EL PASO COUNTY
RESILIENCY PLAN

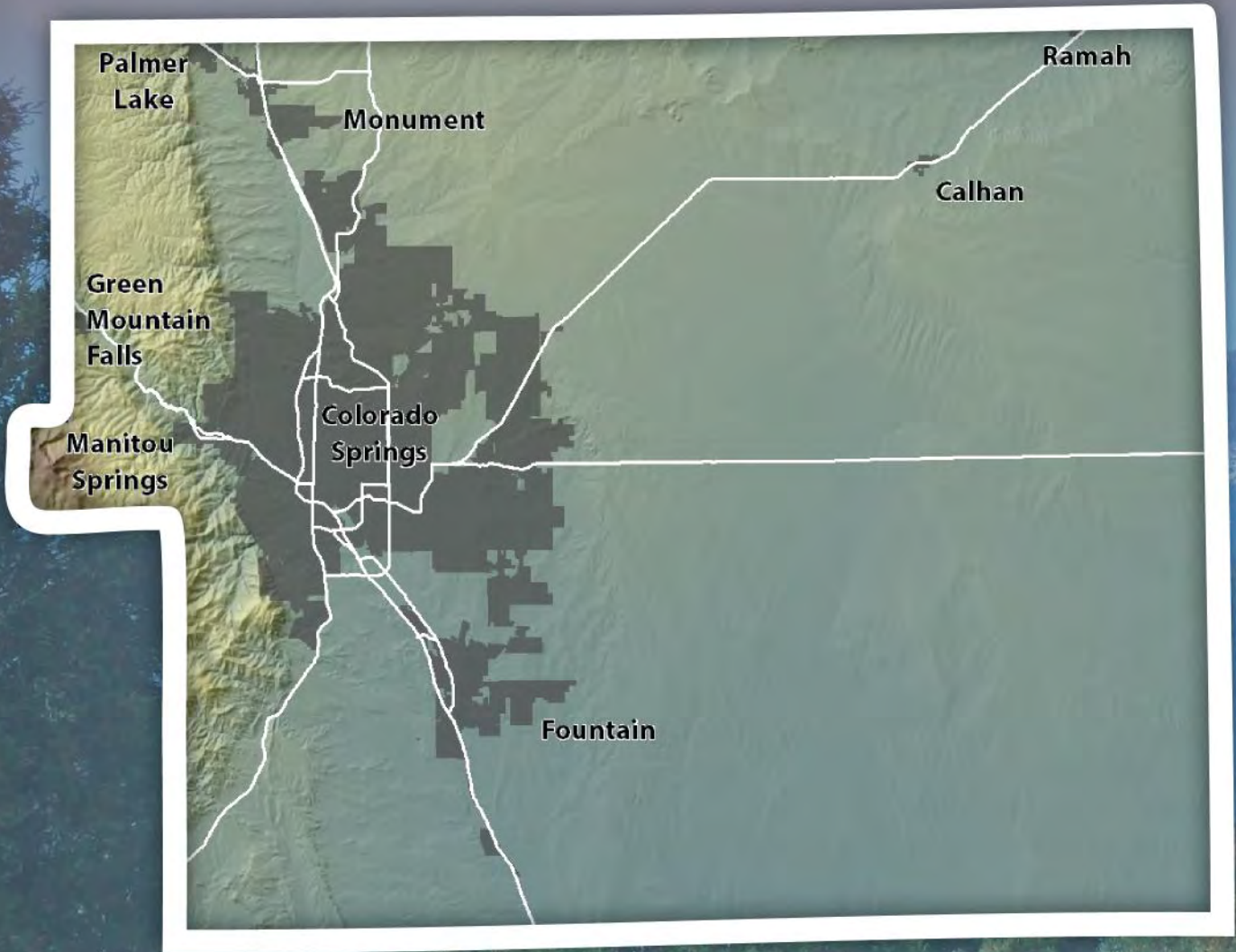Community   Economic   Social   Housing   Infrastructure   Watershed

Palmer
Lake

Ramah

Monument

Calhan

Green
Mountain
Falls

Colorado
Springs

Manitou
Springs

Fountain

EL PASO COUNTY

Letter from the Steering Committee

TO BE DEVELOPED. The content and structure of this letter are at the discretion of the El Paso County Local Resiliency Steering Committee. One approach would be to explain in very broad terms (1 page or less) **why** the El Paso County Resiliency Plan (the Plan) was developed, **what** its overall vision and goals are, and **how** those goals can be translated into concrete actions. The following is a list of suggested items to make these points, based on content developed in the Plan.

Why: Description of the specific context and reasons this Plan was developed.

- Recent disasters that have impacted communities in El Paso County (e.g., Waldo Canyon Fire, Black Forest Fire, 2013 floods, 2015 floods, landslides, and mudslides).

- Known impacts of certain human-caused hazards (e.g., mass shootings) and potential threats caused by others (e.g., terrorism, cyber-attack).

- Ongoing local challenges to the community in facing such events (e.g., development in high-risk areas, population growth and aging, water supply and resource issues) and the need to create a framework to deal with these in a broader sense.

Why/What: Description of the concept of community resiliency planning, and why to apply it to communities in El Paso County.

- Collaborative, stakeholder-driven process to allow communities to better anticipate and deal with the potential impacts of natural and human-caused hazards.

- Broadening of focus from prevention and management of disasters, to a vision for community adaptation and improvement in the face of changing circumstances.

- Approach to hazards that includes looking at both shocks (proximate causes of a disaster, such as a fire or flood) and stresses (underlying conditions in the community that lead to vulnerability, such as aging and inadequate infrastructure).

What: Discuss the vision and central goals of the Plan.

- Vision: "A forward thinking, resilient Pikes Peak region that focuses on common needs and shared responsibilities to foster a healthy, diverse community and economy, balancing the interdependence of human, built, and natural systems."

- Goals center around increasing social capital and community connectedness, strengthening the branding of the Pikes Peak region, and creating regional planning mechanisms to coordinate resource stewardship and management.

How: Describe the means to be put in place to adopt and implement the Plan.

- Priority projects to get the ball rolling.

- Development of a process to sustain action over the long-term.

The letter should end with a signature block.

Acknowledgements

The El Paso County Resiliency Plan (the Plan) was developed as a collaborative effort. The planning process included participation, insight, and support from a wide range of local, state, and federal government partners, as well as partners in the private and non-profit sectors. Special thanks go out to the following organizations for their support in making this planning process a successful step toward enhancing resiliency in El Paso County:

El Paso County Local Resiliency Steering Committee (a full list of Steering Committee members is provided in Appendix A)

El Paso County Department of Transportation

El Paso County Office of Emergency Management

Colorado Resiliency and Recovery Office

Colorado Department of Local Affairs

National Renewable Energy Laboratory

Colorado Energy Office

Executive Summary

The El Paso County Resiliency Plan (the Plan) represents commitment of communities in El Paso County to a more resilient future. Developed with the collaboration of numerous stakeholders representing government, non-profits, the private sector, and individuals, the Plan is driven by the communities' knowledge, priorities, and values. It identifies and analyzes shocks and stresses that may occur, and ultimately develops a holistic strategy and identifies concrete activities that communities in El Paso County can implement to enhance resiliency. The Plan represents a call to action and seeks to empower all those with a stake in resiliency to participate in making it an ongoing community priority and reality.

What is Resiliency?

This Plan uses the definition of resiliency established by the Colorado Resiliency Working Group. Resiliency is *"…the ability of communities to rebound, positively adapt to, or thrive amidst changing conditions or challenges—including disasters and climate change—and maintain quality of life, healthy growth, durable systems, and conservation of resources for present and future generations."*

Pursuant to the *Colorado Resiliency Framework,* resiliency can be expressed by the vitality of the following six sectors: Community; Economic; Health and Social; Housing; Infrastructure; and Watersheds and Natural Resources. These sectors provide a framework for looking at a wide range of community needs and activities and exploring the interconnections between systems and services.

Establishing a Baseline

Building more resilient communities in El Paso County requires an understanding of existing conditions in the six resiliency sectors. Chapter 2 of the Plan presents a snapshot of these conditions using metrics from various trusted sources. The following key strengths and challenges were identified in each sector:

Sector	Key Strengths	Key Challenges
Community	Collaboration between jurisdictions; Faith-based organizations and NGOs	Rapid population growth, especially in and around Colorado Springs
Economic	Strong base of military sector jobs; Declining unemployment	Over-reliance on military budgets; Some areas dependent on tourism
Health and Social	High educational attainment; Low crime rates	Large areas underserved by health services
Housing	Extensive emergency housing; Relatively modern building stock	High cost of rental housing; Ongoing homelessness
Infrastructure	Dual civilian/military infrastructure networks	Dependence on fossil fuels; Dependence on Interstate 25 corridor
Watersheds and Natural Resources	Mild climate; Large percentage of undeveloped land	Dependence on water imports; Wildland-Urban Interface development; Military hazardous waste

Shocks and Stresses

Chapter 3 of the Plan presents the idea of shocks and stresses and how they lead to community vulnerability. Shocks are sudden catastrophic events that can cause direct damage, injuries, and death. Examples of shocks include natural disasters, terrorism, and pandemics. The following have been identified as the most significant shocks that have impacted, or have the potential to impact, communities in El Paso County:

Significant Shocks	
Natural Hazards	**Human/Technological**
Flooding and Dam Failure	Long-Term Deployment or Loss of Military Personnel
Wildfire	Extreme Acts of Violence
Severe Weather	Military or Terrorist Attack

Stresses, on the other hand, are underlying factors that exacerbate the impact of shocks and/or hinder a community's ability to address resiliency. Examples of potential stresses include high unemployment, aging infrastructure, and economic downturns. The following have been identified as the most significant ongoing stresses impacting communities in El Paso County. Certain stresses directly reflect the key challenges identified in Chapter 2.

Significant Stresses
Limits on Municipal Budgeting
Aging Population
Aging and Inadequate Infrastructure
Increasing Homelessness
Economic Downturns

Defining a Vision and Goals

Chapter 4 of the Plan presents the vision, goals, and strategies that should drive immediate and longer-term action to enhance resiliency in El Paso County. After considering what resiliency should look like locally and regionally, the El Paso County Local Resiliency Steering Committee crafted the following vision statement:

"A forward thinking, resilient Pikes Peak region that focuses on common needs and shared responsibilities to foster a healthy, diverse community and economy, balancing the interdependence of human, built, and natural systems."

With the input of the broader stakeholder group, this vision statement was refined into the following set of goals.

Goal 1: Increase community capacity to reduce impacts from shocks and stresses.

Goal 2: Foster a paradigm shift toward comprehensive, collaborative planning and implementation with sustainable funding and stakeholder engagement.

Goal 3: Create cultural awareness of the need for personal connections in communities and between communities.

Goal 4: Brand the region in a way that brings people together and creates buy-in.

Goal 5: Support coordinated stewardship and management of natural resources.

Defining Strategies

Informed by the resiliency vision and goals, the El Paso County Local Resiliency Steering Committee developed strategies that address existing conditions and align with the six resiliency sectors. These strategies serve to define the objectives of resiliency projects.

Resiliency projects were identified through community consultation at charrettes. The list provided in this Plan includes projects that have already been well-defined and scoped, as well as ideas for future projects that were elicited for the first time during these events. Wherever possible, projects have been prioritized based on the following criteria:

Prioritization Criteria	Description
Co-Benefits	Address problems across multiple sectors creating maximum benefit.
Innovation	Advance new approaches to encourage continual improvement.
High-Risk and Vulnerability	Reduce risks to human well-being, infrastructure, and natural systems.
Adaptive Capacity	Consider future unknowns of changing climate, and economic and social conditions.
Economic Benefit-Cost	Make good financial investments that have the potential for economic benefit.
Harmonize with Existing Activity	Expand, enhance, or leverage work being conducted to build on existing efforts.
Social Equity	Provide solutions that consider the needs of vulnerable populations.
Long-Term and Lasting Impact	Create long-term gains with solutions that are replicable and sustainable.
Technical Soundness	Identify solutions that reflect proven best practices in similar regional contexts.

Priority Projects

Using the criteria listed above, and taking into account project readiness, the following projects have been identified as priorities for immediate action:

Project	Resiliency Sectors	Project Description
Flexibility in Budgeting and Spending Processes	All Sectors	Create a multi-stakeholder group to increase accountability and efficiency by analyzing the more than 150 Special Districts and restrictions on government budgeting and spending.
Pikes Peak Regional Wildfire Innovation Network	Community, Housing, Infrastructure, Watersheds and Natural Resources	Create fire-adapted communities and resilient watersheds in the Pikes Peak region through multi-jurisdictional organizations.

Project	Resiliency Sectors	Project Description
The Pikes Peak Regional Resiliency Hub	All Sectors	Create a regional clearinghouse to link needs with resources across jurisdictions and sectors by creating a Regional Resiliency Hub to link individuals, non-profits, and government agencies.
Improve Codes and Zoning for Resiliency	Community, Health and Social, Housing, Watersheds and Natural Resources	Improve existing regional building and maintenance codes and local zoning to support resiliency and sustainability throughout the region.
Healthy and Happy El Paso County	Community, Economic, Health and Social	Develop a comprehensive, integrated, and proactive psychosocial and medical health care system in El Paso County.
Regional Stormwater Management	Community, Housing, Infrastructure, Watersheds and Natural Resources	Improve stormwater management throughout El Paso County, through establishment of a regional collaborative group of watershed stakeholders.
Manitou Springs Municipal Complex	Community, Health and Social, Infrastructure	Relocate the main municipal functions (currently located in a floodplain) to provide for continuity of municipal function during floods.

Roadmap to Resiliency

Resiliency is an ongoing process. Community resiliency will not be achieved simply through the completion of projects proposed in this Plan. Continued action in the following areas will be critical for ensuring the ongoing success of the Plan.

Leadership and Collaboration. A variety of organizations are needed to sustain ongoing resiliency actions. Ongoing efforts should be made to identify new approaches toward coordination and governance.

Capacity Building. Building resiliency relies on an ongoing process of evaluating resources and generating new opportunities.

Ongoing Community Involvement. Ongoing success relies on active public engagement. Community members should stay informed, and new outreach methods should be developed.

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Appendices

A   Local Steering Committee and Project Team

B   Plan Process Materials

C   Template Annual Operating Plan

D   Project Scoping Tools

E   Resources

F   Strategies and Project Matrix

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Section 1
Introduction

El Paso County is located in the Pikes Peak Region of Colorado and is home to communities that offer abundant outdoor recreational activities, ideal weather throughout the seasons, and an attractive cost of living and quality of life. The regional culture, transportation infrastructure, and economy are also shaped by the county's location at the southern end of the Front Range Corridor. Easy access to the outdoors is enhanced by a range of ecosystems, from prairies to steep mountains. El Paso County is the second-most populous county in Colorado and is growing, with over 660,000 residents who are proud to call the county home. The county includes Colorado's second-most populous city, Colorado Springs.

> El Paso County's **core values** reflect residents' commitment to family, faith, and respect for personal and property rights.

El Paso County is more diverse than the state as a whole and the population is forecasted to grow faster than the number of available jobs between 2015 and 2030. Between 2000 and 2010, the 65 and over age group experienced the second-largest population increase due to aging Baby Boomers. As a result, retirees are an important segment of the county population. The military plays a key role in local communities and the economy due to the presence of five military installations and industries based on serving the defense sector. Communities in El Paso County have struggled with retaining the younger segment of the population. Those residents that do decide to settle in El Paso County tend to have a strong family focus and respect for personal and property rights. Faith-based groups are also an important voice within the communities. [1,2,3,4]
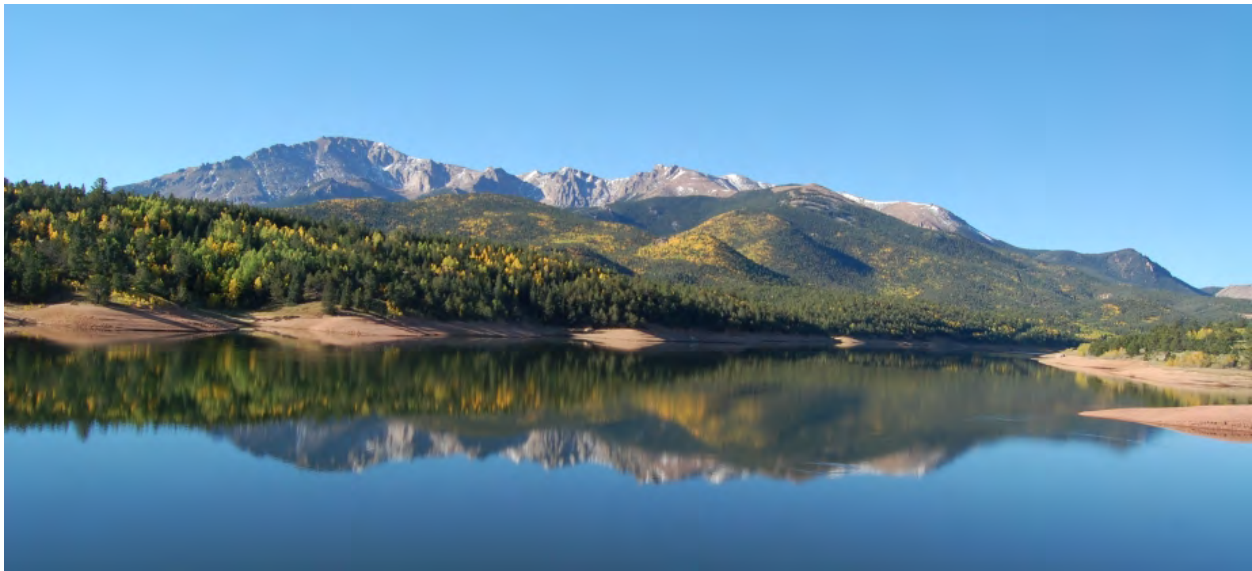
The region has a strong history of planning and preparedness, and El Paso County communities are addressing issues at the forefront of sustainability and resiliency planning. The county is building upon efforts such as the Pikes Peak Region 2030 Plan (written in 2012) that outlines a strategy and vision for the future based on sustainability principles and the recent 2015 El Paso County Multi-Jurisdictional Hazard Mitigation Plan. Fort Carson, a prominent military installation in the county, has also led the way with a commitment to sustainability since 2002; Fort Carson aims to be a "net zero" installation by 2020.[1] Communities are recognizing the value of a coordinated and collaborative approach to planning and implementation at a regional level. Relationships between agencies, organizations, and communities are improving. After the area was severely impacted by strong storms, major flooding, and wildfires in recent years, the county has showed excellent cooperation across jurisdictions and with military emergency planners and it continues to be committed to strengthening emergency response collaboration between all jurisdictions. In light of these weather events and natural disasters, the county has committed to understanding resiliency principles and adopting a holistic view that incorporates both hazard mitigation and community resiliency.[1,2,3,4]

One of the community's recent natural disasters, the 2012 Waldo Canyon Fire, burned over 18,000 acres in the Pike National Forest over 18 days. The fire began just 3 miles west of the City of Colorado Springs and left a path of destruction, led to evacuation of residents, destroyed homes within the city, and resulted in two fatalities. The fire was the most costly fire in Colorado history (at the time) and triggered a massive coordinated response from emergency responders in the city and with local and regional partners. In response to the event, the City of Colorado Springs augmented the Share the Responsibility program with the Wildfire Mitigation Stipend Pilot Program directed at homeowners in high-risk areas to mitigate fire risk on their property. The following year, the Black Forest Fire became the most destructive fire in Colorado history in terms of homes lost, with over 14,000 acres burned and over 41,000 people evacuated. The Waldo Canyon Fire event and the lessons learned from response and recovery activities helped prepare and educate authorities for another large-scale incident such as the Black Forest Fire.[1,2,3,4]

The Front Range Floods of 2013 and 2015 also impacted El Paso County. In September of 2013, historic rainfall caused unprecedented flooding along the Front Range. Approximately 16 inches of precipitation fell in El Paso County in a period of two days. Flash flooding in Rock Creek, Cheyenne Creek, and Fountain Creek caused extensive damage; President Obama declared a State of Emergency in El Paso County on September 14, 2013.[4] Additional flash flooding occurred in the City of Manitou Springs in July of 2013, when over half an inch of rain fell in less than 20 minutes.[5] Water and debris rushed from the Waldo Creek burn scar onto community streets, causing severe damage to homes and vehicles. Since the 2013 Manitou Springs flash floods, El Paso County has coordinated with the United States Department of Agriculture's Forest Service and Natural Resources Conservation Service, the State of Colorado, and the City of Manitou Springs to implement flood mitigation. Some mitigation measures proved to be successful during the 2015 flooding and others require additional improvement. Several flood mitigation projects are ongoing.[6]

El Paso County strives to learn from past disasters and continues to strengthen the county's ability to "bounce back" better and stronger from future events. El Paso County communities have developed this El Paso County Resiliency Plan (the Plan) in order to develop a shared resiliency vision and goals, define and catalyze resiliency priority projects, and complement resiliency planning efforts in neighboring communities and at the statewide level.

Section 1.1 Objectives and Guiding Principles

This Plan is meant to serve the community as both a snapshot of current thinking around resiliency, and as a framework for future ideas and actions in the community. The Plan has been developed by a varied group of stakeholders and vetted through a public review process.

Objectives of the Plan. The Plan is organized to accomplish the following objectives:

- Establish a baseline for understanding resiliency in El Paso County.

- Review the shocks (e.g., fire, flood, terrorism) and stresses (e.g., drought, aging infrastructure) that combine to create vulnerabilities in El Paso County.

- Present a vision for resiliency in El Paso County that is supported by forward-looking goals, actionable strategies, and concrete ideas and projects for action.

- Provide a framework for ongoing implementation and action that allows communities and organizations in El Paso County to use this Plan as a springboard for building capacity, increasing community connectivity, and moving toward a more resilient community.

What the Plan is Not. It is important to understand what this Plan is not intended to do:

- This Plan is not a hazard mitigation plan. It is not intended to provide an exhaustive review of all the shocks and stresses that might impact the community, but instead is intended to broaden understanding of those shocks and stresses and how they have impacts across many aspects of the community.

- This Plan is not a comprehensive checklist of actions. Rather, it is a presentation of the community's vision for a resilient El Paso County, a discussion of strategies and priority projects serving this vision, and a framework under which local government, community, and faith-based organizations, the private sector, and other partners can take collective and individual action to foster a culture of resiliency.

- This Plan is not a 'capital C' County plan. It is meant to provide guidance and resources for all governments, community partners, and interested organizations located in El Paso County. The Plan does use the word "county" and "El Paso County" at times to serve as a way to succinctly cover a wide range of partners, but nothing in this Plan should be construed as being the sole product or responsibility of the El Paso County government.

Guiding Principles

Enhance Connectivity. Community action should support connecting people to their community, jobs, services, and each other.

Build on Existing Action. A strategy for future action should honor the work that has already been conducted to build community resiliency.

Engage the Whole Community. Resiliency planning should not only engage the whole community, but be reflective of the human, economic, and geographic diversity within the community.

Support the Most Vulnerable. All resiliency action should be viewed through the lens of how it supports those who may be disproportionately impacted by shocks and stresses in El Paso County.

Foster Action. This Plan should drive action and empower communities to push a cultural shift in thinking about resiliency through concerted and collaborative efforts.

Section 1.2 Vision Statement

Through the resiliency planning and engagement process, El Paso County has made a long-term commitment to enhance its resiliency to shocks and stresses. This commitment is best expressed in El Paso County's vision for resiliency:

"A forward thinking, resilient Pikes Peak region that focuses on common needs and shared responsibilities to foster a healthy, diverse community and economy, balancing the interdependence of human, built, and natural systems."

The vision clearly identifies that resiliency must address common needs, and states that those needs can only be addressed by people acting at all levels ("shared responsibilities"). By doing so, the county can build and maintain a healthy, diverse community and economy without sacrificing the natural world or social or physical assets.

Section 1.3 What is Resiliency?

The Colorado Resiliency Working Group defined resiliency as *"…the ability of communities to rebound, positively adapt to, or thrive amidst changing conditions or challenges —including disasters and climate change—and maintain quality of life, healthy growth, durable systems, and conservation of resources for present and future generations."*

While there are many competing definitions of resiliency, most incorporate a few important concepts that can inform efforts to build resilient communities. One is the concept of *adaptability to change*: a resilient community is one that can thrive under changing conditions, whether those changes are rapid or more gradual. *Diversity* and *redundancy* can foster resiliency. For example, a community with a diverse economy may be better able to weather an economic shock, especially if that shock adversely affects one or several sectors more than others.

Another concept important to resiliency planning is that of *systems* and *feedback*. Resiliency planning acknowledges that economic, social, and environmental systems are tightly interconnected. For example, drought can lead to crop failure, thereby impacting the agricultural economy. Simultaneously, drought can exacerbate conditions for wildfires, which threaten life, property, and ecological communities. These relationships and feedback processes are central to understanding what creates (or undermines) resiliency.

Finally, resiliency addresses vulnerability arising from both acute *shocks* and latent *stresses. A resilient community is one that thrives in good times and bad.* Hence, resiliency planning necessarily addresses a broader array of issues than traditional hazard mitigation planning. For example, hazard mitigation may help reduce the flood exposure of a neighborhood, while resiliency planning recognizes that disparate conditions in that neighborhood—whether due to poverty, illness, language barriers, or other underlying factors—create and exacerbate negative outcomes before, during, and after a hazard event occurs.

Resiliency planning in El Paso County is organized around six resiliency sectors, as illustrated in Figure 1-1. The planning process utilized these sectors as a way to engage stakeholders and ensure a *holistic approach* to community resiliency, but also recognized that the sectors are interconnected, and a truly resilient community relies on systems that foster cross-sector collaboration and benefits.

Figure 1-1: Resiliency Sectors

Additional details on each sector, including an assessment of existing conditions for El Paso County, are provided in **Section 2**.

Section 1.4   Resiliency Planning and Community Engagement in El Paso County

The development of this Plan was not an insular endeavor; rather, it capitalized on existing momentum around resiliency planning in Colorado, and made efforts to engage a wide spectrum of stakeholders in the community. The resiliency planning process follows the development and adoption of the Colorado Resiliency Framework and is one of three pilot plans being developed in the state. Planning efforts are being conducted at the same time in Boulder and Larimer counties. This pilot planning process will result in lessons learned for helping other counties around the state to build their own resiliency.

Section 1.4.1   Approach and Guiding Principles

The overall approach to Plan development within El Paso County was to capture the input from a wide set of stakeholders including local, state, and federal governments, public utilities, and numerous non-profit organizations. Due to the prominence of military installations within the county, military stakeholders were also an important voice in the Plan development. The majority of stakeholders involved in Plan development have spent significant time and resources in recovery planning efforts, on the heels of diverse natural hazard events, collaborating on long-range policy planning efforts and implementing local preventative improvements. As a result, the participants have been well-versed in mitigation and

Colorado Resiliency Framework Goals

Risk. Reduce risk to Colorado communities.

Planning. Enhance resiliency planning capacity in Colorado communities.

Policy. Develop, align, and streamline policies to empower resiliency.

Culture. Create a culture that fosters resiliency, instilling an inherent sense of responsibility among all.

Investment. Ingrain resiliency into investments in Colorado.

recovery processes, and the approach of the community engagement process included building an understanding of resiliency principles.

Section 1.4.2   Colorado Resiliency Framework

On June 1, 2015, the Governor adopted the Colorado Resiliency Framework, which was designed to cultivate and empower a culture of resiliency throughout the state of Colorado, and represents "the State's long-term commitment and investment into a resilient future." Since the release of the Framework, the Colorado Resiliency and Recovery Office has supported the development of local resiliency plans in Boulder, El Paso, and Larimer counties. These pilot plans will serve as a springboard for resiliency planning throughout Colorado.

Section 1.4.3   Local Steering Committee

The El Paso County Resiliency Steering Committee initially grew out of the Waldo Canyon Fire Regional Recovery Group. This collegiate team has met monthly since the Waldo Canyon Fire was contained and consists of representatives from El Paso County, the cities of Colorado Springs and Manitou Springs, various State of Colorado and federal agencies, The Flying W Ranch, The Navigators at Glen Eyrie, and numerous environmental non-profit organizations. In addition to these partners, the El Paso County Local Resiliency Steering Committee consisted of individuals from Colorado Springs Utilities, Black Forest Together, South Central Voluntary Organizations Active in Disasters, the Colorado Springs Office of Emergency Management, the City of Manitou Springs, and El Paso County. The Steering Committee has directed the planning process leading to this document, including identifying and recommending interested stakeholders, defining the structure and expected outcomes of the resiliency charrettes, and engaging and mobilizing government agencies and community partners to participate. The Steering Committee is expected to maintain a leading role in putting the principles of the Plan into practice.

A full list of Steering Committee members is provided in Appendix A.

Section 1.4.4   Resiliency Charrettes

The El Paso County resiliency planning process was based on two charrettes that were held in the community as a forum on resiliency. The two charrettes provided an opportunity for intensive work sessions to allow stakeholders to develop a collaborative vision for resiliency, identify goals, and develop sector-specific strategies.

Charrette #1

On August 6, 2015, the El Paso County Local Resiliency Steering Committee met to plan for a focused planning charrette to kick off development of the Plan. Committee members decided on desired participants, charrette structure, and expected outcomes. This first charrette comprised two intensive day-long planning sessions held August 31 to September 1, 2015, that engaged 45 representatives of local, state, and federal governments, military, public utilities, and non-profit organizations. The charrette was designed to develop the Plan based on the perspectives of a wide variety of stakeholders and to build on the existing plans and planning processes in the county, not to replace them. The charrette included prepared presentations, guided discussion, small group work, and consensus-building discussions.

Objectives of Charrette #1 included:

Objective 1: Provide participants with an overview of the planning process and build awareness around local resiliency planning efforts and how they fit together.

Objective 2: Identify high-level potential shocks and stresses in El Paso County.

Objective 3: Establish plan vision and goals, and identify strategies for increased resiliency based on the sectors presented in the Colorado Resiliency Framework.

Objective 4: Identify, summarize, and prioritize projects for inclusion in the Plan.

The first day of Charrette #1 focused on visioning, goal setting, and sector strategies. The second day of the charrette allowed participants to identify specific projects necessary to implement the strategies for each sector. In addition to the discussions and exercises, participants had a chance to express their ideas in two other non-verbal formats. Participants were asked to note vulnerabilities, lessons from past experience, opportunities for building resilience, or any other important thoughts on a map of El Paso County. An open sheet was also provided to participants for writing down thoughts on this statement: *"What are your greatest ambitions for El Paso County for resilience?"*

Charrette #1 produced an overview of shocks and stresses that affect county vulnerabilities, a resiliency vision statement, resiliency goals, and resiliency strategies for the six resiliency sectors. The charrette also produced project ideas that cut across sectors and jurisdictions designed to help El Paso County thrive under a variety of conditions. These project ideas were used as a foundation for prioritization and project ownership discussions in Charrette #2.

Charrette #2

The second of the two intensive planning sessions was held on October 13, 2015, to reconvene stakeholders and continue the resiliency planning process. Twenty-seven representatives of local, state, and federal governments, military, public utilities, and non-profit organizations participated in the charrette. The charrette was designed to review and validate the El Paso County Resiliency Plan content developed during Charrette #1, bring forward new ideas for community resiliency, and build a "Roadmap for Resiliency" that establishes the community's path forward. Similar to Charrette #1, Charrette #2 included prepared presentations, guided discussion, small group work, and consensus-building discussions.

Objectives of Charrette #2 included:

Objective 1: Review and validate shocks and stresses, vision, goals, and strategies from Charrette #1.

Objective 2: Engage stakeholders in bringing forward new ideas for community resiliency.

Objective 3: Assign ownership to identified resiliency projects.

Objective 4: Build a "Roadmap to Resiliency" that establishes the community's path forward.

The morning activities of Charrette #2 focused on reviewing and validating shocks and stresses, the El Paso County resiliency vision and goals, and the strategies to achieve the vision and goals. Participants worked in small groups, in plenary, and interacted with materials posted around the room to validate the Plan's content. Charrette participants also reviewed the list of project ideas developed in Charrette #1. In the afternoon, participants focused on identifying the potential roadblocks to, and opportunities for, building resiliency within the county, how to address the roadblocks and opportunities, and who should be assigned to make that happen. In developing the "Roadmap to Resiliency," the participants considered the following framing topics: leadership and collaboration, capacity building, and community engagement.

Charrette #2 validated content included in the first draft of the Plan, produced a refined list of project ideas, including the identification of project owners for short-term actionable projects, and defined the first steps in the "Roadmap to Resiliency," to transform resiliency strategies into realities.

