

Hazards		
South Jefferson County Community Plan		Comprehensive Master Plan
<p>Hazards, natural and human made, should be identified, eliminated, mitigated and/or avoided to prevent the loss of life, property, or costly remediation and to protect the public health and environment. Potential problems need to be identified early in the planning and development process before economic losses and environmental damage occur.</p>	<p>Duplicative</p>	<p>Hazards & Geologic Constraints Vision Jefferson County: Life, health and property of residents are protected from the effects of hazardous conditions by avoiding the development of those areas unless elimination or mitigation of the hazard is possible. The intent of this section is to identify hazards in the County that should be mitigated or eliminated prior to development and to identify those governmental entities that have the authority to safeguard people, property and the environment from injury or damage caused by hazardous conditions and events, whether natural or triggered by human activities.</p> <p>During the development review process, all development proposals should be checked to ensure that hazards are not present on the specific site or can be adequately mitigated, and that the appropriate measures and design guidelines have been applied. Potential problems need to be identified early in the process before economic loss and environmental damage occurs.</p>
Goals		
<p>1. Reduce threats to public safety, and loss of property and life, from geologic hazards.</p>	<p>Duplicative</p>	<p>Hazards & Geologic Constraints 1) General i) Goal: Promote public safety and reduce loss of property due to hazards and geologic constraints.</p>
<p>2. Avoid/reduce exposure to pollutants and environmental hazards.</p>	<p>Duplicative</p>	<p>Hazards & Geologic Constraints 1) General (a) Objective: Manage growth and development so as to minimize adverse social, economic, and environmental impacts in hazard and geologic constraints areas.</p>
<p>I. Geologic Hazards Jefferson County has mapped many of the hazards and constraints in the county with assistance from the Colorado Geological Survey (CGS), United States Geological Survey (USGS), Colorado State Forest Service (CSFS), Urban Drainage and Flood Control District (UDFCD), and the Federal Emergency Management Agency (FEMA). Geologic hazards have been classified into High, Moderate, and Low categories. (See Appendix for a description of specific geologic hazards.)</p>	<p>Duplicative. This is FYI and these issues are discussed in the detail in the appendix.</p>	
A. General		
<p>1. Single-family residential development should not occur on slopes greater than 30%.</p>	<p>Duplicative</p>	<p>Hazards & Geologic Constraints Mapped Moderate Geologic Constraint Areas • 20% - 30% slopes Mapped Major Geologic Constraint Areas • 30% - 40% slopes 2) Geologic Hazards and Constraints i) Goal: Protect people and property from geologic hazards and constraints. (b) Objective: Ensure activities do not aggravate or accelerate existing geologic hazards and constraints. (See Appendix C II. Housing 1) Site Constraints 4. Policy: Discourage residential development on slopes exceeding 30%. (See Appendix B I. c.)</p>

2. Non-residential and multi-family development should not occur on slopes greater than 20%.	Add to CMP	<p>Modify to say: Discourage non-residential development on slopes exceeding 20%.</p> <p>Add as Policy 4 under the General Land Use Chapter, Urban and Non-Urban Interface, Objective B.</p> <p>Modify to say: Discourage multi-family residential development on slopes exceeding 20%.</p> <p>Add as Policy 5 under the Housing Chapter, Site Constraints, Objective A and renumber existing policies 5-10 to 6-11.</p>
3. The natural topography and existing vegetation should be protected before, during, and after development. If disturbed, the natural appearance, vegetation, and slope stability should be maintained, or if not possible, restored. Disturbed areas should be stabilized as quickly as possible to reduce fugitive dust and potential erosion. Drought resistant plantings should be used to revegetated disturbed areas (see Appendix).	Duplicative	<p>Air, Light, Odor and Noise</p> <p>Air</p> <p>1. Policy: Minimize areas of disturbance including road and driveway cuts, homesite clearings, and any other grading and blasting areas.</p> <p>2. Policy: To control dust and mitigate the adverse effect of grading for new development, revegetate disturbed areas with species native to Colorado.