# Staff Report to the Weber County Commission

*Weber County Planning Division*

## Synopsis

### Application Information

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| **Application Request:** | Consideration and decision on a proposal to amend the following sections of the Weber County Land Use Code: Definitions (§101-1-7), General Provisions (§102-1), Natural Hazards Overlay Districts (§104-27), Supplementary and Qualifying Regulations (§108-7) and Hillside Development Review Procedures and Standards (§108-14) to clarify that the Planning Commission is not the only land use authority over projects with natural hazards, and to provide clarity, remove redundancies, and include process steps and appeal provisions for natural hazards reviews. |
| **Agenda Date:** | Tuesday, September 06, 2016 |
| **Staff Report Date:** | Wednesday, August 31, 2016 |
| **Applicant:** | Weber County Planning Division |
| **File Number:** | ZTA 2016-01 |

### Staff Information

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| **Report Presenter:** | Charlie Ewert<br>cewert@co.weber.ut.us<br>(801) 399-8763 |
| **Report Reviewer:** | RG |

## Applicable Ordinances

§101-1-7: Definitions
§102-1: General Provisions
§104-27: Natural Hazards Overlay Districts
§108-7: Supplementary and Qualifying Regulations
§108-14: Hillside Development Review Procedures and Standards

## Legislative Decisions

Decision on this item is a legislative action. When the Planning Commission is acting on a legislative item it is acting as a recommending body to the County Commission and has wide discretion. Examples of legislative actions are general plan, zoning map, and land use code amendments. Typically, the criterion for providing a recommendation on a legislative matter suggests a review for compatibility with the general plan and existing ordinances.

## Summary and Background

Weber County has many various natural hazards. The natural hazards overlay ordinance[1] was created decades ago in an attempt to address mitigation measures for building on potentially hazardous sites. Hazard study areas are identified based on the best hazards mapping information available for a given site.[2] These maps give a point of reference for the County to gauge whether additional studies are needed prior to permitting new development. After site evaluation, geologists and other experts can determine the breadth of hazards (if any), and help the County determine mitigation measures necessary to minimize impacts on the resulting occupants, surrounding property owners, and public infrastructure. Under current ordinances, if a site is in a study area it is required that the land owner has an expert review for such hazards, and offer the results and recommendations to the County's Land Use Authority for consideration during development review.[3]

Staff has become aware that the current Natural Hazards Overlay Zone specifies that only the Planning

[1] See LUC §104-27.
[2] LUC §104-27 was originally created with specific hazards maps; however, mapping of hazards throughout Weber County has evolved since then. The Utah Geological Survey currently has several relevant mapping resources, including an online map service.
[3] See LUC §104-7-4.

Commission is the Land Use Authority for development that is located within a natural hazard study area. While this provision may make sense for certain types of more complicated applications, it does not lend to an efficient or expedient review of simple applications, like single family dwelling building permits.

Additionally, this requirement conflicts with other provisions in the Land Use Code. Those provisions designate other entities, such as the Planning Director or the County Commission, as the Land Use Authority for some types of applications.[4]

Review and modification of this proposal has been a cross collaboration between the Planning Division, Engineering Division, Attorney's Office, and outside expert legal counsel. We have also reached out to a private geologist for comments. Through this careful evaluation it became apparent that these proposed changes are necessary. The changes include the need for clarifying provisions, and in some places, ordinance reconstruction. The proposal provides better consideration for the designated Land Use Authority when considering natural hazards; it also helps clarify the role of the Planning Director in certain Land Use Authority decisions; and then, generally, it provides for clarity, removes redundancies, and includes process steps and appeal provisions for reviews of projects when natural hazards are present.

This proposal makes a best effort to resolve known ordinance issues regarding governance of development in natural hazard areas, however, we are aware that it may only provide an intermediary solution to resolve the Land Use Authority problem, and a few other simple clarifications.

## Policy Analysis

**Recommended method of reviewing the proposal.** The complete proposal is presented in the ordinance provided herein as Attachment 5. The attachments 2-3 provide a more specific analysis of the changes in the text-balloons in the margins.

The proposal is lengthy. To ease in the County Commission's review, consider the following. Attachment 2 is the complete text of the proposed changes, which is in the same format that the proposal will be presented to the County's codifiers. However, because the natural hazards code is being removed from §104-27 and added into §108-22, this exhibit does not emphasize in track-changes all of the changes being made between the two. Rather, it only shows that §104-27 was deleted and §108-22 was added. For this reason staff offers Attachment 3, which is a document that emphasizes in track-changes what changes are occurring between the current §104-27 to the proposed §108-22. Staff recommends that the Commission starts their review with Attachment 3.

A brief synopsis of the changes is provided below.

**Policy considerations.** It can be noted that throughout the proposal the term "planning commission" has been replaced with "land use authority." This is because the code designates different land use authorities for different types of permits. For example, the Planning Director is the land use authority for approving alternative lot access, the Planning Commission is the land use authority for approving conditional use permits, and the County Commission is the land use authority for approving road dedications. By changing Planning Commission to Land Use Authority the proposal points the reader back to whomever is the Land Use Authority for a given permit type, as otherwise designated elsewhere in the code.

The current code could be more clear for what types of permits, and under what circumstances, the Planning Director is the land use authority. This proposal addresses that.

This proposal also addresses the fact that current ordinances are made unnecessarily complicated by requiring natural hazards to be administered through a hillside review process rather than by a typical natural hazards review process. There is unnecessary overlap between the ordinances. This proposal separates the hillside review process from the natural hazards review process, and establishes better procedural guidelines for natural hazards review.

This proposal moves the natural hazards ordinance from Title 104 – Zones, to Title 108 – Standards. There are a couple of reasons for doing this. The first, natural hazards really are not zones. A zone has legislatively created

[4] For example, LUC §102-1-2 sets up certain land use authority permissions for the planning director.

boundaries intended to organize land uses based on the public will of the community. The existence of natural hazards is not subject to the will of the legislative body, and their boundaries cannot be changed by community desire. Natural hazards are more akin to hillside development or source protection areas than they are zones. It is better to create standards for development on them rather than try to govern them by a zone. Second, the natural hazards ordinance provides for a method of changing the natural hazards maps when it can be proven that the suspected hazard is not actually present. If the natural hazards ordinance is considered a "zone" and mapped as a "zoning overlay" any of these changes would be subject to the typical rezone process, which is an unnecessary complication for such a highly technical consideration.

This proposal brings the appeal process for geologic hazards into compliance with the governing state statutes.

## Conformance to the General Plan

Generally, land use code changes should be vetted through the filter of policy recommendations of the applicable general plan. The new 2016 Ogden Valley General plan advises the county to reduce development potential on known geologic hazard areas. There are not specific recommendations regarding this proposal the Western Weber plan, however, it can be determined by the Planning Commission that the proposal is not in conflict with the general plan's guidance.

## Past Action on this Item

The Western Weber Planning Commission heard this proposal in a public hearing on June 14, 2016, and tabled the proposal pending addition review time. They offered a positive recommendation on it in their August 9, 2016 meeting.

The Ogden Valley Planning Commission heard this proposal and made a positive recommendation in their July 26, 2016 meeting.

## Noticing Compliance

A hearing for this item before the Planning Commission has been posted for public notice in compliance with UCA §17-27a-205 and UCA §17-27a-502 in the following manners:

- Posted on the County's Official Website
- Posted on the Utah Public Notice Website
- Published in a local newspaper

## Staff Recommendation

Staff and both Planning Commissions recommends approval of the text included as Attachment 5 with the following findings:

1. The changes are necessary to reduce conflicting provisions in the Land Use Code.
2. The changes are necessary to provide clarity in the Land Use Code.
3. The clarifications will provide for a more efficient administration of the Land Use Code.
4. The changes comply with the intent of the Land Use Code.
5. The changes are not detrimental to the effect of the general plan.
6. The changes are not found to be detrimental to the health, safety, and welfare of County residents.

## Attachments

1. Summary, List, and Key to Proposed Changes.
2. Annotated Redlined Version of Code Changes
3. Comparison of the Current and Proposed Natural Hazards Codes [omits technical edits of other sections].
4. Land Use Code Revision Process Flowchart.
5. Ordinance

# Exhibit A: Summary, list, and key to proposed changes

The following code changes are being proposed to clarify that the Planning Commission is not the only land use authority over projects with natural hazards, and to provide clarity, remove redundancies, and include process steps and appeal provisions for natural hazards reviews.

This change addresses the following code sections:

§ 101-1-7. Definitions

§ 102-1: General provisions

§ 104-27: Natural hazards overlay districts

§ 108-7: Supplementary and qualifying regulations

§ 108-14: Hillside development review procedures and standards

Key to reading track changes:

Three periods (**…**) indicates that there are codes sections that have been left out of the proposed changes. These code sections will remain unchanged.

Language that has been added is shown in blue underline

~~Language that has been moved to a new location is shown in green double strikeout~~

~~Language that has been deleted is shown in red strikeout~~

Language that has been moved from an old location is shown in green double underline

**Title 101 - GENERAL PROVISIONS**

…

**Sec. 101-1-7. - Definitions.**

…

Building parcel designation. The term "building parcel designation" means two or more lots within an approved subdivision are recognized as one lot for building purposes. ~~This does not allow for the creation of additional lots, and the original lot lines as recorded do not change. The planning director can administratively approve a building parcel designation application.~~

…

Geologic and Geotechnical terms.

Active fault. The term "active fault" means a seismic (earthquake) fault displaying evidence of greater than four inches of surface displacement along one or more of its traces during Holocene time (approximately 10,000 years ago to the present).

Active landslide. The term "active landslide" means a landslide which is known to have moved or deformed and which has not been proven to be stable by a geotechnical investigation.

Aquifer. The term "aquifer" means a geological unit in which porous and permeable conditions exist or a geologic unit of stratified drift, and thus are capable of yielding usable amounts of water.

Aquifer recharge. The term "aquifer recharge" area means an area that has soils and geological features that are conducive to allowing significant amounts of surface water to percolate into groundwater.

Area of deformation. See "zone of deformation."

Critical acceleration. The term "critical acceleration" means the minimum amount of ground acceleration during seismically induced ground movement required to induce liquefaction or other forms of ground disruption.

Critical facilities. The term "critical facilities" means:

(1) Lifelines such as major communication, utility and transportation facilities and their connection to emergency facilities;

(2) Essential facilities, such as:

a. Hospitals and other medical facilities having surgery and emergency treatment areas;

b. Fire and police stations;

c. Tanks or other structures containing, housing, or supporting water or other fire-suppression materials or equipment required for the protection of essential or hazardous facilities, or special occupancy structures;

d. Emergency vehicle shelters and garages;

e. Structures and equipment in emergency-preparedness centers;

f. Standby power generating equipment for essential facilities;

g. Structures and equipment in government communication centers and other facilities required for emergency response;

**Comment [c1]:** Currently, there is only this definition explaining what a building parcel designation is, but not any statutes allowing it. A statute has been added in 108-7-33 (herein) that uses this stricken language, and provides additional standards based on the County's historic and routine procedure.

**Comment [c2]:** All of the definitions in the natural hazards ordinance were removed and added here. Some of these definitions were supplemented with the definitions found in the natural hazards codes. Some have been re-worked or updated for clarity or best management practices. All definitions have been cross referenced for their use in other chapters to verify consistency.

(3) Hazardous facilities such as structures housing, supporting or containing sufficient quantities of toxic or explosive substances to be dangerous to the safety of the general public if released; or

(4) Special occupancy structures, such as:

a. Covered structures whose primary occupancy is public assembly (capacity greater than 300 persons);

b. Buildings for schools through secondary or day care centers (capacity greater than 50 students);

c. Buildings for colleges or adult education schools (capacity greater than 50 students);

d. Medical facilities with 50 or more resident incapacitated patients, but not included above;

e. Jails and detention facilities;

f. All structures with occupancy greater than 5,000 persons;

g. Structures and equipment in power-generating stations and other public utility facilities not included above, and required for continued operation;

h. Unique or large structures whose failure might be catastrophic, such as dams holding over ten acre feet of water. ~~lifelines, such as major communication, utility and transportation facilities and their connection to emergency facilities, unique or large structures whose failure might be catastrophic, such as dams or buildings where explosive, toxic or radioactive materials are stored or handled, high occupancy buildings such as schools, hotels, offices, emergency facilities, such as police and fire stations, hospitals, communication centers and disaster response facilities.~~

Debris flow. The term "debris flow" means a mass of rock fragments, soil, and mud which, when wet, moves in a flow-like fashion. Debris flows will follow a confined channel, but may alter course if present on an alluvial/debris fan surface.

Engineering geologist. The term "engineering geologist" means a geologist who, through education, training and experience, is able to assure that geologic factors affecting engineering works are recognized, adequately interpreted and presented for use in engineering practice and for the protection of the public. This person shall have:

(1) At least a four-year degree in geology, engineering geology, or a related field from an accredited university; and

(2) At least three full years of experience in a responsible position in the field of engineering geology.

(3) A Utah State Professional Geologist's license.

**Comment [c3]:** New standard.

Engineering geology. The term "engineering geology" means the application of geological data and principles to engineering problems dealing with naturally occurring rock and soil for the purposes of assuring that geological factors are recognized and adequately interpreted in engineering practice.

Fault. The term "fault" means a fracture in the earth's crust forming a boundary between rock or soil masses that have moved relative to each other (also see "active fault").

Fault scarp. The term "fault scarp" means a steep slope or cliff formed directly by movement along a fault.

Fault trace. The term "fault trace" means the intersection of the fault plane with the ground surface.

Fault zone. The term "fault zone" means a corridor of variable width along one or more fault traces.

Geotechnical report. The term "geotechnical report" means a technical report or study prepared by a geotechnical professional who is qualified in the field of expertise examined and analyzed in such a report. A person shall be considered "qualified" upon presentation of credentials providing recognition in the professional field, an academic degree from an accredited college or university in geology, geotechnics and/or geotechnical engineering.

Landslide. The term "landslide" means a general term for the down slope movement of a mass of soil, surficial deposits or bedrock.

Liquefaction. The term "liquefaction" means a process by which certain water saturated soils lose bearing strength because of ground shaking and increase of groundwater pore pressure. Liquefaction potential categories depend on the probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction in those zones. High liquefaction potential means that there is a 50% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction. Moderate means that the probability is between 10% and 50%, low means that the probability is between 5% and 10%, and very low means less than 5%.

Natural hazard. The term "natural hazard" means any hazard listed in Section 108-22-2, including, but not limited to, liquefaction, surface fault rupture, rock fall, debris flow, flood, tectonic subsidence, landslide and other hazards.

Natural hazard map. The term "natural hazard map" means any map that has been published by a qualified professional or applicable governmental agency, which contains the best available information, as determined by the County Engineer, and which delineates a potential natural hazard.

