PLANNING FOR HAZARDS

Land Use Solutions for Colorado

Rocky Mountain Land Use Institute

March 10, 2016

Overview of Presentation

- Why planning for hazards is important to Colorado
- Approaches to planning for hazards
- Overview of the planning for hazards guide
- Colorado case studies
- Moving forward – next steps

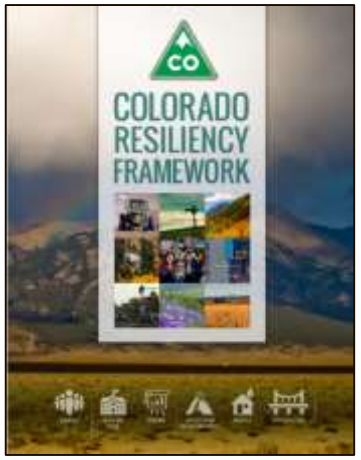
Why Planning for Hazards is Important to Colorado

Why Colorado?

- The population is growing
- We are no stranger to hazards (and they are increasing in frequency and severity)
- Many Colorado communities face hazards
  - Riparian areas (floodways)
  - Forested areas (wildland-urban interface)
  - Ridgelines (great views/steep slopes)

Colorado Resiliency Framework

- Governor adopted in 2015
- Establishes a vision and definition of
- A "call to action" for Colorado communities
- Outlines concrete strategies, including this guide
- coloradounited.com



What is Resiliency?

"The ability of communities to rebound and positively ***adapt to or thrive amidst changing conditions or challenges*** *-- including disasters and changes in climate -- and maintain quality of life, healthy growth, economic vitality, durable systems and conservation of resources for present and future generations."*

- Colorado Resiliency Working Group

Approaches to Planning for Hazards

Approaches to Consider

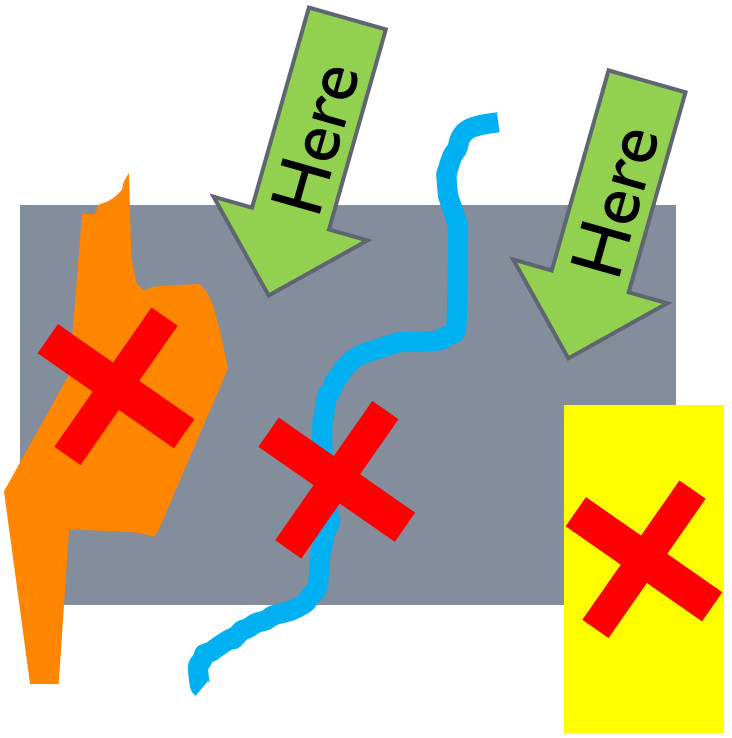
Avoidance

The most effective way to protect development from hazards is simply to prohibit development in known hazard areas.

But that's not always possible……

Approaches to Consider

- Prevent development in hazardous areas
- Direct future growth to safer areas
- Strengthen existing development in hazardous areas



Consider Community Context

- Size and geographic location
- Technical, administrative, and financial capacity
- Community goals and political will

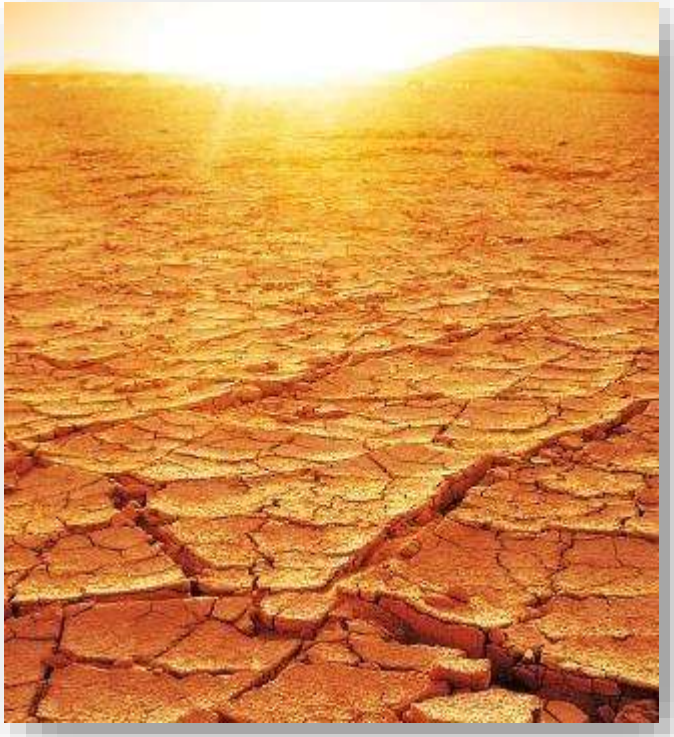
Consider the Interrelatedness of Hazards

For example:

- Drought → Fire
- Lightning → Fire
- Fire → Flooding
- Fire → Debris Flow
- Flooding → Soil Hazards

Consider Climate Change

- *Colorado Climate Plan* (2015) suggests that Colorado temperatures will increase another 2.5 to 5 degrees Fahrenheit by 2050
  - Longer and more severe droughts
  - Faster and earlier snowmelt
  - More frequent periods of extreme heat



Planning for Hazards – A Collaborative Approach

- Land use planners
- Emergency managers
- Elected and appointed officials
- Public works officials
- Community advocates
- Business owners
- Developers
- Citizens