Plan Review Session

Following substantial completion of the draft version of this Plan, the El Paso County Local Resiliency Steering Committee held a formal Plan Review Session on January 13, 2016. This half-day session engaged committee members and selected stakeholders directly with the proposed Plan content and

format. The session's primary objective was to gather comments and feedback confirming that Plan content adequately reflected community input and considerations, or, as necessary, provide a forum for proposing specific corrections, updates, or changes to the Plan.

The primary feedback obtained through this session included:

■ Many of the county's strengths, including use of advanced information technologies and the use of codes and zoning to reduce vulnerability, can actually be vulnerabilities, themselves. Use of technology includes dependence on technology, and efforts to upgrade buildings and neighborhoods to reduce risk may endanger historic heritage and overburden residents without the means to make required improvements.

■ In order to maintain support for important programs that often take several years to implement and take effect, a challenge for the Plan is to help both government officials and the general public understand how long recovery really takes.

■ The issue of low-level of participation awareness of the public about disaster or resilience issues is a constant problem. Addressing this issue is one of the goals of the proposed Resiliency Hub project.

■ Planning for resiliency and implementing programs both require capacity. The Plan should reflect the need for resources and capacity to implement priority programs.

■ There were several strategies that needed additional project ideas for implementation. This was especially true in the Economics sector. The review pointed out that several projects did address the Economic sector; however, including the many effective groups working on economic development issues in the county in the process would be an important early implementation step.

■ The Plan represents an assessment and aspirational goals. As a result, plans are not linked directly to budgets; instead, the Plan sets criteria and general overall agreement about the areas that need attention and the approach. Projects, programs, and budgets would be introduced later in the process.

■ In order to move the Plan forward, the most natural leadership entity is the Watershed Collaborative, which has considerable overlap with the Local Steering Committee and many of the stakeholders in the room. The Watershed Collaborative will develop a plan for governance and implementation of the Plan.

Section 1.5   Related Planning Efforts

This Plan seeks to build on the many prior planning efforts that have already been completed in El Paso County. These include:

■ **City of Colorado Springs: Emergency Operations Plan (2007).** Establishes the structure for a coordinated response to various types of emergency events.

■ **City of Colorado Springs: Pre-Disaster Mitigation Plan (2010)**. Strives to eliminate or reduce long-term risks to people and property due to natural and human-caused hazards.

■ **City of Colorado Springs: Parks System Master Plan (September 2014)**. Directs the operations of guidance to the City Parks, Recreation, and Cultural Services Department, the Parks and Recreation Advisory Board, the Trails, Open Space, and Parks Working Committee, as well as other City departments and partners. The Plan also codifies procedures and policies through 2025.

■ **City of Colorado Springs: City Master Plan**. Directs the operations of City departments and codifies procedures and policies.

- **City of Manitou Springs: Community Master Plan/Hazard Mitigation Plan (Fall 2016).** Ongoing planning process to integrate hazard mitigation planning with overall community planning.

- **El Paso County Multi-Jurisdictional Hazard Mitigation Plan (June 2015).** Establishes the structure for a coordinated response to various types of emergency events.

- **Fountain Creek Corridor Restoration Master Plan (October 2011).** Restores and improves resiliency of the Fountain Creek watershed, waterways, and riparian corridors through multi-stakeholder efforts, including regional governments and interested parties throughout the region.

- **Pikes Peak Regional Sustainability Plan (Looking to our Future 2030) (March 2012).** Goals and strategies were developed for 10 different issue areas in a two-year collaborative effort between government, businesses, and communities in El Paso and Teller counties led by the Pikes Peak Area Council of Governments.

- **Pikes Peak Area Council of Governments: Water Quality Management Plan (2010).** Restores and maintains the chemical, physical, and biological integrity of waters through planning with special districts, local governments, and other stakeholders.

- **Mountain Metropolitan Transit, City of Colorado Springs, and Pikes Peak Area Council of Governments: 2040 Regional Transportation Plan (includes non-motorized and transit) (April 2015).** Goals and criteria were developed to evaluate and score projects that were submitted for funding to reduce congestion and improve economic vitality.
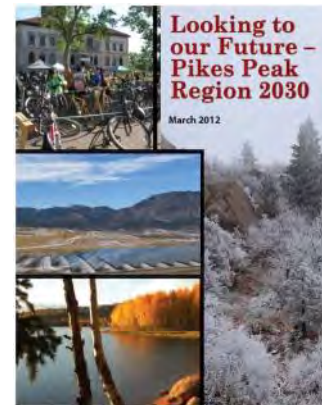
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Section 2
Existing Conditions

Resiliency in El Paso County is directly impacted by the current social, economic, physical, and institutional factors that influence both how much the community can be impacted and how well it can recover.

This section begins with general information, then summarizes existing conditions in El Paso County in each of the six sectors identified in the Colorado Resiliency Framework: Community, Economic, Health and Social, Housing, Infrastructure, and Watersheds and Natural Resources.

Section 2.1   General Information

El Paso County is located in east-central Colorado, approximately one hour south of Denver via Interstate 25 (I-25). Western portions of the county are steep and mountainous, and culminate at Pike's Peak (over 14,000 feet high), whereas eastern areas include mainly prairie land dominated by ranching. In between these areas lie the county's major urban and suburban population centers, centered around Colorado Springs.[7,8]

El Paso County was formed as one of the original 17 counties of the Territory of Colorado in 1861. The County's total area is 2,158 square miles, and its population was estimated at 663,519 in 2014. The seat of government and largest city is Colorado Springs, with an estimated population of 416,427 as of 2014. Other cities located in El Paso County include Fountain and Manitou Springs. El Paso County and neighboring Teller County make up the Colorado Springs, Colorado, Metropolitan Statistical Area.[9,10,11]

A full list of incorporated and unincorporated communities located in El Paso County is provided in Table 2-1. Figure 2-1 provides a general map of the community, including urban and rural areas, major natural features, transportation corridors, and protected areas.

Table 2-1: Cities, Towns, and Unincorporated Communities in El Paso County

Incorporated Cities and Towns*		Unincorporated Communities†	
Name	Population	Name	Population
Colorado Springs	416,427	Security-Widefield	32,882
Fountain	27,631	Cimarron Hills	16,161
Monument	6,391	Fort Carson††	13,813
Manitou Springs	5,314	Black Forest	13,116
Palmer Lake	2,579	Woodmoor	8,741
Calhan	797	Stratmoor	6,900
Green Mountain Falls**	676	U.S. Air Force Academy	6,680
Ramah	123	Gleneagle	6,611
		Cascade-Chipita Park	1,655
		Ellicott	1,131
		Peyton	250
		Rock Creek Park	58

* Includes all incorporated Home Rule Municipalities, Statutory Cities, and Statutory Towns. U.S. Census Bureau 2014 population estimate.

** Portions of Green Mountain Falls are located in Teller County.

† Includes Census Designated Places used in the 2010 U.S. Census. U.S. Census 2010 population figures.

†† Portions of Fort Carson are located in Pueblo County and Fremont County.
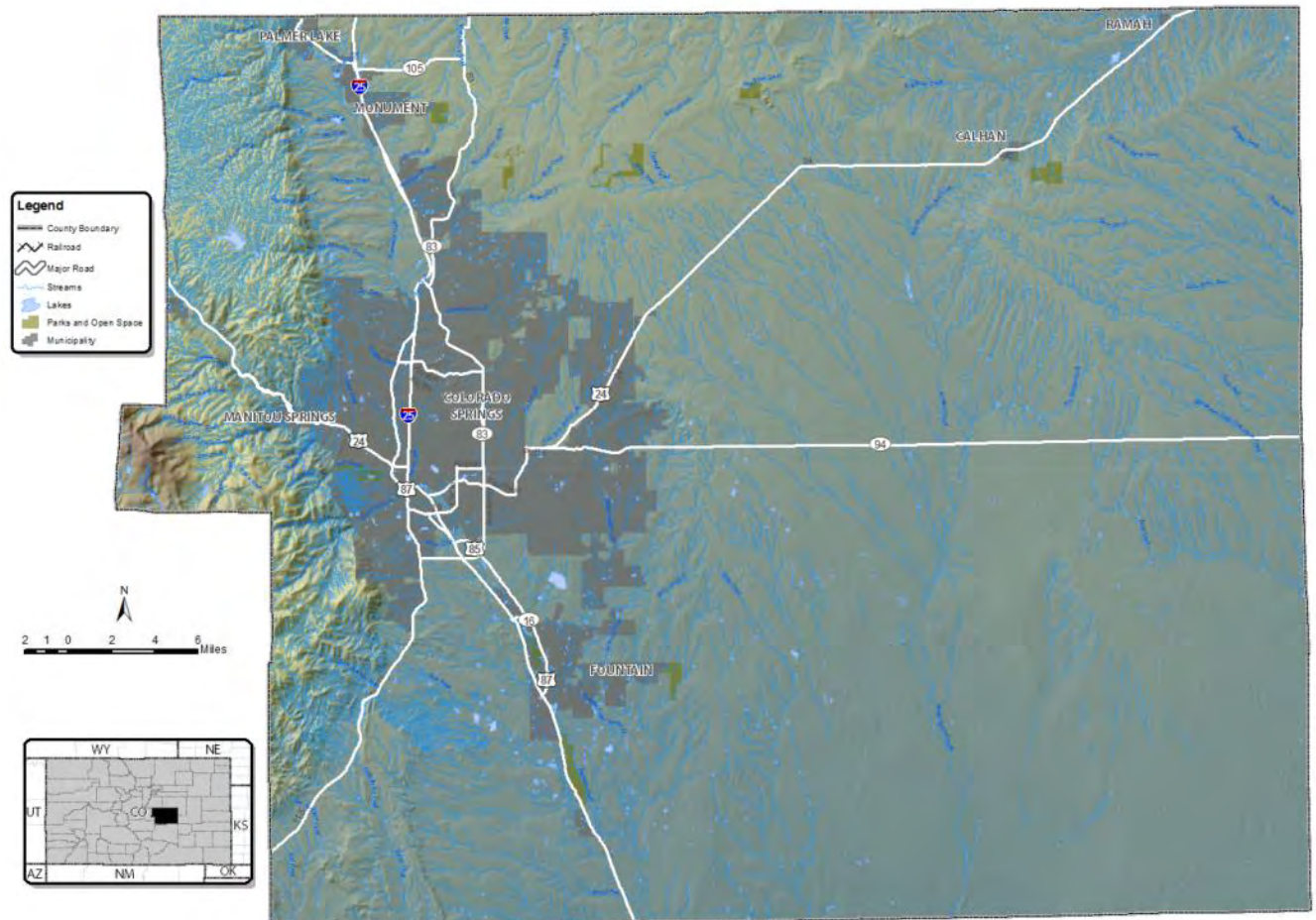
Figure 2-1: Map of El Paso County

Section 2.2   Community

A resilient community is one in which individual community members have the information and tools necessary to make resilient decisions, while an underlying culture of responsible governance drives local and regional decision making. Key elements include the capacity for institutions to make plans that are coordinated across disciplines (e.g., land use planning, emergency management), incorporate lessons learned from prior experience, take into account the needs and concerns of all local population groups, and make the link between local and regional concerns.

In this respect, the main strengths and challenges faced by local communities are the following:

■ **Strengths**: Well-established county and municipal institutions with strong working relationships across jurisdictions; wide-ranging network of faith-based and non-governmental organizations with experience and interest in disaster issues.

■ **Challenges**: Large and rapidly growing population, particularly in the Colorado Springs area.

The following briefly summarizes key aspects of local governance, demographics, and community organization that relate to community resiliency.

Governance and Planning

As shown in Table 2-1, approximately two-thirds of El Paso County's population lives in incorporated areas, while the remaining third lives in areas directly administered by the County. There is a significant disparity in resources between the City of Colorado Springs and smaller jurisdictions. Smaller governments rely more on El Paso County services and are more likely to participate in planning coordinated at the county level.

The County Office of Emergency Management and six municipal governments jointly participated in creating the 2015 El Paso County Multi-Jurisdictional Hazard Mitigation Plan. The City of Colorado Springs maintains a separate Office of Emergency Management and Hazard Mitigation Plan.[12,13]

The land use actions of the government of El Paso County are guided by the El Paso County Master Plan, which includes a County Policy Plan, nine Small Area plans, a Parks Master Plan, and a Master Plan for Mineral Extraction. In incorporated areas, most municipalities have chosen to assert their authority over land use. For example, the City of Colorado Springs, City of Fountain, and Town of Monument have all established their own Master Plans or Comprehensive Plans.[14,15,16,17]

Demographics

El Paso County is the second-largest county in Colorado by population and has experienced steady population growth, reaching over 660,000 in 2014. This population has been largely fueled by job growth and a relatively young population, particularly within and adjacent to Colorado Springs.[18]
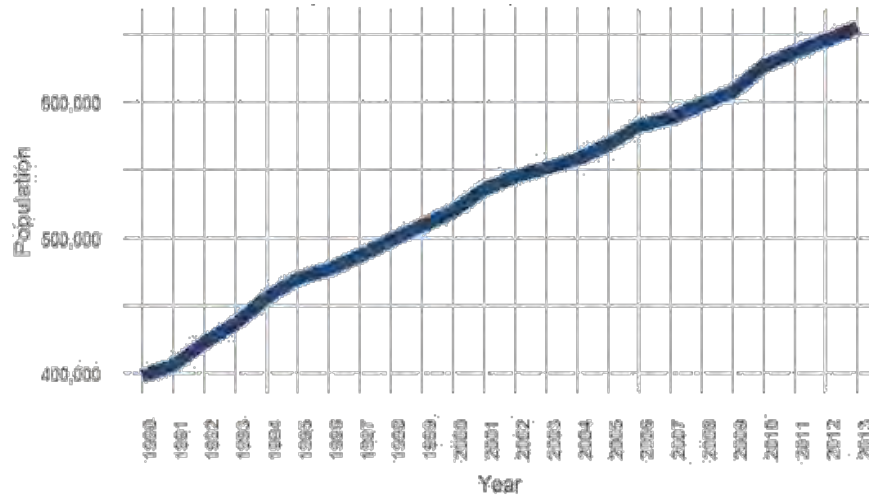
Figure 2-2: Population Growth in El Paso County, 1990-2013

The county population grew by more than 20% between 2000 and 2010 and is expected to grow by a comparable rate for the next three decades, with an expected 2040 population of over 964,000.[19]

Also, due to the substantial local military presence, a significant proportion of the county's population, at all times, is either recently arrived, or relatively transient.

Based on 2010 and 2014 estimates, over 540,000 county residents (82%) live in Colorado Springs or in the immediately adjacent communities of Security-Widefield, Fountain, Cimarron Hills, Fort Carson, Black Forest, Stratmoor, U.S. Air Force Academy, Manitou Springs, and Gleneagle. The eastern (plains) and western (mountain) portions of the county are far more sparsely populated.
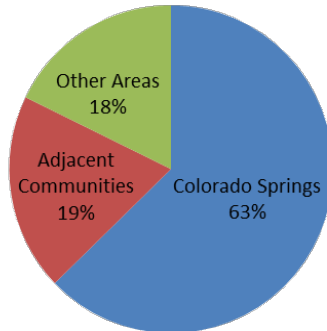
Figure 2-3: Population Distribution by Area, 2010-2014

El Paso County is somewhat more diverse than Colorado as a whole in terms of racial and ethnic distribution. As of 2014, the county's population was approximately 70% White, 15% Hispanic, 7% African-American, 3% Asian, and 1% Native American. While populations in all major groups are growing, Hispanics are the fastest growing group, increasing by over 60% from 2000 to 2010. As of 2013, the U.S. Census Bureau estimates that 12% of the county's population speaks a language other than English at home, and 4% speak English less than "very well."[20,21]
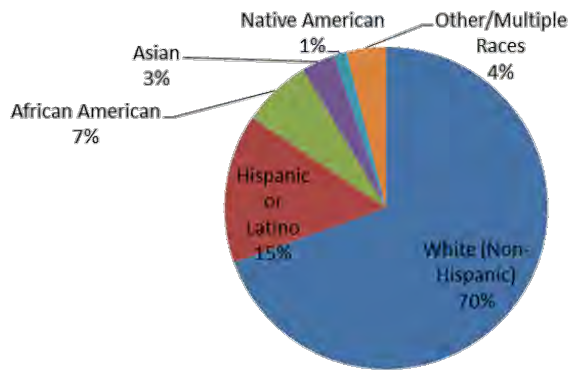
Figure 2-4: El Paso County Population by Race/Ethnicity, 2014

Community and Faith-Based Organizations

Colorado Springs and El Paso County are nationally known as a center of faith-based activity, including local congregations and the regional, national, and international headquarters for numerous faith-based organizations. This community has distinguished itself as a source of disaster relief resources and volunteers, including following Hurricane Katrina in 2005 and recent Colorado disasters.

Section 2.3   Economic

The capacity of the local economy to absorb the impacts of events, such as natural disasters or national downturns, while maintaining business volume and employment, is critical for the long-term survival of communities in El Paso County. Economic resilience can be strengthened through multiple means, including fostering strong base industries, encouraging the establishment of a wide range of businesses, facilitating access to capital, and developing a skilled workforce that can command steady and self-supporting incomes. Promoting the use of business continuity plans and back-up systems can also help reduce the time needed to get back to business following a disaster event.

In this respect, the main strengths and challenges faced by communities in El Paso County are the following:

- **Strengths**: Military sector provides a strong base for local employment; wide range of non-military industries and job types; unemployment on the decline.

- **Challenges**: Over-reliance on military sector makes community vulnerable to changes in defense policy and budgets; reliance on tourism in some communities can have an impact when disasters occur.

The following briefly summarizes key aspects of the local economy, including major employers, employment by sector, and household income.

Major Industries and Employers

El Paso County's economy is heavily dominated by the presence of five major military installations in the immediate vicinity of Colorado Springs: Cheyenne Mountain Air Force Station, Fort Carson Army Post, Peterson Air Force Base, Schriever Air Force Base, and the U.S. Air Force Academy. Combined, these facilities account for nearly 20% of all jobs held in the county. Table 2-2 provides a list of the top ten employers in Colorado Springs, as of 2014.

Table 2-2: Top 10 Employers in Colorado Springs, 2014 [22]

Employer	*Rank*	*% Total Employment*
Fort Carson Army Post	1	10.38%
Peterson Air Force Base	2	3.89%
Schriever Air Force Base	3	2.50%
U.S. Air Force Academy	4	2.48%
Colorado Springs School District #11	5	1.30%
Academy School District #20	6	1.05%
Memorial Hospital – UCHealth	7	1.03%
Penrose – St. Francis Health Services	8	0.93%
City of Colorado Springs	9	0.75%
El Paso County	10	0.69%

Non-military employment is distributed among a relatively diversified mix of industries and job types, as shown on Figure 2-6. There are noticeable concentrations of employment in both tourism and leisure-related activities. In addition, Colorado Springs is known as the national headquarters for a number of Christian organizations.
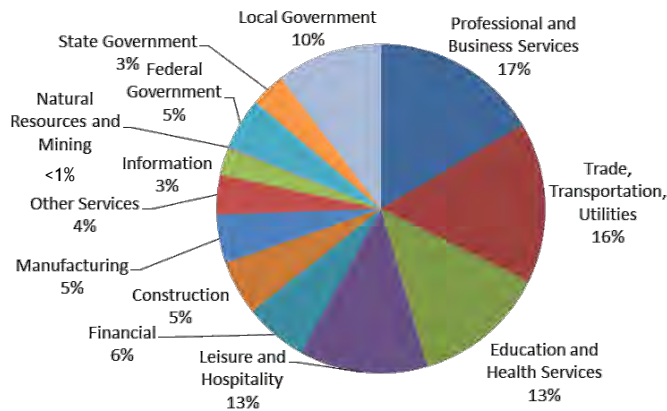
Figure 2-5: El Paso County Non-Military Employment by Sector, 2014 [23]

Household Employment and Income

El Paso County's annual unemployment rate was 4.9% in July 2015, slightly higher than Colorado's unemployment rate of 4%, but lower than the county's rate of 6% the previous year (2014). Table 2-3 shows that the median household income in El Paso County of $57,125 was slightly lower than the state median. However, the county's poverty rate (12.4%) was lower than the state average (13.2%).

Table 2-3: Median Income and Poverty in El Paso County, 2013 [24]

Census County Division	Median Household Income	Population Below Poverty
Black Forest-Peyton	$98,986	5.9%
Cheyenne Mountain	$97,281	6.1%
Colorado Springs	$51,043	15.0%
City of Colorado Springs	*$53,962*	13.7%
Elsmere	$69,565	8.6%
Fountain	$54,268	10.9%
City of Fountain	*$56,454*	9.7%
Monument	$66,531	8.4%
Town of Monument	*$88,476*	1.7%
City of Manitou Springs	*$44,323*	17.1%
Pikes Peak	$68,571	14.2%
Southeastern El Paso	$58,732	12.6%
El Paso County	$57,125	12.4%
State of Colorado	$58,433	13.2%

Within El Paso County, median income and poverty rates vary significantly. For example, the Town of Monument and the Black Forest-Peyton area have significantly higher median incomes and lower poverty rates than other communities. In contrast, the median household income in Manitou Springs was nearly $13,000 lower than the county median in 2013, with a poverty rate over 17%.[25,26]

Distribution of Employment and Income

Employment in El Paso County is concentrated in Colorado Springs, which has the largest workforce in the county. Many other areas in the county function as bedroom communities, where workers may travel greater distances to reach their jobs, as shown in Table 2-4. For example, the majority of workers residing in the Black Forest–Peyton, Fountain, Pikes Peak, and Southeastern El Paso areas commute to another community for work. Nearly 85% of workers living in the City of Fountain work in another community.[27]

Table 2-4: Percentage of Workers Commuting to Other Communities, 2013

Census County Division	Residents Who Work Outside of Place of Residence
Black Forest-Peyton	66.3%
Cheyenne Mountain	27.3%
Colorado Springs	20.0%
City of Colorado Springs	*19.5%*
Elsmere	43.7%
Fountain	73.8%
City of Fountain	*84.8%*
Monument	36.4%
City of Monument	*67.7%*
City of Manitou Springs	*73.0%*
Pikes Peak	65.5%
Southeastern El Paso	87.8%
El Paso County	33.3%
State of Colorado	56.8%

Section 2.4   Health and Social

A more cohesive community, made of more resilient individuals, can better adapt to ongoing change. Community cohesiveness is related to a community's institutions (see Section 2.2), but also to the means provided for supporting individual needs. These needs range from the universal, such as safety and education, to the specific, including those experienced by groups that may be vulnerable or have access and functional needs (e.g., non-English speakers, the disabled, the elderly). Health and social services are provided by a broad network of federal, state, local, non-profit, and business organizations. The ability of this network to provide universal access is critical in ensuring the resiliency of individuals, families, and communities.

In this respect, the main strengths and challenges faced by communities in El Paso County are the following:

- ■ **Strengths**: High educational attainment and access to educational services; relatively low crime rates by national standards.

- ■ **Challenges**: Certain areas underserved by health services, especially mental health, either as a function of specific needs, or as a function of geographic isolation.

The following briefly summarizes key aspects of access to basic services, educational attainment, vulnerable populations, and local crime rates in El Paso County.

Access to Basic Services

Access to services, such as medical care, is influenced by the capacity of existing services to meet the public's need and the ability of people to reach those services.

Overall, El Paso County has one primary care physician for every 5,280 residents.[28] However, there are differences in available types and levels of care in different areas.

Part of Colorado Springs is considered a medically underserved area, based on the following: the low ratio of primary medical care physicians as compared to the population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over.[29] Furthermore, much of the area along I-25 south of Colorado Springs is designated as a "medically underserved population;" this designation is based on the same variables as a "medically underserved area," but considers populations with economic barriers or cultural and/or linguistic access barriers to medical care.[29]

In addition, certain medical facilities near Colorado Springs have a shortage of health care professionals, and the eastern half of the county has a general shortage of medical professionals.[30]

Issues with access to basic services are somewhat attenuated by the fact that the vast majority of households in El Paso County (95%) have access to at least one vehicle, allowing them to travel to reach services. However, the 5% of households with no vehicle access may be at a higher risk of being unable to access basic services, and distances to facilities can be long, particularly for residents of the eastern half of the county.[31]

Educational Opportunity and Attainment

Educational attainment within El Paso County is comparable to statewide averages. Nearly 94% of county residents 25 years and older have a high school diploma, compared to 90% of adults in Colorado as a whole. At the same time, 35% of county residents 25 and older have a bachelor's degree or higher, compared to 37% statewide.[32]

The county is home to multiple institutions of higher learning, including the University of Colorado in Colorado Springs, the U.S. Air Force Academy, Colorado College, and several community and technical colleges.

Vulnerable Populations

A number of different populations may be considered especially vulnerable to the effects of disasters. This group is generally thought to include senior citizens, persons with disabilities, members of minority groups, and persons who do not speak English fluently. The following factors of exclusion also affect significant numbers of people in El Paso County:

- Approximately 5% of households reported not having telephone service in 2013.[33]

- While technology has become more popular among older adults, 17% of households with members 65 years of age and older still do not have a computer, and 5% of those that do have a computer lack access to the internet.[34]

- Approximately 5% of households do not have access to a vehicle.

Another indicator of potentially vulnerable populations is the number of persons dependent on government assistance programs. Over 3% of households in the El Paso County receive supplemental security income (additional assistance for low-income populations who are blind, disabled, or over 65), while 2% receive other forms of cash public assistance and 9% receive food stamp benefits.[35]

Crime

Crime rates vary across El Paso County. They are generally comparable to, or lower than, other parts of Colorado, except in Colorado Springs, where they are slightly higher. Table 2-5 provides a summary of reported crimes in the county.[36,37,38]

Table 2-5: Crime Rates in El Paso County, 2013

Location	Violent Crimes	Property Crimes	Violent Crime per 1,000 People	Property Crime per 1,000 People
Colorado Springs	1,893	18,175	4.3	41.7
Manitou Springs	14	133	2.7	25.5
Monument	5	173	0.9	29.8
Fountain	78	619	2.9	22.8
Other El Paso County	475	2,588	2.3	12.5
State of Colorado	16,626	140,057	3.08	26.6

Section 2.5   Housing

Residents of communities in El Paso County require housing in order to go about their daily lives in a functional manner; without adequate housing, it can be nearly impossible to work, shop, run a business, or even receive basic services. In addition, housing is usually a household's most significant ongoing expense, or their largest investment, or both. Natural disasters, human-caused events, and economic downturns can all have significant impacts on housing. Improving the resiliency of a community's housing stock is, therefore, essential to improving resiliency of the community as a whole. The resiliency of housing can be characterized as a function of its availability, affordability, quality, and vulnerability.

In this respect, the main strengths and challenges faced by communities in El Paso County are the following:

- **Strengths**: Extensive emergency housing resources; relatively modern building stock.

- **Challenges**: Relatively high cost of rental housing; ongoing homelessness and near homelessness.

The following briefly summarizes key aspects of housing stock resiliency in El Paso County, as well as the availability of emergency housing resources.

Housing Availability and Affordability

Single-family detached units make up the majority of occupied housing in El Paso County (68%).[39] The county had over 17,000 vacant housing units in 2013, of which, 30% were for rent and 17% were for sale.[40]

Affordability of housing in El Paso County is similar to the rest of the state. The average homeowner spends approximately 21% of their income on housing costs in both El Paso County and across the state.[41] Renters, meanwhile, pay on average almost 31% of their income toward their monthly housing costs. Over 22% of households who rent spend 50% or more of their household income on rent.[41] Among those households that earn less than $20,000 per year in income, nearly 77% spend more than 30% of that income on housing, while over 93% of renters pay 30% or more on housing.[41]

Housing Quality and Accessibility

Housing quality in El Paso County mirrors that of the state. Housing in the county is relatively new, with over 57% of housing structures built in 1980 or later. Just 5.3% of homes were built before 1939. Less than 1% of the homes in the county lack complete plumbing or kitchen facilities.[42] As the county population has increased, new homes and condominiums have prompted this increase in housing amenities. However, an increase in demand has created a decrease in affordability for many of the vulnerable populations within the community.

Compared to renters, homeowners are generally more satisfied with the quality of their housing. Homeowners within El Paso County feel safer, more secure with heating, and are generally more pleased with the condition of their homes.[43] This correlation also appears to be tied to area median income. As an El Paso County resident's income increases, so does their perception of housing quality regardless of status as an owner or renter.

Emergency Housing Resources

Following shocks, emergency shelters are opened and operated through coordination with local emergency management agencies and the American Red Cross. Shelters house all Mass Care duties within them, including food, medical assistance, and more.

Emergency rent assistance is provided through a number of non-profit and faith-based organizations, including Northern Churches Care, Holy Cross Lutheran Church, and the Pikes Peak Community Action Agency. These and other organizations also offer emergency sheltering and transitional housing. In particular, the Interfaith Hospitability Network is a group of 36 faith-based organizations that provide families with housing for a week at a time. In addition, the network provides daytime care and case management.[44]

Section 2.6   Infrastructure

Resilient infrastructure facilities are typically designed and managed to answer complex engineering challenges. In a resilient infrastructure system, different facilities should function as an integrated network that allows the continuous provision of critical services, such as transportation, power, water distribution, waste management, and others. To achieve this, facilities should be sited and designed in a manner that addresses potential hazards (e.g., keeping infrastructure out of floodplains). At the same time, redundancy should be built, wherever economically feasible, to allow for continuously operating lifelines (e.g., multiple roads into and out of mountain communities), and to reduce the likelihood of cascading failures (e.g., communications shutdown due to power grid failure).

In this respect, the main strengths and challenges faced by communities in El Paso County are the following:

- **Strengths**: Dual civilian and military infrastructure networks; near-universal access to telephone service, and broad availability of other telecommunications in populated areas.

- **Challenges**: Dependence on fossil fuels that must be transported into the region; dependence on I-25 for north-south transportation; limited public transportation; east-west corridors are vulnerable to flooding and debris flows.

The following briefly summarizes key aspects of infrastructure systems resiliency in El Paso County, as well as the availability of emergency housing resources.

Government Facilities

In El Paso County, the largest government facilities by a significant margin are the four major military installations that are also the county's largest employers: Fort Carson Army Post, Peterson Air Force Base, Schriever Air Force Base, and the U.S. Air Force Academy.

State, county, and local governments also operate significant facilities. El Paso County's Facilities Maintenance Section maintains over 130 county-owned or -leased buildings totaling more than 3.1 million square feet of space. In addition, each city has its own city-owned or -leased buildings.[45]

Transportation

A well-maintained and efficient transportation network is important, not only for the everyday needs of the county's residents and businesses, but also during emergencies. I-25 serves as the main north-south route that connects the larger population centers in El Paso County. Several U.S. Routes and state roads serve as additional main roads throughout the county, including U.S. 24 and Routes 16, 21, 83, 94, 105, and 115.

Rail transportation is limited to two major lines that follow I-25 and provide freight service. The Pikes Peak Cog Railway provides a scenic route for tourists between Manitou Springs and the summit of Pikes Peak. The Colorado Springs Airport is a city-owned facility that shares runways and navigational facilities with Peterson Air Force Base.[46]

Public transportation includes over 20 bus lines serving Colorado Springs, Manitou Springs, and Security-Widefield. These bus lines are operated by Mountain Metro Transit, a division of the City of Colorado

Springs' Department of Public Works. Mountain Metro Transit also provides Americans with Disabilities Act paratransit services and coordinates a fleet of vehicles used for vanpools and schoolpools. A single bus route is also offered by the City of Fountain.[47,48] In addition, an inter-regional Express Bus service through the Colorado Department of Transportation provides service between Colorado Springs and Denver.[49]

Water and Wastewater

The vast majority of homes and businesses in El Paso County are served by public water systems. The largest of these systems is Colorado Springs Utilities, which services nearly 412,000 people. Public water systems in Colorado Springs, Security, and Fountain rely on local or purchased surface waters. However, most other small systems rely on groundwater.[50]

Approximately 25,000 residents in rural and unincorporated parts of the county use individual or shared wells for their water supply. There are limited options for developing additional supplies of surface water within the county, and groundwater supplies are not considered dependable.[51]

While the majority of homes in El Paso County are tied to a municipal wastewater system, an estimated 35,000 homes rely on an on-site wastewater treatment system.[52]

Energy

Most electrical power generation in El Paso County relies on natural gas and coal as fuel sources.[53] Table 2-6 shows the number of power plants in El Paso County by energy source and capacity.