Natural hazard study area. The term "natural hazard study area" means any area identified on any natural hazard map or within any natural hazard studies or reports as having potential for being a natural hazard. In addition, the County Engineer has discretion to identify a natural hazard study area as a new hazard or potential hazard becomes known.

Rock fall. The term "rock fall" means the gravity-induced drop of a newly detached segment of bedrock or perched rock of any size from a cliff or steep slope.

Structure designed for human occupancy. The term "structure designed for human occupancy" means any residential dwelling or any other structure used or intended for supporting or sheltering any use or occupancy which is expected to have occupancy rate of more than 2,000 person-hours per year.

Zone of deformation. The term "zone of deformation" means the zone along a fault in which natural soil and rock materials are disturbed as a result of movement along the fault.

**…**

**Title 102 - ADMINISTRATION**

**CHAPTER 1. - GENERAL PROVISIONS**

**Sec. 102-1-1. - Purpose and intent.**

The purpose of this section is to establish regulations and procedures for the processing and consideration of applications allowed by this Land Use Code.

**Sec. 102-1-2. - ~~Administrative~~ Planning director authority.**

(a) The planning director, or his designee, is authorized to deny, approve, or approve with conditions an application for an administrative approval. Administrative approval can be given for the following applications:

(1) Site plan approval, when required by this Land Use Code, for which the Land Use Authority is not otherwise specified by this Land Use Code;

**Comment [c4]:** The changes in this section are intended to clarify the role of the Planning Director when acting as the Land Use Authority.

(2) ~~site plans~~Design review for ~~with~~ buildings under 10,000 square feet ~~located on a parcel less than one acre in size,~~and which impact an area of less than one acre, as provided in Section 108-1-2;

(3) H~~h~~ome occupation~~s with or without visiting clientele,~~ , as provided in Section 108-13-2;

(4) Building parcel designation, as provided in Section 108-7-33;

(5) ~~combining of lots within an approved subdivision which meet ordinance requirements, minor~~ Small subdivisions ~~as defined by the subdivision definition~~, as provided in Section 106-1-8(f) of this Land Use Code; and

(6) F~~f~~lag lots, access to a lot/parcel using a private right-of-way or access easement, and access to a lot/parcel at a location other than across the front lot line~~.~~, as provided in Title 108, Chapter 7 of this Land Use Code.

(b) The planning director may deny an application for an administrative approval if the use fails to comply with specific standards set forth in this ~~chapter~~ Land Use Code or if any of the required findings are not supported by evidence in the record as determined by the director. At the discretion of the planning director, the planning commission can hear the request for an administrative approval.

(~~b~~c) The ~~administrative~~ planning director approval process includes public notice and comment from adjacent property owners, when~~as~~ required by this Land Use Code or state code.

**…**

**Sec. 102-1-4. - Notice of decision.**

After ~~hearing~~ reviewing the evidence and considering the application, the ~~approving authority (planning commission, planning director or his designee, board of adjustment, and county commission on land use applications)~~Land Use Authority, as designated by this Land Use Code, shall make its findings and decision. It shall then send ~~have them entered in the minutes. Upon a decision by the approving authority,~~ a notice of decision ~~shall be mailed~~ to the applicant at the address or e-mail address given in the application. A notice of decision can be a ~~new~~ written notice of decision, a copy of the written administrative approval ~~form~~ signed by the planning director or designee, or a copy of the approved minutes. A decision by the ~~approving authority~~Land Use Authority is final at the time the notice of decision is ~~issued~~sent. If a notice of decision is not sent, and the decision was made in a meeting where minutes are kept, the decision shall be final on the date the minutes from the meeting are approved by the ~~approving authority~~Land Use Authority. The planning division shall also mail notice of any decisions to any person or agency who, in writing, requested such notification before the decision was rendered. Unless the Land Use Authority's final decision specifies otherwise, ~~D~~the Land Use Authority's decision~~s~~ is~~are~~ subject to requirements and conditions stated in the staff report and, if applicable, listed in the meeting minutes.

**…**

**Title 104 - ZONES**

**…**

**CHAPTER 27. - RESERVED~~NATURAL HAZARDS OVERLAY DISTRICTS~~**

**~~Sec. 104-27-1. - Purpose and intent.~~**

~~(a) The purpose and intent of this chapter is to coordinate the application of natural hazards guidelines and standards, in order to protect the health, welfare and safety of the citizens of the county, and to minimize potential effects of natural and manmade hazards by identifying known hazardous~~

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**Comment [c5]:** Here is part of the new statute of for "building parcel designation." See the rest in 108-7-33.

**Comment [c6]:** This land use code no longer references "minor subdivisions." Only "small subdivisions."

**Comment [c7]:** Changes to this section clarify the role of the land use authority when offering a final decision and when notifying the applicant of the decision.

**Field Code Changed**

**Comment [c8]:** This whole section has been moved in its modified form to section 108-22. This removes it from the zoning chapter and places it in the standards chapter where it belongs.

~~areas. This portion of the chapter specifies the areas for which an environmental analysis shall be performed prior to development, the content of the analysis and the procedure by which development applications requiring the analysis are reviewed and processed.~~

~~(b) The county recognizes individual property rights and shall make every effort to balance the right of the individual property owner with the health, welfare, safety and the common good of the general public.~~

~~**Sec. 104-27-2. Potential hazards.**~~

~~The following potential hazards have been identified:~~

~~(1) Surface fault ruptures.~~

~~a. Surface faulting has been identified as a potential hazard in the county. Maps have been produced delineating the known area where a hazard may exist from surface fault ruptures. Broad subsidence of the valleys accompanying surface faulting may affect areas several miles away from the fault. These effects are not considered here, but are covered in subsection b of this section.~~

~~b. Studies along the Wasatch fault have indicated that during a "characteristic" earthquake which produces surface faulting, offsets of six feet or more may occur on the main trace of the fault zone. This offset will result in formation of a near vertical scarp, generally in unconsolidated surficial deposits, that begin to ravel and erode back to the material's angle of repose (33-35 degrees) soon after formation. Antithetic faults west of the main trace may also form, generally exhibiting a lesser amount of offset, but sometimes as much as several feet. The zone between these two faults may be complexly faulted and tilted with offset along minor faults of several inches or more.~~

~~c. Based upon this data, it is difficult, both technically and economically, to design a structure to withstand six feet or more of offset through its foundation. Thus, avoidance of the main traces of the fault is the principal risk reduction technique that can be reasonably taken.~~

~~d. No critical facility or structure for human occupancy shall be built astride an active fault. In some areas adjacent to the main trace but still within the zone of deformation, avoidance may not be necessary. Less damaging (smaller) offsets of less than four inches, and tilting may occur and structural measures may be taken to reduce casualties and damage. However, structural damage may still be great, and buildings in the zone of deformation may not be safe for occupants following a large earthquake.~~

~~e. Due to the scale used to map these zones, there is not enough detail to delineate all fault traces and zones of deformation at a particular location, therefore, site specific plans and studies shall be required for development in or adjacent to the delineated areas.~~

~~f. Upon submittal, review and planning commission approval of site specific plans and studies with recommendations, produced by a qualified engineering geologist, setbacks shall be a minimum of 50~~

feet from an active fault trace. A reduction in the setback will be considered if the report presents evidence to justify a reduction acceptable to the planning commission.

(2) Landslide/tectonic subsidence.

a. Landslide. Landslides, historically, have been one of the most damaging geologic processes occurring in Weber County. Most active landslides, and most older slides, have been mapped and are shown on the Sensitive Lands Overlay District maps. These designations serve as an indication of unstable ground. The maps designate areas of landslides and slopes which are potentially unstable under static (non-earthquake) conditions, and are especially vulnerable under conditions of high to abnormally high precipitation. Landslides can damage structures, roads, railroads and power lines. Furthermore, landslides may rupture canals, aqueducts, sewers and water mains, all of which can add water to the slide plane and promote further movement. Flooding may also be caused.

b. Many methods have been developed for reducing landslide hazards. Proper planning and avoidance is the least expensive measure, if landslide-prone areas are identified early in the planning and development process. Care in site grading with proper compaction of fills and engineering of cut slopes is a necessary follow-up to good land use planning. Where avoidance is not feasible, various engineering techniques are available to stabilize slopes, including de-watering (draining), retaining structures, piles, bridging, weighting or buttressing slopes with compacted earth fills and drainage diversion. Since every landslide and unstable slope has differing characteristics, any development proposed within a designated landslide hazard area, as delineated on the Sensitive Lands Overlay District maps, shall require the submittal, review and approval by the planning commission, of specific site studies, including grading plans, cut/fill, and plans produced by a qualified engineering geologist and a Utah licensed geotechnical engineer. The site specific study shall address slope stability (including natural or proposed cut slopes), evaluate slope failure potential, effects of development and recommendations for mitigative measures. Slope stability analysis shall include potential for movement under static, development-induced and earthquake-induced conditions as well as likely groundwater conditions.

c. Tectonic subsidence. Tectonic subsidence, also called seismic tilting, is the warping, lowering and tilting of a valley floor that accompanies surface faulting earthquakes on normal (dip slip) faults such as the Wasatch fault zone. Inundation along the shores of lakes and reservoirs and the ponding of water in areas with a shallow water table may be caused by tectonic subsidence. Certain structures which require gentle gradients or horizontal floors, particularly wastewater treatment facilities and sewer lines may be adversely affected.

d. Because subsidence may occur over large areas (tens of square miles), it is generally not practical to avoid the use of potentially affected land except in narrow areas of hazard due to lake shoreline flooding. For gravity-flow structures such as wastewater treatment facilities that are within areas of possible subsidence, it is advisable to consider the tolerance of such structures to slight changes in gradient. Some structures may have to be releveled after a large-magnitude earthquake. Critical

~~facilities which contain dangerous substances should have safety features to protect the structure, its occupants and the environment from both tilting and flooding.~~

~~e. Flooding problems along lakes from tectonic subsidence shall be reduced using standard techniques such as raising structures above expected flood levels and dikes can be built. Development adjacent to lakes or reservoirs shall be prohibited within three feet of elevation above projected lake levels to protect against natural rises from wet periods, storm waves and earthquake induced seiching, as well as hazards associated with tectonic subsidence.~~

~~f. Rises in the water table accompanying tectonic subsidence may cause water to pond, flood basements and disrupt buried facilities in areas of shallow groundwater adjacent to the fault on the down dropped side.~~

~~g. The principal application of the identified tectonic subsidence areas is to make the public aware of the hazard and to indicate those areas where further study may be necessary. Site specific tectonic subsidence studies are recommended only for critical facilities in areas of potential lake margin and ponded shallow groundwater flooding. However, certain vulnerable facilities such as high cost wastewater treatment plants and hazardous waste facilities should also consider potential tilting.~~

~~(3) Rock fall.~~

~~a. Rock falls are a naturally occurring erosional process in mountain areas in Weber County. As development advances higher onto the bench areas and into the canyons the risk from falling rocks becomes greater. A primary mechanism responsible for triggering rock falls is water in outcrop discontinuities. Rock falls present a hazard because of the potential damage a large rock mass, traveling at a relatively high velocity, could cause to structures and personal safety. Buildings shall be located so that structures are not positioned in an area susceptible to rock falls. When new developments cannot be designed around a rock fall path, and hazard reduction measures must be considered, a site specific plan and hazard study, with recommendations for mitigation, shall be produced by a qualified engineering geologist, submitted for review and approval by the planning commission. Mitigation may require design by a Utah licensed geotechnical engineer, and may include rock stabilization techniques such as bolting, cable lashing, burying, and grouting discontinuities, removal or break up of potential rock clasts, as well as deflection berms, slope benches, and rock catch fences to stop or at least slow down falling rocks. Strengthening a structure to withstand impact is an example of modifying what is at risk. Mitigation problems can arise when rock source areas are located on land not owned by the developer.~~

~~b. In areas where the rock fall hazard is present but very low, disclosures of potential hazards to land owners and residents with an acknowledgment of risk and willingness to accept liability may be an acceptable alternative to avoidance or mitigation for single family residences.~~

~~(4) Debris flows.~~

~~a. Debris flows are mixtures of water, rock, soil and organic material (70-90 percent solids by weight) that form a muddy slurry much like wet concrete and flow down slope, commonly in surges or pulses, due to gravity. They generally remain confined to stream channels in mountainous areas, but may reach and deposit debris over large areas on alluvial fans at and beyond canyon mouths.~~

~~b. The county debris flow hazard maps were constructed from the boundaries of active alluvial fans and areas with slopes steeper than 30 percent. Any proposed development in areas identified as debris flow hazard areas shall be evaluated prior to approval of the proposed development.~~

~~1. A study shall be prepared by an engineering geologist for any development proposed in or adjacent to a debris flow hazard area and shall include:~~

~~(i) An analysis of the past history of debris flow at the site based on subsurface exploration to determine the nature and thickness of debris flow and related alluvial fan deposits.~~

~~(ii) An analysis of the drainage basin's potential to produce debris flows based on the presence of debris slides and colluvium-filled slope concavities, and an estimate of the largest probable volumes likely to be produced during a single event.~~

~~(iii) An analysis of the stream channel to determine if the channel will supply additional debris, impede flow, or contain debris flows in the area of the proposed development.~~

~~(iv) An analysis of manmade structures upstream that may divert or deflect debris flows.~~

~~(v) Recommendations concerning any channel improvements, flow modifications and catchment structures, direct protection structures or floodproofing measures, if necessary, in order to protect the development.~~

~~(vi) Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

~~(5) Liquefaction areas.~~

~~a. Earthquake ground shaking causes a variety of phenomena which can damage structures and threaten lives. One of these is termed soil liquefaction. Ground shaking tends to increase the pressure in the pore water between soil grains, which decreases the stresses between the grains. The loss of intergranular stress can cause the strength of some soils to decrease nearly to zero. When this occurs, the soil behaves like a liquid. When liquefaction occurs, foundations may crack, buildings may tip, buoyant buried structures such as septic tanks and storage tanks may rise, and even gentle slopes may fail as liquefied soils and overlying materials move down slope.~~

~~b. Areas of potential liquefaction have been delineated and the following regulations and mitigation measures have been adopted in order to reduce the hazard and consequences. Areas of moderate to high liquefaction potential need not be avoided. Structural measures and site modification techniques are available to reduce hazards. A site specific liquefaction study shall be required to be~~

~~prepared, and shall be prepared by an engineering geologist and/or a state licensed geotechnical engineer.~~

~~(i) Standard soil foundation study, for the proposed development, shall include liquefaction potential evaluation based upon depth to groundwater, soil types and ground failure hazard.~~

~~(ii) If liquefiable soils are present, standard penetration tests and/or cone penetration tests shall be required to determine critical accelerations needed to induce liquefaction.~~

~~(iii) Report shall include accurate maps of the area showing any proposed development, the location of bore holes and/or test pits, the site geology, and location and depths of any liquefiable soils noted, along with the probability of critical accelerations needed to induce liquefaction in these soils being exceeded for appropriate time periods.~~