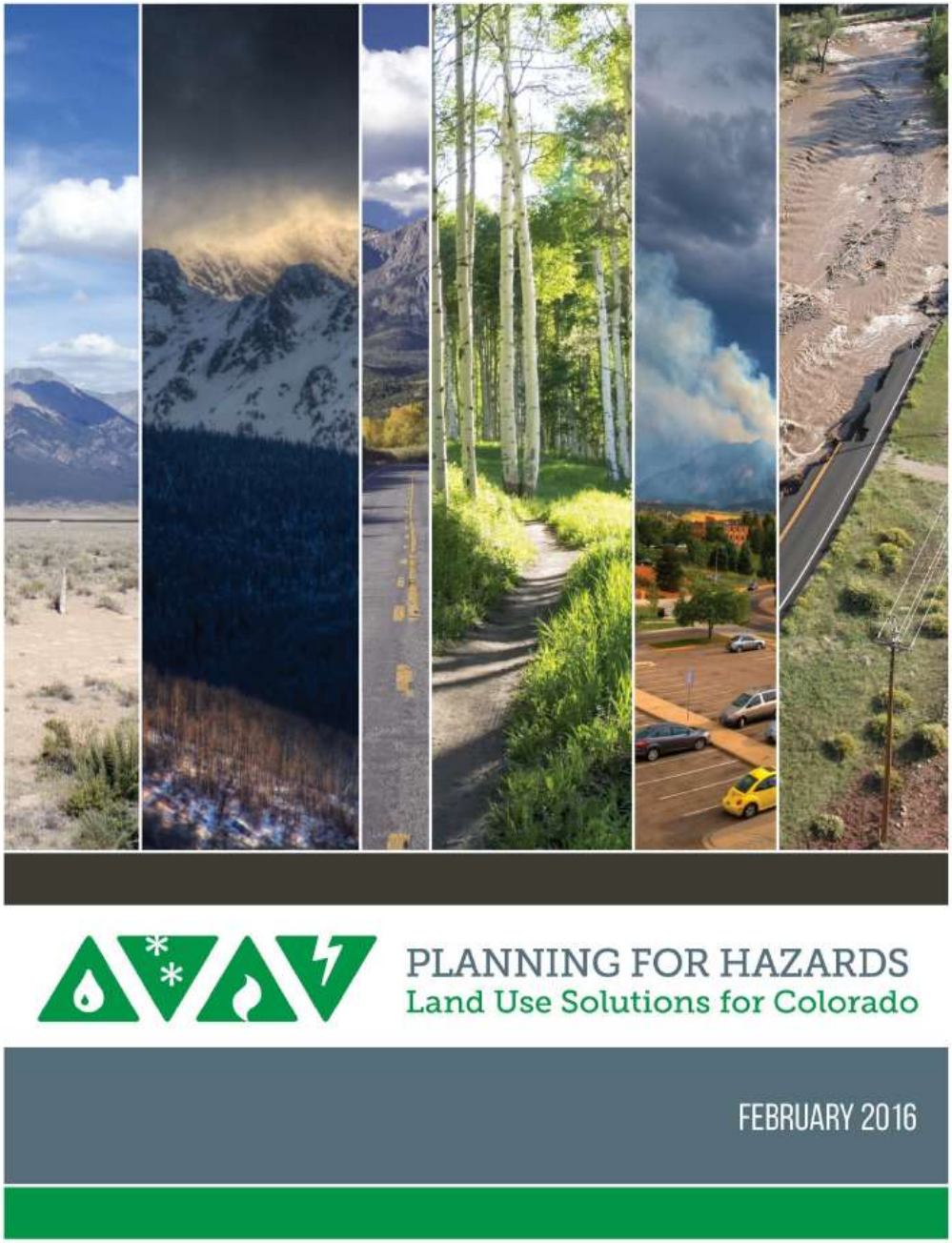
Overview of the Planning for Hazards Guide

Overall Goals

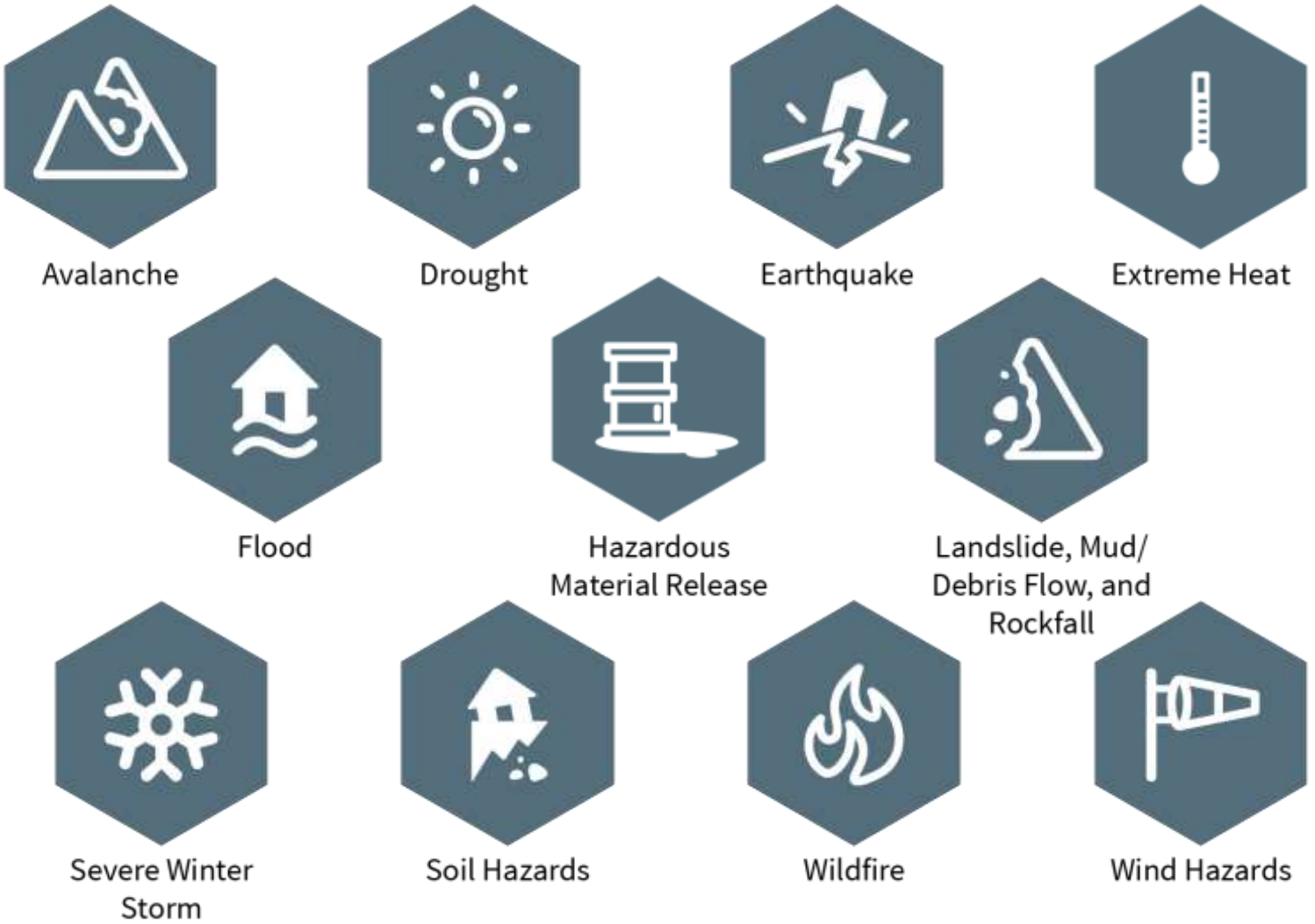
- Communicate to multiple audiences
- Ensure all content is accessible in a variety of formats
  - **Printed guide**
    - User-friendly exploration of major planning tools
    - All content, plus internal and external links
  - **Website:**
    - Essential content from all chapters (background, framework, resources, examples)
    - Multiple ways (entry points) to access information
    - Multimedia content
    - Foundation for future updates