Table 2-6: Power Plants in El Paso County

Energy Source	Number of Facilities	Total Net Summer Capacity (Megawatts)
Natural Gas	4	809
Coal	2	462
Hydroelectric	3	34.6
Solar	2	7
Petroleum	1	1.1
Total*	11	1,313.7

Note: *Ray D. Nixon Plant is a combined natural gas and coal facility. Total capacity of plant is segregated in table.

Nearly 77% of homes in El Paso County are heated by gas provided by a local utility. Almost 18% of homes rely on electricity for heating, while 4% use tank gas or liquefied petroleum gas.[54]

Communications

Broadband services, including DSL, cable, or fiber, generally are widely available in and around Colorado Springs and in Front Range communities along the I-25 corridor. Broadband service is sparser in the eastern part of the county, but is available in some areas, particularly in the more densely developed communities. Terrestrial fixed or terrestrial mobile wireless services are available across most of the county.[55] Cellular service from major carriers is widely available in and around Colorado Springs, including the Cimarron Hills, Fountain, and Manitou Springs areas, and along the I-25 corridor. In the eastern part of the county, cellular service is more limited, with the primary coverage areas along U.S. 24.[56]

Out of a total of over 235,000 occupied housing units in the county, approximately 97% had telephone service, while the remaining 3% (approximately 6,400 housing units) had neither landline nor cellular telephone service.[57]

The El Paso-Teller County Enhanced 911 Authority administers the county's Enhanced 911 System, but does not respond to emergency calls directly.[58] The organization also oversees the county's Emergency Notification System and allows county residents and others to register online to receive emergency notifications via multiple methods.[59] Since 2001, the county's Enhanced 911 System has been able to receive and identify the location of emergency calls received by cell phone.[60]

Solid Waste Management

El Paso County has three active landfills, which are located in Colorado Springs and Fountain. All three landfills are expected to have capacity to continue accepting waste until at least 2079.[61] The private sector is primarily responsible for solid waste collection, transfer, disposal, and recycling services throughout the county. A disposal fee helps to support El Paso County programs to promote recycling.[62]

Section 2.7   Watersheds and Natural Resources

Well-functioning natural resource systems provide essential services to human communities. However, the functions of these systems can be significantly impacted by short-term shocks and long-term stresses. For example, a stream channel hit by a 500-year flood may be disturbed in a number of ways (e.g., bank breach, destruction of riparian areas, debris build-up) that inhibit proper flow and actually increase future flood risk as well. Resilient watersheds and natural resource systems are able to withstand disturbances over time while retaining their essential structure, functions, and support services. Ideally, resilient communities would benefit from the natural systems they inhabit, while remaining resilient to the environmental hazards they pose. As an example, a resilient community developed within a forested area would benefit from the scenic value and ecosystem services provided by the forest, while nevertheless incorporating standards and means to protect life and property from wildfire.

In this respect, the main strengths and challenges faced by communities in El Paso County are the following:

- **Strengths**: Large percentage of undeveloped land and open space; relatively mild climate.

- **Challenges**: Dependence on water imports from areas west of the Continental Divide; expanding development in forested areas at the Wildland-Urban Interface; potential for very harmful military hazardous waste; unique geology leads to increased hazard risk.

The following briefly summarizes key aspects of watershed and natural resource resiliency in El Paso County, as well as the availability of emergency housing resources.

Environment and Climate

The climate in El Paso County is considered mild, with 285 days of sunshine. Nevertheless, a number of climatic hazards can affect the county on a regular basis, including drought, tornadoes, and severe weather such as hail, windstorms and winter storms (see Section 3). The county receives an average of 15 inches of rain and 35 inches of snow each year, with most precipitation occurring in winter.[12,63]

Land Use/Land Cover Patterns and Change

The majority of El Paso County is made up of undeveloped grassland and shrublands. Approximately 36% of El Paso County's land area is publicly owned.

Federal ownership makes up the largest share of public lands, including approximately 117,000 acres within Pike National Forest, 3,800 acres of Bureau of Land Management lands, and a substantial amount of military lands.

The county also includes state- and county-owned land. El Paso County Parks currently owns or manages approximately 6,500 acres of park land, 100 miles of trails, and approximately 2,500 acres of conservation easements. Most of the parks managed by El Paso County Parks are regional parks that are typically 200 acres or larger.[64]

The City of Colorado Springs manages and maintains an extensive park and trail system encompassing 212 individual properties and over 17,000 total acres of land. This includes 13,500 acres of regional parks and open space, 140 miles of urban trails, 100 miles of park trails, eight community parks, 132 neighborhood parks, two public golf courses, and two cemeteries.[65]

El Paso County has over 1,200 farms that total nearly 649,000 acres. Over 40% of farms in the county are used for livestock or poultry.[66]

Water Resources

Surface waters are most abundant in the mountainous, western part of El Paso County. The county's primary watersheds are Fountain Creek, Black Squirrel Creek, Cherry Creek, Monument Creek, and Kiowa Creek.[67] Most streams in the county eventually empty into the South Platte River, Arkansas River, Horse River, and Rush River.[68] Standing waterbodies, including Palmer Lake and Drake Lake near Falcon, are human-made and used to retain surface water supplies.[67]

While the City of Colorado Springs and several local water districts in the county own surface water allotments, most of the surface water in El Paso County streams is owned by downstream water users. Increasing surface water supplies available to county residents will depend on increasing opportunities for conservation, re-use, retention and storage, or purchase of additional water rights.[69] Uncertain weather trends will continue to be a critical factor in water management. Increases in average temperatures may affect the availability and timing of snowmelt. Overall changes in precipitation and stream flow are difficult to predict, however, and continue to add a layer of uncertainty in projections of water supply.[70]

Riparian areas and open space along the county's creeks, ponds, and lakes provide flood buffer areas, valuable wildlife habitat, and parks and recreational areas that draw residents and tourists. Portions of Fountain Creek flow through the Fountain Creek Park and Nature Center and Rainbow Falls Recreation Area, and the Fountain Creek Regional Trail follows the riparian corridor for approximately 10 miles,

providing access to other county parks and trails. Another string of parks follows the riparian corridor of Bear Creek. The Palmer Lake Regional Recreation Area, Ben Lomond Mountain, and New Santa Fe Trail are situated along the shore of Palmer Lake in the northwestern part of the county.[71]

High water and increased flow in streams following heavy rains may cause flooding, erode stream banks, damage nearby infrastructure, and increase sedimentation in areas downstream.[67]

The county's groundwater resources include four primary aquifers of the Denver Basin (Dawson, Denver, Arapahoe, and Fox Hills), which lie beneath the northeastern and north-central parts of the county. Water contained in the upper and outer layers of these aquifers is considered tributary to the county's surface water resources, and is generally not available for consumptive use without augmentation. Groundwater is sporadic in western El Paso County, in areas where bedrock is granite or exposed at ground surface. In the eastern and southern parts of the county, groundwater resources are generally available along stream channels and in shallow or surficial alluvial deposits, as well as in the Pierre Shale formation.[69]

Forest Resources

Like water, forest resources have played a vital role in shaping El Paso County. Furthermore, the forest system, and all flora and fauna within it, play a critical role in shaping the watershed, itself. Forests rely on groundwater within the watershed, while the watershed system relies on the forest to serve as a natural filter and remove toxins and particulate matter from the water.

The majority of forested land in El Paso County is within the Pike National Forest on the western edge of the county. The forest stretches across six counties and totals over 1,100,000 acres.[72] Other notable forest areas include the Black Forest. Expanding development on the western and northern edges of the Colorado Springs urban area adjacent to the Pike National Forest and Black Forest have significantly added to the contact area at the Wildland-Urban Interface, resulting in significantly higher wildfire damage in recent years.

Source: City of Colorado Springs

In addition to wildfires, forest resources have been frequently impacted by invasive species and pests. El Paso County ranks fifth among Colorado counties, with the most invasive plant species reported (224 different species).[73]

Hazardous Areas and Sites

El Paso County contains 10 superfund sites, seven of which are located in Colorado Springs, and one each in Fort Carson, Monument, and Security-Widefield.[74] Mining of metals and minerals has occurred within the county since it was settled, and 163 acres of public land are actively mined.[75] These mines can pose a risk to workers and the general public, and can lead to potential cave-ins and general instability. Instability is also a concern for communities at the foothills of the Rocky Mountains, including Manitou Springs. These areas are prone to slope instability, landslides, and soil erosion, among other risks.[76]

Section 3
Shocks and Stresses

The overarching aim of the El Paso County Resiliency Plan is to chart a path toward a resilient future in which El Paso County's vulnerability to adverse changes and potential disasters is reduced, and its ability to "bounce forward" is enhanced. To that end, this section describes the driving forces that can make a community vulnerable, and identifies specific vulnerabilities in the county.

Section 3.1   What Makes Communities Vulnerable

Section 3.1.1   Definitions

Vulnerability. Vulnerability arises when a community, an asset, or an individual is exposed to a hazard *and* is likely to suffer adverse effects from this hazard. A **hazard** refers to a possible natural or human-induced event that would have adverse effects on exposed persons and assets. **Exposure** is the condition of being located in an area where hazard events may occur.

Shocks and Stresses. The more an individual or a community is vulnerable, the more likely the impacts of a hazard will translate into a **disaster**. However, individuals and communities that are vulnerable to hazards can also be resilient in the face of disaster. Vulnerability can be addressed in two ways:

- Mitigating **direct** vulnerability to acute **shocks.** Shocks include natural events, such as wildfires, floods, and winter storms, as well as human-made events, such as industrial accidents, public health crises, and terrorism.

  - Direct vulnerability is often measured as potential **damage** to buildings and infrastructure and as personal risks, including **injuries** and **death**.

  - **Hazard mitigation** focuses on reducing direct vulnerability by reducing communities' exposure to shocks.

- Reducing **indirect** vulnerability due to chronic **stresses.** Stresses are underlying **economic, social,** and **environmental** attributes that undermine an individual's, community's, or asset's ability to respond to or recover from a shock. Stresses include environmental conditions (e.g., drought) and failures of human controlled systems (e.g., high unemployment). When multiple stresses occur simultaneously, they may exacerbate negative outcomes.

  - The same shock event, causing the same amount of immediate damage will cause more or less long-term impact in a community depending on underlying **stress**.

  - A focus on **resiliency planning** seeks to reduce indirect vulnerability by harnessing the communities' ability to improve underlying conditions and develop adaptive capacity.

Section 3.1.2   Relationships between Shocks and Stresses

The relationship between shocks and stresses is complex, and communities are best served by taking a holistic perspective when planning for resiliency. Stresses can exacerbate the impact of shocks, and can even cause shocks to occur. At the same time, individual or repeated shocks can worsen existing stresses and sometimes create new stresses.

For example, the occurrences of many individual natural hazards are tightly interrelated, such as in the case of droughts, wildfires, and floods. Drought[77] can create ideal conditions for shocks, such as wildfires or floods, while simultaneously exacerbating underlying economic stresses. This can increase a community's vulnerability.

Underlying stresses are a major factor in determining the extent of the impact of a shock on an individual or community. Two neighboring families, each with equal exposure to a hazard, may experience very different outcomes from a given shock. For example, one resident living in a floodplain may have modified their home to mitigate potential damage and may heed warnings to evacuate before a flood event strikes, suffering relatively little impact. Meanwhile, a neighbor may not have invested in flood protection, resulting in major, costly damage to their home. The extent to which this property damage affects the neighbor will vary depending on, for example, whether or not the neighbor has flood insurance, savings, a job that provides the flexibility needed to deal with the recovery process, and a social "safety net" for temporary housing and emotional support.

The most resilient communities typically feature strong leadership and governance, social connectedness and healthy community networks, land use plans that integrate hazard considerations, a prosperous and diversified economy, a focus on individual health and well-being, and well-developed, maintained, and protected infrastructure. By contrast, communities that suffer from systemic socioeconomic stresses (e.g., high poverty, corruption, limited land use planning, inadequate infrastructure) may have less capacity to respond to and recover from a shock. Shocks and stresses cannot be separated when thinking about vulnerability and its inverse—resiliency.

Section 3.2   Shocks and Stresses in El Paso County

As identified in the El Paso County Multi-Jurisdictional Hazard Mitigation Plan[12], communities in El Paso County are exposed to a wide range of hazards. A list of the hazards identified in these two plans can be found in Table 3-1.

Table 3-1: Hazards Affecting El Paso County

Atmospheric and Geologic Risks	Human / Technological Risks	Other Risks / Multiple Causes
■ Avalanche ■ Drought ■ Earthquake ■ Hailstorm ■ Landslide or Rockfall ■ Lightning ■ Mud or Debris Flow ■ Subsidence and Sink Holes ■ Tornado ■ Severe Wind ■ Winter Storm	■ Aircraft Accident ■ Dam Failure ■ Extreme Acts of Violence ■ Hazardous Materials Release	■ Erosion and Deposition ■ Flooding ■ Pandemic Disease ■ Wildfire

Vulnerability to these hazards varies widely depending on location. For example, the El Paso County Multi-Jurisdictional Hazard Mitigation Plan identifies wildfire as a high risk to most of El Paso County, while the risk from dam failure is of concern to jurisdictions such as Colorado Springs, Fountain, Manitou Springs and Palmer Lake.[12]

The El Paso County Multi-Jurisdictional Hazard Mitigation Plan lists the following hazards as (a) highly likely to occur in three or more jurisdictions, and (b) posing significant impacts to people, property, and the economy: flooding, hailstorm, severe wind, wildfire, winter storm, and hazardous materials release. This is consistent with the City of Colorado Springs Pre-Disaster Mitigation Plan and historic Disaster Declarations, as flooding, wildfire, and winter storms have most frequently and severely impacted the county.[12]

Numerous stresses could affect El Paso County and vary, depending on the jurisdiction. Environmental stresses include drought, social stresses include increasing population and lack of health care professionals, while economic stresses include stagnant job growth and a relatively undiversified economy.

Shocks and stresses differ in their likelihood (frequency) and their consequences. Figure 3-1 shows the relative frequency and consequences of shocks and stresses of concern in El Paso County, based on comments received during the first planning charrette.

Further discussions with community stakeholders also specifically highlighted the following shocks and stresses of concern beyond what was identified in the local hazard mitigation plans:

- **Shocks**: Mass violence incidents, cyber-attacks, loss of a major tourist attraction, and a chemical, biological, radiological, nuclear, or explosives event.
- **Stresses**: Aging infrastructure, increasing homelessness, and economic downturns.

In the following sections, major shocks and stresses affecting El Paso County are summarized. This is not a comprehensive analysis, but rather an attempt to identify the shocks and stresses of greatest priority **from a resiliency perspective**, as expressed in planning charrettes, meetings, surveys, interviews, and local, state, regional, and national plans and reports.
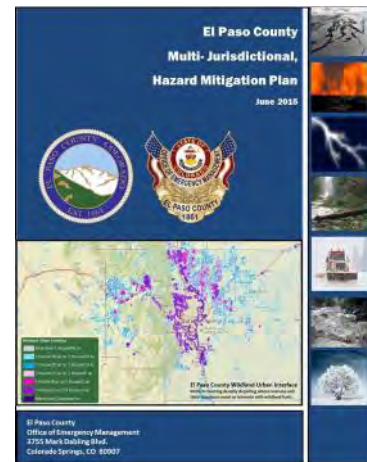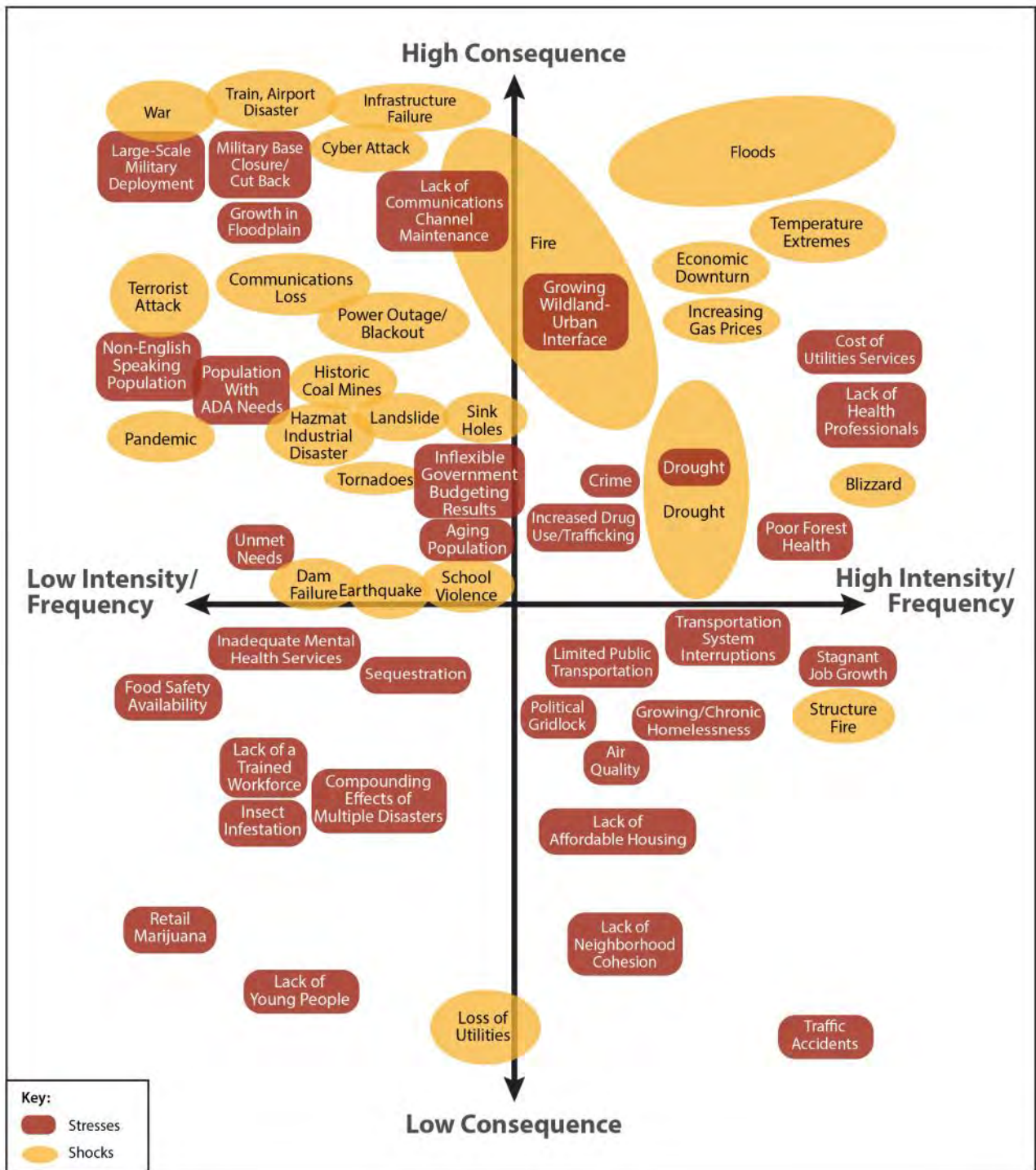
Figure 3-1: Shocks and Stresses in El Paso County

Section 3.2.1   Major Shocks

The El Paso County Multi-Jurisdictional Hazard Mitigation Plan identifies flooding and wildfire as major threats that were consistently ranked as a high or medium threat to communities in the county. These hazards were echoed as major concerns during the first planning charrette. In addition, the charrette identified the potential impact of a deployment of military personnel in support of an extended military engagement as a concern due to the presence of multiple major military installations in El Paso County. Therefore, this section focuses on flooding, wildfire, and large-scale military deployment as the major potential shocks for El Paso County.

Natural Hazards – Flooding and Dam Failure

Heavy rainfall can result, and has resulted, in severe flash flooding in El Paso County on numerous occasions. The risk for flash flooding is greatest during late July and August. Based on the El Paso County Multi-Jurisdictional Hazard Mitigation Plan, flooding was ranked as a high-risk hazard for unincorporated parts of El Paso County, Manitou Springs, and Palmer Lake. Calhan, Ramah, Fountain, and Green Mountain Falls were all identified as having a medium risk for both flooding and dam failure.

Source: Ed Ogle[78]
and three deaths.[12,79]

Between 1996 and 2015, 118 flood events were recorded that were responsible for a total of nearly $57 million in property damage and six deaths. The most recent severe flooding in El Paso County occurred in September 2013. Heavy rains fell in western El Paso County and resulted in flooding in Colorado Springs, Fountain, Manitou Springs, and Security-Widefield. The flooding in 2013 caused the closure of local, state, and federal highways, flooded 89 homes along Cheyenne Creek, and caused $1.1 million in property damage

El Paso County is primarily located in the Arkansas River Basin. It is estimated that over 15,000 people live in the county's 100-year floodplain, and over 22,000 live in the 500-year floodplain. Most of the county's population centers are located along Fountain Creek or Monument Creek, including Palmer Lake, Monument, Manitou Springs, Colorado Springs, and Fountain. Significant development has occurred along Fountain Creek and many of its tributaries, and an estimated 25,000 people are at risk of flooding from Fountain Creek.[12]

In addition, the Waldo Canyon Wildfire burned over 18,000 acres in El Paso County and the City of Colorado Springs in 2012.[79] The resulting burn scar is now more susceptible to higher rainfall runoff rates, increased sedimentation, and debris flows due to lack of vegetation and poor soil quality, and it is anticipated that the area may experience a 100-year flood every 10 years, on average, until revegetation.[12]

El Paso County maintains a flash flood monitoring system comprising 60 sensors at 40 sites to transmit rain and stream data to emergency management agencies. All municipalities in El Paso County (with the exception of the town of Ramah) participate in the National Flood Insurance Program's Community Rating System, which provides discounts on flood insurance for communities that take measures to reduce flood risk.[80,81]

Manitou Springs and Palmer Lake are also at high risk for flooding due to dam failure, and Calhan/Ramah, Fountain, and Green Mountain Falls are at medium risk. While the impacts of individual dam failure events are remarkable, the frequency of dam failure is significantly lower than for other types of floods. The only recorded dam failure in El Paso County occurred in 1929, when a 15-foot wall of water resulted in one death and the destruction of a mountain resort at Ute Pass Fish Creek. Emergency response during the 2013 flood and 2012 Waldo Canyon Wildfire included specific efforts to avoid impacts to dams.[12]

Natural Hazards – Wildfire

The majority of El Paso County is made up of undeveloped pine forests, grassland, and shrublands that can serve as fuel for wildfires. The Wildland-Urban Interface includes areas where these undeveloped lands (as well as forest lands) are mixed with human development. An estimated 53% of El Paso County's population lives within the Wildland-Urban Interface. The Regional Hazard Mitigation Plan identified wildfire as a high risk in unincorporated El Paso County, Colorado Springs, Calahan, Rahmah, Green Mountain Falls, Manitou Springs, Monument, and Palmer Lake, and as a medium risk in Fountain.[12]

While July is the peak of the fire season, wildfires can occur at any time of the year. Wildfires can be part of the natural regeneration process of forest or grassland or can be caused by humans. The number of, size of, and damage caused by wildfires have grown steadily over the past few decades. A total of 13 wildfires occurred in El Paso County between 2000 and 2013, with five of these resulting in property damage.[79] The Black Forest Wildfire was the most recent and devastating wildfire in El Paso County; this wildfire occurred in June 2013 north of Colorado Springs and was estimated to have caused $293 million in property damage and resulted in the evacuation of 35,000 people and the destruction of 486 homes.[79] The Waldo Canyon Wildfire occurred in Western El Paso County in June and July of 2012. This wildfire resulted in the evacuation of 32,000 people, caused two deaths and $400 million in property damage, and destroyed 347 structures.[79]

In the Waldo Canyon Fire, the steep slopes have made revegetation activities difficult. In both fires, the presence of an interconnected canopy of pine trees contributed to rapid-moving crown fires, while the lack of vegetation in the post-fire period has increased the risk of flash flooding.

Committees were formed after both the Black Forest and Waldo Canyon wildfires to address the long-term recovery needs of the communities and community members.

Source: City of Colorado Springs

Natural Hazards – Severe Weather

A variety of severe weather types have been identified as posing significant risks to multiple communities within El Paso County, including hail, lightning, tornados, severe wind, and winter storms.[12]

Recurring destructive events, such as severe hailstorms, windstorms, and lightning strikes, occur along the whole length of the interface between the Great Plains and Rocky Mountains. While such events rarely cause injuries and deaths, damage to private property and interruptions in public utility services, particularly power outages, commonly occur in the strongest severe weather situations. The property damage associated with hailstorms is especially severe, reaching hundreds of millions of dollars. Every year, it is estimated that 1 to 2% of total crop value in the United States is lost to hailstorms.[12,82,83]

Winter storms typically occur between November and April, and can result in heavy snowfall, blowing snow, and extreme cold. Particularly harsh or persistent winter storms may cause transportation disruptions, power outages, and/or damage to buildings, utility lines, and domestic water pipes. Winter storms may also result in deaths and injuries from various causes, including transportation incidents and exposure to low temperatures. Between 1996 and 2014, 118 severe winter weather events, including nine blizzards, were recorded in El Paso County. The most severe of these events, in October 1997, resulted in at least four deaths and two injuries in El Paso County in addition to stranding hundreds of travelers, causing power outages lasting up to two days, killing an estimated 20,000 cattle statewide, and causing millions of dollars in local and statewide economic losses.[12,82,83]

Human-Caused – Long Term Deployment or Loss of Military Personnel

The Pikes Peak region is home to more than 40,000 active duty service members, 73,000 family members, and 100,000 veterans.[84] The region includes five major military installations, all of which are primarily located in El Paso County. Therefore, the military community and its members are an integral part of the social fabric of El Paso County and are an important voice that contributes to the economic and social strength of the county.

Some research suggests that military engagements requiring the large-scale deployment of military personnel could result in loss of population and income in the county, with potentially significant economic, social, and safety impacts[85]. A closure of—or significant reduction in personnel at—any one installation would likely have even more broad-ranging impact locally.

The economy throughout much of El Paso County relies heavily on these military installations. This makes the economy particularly susceptible to shocks such as war, sequestration, or closure of one or more military bases. Fort Carson is the largest employer in the county, and Peterson Air Force Base, the U.S. Air Force Academy, and Schriever Air Force Base are also among the largest employers in the county.[12] In addition to on-site employment, the presence of military facilities has also brought a number of defense contractors to El Paso County, which also provide significant employment. A further economic contribution that certain facilities offer is that they serve as major tourist attractions—the U.S. Air Force Academy alone hosts hundreds of thousands of visitors each year.[86]

Many local businesses in El Paso County rely on military personnel or related tourist traffic for their customer base. These businesses would likely suffer from a drop in customers if a significant portion of active military personnel decreased, or in the event that certain facilities were closed to visitors. Smaller businesses may be more susceptible to this shock as they may not be able to survive long-term drops in sales. The closure of these businesses would have ripple effects throughout the economy that could cause significant unemployment and increase the number of households requiring financial assistance.

Social impacts from this type of shock would be felt most directly by the families of deployed military personnel, effectively increasing the number of single-parent households. Furthermore, households where both parents are in active military service may face the challenge of finding a temporary home for children. Host families are likely to face stress from increased responsibilities, the need to learn new skills, increased financial concerns, and concern over a service member's safety.[87] The deployment of service members overseas, and the mental and physical health challenges faced by returning service members, could result in an increased strain on the community's well-being, and generate an increased need for counseling and other social services. The initial deployment would represent a shock; however, extended deployment over many years would become a stress for the community.

Human-Caused – Extreme Acts of Violence

In recent years, multiple mass shootings have taken place in Colorado, including the Columbine High School shooting in 1999 and the Aurora Theater Shooting in 2012. El Paso County has experienced this type of violence—with the New Life Church attack in 2007, and the Planned Parenthood attack on November 27, 2015.[12,88]

Although this hazard has proved to be an increasingly frequent occurrence in communities throughout the United States, subject matter experts have struggled to accurately define or track the nature of these incidents. *USA Today* has estimated that 291 cases of mass killings (four or more dead victims) have occurred since 2006. Among those incidents, 43 were public shootings, the specific type of incident that has tended to gather the most media attention and result in the largest death tolls.[89]

Mass killings, including public shootings, appear to occur in all parts of the country. Despite the pre-eminence of certain types of incidents (e.g., school and campus shootings), there does not appear to

be a distinct pattern of motives, methods, or locations for public shootings. Although certain incidents may be classifiable as terrorist attacks (see "Human Caused – Military or Terrorist Attack"), many others are attributable to factors as diverse as domestic violence, financial stress, and mental health.[89]

Human-Caused – Military or Terrorist Attack

Colorado Springs' unique position as a large population center (second largest city in Colorado) with a concentration of strategic military assets (such as the U.S. Air Force Academy, North American Aerospace Defense Command (NORAD), U.S. Northern Command, and Air Force Space Command Headquarters) makes it a potential target for acts of domestic and international terrorism, cyber-terrorism, and military attacks.

Generally speaking, terrorism involves acts intended to either (a) intimidate or coerce a civilian population, (b) influence the policy of a government, or (c) affect the conduct of government. Traditional definitions of terrorism focus on mass destruction, assassination, and kidnapping.[90] However, future attacks could include instances of chemical, biological, radiological, or nuclear attack, as well as cyber-attacks which have become a new means of attacking both civilians and governments.

Although no incidents of terrorism have been recorded to date in El Paso County, acts of domestic and international terrorism have occurred throughout the history of the United States and are all but certain to occur in the future. The most destructive incidents in recent decades included the Oklahoma City bombing of the Alfred P. Murrah Federal Building in 1995, and the September 11, 2001, attacks on the World Trade Center in New York and the Pentagon in Washington, D.C.

Because of El Paso County's position at the center of the contiguous United States, the likelihood of a direct strike by a foreign military force is relatively low. Nonetheless, the value of local military assets could motivate such an attack.

Section 3.2.2   Major Stresses

Based on existing conditions and discussions from the first planning charrette, this section focuses on limits on municipal budgeting, development in floodplains and the Wildland-Urban Interface, and an aging population as the major stresses for El Paso County.

Limits on Municipal Budgeting

Limits on raising taxes and revenue spending in Colorado can restrict the funding of new projects or programs that may be needed to mitigate hazards or support resiliency in El Paso County. This requires thoughtful planning and the ability to pursue multiple approaches to financing priority projects and initiatives. Resources for implementing resiliency actions often come from grant funding, and are hard to sustain. Identifying funding sources was noted as a challenge for many of the recommendations in the Pikes Peak Regional Sustainability Plan (Looking to our Future 2030). Of the 51 projects recommended in the 2008 El Paso County Multi-Jurisdictional Hazard Mitigation Plan (which was updated in 2015), only 10 have been completed as of 2014.[91,12]

Funding challenges can both directly and indirectly affect a community's ability to mitigate or respond to a shock. Unimplemented mitigation measures due to a lack of funding may increase the risks and impacts resulting from a disaster event. In addition, lack of flexibility in budgeting limits a local government's potential to act on other social and economic stresses, such as programs to address the growing needs of older adults or economic development initiatives to diversify the economy.

Aging Population

El Paso County's population is growing older, with adults aged 55 and over making up the largest increase in population between 2000 and 2010. The Pike Peaks Region is also home to over 100,000 veterans, a significant number of whom reside in El Paso County.[91] The presence of a large, aging population brings a specific set of needs in social, health, housing, transportation, and emergency services. Meeting these needs in a timely and cost-effective manner will be a key resiliency challenge for El Paso County as its demographic profile changes over the coming decades.

Older adults may be less physically mobile or lack transportation and could be unable to respond quickly and leave their homes during an evacuation. In addition, this population may face greater health risks from smoke inhalation during wildfires and limited clean water and food during a flood event. The county has a slightly lower number of physicians per 10,000 people than the state as a whole, which could exacerbate the problems faced by older adults as their number increases in the county.[92]

An aging population may also result in a reduction of the county's workforce. The number of individuals in El Paso County aged 34 and younger (16% increase) increased between 2000 and 2010, but at a slower rate than those aged 55 and over (57% increase).[92] This imbalance has the potential to strain the local economy if employers are unable to fill positions and if the number of retirees requiring services outpaces working adults contributing to the tax base that funds those services.