~~(iv) The report shall include recommendations for hazard reduction techniques.~~

~~(v) The county engineer shall concur with the scope of the report, techniques and methodology to be used in the preparation of the report and shall have input as to the specific types of information to be included in the report.~~

~~(vi) Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

~~(6) Flood. The floodplain standards are written to minimize the loss of life and property when floods do occur, not to ban development outright from the floodplain. The Federal Emergency Management Agency (FEMA) has produced official floodplain maps, depicting areas of potential stream flooding for major drainages in Weber County. FEMA recommends that no new development be permitted in the 100-year floodplain unless:~~

~~a. Detailed engineering studies, prepared by a state licensed engineer, show that the proposed development will not increase the flood hazard to other property in the area. Recommendations shall be made for floodproofing or other mitigation techniques for development within flood hazard areas. (Site investigations for proposed development in lake flooding areas near Great Salt Lake need only indicate the site elevation. Development proposals in areas with elevations less than 4,218 feet will be reviewed with respect to lake flooding potential and compatibility of proposed use.)~~

~~b. The proposed development is elevated above the 100-year flood base elevation.~~

~~c. For federally insured loans, flood insurance is purchased from a company participating with the Federal Insurance Administration or a like private carrier.~~

~~d. Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

~~1. Alluvial fan flooding, which is not mapped under the FEMA program, may be a hazard on all active alluvial fans designated on the debris flow hazard maps. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.~~

~~2. Sheet flow. Certain areas of the Ogden Valley have been identified and mapped as areas of sheet flow flooding. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.~~

~~(7) Other hazardous areas.~~

~~a. As in many counties in the Western United States, development in the county is constrained by the presence of natural and manmade hazards. These hazards include avalanche, slope movement, soils categorized as having severe building limitations and slopes exceeding 30 percent.~~

~~b. Not all hazardous sites and conditions have been identified in the county; however, development on those identified sites shall be permitted when projects are studied and designed by a qualified engineering geologist and a state licensed civil engineer, architect and/or an engineering geologist and certified to withstand the potential hazard for which it is designed, and that the site is buildable and that the site is safe. This allows development on hazardous sites with the full acknowledgment of the property owner. The use of hazardous sites for open space is encouraged.~~

~~**Sec. 104-27-3. Supplementary hazards definitions.**~~

~~The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:~~

~~Active fault means a fault displaying evidence of greater than four inches of displacement along one or more of its traces during Holocene time (about 11,000 years ago to the present).~~

~~Area of deformation means the zone along a fault in which natural soil and rock materials are disturbed as a result of movement along the fault. (Also Zone of Deformation.)~~

~~Critical acceleration means the minimum amount of ground acceleration during seismically induced ground movement required to induce liquefaction or other forms of ground disruption.~~

~~Critical facilities means:~~

~~(1) Lifelines such as major communication, utility and transportation facilities and their connection to emergency facilities;~~

~~(2) Essential facilities, such as:~~

~~a. Hospitals and other medical facilities having surgery and emergency treatment areas;~~

~~b. Fire and police stations;~~

~~c. Tanks or other structures containing housing or supporting water or other fire-suppression materials or equipment required for the protection of essential or hazardous facilities, or special occupancy structures;~~

~~d. Emergency vehicle shelters and garages;~~

~~e. Structures and equipment in emergency-preparedness centers;~~

~~f. Standby power generating equipment for essential facilities;~~

~~g. Structures and equipment in government communication centers and other facilities required for emergency response;~~

~~(3) Hazardous facilities such as structures housing, supporting or containing sufficient quantities of toxic or explosive substances to be dangerous to the safety of the general public if released; or~~

~~(4) Special occupancy structures, such as:~~

~~a. Covered structures whose primary occupancy is public assembly (capacity greater than 300 persons);~~

~~b. Buildings for schools through secondary or day care centers (capacity greater than 50 students);~~

~~c. Buildings for colleges or adult education schools (capacity greater than 50 students);~~

~~d. Medical facilities with 50 or more resident incapacitated patients, but not included above;~~

~~e. Jails and detention facilities;~~

~~f. All structures with occupancy greater than 5,000 persons;~~

~~g. Structures and equipment in power-generating stations and other public utility facilities not included above, and required for continued operation;~~

~~h. Unique or large structures whose failure might be catastrophic, such as dams holding over ten acre feet of water.~~

~~Debris flow means a mass of rock fragments, soil, and mud which, when wet, moves in a flow-like fashion. Debris flows will follow a confined channel, but may alter course if present on an alluvial/debris fan surface.~~

~~Engineering geologist means a geologist who, through education, training and experience, is able to assure that geologic factors affecting engineering works are recognized, adequately interpreted and presented for use in engineering practice and for the protection of the public. This person shall have at least a four-year degree in geology, engineering geology, or a related field from an accredited university and at least three full years of experience in a responsible position in the field of engineering geology.~~

~~Engineering geology means the application of geological data and principles to engineering problems dealing with naturally occurring rock and soil for the purposes of assuring that geological factors are recognized and adequately interpreted in engineering practice.~~

~~Fault means a fracture in the earth's crust forming a boundary between rock and soil masses that have moved relative to each other (See Active fault).~~

~~Fault scarp means a steep slope or cliff formed directly by movement along a fault.~~

~~Fault trace means the intersection of a fault plane with the ground surface.~~

~~Fault zone means a corridor of variable width along one or more fault traces.~~

~~Landslide means a general term for the downslope movement of a mass of soil, surficial deposits or bedrock.~~

~~Liquefaction means a process by which certain water-saturated soils lose bearing strength because of ground shaking and increase of groundwater pore pressure.~~

~~Natural hazard means avalanche, liquefaction, surface fault rupture, rock fall, debris flow, flood, tectonic subsidence and/or landslide.~~

~~Natural hazard maps means the overlay maps, which delineate hazards, such as avalanche, liquefaction, surface fault rupture, rock fall and/or landslide areas.~~

~~Rock fall means the gravity-induced drop of a newly detached segment of bedrock or perched rock of any size from a cliff or steep slope.~~

~~Structure designed for human occupancy means any residential dwelling or any other structure used or intended for supporting or sheltering any use or occupancy which is expected to have occupancy rate of more than 2,000 person-hours per year.~~

~~**Sec. 104-27-4. Studies and reports required.**~~

~~(a) Requirement for report. Any applicant requesting development on a parcel of land within a natural hazards study area, as shown on the natural hazards maps, shall submit to the planning commission six copies of site-specific natural hazard studies and reports, where required for such development according to the following chart.~~

~~(1) The natural hazards report and studies shall be prepared by an engineering geologist. In the case of a snow avalanche hazard, the report shall be prepared by an experienced avalanche expert. The report shall be signed by the preparer and shall also include the qualifications of the preparer.~~

~~(2) The report shall be site-specific and identify all known or suspected potential natural hazards originating on-site or off-site affecting the particular property.~~

(3) The report shall include a detailed site map (scale: one inch equals 200 feet or larger), showing the location of the hazard with delineation of the recommended setback distances from the hazard and the recommended location for structures.

(4) The report shall address the potential effects of the hazard on the proposed development and occupants thereof in terms of risk and potential damage.

(5) The report shall contain recommendations for avoidance or mitigation of the effects of the hazard consistent with the purposes set forth in section 104-27-1 of this chapter. The evidence on which recommendations and conclusions are based shall be clearly stated in the report.

(6) Trench logs (scale: one inch equals five feet or larger), aerial photographs, references with citations, and other supporting information as applicable, shall also be included in the report.

| Land Use (Type of Facility) | Liquefaction Potential High/Moderate | Landslide/Rock Fall/Debris Flow Special Study Area | Surface Fault Rupture Special Study Area |
|---|---|---|---|
| Critical facilities | Yes | Yes | Yes |
| Industrial or commercial ;gt;2 stories/;gt;5,000 sq. ft. | Yes | Yes | Yes |
| Multifamily (4 or more units) and all other industrial or commercial | Yes | Yes | Yes |
| Residential subdivisions | No** | Yes | Yes |
| Residential, single lots/multifamily (less than 4 units/acre) | No** | Yes | Yes |
| **Although no special study is required, disclosure is required as described in section 104-27-7. | | | |

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(b) Review of report. In order to fulfill the purposes of this chapter, the planning commission (for conditional uses, site plan review, design review and subdivisions) shall review any proposed development which requires preparation of a natural hazards report under this chapter to determine the possible risks to the safety of persons or property from natural hazards.

(1) Prior to consideration by the planning commission of any such development, the planning director shall submit the report to the Utah Geological and Mineral Survey, the U.S. Forest Service,

~~and/or any other experts for review and recommendation. Any cost for the review shall be paid by the applicant prior to any planning commission action.~~

~~(2) Whenever the planning commission determines that an area is subject to natural hazards which present an unreasonable risk to the safety of persons or property, including public streets, such area shall not be approved for development unless the applicant can demonstrate that such a risk can be reduced to a reasonable and acceptable level in a manner which has a minimum effect on the natural environment.~~

~~(3) The planning commission may set requirements necessary to reduce the risks from natural hazards as a condition to the approval of any development which requires preparation of a natural hazards report.~~

~~(c) Active fault consideration. No critical facility (excluding transportation lines or utilities which by their nature may cross active faults) or structures designed for human occupancy shall be built astride an active fault. If a fault is discovered in the excavation for such a structure, a special study and report, as described in subsection (a) of this section, shall be performed to determine if the fault is active, and if the fault is determined to be active, the procedures set forth in subsection (b) of this section, shall be followed. No structure designed for human occupancy shall be built on a fault scarp. Footing setbacks from a fault scarp shall meet the requirements of chapter 29 of the Uniform Building Code. The planning commission may increase footing setback requirements where information from a geotechnical report indicates slope conditions warrant a greater setback distance.~~

~~**Sec. 104-27-5. - Disclosure required.**~~

~~(a) When a natural hazard report shows that a hazard exists which affects a particular parcel, a copy of the report shall be kept for public inspection in the county planning commission office. The natural hazard report denoting the type and severity of the hazard, the professional who prepared the report, the fact that the report is available to the public at the county planning department, and any restrictions on the use of the parcel required within the natural hazards report shall be recorded as a deed covenant running with the land, in the office of the county recorder, in addition to the following:~~

~~(1) Notice that the parcel is located within a natural hazards special study area as shown on the natural hazards map.~~

~~(2) Notice of the existence and availability of the natural hazards report for public inspection in the county planning commission office.~~

~~(3) An agreement by the owner of the parcel and any successor in interest to comply with any conditions set by the planning commission to minimize adverse effects of the natural hazard.~~

~~(4) When a natural hazard report is not required, but where the parcel is located within a mapped hazardous area, as shown on one of the natural hazards overlay maps, notice that the parcel is located~~

~~within such an area shall be recorded as a deed covenant running with the land in the county recorder's office and shall be written in a form satisfactory to the county engineer and attorney.~~

~~(5) The natural hazards ordinance codified in this chapter and natural hazards maps represent only those hazardous areas known to the county, and shall not be construed to include all possible potential hazard areas. The natural hazards listed in this chapter and associated maps may be amended as new information becomes available. The provisions of this chapter do not in any way assure or imply that areas outside its boundaries will be free from the possible adverse effects of natural hazards. This chapter shall not create liability on the part of the county, any officer or employee thereof for any damages from natural hazards that result from reliance on this chapter or any administrative requirement or decision lawfully made thereunder.~~

**~~Sec. 104-27-6. - Exemptions from filling natural hazard report.~~**

~~Proposed development not occupied by humans shall not be required to provide a natural hazard report, except critical facilities which shall be required to provide a report.~~

**~~Sec. 104-27-7. Costs to be the responsibility of the developer/applicant.~~**

~~Any of the above described technical reports and/or studies shall be performed by the required qualified professional on behalf of the county through a third-party contract where all fees, costs and expenses are the responsibility of the applicant. Any other costs incurred in providing technical reports or testimony by expert witnesses shall be solely the responsibility of the applicant and not the county.~~

**~~Sec. 104-27-8. Change of use.~~**

~~No change in use which results in the conversion of a building or structure from one not used for human occupancy to one that is so used shall not be permitted unless the building or structure complies with the provisions of this chapter.~~

**~~Sec. 104-27-9. Variances.~~**

~~(a) Ability to grant. The county board of adjustment, when deciding appeals for variances of distance or area within the Natural Hazards Overlay Zone shall follow both the standards of title 102, chapter 3 of the Weber County Land Use Code and the standards stated below.~~

~~(b) Items to consider. In deciding whether to grant a variance and what conditions to attach to its approval, the board of adjustment shall consider:~~

~~(1) The likelihood during a significant seismic or other geologic event that materials may be moved onto adjacent land areas causing injury to persons or property;~~

~~(2) The degree of susceptibility to damage by seismic or other geologic activity for the building design or use proposed;~~

~~(3) The importance of the services of the proposed facility to the community and the need for the facility to be functional following a significant event of geologic activity;~~

~~(4) The necessity of the facility to be in the proposed location or proposed design;~~

~~(5) Considering alternate locations and designs available;~~

~~(6) The ability of the community to provide emergency services to the facility in the event of a catastrophe;~~

~~(7) The degree of benefit received from the variance relative to the hazards posed to the facility's neighbors, visitors, and owners.~~

~~(c) Presumption relative to approval. Generally, the standards of this chapter shall not be varied unless an equally safe method of use and construction can be approved.~~

~~(1) The amount of variance approved shall be only the minimum amount required to provide relief.~~

~~(2) A variance shall be granted only if it will not result in a threat to public safety, cause extraordinary public expense, or create a nuisance.~~

~~(3) A variance shall be granted only if it will not result in a threat to public safety, cause extraordinary public expense, or create a nuisance.~~

~~(4) In a continuum beginning with hay barns and agricultural structures and going to high rise apartment buildings and auditoriums, the difficulty in obtaining a variance shall be greater for structures with a high percentage of time when the structure is utilized by humans or is occupied by a large number of people.~~

~~**Sec. 104-27-10. Disputes; boundaries or mapped hazards.**~~

~~The boundary lines of the special study areas shown on the Natural Hazards Overlay Maps shall be determined by use of the scale appearing on the map. Where there is a conflict between the boundary lines illustrated on the map and actual field conditions, or where detailed investigations show that the mapped hazards are not present within a particular area, the dispute shall be settled as follows:~~

~~(1) The person disputing the hazard study area boundary or the mapped hazards present within a particular area shall submit technical and geologic evidence to support such claim to the planning commission in the form of a site-specific natural hazards report.~~

~~(2) The planning commission may request the Utah Geological Survey, the U.S. Forest Service, and/or other experts to review the evidence prior to making a decision concerning the dispute.~~

~~(3) The cost of the review shall be paid by the person disputing the map.~~

~~(4) The planning commission may allow deviations from the mapped boundary line only if the evidence clearly and conclusively establishes that the natural hazard study area boundary location is incorrect, or that the mapped hazards are not present within a particular area.~~

~~(5) Any decision of the planning commission may be appealed to the board of county commissioners by filing an appeal within 15 days of the planning commission's decision.~~

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**Title 106 - SUBDIVISIONS**

...

