaping recommendations
- community resource directories
- links to additional regional resources
- eco-friendly maintenance practices

Designers and Builders shall also develop a post-occupancy assessment in order to systematically evaluate products and systems utilized for further Designer/Builder education.

#### 11.6 HIGH PROFILE COMMUNITY BUILDINGS

Designers and Builders of high profile buildings of public use (community, educational, or civic projects) are highly encourage to develop documentation for certification in the LEED green building ratings for Certified, Silver, Gold, or Platinum status. Designers and Builders shall work closely with the Three Springs Director of Planning and Design and the Sustainable Development Program Manager in the design, development, and educational promotion of sustainable design features in demonstration projects.



#### 11.7 LEED-CERTIFIED COMMITMENT

The Master Developer shall design and construct the following three new construction projects in Village I depicted in the Three Springs Master Plan to earn at least LEED-NC-Certified or higher status under the New Construction (NC) credit system for Certified (26-32 points), Silver (33-38 points), Gold (39-51 points), or Platinum (52-69 points):

- Building C (mixed-use)-24,287 GSF
- Building D (mixed-use)-27,179 GSF
- Neighborhood Center-approximately 13,000 sf

#### 11.8 DESIGN GUIDELINES

The Three Springs Design Guidelines address the integration and compatibility of architectural, landscape design, and sustainable design elements. The Guidelines promote design that strives to mitigate the impacts of buildings on the environment, community, and workplace. Builders and Designers should refer to the Design Guidelines for sustainable design principles in (2.0) Universal Design Principles and guidelines in site-specific projects for Mixed-Use Urban Centers (4.0), Special Districts (5.0), Multi-Family Residential (6.0), and Single-Family Residential (7.0).

The Design Review Committee (DRC) shall administer the design review and construction compliance in accordance with the Three Springs Design Guidelines and the process described in (8.0) Design Approval Process and (8.2) the Sustainable Development Program. The DRC reserves the authority to waive the application of certain green construction standards in such cases as affordable housing projects or other projects that may present significant benefit to the community and yet have budget implications (such as assisted living or civic non-profit functions).



### 11.9 SUSTAINABLE DEVELOPMENT PROGRAM MANAGEMENT

The proposed Three Springs Metropolitan Districts (Nos. 1, 2, and 3) are Title 32 quasi-governmental jurisdictions designed to provide financing, acquisition, completion and operation of public infrastructure. District No. 3 shall have the authority to govern the management of the Sustainable Development Program. A May 2006 election determines the authorization for formation of the District(s) in conformance with the Service Plans. Duly elected Board of Directors of the respective District(s) will oversee general operations under a partial year budget. Budgets for the following year will be approved in Fall 2006. The Master Developer shall define, initiate, and coordinate the Program as needed prior to establishment of the Board of Directors and sufficient Metropolitan District operating funds.

### 11.10 PROGRAM MANAGER

The Master Developer shall hire a Sustainable Development Program Manager within the initial year to coordinate and manage the implementation of the Three Springs Sustainable Development Program and serve as a resource for planning, development, and community networks. Essential duties and responsibilities include:

- Advocates for improved standards, technology and best practices in planning and construction and develops program infrastructure including policies, guidelines, standards, procedures, handbooks, and compliance records.
- Develops ongoing assessment tools including baseline data on energy and water conservation programs, trip reduction, recycling and construction waste management and others and continually monitors and evaluates annual operational and management programs as required (see 11.10 Research and Baseline Data Collection below).
- Works closely with the Three Springs Director of Planning and Design, the Design Review Committee (DRC), and consultants, designers, and builders during the design review process providing technical resource coordination to ensure green construction standard compliance.
- Collaborates with consultants, designers, builders, local initiatives, and the educational community for demonstration projects, experiential learning, and stewardship projects in the community.
- Provides education and training for construction field personnel, consultants, and trade partners.



- Facilitates education and targeted campaigns on sustainability issues through the community newsletter, website, and classroom sessions.
- Coordinates the establishment of the Design Resource Center as an information center of design options and sustainable practices for prospective purchasers. Provides on-going information on products, systems, practices, and local service providers.
- Coordinates with local and regional service providers and initiatives to promote sustainable education in forums, workshops, expos, and conferences for the students, general public, construction professionals, and policy decision-makers.
- Identifies and cultivates strategic partnerships with mission-aligned organizations, consultants, and educational institutions. Collaborates with key partners on grants and funding opportunities.
- Performs ongoing research initiatives with key partners to obtain baseline data/monitoring to track performance and costs of program activities.
- Coordinates post-occupancy research to determine effective green construction components and shares information with the building community.
- Establishes non-profit foundation dedicated to community stewardship and sustainability initiatives and seeks funding for projects.
- Develops comprehensive community calendar of events, develops publicity, and coordinates production of events and activities promoting health and well-being and arts/cultural.
- Manages programs, activities, facility operations, and staff of the Neighborhood Center.
- Serves as Metropolitan Board liaison and attends all meetings. Assists with development of annual budget for programs, assists with agendas and long range goals, compiles both quarterly and annual review, and provides assessments and recommendations for program development strategies.