Aging and Inadequate Infrastructure

Residents of El Paso County are fortunate to be served by a robust network of infrastructure that meets the community's day-to-day needs. However, like many counties in Colorado (and beyond), El Paso County's infrastructure is aging and in need of maintenance and, in some cases, replacement. Many bridges, wastewater treatment plants, and dams were built 40 or more years ago, bringing them near the end of their design life.[93]

Furthermore, as the county continues to grow, the ability of current infrastructure to serve both present and future needs is likely to be diminished or compromised. El Paso County's population grew 1.9% from 2000 to 2010, and is expected to keep growing at a rate of at least 1.5% through 2030 and at a rate of over 1% through 2050. El Paso County's population is currently projected by the State Demography Office to reach nearly 850,000 in 2030, and over 1.05 million in 2050.[94]

In addition, as flooding and extreme weather may become more frequent, some infrastructure may require redesign to accommodate the harsher conditions. Maintaining and, eventually, replacing infrastructure is a cost that local municipalities and state and federal governments will have to bear. While the county's municipalities are generally in good fiscal shape, these investments need to be planned for and will be paid off over many years.[95]

Increasing Homelessness

Homelessness is defined as "lack[ing] a fixed, regular, and adequate nighttime residence." During point-in-time surveys carried out by the Colorado Springs/El Paso County Continuum of Care in January 2014, more than 1,200 homeless people in the county were counted, over 20% of whom were under the age of 18 and over 10% of whom were veterans. This represents a nearly 30% increase since 2007, putting a significant amount of strain on the local network of public and non-profit human and social services.[96]

The increased pressure on human and social services may lead to challenges in mobilizing the additional capacity needed for the general population following a major disaster. Furthermore, homeless persons are likely to suffer disproportionate impacts from disasters due to their extremely vulnerable position.

Economic Downturns

Local and state resources tend to be further stretched during economic downturns, making it more difficult to effectively respond to and recover from disasters. Furthermore, for businesses already under stress in a weak economic climate, a major disaster can be the end of the line. Due to its unique mix of military and private-sector activity, the economy of El Paso County can experience local downturns as a result of changes in military activity or federal policy and spending; it can also be affected by shifts in the broader national economy. On the other hand, El Paso County is not subject to significant economic fluctuations due to changes in commodity (oil and gas, mineral) prices.

Shifts in military activity can have a significant impact on the local population and, in turn, on local economic conditions. Over the last 15 years, this influence has cut both ways. As an example, long-term deployments in Iraq and Afghanistan have caused a significant outflow of military personnel from El Paso County; however, base realignment has relocated thousands of positions into the county over the same period. The general uncertainty over long-term military commitments in the community may be a damper for local economic growth.[97]

Furthermore, instability in the federal budget cycle has impacted the local economy at certain times. This is illustrated most recently by the 0% growth rate in the local economy in 2013, a year marked by the federal budget sequestration cuts as well as the October 2013 government shutdown, both of which impacted defense spending. Over the same period, Colorado's overall economic growth stood at 2%.[98]

The local economy is also intimately tied to the wider national economy, and is impacted by national downturns. Measures of the Gross Metropolitan Product for the Colorado Springs Metropolitan Statistical Area suggest that the local economy was hit both earlier and harder than the state of Colorado as a whole during the 2008-2009 recession. The local economy contracted by over 2% in 2008, while the state economy was still growing.[98]

Section 3.3   Key Community Vulnerabilities

El Paso County has undertaken tremendous efforts to plan and prepare for shocks and to mitigate stresses. Nonetheless, certain key vulnerabilities remain.

Development in Floodplains and at the Wildland-Urban Interface

Communities within El Paso County have seen steady population growth since 1990 and expect to continue to see growth in the near future.[12] Development within floodplains and the Wildland-Urban Interface is likely to place more people and property in danger from flooding or wildfires. In Manitou Springs and the west side of Colorado Springs, new development is constrained by steep slopes that are unsuitable for building, but existing development is still at risk.

An estimated 53% of El Paso County's population (over 350,000 people) resides at the Wildland-Urban Interface, and 2.4 and 3.4% of the county's population live in identified 100-year and 500-year floodplains, respectively.[12] Areas in the Wildland-Urban Interface are at increased risk from wildfire. In addition, just as the Waldo Canyon burn scar has increased the risk of flash flooding, the removal of vegetation on undeveloped areas for human structures could also increase the rate of runoff, increase debris flow and sedimentation, and exacerbate flood risks to residents and businesses in floodplains.

The ability of emergency and social services to quickly respond during and after a shock is vital to protecting lives and property. Many of these services in the county are housed in locations at high risk for flooding or wildfire. During an emergency, they must first address their immediate danger, which can interfere with serving the community. One example is Manitou Springs City Hall, which is located in a floodplain. The risk of flooding has repeatedly forced City personnel and emergency services to evacuate to a safe location before addressing the needs of the community.

Landscapes Impacted by Past Disaster

Major disasters, such as floods and wildfires, have significant impacts to the natural and man-made landscapes and the environmental functions served by those landscapes. When major floods overtop river banks and carry large amounts of debris, they can damage river channels in ways that lower the stream's carrying capacity or put new areas at risk of future floods. Burn scars from events such as the Black Forest fire and Waldo Canyon fire deplete the soil of nutrients necessary for vegetation to regenerate. Where burn scars are located on steep slopes (as in Waldo Canyon), the poor soil and lack of vegetation, in turn, increases erosion and downstream flash flooding.

Emergency Planning and Capacity Building

Certain key gaps remain in local emergency preparedness in El Paso County, and are still in the process of being addressed. Public participation in planning and implementation are highest after disasters; however, in between disasters, participation and awareness in disaster planning and preparation are low. Use of advanced information technologies is a strength of the emergency management system, although it creates a vulnerability should internet access be interrupted for an extended period. Additional key gaps include the need to improve evacuation plans, and a need to build awareness of social services and related resources.

Evacuation plans need to be improved throughout the county, to improve the organization of evacuations, as well as evacuation facilities. This is especially true where vulnerable populations are located. For example, during the Black Forest fire, an assisted living facility took nearly four hours to evacuate, largely due to uncertainty over responsibilities and a lack of training. Further exacerbating this issue, identified evacuation routes may not be adequate; in some areas, routes consist of inconsistently maintained private roads or are overgrown.

On the other hand, the City of Colorado Springs has successfully conducted neighborhood evacuation drills in every section of the Wildland-Urban Interface since 2006. Notably, the Cedar Heights and Rockrimmon neighborhoods participated in drills prior to the 2012 Waldo Canyon Fire; those same neighborhoods were evacuated during the fire. The City of Colorado Springs also conducted a drill that had their highest level of citizen participation in April 2015 when the neighborhoods around Palmer Park, a city park that is identified as a Wildland-Urban Interface, evacuated nearly 300 people from 145 homes.

Concerning social services, vulnerable populations are often unable to access the many resources and services available in the county due to a lack of knowledge or communication between providers. The county has many excellent community organizations and government agencies that could become more effective with increased coordination.

Water Resource Challenges

Mirroring conditions throughout the Front Range, the majority of water supplied to El Paso County comes from areas west of the Continental Divide, and is conveyed by a series of pipelines, reservoirs, and pump stations to populated areas. Over 120 million gallons per day are pumped in this manner from the western slope to feed the water supply for Colorado Springs Utilities. At the same time, conditions east of the Front Range are generally arid, with limited groundwater resources that recharge slowly, and are, in many cases, not available for consumptive use.[99]

The transport of large quantities of water over the Rocky Mountains presents multiple points where the supply is vulnerable to natural disasters, sabotage, malfunction, or equipment failure. Furthermore, this supply is dependent on mountain snowpack. Although snowmelt has proved to be a sufficient resource for the last 150 years, increasing population growth in the coming decades and the recurrence of drought years suggest that the adequacy and stability of this supply may be challenged in future decades.

Section 3.4 How Uncertain Weather Patterns Affect Vulnerability in El Paso County

Observed trends and changes in climate have the potential to increase the frequency and severity of shocks, such as flooding and wildfires. Shifts in weather patterns are expected to occur throughout Colorado, including higher average temperatures, increased number of extreme heat events, and more prolonged and severe droughts. These impacts are likely to impact much of El Paso County in the future. As drought and higher temperatures become more prevalent, the risk for wildfires could

increase. Heavier rainfalls combined with burn scars could result in more severe flooding events similar to what has been seen with the Waldo Canyon burn scar.

Changing precipitation and temperatures may impact the county's water supply, which primarily relies on groundwater due to a lack of surface water availability. The need for water storage may become greater with increasing temperatures, lower precipitation, and longer periods of drought. This is especially true if the population continues to increase as projected.

Section 4
Resiliency Strategy

As presented in Section 1, El Paso County's vision for community resiliency is as follows:

"A forward thinking, resilient Pikes Peak region that focuses on common needs and shared responsibilities to foster a healthy, diverse community and economy, balancing the interdependence of human, built, and natural systems."

Achieving this vision involves developing a culture and practice of strengthening community resiliency in El Paso County, and will require coordinated and systematic work over many years. In support of this vision, stakeholders involved in creating this Plan have outlined a series of goals, strategies, and projects that will contribute to resiliency within El Paso County:

- **Goals** are broad statements describing the themes that organizations within El Paso County seek to address to improve overall community resiliency and realize the vision statement.

- **Strategies** describe distinct plans of action that will be undertaken in an effort to achieve this Plan's goals. In some cases, multiple strategies may be developed to achieve a particular goal.

- **Projects** are specific undertakings that contribute to executing a strategy. For example, a strategy may be to "expand the use of green infrastructure to mitigate stormwater runoff" whereas a project may "install bioswales along Main Street between 4th and 10th Streets."
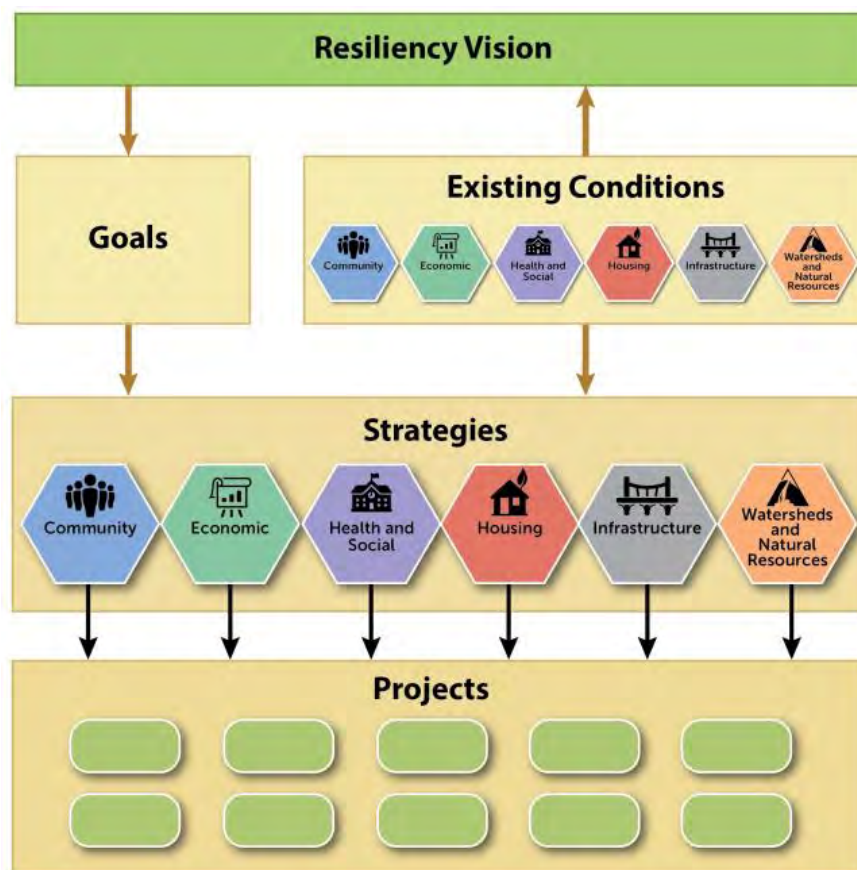

Figure 4-1: Resiliency Vision, Goals, Strategies and Projects

Section 4.1   Strategy Development

As described in Section 1, this Plan was developed through a collaborative process that engaged stakeholders—experts and laypersons alike—in the planning process. These stakeholders shaped El Paso County's vision statement and outlined important resiliency goals. This process extended to the task of developing strategies and projects to forward El Paso County's resiliency goals.

Section 4.1.1   Approach and Process

Goals, strategies, and projects have been identified for El Paso County through a multi-step process that engaged a wide variety of stakeholders. This process is explained in detail in **Section 1.4: Resiliency Planning and Community Engagement in El Paso County,** and materials and documentation used throughout the community engagement process are provided in Appendix B.

In identifying strategies and projects, participants in the planning process were challenged to begin a **deeper cultural shift in decision making** by evaluating strategies and projects from multiple perspectives and against multiple criteria. These cultural shifts included new thinking about building partnerships across jurisdictional and sectoral lines, encouraging individual responsibility while providing local services, building and maintaining infrastructure to mitigate damage from hazards, paying for the infrastructure and services desired, and analyzing the effects of long-term stresses in addition to the better-known shocks, such as fire and flood.

Section 4.2   Resiliency Goals

Building on El Paso County's vision—a forward-thinking, resilient Pikes Peak region that focuses on common needs and shared responsibilities to foster a healthy, diverse community and economy, balancing the interdependence of human, built, and natural systems—community members and leaders who were engaged in the resiliency planning process have identified the following goals (these are presented randomly and are not numbered according to priority) to address and improve disaster resiliency:

Goal 1: Increase community capacity to reduce impacts from shocks and stresses. Increasing resiliency is more than disaster mitigation. Taking action before disasters to reduce risk can save lives and money; however, when conditions are good, it can be difficult to motivate people to take action. The county strives to move beyond community involvement and "buy-in" to increasing the community capacity as a whole. This requires a shift to a culture of responsibility at the individual level, such as mitigating the danger of wildfire or preparing families for disasters. Local government action is also needed, such as devoting public resources for stormwater management, maintaining and restoring forest health, fostering emergency preparedness, and maintaining infrastructure.

Goal 2: Foster a paradigm shift toward comprehensive, collaborative planning and implementation with sustainable funding and stakeholder engagement. In order to build resiliency, existing planning and stakeholder engagement processes need to be brought together. Quality of life and emergency preparedness depend on looking to the future to ensure that development does not increase risk or create problems, such as traffic, pollution, and unemployment. In addition, even the best plan cannot be fulfilled without identifying sustainable funding sources and committing to them.

Goal 3: Create cultural awareness of the need for personal connections in communities and between communities. Resiliency to both shocks and stresses is increased with the connections between people and between communities. Any effort to build and maintain ties, especially across neighborhoods, jurisdictions, and sectors, will increase capacity to handle an uncertain future.

Goal 4: Brand the region in a way that brings people together and creates "buy-in." Creating and fostering a Pikes Peak-based identity can increase individuals' pride in being from and/or residing in El Paso County. It encourages communities to work together, and also encourages

younger and transient populations to settle in the county and work towards a better future for the region.

Goal 5: Support coordinated stewardship and management of natural resources. El Paso County's vision of creating a resilient Pikes Peak region includes creating a balance between the built and natural environments. Therefore, this focus on the natural world speaks to the need for natural resource stewardship. Environmental preservation for aesthetic, recreational, and risk reduction purposes is a key element of building countywide resiliency.

Section 4.3   Strategies by Resiliency Sector

The strategies identified for El Paso County are described and summarized according to their primary targeted resiliency sector in the following sections. However, many activities are cross-sectoral in nature, and all will benefit from multi-sector engagement and participation.

The Colorado Resiliency Framework outlines a series of statewide strategies and goals organized into the six resiliency sectors. This Plan has taken into consideration the strategies and goals elaborated in the Colorado Resiliency Framework, and the strategies and projects proposed in this Plan are organized into those same sectors.

Section 4.3.1   Community

Increased resiliency in the El Paso County community sector means a more knowledgeable, aware, and educated community is achieved. Personal responsibility is amplified, and there is increased awareness of the responsibilities that come with residing in the Wildland-Urban Interface. Parks are linked together, and arts and recreation are encouraged so that all residents of the county may participate. The County is a good steward of natural resources, and communities collaborate and share information.

Issue Statement

Recent disasters and the county's expansion patterns show that development in hazardous areas in an uncoordinated and unplanned manner can put people at risk from flood and fire, especially in the Wildland-Urban Interface and floodplains. This development pattern also increases impacts to traffic, infrastructure provision, and maintenance, and provision of social services. Stresses such as a large transient population tied to the military installations within the county lead to a continuous need for community education related to disaster preparedness and resiliency measures. Drought is cited as both a shock and a stress within El Paso County. The current land use planning process could be updated to include emerging issues and resources, such as overexploited aquifers and water availability.

Strategies

The strategies identified in this sector seek to address the primary issues and move towards the resiliency vision through striving to create a culture of personal responsibility, promoting collaboration between communities and public and private agencies, increasing education and community participation, enhancing stewardship of natural resources, and encouraging responsible development patterns.

C-1: Build relationships around regional recovery groups for cooperation/education. Build upon the relationships and work conducted by regional recovery groups and look to expand to other areas in order to foster citizen, non-governmental organization, and government collaboration. Government and non-governmental organizations' collaboration should include coordinated planning and outreach efforts. The de-confliction of existing groups will be a key starting point. Relationships between jurisdictions are improving, and opportunities for inter-jurisdictional collaboration are also imperative.

C-2: Facilitate responsible water use and balance growth and water availability. Build awareness of the importance of addressing water limitations and drought within the community.

Promote opportunities for educating communities on water demand reduction measures, conservation measures, reuse and recovery techniques, and the intersection of development density and the impacts on water use. Incorporate Smart Growth principles and strategies in the application of land use. Water needed to support new uses should be identified in tandem with growth plans. Foster public education on the benefits of green infrastructure and low-impact development stormwater management to help address the need for additional stormwater controls in the county.

C-3: Foster vibrant arts/culture/recreation, with opportunities for participation. Encourage community building through the stewardship of natural resources and beauty through participation

in arts, culture, and recreation opportunities. For, example, there is great potential related to creating a network of parks and multi-use trails alongside local streams. Utilize outcome-based planning and focus on planning that works across jurisdictional boundaries to build community capacity that will enhance mutual support in the face of an event or disaster.

C-4: Develop an educated, responsible citizenry that knows how and why to keep themselves and their neighbors safe and strong. Foster education, disaster preparedness, and cooperation at the individual level. Encourage personal responsibility among residents to help communities be safe and resilient in response to shocks and stresses. Leverage the strong history of coordination between the military emergency preparedness entities and the cities and county to further foster knowledge and awareness among the military and civilian populations. In addition, there is opportunity to foster resiliency education through engagement with faith-based groups and family organizations.

C-5: Promote master planning with a focus on resiliency. Enable responsible development patterns throughout local communities through master planning and updated land use processes that address emerging issues such as water availability, development in hazardous areas, natural resource stewardship, and density allocation. Incorporate resiliency principles in county and city planning and regulatory processes, including land use planning, guidance or requirements regarding land use in floodplains and the Wildland-Urban Interface, building codes, development density guidelines or requirements, and zoning variances. Successful incorporation of principles at the local level will support resiliency and sustainability throughout the region.

Section 4.3.2   Economic

Increased resiliency in the El Paso County economic sector means: (1) important relationships between businesses and governing bodies, and other organizations such as faith-based organizations, are maintained; (2) tourism marketing is enhanced and entrepreneurship training is improved; (3) the community helps to sustain Department of Defense contracts to support the strong military presence in the county; (4) farming education is enhanced to sustain the limited agricultural land in the county; and (5) taxes and spending are controlled to keep the economy in balance.

Issue Statement

There is a strong link between local economic development and community resiliency. El Paso County is the second-largest county by population in Colorado, and the population is forecast to exceed job growth through 2030 due to the aging of the labor force. There is difficulty in retaining the younger workforce because members of younger age groups do not view El Paso County as a viable location to

settle. There is a mix of industries present in El Paso County, which positively influences resiliency. Employment is growing in industries such as health services and management of companies. Nonetheless, there is a large dependency on the military, associated defense contractors, and the job positions they provide within the county. Military conflicts requiring large deployments, base closure, and disasters affecting installations can have a severe impact on the county's economic activity. Services to surrounding counties and the nation by local businesses also contribute to a large portion of economic activity in El Paso County and is important to maintain. Spending by retirees is an important economic driver, while provision of services for retired military populations is important for achieving resilient communities in the county.

Strategies

The strategies identified in this sector seek to address the primary issues and move towards the resiliency vision by creating an environment where existing businesses can thrive, attractive employment opportunities for the younger workforce are created, business diversification is expanded, impacts on tourism are reduced, and farming is maintained.

E-1: Maintain and enhance existing businesses and promote small and mid-sized businesses, particularly start-ups, to further develop business and employment opportunities, especially for younger people. Existing local businesses are vital to the local economy and maintaining relationships between various businesses and governing bodies will help sustain and grow local businesses and contribute to a more resilient economy. Implementing training and entrepreneurial strategies targeted towards younger people will help foster attractive career options and the opportunity for younger populations to settle in local communities.

E-2: Encourage and support business diversification. Business diversification is essential to resiliency and will reduce stresses related to reliance on dominant industries such as the Department of Defense and retiree spending. El Paso County communities should aim for a balance of business sectors, including military, technology, tourism, service, manufacturing, and agriculture. An increasingly diversified economy, including enhanced tourism opportunities, will reduce the impacts of stresses such as military base closures or cut backs, large-scale military deployment, aging population, and stagnant job growth.

E-3: Work to reduce impacts from stresses on tourism. Non-local events, such as floods and fires elsewhere in Colorado or events that cause the military installations and U.S. Air Force Academy to close to outside visitors, can have substantial effects on tourism in El Paso County. Developing proactive strategies to address such events would benefit all aspects of the tourism economy.

E-4: Maintain farming and the land on which to do it. Agriculture is a small portion of the local economy in El Paso County, but a section of the economy is needed for food security, natural and water resource management, and cultural preservation. Agriculture includes ranches, large and small farm lands, and urban farming, such as community gardens and rooftop cultivation. Maintaining farming can include reducing risk associated with the profession through the control of taxes, reducing urban sprawl, promoting education on farming options, and communicating the implications of drought and uncertain weather patterns.

Section 4.3.3   Health and Social

Increased resiliency in the El Paso County health and social sector means access to holistic healthcare, including the provision of affordable care, preventive care, and mental health services. Implementing culturally appropriate strategies, increasing knowledge of vulnerable populations, and reducing transportation and accessibility barriers are also important components of a resilient health and social sector.

Issue Statement

There are several underlying stresses within the El Paso County communities that affect the health and social sector. Relevant stresses include the aging population, lack of health professionals in the region, populations that speak other languages or have special needs, growing homelessness, and lack of sufficient mental health services. These stresses can exacerbate issues, such as inadequate funding for health and social services, unemployment, insurance coverage, service barriers, and access to care. Lack of resources and awareness of available resources are also key barriers in the health and social sector. The overall culture of the communities and obstacles to effective communication also contribute to an inadequate "safety net" structure for the population.

Strategies

The strategies identified in this sector seek to address the primary issues and move towards the resiliency vision through increased community inclusivity, collaboration, education, communication, training, incentives, and medical capacity.

HS-1: Increase community inclusivity while supporting development of neighborhoods with clear identities and "values." Inclusive communities with clear identities and access to safe and decent social provisions increase resiliency to adverse situations. Inclusivity increases community capacity that, in turn, enhances neighborhood-level support in the face of an event or disaster.

HS-2: Collaborate with all other sectors. The health and social sector is affected by many of the underlying stresses and issues in the community, such as homelessness and unemployment. Creating links between health and social providers and the other five sectors will increase communication, break down barriers, and mitigate issues, while achieving outcomes and fostering

ongoing collaboration. The health and social sector, along with its fundamental importance, has the potential to inform the work of other sectors.

HS-3: Foster education and communication, particularly with the emergency response community. Education and communication between the public and response partners is needed to increase awareness of available resources and help identify gaps in health and social services. Government or vocational education could help fill this communication gap.

HS-4: Support training around mental health services across all public and private sectors. A broader, more comprehensive education approach across all public and private sectors around community mental health issues is needed. Sustain and promote Crisis Intervention Training for law enforcement focusing on mental health issues.

HS-5: Create incentives for healthy living. Promotion of healthy lifestyles is an important part of preventive care. There is strong motivation for employers to encourage a healthy workforce, such as increased productivity and less sick time. Therefore, employers are a key enabler and avenue for this strategy through health care plan options, education, childcare provisions, and other incentives.

HS-6: Increase core medical capacity. Create a more robust medical infrastructure to increase health and social resiliency. Increase the number of and access to doctors, hospitals, acute care options, and training centers, particularly in the southern part of the county.

Section 4.3.4   Housing

Increased resiliency in the El Paso County housing sector means that housing is available near jobs, accessible to all economic levels, and serves a diverse population. Housing should also meet the needs of an aging population and other vulnerable populations and be located in proximity to services. Affordable housing availability throughout the county, building codes in line with resiliency principles, taking natural hazards into account in development reviews, and a balance of rental and owned housing are also important components of a resilient housing sector.

Issue Statement

The housing market in the Pikes Peak Region has historically experienced boom and bust cycles. Large-scale troop deployments drastically affect housing availability in the area. The lack of affordable housing is cited as a stress in El Paso County and shocks, such as floods or fire, can also directly affect housing. Increased development, including housing, along the Wildland-Urban Interface is a serious stress within the county and greatly increases risks associated with fires and flooding. The large segment of aging residents requires different housing needs, with an emphasis on single-story construction, whereas houses constructed in the last 20 years are often multiple stories. The approach to housing at the county level is also subject to the changing priorities of federal grants.

Strategies

The strategies identified in this sector seek to address the primary issues and move towards the resiliency vision through interventions at the planning and development phases, revisions to code regulations, promotion of affordable housing, and development of adaptive and flexible housing strategies.

H-1: Update master plans to match changing demographics. Meet the needs of aging and vulnerable populations through master plan updates and promote the co-location of housing and services. Take into consideration the quarter-mile and half-mile radius around housing master plans as key locations for appropriate services.

H-2: Develop resilient housing requirements for developers. Define what resiliency is for housing, including associated metrics, tools, and ideas that developers can implement.

H-3: Evaluate and revise zoning and building codes and the development review to create a foundation for resilient housing. Appropriate zoning and building codes will promote resiliency through establishing health, safety, and welfare benchmarks. Natural hazards should be accounted for in the development review process to reduce conflicts, such as the growing Wildland-Urban Interface.

H-4: Require new development and redevelopment to include an affordable housing component. Establish an affordable housing percentage in new market-rate development and redevelopment projects. Consider various incentives, such as density bonuses for development projects in key locations, in exchange for increased affordable housing provisions.

H-5: Plan for changing conditions—build in flexibility in housing options and develop adaptive strategies for housing needs. Planning for a range of housing options, allowing demographic

forecasts to inform decision making, and developing adaptive management strategies for planning and regulating housing will buffer the housing sector from the severe effects of shocks and stresses. Plans for various housing options and related strategies should remain flexible so they can be easily altered when conditions change.

Section 4.3.5   Infrastructure

Increased resiliency in the El Paso County infrastructure sector means that infrastructure remains in operation following a disaster, is strategically located and dispersed where needed to incorporate redundancy, has sufficient capacity to meet peak demands, and is closely monitored. State and regional funding sources should be taken into consideration in the development of local infrastructure policy, and infrastructure owners should promote a culture of awareness of vulnerability to system stresses and define mitigation measures. A comprehensive funding plan, proper prioritization, and an adequate maintenance plan, including preventative maintenance, are also key components of a resilient infrastructure sector. Refining and adjusting mitigation as technologies progress will help infrastructure systems adopt adaptive designs that are "safe-to-fail" and bend in the face of a shock instead of breaking. In the event of a break, systems should be built back better than before.

Issue Statement

The infrastructure sector is often one of the primary sectors directly impacted by shocks such as flooding and other severe weather events. In addition, limited public transportation, transportation system interruptions, and the cost of utility services are all cited as stresses within El Paso County. There are also numerous remote communities (both in the mountains and on the plains) without access to adequate communication infrastructure. Aging infrastructure and the maintenance required for adequate upkeep is a national issue that is also present in the county. There are competing priorities at the municipal and regional levels and competition for funding streams. Undercapitalization of water infrastructure through subsidized water and historic water rights are also issues that impact the future of water infrastructure.

Strategies

The strategies identified in this sector seek to address the primary issues and move towards the resiliency vision through the development of a comprehensive asset management system, strategies that promote infrastructure maintenance and continuity of service, and resiliency education for infrastructure owners.

I-1: Create an inventory of equipment assets, including their condition, maintenance schedule, and what agency to contact for access. Evaluate the existing inventory of infrastructure assets and develop improvements such as a database of equipment available throughout the county, particularly specialized equipment. The inventory will serve as a comprehensive asset management system that will aid in the prioritization process and monitoring programs. The inventory will also foster coordinated usage of resources, inter-department and inter-agency communication about resource utilization, emergency preparedness, and communication with first responders.

I-2: Develop resilient infrastructure that is maintainable (and funded to be maintained), continues to provide services, and can handle shocks and stresses. Developing resilient infrastructure will require a dynamic prioritization process that is flexible and links the current situation with future needs and vision. It is important to be proactive and respond to both current and future infrastructure needs.

I-3: Promote resiliency education for infrastructure owners. Infrastructure owners should build awareness of resiliency principles within their organization that will aid in identifying vulnerabilities to system stresses and defining mitigation measures. This will contribute to infrastructure systems that are more likely to bend in the face of a shock rather than break.

Section 4.3.6 Watersheds and Natural Resources

Increased resiliency in the El Paso County watershed and natural resources sector means that the landscape is returned to its natural hydrologic function and stormwater is managed by green infrastructure and habitat corridors. The natural environment is balanced with the growing pressure from the county population and can withstand external forces. Other important components of a resilient watershed and natural resources sector include adequate and safe water supply, protection from flash flooding, and improvement in forest health. The public and private sectors and the community have shared responsibility for watershed and forest health and preservation of natural resources.

Issue Statement

Watersheds and natural resources are directly intertwined with shocks such as fires, flooding, landslides, variability of precipitation, and increasingly uncertain weather patterns. Numerous stresses greatly increase the vulnerability from these shocks, including the growing Wildland-Urban Interface, building in floodplains, poor forest health (linked to fuel loading for wildfires), need for greater natural resource stewardship, and lack of funding related to natural resource conservation and mitigation measures. Inter-jurisdictional management issues also contribute to a lack of consistent policy, regulation, land use, and approach to invasive species, for example.

Strategies

The strategies identified in this sector seek to address the primary issues and move towards the resiliency vision through creating incentives for smart growth, improving forest health, and developing long-term funding sources.

WN-1: Balance county growth and development with the need to protect and preserve watersheds and natural resources. Create incentives and policies for smart growth. Growth should be designed, for example, to reduce the Wildland-Urban Interface and associated vulnerabilities related to wildfires and floods, integrate green infrastructure, reduce power and water needs, and replicate natural, predevelopment hydrology. Integrate thinking about open space with development and housing planning, and tie back to county branding efforts.

WN-2: Promote healthy ecosystems that deliver the range of services communities use. Foster ecosystem stewardship in a way that supports the economic uses and other services communities ask of those ecosystems. This should include supporting forest and grassland health to mitigate fire risk, minimize flood risk, preserve water quality and quantity, as well as modifying development to minimize impacts to ecosystem functioning.

WN-3: Develop long-term, maintainable funding sources to support forest stewardship, smart growth, and green infrastructure. Public and private sector funding sources are needed for education and projects related to forest stewardship, smart growth, and green infrastructure.

WN-4: Encourage forest restoration and maintenance through the development of local markets and economic incentives for forest thinning by-products. Creating local economic incentives for forest thinning by-products will reduce the potential for fuel loading related to wildfires and promote a sustainable cycle to improve and maintain forest health.

WN-5: Integrate stormwater plans with floodplain management. Assess how policy and local regulations can guide the integration of stormwater management plans with existing floodplain management processes. This will contribute to the successful management of floodplains in the region.

WN-6: Support the sustainable use and preservation of natural systems for future generations through education and outreach. Promote awareness of sustainability and natural system preservation through education programs and outreach efforts.

Section 5
Roadmap to Resiliency

The strategies and projects identified in this Plan are all critical in strengthening resiliency in El Paso County communities. However, not all projects can be implemented simultaneously—some will be easier to implement or provide more immediate benefits, while others may come at a higher cost or have less tangible, longer-term benefits. Therefore, this section of the Plan prioritizes efforts by balancing factors, such as project benefits, costs, effectiveness, and ease of implementation.

In addition, El Paso County cannot "achieve" resiliency by implementing a project or reaching set milestones. Resiliency is something that requires continuous work and adapting processes, plans, and projects as the context changes. The focus should be on improving the qualities that make El Paso County resilient today, as well as addressing the factors that make the community and its members vulnerable to the impacts of shocks and stresses. This Roadmap to Resiliency provides a framework for sustaining progress toward El Paso County's resiliency vision and goals.