**CHAPTER 1. - GENERAL PROVISIONS**

...

**Sec. 106-1-8. - Final plat requirements and approval procedure.**

...

(g) *Additional ~~documents~~provisions.* The Land Use Authority may impose conditions of approval as may be necessary to assure compliance with this Land Use Code. Unusual site specific conditions ~~of development or other~~ restrictions applied to the ~~use~~development of a lot or lots ~~resulting~~ attributed~~from~~ to topography, geologic or environmental conditions or potential hazards, location, ~~or zoning~~ or other site specific ~~regulations~~conditions or restrictions authorized by this Land Use Code~~, etc.,~~ shall be identified in the actual location of the condition or restriction on the subdivision drawing. A notice of the unusual site specific condition or restriction ~~, and~~ shall be recorded ~~as a protective covenant attached~~ to run with the lot or lots affected.

**Comment [c9]:** This subsection of the Subdivision code is being modified to remove the requirement for a "covenant." It is also being modified for general clarity.

...

**Title 108 - STANDARDS**

...

**CHAPTER 7. - SUPPLEMENTARY AND QUALIFYING REGULATIONS**

...

**Sec. 108-7-33. - Building parcel designation**

**Comment [c10]:** Here is the new statute for a building parcel designation.

(a) Separate adjoining lots within an approved subdivision plat may be combined for building purposes without filing a formal subdivision plat amendment. The original lot lines, as recorded, do not change.

(b) A building parcel designation shall be approved provided that:

(1) An application shall be submitted on a form approved by the Planning Director;

(2) The application shall include a copy of the subdivision plat;

(3) All lots proposed to be combined shall be under the same ownership;

(4) No additional lot shall be created; and

(5) The existing lots shall conform to the current zoning or be part of a platted cluster subdivision or PRUD. Existing lots that do not conform to current zoning shall require an amended subdivision plat.

...

**CHAPTER 14. - HILLSIDE DEVELOPMENT REVIEW PROCEDURES AND STANDARDS**

**Comment [c11]:** Changes to this whole chapter are intended to separate hillside review process from the natural hazards review process. More changes to this chapter can be anticipated in the future.

**Sec. 108-14-1. - Purpose and intent.**

(a) It is recognized that the general provisions, definitions, procedures, improvements and design requirements, standards and principles set out in the Land Use Code of Weber County require supplementation to protect and preserve the public health, safety, and welfare in regard to hillside terrain and environmentally sensitive areas. When areas are subdivided or developed on sensitive areas, such features as special soil ~~and geologic~~ conditions, steep terrain, highly combustible native vegetation, and other conditions may pose serious potential consequences such as increased fire, flood or erosion hazards, traffic circulation problems, sewage disposal problems, property damage from extensive soils slippage and subsidence, and adverse effects from destruction of natural scenic beauty and unsightly developments. Such consequences may be avoided if special consideration is given to areas where one or more such conditions exist.

(b) In the administration of the provisions of this chapter, the hillside development review board shall strive to achieve the objective of preserving the natural contours of the hillside areas by encouraging and requiring, where necessary, the following:

(1) A minimum amount of grading which preserves the natural contours of the land.

(2) Retention of trees and other native vegetation (except in those cases where a high fire hazard results) which stabilizes steep hillsides, retains moisture, prevents erosion and enhances the natural scenic beauty.

(3) Construction of roads on steep hillsides in such a way as to minimize scars from cuts and fills and avoid permanent scarring of hillsides.

(4) Placement of building sites in such a manner as to permit ample room for adequate defensible area as defined by the fire code, landscaping and drainage between and around the buildings.

(5) Grading which will eliminate the sharp angles at the top and toe of cut and fill slopes, both with respect to building sites and to road cross-sections.

(6) Lot and structure designs and location which will be appropriate in order to reduce ~~geologic and environmental hazards, as required in of title 104, chapter 27, Natural Hazards Overlay District, as well as~~ grading and natural topographic disturbance.

(7) Cluster type development or other new concepts and techniques, where appropriate, in order to eliminate, as far as possible, construction on steep, sensitive or dangerous terrain.

(8) Early temporary or permanent planting, or other materials, wherever appropriate to maintain necessary cut and fill slopes in order to stabilize them with plant roots or other materials, thereby preventing erosion and to conceal the raw soil from view.

...

**Sec. 108-14-3. - Applicability.**

(a) All parcels, subdivision lots, roads and accesses, where the natural terrain has average slopes at or exceeding 25 percent shall be reviewed by the Hillside Development Review Board as part of an application request for land use and building permits. Hillside Review is required as part of the preliminary subdivision review. This requirement may be waived by the Pplanning Ddirector and the Ccounty Eengineer on a case-by-case basis.

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(b) The planning division shall not issue any land use permits, and the building official shall not issue any building permits until detailed plans and engineered drawings have been submitted to, and approved by the hillside development review board. Any condition attached to such approval by said board shall be a condition required with the issuance of land use permit. All parcels, subdivisions, lots, roads and accesses may come under consideration of the review board if requested by the owner, developer, or review agency. Other circumstances may warrant a review as found in the Title 108 Chapter 22 – Natural Hazard Areas. ~~"Natural Hazards Overlay Districts" of title 104, chapter 27.~~

**Sec. 108-14-4. - Procedure.**

Application plans and applications of the proposed development and any relevant information regarding building and excavation of the site are to be submitted to the planning division. Information shall include, but not be limited to the following:

(1) Detailed engineering plans and profiles for retaining wall, cuts, filling and/or excavating of land.

(2) Site plan with contours.

(3) Cross sections of improvements.

(4) Retaining wall designs with engineers stamp (if applicable).

(5) Geotechnical report (site specific for structures) and, if applicable, ~~an outside review of the geological report if deemed necessary.~~verification of compliance with the requirements of Title 108, Chapter 22 - Natural Hazard Areas.

(6) Other studies and/or information deemed necessary by the members of the board.

(7) Utah pollution discharge elimination system (UPDES) permit with stormwater pollution prevention plan (SWPPP) shall be required at the time of application. Erosion control landscaping on cuts, fills and other locations, considered necessary by the review board, shall be provided in order to prevent erosion.

(8) A landscape plan as per ~~section~~Section 108-14-10.

...

**Sec. 108-14-9. – Reserved. ~~Geologic and other environmental considerations.~~**

~~(a) Geologic and other environmental constraints shall be considered by the review board when reviewing any developments on restricted lots or parcels of land. Mitigation measures shall be required as stated in title 104, chapter 27 the Natural Hazards Overlay District of the Weber County Land Use Code.~~

~~(b) An outside review of the geological report may be done by an independent firm, at the discretion of the county engineer if he deems it necessary; the independent firm will be selected from a list, provided by the county, with all costs associated with the review paid by the applicant. The hillside development review board shall consider the findings, recommendations, and requirements of the report. If the applicant disagrees with the finding and reconditions and requirements of the independent firm, they may appeal to the board of adjustment.~~

...

**Sec. 108-14-11. - Appeals.**

(a) Except as allowed in subsection (b) of this section, an appeal of any written decision in the application of this chapter shall be appealed in accordance with Title 102, Chapter 3 – Board of Adjustment, of this Land Use Code.

**Comment [c12]:** This whole section is intended to clarify the appeal process, and bring the ordinance into compliance with state statute.

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(b) When a written decision provided under this chapter contains technical aspects, an applicant may request the County to assemble a panel of qualified professionals to serve as the appeal authority for the sole purpose of determining those technical aspects[1].

(1) The technical aspects of the administration and interpretation of this chapter are decisions related to:

a. the acceptance or rejection of scope, techniques, methodology, conclusions or specific types of information presented in a study or report;

b. the review and recommendation of an acceptable study or report for the Land Use Authority's consideration; or

c. the interpretation or application of any technical provisions of a study or report that is required by this chapter.

(2) Unless otherwise agreed by the applicant and County, if an applicant makes a request under this subsection, the County shall assemble the panel consisting of:

a. one qualified professional designated by the County;

b. one qualified professional designated by the applicant; and

c. one qualified professional chosen jointly by the County's designated qualified professional and the applicant's designated qualified professional.

(3) A member of the panel may not be associated with the application that is the subject of the appeal.

(4) The applicant shall pay for one half the cost of the panel in addition to the County's appeal fee.

(5) The panel shall be governed by the same appeal provisions of the Board of Adjustment provided in Title 102, Chapter 3 - Board of Adjustment, of this Land Use Code.

~~An appeal of the Hillside Development Review Board's decision shall be submitted to the county planning division:~~

~~(1) The applicant, a board or officer of the county, or any person adversely affected by the Hillside Development Review Board's decision administering or interpreting Hillside Development Review procedures and standards ordinance may, within the time period provided by ordinance, appeal that decision to the appeal authority by alleging that there is error in any order, requirement, decision, or determination made by the Hillside Development Review Board in the administration or interpretation of the hillside development review procedures and standards ordinance.~~

~~(2) An applicant who has appealed a decision of the land use authority administering or interpreting the county's geologic hazard ordinance may request the county to assemble a panel of qualified experts to serve as the appeal authority for purposes of determining the technical aspects of the appeal.~~

~~(3) If an applicant makes a request under subsection (1) of this section, the county shall assemble the panel described in subsection (4) of this section consisting of, unless otherwise agreed by the applicant and county:~~

~~a. One expert designated by the county;~~

~~b. One expert designed by the applicant; and~~

~~c. One expert chosen jointly by the county's designated expert and the applicant's designated expert from a pre-approved list that the engineering division has assembled.~~

[1] Note to codifiers: provide reference to UCA §17-27a-703(2)

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~~(4) A member of the panel assembled by the county under subsection (3) of this section may not be associated with the application that is the subject of the appeal.~~

~~(5) The applicant shall pay one-half of the cost of the panel and the county's published appeal fee.~~

...

**CHAPTER 22. – NATURAL HAZARD AREAS**

**Comment [c13]:** All of the changes from Section 104-27 have been moved here in their modified form. See the comparison in Exhibit D to review the changes between them.

**Sec. 108-22-1. - Purpose and intent.**

(a) The purpose and intent of this chapter is to coordinate the application of natural hazards guidelines and standards, in order to protect the health, welfare and safety of the citizens of the County, and to minimize potential effects of natural and manmade hazards by identifying known hazardous areas. This portion of the chapter specifies the areas for which an environmental analysis shall be performed prior to development, the content of the analysis and the procedure by which development applications requiring the analysis are reviewed and processed.

(b) The County recognizes individual property rights and shall make every effort to balance the right of the individual property owner with the health, welfare, safety and the common good of the general public.

**Sec. 108-22-2. - Potential hazards.**

The following potential hazards have been identified:

(1) Surface-fault ruptures.

a. Surface faulting has been identified as a potential hazard in the County. Maps have been produced delineating the known area where a hazard may exist from surface fault ruptures. Broad subsidence of the valleys accompanying surface faulting may affect areas several miles away from the fault. These effects are not considered here, but are covered in subsection 3 of this section.

b. Studies along the Wasatch fault have indicated that during a "characteristic" earthquake which produces surface faulting, offsets of six feet or more may occur on the main trace of the fault zone. This offset will result in formation of a near-vertical scarp, generally in unconsolidated surficial deposits, that begin to ravel and erode back to the material's angle of repose (33-35 degrees) soon after formation. Antithetic faults west of the main trace may also form, generally exhibiting a lesser amount of offset, but sometimes as much as several feet. The zone between these two faults may be complexly faulted and tilted with offset along minor faults of several inches or more.

c. Based upon this data, it is difficult, both technically and economically, to design a structure to withstand six feet or more of offset through its foundation. Thus, avoidance of the main traces of the fault is the principal risk reduction technique that can be reasonably taken.

d. No critical facility (excluding transportation lines or utilities which by their nature may cross active faults) or structure designed for human occupancy shall be built astride an active fault. If a fault is discovered in the excavation for such a structure, a geologic hazard study and report, as provided in Section 108-22-3 of this Land Use Code, is required. In some areas adjacent to the main trace but still within the zone of deformation, avoidance may not be necessary. Less damaging (smaller) offsets of less than four inches, and tilting may occur and structural measures may be taken to reduce casualties and damage. However, structural damage may still be great, and buildings in the zone of deformation may not be safe for occupants following a large earthquake.

e. Due to the scale used to map these zones, there is not enough detail to delineate all fault traces and zones of deformation at a particular location, therefore, site specific plans,

studies, and reports shall be required, as provided in Section 108-22-3 of this Land Use Code, for development in or adjacent to the delineated areas.

f. Building setbacks shall be a minimum of 50 feet from an active fault trace. A reduction in the setback may be considered if the report presents evidence to justify a reduction acceptable to the Land Use Authority, after recommendation from the County Engineer.

(2) Landslide.

a. Landslides, historically, have been one of the most damaging geologic processes occurring in Weber County. Most active landslides, and most older slides, have been mapped. The maps identify areas of landslides and slopes which are potentially unstable under static (non-earthquake) conditions, and are especially vulnerable under conditions of high to abnormally high precipitation, heavy snowmelt, or excessive water application due to irrigation or septic system discharge. Landslides can damage structures, roads, railroads and power lines. Furthermore, landslides may rupture canals, aqueducts, sewers and water mains, all of which can add water to the slide plane and promote further movement. Flooding may also be caused.

b. Many methods have been developed for reducing a landslide hazard. Proper planning and avoidance is the least expensive measure, if landslide-prone areas are identified early in the planning and development process. Care in site grading with proper compaction of fills and engineering of cut slopes is a necessary follow-up to good land use planning. Where avoidance is not feasible, various engineering techniques are available to stabilize slopes, including de-watering (draining), retaining structures, piles, bridging, weighting or buttressing slopes with compacted earth fills and drainage diversion. Since every landslide and unstable slope has differing characteristics, any development proposed within an identified landslide hazard area shall require the submittal and review of a study and report, as provided in Section 108-22-3. The study and report shall address slope stability (including natural or proposed cut slopes), evaluate slope-failure potential, effects of development and recommendations for mitigative measures. Slope stability analysis shall include potential for movement under static, development-induced and earthquake-induced conditions as well as likely groundwater conditions.