### 11.11 RESEARCH AND BASELINE DATA COLLECTION

The performance of program standards should be carefully monitored to demonstrate tangible results and measure progress over time. Program standards may include but are not limited to the following:

- Energy Demand
- Energy Supply
- Water Use
- Air Pollution-Trip Reduction
- Job Creation
- Operational and Maintenance

### 11.12 MONITORING MEMORANDUM OF UNDERSTANDING (MOU)

An implementation MOU will be developed between GRVP, LLC, the City of Durango, and other entities as required to outline important partnerships and responsibilities to advance the goals and objectives for the Three Springs Sustainable Development Program as it relates to defining baseline measurements and shall be grounded in Durango area baseline data conditions that are documented and periodically updated. The data will assist in developing performance and costs targets at Three Springs as well as defining applicable emerging technical resources that are economically feasible. The SDP Manager shall collaborate with key partnerships which may include, among others, the City of Durango, 9-R School District, LPEA, Atmos Gas, Fort Lewis College, San Juan Basin Health Department, SWCRES, Operation Healthy Communities, Sustainability Alliance of Southwest Colorado, and others to research and compile baseline data for average household water and energy usage, solid waste production, vehicle miles traveled, water quality impacts, air quality impacts, and maintenance/operations costs.

### 11.13 INITIAL IMPLEMENTATION STRATEGIES

The following implementation strategies for Years 1-4 are designed to accommodate innovative design, advancing technologies, and developing opportunities over time and shall be reviewed annually by the Three Springs Metropolitan District Board:

#### Governance

- Formation of District and governing structure/funding

#### Policies/Procedures

- Establish Construction Policies and Standards
- Coordinate Design Review Procedures/Compliance

#### Education

- Builder Program: Construction Guidelines/Training
- Prospective Purchaser: Design Resource Center and Directory
- Communications: Monthly Newsletter, Website, Internet
- Signage: Informational Signage/Kiosks
- Demonstration Project Public Relations/Awareness
- Parks and School Eco-Awareness Programs
- Sustainable Issues Forums, Programs, Expos
- Consumer Best Practices Campaigns
- Builder University: Built Green® and Energy Star®

#### Community/Social

- Three Springs Arts and Culture Master Plan
- Neighborhood Center Programs/Activities
- Community Arts, Festivals, and Events
- Stewardship Programs

#### Public Transportation

- Service Commitments for Frequency of Service

#### Design and Construction

- Construction Waste Recycling Facility
- Neighborhood Center Design/Development
- Fiber Optic Infrastructure
- Demonstration Partners–Village 1 Urban Center
- Demonstration Partners–Civic, Schools, and Parks
- Demonstration Partners–Village 1

#### Business Sector

- Recruitment/Orientation
- Business Networks

#### Research and Monitoring

- Monitoring Memo of Understanding (MOU) with City of Durango
- Partnership Collaborations
- Comprehensive Baseline Data for Future Analysis
- Site Specific Monitoring
- Shared Benefit Research Data

#### Operations and Maintenance

- Operations and Maintenance Handbook Templates
- Residential Association (RA)
- Mixed Use Association (MUA)
- Metropolitan District
- City of Durango Annual O & M Cost Accounting (Monitoring MOU)

## G L O S S A R Y

**Access and Circulation Plan** – community-wide plan to define routes for shared use paths, equestrian trail, connector trails, trailheads and fixed route public transit routes including hubs and stops in Three Springs as defined in the Three Springs Master Plan.