Section 5.1 Implementing the Plan Today
Section 5.1.1 Resiliency Projects

El Paso County stakeholders came together in service of their resiliency vision and goals to identify projects that could implement the strategies identified in Section 4.

This discussion proceeded from the basis that projects should foster a cultural shift in decision making, emphasizing benefits across sectors, with special emphasis on the impact on vulnerable populations. Using a cross-sector approach ensures projects have multiple benefits that are distributed throughout the community.

Charrettes #1 and #2 produced project ideas that cut across sectors and jurisdictions, and that are designed to help El Paso County thrive under a variety of conditions. During this iterative process of brainstorming and selection, stakeholders developed 29 project concepts. After taking into consideration the county resiliency goals and strategies, cross-sector benefits, regional coordination, and emphasis on engagement and collaboration, seven projects were retained for action in the near

term. The 22 project ideas that were not selected for further development at this time are listed in Table 5-2 and may be appropriate for consideration at a later date.

Section 5.1.2   Types of Projects

For the purposes of this Plan, projects are grouped into the following three categories.

- **Resilient Community Building**: Resiliency is rooted in the notion that citizens, communities, and the systems that serve them are all connected—connected through social capital and relationships, connected by watersheds and transportation corridors, and, most importantly, connected through shared priorities and needs. This project area, therefore, includes actions to realize and improve these connections, and primarily includes planning, education, and outreach efforts.

- **Risk Management**: Risk management provides foundational information for communities to make informed land use, development, and capital improvement decisions to reduce sensitivity as communities grow. Implementation of resilient strategies and projects depends on the availability of current and comprehensive risk data, analysis, and mapping.

- **Capital Investment**: Investments involve projects that address shocks and stresses through concrete improvements, achieve triple bottom-line returns (economic, social, and environmental returns) and demonstrably enhance regional resilience. They also provide benefits across multiple sectors and geographic regions.

Section 5.1.3   How to Prioritize Projects

Resiliency projects can take many shapes, ranging from relatively low-cost planning and education activities to multi-million dollar infrastructure projects. Nonetheless, the best resiliency projects have some attributes in common. As such, all projects listed in this Plan have been assessed in terms of how well they demonstrate the Resiliency Prioritization Criteria outlined in the Colorado Resiliency Framework. These criteria are described in Figure 5-1.

Co-Benefits:
Provide solutions that address problems across multiple sectors creating maximum benefit.

Cross-sector Strategy: Develop a statewide guide and online resource on how to assess, analyze, and integrate all hazards data into local government land use planning.

Project Example: Develop model codes.

Innovation:
Advance new approaches and techniques that will encourage continual improvement and advancement of best practices serving as models for others in Colorado and beyond.

Cross-sector Strategy: Explore the use of captured biogas produced in the natural wastewater treatment process from wastewater treatment plants as a continual (though limited) and emergency backup energy supply.

Project Example: Conduct research, then design and build a model plant using biogas as an alternative fuel and backup.

High Risk and Vulnerability:
Ensure that strategies directly address the reduction of risk to human well-being, physical infrastructure, and natural systems.

Cross-sector Strategy: Encourage local governments to develop floodplain standards that prohibit future development in flood plains through a public/private partnership between state agencies and associated private or non-profit partners.

Project Example: Create a statewide risk and vulnerability assessment tool.

Adaptive Capacity:
Include flexible and adaptable measures that consider future unknowns of changing climate, economic, and social conditions.

Cross-sector Strategy: Work with local planners, residents, and builders to incorporate water and energy-efficiency measures into existing and new homes.

Project Example: Adopt performance-based energy and water building codes for all new housing, and provide labeling for all existing housing for renters and buyers.

Economic Benefit-Cost:
Make good financial investments that have the potential for economic benefit to the investor and the broader community both through direct and indirect returns.

Cross-sector Strategy: Incorporate risk and resiliency analyses into funding decisions, including state grant programs.

Project Example: Develop resiliency design standards and incentivize their application in projects utilizing public funds.

Harmonize with Existing Activity:
Expand, enhance, or leverage work being done to build on existing efforts.

Cross-sector Strategy: Continue to engage community stakeholders to determine resiliency needs and priorities in watersheds.

Project Example: Expand on the current watershed-wide collaborative focus of 75 watershed groups to include a focus on all hazards.

Social Equity:
Provide solutions that are inclusive with consideration to populations that are often most fragile and vulnerable to sudden impacts due to their continual state of stress.

Cross-sector Strategy: Promote and educate decision makers and program managers about the value of and the opportunities for using the Community Inclusion mapping project.

Project Example: Integrate Community Inclusion map analysis into planning and funding decisions.

Long-Term and Lasting Impact:
Create long-term gains to the community with solutions that are replicable and sustainable, creating benefit for present and future generations.

Cross-sector Strategy: Establish a new resiliency funding bank to support lapses in current funding opportunities.

Project Example: Create the Colorado Community Resiliency Partnership Fund.

Technical Soundness:
Identify solutions that reflect best practices that have been tested and proven to work in similar regional context.

Cross-sector Strategy: Develop guidance and share best practices to help communities plan for the potential impacts of changing risks and hazards and incorporate this information into policies and actions in comprehensive and other plans.

Project Example: Develop resiliency design and policy guides and a case study database.

Figure 5-1: Resiliency Prioritization Criteria – Colorado Resiliency Framework

Section 5.1.4   Priority Projects

El Paso County stakeholders initially proposed six priority projects for further development; the seventh priority project resulted from additional discussions in Charrette #1. Table 5-1 summarizes the associated resiliency sectors, strategies, and responsible stakeholders for each priority project.

Priority Project 1: Flexibility in Budgeting and Spending Processes

Create a multi-stakeholder group to increase accountability and efficiency by analyzing the more than 150 Special Districts and the restrictions placed on government budgeting and spending. Key tasks of the stakeholder group would include:

- Assess the sources, magnitudes, service responsibilities, and accountability of special districts in coordination with the Colorado Special District Association.

- Analyze the findings and study the possibility of creating a dedicated fund for resiliency projects that would be funded from excess tax receipts.

Priority Project 2: Pikes Peak Regional Wildfire Innovation Network

Promote fire-adapted communities and resilient watersheds in the Pikes Peak region through multi-jurisdictional collaboration involving El Paso County, local municipalities, fire districts, forestry organizations, non-profits, the U.S. Forest Service, the Colorado State Forest Service, private industry, and the community. The goal of this initiative is to restore forest health, protect watershed and potable water supplies at a regional level, and reduce the risk and intensity of another catastrophic forest fire. The project would specifically target the recovery and restoration of both the Black Forest and Waldo Canyon burn scars and reduce the fire risk within Wildland-Urban Interface areas in El Paso County. Conducting restoration and reforestation of burn scars will reduce flash flood and debris flow issues currently impacting the Black Forest, Colorado Springs, and other downstream communities. This holistic approach will, in turn, create resiliency in both the environment and the community.

This priority project will also provide a much needed model that can then be replicated in other areas devastated by fire in El Paso County, the state of Colorado, and in the wildfire ravaged western states. Burned forest will be cleared and erosion control measures will be implemented, including the transplanting of live trees from green forest to the burn scar. Fire risks in green forests will be mitigated through methods such as thinning and the establishment of firebreaks. Both black and green trees will be repurposed into lumber and wood products through collaboration with private industry, providing local employment opportunities. An initial treatment area of 1,000 acres in the Black Forest will target a combination of the land with the worst burn scar damage and watershed risk with protection of the unburned forest by strategically creating contiguous areas of mitigated forest, in essence creating fuel breaks to slow fire intensity. This green approach will target 100% utilization of the forest's natural resources and result in short-term flood mitigation and elimination of blight and long-term improved forest and watershed health. The integration of forest recovery with proactive mitigation will leverage existing funding along with homeowner participation and will promote a cultural shift in the community that recognizes shared personal and community responsibility through education and active participation.

Priority Project 3: The Pikes Peak Regional Resiliency Hub

The Pikes Peak Regional Resiliency Hub (RRH) will serve as a clearing-house for resources to educate and engage the community on resiliency and to offer social services and disaster preparedness and/or recovery resources in the Pikes Peak Region (El Paso County). The RRH will provide necessary linkage between stakeholders, individuals, non-profits, government agencies, and other groups by connecting local resources to requested needs (i.e., transportation, health, and education), with special attention given to high-risk and vulnerable populations. The project would serve as the catalyst for a paradigm shift to reduce fragmentation of efforts and promote interaction across jurisdictions and sectors. The RRH will include staff with expertise in the six sectors of the Colorado Resiliency Framework, and will

conduct targeted outreach to residents and community organizations to build local resilience. RRH staff will also help residents to navigate critical resources and social services that help to build resilience. The City of Manitou Springs has committed to serving as the managing entity and fiscal sponsor of this initiative on behalf of the region.

Priority Project 4: Improve Codes and Zoning for Resiliency

This project will seek to improve existing regional building and maintenance codes and zoning to support resiliency and sustainability. Updated codes could minimize the impacts of a disaster, including impacts to human safety and costs to the built environment. Key steps needed to update existing codes include:

- Researching the challenges (e.g., maintenance that affects neighbors, change in weather impacts) and defining what is being addressed in existing codes (e.g., fire prevention, flood prevention, drainage criteria, zoning implications, on-site flood management).

- Conducting hazard mapping for communities to identify landslide-prone areas, floodplains, and areas with potential for sink holes, and areas to encourage infill development to reduce sprawl.

- Developing a process to review new construction and major renovation plans for compliance with updated codes.

- Providing technical assistance for builders, communities, architects, and code enforcement officials so they understand and comply with updated codes, and ensuring public management of the program is adaptive.

- Facilitating adoption of updated codes by local government partners.

Priority Project 5: Healthy and Happy El Paso County

This project will help to develop a comprehensive, integrated, and proactive psychosocial and medical health care system in El Paso County. The project would use outreach and education to enhance and promote wellness programs, use preventative and behavioral healthcare, and would focus on vulnerable populations and those with disparate access to services. Tools for implementing this program include:

- Deploying mobile clinics to offer health screening.

- Creating a "safety net" for mental health crises.

- Building healthcare partnerships that bring together hospitals, businesses, and local government.

Priority Project 6: Regional Stormwater Management

To improve stormwater management throughout El Paso County, this project will establish a regional collaborative group of watershed stakeholders. This collaborative group would assess upstream/ downstream incidents and developmental hazards and facilitate the prioritization of mitigation and restoration projects. Actions to be undertaken for the project include:

- Incorporating the El Paso Regional Watershed Coordinator as the principal organizer for the Watershed Collaborative.

- Identifying quickly executable projects for mitigation and restoration of watersheds.

- Addressing infrastructure and other major concerns through watershed projects.

Priority Project 7: Manitou Springs Municipal Complex

This priority project is a proposal to relocate the Manitou Springs Municipal Complex, a critical government facility in El Paso County, to a safer location that will not be subject to chronic post-wildfire flash flooding. This will enable critical government operations, such as police, fire, and social outreach, to continue during and after future disaster events. The current complex is subject to frequent evacuations due to watershed impacts of the Waldo Canyon Fire. During flash floods and flood warnings, all city operations are forced to evacuate from City Hall. In 2013, severe flooding caused structural damage to the building and cost nearly $223,000 to repair. The consistent threat of flooding also poses the risk of losing vital records, held by the City of Manitou Springs Clerk, Finance, and Police departments. The replacement facility will allow for the expansion of services to vulnerable populations and provide an opportunity for renovation and adaptive re-use of the existing facility that will simultaneously mitigate flood risks and preserve the historic character of the building.

The replacement complex will also be designed with energy efficient measures, including the deployment of a microgrid as provided for in the National Renewable Energy Laboratory (NREL)/State of Colorado partnership. Drawing from past experience in disaster recovery efforts, NREL will provide technical support to the state and Manitou Springs, including project scoping, site layout, contracting and procurement, and evaluation of the microgrid project success. The microgrid sets forth an innovative approach in the deployment of advanced energy infrastructure solutions to reduce everyday energy demands and to provide critical continuity of service during an extended outage. The approach focuses on the utilization of clean energy (solar photovoltaic and battery backup) to power the microgrid. This project builds on success stories following Super Storm Sandy, where microgrids enabled facilities to "island" from the broader grid and maintain operability during grid-wide failure. This project stands apart from past efforts because it seeks to provide the benefit of a microgrid to a community's most vulnerable populations and demonstrates the feasibility, reliability, and benefits of such technology in the context of municipal critical facilities.

Table 5-1: El Paso County Priority Projects

*Note: Coding (i.e. - C1, I3, WN3) refers to the specific resiliency sector strategies addressed via the project. These strategies can be found in *Section 4.3*.

Project	Resiliency Sectors and Strategies Addressed*	Regional Benefits?	Project Description
Flexibility in Budgeting and Spending Processes	All Sectors: C1, WN3	Y	Create a multi-stakeholder group to increase accountability and efficiency by analyzing the more than 150 Special Districts and restrictions on government budgeting and spending.
Pikes Peak Regional Wildfire Innovation Network	Community: C1, C4; Housing: H2, H3; Infrastructure: I3; Watersheds and Natural Resources: WN1, WN2, WN4, WN6	Y	Create fire-adapted communities and resilient watersheds in the Pikes Peak region through multi-jurisdictional organizations.
The Pikes Peak Regional Resiliency Hub	All Sectors: C1, WN3	Y	Create a regional clearinghouse to link needs with resources across jurisdictions and sectors by creating a Regional Resiliency Hub to link individuals, non-profits, and government agencies.
Improve Codes and Zoning for Resiliency	Community: C4, C5; Health and Social: HS2; Housing: H1, H2, H3, H5; Watersheds and Natural Resources: WN1, WN2, WN3	Y	Improve existing regional building and maintenance codes and local zoning to support resiliency and sustainability throughout the region.
Healthy and Happy El Paso County	Community: C1, C4; Health and Social: HS1, HS2, HS4, HS6	Y	Develop a comprehensive, integrated, and proactive psychosocial and medical health care system in El Paso County.
Regional Stormwater Management	Community: C1, C2, C4; Housing: H2, H5 Infrastructure: I1-I3; Watersheds and Natural Resources: WN2, WN5	Y	Improve stormwater management throughout El Paso County, through establishment of a regional collaborative group of watershed stakeholders.
Manitou Springs Municipal Complex	Infrastructure: I2	N	Relocate the main municipal functions (currently located in a floodplain) to provide for continuity of municipal function during floods.

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Section 5.1.5   Roles and Responsibilities

The strategies and projects identified in this Plan require a long-term process and committed people to make them a reality. Forward movement toward El Paso County's resiliency vision requires identifying persons and organizations who champion projects and initiatives and who can devote time and resources and take responsibility for implementing each piece of the Plan.

A **lead stakeholder** is the organization deemed responsible for advancing a strategy or project. In most cases, the lead stakeholder is the local government agency with authority and responsibility over the types of projects, services, and policies implied by the strategy. In certain cases, a private sector or non-profit lead stakeholder has been selected as the lead stakeholder because they are already leading in this area and have the needed contacts and relationships to further the work or have exceptional qualifications and capabilities.

Projects also need **supporting stakeholders** to make them a reality. These are organizations that have demonstrated interest, capabilities, and commitment to a strategy or project, but are not in a position to assume authority or responsibility over its success. These may include local government agencies or special districts that are contributing players within a larger project scope, state or federal agencies that do not have primary jurisdiction in Home Rule areas, and private sector and non-profit organizations who provide ground-up connections and/or critical knowledge, but do not have a mission or mandate to deliver the full project scope.

Table 5-2 identifies possible stakeholders; however, for implementation, stakeholders should identify a lead and ensure that all the relevant stakeholders are also identified. The lead and supporting stakeholders identified in this Plan have made commitments during Plan development. Ensuring continued commitment and action in service of specific objectives and projects may require formal agreements in certain cases.

> ### Example: Building Collaborative Networks – El Paso County Regional Watershed Collaborative
>
> Recently, the Waldo Canyon Recovery Group, which has been coordinating recovery efforts related to the Waldo Canyon Fire, has supported the formation of the El Paso County Regional Watershed Collaborative.
>
> **Mission**: Provide regional collaboration to promote the recovery, restoration, and resilience of watershed ecosystems within El Paso County through the efforts of watershed stakeholders.
>
> **Leadership Representatives** include:
>
> - City of Colorado Springs
> - El Paso County
> - Teller County
> - Colorado Springs Utilities
> - One small community representative (Manitou Springs)
> - One non-government entity (Rocky Mountain Field Institute)
> - Fountain Creek Watershed, Flood Control, and Greenway District
>
> Additional stakeholders include other small communities, non-profits, local, state, and federal agencies, military bases, and private entities. (El Paso County Regional Watershed Collaborative Governance Document, November 2015)

Section 5.1.6   Ongoing State Support for Local Resiliency

Following adoption of the Colorado Resiliency Framework, the State of Colorado has made a long-term commitment to a resilient future. To demonstrate this commitment, Governor Hickenlooper has expanded the mission of the Colorado Recovery Office and renamed it the Colorado Resiliency and Recovery Office (CRRO). In addition, the State has developed and proposed the creation of the Colorado Resiliency Program that will apply a deliberate, systematic and regional approach to address both acute risk from shocks and increased vulnerability from underlying social, economic and

environmental stresses. In addition to addressing known risks, this approach will also provide communities with a process to systemically address the need for adaptive capacity and measures in the face of changing conditions and climate.

The CRRO's commitment to resiliency at the local level has been demonstrated through a number of key areas:

- **Technical Assistance:** CRRO has, and will continue to provide technical support, such as:
  - Resources: Funds and grants, as well as equipment.
  - Insights: Access to CRRO staff, and research.
  - Technology and Data: improved mapping, and risk information technology.

- **Identification of Funding Opportunities:** The CRRO has identified the need for funds that would support ongoing community-based projects and programs that advance the future adaptability and resiliency of communities to sudden shocks and reduce ongoing stresses. Securing funds for local projects will continue to be a priority through the Community Resilience Partnership Fund, which will follow these objectives:
  - Fill critical financing gaps with strategic investments;
  - Be a catalyst for changing existing funding systems to include resiliency;
  - Attract new investors that see the value of investing in resiliency measures;
  - Leverage existing resources to create multiple benefits;
  - Improve the affordability of projects targeted to vulnerable populations; and
  - Provide a stable and sustainable source of funding for resiliency programs and projects.

- **Support for Local Planning Processes:** The CRRO understands that local plans require local knowledge. Therefore, the State will continue to serve in a facilitation role during local resiliency planning, in order to foster ideas that will address unique local challenges.

- **Project Prioritization:** Through the pilot local planning processes (including El Paso County), over 100 resiliency project ideas were identified for inclusion in long-term local resiliency frameworks. Sectors served as the organizing element in the Framework strategy development and are also being applied to the local resiliency strategy and Plan development process to ensure all aspects of a resilient community are engaged and included.

- **Project Implementation:** While local knowledge may foster better location-specific plans and projects, local entities may lack the resources to implement such plans and projects. CRRO will continue to provide support for implementing projects, and will seek additional funding to enhance such projects.

Section 5.2   Sustaining Progress toward Resiliency

All of the locally identified projects are promising ideas—ideas that cut across the normal lines of action. The projects need to be fleshed out by the coalition of lead and supporting stakeholders, combined with ongoing actions and plans that support them, and funded by the necessary resources to make them viable. This is long-term work, and cannot be achieved during the short duration of this resiliency planning process. Sustaining progress toward resiliency will entail a series of long-term efforts centered on leadership and collaboration, capacity building, and community engagement. This section provides an outline, based on stakeholder discussions at Charrette #2, for making the El Paso County vision, goals, and strategies a reality.

Section 5.2.1   Leadership and Collaboration

When considering leadership and collaboration, stakeholders explored how existing organizations can be leveraged to support ongoing resiliency actions in the community and what new approaches to coordination and governance may be needed. Stakeholders determined that a variety of organizations of different types and with different purposes are needed to sustain ongoing resiliency actions. For example, government emergency operations are needed to respond to a disaster, and non-profit entities are needed to address unmet needs and fundraising.

To move the Plan forward, The El Paso County Regional Watershed Collaborative will take the lead in institutionalizing the Plan. A list of initial actions is provided below:

Who will take the lead?

- Governmental regulatory bodies
- Faith-Based Organizations
- Pikes Peak Regional Council of Governments
- RRH Staff
- El Paso Watershed Collaborative
- Sector Collaboratives

- The Plan will be assigned to a subcommittee of the El Paso County Regional Watershed Collaborative. Each of the local emergency management agencies will participate, as well as other stakeholders who are interested in working on the process.

- The subcommittee will define a specific charter for institutionalizing the Plan. The charter and subsequent transfer plan should include a systematic approach to identifying other groups for participation.

- The subcommittee will then create a transfer plan, with timelines for transfer to the RRH or other appropriate structure within one year.

- The subcommittee will present a resolution to the County Commissioners after three to four months to adopt or endorse the Plan without financial requirements.

- The RRH will have oversight from the state and CRRO could provide support and facilitation assistance.

Governmental regulatory bodies with fiscal, legal, and policy authority need to be involved in ongoing coordination and governance, but Voluntary Organizations Active in Disaster (VOADs), faith-based organizations, and Pikes Peak Regional Council of Governments should all be key players.

Section 5.2.2 Capacity Building and Programmatic Opportunities

In considering capacity and programmatic opportunities, stakeholders identified actions the community can take now to enhance resiliency, considered potential funding avenues, and identified leadership roles. When identifying immediate action items, the theme of integrating land use processes with risk reduction strategies and the importance of education became apparent. Immediate actions the community can take now to enhance resiliency include:

> **Who will take the lead capacity building?**
>
> - Local Governments
> - Non-Profits
> - RRH Staff
> - El Paso Watershed Collaborative
> - Sector Collaboratives

- Collect and prepare better information, such as mapping vulnerabilities, to inform collaborative regional planning.

- Integrate land use processes with risk reduction strategies focused on fires and floods. Examples include the acquisition of high-risk properties through the use of easements and establishment of Wildland-Urban Interface ordinances.

- Implement public education to stress that everyone has a role to play to reduce risk and maintain a healthy and safe community.

- Ensure that strong land use and hazard risk reduction plans, regulations, and enforcement are implemented.

- Implement volunteer and non-profit capacity building to mitigate hazards.

El Paso County can explore several funding avenues to finance resiliency actions, including creative funding opportunities such as crowd-source funding, grants, mitigation fees or fines, stormwater fees, and revenue generation opportunities. In addition, communities can explore ways to mitigate the ratchet-down effect of recessions on tax dollar collection and spending.

Key players in capacity building include the El Paso Watershed Collaborative and future similar collaboratives from each sector, local governments, non-profits, and the coordinating staff at the RRH.

Section 5.2.3 Ongoing Community Involvement

In considering ongoing community engagement, stakeholders contemplated how ongoing public outreach and education will be used to empower the community to move toward resiliency, identified strategies to support vulnerable populations, and identified associated leadership roles. A wide array of communication methods should be employed in ongoing public outreach and education surrounding resiliency. The following are key themes expressed in the consideration of how public outreach and education will be used to empower the community around resiliency actions:

> **Who will take the lead community involvement?**
>
> - Resilience Champions (retired community members)
> - Recovery Officers
> - South-Central Region VOAD
> - CRRO
> - RRH Staff

- Consistent, clear messaging is critical.

- Public information offices, VOAD, and the Crisis Communications Center could be tapped to communicate information.

- Social media, schools, colleges, and universities could be used to reach younger population groups.

- Leverage existing outreach efforts in each sector (e.g., fire department outreach to communities and elementary schools, health fairs, economic outreach to high school students).

- Creative messaging techniques could be used to reach hard-to-engage populations, such as young adults and the elderly. Examples include resiliency "open mic night" at breweries and resiliency videos for casino buses.

- Explore Crisis Communications Center communication and messaging options.

- The state could support county resiliency by providing consistent messaging and communication materials for use across Colorado.

Several strategies to support vulnerable populations in El Paso County were identified through stakeholder dialogue. Again, a wide array of stakeholder engagement strategies is needed to effectively communicate resiliency information. Strategies include:

- Planning events and messaging at the locations where vulnerable populations are located (e.g., senior centers, homeowners' association meetings, town hall meetings, and vulnerable population meetings).

- Expanding existing Community Emergency Response Teams (CERT) Training in terms of training content and access/availability. Expanding existing programs beyond general Federal Emergency Management Agency (FEMA) information, advanced first aid, and other similar programs to address resiliency. Training additional CERT trainers and create a traveling training circuit (e.g., to PTA/PTO meetings, church groups, Black Forest).

- Using the San Francisco Interfaith Council as a model to come together as a community around common issues and focusing on a problem.

- Providing people with volunteer opportunities by linking population sectors with groups.

- Working to enlist and engage churches and faith-based organizations around resiliency.

Key players in ongoing community involvement include retired firefighters, police officers, and military personnel that can serve as resiliency champions within the communities, recovery officers from each jurisdiction, the South-Central VOAD, CRRO, and the coordinating staff at the RRH.

Section 5.3   Maintaining and Updating the Plan

Section 5.3.1   Plan Approval

This Plan represents a vision and strategy for community resiliency that is the result of stakeholders from across the El Paso County community coming together. The strategy presented herein is not intended as a "one size fits all" approach, but as a framework within which interested communities and stakeholder group can craft a tailored approach drawing on a shared vision and goals.

As such, all interested communities, agencies, and organizations in El Paso County are encouraged to formally approve, adopt, or otherwise publicly resolve to support the Plan to signal the community's commitment to thinking about these issues in a new way.

Section 5.3.2   Regular Review and Maintenance

While the notion of resiliency is unlikely to change, community goals may shift with time, and the strategy proposed in this Plan is not intended to be static. The community's understanding of what it means to be resilient will grow as shocks and stresses are experienced, lessons are learned, new science and technologies emerge, and community connectivity increases.

Therefore, the El Paso County Local Resiliency Steering Committee should convene on an annual basis to review the Plan and make updates to reflect the following:

- How have existing conditions in El Paso County changed and how have the changes enhanced or reduced our resiliency?

- Are the goals and strategies presented in the Plan still reflective of our shared vision?

- What is the status of projects discussed in the Plan? What new ideas or activities should be included?

Resources for gathering information and data on resiliency are provided in Appendix E.

Section 5.3.3   Developing an Annual Operating Plan

The actions and projects identified in this Plan are a reflection of the planning process and current thinking on resiliency among stakeholders in El Paso County. They are not intended as a list of projects to be set in stone, but as an example of the types of forward thinking ideas communities may choose to implement to enhance resiliency. To that end, the Steering Committee and organizations seeking to implement this Plan are encouraged to develop an Annual Operating Plan that identifies specific actions to be achieved over the next year. The Annual Operating Plan should describe the scope of these actions by providing information on:

- Related goals and strategies from the El Paso County Resiliency Plan;

- Desired outcomes;

- Challenges;

- Lead and supporting stakeholders;

- Priority level; and

- Milestones and timeline.

A template Annual Operating Plan matrix is provided in Appendix C.

Table 5-2: Potential Future Resiliency Projects

Project	Resiliency Sector Addressed	Regional Benefits?	Project Description
Resilient Community Building			
Centers of Resilience	Community: C1, C4; Health and Social: HS2, HS3	N	Enhance existing centers of resilience such as those at the U.S. Air Force Academy and Fort Carson, and create new ones, as needed, which can maintain lifeline functions during disasters. Vet plan with appropriate installation commanders.
Community Emergency Response Teams (CERT)	Community: C1, C4; Health and Social: HS1, HS2, HS3, HS6	N	Promote community preparedness and self-help capacity by encouraging more CERT teams in colleges, faith-based organizations, and fire districts. County Emergency Operations Center (EOC) and City EOC are potential project owners.
Business Development	Economic: E1, E2	Y	Implement the Operation 6035 plan addressing business retention and development in sectors such as cleantech, medical, and manufacturing. Develop training and foster an entrepreneurial environment within small and mid-sized businesses.
Resilience Regional Food Systems	Community: C1, C4; Economic: E4; Health and Social: HS1, HS2, HS5	Y	Improve access, availability, and resilience of the food system by working with the Green Cities Coalition Food Group, Food Policy Committee, Farmers Markets, agricultural cooperatives, and urban gardens. South-Central Region VOAD is a potential project owner.
Regional Resilience Network	Community: C1, C4	Y	Create a resiliency and preparedness working group to meet monthly or quarterly to convene multi-jurisdictional partners to plan and adapt projects and identify funding.
Resiliency Education	Community: C1, C4; Health and Social: HS1-HS3	Y	Foster resiliency education through engagement with faith-based groups and family organizations. Leverage the strong history of coordination between the military emergency preparedness entities and the cities and county to further foster knowledge and awareness among the military and civilian populations.
Inclusive Housing	Housing: H1, H4; Community: C1, C3, C4, C5; Health and Social: HS2	Y	Increase local government involvement around affordable housing funding and decisions. Include housing that addresses mental health needs. Create mechanisms for post-purchase support and education.

Table 5-2: Potential Future Resiliency Projects

Project	Resiliency Sector Addressed	Regional Benefits?	Project Description
Risk Management			
Infrastructure Mapping	Infrastructure: I1, I3	Y	Create a secure, but usable, inventory of all infrastructure assets across the county, including information on who owns them, and who to call during a disruption for emergency responders and resilience planners.
Roles and Responsibilities	Community: C1, C4, C5	Y	Create an education effort to clearly define the roles of government and the responsibilities of residents during an emergency.
Capital Investment			
Living with Water - Fountain Creek Greenway	Community: C2, C5; Watersheds and Natural Resources: WN5, WN6	Y	Develop Fountain Creek as a water amenity throughout the region, removing retrofitting and redeveloping properties in high-hazard areas. Fountain Creek Watershed, Flood Control, and Greenway District is a potential project owner.
Highway 24 Flood Watch and Mitigation	Infrastructure: I2	Y	Mitigate for flooding and maintain U.S. 24 west through Upper Fern Gulch, Waldo Canyon, Williams Canyon, and Wellington Gulch. Colorado Department of Transportation is a potential project owner.
Aging Infrastructure	Infrastructure: I1, I2	N	Repair aging and undersized infrastructure throughout the region. Plan for additional full-time employees for infrastructure maintenance.
Sediment Handling and Material Recycling	Infrastructure: I1, I2; Watersheds and Natural Resources: WN3, WN5, WN6	N	Fund a regional program to remove sediment from stormwater systems and recycle materials for use in mitigation and road repairs.

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Appendix A
Local Steering Committee and Planning Team

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[INSERT LIST OF STEERING COMMITTEE MEMBERS/ORGANIZATIONS HERE]

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Appendix B
Plan Process Materials

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El Paso County Charrette #1 Summary

August 31-September 1, 2015

Colorado Springs, CO

Introduction

On August 31 – September 1, 2015, a wide set of stakeholders from El Paso County began a resiliency planning process. Forty-five representatives of local, state, and federal government, military, public utilities, and non-profit organizations met for two days to create a Local Resiliency Plan for El Paso County.

The County has been hit with several major natural disasters in recent years, including fires in Waldo Canyon and the Black Forest and widespread flooding along the Front Range and flash floods in Manitou Springs. The majority of charrette participants have spent significant time and resources in recovery planning efforts on the heels of diverse natural hazard events, collaborating on long-range policy planning efforts and implementing local preventative improvements. The charrette agenda was developed to:

- leverage work generated to-date by local agencies, entities, municipalities, non-profits, and El Paso County,
- provide opportunities for the sharing of information, and
- identify goals, strategies and projects to be included in the El Paso County Local Resiliency Plan.

Day #1 focused on visioning, goal setting, and sector strategies. Day #2 allowed participants to identify specific projects necessary to implement the strategies for each sector.

This resiliency planning process is being piloted in three counties – Boulder, El Paso, and Larimer – and will develop lessons learned for helping other counties around the state to build their resiliency.

Overall Charrette Objectives

Objectives of the charrette included:

- **Objective 1:** Provide participants with an overview of the planning process and build awareness around local resiliency planning efforts and how they fit together.
- **Objective 2:** Identify high level potential shocks and stresses in the County.
- **Objective 3:** Establish plan vision and goals, and identify strategies for increased resiliency based on the sectors presented in the Colorado Resiliency Framework.
- **Objective 4:** Identify, summarize, and prioritize projects for inclusion in the resiliency plan.

Charrette Format

The Charrette was designed to develop a County Resiliency Plan based on the perspectives of a wide variety of stakeholders. The format combined prepared presentations, guided discussion, small group work, and consensus building discussions.