(3) Tectonic subsidence.

a. Tectonic subsidence, also called seismic tilting, is the warping, lowering and tilting of a valley floor that accompanies surface-faulting earthquakes on normal (dip slip) faults such as the Wasatch fault zone. Inundation along the shores of lakes and reservoirs and the ponding of water in areas with a shallow water table may be caused by tectonic subsidence. Certain structures which require gentle gradients or horizontal floors, particularly wastewater treatment facilities and sewer lines may be adversely affected.

b. Because subsidence may occur over large areas (tens of square miles), it is generally not practical to avoid the use of potentially affected land except in narrow areas of hazard due to lake shoreline flooding. For gravity-flow structures such as wastewater treatment facilities that are within areas of possible subsidence, it is advisable to consider the tolerance of such structures to slight changes in gradient. Some structures may have to be releveled after a large-magnitude earthquake. Critical facilities which contain dangerous substances should have safety features to protect the structure, its occupants and the environment from both tilting and flooding.

c. Flooding problems along lakes from tectonic subsidence shall be reduced using standard techniques such as raising structures above expected flood levels and dikes can be built. Development adjacent to lakes or reservoirs shall be prohibited within three feet of elevation above projected lake levels to protect against natural rises from wet periods, storm waves and earthquake induced seiching, as well as hazards associated with tectonic subsidence.

d. Rises in the water table accompanying tectonic subsidence may cause water to pond, flood basements and disrupt buried facilities in areas of shallow groundwater adjacent to the fault on the down dropped side.

e. The principal application of the identified tectonic subsidence areas is to make the public aware of the hazard and to indicate those areas where further study may be necessary. Site specific tectonic subsidence reports and studies are recommended only for critical facilities in areas of potential lake-margin and ponded shallow groundwater flooding. However, certain vulnerable facilities such as high cost wastewater treatment plants and hazardous waste facilities should also consider potential tilting.

(4) Rock fall.

a. Rock falls are a naturally occurring erosional process in mountain areas in Weber County. As development advances higher onto the bench areas and into the canyons the risk from falling rocks becomes greater. A primary mechanism responsible for triggering rock falls is water in outcrop discontinuities. Rock falls present a hazard because of the potential damage a large rock mass, traveling at a relatively high velocity, could cause to structures and personal safety. When new developments cannot be designed around a rock fall path, and hazard reduction measures must be considered, a study and report as provided in Section 108-22-3, is required. Mitigation shall require design by a Utah licensed geotechnical engineer, and may include rock stabilization techniques such as bolting, cable lashing, burying, and grouting discontinuities, removal or break-up of potential rock clasts, as well as deflection berms, slope benches, and rock catch fences to stop or at least slow down falling rocks. Strengthening a structure to withstand impact is an example of modifying what is at risk. Mitigation problems can arise when rock source areas are located on land not owned by the developer.

b. In areas where the rock fall hazard is present but very low, disclosure of a potential hazard to land owners and residents with an acknowledgment of risk and willingness to accept liability may be an acceptable alternative to avoidance or mitigation for single-family residences.

(5) Debris flows.

a. Debris flows are mixtures of water, rock, soil and organic material (70-90 percent solids by weight) that form a muddy slurry much like wet concrete and flow down slope, commonly in surges or pulses, due to gravity. They generally remain confined to stream channels in mountainous areas, but may reach and deposit debris over large areas on alluvial fans at and beyond canyon mouths.

b. The County debris flow hazard maps were constructed from the boundaries of active alluvial fans and areas with slopes steeper than 30 percent. Any proposed development in areas identified as debris flow hazard areas shall be evaluated prior to approval of the proposed development. A study and report, as provided in Section 108-22-3, shall be prepared by an engineering geologist for any development proposed in or adjacent to a debris flow hazard area and shall include:

1. An analysis of the history of debris flow at the site based on subsurface exploration to determine the nature and thickness of debris flow and related alluvial fan deposits. If, in the engineering geologist's professional opinion, geologic conditions have changed enough to render a debris flow inactive, the analysis may estimate the nature and approximate thickness of the debris flow and related alluvial fan deposits in lieu of subsurface exploration.

2. An analysis of the drainage basin's potential to produce debris flows based on the presence of debris slides and colluvium-filled slope concavities, and an estimate of the largest probable volumes likely to be produced during a single event.

3. An analysis of the stream channel to determine if the channel will supply additional debris, impede flow, or contain debris flows in the area of the proposed development.

4. An analysis of manmade structures upstream that may divert or deflect debris flows.

5. Recommendations concerning any channel improvements, flow modifications and catchment structures, direct protection structures or floodproofing measures, if necessary, in order to protect the development.

(6) Liquefaction areas.

a. Earthquake ground shaking causes a variety of phenomena which can damage structures and threaten lives. One of these is termed soil liquefaction. Ground shaking tends to increase the pressure in the pore water between soil grains, which decreases the stresses between the grains. The loss of intergranular stress can cause the strength of some soils to decrease nearly to zero. When this occurs, the soil behaves like a liquid. When liquefaction occurs, foundations may crack, buildings may tip, buoyant buried structures such as septic tanks and storage tanks may rise, and even gentle slopes may fail as liquefied soils and overlying materials move down slope.

b. Areas of potential liquefaction have been delineated and the following regulations and mitigation measures have been adopted in order to reduce the hazard and consequences. Areas of moderate to high liquefaction potential need not be avoided. Structural measures and site modification techniques are available to reduce a hazard. A site specific liquefaction study and report shall be required pursuant to Section 108-22-3, and shall be prepared by an engineering geologist and/or a state licensed geotechnical engineer and shall comply with the following:

1. Standard soil foundation study, for the proposed development, shall include liquefaction potential evaluation based upon depth to groundwater, soil types and ground failure hazard.

2. If liquefiable soils are present, standard penetration tests and/or cone penetration tests shall be required to determine critical accelerations needed to induce liquefaction.

3. The study and report shall include an accurate map of the area showing any proposed development, the location of bore holes and/or test pits, the site geology, and location and depths of any liquefiable soils noted, along with the probability of critical accelerations needed to induce liquefaction in these soils being exceeded for appropriate time periods.

4. The report shall include recommendations for hazard reduction techniques.

(7) Flood.

a. The floodplain standards are written to minimize the loss of life and property when floods do occur, not to ban development outright from the floodplain. In the event the following provisions conflict with those in Title 22 of the Weber County Code, the most restrictive shall apply. The Federal Emergency Management Agency (FEMA) has produced official floodplain maps, depicting areas of potential stream flooding for major drainages in Weber County.

b. FEMA recommends that no new development be permitted in the 100-year floodplain unless:

1. Detailed engineering study and reports, as required by Section 108-22-3, prepared by a state-licensed engineer, show that the proposed development will not increase the flood hazard to other property in the area. Recommendations shall be made for floodproofing or other mitigation techniques for development within flood hazard areas. (Site investigations for proposed development in lake-flooding areas near Great Salt Lake need only indicate the site elevation. Development proposals in areas

with elevations less than 4,218 feet will be reviewed with respect to lake-flooding potential and compatibility of proposed use.)

2. The proposed development is elevated above the 100-year flood base elevation.

3. For federally-insured loans, flood insurance is purchased from a company participating with the Federal Insurance Administration or a like private carrier.

c.. The study and report, as may be required by Section 108-22-3, shall consider the following:

(i) Alluvial fan flooding, which is not mapped under the FEMA program, may be a hazard on all active alluvial fans identified on debris flow hazard maps. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.

(ii) Sheet flow. Certain areas of the Ogden Valley have been identified and mapped as areas of sheet flow flooding. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.

(8) Other hazards.

a. As in many counties in the Western United States, development in the County is constrained by the presence of natural and manmade hazards. These hazards include, but are not limited to, avalanche, slope movement, soils categorized as having severe building limitations and slopes exceeding 30 percent.

b. Not all hazardous sites and conditions have been identified in the County. As a hazard or potential hazard becomes known, the County has discretion to require any study and report that is necessary to understand how the hazard or potential hazard may impact development. The study or report shall provide appropriate hazard mitigation measures.

**Sec. 108-22-3. - Studies and reports required.**

(a) *Requirement for a study and report.* Unless waived by the Planning Director or County Engineer for unique circumstances, or otherwise exempted in Section 108-22-5, any application for development on a parcel of land within a natural hazard study area shall be submitted to the planning division with two hard copies and one electronic (pdf) copy of a site-specific natural hazard study and report, where required for such development according to the following chart:

| Land Use (Type of Facility) | Liquefaction Potential High/Moderate | Landslide/Rock Fall/Debris Flow Study Area | Surface Fault Rupture Study Area | Tectonic Subsidence Study Area | Flood Study Area | Other Hazardous Areas |
|---|---|---|---|---|---|---|
| Critical facilities | Yes | Yes | Yes | Recommended | Yes | As determined by the County Engineer |
| Industrial, commercial, or multifamily (4 or more units) | Yes | Yes | Yes | No | Yes | As determined by the County Engineer |
| Residential subdivisions | No** | Yes, unless otherwise provided by Section 108-22-2(4)b. | Yes | No | Yes | As determined by the County Engineer |
| Residential, single lots/multifamily (less than 4 units) | No** | Yes, unless otherwise provided by Section 108-22-2(4)b. | Yes | No | Yes | As determined by the County Engineer |

**Although no study and report is required, disclosure is required as described in Section 108-22-4.

(1) Each natural hazard study and report shall be prepared by an engineering geologist. In the case of a snow avalanche hazard, the study and report shall be prepared by an experienced avalanche expert. The study and report shall be signed by the preparer and shall also include the qualifications of the preparer.

(2) Each natural hazard study and report shall be site-specific and identify, to the extent practicable, all known or suspected potential natural hazard(s) originating on-site or off-site which present a reasonable likelihood of adversely affecting the particular property.

(3) Each natural hazard study and report shall include a detailed site map (scale: one inch equals 200 feet or larger), showing the location and type of hazard with delineation of the recommended setback distances from the hazard and the recommended location for structures.

(4) Each natural hazard study and report shall address the potential adverse effects of the hazard on the proposed development and occupants thereof in terms of the reasonable likelihood of potential damage.

(5) Each natural hazard study and report shall contain recommendations for avoidance or mitigation of the identified adverse effects of the hazard consistent with the purposes set forth in

Section 108-22-1 of this chapter. The evidence on which recommendations and conclusions are based shall be clearly stated in the report.

(6) Trench logs (scale: one inch equals five feet or larger), trench photos, aerial photographs, references with citations, and other supporting information, as applicable, shall also be included in each natural hazard study and report.

(b) *Review of the study and report.* In order to fulfill the purposes of this chapter, the Land Use Authority shall review any proposed development which requires preparation of a natural hazard study and report under this chapter to determine the possible risks to the safety of persons or property from a natural hazard.

(1) Prior to consideration by the Land Use Authority of any such development, the County Engineer may submit the study and report, and, if applicable, site specific plan, to outsourced qualified professionals for review and recommendation. Any cost for the review shall be paid by the applicant prior to any Land Use Authority action.

(2) The County Engineer has discretion to reject the scope, techniques, methodology, conclusions, or specific types of information presented in the study and report if industry standards of care were not used. All conclusions of the study and report shall be supported by adequate data.

(3) The County Engineer shall prepare a final review and recommendation of an acceptable study and report, and, if applicable, site specific plans, for the Land Use Authority's consideration.

(4) Whenever the Land Use Authority determines that an area is subject to a natural hazard which present an unreasonable risk to the safety of persons or property, including public streets, such area shall not be approved for development unless the applicant can demonstrate that such a risk can be reduced to a reasonable and acceptable level in a manner which has a minimum effect on the natural environment.

(5) The Land Use Authority may set requirements or conditions necessary to reduce the risks from a natural hazard as a condition to the approval of any development which requires preparation of a natural hazard study and report.

(c) *Study and report verification.* The project engineering geologist shall submit with the study a signed and sealed verification letter stating that the study was conducted in accordance with industry standards of care, and that it complies with this Land Use Code and all other applicable laws. Written verification shall be provided from the issuer of professional errors and omissions liability insurance, in the amount of one million dollars ($1,000,000.00), which covers the engineering geologist, and which is in effect on the date of preparation of all required studies and reports.

(d) *Development design verification.* Whenever possible, avoidance of development in an area with an identified natural hazard is strongly encouraged. However, pursuant to requirements of this chapter, development in an area with an identified natural hazard shall be permitted when it is designed to mitigate, and is reasonably safe from, the identified hazard. Final design of the development shall not be accepted by the County unless:

(1) The development's state licensed engineer, or if applicable, engineers, provide(s) the County with a signed and sealed verification letter stating that, pursuant to the considerations, findings, recommendations, and conclusions of the development's engineering geologist's study and report, the development has been designed to mitigate, and is reasonably safe from, the identified hazard.

(2) The development's engineering geologist submits a signed and sealed verification letter stating that the final design of the development adequately provides for the considerations, findings, recommendations, and conclusions of the study and report, and is reasonably safe from the identified hazard.

(3) Written verification is provided from the issuer(s) of professional errors and omissions liability insurance, in the amount of one million dollars ($1,000,000.00), which covers the engineering

**Comment [c14]:** This section is identified as potentially producing a decision of "technical aspects" for which an appeal may merit a special panel for review. See the new section 108-22-9(b) for more details.

**Comment [c15]:** This section is identified as potentially producing a decision of "technical aspects" for which an appeal may merit a special panel for review. See the new section 108-22-9(b) for more details.

**Comment [c16]:** This word, and its use in throughout this subsection, has been changed from previous versions.

geologist and state licensed engineer(s), and which is in effect on the date of preparation of all required reports and certifications.

**Sec. 108-22-4. - Disclosure required.**

(a) When a natural hazard report shows that a hazard exists which affects a particular parcel:

(1) a copy of the report shall be kept for public inspection in the County Planning Division Office.

(2) A notice that runs with the land shall be recorded, and, if applicable, a note on the subdivision plat shall be required, which provide:

a. Notice that the parcel is located within a natural hazard study area;

b. Notice that a natural hazard study and report is available for public inspection in the County Planning Division Office;

c. Notice that a hazard has been identified on the parcel and the type and severity of the hazard;

d. The professional who prepared the report, with his or her contact information; and

e. Any restrictions on the use of the parcel required within the natural hazard report, or by the Land Use Authority.

(b) When a natural hazard report is not required, but where the parcel is located within a natural hazard study area, notice that the parcel is located within such an area shall be recorded running with the land and noted on the subdivision plat (if applicable), and shall be written in a form satisfactory to the County Engineer and County Attorney.

(c) The natural hazard ordinance codified in this chapter and natural hazard map represent only those potentially hazardous areas known to the County, and shall not be construed to include all possible potential hazard areas. The natural hazards listed in this chapter may be amended as new information becomes available. The provisions of this chapter do not in any way assure or imply that areas outside its boundaries will be free from the possible adverse effects of a natural hazard. This chapter shall not create liability on the part of the County, any officer or employee thereof for any damages from a natural hazard that result from reliance on this chapter or any administrative requirement or decision lawfully made thereunder.

**Sec. 108-22-5. - Exemptions from natural hazard study and report.**

A proposed structure that is not a structure designed for human occupancy shall not be required to provide a natural hazard report; except a report shall be provided for a critical facility if required by Section 108-22-3, or when otherwise required by the Planning Director or County Engineer due to unique and dangerous natural hazards conditions known to be in the area.