</p> <p>Visual Resources</p> <p>4) Site Design</p> <p>6. Policy: Minimize the impacts of road cuts, building footprints, and other grading activities on their surroundings, by minimizing grading and including rounded slopes, erosion control, reseeding, and revegetation to return disturbed areas to their natural state.</p> <p>(b) Objective: Avoid or minimize development impacts on ridgelines and steep hillsides</p> <p>2. Policy: Minimize the need for grading, earth moving, vegetation removal and site disturbance related to development on ridgelines and steep hillsides.</p> <p>3. Policy: Grading or earth moving to create a flat building pad on a slope should be discouraged; instead, buildings should be stepped to fit with the natural terrain.</p>
4. Development and mitigation should not increase or create potential hazards on adjacent properties or public roads.	Duplicative	<p>Hazards & Geologic Constraints</p> <p>2. Policy: Identify resources and environmental conditions potentially impacted by proposed development in the initial stages of a project, to best design a development that protects the environment.</p> <p>(b) Objective: Ensure activities do not aggravate or accelerate existing geologic hazards and constraints. (See Appendix C II. a.)</p> <p>(d) Objective: Protect existing structures and roads from adverse impacts caused by new development. Impacts include geologic, erosion and sedimentation.</p>
5. Development should not aggravate or accelerate existing hazards.	Duplicative	<p>Hazards & Geologic Constraints</p> <p>2. Policy: Identify resources and environmental conditions potentially impacted by proposed development in the initial stages of a project, to best design a development that protects the environment.</p> <p>(b) Objective: Ensure activities do not aggravate or accelerate existing geologic hazards and constraints. (See Appendix C II. a.)</p>
6. The county's engineering geologist should review proposals in or near high and moderate geologic hazard areas for specific identification of the hazard and necessary mitigation. Geologic hazard areas should only be declassified after the appropriate studies and public hearings have been completed.	Duplicative. Not discussed but Geologist review is already required as part of the process.	
B. High Geologic Hazard Areas		
<p>High geologic hazards are high-to-extreme threats to public safety that require that the hazard be avoided unless a study determines that the hazard can be mitigated. They include:</p> <ul style="list-style-type: none"> • Rockfalls; • Landslides and slope failure; • Potentially unstable slopes; • Floodplains; • Zoned geologic hazards; and • Subsidence. 	Duplicative.	<p>Hazards & Geologic Constraints</p> <p>Mapped Major Geologic Hazard Areas</p> <ul style="list-style-type: none"> • Rockfall • Landslide • Slope Failure • 100 Year Floodplains • Zoned geologic hazards, except Dipping Bedrock • Subsidence • Methane <p>Potentially unstable slopes mentioned as an Environmental Hazard in the Appendix.</p>

In the South Jefferson County area there are three former coal mines: Economy, Littleton, and Virginia	This may be included into the introductory to the S. Jeffco Section.	
1. Development in high geologic hazard areas should be avoided.	Duplicative.	Hazards & Geologic Constraints 1) Geologic Hazards and Constraints 1. Policy: Avoid development in geologic hazard areas, unless a study is conducted on the area and there is adequate mitigation or elimination of the hazards.
2. Mitigation should be allowed only when development and mitigation will not increase potential hazards on adjacent properties, will not aggravate or accelerate existing hazards, and will completely eliminate the threat to public safety and loss of property.	Duplicative.	Hazards & Geologic Constraints 1. Geologic Hazards and Constraints (b) Objective: Ensure activities do not aggravate or accelerate existing geologic hazards and constraints. (See Appendix C II. a.) 1. Policy: Avoid development in geologic hazard areas, unless a study is conducted on the area and there is adequate mitigation or elimination of the hazards. 4. Policy: Development in geologic hazard areas should be discouraged. Development should only be allowed in these designated hazard areas when adequate mitigation or elimination of the potential hazards can be demonstrated. 11) Sustainability (b) Objective: The County should ensure to the extent possible that land use activities do not aggravate, accelerate, or increase the level of risk from natural hazards.