Outline:

- Introduction and Summary
- Planning Framework
- Hazard Identification and Risk Assessment
- Planning Tools and Strategies
- Moving Forward
- Appendix – Hazards in Colorado



The Hazards Lineup



Planning Tool Profiles

ADDRESSING HAZARDS IN PLANS AND POLICIES
Integrating Risk Reduction into Comprehensive Plans
Climate Plan
Community Wildfire Protection Plan (CWPP)
Hazard Mitigation Plan
Parks and Open Space Plan
Pre-Disaster Planning (COOPs, COGs, and PDRPs)
STRENGTHENING INCENTIVES
Community Rating System
Density Bonuses
Development Agreements
Transfer of Development Rights
PROTECTING SENSITIVE AREAS
1041 Regulations
Cluster Subdivisions
Conservation Easements
Land Acquisition
Overlay Zoning
Stream Buffers and Setbacks

IMPROVING SITE DEVELOPMENT STANDARDS
Low-Impact Development and Stormwater Management BMPs
Site-Specific Assessments
Subdivision and Site Layout Standards
Use-Specific Standards in Zoning Regulations
IMPROVING BUILDINGS AND INFRASTRUCTURE
Building Code
Critical Infrastructure Protection
WUI Code
ADMINISTRATION AND PROCEDURES
Application Submittal Requirements
Post-Disaster Building Moratorium

What's in the Tool Profiles?

- How it Works
- Implementation
- Where It's Been Done
- Advantages and Key Talking Points
- Challenges
- Model Code Language and Commentary (for some)
- Key Facts
- Examples and More Information

SUBDIVISION AND SITE DESIGN STANDARDS

HOW IT WORKS

Subdivision and site design standards are used by communities to regulate how parcels of land are divided into developable lots, and how those lots are subsequently designed and laid out through the development process. Subdivision typically includes the creation of a sketch plan (showing basic lot layout and provisions for public infrastructure), and subsequent creation of a more detailed preliminary plat (indicating building footprints and specific measurements), and then culminating in a final plat that creates the new lots. Abbreviated procedures are typically established for minor subdivisions that involve the creation of just a handful of lots.

Site design standards are related and define the basic parameters for development on individual lots, including maximum or minimum lot size, how buildings are situated on a lot, traffic and circulation patterns, pedestrian connectivity, preservation of open areas, and avoidance of hazardous areas.

Communities increasingly consider hazard mitigation when adopting site layout standards. For example, applicants are required to avoid mapped hazard areas (like floodplains) in new development or to develop strategies to mitigate the hazard risk.

IMPLEMENTATION

As communities grow, they should identify where new growth should be concentrated through long-range planning mechanisms, such as the comprehensive planning process. There can be pressure to locate new development in areas that are known to be at risk from hazards. Communities must balance competing interests when reviewing proposed development. For example, the need for additional workforce housing in a community should be balanced against the desire to protect natural areas, view corridors, and natural hazard areas, as well as the safety and welfare of future inhabitants of the development. Communities are challenged with keeping development out of

harm's way while allowing individuals to develop land consistent with stated policies. Communities can often find middle ground through subdivision standards that allow for new subdivisions to be approved when they meet conditions to mitigate hazards, such as water cisterns for wildfire protection, slope stabilization for landslide and rockfall, and keeping buildable lots out of the floodplain. Additional incentives and regulations can be explored such as **cluster subdivisions**, **density bonuses**, and **Transfer of Development Rights (TDRs)**, each of which are good tools for promoting avoidance of hazards. Each of these are discussed in separate planning tool profiles.

According to APA's *Zoning Practice* issue on Safe Growth Audits (Godschalk, 2009), communities should ask themselves the following questions related to their subdivision regulations:

1. Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?
2. Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?
3. Do the regulations allow density transfers where hazard areas exist?