**Sec. 108-22-6. - Costs to be the responsibility of the developer/applicant.**

Any of the above described technical reports and/or studies shall be performed by qualified professionals on behalf of the applicant. The cost of outsourced qualified professionals used by the County to aid in the review required in Section 108-22-3 is the responsibility of the applicant. Any other costs incurred in providing technical reports or testimony by qualified professionals or expert witnesses shall be solely the responsibility of the applicant and not the County.

**Sec. 108-22-7. - Change of use.**

No change in use which results in the conversion of a building or structure not designed for human occupancy to one designed for human occupancy shall be permitted unless the building or structure complies with the provisions of this chapter.

**Sec. 108-22-8. - Conflict between boundaries of study area or identified hazard.**

**Comment [c17]:** This section is being changed to remove the word "covenant." A covenant has a very specific legal meaning. The point of this section is to provide notice, not a covenant. On a related amendment herein, see §106-1-8(g).

**Comment [c18]:** This section is identified as potentially producing a decision of "technical aspects" for which an appeal may merit a special panel for review. See the new section 108-22-9(b) for more details.

Where there is a conflict between the boundaries of an identified natural hazard study area and actual field conditions, or where detailed investigations show that the identified hazard is not present within a particular area, the conflict shall be settled as follows:

(1) The person disputing the natural hazard study area boundary shall submit technical and geologic evidence to support such claim to the County Engineer in the form of a site-specific natural hazard report.

(2) The County Engineer may request outsourced qualified professionals to review the evidence and make a recommendation prior to making a final written decision concerning the dispute. The cost of the outsourced qualified professional's review shall be paid by the person disputing the boundary.

(3) The County Engineer may allow modifications to the boundary only if the evidence clearly and conclusively establishes that the natural hazard study area boundary location is incorrect, or that the identified hazard is not present within a particular area.

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**Sec. 108-22-9. - Appeals.**

(a) Except as allowed in subsection (b) of this Section, an appeal of any written decision in the application of this chapter shall be appealed in accordance with Title 102, Chapter 3 – Board of Adjustment, of this Land Use Code.

(b) When a written decision provided under this chapter contains technical aspects, an applicant may request the County to assemble a panel of qualified professionals to serve as the appeal authority for the sole purpose of determining those technical aspects[2].

(1) The technical aspects of the administration and interpretation of this chapter are decisions related to:

a. the acceptance or rejection of scope, techniques, methodology, conclusions or specific types of information presented in a study or report;

b. the review and recommendation of an acceptable study or report for the Land Use Authority's consideration;

c. the interpretation or application of any technical provisions of a study or report that is required by this chapter; or

d. the modification of a natural hazard study area boundary.

(2) Unless otherwise agreed by the applicant and County, if an applicant makes a request under this subsection, the County shall assemble the panel consisting of:

a. one qualified professional designated by the County;

b. one qualified professional designated by the applicant; and

c. one qualified professional chosen jointly by the County's designated qualified professional and the applicant's designated qualified professional.

(3) A member of the panel may not be associated with the application that is the subject of the appeal.

(4) The applicant shall pay for one half the cost of the panel in addition to the County's appeal fee.

(5) The panel shall be governed by the same appeal provisions of the Board of Adjustment provided in Title 102, Chapter 3 - Board of Adjustment, of this Land Use Code.

[2] Note to codifiers: provide reference to UCA §17-27a-703(2)

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**CHAPTER ~~27.~~ 22. – NATURAL ~~HAZARDS OVERLAY DISTRICTS~~ HAZARD AREAS**

**Sec. ~~104-27~~108-22-1. - Purpose and intent.**

(a) The purpose and intent of this chapter is to coordinate the application of natural hazards guidelines and standards, in order to protect the health, welfare and safety of the citizens of the ~~county~~County, and to minimize potential effects of natural and manmade hazards by identifying known hazardous areas. This portion of the chapter specifies the areas for which an environmental analysis shall be performed prior to development, the content of the analysis and the procedure by which development applications requiring the analysis are reviewed and processed.

(b) The ~~county~~County recognizes individual property rights and shall make every effort to balance the right of the individual property owner with the health, welfare, safety and the common good of the general public.

**Sec. ~~104-27~~108-22-2. - Potential hazards.**

The following potential hazards have been identified:

(1) Surface-fault ruptures.

a. Surface faulting has been identified as a potential hazard in the ~~county~~County. Maps have been produced delineating the known area where a hazard may exist from surface fault ruptures. Broad subsidence of the valleys accompanying surface faulting may affect areas several miles away from the fault. These effects are not considered here, but are covered in subsection ~~b~~3 of this section.

b. Studies along the Wasatch fault have indicated that during a "characteristic" earthquake which produces surface faulting, offsets of six feet or more may occur on the main trace of the fault zone. This offset will result in formation of a near-vertical scarp, generally in unconsolidated surficial deposits, that begin to ravel and erode back to the material's angle of repose (33-35 degrees) soon after formation. Antithetic faults west of the main trace may also form, generally exhibiting a lesser amount of offset, but sometimes as much as several feet. The zone between these two faults may be complexly faulted and tilted with offset along minor faults of several inches or more.

c. Based upon this data, it is difficult, both technically and economically, to design a structure to withstand six feet or more of offset through its foundation. Thus, avoidance of the main traces of the fault is the principal risk reduction technique that can be reasonably taken.

d. No critical facility (excluding transportation lines or utilities which by their nature may cross active faults) or structure designed for human occupancy shall be built astride an active fault. If a fault is discovered in the excavation for such a structure, a geologic hazard study and report, as provided in Section 108-22-3 of this Land Use Code, is required. In some areas adjacent to the main trace but still within the zone of deformation, avoidance may not be necessary. Less damaging (smaller) offsets of less than four inches, and tilting may occur and structural measures may be taken to reduce casualties and damage. However, structural damage may still be great, and buildings in the zone of deformation may not be safe for occupants following a large earthquake.

e. Due to the scale used to map these zones, there is not enough detail to delineate all fault traces and zones of deformation at a particular location, therefore, site specific plans ~~and~~, studies, and reports shall be required, as provided in Section 108-22-3 of this Land Use Code, for development in or adjacent to the delineated areas.

f. ~~Upon submittal, review and planning commission approval of site specific plans and studies with recommendations, produced by a qualified engineering geologist.~~ Building setbacks shall be a minimum of 50 feet from an active fault trace. A reduction in the setback ~~will~~may be considered if the report presents evidence to justify a reduction

**Comment [c1]:** All of the changes from Section 104-27 have been moved into this new section (108-22) in their modified form.

**Comment [c2]:** Current code is inconsistent about this. This corrects the inconsistency.

**Comment [c3]:** Of specific concern, this ordinance suggests that only the planning commission has control over development approvals where natural hazards are a concern. This amendment fixes that (you see these changes throughout).

acceptable to the ~~planning commission~~Land Use Authority, after recommendation from the County Engineer.

(2) Landslide~~/tectonic subsidence~~.

a. ~~Landslide.~~ Landslides, historically, have been one of the most damaging geologic processes occurring in Weber County. Most active landslides, and most older slides, have been mapped ~~and are shown on the Sensitive Lands Overlay District maps. These designations serve as an indication of unstable ground. The maps designate~~. The maps identify areas of landslides and slopes which are potentially unstable under static (non-earthquake) conditions, and are especially vulnerable under conditions of high to abnormally high precipitation~~.~~, heavy snowmelt, or excessive water application due to irrigation or septic system discharge. Landslides can damage structures, roads, railroads and power lines. Furthermore, landslides may rupture canals, aqueducts, sewers and water mains, all of which can add water to the slide plane and promote further movement. Flooding may also be caused.

**Comment [c4]:** Added language to be clear that precipitation is not the only problem.

b. Many methods have been developed for reducing a landslide ~~hazards~~hazard. Proper planning and avoidance is the least expensive measure, if landslide-prone areas are identified early in the planning and development process. Care in site grading with proper compaction of fills and engineering of cut slopes is a necessary follow-up to good land use planning. Where avoidance is not feasible, various engineering techniques are available to stabilize slopes, including de-watering (draining), retaining structures, piles, bridging, weighting or buttressing slopes with compacted earth fills and drainage diversion. Since every landslide and unstable slope has differing characteristics, any development proposed within ~~a designated~~an identified landslide hazard area~~, as delineated on the Sensitive Lands Overlay District maps,~~ shall require the submittal~~,~~ and review ~~and approval by the planning commission,~~ of ~~specific site studies, including grading plans, cut/fill,~~a study and ~~plans produced by a qualified engineering geologist~~report, as provided in Section 108-22-3. The study and ~~a Utah licensed geotechnical engineer. The site specific study~~report shall address slope stability (including natural or proposed cut slopes), evaluate slope-failure potential, effects of development and recommendations for mitigative measures. Slope stability analysis shall include potential for movement under static, development-induced and earthquake-induced conditions as well as likely groundwater conditions.

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~~d~~b. Because subsidence may occur over large areas (tens of square miles), it is generally not practical to avoid the use of potentially affected land except in narrow areas of hazard due to lake shoreline flooding. For gravity-flow structures such as wastewater treatment facilities that are within areas of possible subsidence, it is advisable to consider the tolerance of such structures to slight changes in gradient. Some structures may have to be releveled after a large-magnitude earthquake. Critical facilities which contain dangerous substances should have safety features to protect the structure, its occupants and the environment from both tilting and flooding.

~~e~~c. Flooding problems along lakes from tectonic subsidence shall be reduced using standard techniques such as raising structures above expected flood levels and dikes can be built. Development adjacent to lakes or reservoirs shall be prohibited within three feet of elevation above projected lake levels to protect against natural rises from wet periods, storm waves and earthquake induced seiching, as well as hazards associated with tectonic subsidence.

~~f~~d. Rises in the water table accompanying tectonic subsidence may cause water to pond, flood basements and disrupt buried facilities in areas of shallow groundwater adjacent to the fault on the down dropped side.

~~g~~e. The principal application of the identified tectonic subsidence areas is to make the public aware of the hazard and to indicate those areas where further study may be necessary. Site specific tectonic subsidence reports and studies are recommended only for critical facilities in areas of potential lake-margin and ponded shallow groundwater flooding. However, certain vulnerable facilities such as high cost wastewater treatment plants and hazardous waste facilities should also consider potential tilting.

(~~3~~4) Rock fall.

a. Rock falls are a naturally occurring erosional process in mountain areas in Weber County. As development advances higher onto the bench areas and into the canyons the risk from falling rocks becomes greater. A primary mechanism responsible for triggering rock falls is water in outcrop discontinuities. Rock falls present a hazard because of the potential damage a large rock mass, traveling at a relatively high velocity, could cause to structures and personal safety. ~~Buildings shall be located so that structures are not positioned in an area susceptible to rock falls.~~ When new developments cannot be designed around a rock fall path, and hazard reduction measures must be considered, a ~~site specific plan and hazard study, with recommendations for mitigation, shall be produced by a qualified engineering geologist, submitted for review and approval by the planning commission. Mitigation may~~study and report as provided in Section 108-22-3, is required. Mitigation shall require design by a Utah licensed geotechnical engineer, and may include rock stabilization techniques such as bolting, cable lashing, burying, and grouting discontinuities, removal or break-up of potential rock clasts, as well as deflection berms, slope benches, and rock catch fences to stop or at least slow down falling rocks. Strengthening a structure to withstand impact is an example of modifying what is at risk. Mitigation problems can arise when rock source areas are located on land not owned by the developer.

b. In areas where the rock fall hazard is present but very low, ~~disclosures~~disclosure of a potential ~~hazards~~hazard to land owners and residents with an acknowledgment of risk and willingness to accept liability may be an acceptable alternative to avoidance or mitigation for single-family residences.

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a. Debris flows are mixtures of water, rock, soil and organic material (70-90 percent solids by weight) that form a muddy slurry much like wet concrete and flow down slope, commonly in surges or pulses, due to gravity. They generally remain confined to stream channels in mountainous areas, but may reach and deposit debris over large areas on alluvial fans at and beyond canyon mouths.

b. The ~~county~~County debris flow hazard maps were constructed from the boundaries of active alluvial fans and areas with slopes steeper than 30 percent. Any proposed development in areas identified as debris flow hazard areas shall be evaluated prior to approval of the proposed development.

~~1.~~ A study and report, as provided in Section 108-22-3, shall be prepared by an engineering geologist for any development proposed in or adjacent to a debris flow hazard area and shall include:

~~(i)~~1. An analysis of the ~~past~~ history of debris flow at the site based on subsurface exploration to determine the nature and thickness of debris flow and related alluvial fan deposits. ~~—~~ If, in the engineering geologist's professional opinion, geologic conditions have changed enough to render a debris flow inactive, the analysis may estimate the nature and approximate thickness of the debris flow and related alluvial fan deposits in lieu of subsurface exploration.

**Comment [c5]:** Added language to facilitate common sense application of the law. This will help geologists still comply with the law while not conducting an expensive trench analysis when, in their opinion, it's obvious that subsurface exploration is not necessary.

~~(ii)~~2. An analysis of the drainage basin's potential to produce debris flows based on the presence of debris slides and colluvium-filled slope concavities, and an estimate of the largest probable volumes likely to be produced during a single event.

~~(iii)~~3. An analysis of the stream channel to determine if the channel will supply additional debris, impede flow, or contain debris flows in the area of the proposed development.

~~(iv)~~4. An analysis of manmade structures upstream that may divert or deflect debris flows.

~~(v)~~5. Recommendations concerning any channel improvements, flow modifications and catchment structures, direct protection structures or floodproofing measures, if necessary, in order to protect the development.

~~(vi) Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

**Comment [c6]:** This language is removed from these subsections throughout and better consolidated into 108-22-3.

~~(5~~ (6) Liquefaction areas.

a. Earthquake ground shaking causes a variety of phenomena which can damage structures and threaten lives. One of these is termed soil liquefaction. Ground shaking tends to increase the pressure in the pore water between soil grains, which decreases the stresses between the grains. The loss of intergranular stress can cause the strength of some soils to decrease nearly to zero. When this occurs, the soil behaves like a liquid. When liquefaction occurs, foundations may crack, buildings may tip, buoyant buried structures such as septic tanks and storage tanks may rise, and even gentle slopes may fail as liquefied soils and overlying materials move down slope.

b. Areas of potential liquefaction have been delineated and the following regulations and mitigation measures have been adopted in order to reduce the hazard and consequences. Areas of moderate to high liquefaction potential need not be avoided. Structural measures and site modification techniques are available to reduce ~~hazards~~a hazard. A site specific liquefaction study and report shall be required pursuant to ~~be prepared~~Section 108-22-3, and shall be prepared by an engineering geologist and/or a state licensed geotechnical engineer~~.~~ and shall comply with the following:

~~(i)~~1. Standard soil foundation study, for the proposed development, shall include liquefaction potential evaluation based upon depth to groundwater, soil types and ground failure hazard.