3. If mitigation is possible, a study should be conducted to identify the appropriate mitigation method for the hazard. The appropriate mitigation should be implemented during site design, site preparation, and/or construction.	Modify CMP	Modify existing Policy 1 under the Hazards & Geologic Constraints Chapter, Geologic Hazards & Constraints, Objective B to say: 1. Avoid development in geologic hazard areas, unless a study is conducted on the area and there is adequate mitigation or elimination of the hazards. The appropriate mitigation should be implemented during site design, site preparation, and/or construction.
4. Water-intensive landscaping and individual sewage disposal systems (ISDS) should not be permitted in high geologic hazard areas. Drought resistant vegetation is recommended (see Appendix).	Add to CMP	Modify to say: Water-intensive landscaping and septic systems should not be permitted in High Geologic Hazard Areas. Add as Policy 3 under the Hazards & Geologic Constraints Chapter, Geologic Hazards & Constraints, Objective B.
5. Development should not occur in the zoned geologic hazard areas without proper mitigation in full compliance with the appropriate Overlay District.	Delete. This is already required in the Zoning Resolution	
C. Moderate Geologic Hazard Areas		
Moderate geologic hazards are potential threats to public safety. They require studies to determine the extent of potential hazards and may require extensive mitigation. They include: <ul style="list-style-type: none"> • Designated Dipping Bedrock Overlay Zone District; • Methane gas fields from abandoned landfills; • Post wildfire flooding and mud flow areas; • Highly erodible soils; • High swelling/expansive soils and bedrock; and • Highly sensitive soils. 	Redundant.	Hazards & Geologic Constraints Mapped Moderate Geologic Hazard Areas <ul style="list-style-type: none"> • Post-wildfire flooding and mud flow areas Mapped Major Geologic Constraint Areas <ul style="list-style-type: none"> • Highly swelling soils • Dipping Bedrock Mapped Moderate Geologic Constraint Areas <ul style="list-style-type: none"> • Moderate swelling soils • Highly erodible soils • Highly sensitive soils
1. Development in moderate geologic hazard areas should adequately mitigate or eliminate the hazard. A study should be conducted to determine the extent of potential hazards that may require extensive mitigation.	Duplicative.	Hazards & Geologic Constraints 1) General Policy: Development in hazard areas should be avoided or the effects of such development mitigated to minimize harm to the County and its residents such that each is not subject to future safety or cost implications. 3. Geologic Hazards and Constraints Policy: Mitigate or eliminate geologic constraints. Conduct a study to determine the extent of potential constraints.
2. Landscaping and drainage plans should be designed to avoid aggravation or acceleration of any moderate geologic hazard. Drought resistant vegetation is recommended (see Appendix).	Add to CMP	Add as Policy 4 under the Hazards & Geologic Constraints Chapter, Geologic Hazards & Constraints, Objective B.

D. Low Geologic Hazard Areas		
Low geologic hazards are potential constraints that require an awareness of the potential risk, a site-specific hazard investigation, and may require mitigation to minimize adverse impacts. They include: Moderately erodible soils; Low to moderate swelling/expansive soils and bedrock; and Moderately sensitive soils.	Duplicative	Hazards & Geologic Constraints Mapped Moderate Geologic Constraint Areas <ul style="list-style-type: none"> • 20% - 30% slopes • Moderate swelling soils • Mapped Minor Geologic Constraint Areas • Moderately erodible soils
1. Land uses in low geologic hazard areas should adhere to current county regulations regarding identification and mitigation of geologic and soil hazards.	Duplicative. - Not the exact language, but the same result.	Hazards & Geologic Constraints 3. Geologic Hazards and Constraints 2. Policy: Mitigate or eliminate geologic constraints. Conduct a study to determine the extent of potential constraints. 6. Policy: Development proposals should address how moderate and minor geologic constraint areas will be mitigated.
A. Pollutants and Environmental Hazards		
1. Development applications for businesses that use, store or transport hazardous and toxic materials, should be referred to fire districts and emergency management for review.	Duplicate	Hazards & Geologic Constraints 7. Hazardous Wastes and Materials (a) Objective: Ensure hazardous wastes and/or hazardous materials are properly manufactured, handled, stored, transported, used and disposed. 2. Policy: Inform Fire Districts and emergency management teams of chemicals, explosives, hazardous materials, products and their wastes stored or manufactures on sites, or transported within their districts.