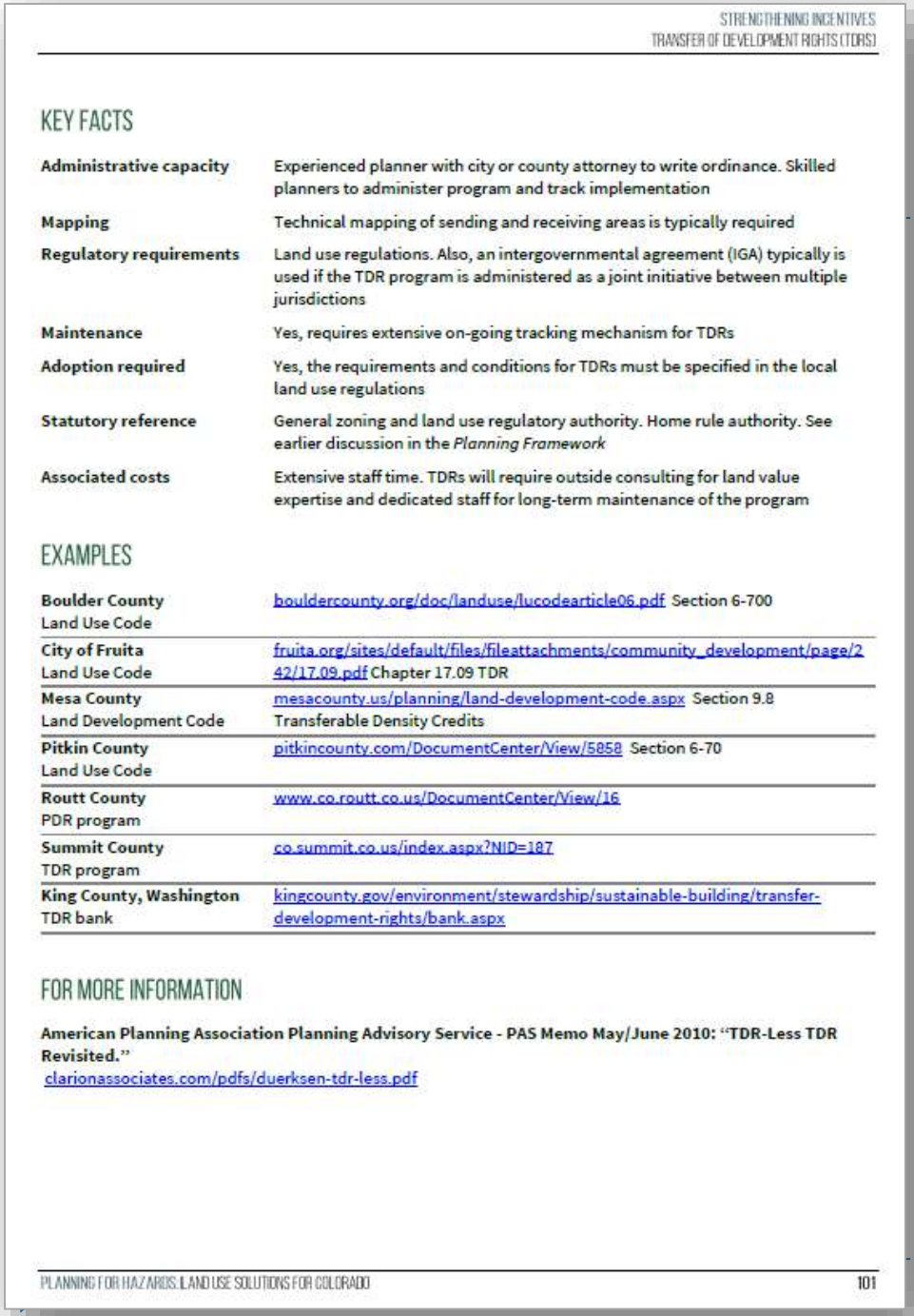
As with zoning codes, adoption of subdivision ordinances or site layout standards requires approval by the governing body (City Council, Board of Trustees, or County Commissioners).

WHERE IT'S BEEN DONE

Pagosa Springs adopted sensitive area protection standards for subdivisions and for redevelopment of existing areas in its Land Use and Development Code (2015). The standards generally address the following issues:

- **Slopes.** Slopes greater than 30 percent, or are otherwise unstable or subject to hazards, are not allowed to be platted or developed for residential uses without mitigation controls in place.
- **Natural Features.** Subdivisions or development shall protect waterways, vegetation, and rocks and other natural features or vistas.
- **Areas of Special Flood Hazard.** Mapped flood hazard areas identify areas where subdivisions shall not be approved without evidence that it is not in a flood hazard or meets other flood damage protection regulations to the satisfaction of the floodplain administrator.
- **Geologic Hazard Areas.** Subdivisions and site plans must meet mitigation conditions prior to approval in mapped geologic hazard areas in the Town as the information becomes available, including provisions to prevent danger to human life or property.
- **Wildfire Hazard Areas.** Applicants for subdivisions or other development must provide evidence from a professional forester that the proposal meets several conditions, including adequate roads for emergency services and criteria for wildfire areas published by the Colorado State Forest Service.
- **Perimeter Fencing.** Limits the height to protect migration of elk and deer.
- **Riparian Setbacks.** To promote and preserve the quality of the river ecology, aesthetic, and recreation.

In addition to these standards, approval criteria for major subdivisions also address areas that may involve soil or topographical conditions that present hazards.



KEY FACTS

Administrative capacity	Experienced planner with city or county attorney to write ordinance. Skilled planners to administer program and track implementation
Mapping	Technical mapping of sending and receiving areas is typically required
Regulatory requirements	Land use regulations. Also, an intergovernmental agreement (IGA) typically is used if the TDR program is administered as a joint initiative between multiple jurisdictions
Maintenance	Yes, requires extensive on-going tracking mechanism for TDRs
Adoption required	Yes, the requirements and conditions for TDRs must be specified in the local land use regulations
Statutory reference	General zoning and land use regulatory authority. Home rule authority. See earlier discussion in the *Planning Framework*
Associated costs	Extensive staff time. TDRs will require outside consulting for land value expertise and dedicated staff for long-term maintenance of the program

EXAMPLES

Boulder County Land Use Code	bouldercounty.org/doc/landuse/lucodearticle06.pdf Section 6-700
City of Fruita Land Use Code	fruita.org/sites/default/files/fileattachments/community_development/page/242/17.09.pdf Chapter 17.09 TDR
Mesa County Land Development Code	mesacounty.us/planning/land-development-code.aspx Section 9.8 Transferable Density Credits
Pitkin County Land Use Code	pitkincounty.com/DocumentCenter/View/5858 Section 6-70
Routt County PDR program	www.co.routt.co.us/DocumentCenter/View/16
Summit County TDR program	co.summit.co.us/index.aspx?NID=187
King County, Washington TDR bank	kingcounty.gov/environment/stewardship/sustainable-building/transfer-development-rights/bank.aspx

FOR MORE INFORMATION

American Planning Association Planning Advisory Service - PAS Memo May/June 2010: "TDR-Less TDR Revisited."
clarionassociates.com/pdfs/duerksen-tdr-less.pdf