Participation

Forty-five representatives of local, state, and federal government, military, public utilities, and non-profit organizations participated in the meeting.

Existing Plans

The Charrette was designed to build on the existing plans and planning processes in the County, and not to replace them. Participants reported on the major plans so everyone was aware of what had gone on before and what is in process.

These plans included:

- City of Colorado Springs: Emergency Operations Plan
- City of Colorado Springs: Pre-Disaster Mitigation Plan
- City of Colorado Springs: Parks Master Plan
- City of Colorado Springs: City Master Plan
- City of Manitou Springs: Community Master Plan (CMP)/Hazard Mitigation Plan (HMP)
- Fountain Creek Restoration Master plans
- Pikes Peak Regional Sustainability Plan (Looking to our Future 2030)
- Water Quality plans
- 2040 Regional Transportation Plan (includes non-motorized and transit)

Participants recognized that there are other important plans as well, but that these were the most relevant for these discussions.

Results

The workshop produced an overview of shocks and stresses that affect county vulnerabilities, a resiliency vision statement, resiliency goals, and resiliency strategies for the six resiliency sectors.

Resiliency to What?

One of the first steps in the workshop consisted of analyzing the shocks and stresses that contribute to or exacerbate vulnerabilities in El Paso County. Participants identified the most important shocks and stresses, categorizing them by frequency and potential consequences.

Shocks include natural events such as wildfires, floods, and winter storms; and man-made events such as industrial accidents, public health crises, and terrorism. When most people think of hazards, they have shocks in mind.

Stresses are underlying **economic**, **social**, and **environmental** attributes that undermine an individual, community, or asset's ability to respond to or recover from a shock. Simultaneously, stresses may contribute to or cause recurring negative outcomes.

Resiliency can be enhanced by reducing vulnerability to acute **shocks** and chronic **stresses.**

The shocks and stresses identified by participants are summarized in the following chart.
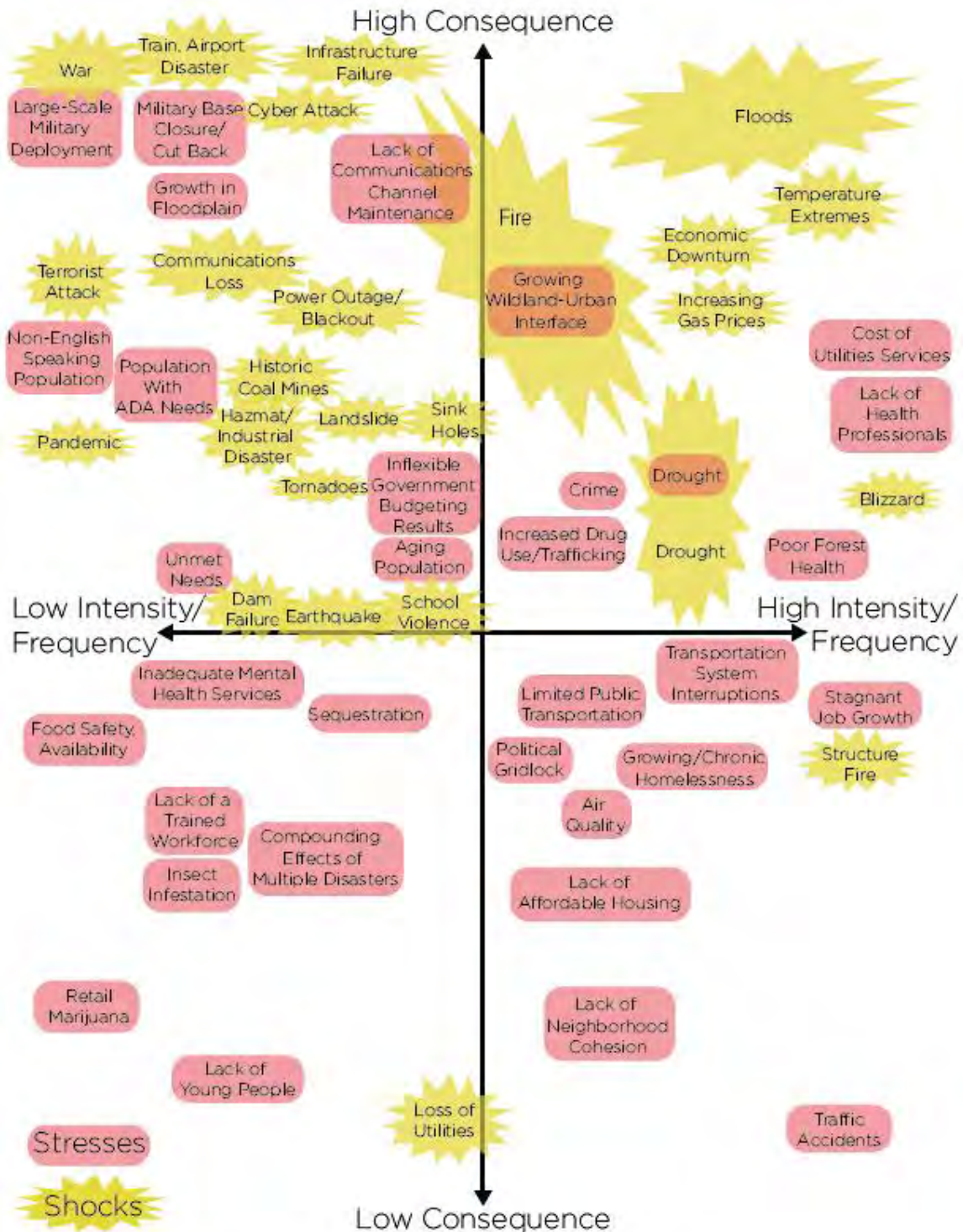
Community Vision and Goals

Participants worked in groups to develop a vision statement, resiliency goals, and high level strategies for each sector. Participants broke into groups that cut across sectors and jurisdictions and discussed the following questions:

1. What should resilient El Paso County communities look like 30 years from now? How will they function?
2. How does this differ from what El Paso County communities look like and how they function today?

Participants wrote down this information and reported back to the whole group. The facilitators then consolidated this thinking into an overall set for the workshop.

Vision

A forward thinking resilient Pikes Peak region with a healthy, diverse, and sustainable economy that identifies values and respects the environment, natural resources and economy by collaborating to address common needs and shared responsibilities.

Goals:

- Increase community buy-in for disaster mitigation
- Foster a paradigm shift toward comprehensive planning and implementation with sustainable funding and stakeholder engagement
- Create cultural awareness of the need for personal connections in communities and between communities
- Create long-standing inter-agency collaborative agreements
- Brand the region in a way that brings people together and creates buy-in

Strategies

Participants then moved on to developing strategies for resiliency by sector. The six sectors are:

To develop these strategies, participants divided up in to sector groups and discussed the following questions:

1. What does resiliency mean for your sector? What does this look like?
2. What are the shocks and stresses most often associated with this sector?
3. Identify potential strategies to implement resiliency in this sector.

Key strategies developed by charrette participants included:

Community
1. Build relationships around regional recovery groups for cooperation/education
2. Facilitate responsible water use/education
3. Foster vibrant arts/culture/recreation, with opportunities for participation
4. Develop an educated, responsible citizenry that knows how/why to keep themselves and their neighbors safe and strong

Economic
1. Maintain farming and the land on which to do it
2. Maintain existing business, recognizing that governing bodies (e.g. U.S. Olympic Committee, faith-based organizations) are important to the local economy
3. Encourage small and mid-sized businesses, particularly start-ups, to encourage business and employment opportunities for (especially) younger people
4. Encourage business diversification

Health and Social
1. Enhance authority for regulation and enforcement (e.g. around housing)
2. Collaborate with all other sectors
3. Support education and communication, particularly w/emergency response community
4. Provide more support for training
5. Create incentives for employers to help employees stay healthy
6. Create strong links to all other sectors

Housing
1. Update master plans to match changing demographics
2. Develop resilient housing strategies for developers
3. Revise zoning and building codes and the development review to create a foundation for resilient housing
4. Require new development to require affordable housing component
5. Develop adaptive strategies for housing because it is complex and buffeted by many different forces (economic, social, etc.)
6. Plan for changing conditions; build in flexibility in housing options and strategy

Infrastructure
1. Create an inventory of all assets, including their condition and maintenance schedule, in a common GIS database with proper security.
2. Develop resilient infrastructure that is maintainable (and funded to be maintained), continues to provide services, and can handle shocks and stresses

Watersheds and Natural Resources
1. Create incentives for smart growth
2. Promote healthy forest ecosystems that deliver the range of services communities require
3. Develop long-term, smart (maintainable) funding sources

4. Develop local markets for forest thinning by-products

Projects

The charrette also produced project ideas that cut across sectors and jurisdictions, designed to help El Paso County thrive under a variety of conditions. These project ideas will be explored over the next month, and will be considered in the El Paso Resiliency Plan to be developed over the next three months.

Resiliency thinking calls for a different emphasis in project selection criteria than we have used traditionally. The state framework cites the following criteria as the most important:

- Co-Benefits
- High Risk and Vulnerability
- Economic Benefit-Cost
- Social Equity
- Technical Soundness
- Innovation
- Adaptive Capacity
- Harmonize with Existing Activity
- Long-Term and Lasting Impact
- Regional Benefits

Projects should foster a cultural shift in decision-making, emphasizing multiple benefits across sectors, with special emphasis on the impact on vulnerable populations.

Through an iterative process of brainstorming and selection, the charrette resulted in identification of the following projects for further consideration:

- **Improve Codes and Zoning for Resilience** – Improve building and maintenance codes and zoning to support resilience and sustainability, including assessment of approaches to fire and flood prevention, drainage criteria, and hazard mapping, and technical assistance for builders, communities, architects and code enforcement officials.
- **Community Engagement/Regional Resilience Facilitation** – Create a regional clearinghouse to link needs with resources across jurisdictions and sectors by creating a Regional Resiliency Facilitator and linking individuals, non-profits, and government agencies.
- **El Paso County Healthy Forest Mitigation and Watershed Protection** – Create fire adapted communities and resilient watersheds in the Pikes Peak region through multi-jurisdictional organizations to promote a cultural shift that recognizes personal and community responsibility.

- **Healthy and Happy El Paso County** – Support a proactive psychosocial and medical health care system based on outreach and education to enhance and promote wellness programs, preventative and behavioral health with a focus on vulnerable populations and those with disparate access to services.
- **Flexibility in Budgeting and Spending Processes** – Create a multi-stakeholder group to increase accountability and efficiency by analyzing the more than 150 Special Districts and restrictions on government budgeting and spending.
- **Stormwater Management** – Establish a regional collaborative group of watershed stakeholders that assess upstream/downstream incident and developmental hazards and facilitates the prioritization of mitigation and restoration projects.

Interactive Exhibit

In addition to the discussions and exercises, participants had a chance to express their ideas in two other non-verbal formats. One was a map of El Paso County, where participants were asked to note vulnerabilities, lessons from past experience, opportunities for building resilience, or any other important thoughts. The second was an open sheet for writing down thoughts on this statement: **"What are your greatest ambitions for El Paso County for resilience?"**
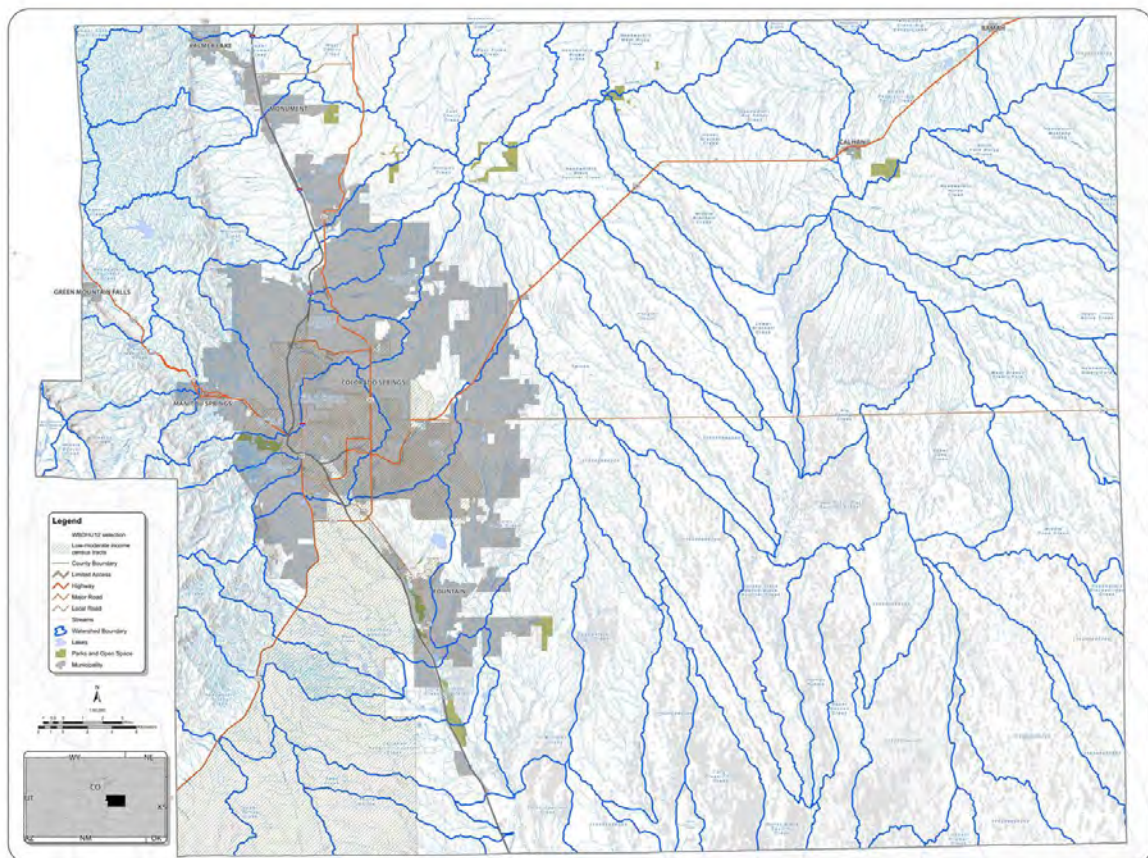
The following are the results.

El Paso County Map Contributions

- Outreach to homeless living in the woods – vulnerable population and impact on watershed and Forest Service
- Dams and impoundments are adequately monitored to ensure safety
- Flood mitigation FCWFCGD on Cascade Creek/Fountain Creek in the foothills
- Fire mitigation in foothills west of Colorado Springs
- Poor forest health contributed to the Waldo Canyon fire
- Manitou Springs city building is in the floodplain
- Fire mitigation in foothills west of Monument
- Mill tailings are adequately contained and their impacts on property values and the community are known and understood
- Flood mitigation near Cheyenne Creek west of Colorado Springs
- "Global community collaboration" communications, gaps, needs
- Sequestration
- Global conflict, migration, etc.
- Downsizing/upsizing cycles
- Alignment of policies and goals
- Flooding
- Agricultural land loss
- Local employment
- Transportation
- Flood control FCWFCGD south of Fountain
- Black Forest fire recovery and mitigation
- Stormwater infrastructure repairs in Colorado Springs
- Transportation needs – busses, etc. east of Powers in Colorado Springs, elderly services also
- "Advertise" flood controls already in place
- Plan for infrastructure as more people move east

What are your greatest ambitions for El Paso County for resilience?

- Establish a Regional Facilitator to promote coordination
- Create an Interagency Oversight Committee
- Recovery of the Black Forest and protection of watershed
- Develop a Mental Health safety net for El Paso County
- Foster activities for disabled young adults
- Build connectivity through streams and parks – beautiful walking/biking paths, safe, connected to others
- Project planning encompassing many needs and done as "one"

Process Overview

At the end of each day, participants were asked to share their insights regarding the local resiliency planning process, as well as their impressions regarding the charrette format. The following are representative comments as expressed by participants.

Format: Good. Good mix of team projects and individual inputs. Breakout sessions worked well. It was a good format in that it forced the group to prioritize and condense ideas. Really enjoyed learning about other agencies' perspective. I have attended all three planning sessions and I like the fact that the format has changed a bit each time. Excellent facilitators -- worked best when they got us to be specific.

Content: Good. Shock/stresses framework very helpful. Very large scope but on track. The conversations and facilitation were targeted and effective. Loved the group think! Moving and changing up teams builds relationships. Great ideas were produced as a result of the resiliency plan premise. Content adequate -- however "politics" is one institution that could be added to the sector model. Content almost a little too guided. Didn't allow for other areas to be explored. Content seemed to be thoroughly planned. Good topic categories that follow grants and efforts.

Gaps/Topics Missing: Could have had better representation from economics and housing groups; left those areas weak in discussion. At times, our discussion seemed very general. Perhaps some experts in subject matter would be helpful, although this forced us to generate solutions. Previous visioning exercises – would serve as a good starting point for the conversation on vision and goals. The planning efforts were a good start, but non-governmental entities had conducted some previous visioning (Gazette, United Way, etc.). Might be nice to describe characteristics of resilience (redundancy, adaptability, etc.) in the beginning. Opportunity to identify synergies between sectors of government. Maybe more focus on areas not really touched upon – Arts, Parks, Education. More diversity in the attendees -- the short timeline restricted the attendance. Deal with consequences of disaster -- role of private organizations. Who in the room can a resource for me, for you! Focus on human resource elements; HR and university personnel could help with this aspect which affects the economic sector. Benefit/Cost analysis -- "Prototypes" would be or might be helpful in determining long range project costs. Did not identify the overarching threats that drive the need for resiliency. Best practices. May need a third day with subject matter experts, in various areas. I felt group focus was on recent disasters vs. holistic long term resilience. Should include CDOT throughout.

Suggestions: The afternoon sessions needed more time to vet and clarify positions. Info to members earlier. Would have been helpful to have some background information on each other's other planning efforts that have taken place – e.g. links to existing plans, background info etc. Smaller group. Foreshadow the next topic to be discussed after break before breaking so people feel compelled to stick around.

Change name from "charrette" -- these initial meeting are not final, misuse of term. Handouts of all slides. Include straw man thoughts for recent natural disasters/or probable events (landslides, snowstorms, etc.) to assist those who have not experience them, thus not on their radar. Better information on separation of tasks (competition vs. long term plan) would've been helpful in the process. Also, a heads up from the state on the competition could've helped us come more prepared to provide executable projects for submittal. I would like an extra half-day in order to narrow projects to get to actions/tasks. The afternoon sessions needed more time to vet and clarify positions. Have a way to vet recommended projects. If the topic is already being addressed--like Ft. Creek Watershed District--why prioritize a rather duplicate idea (like Watershed Collaborative). Values statement along with mission, vision, goals. Send slides out after consolidation/slides/notes, etc. Handouts.

Ideas for next time: Take projects and build a "prototype" and sell to the group--establish values and verifications. The planning process seemed aimed primarily at governmental entities, but the social/human component seemed to be missing (e.g. Council of Neighborhoods and Organizations). More discussion on <u>large</u> vision for the region. Provide goals for session and advance work needed well prior to the session to maximize the benefits. A better understanding of the 2 focuses we had for today (resiliency planning and NDRC projects). Seems many stakeholders were not represented so expanding participation for future efforts suggested. I think that the emphasis on resiliency planning, and then emphasis on the HUD competition confused some people...even though you did explain it several times. What is the value there?

Next Steps

Information generated at Charrette #1 will be used to draft the El Paso County Local Resiliency Plan. The initial draft will be available for review and comment prior to Charrette #2, tentatively scheduled for October 13, 2015.

This process builds on the work of a multi-stakeholder effort to construct a Resiliency Framework for the State.

The Framework:

- Establishes a vision and definition of resiliency for the State of Colorado
- Seeks to empower a culture of resiliency in Colorado communities
- Identifies guiding principles
- Outlines specific strategies across sectors that the State commits to implementing.

The process may also contribute to the State's application for a funding opportunity with the US Department of Housing and Urban Development (HUD). This funding opportunity is the National Disaster Resilience Competition (NDRC). Colorado has already passed the first round of the competition, and Phase 2 applications are due October 27th. *This resiliency planning process will contribute to this application. However, the broader objective of this process is to change the way we do business around these issues for the long run. The current HUD funding opportunity is only one part of the larger process.*

Attachments

1   Agenda
2   Sign-In Sheets
3   Vision and Goals Worksheets
4   Resiliency Sector Worksheets
5   Project Identification Worksheets

Attachment 1   Agenda

Day 1 – August 31

Time	Activity
8:30 – 9:00	Sign In
9:00 – 9:30	Introduction and Process Overview
9:30 – 10:00	Shocks, Stresses and Vulnerability
10:00 – 10:30	Current Planning Efforts
10:30 – 10:45	Break
10:45 – 12:15	Vision and Goals Work Session
12:15 – 1:15	Working Lunch
1:15 – 2:45	Resiliency Sectors Break Out Session #1
2:45 – 3:00	Break
3:00 – 3:45	Resiliency Sectors Break Out Session #2
3:45 – 4:30	Break Out Session Report Out
4:30 – 4:45	Project Identification – Stakeholder Input
4:30 – 5:00	Feedback Forms, Next Steps, and Adjourn

Day 2 – September 1

Time	Activity
8:30 – 9:00	Sign In
9:00 – 9:30	Day One Review
9:30 – 10:00	Project Identification 101
10:00 – 12:00	Project Identification and Prioritization
12:00 – 1:00	Lunch
1:00 – 2:00	Co-Benefits and Interconnectedness
2:00 – 3:00	Project peer review
3:00 – 3:30	Feedback Forms, Next Steps, and Adjourn

El Paso County Strategic Resiliency Planning
August 31, 2015

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El Paso County Strategic Resiliency Planning
August 31, 2015

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El Paso County Charrette #2 Summary

October 13, 2015

Colorado Springs, CO

Introduction

On October 13, 2015, stakeholders from El Paso County reconvened to continue the Resiliency Planning Process begun August 31st, 2015. Twenty-seven representatives of local, state, and federal government, military, public utilities, and non-profit organizations met to review and validate Local Resiliency Plan content for El Paso County developed in Charrette #1, to bring forward new ideas for community resiliency, and to build a "Roadmap for Resiliency" that establishes the community's path forward.

The morning activities focused on reviewing and validating shocks and stresses, the county resiliency vision and goals, and the strategies to achieve that vision and goals. In the afternoon, participants focused on the potential roadblocks to and opportunities for building resiliency within the County, focusing on how to address those roadblocks and opportunities, and who needs to be at the table to make that happen.

This Resiliency Process is being piloted in three counties – Boulder, El Paso, and Larimer – and will develop lessons learned for helping other counties around the state to build their resiliency.

Overall Charrette Objectives

Objectives of the charrette included:

- **Objective 1:** Review and validate shocks and stresses, vision, goals and strategies from Charrette #1.
- **Objective 2:** Engage stakeholders in bringing forward new ideas for community resiliency.
- **Objective 3:** Assign ownership to identified resiliency projects.
- **Objective 4:** Build a "Roadmap to Resiliency" that establishes the community's path forward.

Charrette Format

The Charrette was designed to further develop input for the County Resiliency Plan based on the perspectives of a wide variety of stakeholders. The format combined prepared presentations, guided discussion, small group work, and consensus building discussions.

Participation

Twenty-seven representatives of local, state, and federal government, military, public utilities, and non-profit organizations participated in the meeting.

Validation Results

Participants, working in small groups, in plenary, and interacting with materials posted around the room, validated shocks and stresses, vision, goals and strategies.

Shocks and Stresses

In Charrette #1, participants identified a broad range of shocks and stresses affecting the county.

> **Shocks** include natural events such as wildfires, floods, winter storms and human caused events such as industrial accidents, public health crises, and terrorism. When most people think of hazards, they have shocks in mind.

> **Stresses** are underlying **economic**, **social**, and **environmental** attributes that undermine an individual, community, or asset's ability to respond to or recover from a shock. Simultaneously, stresses may contribute to or cause recurring negative outcomes.

The results from this activity were included in the El Paso County Charrette #1 Summary. In Charrette #2, participants, working in small groups, were asked to think about four of highest intensity, highest consequence shocks and stresses identified.

- Shocks included fire, flood, drought and blizzard/extreme cold.
- Stresses included: base closure, inflexible government spending, stagnant job growth, and forest health.

Participants were first asked whether these were the correct shocks and stresses to highlight, and invited to **add one additional shock and stress** if they so chose. All of the small groups independently noted that the shocks were entirely natural hazards and omitted human induced shocks.

Key human induced shocks of concern participants felt should be included were:

- Mass violence incident;
- Cyber attack;
- Loss of a major tourist attraction; and
- CBRNE (Chemical, Biological, Radiological, Nuclear and Explosives) event.

Key stresses participants felt should be highlighted included:

- Aging infrastructure;
- Increasing homelessness; and
- Reductions in tourism.

Participants were then asked to consider **what happens when these shocks and stresses combine**, including who is most impacted and how this then ripples out to the larger community.

- All of the small groups noted that those most impacted are those already at the margins such as the homeless, mentally ill, elderly and children.
- Impacts can be exacerbated by the "Code of the West" culture that keeps people trying to function from isolated, insular positions until too late.
- The results tax and sometimes overwhelm local governments, law enforcement, and safety nets and increase life safety hazards.
- Longer term, the combination of shocks and stresses can have lasting impacts on mental health, access and functional need, lead to loss of services as funds and manpower are directed elsewhere, and exacerbate social vulnerabilities.
- These in turn can impact businesses and service delivery, resulting in on-going economic impacts.

Finally, participants were asked **what existing conditions exacerbate or ameliorate the impacts of combined shocks and stresses**. This activity begins to identify core strengths or gaps in the county around which resilience efforts can be focused. Participants noted both physical system conditions and social systems in their assessment here.

Exacerbates impacts:

- Development, growth, and associated code issues need to be addressed to avoid expansion into higher-risk areas; and
- As infrastructure ages, is increasingly used, and is no longer of sufficient design capacity risk in to existing development increases.

Ameliorates impacts:

- Increased flexibility in government funding, improved public-private partnerships, and increased collaboration and communication between governments;
- Land use planning;
- Public education;
- Further development of public transportation, particularly outside Colorado Springs;
- Increased access to health care;
- Creation of more flexible government spending policies; and
- Greater reliance on inter-governmental relationships.

Validation of Community Vision and Goals

Participants came back together following the small group shock and stress work to collaborate in plenary on revising and validating the vision and goals statements developed in Charrette #1.

Vision

The resiliency vision presented in the Charrette #1 report was:

> *A forward thinking resilient Pikes Peak region with a healthy, diverse, and sustainable economy that identifies values and respects the environment, natural resources and economy by collaborating to address common needs and shared responsibilities.*

Participants quickly noted that though this reflected many elements that were important to them, it didn't focus attention on the most important elements and was confusing with respect to how the economy, natural resources and environment fit within the vision. Working together, the group revised and refined the vision to read as shown below:

> *A forward thinking, resilient Pikes Peak region that focuses on common needs and shared responsibilities to foster a healthy, diverse community and economy, balancing the interdependence of human, built, and natural systems.*

This version clearly identifies that resiliency needs to address common needs, but that those need can only be addressed by people acting at all levels ("shared responsibilities"). By doing so, the county can build and maintain a healthy, diverse

community and economy without sacrificing the natural world or social or physical assets.

Goals:

The goals identified in Charrette #1 to achieve the outlined vision were:

- *Increase community buy-in for disaster mitigation;*
- *Foster a paradigm shift toward comprehensive planning and implementation with sustainable funding and stakeholder engagement;*
- *Create cultural awareness of the need for personal connections in communities and between communities;*
- *Create long-standing inter-agency collaborative agreements; and*
- *Brand the region in a way that brings people together and creates buy-in.*

In Charrette #2, participants revised these to read:

Goal 1: Increase community capacity to reduce impacts from shocks and stresses.

In revising this goal, participants noted that they wanted county resiliency work to be about more than disaster mitigation, they wanted more than just "buy-in", and community needed to have capacity rather than "involvement". Language for Goal 1 was therefore modified to speak to "community capacity" to reduce "impacts from shocks and stresses".

Goal 2: Foster a paradigm shift toward comprehensive, collaborative planning and implementation with sustainable funding and stakeholder engagement.

Participants added the word "collaborative" to this goal, noting that there are already numerous planning processes, but that to build resiliency, these existing processes need to be brought together. Participants noted that the previous *Goal 4: Create long-standing, inter-agency agreements that formalize these collaborative relationships*, is one of the strategies for achieving goal 2.

Goal 3: Create cultural awareness of the need for personal connections in communities and between communities.

No change.

Goal 4

Now a strategy for implementing Goal 2.

Goal 5: Brand the region in a way that brings people together and creates buy-in.

No change.

Goal 6: Support coordinated stewardship and management of natural resources.

Participants added this goal, noting that the vision speaks to the natural world, that environmental preservation for aesthetic, recreational, and risk reduction reasons is important county-wide, and yet none of the goals addressed current needs in the natural stewardship arena.

These revisions will be included in the next draft of the County Resiliency Plan.

Strategies Validation

Participants then moved on to reviewing and refining the strategies for resiliency by sector that were developed in Charrette #1. The six sectors are:

To review these strategies, participants divided up in to groups. Each group had the strategies from two sectors to review. Groups looked at the strategies proposed, made comments and revisions, and suggested related project ideas. Worksheets were then posted on the walls so that participants could review strategies and comments for the other four over lunch and add information as needed.

The following are the revisions made.

Community

Original Strategy	Revised Strategy	Related Project Ideas/Comments
C1. *Build relationships around regional recovery groups for cooperation and education* Build upon the relationships and work done by regional recovery groups and look to expand to other areas to foster citizen and government collaboration. Opportunities for both intra- and inter-jurisdictional collaboration are imperative.	**C1.** No change	This should be targeted at both government and NGO players, and should include plan coordination and outreach. One of the key starting points will be de-confliction of standing groups.
C2. *Facilitate responsible water use and education* Promote opportunities for educating communities on water use, conservation measures, the importance of addressing water limitations, and the intersection of development density and the impacts on water use. Foster public education on the benefits of green infrastructure and low impact development stormwater management to help address the need for additional stormwater controls in the county.	**C2.** *Facilitate responsible water use* Promote community educational opportunities on: • water use, • conservation measures, • the importance of addressing water limitations, and • the benefits of green infrastructure, low impact development and storm water management to help address the need for additional storm water controls in the county.	This should incorporate: • Smart Growth principles and strategies. • Water Management Policy Review at the State level including water types, use, watersheds, storage. The education component should focus on water conservation, water use, and application of land use.

C3. *Foster vibrant arts/ culture/ recreation, with opportunities for participation* Encourage the stewardship of natural resources and beauty through participation in arts, culture, and recreation opportunities. For example, there is great potential related to creating a network of parks and multi-use trails alongside local streams. Utilize outcome-based planning and focus on planning that works across jurisdictional boundaries.	**C3.** No change	None
C4. *Educated, responsible citizenry that know how/why to keep themselves and their neighbors safe and strong.* Foster education, disaster preparedness, cooperation, and encourage personal responsibility to help keep communities be safe and resilient in response to shocks and stresses. There is also a strong history of coordination between the military emergency preparedness entities and the cities and county, which fosters knowledge and awareness among the military and civilian populations. In addition, there is opportunity to foster resiliency education through engagement with	**C4.** *Develop an educated, responsible citizenry that knows how and why to keep themselves and their neighbors safe and strong.* Foster disaster preparedness, cooperation, and personal responsibility among residents to help communities be safe and resilient in response to shocks and stresses.	This should be targeted at individuals. Leverage the strong history of coordination between the military emergency preparedness entities and the cities and county to further foster knowledge and awareness among the military and civilian populations. Foster resiliency education through engagement with faith based groups and family organizations.

faith based groups and family organizations.		
	C5. *Master Planning with a focus on Resiliency* This should include land use, specific guidance or requirements regarding land use in flood plains, building codes, density guidelines or requirements, variances, etc.	

Economic

Original Strategy	Revised Strategy	Related Project Ideas/Comments
E1. *Maintain farming and the land on which to do it.* Agriculture is a small portion of the local economy in El Paso County, but a section of the economy we want to maintain for food security, natural and water resource management, and cultural reasons. Maintaining farming can include reducing risk associated with the profession through the control of taxes, reducing urban sprawl, promote education on farming options, and communicate the implications of drought and uncertain weather patterns.	**E1.** No change	This should include ranching, farming big and small, and rooftop gardens.