2. Development applications in the immediate vicinity of electromagnetic energy emission sources should be referred to the Jefferson County Department of Health and Environment for evaluation of health hazards.	Duplicate	Hazards & Geologic Constraints 5) Radiation 1. Policy: Evaluate electromagnetic radiation sources and have them conform to ANSI standards. i. Implementation: Refer high power telecommunications proposals to the County Public Health Department to evaluate health hazards. ii. Implementation: Update the Telecommunications Section of the Zoning Resolution regarding high power telecommunication uses.
3. Land uses on or adjacent to abandoned sanitary landfills should use the latest technology to vent and monitor methane gas. The design of structures and improvements should be based on careful site design and subsurface testing before construction is permitted on landfills to prevent damage from differential settlement. The county should consider using the recovered methane gas.	Duplicate, but does not discuss recovering methane.	Hazards & Geologic Constraints <u>6) Current, Closed and Abandoned Landfills</u> 1. Policy: Ensure land adjacent to landfills has protection from methane gas and differential settlement. 2. Policy: Prevent methane build-up in all structures on closed and abandoned landfills by proper venting and equipping them with methane monitors and alarm systems. 3. Policy: Vent or collect methane from closed and abandoned landfills prior to development.
4. New construction should be radon resistant.	Duplicate	Hazards & Geologic Constraints 2) Radiation 2. Policy: Existing structures and new construction in areas which have been identified as having high levels of natural radioactivity should be mitigated. i. Implementation: Consider adopting International Building Code regulations that would require new construction in areas with high levels of natural radioactivity to use building techniques to prevent high radon levels.
III. Wildfire Hazard		
A. Severe Wildfire Hazard Areas 1. All applications for development within the severe wildfire hazard areas should be referred to the Colorado State Forest Service (CSFS) and local fire protection agency for identification of appropriate mitigation measures. Best Management Practices and accepted methods of forestland management, as defined by CSFS, should be used to reduce severe wildfire hazard areas to a low or moderate rating. (See the Public Facilities, Services, & Utilities section.)	Duplicate	Hazards & Geologic Constraints 4) Wildfire 4. Policy: Refer development proposals to the Colorado State Forest Service and applicable fire protection districts to assess hazards and determine mitigation techniques. i. Implementation: Work with the Colorado State Forest Service to develop standardized criteria for evaluating wildfire hazard levels.

<p>2. Residential lot sizes should be restricted to 1 dwelling unit per 10 to 35 acres.</p> <p>a. Minimum lot size should be 10 acres when the hazard is adequately mitigated, as determined by fire officials.</p> <p>b. Minimum lot size should be 35 acres if inadequate mitigation is done, as determined by fire officials.</p>	<p>This is presently being discussed with Emergency Management. This is not a recommendation specific to S. Jeffco and any proposed recommendations will be added to the CMP.</p>	<p>Housing</p> <p>8. Policy: Avoid development in maximum/critical wildlife quality areas. Transfer the density that would have been allowed in these areas to other portions of the site.</p> <p>9. Policy: Allow development in high wildlife quality areas only when excellent site design is achieved.</p> <p>10. Policy: Densities should decrease as wildlife habitat quality increases.</p>