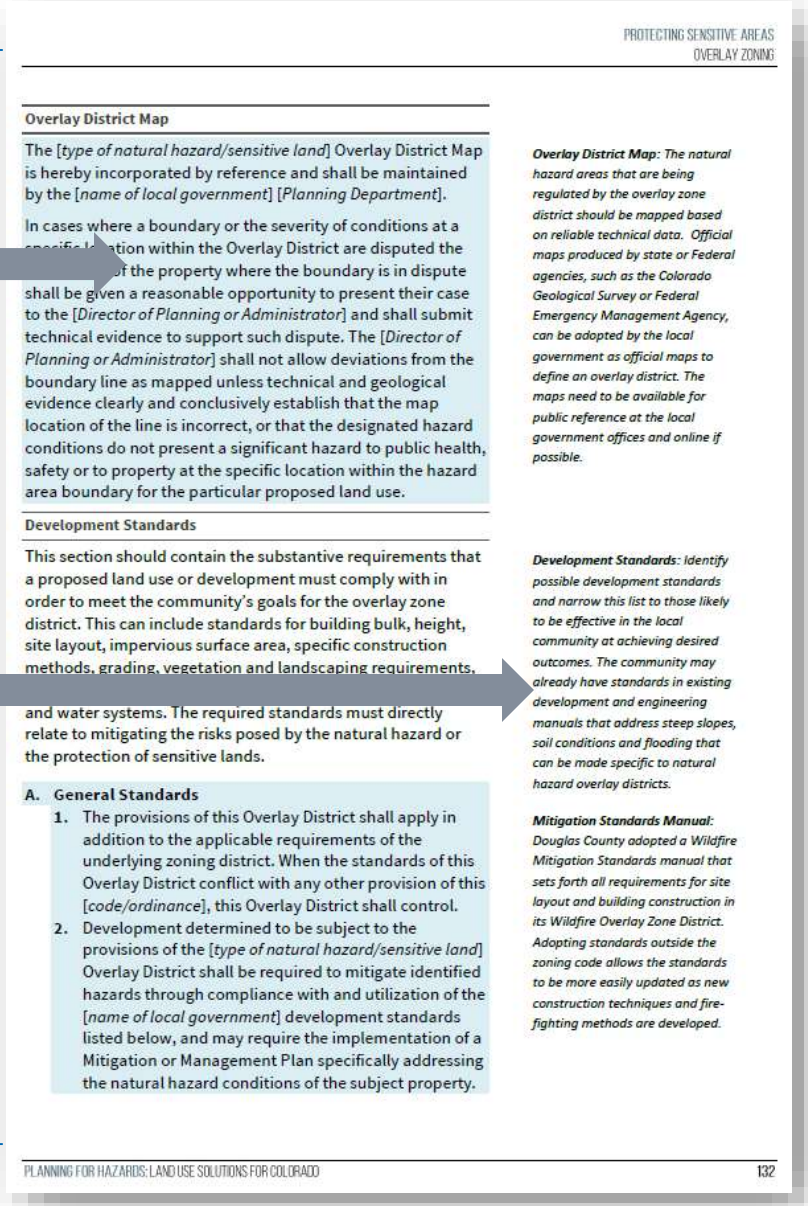
- Quick key facts
  - Capacity requirements
  - Statutory requirements
  - Maintenance concerns
  - Associated costs
- Examples from around Colorado (and sometimes the U.S.)
- "For more information" includes supporting reference materials

Model Code Language

- Integrating Risk Reduction into Comprehensive Plans
- Climate Plan
- Community Wildfire Protection Plan (CWPP)
- Hazard Mitigation Plan
- Parks and Open Space Plan
- Pre-Disaster Planning
- Community Rating System
- Development Agreements
- Transfer of Development Rights
- Density Bonuses
- 1041 Regulations
- Cluster Subdivisions
- Land Acquisition
- Overlay Zoning
- Stream Buffers and Setbacks
- Low-Impact Development and Stormwater Management BMPs
- Site-Specific Assessments
- Subdivision and Site Layout Standards
- Use-Specific Standards
- Building Code
- Critical Infrastructure Protection
- WUI Code
- Application Submittal Requirements
- Post-Disaster Building Moratorium

Model Code Language

- Language to be tailored for local governments (in blue)
- Based on several best practices throughout Colorado and the nation
- Includes commentary for further explanation (in margin)



Overlay District Map

The [*type of natural hazard/sensitive land*] Overlay District Map is hereby incorporated by reference and shall be maintained by the [*name of local government*] [*Planning Department*].

In cases where a boundary or the severity of conditions at a specific location within the Overlay District are disputed the owner of the property where the boundary is in dispute shall be given a reasonable opportunity to present their case to the [*Director of Planning or Administrator*] and shall submit technical evidence to support such dispute. The [*Director of Planning or Administrator*] shall not allow deviations from the boundary line as mapped unless technical and geological evidence clearly and conclusively establish that the map location of the line is incorrect, or that the designated hazard conditions do not present a significant hazard to public health, safety or to property at the specific location within the hazard area boundary for the particular proposed land use.

Overlay District Map: *The natural hazard areas that are being regulated by the overlay zone district should be mapped based on reliable technical data. Official maps produced by state or Federal agencies, such as the Colorado Geological Survey or Federal Emergency Management Agency, can be adopted by the local government as official maps to define an overlay district. The maps need to be available for public reference at the local government offices and online if possible.*

Development Standards

This section should contain the substantive requirements that a proposed land use or development must comply with in order to meet the community's goals for the overlay zone district. This can include standards for building bulk, height, site layout, impervious surface area, specific construction methods, grading, vegetation and landscaping requirements, and water systems. The required standards must directly relate to mitigating the risks posed by the natural hazard or the protection of sensitive lands.

Development Standards: *Identify possible development standards and narrow this list to those likely to be effective in the local community at achieving desired outcomes. The community may already have standards in existing development and engineering manuals that address steep slopes, soil conditions and flooding that can be made specific to natural hazard overlay districts.*

Mitigation Standards Manual: *Douglas County adopted a Wildfire Mitigation Standards manual that sets forth all requirements for site layout and building construction in its Wildfire Overlay Zone District. Adopting standards outside the zoning code allows the standards to be more easily updated as new construction techniques and fire-fighting methods are developed.*

A. General Standards

1. The provisions of this Overlay District shall apply in addition to the applicable requirements of the underlying zoning district. When the standards of this Overlay District conflict with any other provision of this [*code/ordinance*], this Overlay District shall control.
2. Development determined to be subject to the provisions of the [*type of natural hazard/sensitive land*] Overlay District shall be required to mitigate identified hazards through compliance with and utilization of the [*name of local government*] development standards listed below, and may require the implementation of a Mitigation or Management Plan specifically addressing the natural hazard conditions of the subject property.