~~(ii)~~2. If liquefiable soils are present, standard penetration tests and/or cone penetration tests shall be required to determine critical accelerations needed to induce liquefaction.

~~(iii) Report~~3. The study and report shall include an accurate ~~maps~~map of the area showing any proposed development, the location of bore holes and/or test pits, the site geology, and location and depths of any liquefiable soils noted, along with the probability of critical accelerations needed to induce liquefaction in these soils being exceeded for appropriate time periods.

~~(iv)~~4. The report shall include recommendations for hazard reduction techniques.

~~(v) The county engineer shall concur with the scope of the report, techniques and methodology to be used in the preparation of the report and shall have input as to the specific types of information to be included in the report.~~

~~(vi) Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

(~~6~~7) Flood.

a. The floodplain standards are written to minimize the loss of life and property when floods do occur, not to ban development outright from the floodplain. In the event the following provisions conflict with those in Title 22 of the Weber County Code, the most restrictive shall apply. The Federal Emergency Management Agency (FEMA) has produced official floodplain maps, depicting areas of potential stream flooding for major drainages in Weber County. ~~FEMA recommends that no new development be permitted in the 100-year floodplain unless:~~

~~a~~b. FEMA recommends that no new development be permitted in the 100-year floodplain unless:

1. Detailed engineering ~~studies~~study and reports, as required by Section 108-22-3, prepared by a state-licensed engineer, show that the proposed development will not increase the flood hazard to other property in the area. Recommendations shall be made for floodproofing or other mitigation techniques for development within flood hazard areas. (Site investigations for proposed development in lake-flooding areas near Great Salt Lake need only indicate the site elevation. Development proposals in areas with elevations less than 4,218 feet will be reviewed with respect to lake-flooding potential and compatibility of proposed use.)

~~b~~2. The proposed development is elevated above the 100-year flood base elevation.

~~c~~3. For federally-insured loans, flood insurance is purchased from a company participating with the Federal Insurance Administration or a like private carrier.

~~d. Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

~~1.~~c.. The study and report, as may be required by Section 108-22-3, shall consider the following:

(i) Alluvial fan flooding, which is not mapped under the FEMA program, may be a hazard on all active alluvial fans ~~designated~~identified on ~~the~~ debris flow hazard maps. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.

~~2.~~(ii) Sheet flow. Certain areas of the Ogden Valley have been identified and mapped as areas of sheet flow flooding. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.

(~~7~~8) Other ~~hazardous areas.~~hazards.

a. As in many counties in the Western United States, development in the ~~county~~County is constrained by the presence of natural and manmade hazards. These hazards include, but are not limited to, avalanche, slope movement, soils categorized as having severe building limitations and slopes exceeding 30 percent.

b. Not all hazardous sites and conditions have been identified in the ~~county; however, development on those identified sites shall be permitted when projects are studied and designed by~~County. As a ~~qualified engineering geologist and a state licensed civil engineer, architect and/~~hazard or ~~an engineering geologist and certified to withstand the~~ potential hazard ~~for which it is designed, and~~becomes known, the County has discretion to require any study and report that is necessary to understand how the ~~site is buildable and that the site is safe. This allows development on hazardous sites with the full acknowledgment of the property owner~~hazard or potential hazard may impact development. The ~~use of hazardous sites for open space is encouraged.~~study or report shall provide appropriate hazard mitigation measures.

**Sec. 104-27-3. Supplementary hazards definitions.**

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Active fault means a fault displaying evidence of greater than four inches of displacement along one or more of its traces during Holocene time (about 11,000 years ago to the present).

Area of deformation means the zone along a fault in which natural soil and rock materials are disturbed as a result of movement along the fault. (Also Zone of Deformation.)

Critical acceleration means the minimum amount of ground acceleration during seismically induced ground movement required to induce liquefaction or other forms of ground disruption.

Critical facilities means:

(1) Lifelines such as major communication, utility and transportation facilities and their connection to emergency facilities;

(2) Essential facilities, such as:

a. Hospitals and other medical facilities having surgery and emergency treatment areas;

b. Fire and police stations;

c. Tanks or other structures containing housing or supporting water or other fire-suppression materials or equipment required for the protection of essential or hazardous facilities, or special occupancy structures;

d. Emergency vehicle shelters and garages;

e. Structures and equipment in emergency-preparedness centers;

f. Standby power generating equipment for essential facilities;

g. Structures and equipment in government communication centers and other facilities required for emergency response;

(3) Hazardous facilities such as structures housing, supporting or containing sufficient quantities of toxic or explosive substances to be dangerous to the safety of the general public if released; or

(4) Special occupancy structures, such as:

a. Covered structures whose primary occupancy is public assembly (capacity greater than 300 persons);

b. Buildings for schools through secondary or day care centers (capacity greater than 50 students);

c. Buildings for colleges or adult education schools (capacity greater than 50 students);

d. Medical facilities with 50 or more resident incapacitated patients, but not included above;

e. Jails and detention facilities;

f. All structures with occupancy greater than 5,000 persons;

g. Structures and equipment in power-generating stations and other public utility facilities not included above, and required for continued operation;

h. Unique or large structures whose failure might be catastrophic, such as dams holding over ten acre feet of water.

Debris flow means a mass of rock fragments, soil, and mud which, when wet, moves in a flow-like fashion. Debris flows will follow a confined channel, but may alter course if present on an alluvial/debris fan surface.

**Comment [c7]:** This section is being deleted and all definitions are being moved into 101-1-7 (definitions). See Exhibit B to review changes to them.

~~Engineering geologist means a geologist who, through education, training and experience, is able to assure that geologic factors affecting engineering works are recognized, adequately interpreted and presented for use in engineering practice and for the protection of the public. This person shall have at least a four-year degree in geology, engineering geology, or a related field from an accredited university and at least three full years of experience in a responsible position in the field of engineering geology.~~

~~Engineering geology means the application of geological data and principles to engineering problems dealing with naturally occurring rock and soil for the purposes of assuring that geological factors are recognized and adequately interpreted in engineering practice.~~

~~Fault means a fracture in the earth's crust forming a boundary between rock and soil masses that have moved relative to each other (See Active fault).~~

~~Fault scarp means a steep slope or cliff formed directly by movement along a fault.~~

~~Fault trace means the intersection of a fault plane with the ground surface.~~

~~Fault zone means a corridor of variable width along one or more fault traces.~~

~~Landslide means a general term for the downslope movement of a mass of soil, surficial deposits or bedrock.~~

~~Liquefaction means a process by which certain water-saturated soils lose bearing strength because of ground shaking and increase of groundwater pore pressure.~~

~~Natural hazard means avalanche, liquefaction, surface fault rupture, rock fall, debris flow, flood, tectonic subsidence and/or landslide.~~

~~Natural hazard maps means the overlay maps, which delineate hazards, such as avalanche, liquefaction, surface fault rupture, rock fall and/or landslide areas.~~

~~Rock fall means the gravity induced drop of a newly detached segment of bedrock or perched rock of any size from a cliff or steep slope.~~

~~Structure designed for human occupancy means any residential dwelling or any other structure used or intended for supporting or sheltering any use or occupancy which is expected to have occupancy rate of more than 2,000 person-hours per year.~~

**~~Sec. 104-27-4. Studies~~ Sec. 108-22-3. - Study and report~~s~~ required.**

(a) *Requirement for a study and report.* ~~Any applicant requesting~~Unless otherwise exempted in Section 108-22-5, any application for development on a parcel of land within a natural ~~hazards~~hazard study area~~, as shown on the natural hazards maps,~~ shall ~~submit~~be submitted to the planning ~~commission six~~division with two hard copies ~~of~~and one electronic (pdf) copy of a site-specific natural hazard ~~studies~~study and ~~reports~~report, where required for such development according to the following chart~~.~~:

| Land Use (Type of Facility) | Liquefaction Potential High/Moderate | Landslide/Rock Fall/Debris Flow Study Area | Surface Fault Rupture Study Area | Tectonic Subsidence Study Area | Flood Study Area | Other Hazardous Areas |
|---|---|---|---|---|---|---|
| Critical facilities | Yes | Yes | Yes | Recommended | Yes | As determined by the County Engineer |
| Industrial, commercial, or multifamily (4 or more units) | Yes | Yes | Yes | No | Yes | As determined by the County Engineer |
| Residential subdivisions | No** | Yes, unless otherwise provided by Section 108-22-2(4)b. | Yes | No | Yes | As determined by the County Engineer |
| Residential, single lots/multifamily (less than 4 units) | No** | Yes, unless otherwise provided by Section 108-22-2(4)b. | Yes | No | Yes | As determined by the County Engineer |

**Although no study and report is required, disclosure is required as described in Section 108-22-4.

Comment [c8]: This section has been expanded and modified to accommodate all hazards listed in 108-22-2. It has been moved here from further down for clarity purposes.

(1) ~~The~~Each natural ~~hazards~~ hazard study and report ~~and studies~~ shall be prepared by an engineering geologist. In the case of a snow avalanche hazard, the study and report shall be prepared by an experienced avalanche expert. The study and report shall be signed by the preparer and shall also include the qualifications of the preparer.

(2) ~~The~~ Each natural hazard study and report shall be site-specific and identify, to the extent practicable, all known or suspected potential natural ~~hazards~~hazard(s) originating on-site or off-site which present a reasonable likelihood of adversely affecting the particular property.

(3) ~~The~~Each natural hazard study and report shall include a detailed site map (scale: one inch equals 200 feet or larger), showing the location and type of ~~the~~ hazard with delineation of the recommended setback distances from the hazard and the recommended location for structures.

(4) ~~The~~ Each natural hazard study and report shall address the potential adverse effects of the hazard on the proposed development and occupants thereof in terms of ~~risk and~~ the reasonable likelihood of potential damage.

(5) ~~The~~Each natural hazard study and report shall contain recommendations for avoidance or mitigation of the identified adverse effects of the hazard consistent with the purposes set forth in

~~section 104-27~~Section 108-22-1 of this chapter. The evidence on which recommendations and conclusions are based shall be clearly stated in the report.

(6) Trench logs (scale: one inch equals five feet or larger), trench photos, aerial photographs, references with citations, and other supporting information, as applicable, shall also be included in ~~the~~each natural hazard study and report.

| ~~Land Use (Type of Facility)~~ | ~~Liquefaction Potential High/Moderate~~ | ~~Landslide/Rock Fall/Debris Flow Special Study Area~~ | ~~Surface Fault Rupture Special Study Area~~ |
|---|---|---|---|
| ~~Critical facilities~~ | ~~Yes~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Industrial or commercial ;gt;2 stories/;gt;5,000 sq. ft.~~ | ~~Yes~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Multifamily (4 or more units) and all other industrial or commercial~~ | ~~Yes~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Residential subdivisions~~ | ~~No**~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Residential, single lots/multifamily (less than 4 units/acre)~~ | ~~No**~~ | ~~Yes~~ | ~~Yes~~ |
| ~~**Although no special study is required, disclosure is required as described in section 104-27-7.~~ | | | |

~~-~~

(b) *Review of the study and report.* In order to fulfill the purposes of this chapter, the ~~planning commission (for conditional uses, site plan review, design review and subdivisions)~~Land Use Authority shall review any proposed development which requires preparation of a natural ~~hazards~~hazard study and report under this chapter to determine the possible risks to the safety of persons or property from a natural ~~hazards~~hazard.

(1) Prior to consideration by the ~~planning commission~~Land Use Authority of any such development, the ~~planning director shall~~County Engineer may submit the study and report ~~to the Utah Geological and Mineral Survey, the U.S. Forest Service~~, and~~/or any other experts~~, if applicable, site specific plan, to outsourced qualified professionals for review and recommendation. Any cost for the review shall be paid by the applicant prior to any ~~planning commission~~Land Use Authority action.

(2) The County Engineer has discretion to reject the scope, techniques, methodology, conclusions, or specific types of information presented in the study and report if industry standards of care were not used. All conclusions of the study and report shall be supported by adequate data.

(3) The County Engineer shall prepare a final review and recommendation of an acceptable study and report, and, if applicable, site specific plans, for the Land Use Authority's consideration.

**Comment [c9]:** County Engineer may, but is not required to, outsource the review. The County Engineer will outsource in the event that there are unique issues with geology or a geology report.

**Comment [c10]:** This section is identified as potentially producing a decision of "technical aspects" for which an appeal may merit a special panel for review. See the new section 108-22-9(b) for more details.

**Comment [c11]:** This section is identified as potentially producing a decision of "technical aspects" for which an appeal may merit a special panel for review. See the new section 108-22-9(b) for more details.

(4) Whenever the ~~planning commission~~Land Use Authority determines that an area is subject to a natural ~~hazards~~hazard which present an unreasonable risk to the safety of persons or property, including public streets, such area shall not be approved for development unless the applicant can demonstrate that such a risk can be reduced to a reasonable and acceptable level in a manner which has a minimum effect on the natural environment.

(~~3~~5) The ~~planning commission~~Land Use Authority may set requirements or conditions necessary to reduce the risks from a natural ~~hazards~~hazard as a condition to the approval of any development which requires preparation of a natural hazard~~s~~ study and report.

~~(c) Active fault consideration. No critical facility (excluding transportation lines or utilities which by their nature may cross active faults) or structures designed for human occupancy shall be built astride an active fault. If a fault is discovered in the excavation for such a structure, a special study and report, as described in subsection (a) of this section, shall be performed to determine if the fault is active, and if the fault is determined to be active, the procedures set forth in subsection (b) of this section, shall be followed. No structure designed for human occupancy shall be built on a fault scarp. Footing setbacks from a fault scarp shall meet the requirements of chapter 29 of the Uniform Building Code. The planning commission may increase footing setback requirements where information from a geotechnical report indicates slope conditions warrant a greater setback distance~~.

(c) *Study and report confirmation.* The project engineering geologist shall submit with the study a signed and sealed confirmation letter that the study was conducted in accordance with industry standards of care, and that it complies with this Land Use Code and all other applicable laws. Written verification shall be provided from the issuer of professional errors and omissions liability insurance, in the amount of one million dollars ($1,000,000.00), which covers the engineering geologist, and which is in effect on the date of preparation of all required studies and reports.

(d) *Development design confirmation.* Whenever possible, avoidance of development in an area with an identified natural hazard is strongly encouraged. However, pursuant to requirements of this chapter, development in an area with an identified natural hazard shall be permitted when it is designed to mitigate, and is reasonably safe from, the identified hazard. Final design of the development shall not be accepted by the County unless:

(1) The development's state licensed engineer, or if applicable, engineers, provide(s) the County with a signed and sealed confirmation letter stating that, pursuant to the considerations, findings, recommendations, and conclusions of the development's engineering geologist's study and report, the development has been designed to mitigate, and is reasonably safe from, the identified hazard.