<p>B. Moderate Wildfire Hazard Areas</p> <p>1. All applications for development within the moderate wildfire hazard areas should be referred to the Colorado State Forest Service (CSFS) and local fire protection agency for identification of appropriate mitigation measures. Best Management Practices and accepted methods of forestland management, as defined by CSFS, should be used to reduce moderate wildfire hazard areas to a low rating. (See the Public Facilities, Services, & Utilities section.)</p> <p>2. Residential lot sizes should be restricted to 1 dwelling unit per 5 to 35 acres.</p> <p>a. The minimum lot size should be 5 acres when the hazard is adequately mitigated, as determined by fire officials.</p> <p>b. The minimum lot size should be 35 acres if inadequate mitigation is done, as determined by fire officials.</p>	<p>This is presently being discussed with Emergency Management. This is not a recommendation specific to S. Jeffco and any proposed recommendations will be added to the CMP.</p>	<p>Hazards & Geologic Constraints</p> <p>4) Wildfire</p> <p>4. Policy: Refer development proposals to the Colorado State Forest Service and applicable fire protection districts to assess hazards and determine mitigation techniques.</p> <p>i. Implementation: Work with the Colorado State Forest Service to develop standardized criteria for evaluating wildfire hazard levels.</p> <p>Housing</p> <p>8. Policy: Avoid development in maximum/critical wildlife quality areas. Transfer the density that would have been allowed in these areas to other portions of the site.</p> <p>9. Policy: Allow development in high wildlife quality areas only when excellent site design is achieved.</p> <p>10. Policy: Densities should decrease as wildlife habitat quality increases.</p>
<p>C. Low Wildfire Hazard Areas</p> <p>1. In low wildfire hazard area, there is no lot size restriction based on wildfire hazard.</p>	<p>Delete</p>	
<p>IV. Noxious Weeds</p> <p>Noxious weeds are problematic in all areas of Jefferson County. Jefferson County has a Noxious Weed Management Plan, as required by the Colorado Noxious Weed Management Act (CRS 35-5.5).</p> <p>1) All property owners should comply with the requirements of the Colorado Weed Management Act.</p>	<p>Duplicate</p>	<p>Hazards & Geologic Constraints</p> <p>9) Noxious Weeds and Forest Pests</p> <p>1. Policy: Control noxious weeds as specified by the County's Noxious Weed Management Plan.</p>
<p>2. New development should be required either to be revegetated within one growing season or to cover bare areas with materials that will prevent invasion by noxious weeds. (See Appendix for more information.)</p>	<p>Add to CMP</p>	<p>Add language as stated as Policy 4 under the Hazards & Geologic Constraints Chapter, Noxious Weeds & Forest Pests, Objective A.</p>
<p>Implementation</p>		
<p>A. Geologic Hazards</p>		
<p>2) Maintain Jefferson County's eligibility for the National Flood Insurance Program (NFIP) so that flood insurance continues to be available to its citizens.</p>	<p>Duplicate</p>	<p>Hazards & Geologic Constraints</p> <p>3) Floodplains</p> <p>i. Implementation: Jefferson County should maintain its participation in the National Flood Insurance Program to benefit residents.</p>
<p>2. The county should amend the Geologic Hazards Overlay to include all high geologic hazards.</p>	<p>Add to CMP</p>	<p>Modify to say:</p> <p>The County should consider including all high geologic hazards in the Geologic Hazards Overlay.</p> <p>Add as Policy 2 under the Hazards & Geologic Constraints Chapter, Geologic Hazards & Constraints, Objective A.</p>

2. Citizens and the county should work with the Division of Minerals and Geology Abandoned Mine Reclamation Program to close all mine openings that pose a safety hazard. Bat habitats should be considered when selecting closure methods.	Duplicate	Hazards & Geologic Constraints 8. Abandoned Mines 1. Policy: Mine openings that pose a safety hazard should be closed. Citizens should work with the County and the Division of Minerals and Geology Abandoned Mine Reclamation Program. Bat habitats should be considered.
4. Jefferson County and FEMA should continue to require that a Floodplain Development Permit be obtained before construction or development begins within the Floodplain Overlay District.	Duplicate	Hazards & Geologic Constraints 3) Floodplains (b) Objective: Preclude land use activities in the 100-year floodplain that would increase the danger and amount of flooding. 1. Policy: Development in a floodplain should comply with the Floodplain Overlay Zone District.