Case Study – Cluster Subdivisions

Applicability

A. Cluster subdivisions are permitted in the [*name of district(s)*] zoning districts.

B. Clustering of lots is required in the following:

1. New subdivisions in the [*name of district(s)*] zoning districts.
2. New subdivisions in a wildfire hazard area of [insert range of severity level of mapped wildfire hazard areas].

Applicability: *Cluster subdivision can either be mandatory or optional. Many communities limit the districts where clustering benefits can be achieved (such as low-density residential or agricultural districts). For mapped hazard areas, communities can require clustering in certain instances (e.g., high to extreme wildfire hazard rating). Mapping can be tied to the comprehensive plan or hazard mitigation plan.*

Case Study – Cluster Subdivisions

SW County	**Archuleta County** Subdivision Regulations	archuletacounty.org/index.aspx?nid=247
Big City	**City of Aurora** Small Lot Development Standards	municode.com/library/co/aurora/codes/building_and_zoning
	DOLA Model Codes Cluster Subdivision Regulations	colorado.gov/pacific/dola/land-use-codes
Small Town	**City of Durango** Cluster Development	online.encodeplus.com/regs/durango-co
	Larimer County Rural Land Use Process	co.larimer.co.us/planning/planning/landuse
Front Range	**City of Longmont** Cluster Lot Subdivisions	municode.com/library/co/longmont/codes/code_of_ordinances
	Town of Pagosa Springs Conservation Subdivisions	municode.com/library/CO/pagosa_springs/codes/code_of_ordinances
	Routt County Land Preservation Subdivision	www.co.routt.co.us/index.aspx?nid=194
	San Miguel County Areas and Activities of Local and State Interest	sanmiguelcounty.org/243/Land-Use-Code
Resort County	**Summit County** Rural Land Use Subdivision Process	co.summit.co.us/DocumentCenter/Home/View/63 (Section 8420)

Appendix – Hazards in Colorado

- **Expanded information related to the hazards profiled in the guide. Each hazard includes:**
  - Description of the hazard
  - Hazard risk in Colorado
  - Related hazards
  - Available data sources
  - Summary of applicable planning tools and strategies

APPENDIX: HAZARDS IN COLORADO
LANDSLIDE, MUD/DEBRIS FLOW, AND ROCKFALL

LANDSLIDE, MUD/DEBRIS FLOW, AND ROCKFALL

DESCRIPTION

Landslides are the downward and outward movement of slopes composed of natural rock, soils, artificial fills, or combinations thereof. Common names for landslide types include slump, rockslide, debris slide, lateral spreading, debris avalanche, earth flow, and soil creep (*State Hazard Mitigation Plan*, 2013). Landslides move by falling, sliding, and flowing along surfaces marked by differences in soil or rock characteristics. A landslide is the result of a decrease in resisting forces that hold the earth mass in place and/or an increase in the driving forces that facilitate its movement. The rates of movement for landslides can be very quick (tens of feet per second) or very slow (fractions of inches per year). Landslides can occur as reactivated old slides or as new slides in areas that have not previously experienced them. Areas of past or active landslides can be recognized by their topographic and physical appearance. Areas susceptible to landslides but not previously active can frequently be identified by the similarity of geologic materials and conditions to areas of known landslide activity (p. 3-267-270).

A **mud flow** is a mass of water and fine-grained earth materials that flows down a stream, ravine, canyon, arroyo, or gulch. If more than half of the solids in the mass are larger than sand grains—rocks, stones, boulders—the event is called a **debris flow**. Debris and mud flows are combinations of fast-moving water and great volumes of sediment and debris that surge down slope with tremendous force. They are similar to flash floods and can occur suddenly without time for adequate warning. When the drainage channel eventually becomes less steep, the liquid mass spreads out and slows down to form a part of a debris fan or a mud flow deposit. In the steep channel itself, erosion is the dominant process as the flow picks up more solid material. Any given drainage area may have several mud flows a year, or none for several years or decades. They are common events in the steep terrain of Colorado and vary widely in size and destructiveness. Extreme amounts of precipitation in a very short period of time (e.g., cloudbursts) and flash floods are the usual sources for creating a mud flow in Colorado (p. 3-268-270).

2013 landslide along West Mosquito Creek in Park County, Colorado

Source: Colorado Geological Survey, photo by Division of Reclamation and Mining, [illegible]

Rockfalls are the newly detached mass of rock falling from a cliff or down a very steep slope. Rockfalls are the fastest type of landslide and occur most frequently in mountains or other steep areas during early spring when there is abundant moisture and repeated freezing and thawing. Ice wedging, root growth, or ground shaking, as well as a loss of support through erosion or chemical weathering may start the fall (p. 3-269-270).

PLANNING FOR HAZARDS: LAND USE SOLUTIONS FOR COLORADO A-24

PLANNING FOR HAZARDS
Land Use Solutions for Colorado

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www.planningforhazards.com

Purpose of the Guide

Learn how the Hazard Mitigation Guide can help your community address risks and integrate hazard mitigation into policies, regulations, and standards.

Intro

This guide provides detailed, Colorado-specific information about how to assess a community's risk level to hazards and how to implement several land use planning tools and strategies for reducing a community's risk.

Read the Guide

To explore this guide or specific chapters in the traditional format, Page-by-Page from start to finish, look for the purple Table of Contents on the top right and the previous/next buttons on the bottom of each page.

Goals of the Website

- Accommodate different user experiences
- Offer user-friendly interface
- Make it easy to access information from the printed guide
- Bring the document to life through enriched media
- Dynamic with new content over time

JANE

JIM

JOHN

"Jim's Scenario"

Interested in wildfire, Jim has some burning questions…

- How does wildfire impact Colorado communities?
- What types of planning tools can address wildfire?
- What other hazards can be addressed with the same planning tool?
- Is there model code language for that planning tool?

Learn how the H

Avalanche

D

Hazardous Material Release

Extre

Wildfire

Wind Hazards

Severe Winter Storm

Close

Wildfire

On This Page

Description

The Colorado Natural Hazards Mitigation Plan defines a **wildfire** as an unplanned, unwanted **wildland fire**, including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out[36]. Wildland fire occurs when vegetation, or "fuel," such as grass, leaf litter, trees, or shrubs, is exposed to an ignition source and the conditions for combustion are met, resulting in fire growth and spread through adjacent vegetation.