**Built Green Colorado® or Built Green®** – voluntary green building program to encourage homebuilders to use technologies, products and practices to address improved energy efficiency, resource conservation, and indoor air quality. The largest green building program in the nation, Built Green® provides the official designation of homes registered in the program and meeting the criteria of Built Green Colorado®. ([www.builtgreen.org](http://www.builtgreen.org))

**Built Green Checklist®** – list of green building requirements and additional features from which builders choose their building options. Separate building features in specific categories cover energy efficiency, materials, health and safety, and resource conservation. Builders must choose a minimum number of points from the Checklist to meet Built Green® registration status (70-point minimum currently); however Three Springs requires a 90-point minimum. ([www.builtgreen.org/checklist/checklist.htm](http://www.builtgreen.org/checklist/checklist.htm))

**Codes and Standards or The Code** – legally binding document written exclusively for the Three Springs and adopted by the City of Durango to govern the urban form of the community by establishing a classification system designed to organize, manage and integrate a variety of mixed uses within Three Springs. The Code specifies design parameters within each Transect, outlines permitted uses in each Transect, established the necessary building-to-street and building-to-building relationships, required vehicular parking requirements, desirable thoroughfare standards, and specific landscape design and maintenance standards.

**Design Guidelines or The Guidelines** – tool to guide the architectural design of all structures and landscapes within Three Springs and administered in concert with The Codes to ensure the Traditional Neighborhood Development (TND) principles are implemented in an effective manner. The Guidelines define architectural styles and character, building types, massing, materials and color for a range of mixed-use commercial, civic, single-family and multi-family residential uses as well as public and private landscapes in Three Springs.

**Design Review Committee or DRC** – review body authorized to administer the Design Review Process in accordance with the Design Guidelines and the Sustainable Development Program. The DRC is comprised of five (5) voting members including representation from each of the following: City of Durango Planning and Community Development Department, Three Springs Property Owner representing a specific Property Association, Outside Architect, Three Springs Director of Planning and Design, and GRVP, LLC.

**Development Agreement** – governing document for development of Three Springs as agreed upon between GRVP, LLC and the City of Durango (April 15, 2005) including development standards, responsibilities, dedications, phasing, and assurances.

**Energy Star®** – a government-backed (EPA) program assisting builders and individuals to protect the environment through superior energy efficiency. Energy Star® qualified homes are independently verified to be at least 15% more efficient than 2004 International Energy Conservation Code (IECC) Qualified Home pertinent to the region using a new HERS rating system (see HERS). Energy savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water-heating equipment. Energy Star® also encourages the use of energy-efficient lighting and appliances. ([www.energystar.gov](http://www.energystar.gov))

**Energy Efficient Mortgages or EEM** – FHA or HUD insured mortgages for home purchase or refinancing designed to grant mortgage credits for savings on monthly utility bills in purchase of an energy efficient home or installation of energy-saving improvements. The EEM is designed to achieve national energy-efficiency goals (and reduce pollution) and provide better housing for borrowers who might not otherwise qualify for conventional loans. ([pueblo.gsa.gov/cic\\_text/housing/energy\\_mort/energy-mortgage.htm](http://pueblo.gsa.gov/cic_text/housing/energy_mort/energy-mortgage.htm))

**Green Building Rating Systems** – tools developed by the U.S. Green Building Council as part of a rating system portfolio for Leadership in Energy and Environmental Design (LEED) certifications. The rating systems provide nationally-recognized standards based on accepted energy and environmental principles and are revised periodically to incorporate emerging concepts. ([www.usgbc.org](http://www.usgbc.org))

**HERS or Home Energy Rating System** – a defined rating based on an evaluation of the energy efficiency of a home compared to a computer simulated reference house of similar size and shape as the rated home. The rating is provided by an accredited HERS rater to evaluate construction plans and conduct field verification and diagnostic testing programs. ([www.natresnet.org](http://www.natresnet.org))



**HERS Index** – standard rating and scoring system required by Built Green Colorado® as of January 1, 2007 under a new system with a numerical integer value based on a linear scale. The new HERS system evaluates the energy efficiency of a home compared to a computer-simulated reference house of identical size and shape as the rated home that meets minimum requirements of the 2004 International Energy Conservation Code (IECC). The HERS rating results in a HERS Index score between 0 and 100, with the reference house assigned a score of 100 and a zero energy house assigned a score of 0. Each one percent reduction in energy usage (compared to the reference house) results in a one point decrease in the HERS score.