5. The county should evaluate its <i>Land Development Regulation</i> and the <i>Zoning Resolution</i> to verify that natural topography and existing vegetation are protected, enhanced and/or incorporated into site design to the maximum extent possible.	Duplicate – anything more should be incorporated into design guidelines.	Hazards & Geologic Constraints 1) General 2. Policy: Identify resources and environmental conditions potentially impacted by proposed development in the initial stages of a project, to best design a development that protects the environment. Visual Resources 4) Site Design 6. Policy: Minimize the impacts of road cuts, building footprints, and other grading activities on their surroundings, by minimizing grading and including rounded slopes, erosion control, reseeding, and revegetation to return disturbed areas to their natural state. (b) Objective: Avoid or minimize development impacts on ridgelines and steep hillsides 2. Policy: Minimize the need for grading, earth moving, vegetation removal and site disturbance related to development on ridgelines and steep hillsides. 3. Policy: Grading or earth moving to create a flat building pad on a slope should be discouraged; instead, buildings should be stepped to fit with the natural terrain
6. A flood watch program and workable flood warning system should be established for drainages and streams where potential flood hazards are known to exist.	Duplicate	Hazards & Geologic Constraints 2) Floodplains 3. Policy: Support the continued refinement and use of regional flood warning systems.
7. The county is encouraged to map flood-prone areas for informational and educational purposes. Flood-prone areas are not within a floodplain, but could still be flooded due to increased impervious surfaces and fences that block flows.	Add to CMP	Modify to say: The county is encouraged to should map flood-prone areas for informational and educational purposes. Flood-prone areas are not within a floodplain, but could still be flooded due to increased impervious surfaces and fences that block flows. Add as Policy 9 under the Hazards & Geologic Constraints Chapter, Floodplains, Objective B.
B. Pollutants and Environmental Hazards		
B. Pollutants and Environmental Hazards 1. When demolishing or renovating buildings, environmental hazards, such as lead-based paint, mercury, asbestos, etc., should be removed and disposed of properly and safely. The Jefferson County Department of Health and Environment and the Colorado Department of Public Health and Environment should be contacted for required permits.	Delete. This would be addressed at the time of the demolition permit.	
2. The Jefferson County <i>Land Development Regulation</i> and the building code should require that new construction, in areas that have high levels of natural radioactivity, use building techniques to prevent high radon levels. Techniques to prevent radon buildup inside structures and meet federal health standards and state specifications for radon gas should be incorporated into all new construction.	Duplicate	Hazards & Geologic Constraints 5) Radiation 2. Policy: Existing structures and new construction in areas which have been identified as having high levels of natural radioactivity should be mitigated. i. Implementation: Consider adopting International Building Code regulations that would require new construction in areas with high levels of natural radioactivity to use building techniques to prevent high radon levels.
3. Best Management Practices to prevent harmful effects from spills and storage of hazardous materials or pollutants should be followed. The Jefferson County Division of Building Safety should be encouraged to coordinate with the fire protection agencies of jurisdiction when construction plans are submitted for projects that will have hazardous materials onsite during construction and/or operation.	Add first sentence to CMP. Delete second sentence.	Add first sentence as stated as the second sentence of the existing Policy 1 under the Hazards & Geologic Constraints Chapter, Hazardous Wastes & Materials, Objective A. The second sentence is required by both the 2009 and 2006 editions of the International Fire Code.

<p>4. The manufacturing, handling, storage, use, and/or transportation of all known and potential toxic waste and/ or hazardous materials should comply with county, state, and federal regulations.</p>	<p>Duplicate</p>	<p>Hazards & Geologic Constraints 1. Policy: Handling, storage, transportation, manufacturing, use and disposal of hazardous wastes and materials should comply with applicable regulations.</p>
<p>5. The county's current Solid Waste Management Program features a drop-off site for recycling and household hazardous waste disposal on Rooney Road (see Appendix). The county is encouraged to offer free satellite drop-off sites.</p>	<p>Delete. The County does not offer free drop off at Rooney Road.</p>	
<p>6. If the county pursues a biomass project (converting extra slash/wood into energy), locations should be carefully selected to avoid pollution and odors affecting large populations. It is recommended that these projects meet or exceed federal standards.</p>	<p>Duplicate</p>	<p>Land Use 6) Extractive Resources 4. Policy: Support industrial type uses specific to resource extraction/harvesting/processing, such as wood product processing facilities where appropriate infrastructure can be provided and adverse impacts to the local community can be avoided or mitigated.</p>