E2. *Maintain and enhance existing business, recognizing that non-traditional businesses ((e.g. U.S. Olympic Committee, faith-based organizations) are important to the local economy.* Existing local businesses are vital to the local economy and maintaining relationships between various businesses and governing bodies will help sustain and grow local businesses and contribute to a more resilient economy. The county is also home to headquarters of a number of faith-based organizations and athletic governing bodies that provide a unique flavor to the local economy.	**E2.** *Maintain and enhance existing business and promote small and mid-sized business, particularly start-ups, to further develop business and employment opportunities, especially for younger people.* Existing local businesses are vital to the local economy and maintaining relationships between various businesses and governing bodies will help sustain and grow local businesses and contribute to a more resilient economy. At the same time, El Paso County has experienced difficulty in retaining a younger workforce. Implementing strategies targeted towards the younger workforce will help foster attractive career options and the opportunity for younger populations to settle in local communities.	Support the development of strategies within small and mid-sized businesses to foster training and an entrepreneurial environment.
E3. *Promote small and mid-sized business, particularly start-ups, to further develop business and employment opportunities for (especially) younger people.* El Paso County has experienced difficulty in retaining a younger workforce so there is an opportunity to develop strategies within small and mid-	**E3.** *Combined with E2.*	None

sized businesses to foster training and an entrepreneurial environment. Implementing strategies targeted towards the younger workforce will help foster attractive career options and the opportunity for younger populations to settle in local communities.		
E4. *Encourage and support business diversification.* Business diversification is essential to resiliency and will reduce stresses related to dominant industries such as the Department of Defense and retiree spending. An increasingly diversified economy, including enhanced tourism opportunities, will reduce the impacts of stresses such as military base closures or cut backs, large-scale military deployment, aging population, and stagnant job growth.	**E4.** No change	The county should aim for a balance in business, including military, tech, tourism, service, manufacturing and agriculture.
	E5. *Work to reduce impacts from stresses on tourism* Non-local events, such as floods and fires elsewhere in Colorado or events that cause the federal bases and Air Force Academy to close to outside visitors can have substantial effects on tourism in El Paso County. Developing	

	proactive strategies to address such events would benefit all aspects of the tourism economy.	

Health and Social

Original Strategy	Revised Strategy	Related Project Ideas/Comments
HS1. *More authority for regulation and enforcement (e.g. around housing).* More regulatory authority is needed to ensure safe and decent social provisions such as housing.	**HS1.** *Increase community inclusivity while supporting development of neighborhoods with clear identities and "values".*	The original strategy is too broad and too "regulation and enforcement" focused. Plan for community resiliency against adverse situations. True "community planning" that builds not just houses but inclusive communities.
HS2. *Collaborate with all other sectors.* The health and social sector is affected by many of the underlying stresses in the community and many fundamental issues, such as unemployment or homelessness, hence overlaps with other sectors. Creating links between the various sectors and health and social providers will increase communication, reduce barriers, and map vulnerable populations that can be used by emergency responders. Collaboration between sectors is essential and a	**HS2.** *Collaborate with all other sectors.* The health and social sector is affected by many of the underlying stresses in the community such as unemployment or homelessness. Creating links between health and social providers and the other five sectors will increase communication and reduce barriers.	Cross-sectoral links will help break down barriers and mitigate issues while achieving outcomes and fostering ongoing collaboration. Ensure that emergency responders and vulnerable people keep each other up to date on needs before emergencies Establish a cross-sectoral meeting designed to share information around health and social issues relevant to each of the sectors.

monthly meeting is set as a target.		
HS3. *Education and communication, particularly with the emergency response community.* Education and communication between the public and response partners will increase awareness of available resources and help identify gaps in health and social services. Marketing of 211 is recommended in education and communication efforts. In addition, opening a regional facilitator position will create one point of contact to connect people to resources. The position should strive to go beyond basic cataloguing of organizations and truly facilitate connections for the public and responders.	**HS3.** *Education and communication, particularly with the emergency response community.* Education and communication between the public and response partners is needed to increase awareness of available resources and help identify gaps in health and social services.	If government can't do this, can vocational education cover it? Create a regional facilitator position to serve as one point of contact to connect people to resources. The position should strive to go beyond basic cataloguing of organizations and truly facilitate connections for the public and responders.
HS4. *More support for training around mental health services.* Sustain and promote Crisis Intervention Training for law enforcement focusing on mental health issues. Develop mental health first aid training and initiate the training program at government offices.	**HS4.** *Support for training around mental health services across all public and private sectors.* A broader, more comprehensive education approach across all public and private sectors around community mental health issues is needed.	Develop mental health first aid training and initiate the training program at government offices.
HS5. *Create incentives for employers to help employees stay healthy.*	**HS5.** *Create incentives for healthy living*	Employers are a key enabler and avenue for this strategy, though health care

Promotion of healthy lifestyles is an important part of preventive care. There is strong motivation, such as increased productivity and less sick time, for employers to encourage a healthy workforce.		plans, education, childcare, etc. Develop both private and public sectors incentives to promote healthy living.
	HS6. *Increase core medical capacity* Increase the number of and access to doctors, hospitals, acute care options, and training centers, particularly in the southern part of the County, is needed to increases current health and social resiliency.	Actively recruit medical students to locate in Pikes Peak Region. Actively encourage physicians to accept Medicaid Integrate redundant medical systems. Develop a more robust medical infrastructure.

Housing

Original Strategy	Revised Strategy	Related Project Ideas/Comments
H1. *Update master plans to match changing demographics.* Meet the needs of an aging population and vulnerable populations through master plan updates and promote the co-location of housing and services. Take into consideration the quarter-mile and half-mile radius around housing master plans as key locations for appropriate services.	**H1.** No change	Including housing that addresses mental health needs. Increase local government involvement around affordable housing funding and decisions.

H2. *Develop resilient housing strategies for developers.* Define what resiliency is for housing, including associated metrics, tools and ideas that developers can implement.	**H2.** *Develop resilient housing requirements for developers.* Define what resiliency is for housing, including associated metrics, tools and ideas that developers can implement.	These should be requirements, not just "strategies".
H3. *Evaluate and where feasible, revise zoning and building codes and the development review to create a foundation for resilient housing.* Appropriate zoning and building codes will promote resiliency through establishing health, safety, and welfare benchmarks. Natural hazards should be accounted for in the development review process to reduce conflicts such as the growing urban-wildland interface. Engage the development community in any code update process.	**H3.** *Evaluate and revise zoning and building codes and the development review to create a foundation for resilient housing.* Appropriate zoning and building codes will promote resiliency through establishing health, safety, and welfare benchmarks. Natural hazards should be accounted for in the development review process to reduce conflicts such as the growing urban-wildland interface.	Develop county fire codes. As part of this, address defensible structures for county-wide applicability. Engage the development community in any code update process. Increase water efficiencies.
H4. *Require new development to include an affordable housing component.* Establish an affordable housing percentage for new development and redevelopment projects. Consider various incentives such as density bonuses in key locations in exchange for increased affordable housing provisions.	**H4.** *Require new development and redevelopment to include an affordable housing component.* Establish an affordable housing percentage for new development and redevelopment projects. Consider various incentives such as density bonuses in key locations in exchange for increased affordable housing provisions.	The affordable housing percentage should also apply to "redevelopment". Explore whether the affordable housing requirement should be onsite.

H5. *Develop adaptive strategies for housing because it is complex and buffeted by many different forces (economic, social, etc.).* Adaptive management strategies for planning and regulating housing are needed to reduce vulnerability to shocks and stresses.	**H5.** *Develop adaptive strategies for housing needs.* Adaptive management strategies for planning and regulating housing are needed to reduce vulnerability to shocks and stresses.	The idea behind this is good, but how do we avoid it becoming "big government"?
H6. *Plan for changing conditions; build in flexibility in housing options and strategy.* Planning for a range of housing options and allowing demographic forecasts to inform decision making and strategies will buffer the housing sector from the severe effects of shocks and stresses. However, plans for various housing options and related strategies should remain flexible and easily altered when conditions change. Promote creation of post-purchase housing education to allow owners to react to changing conditions.	**H6.** *Plan for changing conditions; build in flexibility in housing options and strategy* Planning for a range of housing options and allowing demographic forecasts to inform decision making and strategies will buffer the housing sector from the severe effects of shocks and stresses. Plans for various housing options and related strategies should remain flexible and easily altered when conditions change.	Create mechanisms for post-purchase support and education.
	H7. *Balance growth and water availability.* Water is limited in Colorado. The water needed to support new uses — whether achieved via new supply, reclaimed water, or conservation — should be	None

	identified in tandem with growth plans.	
	H8. *Integrate thinking about open space with thinking about development and housing, and tie this thinking back to the goal of county "branding".*	None

Infrastructure

Original Strategy	Revised Strategy	Related Project Ideas/Comments
I1. *Create an inventory of all assets, including their condition and maintenance schedule, in a common GIS database with proper security.* Evaluate the existing inventory of infrastructure assets and develop improvements such as a condition evaluation and maintenance schedule. The inventory will serve as a comprehensive asset management system that will aid in the prioritization process and monitoring programs. The inventory will also help with emergency preparedness and communication with first responders.	**I1.** *Create an inventory of equipment assets, including their condition, maintenance schedule, and what agency to contact for access.* Develop a common equipment/resource database, backed by relationships across jurisdictions. This data will make information about equipment available across the county, particularly specialized equipment, and facilitate coordinated usage of that equipment.	Regarding the original strategy, much of this exists, but is not available to the general public due to security issues. However, what is lacking is a database of equipment available throughout the county, particularly specialized equipment.
I2. *Develop resilient infrastructure that is maintainable (and funded to be maintained), continues to provide services, and can handle shocks and*	**I2.** No change	This strategy calls for long-term planning and proactive policy and action. In particular, we need to be better about linking current and future

stresses. Developing resilient infrastructure will require a dynamic prioritization process that is flexible and takes into account the current situation and future vision.		needs and doing both. Plan for additional full-time employees for infrastructure maintenance.

Watersheds and Natural Resources

Original Strategy	Revised Strategy	Related Project Ideas/Comments
WN1. *Create incentives for smart growth.* Balance county growth and development with the need to protect and preserve watersheds and natural resources. Targeting growth and density in strategic locations while preserving the natural landscape in others will reduce the wildland-urban interface and the associated vulnerabilities related to wildfires and floods. Integrating green infrastructure and low impact development to mimic the natural predevelopment hydrology would be beneficial.	**WN1.** *Balance county growth and development with the need to protect and preserve watersheds and natural resources.* Create incentives and policies for smart growth. Growth should be designed, for example, to: reduce the wildland-urban interface and associated vulnerabilities related to wildfires and floods, integrate green infrastructure, reduce power and water needs, and replicate natural, predevelopment hydrology.	None
WN2. *Promote healthy forest ecosystems that deliver the range of services communities require.*	**WN2.** *Promote healthy ecosystems that deliver the range of services that communities use.*	Integrate and fund Community Wildfire Protection Plans and develop public outreach related to the benefits of

Fostering forest stewardship in a way that is balanced with the economic needs and other services communities require will improve overall forest health in the region. Appropriate tree densities and diverse fauna should be taken into consideration to promote healthy forest communities. Integrate and fund Community Wildfire Protection Plans and develop public outreach related to the benefits of healthy forests. The Community Wildfire Protection Plan process can be streamlined across the County.	Foster ecosystem stewardship in a way that supports the economic uses and other services communities ask of those ecosystems. This should include supporting forest and grasslands health to mitigate fire risk, minimize flood risk, and preserve water quality and quantity, and modifying development to minimize impacts to ecosystem functioning.	healthy forests. Streamline the Community Wildfire Protection Plan process across the County.
WN3. *Develop long-term, smart (maintainable) funding sources.* Funding sources are needed for education and projects related to forest stewardship, smart growth, and green infrastructure.	**WN3.** *Develop long-term, maintainable funding sources to support forest stewardship, smart growth and green infrastructure.*	The Collaborative – finding new markets for efforts.
WN4. *Develop local markets for forest thinning by-products.* Creating local economic incentives for forest thinning by-products will reduce the potential for fuel loading related to wildfires and promote a sustainable cycle to improve and maintain forest health.	**WN4.** *Encourage forest restoration and maintenance through the development of local markets and economic incentives for forest thinning by-products.*	Develop economic incentives for forest thinning through the use of tax breaks, grants, and small interest loans. Support the development of markets for forest thinning by-products such as biomass burners.

	WN5. *Integrate storm water plans with floodplain management.*	Conduct a background study and use results to inform policy guidance and the development of local codes.
	WN6. *Support the sustainable use and preservation of natural systems for future generations through education and outreach.*	None

Projects

The workshop also reviewed the list of project ideas developed in Charrette #1. In order to respect all the contributions from that Charrette, the entire list of project suggestions from the Charrette #1 report were posted on the wall for review and comment.

Resiliency thinking calls for a different emphasis in project selection criteria than we have used traditionally. The state framework cites the following criteria as the most important:

- Co-Benefits
- High Risk and Vulnerability
- Economic Benefit-Cost
- Social Equity
- Technical Soundness
- Innovation
- Adaptive Capacity
- Harmonize with Existing Activity
- Long-Term and Lasting Impact
- Regional Benefits

Projects should foster a cultural shift in decision-making, emphasizing multiple benefits across sectors, with special emphasis on the impact on vulnerable populations.

The full list of projects presented in the Charrette #1 report are listed in Table 4-1 below in order to show the variety of ideas that could be carried forward to build resilience. For some of the more immediately actionable projects, participants suggested appropriate project owners to take the ideas forward, and provided comments to make them better.

Table 4-1: El Paso County Project Identification Matrix

Project	Resiliency Sector Addressed	Regional Benefits?	Project Description	Project Owner	Comments
Flexibility in Budgeting and Spending Processes	All Sectors	Y	Create a multi-stakeholder group to increase accountability and efficiency by analyzing the more than 150 Special Districts and restrictions on government budgeting and spending.		
El Paso County Healthy Forest Mitigation and Watershed Protection	Watersheds and Natural Resources, Community, Housing, Infrastructure	Y	Create fire-adapted communities and resilient watersheds in the Pikes Peak region through multi-jurisdictional organizations		
Community Engagement/Regional Resiliency Facilitation	All Sectors	Y	Create a regional clearinghouse to link needs with resources across jurisdictions and sectors by creating a Regional Resiliency Facilitator and linking individuals, non-profits, and government agencies.		
Improve Codes and Zoning for Resiliency	Community, Health and Social, Housing, Watersheds and Natural Resources	N	Improve existing El Paso County building and maintenance codes and zoning to support resiliency and sustainability.	Regional Building Dept Assessor's Office Elected Officials	

Project	Resiliency Sector Addressed	Regional Benefits?	Project Description	Project Owner	Comments
Healthy and Happy El Paso County	Health and Social, Community, Economic	Y	Develop a comprehensive, integrated, and proactive psychosocial and medical health care system in El Paso County.	Aspen Pointe

El Paso Co. P.H.

B.O.H. | |
Regional Stormwater Management	Infrastructure, Watersheds and Natural Resources, Community, Housing	Y	Improve stormwater management throughout El Paso County, through establishment of a regional collaborative group of watershed stakeholders.		
Relocation of the Manitou Springs Muni-Complex	Infrastructure, Community, Health and Social	N	Relocate the main municipal functions (currently located in a floodplain) to provide for continuity of municipal function during floods.		
Infrastructure Mapping	Infrastructure	Y	Create a secure but usable inventory of all infrastructure assets across the county, who owns them, and who to call during a disruption for emergency responders and resilience planners.		Tied to Regional stormwater management

Project	Resiliency Sector Addressed	Regional Benefits?	Project Description	Project Owner	Comments
Islands of Refuge	Community, Health and Social	N	Enhance existing centers of resilience such as at the Air Force Academy and Fort Carson, and create new ones as needed which can maintain lifeline functions during disasters.		Needs to be vetted through installation commanders if military installations are included
Community Emergency Response Teams (CERT)	Community, Health and Social	N	Promote community preparedness and self-help capacity by encouraging more CERT teams in colleges, faith based organizations, fire districts, etc.	County EOC City EOC	
Business Development	Economic	Y	Implement the Operation 6035 plan addressing business retention and development in sectors such as cleantech, medical, and manufacturing.	Regional Building Dept.	
Resilience Regional Food Systems	Community, and Health and Social	Y	Improve access, availability and resilience of the food system by working with the Green Cities Coalition Food Group, Food Policy Committee, Farmers Markets, agricultural cooperatives and urban gardens.	SCRVOAD	
Living with Water - Fountain Creek Greenway	Community, Watersheds and Natural Resources	Y	Develop Fountain Creek as a water amenity throughout the region, removing retrofitting and redeveloping properties in high hazard areas.	Fountain Creek Watershed, Flood Control, and Greenway District	

Project	Resiliency Sector Addressed	Regional Benefits?	Project Description	Project Owner	Comments
Resiliency Working Group	Community	Y	Create a resiliency and preparedness working group to meet monthly or quarterly to convene multi-jurisdictional partners to plan and adapt projects and identify funding.		
Roles and Responsibilities	Community	Y	Create an education effort to clearly define the roles of government and the responsibilities of residents during an emergency.		
Highway 24 Flood Watch and Mitigation	Infrastructure	Y	Mitigate for flooding and maintain Highway 24 west through Upper Fern Gulch, Waldo Canyon, Williams Canyon and Wellington Gulch.	CDOT	
Aging Infrastructure	Infrastructure	N	Repair aging and undersized infrastructure in Manitou Springs.		Tied to regional stormwater management
Sediment Handling and Material Recycling	Infrastructure, Watersheds and Natural Resources	N	Fund a regional program to remove sediment from stormwater systems and recycle materials for use in mitigation and road repairs.		

Roadmap to Resiliency

Participants worked in small groups to develop the outline of a plan for making the vision, goals, and strategy a reality. The group considered the following questions.

Leadership and Collaboration

1. How will **existing organizations** be leveraged to support ongoing resiliency actions in the community?
2. What **new approaches** to coordination/governance may be needed?
3. Who will take the lead?

Capacity Building

1. What <u>three actions</u> can the community take **now** to immediately enhance resiliency?
2. What **funding avenues** might the community explore to finance resiliency actions?
3. Who will take the lead?

Community Engagement

1. How will **ongoing public outreach and education** be used to empower the community to move toward resiliency?
2. What strategies to support **vulnerable populations** will be used?
3. Who will take the lead?

Leadership and Collaboration

1. How will **existing organizations** be leveraged to support ongoing resiliency actions in the community?

   o A variety of organizations, of different types and with different purposes, are needed, e.g. government emergency operations for disaster and a 501C3 for under needs and fundraising.
   o The El Paso County Regional Watershed Collaborative can be used as an example of building collaborative networks.
     ▪ Using this model, find the collaborative groups in each of the six sectors — e.g. the Regional Business Alliance — and weave then

> into a county-wide Regional Resilience Network meeting periodically.
>> ▪ This will build relationships outside of disaster periods.
>> ▪ Pursuit of funding can be a motivator to continue to participate.
> o The proposal to NDRC for a Resiliency Coordinator could provide initial funding this this.
> o The three existing Recovery Offices, El Paso, Colorado Springs, and Manitou Springs, would take core roles.

2. What **new approaches** to coordination/governance may be needed?

   o The Resiliency Network could be set up as a decentralized network with a rotating chair, to create a network that is not dependent on a central organizer.
   o The NCRS Resiliency Coordinator would play a role in this network, but the on-going existence of the network would not hinge on one or a small group of individuals.
   o VOAD, faith based organizations, and the Pikes Peak Regional Council of Governments should all be key players.
     ▪ Government and government regulatory bodies with fiscal, legal and policy authority would need to be involved.

3. Who will take the lead?

   o The Regional Resiliency Coordinator, if funded
   o County Emergency Operations staff
   o El Paso Watershed Collaborative and similar collaboratives from each sector.

Capacity Building

1. What three actions can the community take **now** to immediately enhance resiliency?

   o Better information (e.g. map vulnerabilities) to inform collaborative regional planning
   o Integrate land use and risk reduction with a focus on fires and floods
     ▪ Acquisition of high-risk properties, use of easements, etc.
     ▪ Establish Wildland-Urban Interface codes
   o Public education – everyone has a role to play to reduce risk and maintain a healthy, safe community
   o Strong land-use and hazard risk reduction plans, regulation and enforecetn
   o Capacity building of volunteers and non-profits to mitigate hazards

2. What **funding avenues** might the community explore to finance resiliency actions?

   o Explore creative funding opportunities such as crowd-source funding, mitigation fees, storm water fees, revenue generation opportunities
   o Find ways to mitigate the ratchet-down effect of recessions on tax dollar collection and spending

3. Who will take the lead?

   o El Paso Watershed Collaborative and similar collaboratives from each sector
   o Local governments
   o Non-profits
   o The Regional Resiliency Coordinator, if funded

Community Engagement

1. How will **ongoing public outreach and education** be used to empower the community to move toward resiliency?

   o Consistent, clear messaging is critical.
   o Public information offices, the VOAD, and the Crisis Communications Center could all be tapped to communicate information.
   o Social media, schools, colleges and universities could be used to reach youth and the younger generation
   o Leverage existing outreach efforts in each sector, e.g. fire department outreach to communities and elementary schools, health fairs, economic outreach to high school students
   o Creative messaging could be used to reach hard-to-engage populations such as young adults and elderly:
     ▪ Resiliency open mike night at Breweries
     ▪ Resiliency videos for casino busses.
   o The Crisis Communications Center might be able to create messaging.
   o The State could support county resiliency by providing consistent messaging and communication materials for use across Colorado

2. What strategies to support **vulnerable populations** will be used?

   o We need to go to these populations – to senior centers, homeowners associations, town hall meetings, or where ever typically vulnerable populations gather
   o Expand existing CERT Training both in terms of training content and access/availability

- Expand existing programs beyond general FEMA information, advanced first aid and similar to address broader resiliency
- Train more CERT trainers
- Take the training on the road, e.g. to PTA/PTO meetings, church groups, Black Forest, etc.
  - Use the San Francisco Interfaith Council as a model for focusing on a problem to come together as a community around common issues
  - Provide people with volunteer opportunities
    - Projects for e.g. Scouts, elderly
    - Link people and groups
  - Work to enlist and engage churches around resiliency

3. Who will take the lead?

  - Enlist retired firefighters, police officers, military personnel to serve as resilience champions
  - Recovery officers from each jurisdiction
  - The South-Central VOAD
  - The State Recovery Office
  - The Regional Resiliency Coordinator, if funded

Process Overview

At the end of the day, participants were asked to share their insights regarding the local resiliency planning process, as well as their impressions regarding the Charrette format. The following are comments as expressed by participants.

Charrette Structure and Format:

Participants expressed appreciation for a well-organized workshop with a good balance of small and large group activities. In particular, participants appreciated the brainstorming activities coupled with the opportunity to work in smaller groups to really dive deeply into the issues. The exercises were set up in a way that provided clear continuity from Charrette #1, and the worksheets made it easy for everyone in groups to contribute targeted input. However, because virtually all the activities were conducted in small or plenary groups, not all participants felt comfortable expressing dissenting viewpoints, in particular when grouped with someone they knew had a differing opinion.

The afternoon activities, where groups rotated through tables and were able to hear and then build on the thinking of previous groups was particularly appreciated. Overall participants felt the Charrette was successful and rated it "Good" to

"Excellent", noting that it was well-timed to provide the opportunity to digest and refine materials from Charrette #1.

Charrette Content:

Charrette content was described as "organized", "focused", "planned" and "thought provoking", allowing participants to stay on task and pack in a lot in a short timeframe. The questions were good lead-ins to generate conversation and discussion.

However, some participants would have liked to spend less time on word-smithing in the first exercises to allow more time to dive down further into objectives and details in the later sessions.

Greater facilitation of the activities, including more deliberate tie-ins to the resilience sectors, goals and strategies would have helped discussions from going down tangents, as would more targeted questions (e.g. "What resiliency infrastructure investments are most needed?", "What information/data is needed to make better decisions?")

Lessons Learned:

Overall, the planning process is feeling short, accelerated and rushed, all of which makes it even more challenging. Perhaps because of the timeframe, various sectors aren't at the table – local land-use planners, wider economic and health and social representation, etc. Participants expressed clear regret that there isn't greater buy-in and attendance. More advance notice would probably help.

It's also clear that resiliency is bigger than many participants thought, and to really tackle it there is a greater need for community involvement. There is clearly a strong need to fund a Regional Resiliency Coordinator to spearhead this effort in El Paso County.

Nonetheless, it is exciting to see new ideas constantly emerging, to see the wide range of really smart people involved in this process, and to get a picture of growing capacities, coordination and collaboration within VOAD organizations and across the State.

Suggested Next Steps:
- Approach existing collaborative groups (Regional Business Alliance, Health Care Coalition, etc.) within each sector with the Resiliency Plan
- Have an announcement/grand opening for the plan and invite leaders from existing collaboratives.
- Strongly declare a clear date of commencement to exhibit leadership!

- "Market" resiliency out to the five counties, starting within the Faith-based populations and organizations.
- Continue developing and refine county resiliency vision and goals.
- Develop specific action items, owners and measures.
- Identify, and where needed start deconflicting, existing projects and programs
- Share the collective inputs digitally so participants can keep current and engages. Provide a heads-up on documents as appropriate so people know to look for them.
- Use this charrette group as the foundation of a county resiliency group
- Leadership review of drafts to finalize and implement.
- Make a focused effort to get other key stakeholders – AspenPointe Mental Health, Regional Building, homeless outreach, etc.
- Create a forum for local government and NGO's to move forward with this process.
- More templates and best practices from the State.
- Each community should have a Regional Resiliency Coordinator as a hub.
- Combine a resiliency steering committee with champion representatives at a high level to help represent and prioritize individual sectors.

Next Steps

Information generated at Charrette #2 will be used to revise the El Pso County Local Resiliency Framework. There will be a session to review the revised draft in November. The initial draft will be available for review and comment prior to that session.

Attachments

1   Agenda

2   Sign-In Sheets

3   Shocks and Stresses Worksheets

4   Sector Strategies Worksheets

5   Roadmap to Resiliency Worksheets

Attachment 1   Agenda

October 13

Time	Activity
8:30 – 9:00	Sign In
9:00 – 9:30	Introduction and Review of Charrette #1 Key Themes
9:30 – 10:15	Shocks, Stresses and Vulnerability Validation
10:15 – 10:30	Break
10:30 – 12:15	Vision, Goals and Strategies Validation
12:15 – 12:45	Working Lunch
12:45 – 2:45	Roadmap to Resiliency Work Session
2:45 – 3:15	Roadmap to Resiliency Report Out
3:15 – 3:30	Wrap Up and Next Steps

Attachment 2   Sign-In Sheets

El Paso County Charrette #2: Local Planning Process
October 13, 2015

#	Name	Title	Organization	Phone	Email
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16	Alex Dane	Project Leader	NREL	303 378 6919	alexander.dane@nrel.gov
17	Lorrie Worthey	Mayor of HMF	Green Moun. Falls	651-9367	gmfmayor@gmail.com
18	Gordon Brenner	Recovery Coordinator	Colorado Springs Office of Emerg. Managent	719 385 7141	gbrenner@springsgov.com
19	Brandon Gould	Regional Director	U.S. Senator Cory Gardner	720-537-1456	brandon_gould@gardner.senate.gov
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	El Paso County Charrette #2: Local Planning Process October 13, 2015				
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4	Chris Allan	ISET			
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6	Iain Hyde	State Resiliency Office			
7	Katie Delmonico	State Resiliency Office			
8	Tanya Mann	State Resiliency Office			
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El Paso County Resiliency Plan

Plan Review Session Summary

Colorado Springs, CO

January 13, 2016

I. Introduction

Following review of a draft El Paso County Resiliency Plan (Plan), 15 people gathered at the El Paso County Office of Emergency Management to participate in a facilitated review of the plan document. Participants came from municipal government, state partners, and non-profit organizations. The Plan was the product of two design workshops and a subsequent review by stakeholders. This document summarizes the discussion in that Review session.

The Plan Review Session was broken down into four discussions:

- Existing Conditions
- Strategies And Projects
- Roadmap To Resiliency
- Public Input And Next Steps

The following are the comments and suggestions made by participants in the workshop for finalizing the Plan.

II. Existing Conditions

A. Are the key strengths and challenges listed in each resiliency sector accurate? If not, what needs to be changed?

Participants considered the growing dependence on instantaneous communications, especially mediated by the Internet. While this is strength in many cases, it is also a vulnerability, as systems and networks are subject to power outages and technical failure. How do we handle emergencies when we are fragmented and connected only electronically?

In a similar vein, participants noted that the concept of the use of codes and zoning planning to mitigate risk has a downside in that it risks destroying buildings in historic districts and communities. Participants noted that we must be cautious to find ways to strengthen resiliency while preserving historic areas and community character. At the same time, we should keep in mind that people may know what to do to reduce risk in their buildings and neighborhoods, but may not have the economic resources to do so.

Participants discussed another challenge—lack of awareness on the part of government officials regarding how long recovery takes. Often they underestimate how many years it will take to get funding and programs in place. One example is the mental health program put in place after the Black Forest fire. Just as people were turning to use it, it was cut off after one year as no longer needed.

A similar challenge applies in helping the public to understand how long it takes to apply for grants, obtain funding, and implement a project. We move at the speed of government, and people are more familiar with the private sector and the speed with which it operates. At the same time, people may not apply for grants available to individuals because of how onerous the application and reporting processes are.

B. *What key topics or issues are missing from the discussion of existing conditions? Can you suggest good data sources for these topics?*

In the **Community** section, the Plan should talk about **homelessness**, even though it is addressed in other sections, especially Health and Social. It is an issue that cuts across sectors, and the Plan should reflect that.

The issue of **low levels of public participation and awareness** about disaster preparedness or community resilience issues is a constant problem. Dealing with this issue is one of the goals of the proposed resiliency hub. Typically interest in these issues goes up after an important incident/event. Another possible issue with low participation is that people are convinced that they can't make anything happen, that their action won't make any difference on big issues. In some ways this may reflect a lack of understanding of what the government can do. People think that the government will tell them what to do, or sometimes they don't understand what the limitations of government resources are. At the same time, disaster awareness (awareness of shocks) is higher than awareness around the stresses identified in the Plan. People are more familiar with the dangers of fire and flood than they are of poor road maintenance or long-term underemployment.

A general issue that cuts across all sectors is the **lack of capacity** within organizations to implement resiliency-related programs. The expertise is there, but not the funding and/or personnel. We should determine whether lack of funding and capacity is adequately described in the existing conditions section.

In the **Health and Social** section, participants discussed the need to add **mental health** to the challenges statement. The group concluded that the text should talk about mental health as well as physical well-being.

The group discussed how El Paso County is popular as a place to retire, which reflects positively on the community, yet an **aging population** poses problems for sustainability. Related to **housing accessibility**, retirees with higher incomes are beginning to price out lower income populations in housing markets. And an aging population adds costs to the **social service system** that must be met by younger, working age population.

In the **Watersheds and Natural Resources** section, we should confirm that there is a clear linkage between water quality and post-fire effects.

We should also check on the statement about the risk of very **hazardous military waste** to confirm its accuracy.

In Section 2-6, the text cites five major military installations, but only four are mentioned by name. We should add Cheyenne Mountain Air Force Station.

III. STRATEGIES AND PROJECTS

Consider the Resiliency Vision:

"A forward thinking, resilient Pikes Peak region that focuses on common needs and shared responsibilities to foster a healthy, diverse community and economy, balancing the interdependence of human, built, and natural systems."

A. Do the priority and future projects listed in the Plan serve this vision? If not, what needs to change?

Strategies
Under the **Community sector**, for **Strategy C5**, the group discussed how to maintain historic identity and neighborhoods while making the changes we need to increase resiliency. Can we incentivize strategies for older neighborhoods (e.g., tax breaks, cost share, subsidies)? In most cases code probably needs to be updated.

In general, most strategies in the Plan are long-term strategies. Not many address shocks and stresses in the short-term, such as mass violence or dam failure. Following the recent active shooter event, businesses and churches are developing action plans on their own for dealing with active shooters. In order to take advantage of opportunities like this to work with groups, the Plan should guide us to both short and long term strategies.

The way we **fund our work** presents challenges. Core funding must include preparedness and dealing with long-term stresses, and it is hard to just rely on grant funding for these needs. Manitou Springs is an example—the city has a $6 million budget, with $30 million in project needs. The ability to meet funder requirements for local contribution strains the city's ability to implement grant funding. In addition, local governments often are missing the staff needed to manage these funds and projects adequately. The grants put stress on local government management systems. Do we need to create a new strategy to deal with this capacity issue? In the long run we need the public will to support raising sufficient revenue to build systems that are robust and resilient. The recent sinkhole on Chestnut St. in Colorado Springs is an example—the public doesn't want to spend any money until the road is completely unusable.