Wildland fires are either ignited by lightning or by some consequence of human activity. **In Colorado, lightning accounts for only 17 percent of wildfires, with human ignitions accounting for the remainder.**[37] Human causes vary and can include escaped debris pile burning, campfires, fireworks, construction sparks, downed transmission lines, and arson.

Wildland fires can occur during any time of year. Although there are frequent references to a "fire season," ignitions are a result of the ability of fuels to support combustion. In addition to an ignition source, the fuel type, amount of fuel, distribution pattern, and moisture content—coupled with weather and topography—will determine the conditions for combustion and resulting fire behavior. Fire behavior "outputs" include intensity,

Applicable Planning Tools and Strategies

Addressing Hazards in Plans and Policies

- Comprehensive Plans
- Climate plan
- Community Wildfire Protection Plan
- Hazard mitigation plan
- Parks and open space plan
- Response and recovery planning

Strengthening Incentives

- Development agreements
- Transfer of development rights and density bonuses

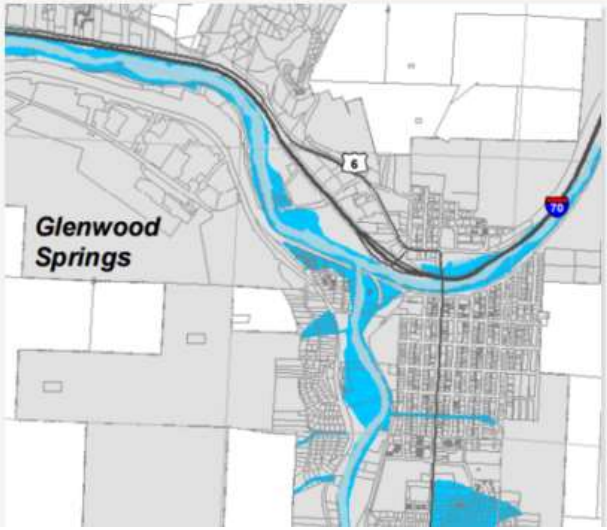
Protecting Sensitive Areas

- 1041 Regulations
- Cluster subdivisions
- Conservation easements
- Land acquisition
- Overlay zoning

Land Use Tool: Overlay Zoning

On This Page

How It Works



Overlay zoning is used by communities to app area-specific standards and/or conditi zoning district (such as residential or l d-use) determines the types of uses permitted, the dimensional requirements, and sometimes additional district-specific standards. An overlay district (or overlay zone) is an additional layer of standards that apply to all areas within a defined overlay boundary, regardless of the underlying base zoning district. For example, an area with single-family homes that is zoned R-1 might also be within a hillside overlay zone. In this example, the permitted uses might allow construction of a single-family home according to the R-1 standards;

Model Codes & Regulations

Learn More

Hazards Addressed

Flood

Wildfire

PDF

Download PDF

See all PDFs

Key Facts

Administrative Capacity - Experienced planner

Mapping - Technical mapping typically required

Community Rating System

- Voluntary, incentive-based program that encourages community floodplain management activities that exceed minimum federal standards
  - Provides a strong framework for implementing comprehensive flood risk management
  - Flood insurance rates are discounted for ALL policyholders in the community based on creditable local activities
- 46 Colorado communities currently participate in CRS

Community Rating System

City of Delta

- Pop. = 8,652 (2014)
- Total number of NFIP policies = 10

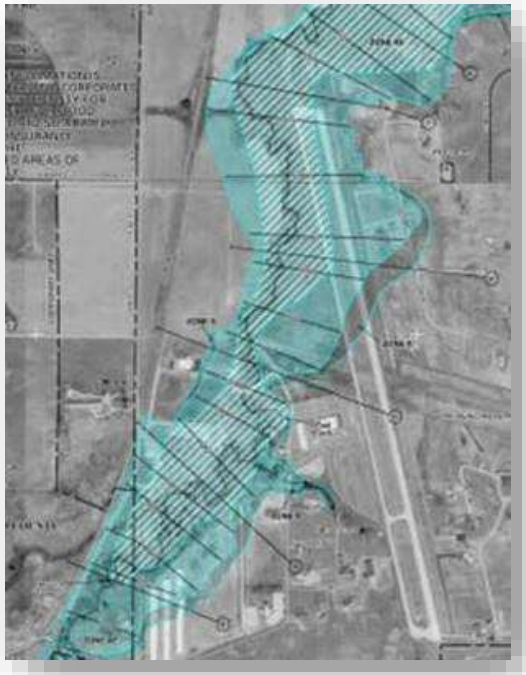
- Joined CRS in 1996, actively participating as **Class 8** community (10% discount for floodplain properties)

- Key activities include:
  - Open space preservation
  - Drainage system maintenance
  - Higher regulatory standards
  - Public outreach activities

Critical Infrastructure Protection

Erie Municipal Airport

- Major economic asset and opportunity for Town of Erie
- Critical "transportation & lifeline" facility
- Traverses Coal Creek floodplain
- Airport access limited to single bridge at Coal Creek Crossing
  - Connects runway to maintenance facility, private hangars and several businesses
  - Critical to proposed Airport Business Park



Critical Infrastructure Protection

Improving Buildings and Infrastructure

- Undersized, decaying culvert required frequent clearing and repairs – just to keep operational in *small storms*
- In 2008, the Town replaced the culvert through the assistance of FEMA Pre-Disaster Mitigation (PDM) funds
- Total project cost = $417,083
- No damage or economic loss during September 2013 flood

"The structure worked per its design. It's a great asset to the town and the airport."