**LEED-CI or Leadership in Energy and Environmental Design-Commercial Interiors** – rating system to provide tenant improvement standards for healthy, environmentally friendly, high-performance green interiors with reduced operations and maintenance costs. ([www.usgbc.org](http://www.usgbc.org))

**LEED-CS or Leadership in Energy and Environmental Design - Core Shell** – rating system with standards for new core and shell construction for base building elements (structure, envelope and building-level systems such as central HVAC, etc.) . The rating system is designed for designers and building owners and works conjunction with the LEED-CI tenant improvements. ([www.usgbc.org](http://www.usgbc.org))

**LEED-NC or Leadership in Energy and Environmental Design-New Construction** – rating system with national standards to address green building construction and high performance for new construction or major renovations in commercial (office/retail) or institution settings. ([www.usgbc.org](http://www.usgbc.org))

**LEED-ND or Leadership in Energy and Environmental Design-Neighborhood Development** – rating system addressing the principles of smart growth, urbanism, and green building into a national neighborhood design standard including site design, compact mixed-use design, proximity to transit, diverse housing types, and pedestrian/bicycle- friendly design. ([www.usgbc.org](http://www.usgbc.org))

**Memorandum of Understanding (MOU)** – Memorandum of Understanding between the City of Durango (COD) Public Works and Parks and Recreation Department and GRVP, LLC which addresses the details of maintenance and operations associated with the COD rights-of-way and park lands. The Memorandum addresses data and associated costs for on-going maintenance and operations.

**Raw Water Master Plan** – master plan designed with the City of Durango Public Works and Parks and Recreation Department for a systems approach to supply non-treated water to irrigate approximately 100 acres located in the Community Park, Neighborhood Park, pocket parks, plazas, and major streetscapes. The Master Plan proposed to conserve water use through a master controller with rain sensors and irrigation restrictions.

**RESNET** – Residential Energy Services Network (RESNET) formed by the National Association of State Energy Officials and Energy Rated Homes of America to develop national standards for home energy rating systems and energy efficient mortgages. The RESNET standards primarily provide accreditation of rating providers, rater training providers, rating software tools, verification of energy savings for energy efficient mortgages (EEMs), verification of a home's energy performance for EPA's Energy Star® Homes Program. ([www.natresnet.org](http://www.natresnet.org))

**SMART 160 Trail** – City of Durango pedestrian and bike trail proposed to link the Animas River Trail in Durango with Bayfield. The proposed route from the South Animas River Trail section heading east through Grandview is proposed to parallel the US 160 corridor in easements separated from the US 160 right of way.

**Stormwater Management Plan** – Best Management Practices (BMPs) designed for stormwater discharge treatment to include vegetated channels, vegetated swales, a pond/wetland system and structural elements include drop structures and a forebay at Three Springs as part of the Individual 404 Permit.

**Three Springs Conceptual Development Plan Amended** – amended Planned Development concepts as approved by the City of Durango (February 2005) to define land use concepts and conceptual densities for the TND mixed-use community on 681 acres to include residential units (2,283 units), commercial/office/light industrial uses (864,000 gsf), lodging units (300 units), hospital (320,224 gsf), and medical offices (375,300 gsf). Dedications include COD Parks and Recreation (205 acres), COD Municipal (5 acres), 9-R School District (40 acres), and Owners' Association (34 acres).

**Three Springs Master Plan** – an internal guide to illustrate the land use and urban form, open spaces and circulation attributes of the overall planned development on the 681-acre site.

**Three Springs Metropolitan Districts** – three (3) Title 32 quasi-governmental districts designed to provide financing, acquisition, completion and operation of public infrastructure including maintenance of pocket parks and plazas, management of the Neighborhood Center, and coordination of the Three Springs Sustainable Development Program.

**USACOE Individual 404 Permit** – site permit issued by the U.S. Army Corps of Engineers to Three Springs for compliance with a wetland assessment and the Clean Water Act. The 404 Permit was issued after evaluation of: 404 (b) (1) Alternatives Analysis, a hydro geomorphic analysis of the on-site wetland resource, wildlife impact study, on and off-site wetland mitigation plans, a groundwater impact study, water depletion analysis, a hierarchical storm water management plan, a water quality monitoring/reporting program, cultural resources assessment and a Biological Assessment.

**U.S. Green Building Council or USGBC** – a national coalition of building industry leaders dedicated to sustainable building performance. USGBC develops the LEED products/resources and provides policy guidance and educational tools. With a broad and active membership base, USGBC is a leader in key industry and research organization through federal, state, and local government agencies. ([www.usgbc.org](http://www.usgbc.org))

## ACKNOWLEDGEMENTS

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City of Durango  
 ECOHOME Store  
 Fort Lewis College  
 Four Corners Office of Resource Efficiency  
 La Plata County

La Plata Electric Association  
 Phoenix Recycling Company  
 San Juan Basin Health Department  
 School District 9-R  
 Southern Ute Indian Tribe

Sustainability Alliance of Southwest Colorado  
 Three Springs Metropolitan District  
 Trails 2000

*A listing as a Prospective Regional Partner does not constitute an endorsement of the Three Springs Sustainable Development Program*

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