Some participants observed that fiscal reality is lacking in the Plan -- who would fund the priority projects? Are there some projects that that won't cost much but lay the foundation for future funding? The Plan is intentionally written without dollars

taken into account—it is an assessment, which then gets used to make specific plans and budgets, which then guide us to go looking for funding sources. The state can assist in finding grant funding sources, and many grants do come with project management funding. The existence of a good aspirational Plan helps in seeking grant funding.

B. Consider Appendix F, which shows the links between the proposed resiliency strategies and listed projects. How can community strategies and projects better align with each other?

Participants looked over the matrix of projects in **Appendix F**, which shows which projects address which sectors and strategies.

Participants discussed sectors that were missing project ideas to implement them. In many cases participants pointed out existing projects on the list that did in fact address strategies, and showed how the Appendix should be revised to reflect that. Participants also generated ideas for projects that would better address the strategies.

Economic Sector
The lack of concrete projects for addressing Economic Sector strategies reflects the absence of many local business partners in the process. The Business Alliance, Convention and Visitor's Bureau, SBDC, EDC, SCORE, CVP, Small Business Incubator, did not attend the Plan Review Session. Participants suggested that we take the Plan to them and get them involved. The State could support this process. Participants pointed out the need to work in a way that aligns with the needs and capacities of these organizations, which often differs from our pattern of group strategic planning sessions such as this one. The Office of Emergency Management has had success in working with businesses in talking about business continuity and employee access. The Regional Business Alliance should be a key partner.

Participants noted that there were few projects for the strategies under the Economic Sector dealing with **agriculture**. There are possibilities in east and north unincorporated El Paso County for Natural Resources Conservation Service (NRCS) grants. There may be possibilities in other parts of the county but we would need to look into it.

Participants pointed out that it is possible to use work in other sectors to promote **local economic growth** that will result in increased resiliency. Aging services is an excellent opportunity to do so in provision of services by local businesses. The Wildfire Innovation Network is using small businesses in the Black Forest area to incorporate fire mitigation in services from lumber mills to artists. The group is also promoting the work of local contractors publicly. We can engage with the community broadly in partnership with the business groups mentioned above through channels such as VOAD (which is encouraging people to prepare for living, not just disaster) or providing tax incentives. In general we should look at the

secondary economic benefits of existing projects, and learn how to use disaster recovery or mitigation efforts to support businesses. If we are mindful of these connections we can promote secondary economic effects of projects.

For Appendix F, showing the link between projects and strategies, the group agreed to add dots to the following cells:

- HS3 – Put a dot under The Pikes Peak Regional Resiliency Hub, Pikes Peak Regional Wildfire Innovation Network, Improve Codes and Zoning for Resiliency, and Regional Stormwater Management
- H4 – Dots under Flexibility in Budgeting and Spending Processes, Healthy and Happy El Paso County
- HS5 – Dot under The Pikes Peak Regional Resiliency Hub and Healthy and Happy El Paso County.
- W3 – Dot under The Pikes Peak Regional Resiliency Hub
- W5 – Dot under Improve Codes and Zoning for Resiliency
- E1 – Flexibility in Budgeting and Spending Processes
- E2 – The Pikes Peak Regional Resiliency Hub, Flexibility in Budgeting and Spending Processes
- E3 – Flexibility in Budgeting and Spending Processes, The Pikes Peak Regional Resiliency Hub, Healthy and Happy El Paso County, Pikes Peak Regional Wildfire Innovation Network
- E4 – Improve Codes and Zoning for Resiliency

IV. Roadmap To Resiliency

How will the Plan become an effective driver of actions taken by local organizations and jurisdictions?

For the projects that are identified as priorities, the next steps are to lay out costs, schedules, and fundable phases. Then funding sources can be looked for. We need to complete pilot projects to demonstrate capacity and be more successful in going after larger funding sources.   Once you can prove credibility, it can lead to future funding sources.

We need to establish relationships with **business community and other stakeholders** that may not have been at the table. Other participants could be: media, homebuilders associations, insurance companies, and the educational community. Universities are excellent resources (e.g., UC Colorado Springs, Colorado College) for both professional help and internships. For example, staff recently made contact with a professor at Colorado College who had been studying sediment movement in Fountain Creek for many years, and now is helpful for hydrology studies. CU Boulder will get new director of the Natural Hazards Center, which may be helpful as well.

Within the **Federal government** there are resources such as the Bureau of Reclamation that can prepare flood models and work on dam emergency action plans. Within state government it is important to maintain relationships with a number of departments and programs such as DHSEM, DOLA, CRRO, and CGS.

Media will be critical to spreading the message including print, TV, radio, and online mediums.

The El Paso County Watershed Collaborative is also important, since it brings together multiple sectors and communities.

Metrics should be developed to determine how successful this Plan (and projects managed under it) is. Success will be based on whether stakeholders understand that this Plan can improve conditions over time—this is not just a hoop to jump through to get grant money.

The Plan does not need to be formally **adopted** by all municipalities in the county. Since there are no financial obligations, the Plan can be "endorsed" or "adopted without financial obligation" by County Commissioners, council members, and other government entities as needed. For the County this process should take about three months.

The **State of Colorado Resilience Working Group** will be formally solidified for ongoing work and will be able to provide some sort of support in the future.

Participants noted that the proposed **Resiliency Hub** has a broad scope—if funded, that hub could be the core of this Plan and associated actions. If not, the Watershed Collaborative has the right parties at the table to carry this Plan forward.

After discussion of the best **institutional home for the Plan**, the group agreed that institutionalizing the Plan should be made the first priority project. That project would be set up as follows:

- The Plan would be assigned to a subcommittee of the Watershed Collaborative. Each of the local emergency management agencies would participate as well as other stakeholders who are interested in working on the process.
- The subcommittee would define a specific charter for itself for this work. The charter and transfer plan should include a systematic approach to identifying other groups to participate.
- The subcommittee would then create a transfer plan, with timelines for transfer to the Resilience Hub or some other appropriate structure within one year.

- The subcommittee would present a resolution to the County Commissioners after three to four months to adopt or endorse the Plan without financial requirements.
- Resilience hub would have oversight from the state, and CRRO could help facilitation and support.

V. Public Input and Next Steps

What approach and process would you recommend for soliciting and receiving public input?

The group agreed that a public process is important to vetting the process and Plan. Participants identified existing public meetings and events that we can use to discuss the Plan and generate feedback and buy in. For example, the City of Colorado Springs will be doing flood control meetings in March/April and can include discussion of the Plan at those meetings. Participants agree that piggybacking on other meetings and communications makes the most sense. The Watershed Collaborative Resiliency Plan subcommittee should develop a short-term project supporting public education and engagement. As part of that project, the subcommittee could consider developing the basics of a public presentation that others could adapt for community meetings, non-profit meetings, faith-based groups, etc. The process of engagement needs at least six months.

CRRO will be finding and cataloging funding sources to support these processes. Rob Pressly (CRRO) can be a frequent resource and presence to keep the subcommittee going.

Next Steps
Information from the Plan Review Session will be used to refine the El Paso County Resiliency Framework. The resulting draft will be circulated for review and public comment.

Attachments

1   Agenda
2   Sign-In Sheet

Attachment 1   Agenda

1:00 – 1:10	Welcome and Opening Remarks
1:10 – 1:30	Overview of the Framework
1:30 – 2:00	Existing Conditions
2:00 – 2:30	Strategies and Projects
2:30 – 2:45	*Break*
2:45 – 3:15	Roadmap to Resiliency
3:15 – 3:45	Resiliency Toolkit
3:45 – 3:55	Discussion
3:55 – 4:00	Wrap Up and Next Steps

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Appendix C
Template Annual Operating Plan

		El Paso County Community Resiliency Steering Committee 20XX Annual Operating Plan						
Item #	Action or Project	Related Goals & Strategies	Desired Outcome	Challenges	Lead Stakeholder	Supporting Stakeholders	Priority Level	Milestones & Timeline
1	[Describe the action item (or project w/ multiple actions coordinated by the same stakeholder)]	[List the plan goals and strategies served by the action or project]	[Describe the outcome the action seeks to achieve]	[Identify likely challenges to be overcome to complete action(s)]	[Identify the lead stakeholder, i.e. the party responsible for completing action(s)]	[Identify other potentially involved stakeholders]	[High, Medium, or Low]	[Target dates to complete action(s)]
2								
3								
4								
5								

Item #	Action or Project	Related Goals & Strategies	Desired Outcome	Challenges	Lead Stakeholder	Supporting Stakeholders	Priority Level	Milestones & Timeline
			El Paso County **Community Resiliency Steering Committee** **20XX Annual Operating Plan**					
6								
7								
8								
9								
10								

Item #	Action or Project	Related Goals & Strategies	Desired Outcome	Challenges	Lead Stakeholder	Supporting Stakeholders	Priority Level	Milestones & Timeline
El Paso County **Community Resiliency Steering Committee** **20XX Annual Operating Plan**								
11								
12								
13								
14								
15								

Appendix D
Project Scoping Tools

Local Resiliency Planning Projects

This project worksheet is intended to capture in a concise but thorough manner the scope and intent of proposed resiliency projects. Resiliency projects can take many shapes and forms, ranging from relatively low-cost planning, education, and program development activities to multi-million dollar infrastructure projects. Hence, the worksheet asks for a great detail of information, not all of which will apply to every project.

The project worksheet is accompanied by a set of instructions which provide further clarity regarding the type of information solicited in each section of the worksheet and the types of material that may be useful in supporting claims made about a proposed project.

The goal of the project worksheet is to help foster "a deeper cultural shift in decision-making" by asking project proponents to assess their projects through multiple lenses. In undertaking to complete a project worksheet, it is anticipated that project proponents will form a richer picture of what makes a project worthwhile by describing and evaluating multiple attributes of a project.

The information requested in the worksheet is derived from multiple sources, including the Colorado Comprehensive Risk Analysis Tool, and attempts to capture the multiple dimensions of a resiliency project as well as the material typically requested in most funding applications.

It is expected that many projects, especially those in an early planning phase, will be unable to complete every field in the project worksheet to the extent implied in the worksheet instructions. Projects that are able to provide more complete and better information are those most likely to be implemented in the short-term.

Most importantly, and even in the absence of detailed quantitative information, project proponents should aim to justify in descriptive terms how their project will contribute to community resiliency by reducing risk and vulnerability and providing multiple benefits to the community and region.

1. Project Name:		2. Date:
3. County:	4. City/Town:	
5. Neighborhood/Street:	6. Census Tract(s):	

7. Project Owner:

8. Brief Description:

9. Unmet Need:	10. Project Timeframe:
	11. Total Project Cost:
	12. Funding In Place:
	Source / Amount ($)
	13. Funding Needed:
	14. Estimated O & M Cost:
	Bearer / $/year or $ in NPV

15. Map Attachments:
*Attach all maps listed below or provide digital copies. Check box to confirm map is attached.
☐Flood Insurance Rate Map (FIRM) or, if unavailable, Flood Hazard Boundary Map (FHBM)   ☐City or

county scale map
☐USGS 1:24,000 topographic map ☐Parcel map ☐Overview photographs representative of project area

16. Primary and Co-Benefits:			
Please check the sector that is the <u>project's primary focus</u>.		Please check <u>all other sectors</u> benefited by the project.	
☐ Health and Social	☐ Economic	☐ Health and Social	☐ Economic
☐ Housing	☐ Infrastructure	☐ Housing	☐ Infrastructure
☐ Watersheds and Natural Resources	☐ Community	☐ Watersheds and Natural Resources	☐ Community
Describe:		Describe:	

17. Regional Benefits:

18. Economic Benefit-Cost:

Cost Category	Benefits	Costs	Notes
[forthcoming]			
PROJECT NET:			Discount Rate:

Will project impact NFIP Community Rating System score?
☐ Yes ☐ No
If yes, describe:
Source for all non-market valuations included in calculations:

19. Social Equity:
Will the project benefit vulnerable communities? ☐ Yes ☐ No
If yes, describe:
Will the project create temporary or permanent jobs? ☐ Yes ☐ No
If yes, describe:
If construction activities will be undertaken, will workers be paid the prevailing wage? ☐ Yes ☐ No
20. Innovation:

21. High Risk and Vulnerability:

Does the project community have a FEMA-approved multi-hazard mitigation plan?   ☐ Yes   ☐ No

Is the project or strategy listed in the plan?   ☐ Yes   ☐ No

If yes, please indicate the page _____ and section _____where project can be found.

22. Technical Soundness:

23. Adaptive Capacity:

24. Harmonize with Existing Activity

Is project implementation dependent on seasonal timing?   ☐ Yes   ☐ No
If yes, describe:
25. Long-Term and Lasting Impact:
Will future response or recovery costs be reduced due to project implementation?   ☐ Yes   ☐ No
If yes, describe:
Consideration of climate change impacts:

26. Project Readiness:	
Jurisdictions involved:	**Permits required:**

Local Resiliency Planning Projects

Instructions for Simplified Worksheet

These instructions provide clarification regarding intent, desired content, and methods for supporting descriptive and quantitative declarations used to describe a proposed resiliency project.

1. – 3. Complete as indicated.

4. Identify the project owner or proponent. Include the <u>name</u>, <u>phone number</u>, and <u>email address</u> for a point of contact as well as the owner/proponent's <u>organization name</u>.

- A proponent must be an individual or entity that will take a lead role in developing/implementing a project or owning and operating a project.

5. Identify all jurisdictions that will be implicated in the project.

6. Describe the proposed project. Include in the description the project scope and partners. Describe how the project contributes to your community's resilience.

- The description should be clear, concise, and should make the case for why the project is worthwhile in terms of enhancing the community's resiliency.
- If relevant, describe the community process that will be undertaken as part of project design and implementation**.**
- Describe if and how this project will address unmet needs from previous disasters.

7. Indicate the proposed start and end date for the project including, if relevant, commissioning and post-project evaluation.

- Where possible, provide a timeline by phase (e.g., pre-planning, planning/design, construction/implementation, commissioning/start-up, etc.).

8. Indicate the estimated total project cost (capital, labor, overhead, profit) using approved methods. If project is divided into multiple phases/tranches, specify this.

- Do not include operations and maintenance costs (O & M).

9. Specify the total amount of project funding in place by source.

10. Specify the total amount of funding needed to enable project implementation.

11. The Colorado Resiliency Framework identifies six resiliency sectors. Indicate which is the primary resiliency sector impacted by the project. Provide a narrative that describes the impacts of the project on that sector.

- Where possible, provide detailed description or quantification of the anticipated benefits and the timeframe in which these benefits will occur.

Indicate all other resiliency sectors impacted by the project. Provide a narrative that describes the impacts of the project on each sector that experiences co-benefits.

- Where possible, provide detailed description or quantification of the anticipated benefits and the timeframe in which these benefits will occur.

12. Describe how the project will impact the region.

- Specify whether or not benefits will accrue to adjacent or nearby communities due to project implementation (for example flood mitigation that benefits downstream communities)
- Specify if and how regional resources have been considered in the design of the project.
- Describe how knowledge generated through the project's implementation will be shared.

13. Provide a narrative summarizing the anticipated benefits and costs of the project. Where possible, provide quantitative estimates of the benefits and the costs broken down by cost category. Quantitative estimates should be made using an accepted, cited methodology. Non-market valuation is acceptable for valuing market externalities (e.g. health and environmental impacts).

14. Indicate whether or not the project will impact vulnerable communities, which vulnerable communities, and describe the nature and extent of the impact.

15. Describe the impact of the project on hazards and vulnerabilities affecting the community. Describe in detail the hazards and/or vulnerabilities that the project will mitigate, the extent of mitigation, and the means by which mitigation will occur.

- Provide evidence to support the hazard and vulnerability narrative by explicitly referencing FEMA Flood Insurance Rate Maps, Hazard Mitigation Plans, Watershed Master Plans, Geotechnical Risk Assessments, Climate Risk Assessments, and other studies and plans.
- For projects that aim to mitigate site-specific flood risks, specify the approved tool (e.g. HEC RAS) that will be used to demonstrate risk reduction.
- For transportation projects, confirm whether or not the Colorado Department of Transportation's Risk and Resiliency Analysis process has been or will be followed.

If the project is identified in a FEMA-approved multi-hazard mitigation plan, provide an appropriate reference.

Specify whether or not the project will NFIP CRS scores.

Define whether or not future response or recovery costs will be avoided.

- Support the statement with evidence such as previous repetitive losses that will be addressed.

16. Provide a narrative describing if and how the project will employ technical practices or criteria that go beyond regulatory compliance. It is assumed that all proposed projects will comply with applicable codes and regulations.

- Summarize key design criteria that demonstrate the use of best-practice performance standards.
- Explain how the use of these standards will contribute to resilience.
- Provide case studies or references demonstrating that the proposed approach has been employed successfully elsewhere or is advocated for by recognized authorities within the field.
- Are major one-time or recurring maintenance needs anticipated (replacing motors, painting, regular inspection, etc.)? If so, describe.
- Identify who will be responsible for undertaking/bearing the costs of these O & M requirements.

17. Provide a narrative describing the project's adaptive management strategy.

- Describe any efforts that will be taken to do post-project monitoring and evaluation (M & E).
- Identify who will be responsible for adapting project or management based on post-project lessons learned.
- For infrastructure projects, define whether the system/project is modular/scalable to adapt to demand and whether or not it can be recycled/repurposed.
- Describe alternative design approaches and how proposed design is adaptive with comparison to standard practice.

18. Provide a narrative describing how the project aligns with other planned or recommended activity.

- Make reference to any plans or other resources that support the project's alignment with community goals and initiatives.
- Specify whether the project is recommended in other planning resources.
- Explain if and how the project's implementation will harmonize with other efforts to minimize disruption to business/daily life and make efficient use of public resources (e.g. through blocking off roads/excavating at same time as other planned work).
- Describe whether or not the project's implementation is seasonally-dependent (e.g. due to low-flow periods in a river, snow cover/weather, etc.). Explain how this has been considered in the project timeline.

19. Describe how the project addresses climate change impacts.

- Make reference to reports and assessments developed for Colorado and other western states.

20. Provide a narrative describing if and how the project can be considered innovative.

- The narrative should reference standard practice in Colorado to make the case that the project is making a novel contribution and/or going beyond business-as-usual.

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Appendix E

Resources

Government Agencies

Government agencies can provide funding, research, and support for resilience planning. Serving as the administrative authorities of disaster preparedness, mitigation, response and recovery operations, they also provide an understanding of policies that dictate current resilience planning.

Federal Agencies

- **Federal Emergency Management Agency (FEMA).** FEMA supports residents to prepare for, protect against, respond to, recover from, and mitigate all hazards. Further information on FEMA can be found at: http://www.fema.gov/

- **National Oceanic and Atmospheric Administration (NOAA).** NOAA studies climate trends, and projects potential future impacts. Further information on NOAA can be found at: http://oceanservice.noaa.gov/

- **National Renewable Energy Laboratory (NREL).** Located in Golden, CO, NREL researches innovating energy solutions. Further information on NREL can be found at: http://www.nrel.gov/

- **U.S. Army Corps of Engineers.** The United States Army Corps of Engineers is working to build resilience in their infrastructure to better serve and support the Nation. Further information on the U.S. Army Corps of Engineers and its resiliency programs can be found at: http://www.usace.army.mil/Missions/Sustainability/BuildingClimateResilience.aspx

- **U.S. Department of Housing and Urban Development (HUD).** The administrator of the National Disaster Resilience Competition (NDRC), HUD seeks to help communities produce more resilient systems. Further information on HUD and its resiliency programs can be found at: http://portal.hud.gov/hudportal/HUD, further information on NDRC can be found at: https://www.hudexchange.info/programs/cdbg-dr/resilient-recovery/

- **U.S. Environmental Protection Agency (EPA).** The EPA works closely with communities to reduce risks to health hand the environment due to natural disasters. Further information on the EPA can be found at: http://www3.epa.gov/, further information on EPA's emergency-specific tools can be found at: http://www2.epa.gov/learn-issues/emergencies-resources#natural-disasters

State Agencies

- **Colorado Department of Local Affairs (DOLA).** DOLA administers HUD funds and assists communities in disaster recovery and resilience efforts. Further information on DOLA and its resilience programs can be found at: https://www.colorado.gov/dola

- **Colorado Department of Public Health & Environment (CDPHE).** CDPHE provides vital services to preparedness, response, and recovery functions. Further information on CDPHE can be found at: https://www.colorado.gov/pacific/cdphe

- **Colorado Department of Transportation (CDOT).** CDOT ensures that Colorado has a safe and efficient highway system. Further information on CDOT can be found at: https://www.codot.gov/

- **Colorado Division of Homeland Security & Emergency Management (DHSEM).** The Division is responsible for comprehensive emergency planning within the state. Further information on DHSEM can be found at: http://dhsem.state.co.us/emergency-management/emergency-management

- **Colorado Legislative Council Committee on Emergency Preparedness, Response, and Recovery.** The Committee provides research to state legislative bodies on issues pertaining to emergency activities. Further information on the Committee can be found at: https://www.colorado.gov/pacific/cga-legislativecouncil/legislative-emergency-preparedness-response-and-recovery-committee

- **Colorado Resilience and Recovery Office (CRRO).** CRRO works closely with communities to develop and coordinate resilience plans. Further information on CRRO can be found at: https://sites.google.com/a/state.co.us/coloradounited/

- **Colorado Water Conservation Board.** The Water Conservation Board addresses water supply concerns, and addresses potential impacts of climate change and watershed restoration. Further information on the Water Conservation Board can be found at: http://cwcb.state.co.us/Pages/CWCBHome.aspx

Local Agencies

- **Colorado Springs Housing Authority (CSHA).** CSHA offers housing assistance programs within the Colorado Springs area. Further information on CSHA can be found at: http://www.csha.us/Our%20Programs/default.html

- **Colorado Springs Office of Emergency Management (OEM).** Colorado Springs OEM coordinates emergency operations within the City of Colorado Springs. Further information on Colorado Springs OEM can be found at: https://oem.coloradosprings.gov/

- **El Paso County Office of Emergency Management (OEM).** The El Paso County OEM seeks to build a more resilient community through cooperation and competence. Further information on Boulder OEM can be found at: http://adm.elpasoco.com/emprep/Pages/OfficeofEmergencyManagement.aspx

- **El Paso County Housing Authority.** El Paso County Housing Authority promotes the availability of decent, safe, and sanitary hosing for persons of low-to-moderate income. Further information on El Paso County Housing Authority can be found at: http://bcc.elpasoco.com/VolunteerBoards/Pages/HousingAuthority.aspx

Other Organizations

Foundations, academic institutions, and service providers can help bring resources toward resiliency programs. Both locally, and nationally, the following organizations offer potential assistance with future planning.

Foundations and Academic Institutions

- **Colorado Climate Network (CCN).** CCN has played a leading role in the Colorado Local Resilience Project. Further information on CCN can be found at: http://www.coclimatenetwork.org/resilience2.htm

- **Natural Hazards Center at the University of Colorado at Boulder.** The Natural Hazards Center researches information concerning social science and policy aspects of disasters. Further information on the Natural Hazards Center and its research can be found at: http://www.colorado.edu/hazards/

- **Pikes Peak Community Foundation (PPCF).** PPCF connects people with causes in an effort to advance philanthropy, and foster community stewardship. Further information on PPCF can be found at: http://www.ppcf.org/

- **Rockefeller Foundation.** The Rockefeller Foundation has played a leading national and international role in the promotion of local resiliency planning and implementation, through programs such as 100 Resilient Cities, the Global Resilience Partnership, and extensive assistance to the HUD Rebuild by Design competition and the National Disaster Resilience Competition (NDRC). Further information on the Rockefeller foundation and its resiliency programs and initiatives can be found at: https://www.rockefellerfoundation.org/our-work/topics/resilience/

- **The Sierra Club Rocky Mountain Chapter.** The Sierra Club mobilizes volunteers to promote environmental protection at the local level. Further information on The Sierra Club can be found at: http://www.sierraclub.org/rocky-mountain-chapter

Service Providers

- **American Red Cross.** The American Red Cross prevents and alleviates the impacts of emergencies by mobilizing volunteers and funds. Further information on the American Red Cross can be found at: http://www.redcross.org/

- **Colorado Municipal League (CML).** CML provides nonpartisan services and resources to assist municipal officials in managing their governments. Further information on CML can be found at: http://www.cml.org/

- **Colorado Springs Small Business Development Center (SBDC).** SBDC provides workshops to help small businesses improve their reach. Further information on SBDC can be found at: http://www.cssbdc.org/

- **The Navigators.** The Navigators is an international Christian ministry providing support to the community. Further information on The Navigators can be found at: https://www.navigators.org/Home

- **Rocky Mountain Community Land Trust (RMCLT).** RMCLT provides permanent housing for low-income families in El Paso County. Further information on RMCLT can be found at: http://www.rmclt.org/

- **United Way of El Paso County.** United Way focuses on improving education, and income, and providing basic needs. Further information on United Way of El Paso and its programs can be found at: http://www.unitedwayelpaso.org/About%20us.htm#.VkJy5berRpg

Publications

- **Achieving Disaster Resilience in U.S. Communities.** Executive, Congressional, and private-sector publication to address resilience strategies. Read full text at: http://csis.org/files/publication/141016_Kostro_DisasterResilience_Web.pdf

- **Colorado Resiliency Framework (CRF).** CRF has been adopted by the state, and represents the state's long-term investment and commitment to a more resilient future. Read full text at: https://sites.google.com/a/state.co.us/coloradounited/resiliency-framework

- **Enhancing the Climate Resilience of America's Natural Resources.** Produced by the Council on Climate Preparedness and Resilience, agenda identifies strategies to make natural resources more resilient. Read full text at: https://www.whitehouse.gov/sites/default/files/docs/enhancing_climate_resilience_of_americas_natural_resources.pdf

- **Incorporating Disaster Resilience into Disaster Recovery.** Produced by the Natural Hazards Center, publication proposes more well-rounded recovery efforts. Read full text at: http://www.colorado.edu/hazards/publications/holistic/ch8_disaster_resilience.pdf

- **Moving Towards Sustainable and Resilient Smart Water Grids.** A concept paper that identifies weaknesses in current urban water systems, and provides resiliency solutions to these problems. Read full text at: http://repository.asu.edu/items/15928

- **Planning Fire-Resilient Counties in the Wildland-Urban Interface.** Produced by the National Association of Counties, this document provides case studies to guide future resilience from wildfires. Read full text at: http://www.naco.org/sites/default/files/documents/GuidetoWildfireRiskandMitigation-NACo2010%20(2).pdf

Relevant Laws

- **Executive Order 13514- Federal Leadership in Environmental, Energy and Economic Performance.** EO 13514 establishes the Task Force on Climate Preparedness and Resilience, and, makes reduction of greenhouse gas emissions a priority for Federal agencies. Read full order at: http://www.gpo.gov/fdsys/pkg/FR-2009-10-08/pdf/E9-24518.pdf. Further information on the Task Force can be found at: https://www.whitehouse.gov/administration/eop/ceq/initiatives/resilience/taskforce

- **Executive Order 13653- Preparing the United States for the Impacts of Climate Change.** EO 13653 establishes actions to enhance climate preparedness and resilience. Read full order at: https://sftool.gov/learn/annotation/427/executive-order-13653-preparing-united-states-impacts-climate-change#note_119_2

- **Executive Order 13677- Climate-Resilient International Development.** EO 13677 is intended to improve resilience considerations within the Federal Government's international development programs. Read full order at: https://www.whitehouse.gov/the-press-office/2014/09/23/executive-order-climate-resilient-international-development

Appendix F
Strategies and Project Matrix

Sector	Priority Resiliency Projects						
	Flexibility in Budgeting and Spending Processes	Pikes Peak Regional Wildfire Innovation Network	The Pikes Peak Regional Resiliency Hub	Improve Codes and Zoning for Resiliency	Healthy and Happy El Paso County	Regional Stormwater Management	Manitou Springs Municipal Complex
Community							
C1. Build relationships around regional recovery groups for cooperation/education.	●	●	●		●	●	
C2. Facilitate responsible water use and balance growth and water availability.						●	
C3. Foster vibrant arts/culture/recreation, with opportunities for participation.							
C4. Develop an educated, responsible citizenry that knows how and why to keep themselves and their neighbors safe and strong.		●		●	●	●	
C5. Promote master planning with a focus on resiliency.				●			
Economic							
E1. Maintain and enhance existing businesses and promote small and mid-sized businesses, particularly start-ups, to further develop business and employment opportunities, especially for younger people.	●						
E2. Encourage and support business diversification.	●		●				
E3. Work to reduce impacts from stresses on tourism.	●	●	●		●		
E4. Maintain farming and the land on which to do it.				●			

Sector	Flexibility in Budgeting and Spending Processes	Pikes Peak Regional Wildfire Innovation Network	The Pikes Peak Regional Resiliency Hub	Improve Codes and Zoning for Resiliency	Healthy and Happy El Paso County	Regional Stormwater Management	Manitou Springs Municipal Complex
Priority Resiliency Projects							
Health and Social							
HS1. Increase community inclusivity while supporting development of neighborhoods with clear identities and "values".					●		
HS2. Collaborate with all other sectors.				●	●		
HS3. Foster education and communication, particularly with the emergency response community.		●	●	●		●	
HS4. Support training around mental health services across all public and private sectors.	●				●		
HS5. Create incentives for healthy living.			●		●		
HS6. Increase core medical capacity.					●		
Housing							
H1. Update master plans to match changing demographics.				●			
H2. Develop resilient housing requirements for developers.		●		●		●	
H3. Evaluate and revise zoning and building codes and the development review to create a foundation for resilient housing.		●		●			
H4. Require new development and redevelopment to include affordable housing component.							
H5. Plan for changing conditions-build in flexibility in housing options and develop adaptive strategies for housing needs.				●		●	

Sector	Flexibility in Budgeting and Spending Processes	Pikes Peak Regional Wildfire Innovation Network	The Pikes Peak Regional Resiliency Hub	Improve Codes and Zoning for Resiliency	Healthy and Happy El Paso County	Regional Stormwater Management	Manitou Springs Municipal Complex
Priority Resiliency Projects							
Infrastructure							
I1. Create an inventory of equipment assets, including their condition, maintenance schedule, and what agency to contact for access.						●	
I2. Develop resilient infrastructure that is maintainable (and funded to be maintained), continues to provide services, and can handle shocks and stresses.						●	●
I3. Promote resiliency education for infrastructure owners.		●				●	
Watersheds & Natural Resources							
W1. Balance county growth and development with the need to protect and preserve watersheds and natural resources.		●		●			
W2. Promote healthy ecosystems that deliver the range of services communities use.		●		●		●	
W3. Develop long-term, maintainable funding sources to support forest stewardship, smart growth, and green infrastructure.	●		●	●			
W4. Encourage forest restoration and maintenance through the development of local markets and economic incentives for forest thinning by-products.		●					
W5. Integrate stormwater plans with floodplain management.				●		●	
W6. Support the sustainable use and preservation of natural systems for future generations through education and outreach.		●					

Sector	Centers of Resilience	Community Emergency Response Teams (CERT)	Business Development	Resilience Regional Food Systems	Regional Resilience Network	Resiliency Education	Inclusive Housing	Infrastructure Mapping	Roles and Responsibilities	Living with Water-Fountain Creek Greenway	Highway 24 Flood Watch and Mitigation	Aging Infrastructure	Sediment Handling and Material Recycling
Community													
C1	●	●		●	●	●	●		●				
C2										●			
C3							●						
C4	●	●		●	●	●	●		●				
C5							●		●	●			
Economic													
E1			●										
E2			●										
E3													
E4				●									
Health and Social													
HS1		●		●		●							
HS2	●	●		●		●	●						
HS3	●	●				●							
HS4													
HS5				●									
HS6		●											

Sector	Centers of Resilience	Community Emergency Response Teams (CERT)	Business Development	Resilience Regional Food Systems	Regional Resilience Network	Resiliency Education	Inclusive Housing	Infrastructure Mapping	Roles and Responsibilities	Living with Water-Fountain Creek Greenway	Highway 24 Flood Watch and Mitigation	Aging Infrastructure	Sediment Handling and Material Recycling
Housing													
H1							●						
H2													
H3													
H4							●						
H5													
Infrastructure													
I1								●				●	●
I2											●	●	●
I3								●					
Watersheds & Natural Resources													
W1													
W2													
W3													●
W4													
W5										●			●
W6										●			●

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