– Russell Pennington
Deputy Director of Public Works
Town of Erie

Site-Specific Hazard Assessment

Improving Site Development Standards

Eagle County, Colorado

- Wildfire management requirements during planning procedures
  - Sketch Plan Process
  - Special Uses
  - Subdivisions
  - PUDs
- Requirements for building permits
- Site inspection process

EAGLE COUNTY

Used with permission:

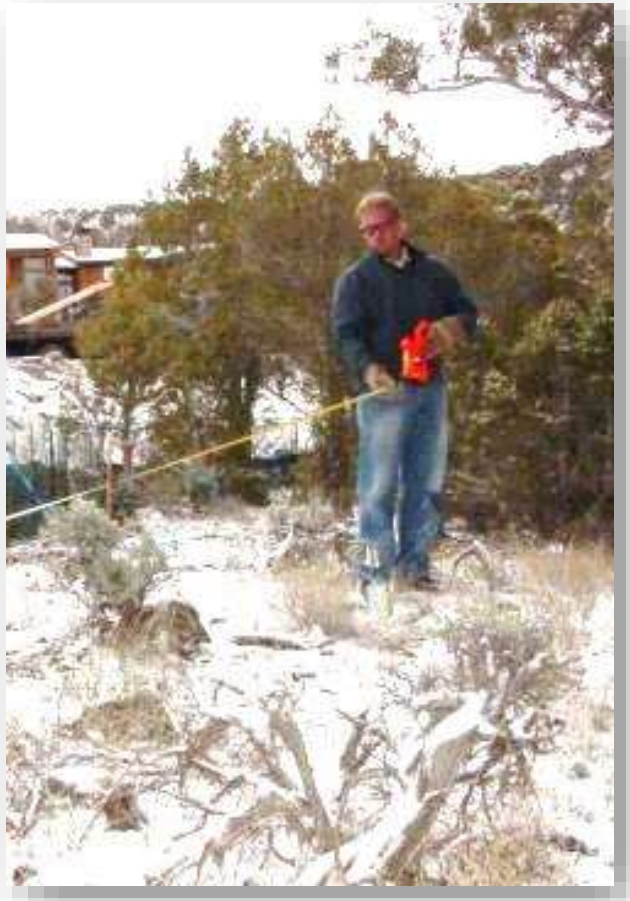
Eric Lovgren
Wildfire Mitigation Manager

Site-Specific Hazard Assessment

Improving Site Development Standards

Challenges in implementation

- Public acceptance takes time
- Competing interests such as "natural forest views"
- Second homeownership – seasonal population
- Poor design of existing communities (lack of appropriate ingress/egress)
- Paying for the program – (only charges a $200 wildfire mitigation fee)



Site-Specific Hazard Assessment

Improving Site Development Standards

Advantages and Key Talking Points (from the guide)

- The best (and in some cases the only) way to identify hazards on a site and determine the most effective methods for mitigation.
- Highlight potentially hazardous conditions prior to any development occurring.
- Provide an important educational component between staff and the applicant related to hazards.
- Results in reduced risk to property and life.

Subdivision and Site Design Standards

Improving Site Development Standards

Pagosa Springs, Colorado

Sensitive Area Protection Standards

- Land Use and Development Code
  - Slopes
  - Natural features
  - Areas of special flood hazard
  - Geologic hazard areas
  - Wildfire hazard areas
  - Riparian setbacks
  - Perimeter fencing (for wildlife migration)

Subdivision and Site Design Standards

Improving Site Development Standards

Pagosa Springs, Colorado

Sensitive Area Protection Standards

Example: Subdivisions in Geologic Hazard Areas must meet several conditions, including:

- Will not create undue financial burden on future residents or the community
- Structures designed for occupancy shall be constructed tot prevent risk to life or property
- Permitted land uses shall avoid or mitigate geologic hazards at initial construction

Video Interviews

- Enriched media content
- Real life examples of planning for hazards
- Description of tools

Planning for Hazards in Larimer County

Fire and Flood

Mitigating the Risks in Larimer County


June 9, 2012
High Park Wildfire

Aerial Mulching Operation


On September 9, 2013…
…it started to rain

Colorado Largest Disaster
September 2013 Flood

Flood Statistics

10 People Died
18,000 Evacuated
1,882 Structures Destroyed

20 inches of rain in 7 days

Larimer County Planning Activities

- County Ordinances and Policies
- County Strategic Plan
- Hazard Mitigation Plan

Moving Forward/Next Steps

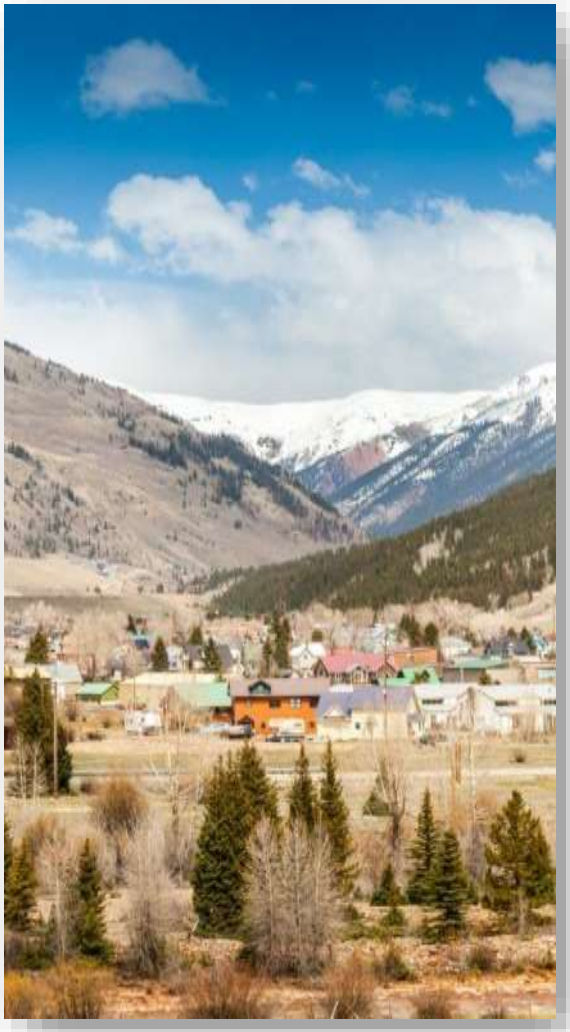
Putting the Guide into Action

- Use guide to inform community planning policies and procedures
- Use guide to support ongoing emergency management and mitigation efforts
- Use guide as an educational and outreach tool

Choosing Appropriate Planning Tools

Ask the following questions when selecting tools and strategies:

- What hazards are you trying to mitigate?
- Do you have policies in place already?
- Do you have capacity to implement?
- Do you have community buy-in?
- Could you accomplish multiple goals with one tool?



Building the Case

- Thoughtful engagement
- Unified messaging
- Findings grounded in data
- Speak to elected officials early and often

Forming a Network

- Identify subject matter experts
- Find examples from other communities
- Develop best practices and additional resources
- Harness political leadership
- Recruit local champions

Additional Best Practices?

Submit your ideas to:

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Questions & Discussion

Thank You

PLANNING FOR HAZARDS
Land Use Solutions for Colorado

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