(2) The development's engineering geologist submits a signed and sealed confirmation letter stating that the final design of the development adequately provides for the considerations, findings, recommendations, and conclusions of the study and report, and is reasonably safe from the identified hazard.

(3) Written verification is provided from the issuer(s) of professional errors and omissions liability insurance, in the amount of one million dollars ($1,000,000.00), which covers the engineering geologist and state licensed engineer(s), and which is in effect on the date of preparation of all required reports and certifications.

**Sec. ~~104-27-5~~108-22-4. - Disclosure required.**

(a) When a natural hazard report shows that a hazard exists which affects a particular parcel~~, a copy of the report shall be kept for public inspection in the county planning commission office. The natural hazard report denoting the type and severity of the hazard, the professional who prepared the report, the fact that the report is available to the public at the county planning department, and any restrictions on the use of the parcel required within the natural hazards report shall be recorded as a deed covenant running with the land, in the office of the county recorder, in addition to the following~~:

(1) a copy of the report shall be kept for public inspection in the County Planning Division Office.

**Comment [c12]:** This section does not belong here. It is incorporated into 108-22-2.

**Comment [c13]:** Subsection c and d are an expansion of a "certification" requirement in current code. It has been modified and expanded to provide for the following:

1. It's been moved here to provide better visibility. It was previously tucked into §104-27-2, which is an inconsistent place for its meaning and application.

2. It has been modified to avoid the word "certify." In the geology and engineering world this word has a different meaning than the code anticipates.

3. It has been modified to put the general public and the private market on notice that the private market needs to be willing to accept full accountability for their work. This is an attempt to help shift "good development practices" from needing complete governmental control, and place it on the private market folks who are actually experts in their field.

4. It is an effort to keep the project geologist in the loop during development design – and to keep designs complying with the geologists recommendations. A reoccurring flaw in relying on the private market to provide optimal geologic hazards safety without significant governmental oversight is that there are not the appropriate checks and balances. Often times development designers do not completely consider the geologists recommendations and infrastructure failures can result. In lieu of significant governmental control over geology review, this section requires that the government check that the project geologist has checked the work and is satisfied.

(2) A covenant that runs with the land shall be recorded, and, if applicable, a note on the subdivision plat shall be required, which provide:

a. Notice that the parcel is located within a natural ~~hazards special~~hazard study area ~~as shown on the natural hazards map.~~ ;

~~(2)~~b. Notice ~~of the existence and availability of the~~ that a natural ~~hazards~~ hazard study and report is available for public inspection in the ~~county planning commission office.~~ County Planning Division Office;

~~(3)~~c. Notice that a hazard has been identified on the parcel and the type and severity of the hazard;

d. The professional who prepared the report, with his or her contact information;

e. Any restrictions on the use of the parcel required within the natural hazard report, or by the Land Use Authority; and

f. An agreement by the owner of the parcel and any successor in interest to comply with ~~any~~the conditions set by the ~~planning commission~~Land Use Authority to minimize adverse effects of the natural hazard.

(~~4~~b) When a natural hazard report is not required, but where the parcel is located within a ~~mapped hazardous area, as shown on one of the~~ natural ~~hazards overlay maps~~hazard study area, notice that the parcel is located within such an area shall be recorded as a ~~deed~~ covenant running with the land ~~in the county recorder's office~~and noted on the subdivision plat (if applicable), and shall be written in a form satisfactory to the ~~county engineer~~County Engineer and ~~attorney~~County Attorney.

(~~5~~c) The natural ~~hazards~~hazard ordinance codified in this chapter and natural ~~hazards maps~~hazard map represent only those potentially hazardous areas known to the ~~county~~County, and shall not be construed to include all possible potential hazard areas. The natural hazards listed in this chapter ~~and associated maps~~ may be amended as new information becomes available. The provisions of this chapter do not in any way assure or imply that areas outside its boundaries will be free from the possible adverse effects of a natural ~~hazards~~hazard. This chapter shall not create liability on the part of the ~~county~~County, any officer or employee thereof for any damages from a natural ~~hazards~~hazard that result from reliance on this chapter or any administrative requirement or decision lawfully made thereunder.

**Sec. ~~104-27-6~~108-22-5. - Exemptions from ~~filling~~ natural hazard study and report.**

~~Proposed development~~A proposed structure that is not ~~occupied by humans~~a structure designed for human occupancy shall not be required to provide a natural hazard report, except ~~critical facilities which~~a report shall be provided for a critical facility if required ~~to provide a report.~~ by Section 108-22-3.

**Sec. ~~104-27-7~~108-22-6. - Costs to be the responsibility of the developer/applicant.**

Any of the above described technical reports and/or studies shall be performed by ~~the required~~ qualified ~~professional~~professionals on behalf of the ~~county through a third-party contract where all fees, costs and expenses are~~applicant. The cost of outsourced qualified professionals used by the County to aid in the review required in Section 108-22-3 is the responsibility of the applicant. Any other costs incurred in providing technical reports or testimony by qualified professionals or expert witnesses shall be solely the responsibility of the applicant and not the ~~county~~County.

**Sec. ~~104-27-8~~108-22-7. - Change of use.**

No change in use which results in the conversion of a building or structure ~~from one~~ not ~~used~~designed for human occupancy to one ~~that is so used~~designed for human occupancy shall ~~not~~ be permitted unless the building or structure complies with the provisions of this chapter.

**Sec. ~~104-27-9. Variances.~~**

**Comment [c14]:** One objective of this amendment is to make it clear that expert reviews will not always be required by the County Engineer; but when they are the applicant is responsible for the cost.

~~(a) Ability to grant. The county board of adjustment, when deciding appeals for variances of distance or area within the Natural Hazards Overlay Zone shall follow both the standards of title 102, chapter 3 of the Weber County Land Use Code and the standards stated below.~~

~~(b) Items to consider. In deciding whether to grant a variance and what conditions to attach to its approval, the board of adjustment shall consider:~~

~~(1) The likelihood during a significant seismic or other geologic event that materials may be moved onto adjacent land areas causing injury to persons or property;~~

~~(2) The degree of susceptibility to damage by seismic or other geologic activity for the building design or use proposed;~~

~~(3) The importance of the services of the proposed facility to the community and the need for the facility to be functional following a significant event of geologic activity;~~

~~(4) The necessity of the facility to be in the proposed location or proposed design;~~

~~(5) Considering alternate locations and designs available;~~

~~(6) The ability of the community to provide emergency services to the facility in the event of a catastrophe;~~

~~(7) The degree of benefit received from the variance relative to the hazards posed to the facility's neighbors, visitors, and owners.~~

~~(c) Presumption relative to approval. Generally, the standards of this chapter shall not be varied unless an equally safe method of use and construction can be approved.~~

~~(1) The amount of variance approved shall be only the minimum amount required to provide relief.~~

~~(2) A variance shall be granted only if it will not result in a threat to public safety, cause extraordinary public expense, or create a nuisance.~~

~~(3) A variance shall be granted only if it will not result in a threat to public safety, cause extraordinary public expense, or create a nuisance.~~

~~(4) In a continuum beginning with hay barns and agricultural structures and going to high rise apartment buildings and auditoriums, the difficulty in obtaining a variance shall be greater for structures with a high percentage of time when the structure is utilized by humans or is occupied by a large number of people.~~

**~~Sec. 104-27-10. Disputes;~~ 108-22-8. - Conflict between boundaries of study area or identified hazard. ~~or mapped hazards.~~**

~~The boundary lines of the special study areas shown on the Natural Hazards Overlay Maps shall be determined by use of the scale appearing on the map.~~

Where there is a conflict between the ~~boundary lines illustrated on the map~~ boundaries of an identified natural hazard study area and actual field conditions, or where detailed investigations show that the ~~mapped hazards are~~identified hazard is not present within a particular area, the ~~dispute~~conflict shall be settled as follows:

(1) The person disputing the natural hazard study ~~area boundary or the mapped hazards present within a particular~~ area boundary shall submit technical and geologic evidence to support such claim to the ~~planning commission~~County Engineer in the form of a site-specific natural ~~hazards~~hazard report.

(2) The ~~planning commission~~County Engineer may request ~~the Utah Geological Survey, the U.S. Forest Service, and/or other experts~~outsourced qualified professionals to review the evidence and make a recommendation prior to making a final written decision concerning the dispute.

~~(3)~~ The cost of the outsourced qualified professional's review shall be paid by the person disputing the ~~map~~boundary.

(~~4~~3) The ~~planning commission~~County Engineer may allow ~~deviations from~~modifications to the ~~mapped~~ boundary ~~line~~ only if the evidence clearly and conclusively establishes that the natural hazard study area boundary location is incorrect, or that the ~~mapped hazards are~~identified hazard is not present within a particular area.

~~(5) Any~~.

**Sec. 108-22-9. - Appeals.**

(a) Except as allowed in subsection (b) of this Section, an appeal of any written decision ~~of~~in the ~~planning commission may~~ application of this chapter shall be appealed ~~to~~ in accordance with Title 102, Chapter 3 – Board of Adjustment, of this Land Use Code.

(b) When a written decision provided under this chapter contains technical aspects, an applicant may request the ~~board of county commissioners by filing an appeal within 15 days of~~ County to assemble a panel of qualified professionals to serve as the ~~planning commission's decision.~~ appeal authority for the sole purpose of determining those technical aspects.

(1) The technical aspects of the administration and interpretation of this chapter are decisions related to:

a. the acceptance or rejection of scope, techniques, methodology, conclusions or specific types of information presented in a study or report;

b. the review and recommendation of an acceptable study or report for the Land Use Authority's consideration;

c. the interpretation of any technical provisions of a study or report that is required by this chapter; or

d. the modification of a natural hazard study area boundary.

(2) Unless otherwise agreed by the applicant and County, if an applicant makes a request under this subsection, the County shall assemble the panel consisting of:

a. one qualified professional designated by the County;

b. one qualified professional designated by the applicant; and

c. one qualified professional chosen jointly by the County's designated qualified professional and the applicant's designated qualified professional.

(3) A member of the panel may not be associated with the application that is the subject of the appeal.

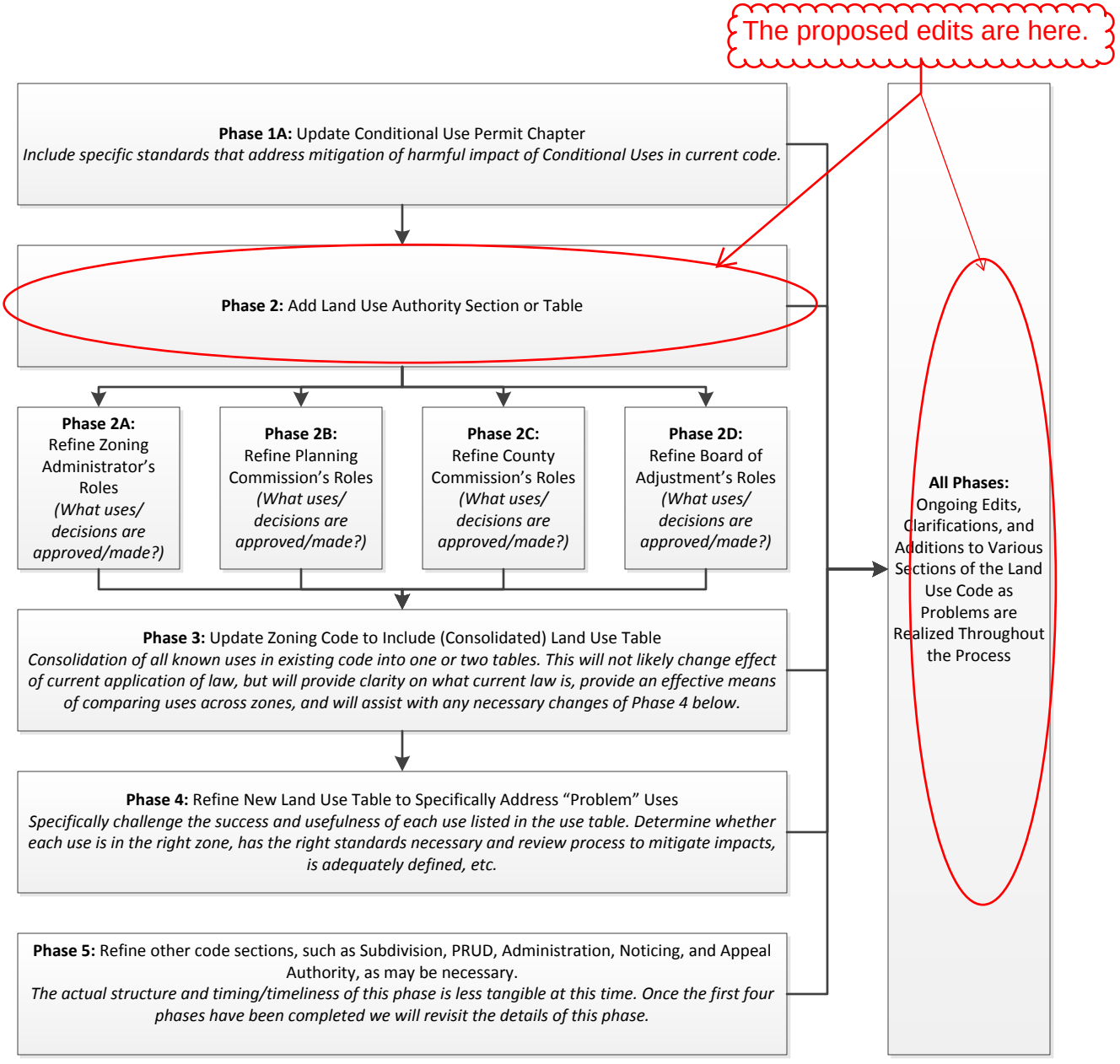
(4) The applicant shall pay for one half the cost of the panel in addition to the County's appeal fee.

(5) The panel shall be governed by the same appeal provisions of the Board of Adjustment provided in Title 102, Chapter 3 - Board of Adjustment, of this Land Use Code.

**Comment [c15]:** State code requires the county to allow appeals to be run this way. Our natural hazards code does not currently adequately provide for this.

# Weber County Land Use Code Revision Process Workflow

This flowchart is intended to illustrate the intended course of the revision process. It is not an absolute plan, and deviations may occur as more information is gathered, but it will provide the Planning Commission with an idea where we are in the process at any given time. Staff will refer to this structure regularly.



**ORDINANCE NUMBER** 2016-_____

**AN ORDINANCE AMENDING THE WEBER COUNTY LAND USE CODE TO UPDATE AND CLARIFY PROVISIONS RELATED TO NATURAL HAZARDS REGULATIONS AND PROVIDE CERICAL EDITS.**

**WHEREAS,** the Weber County Land Use Code heretofore contained regulations governing natural hazards; and

**WHEREAS,** these regulations offered inadequate, vague, or inconsistent provisions; and

**WHEREAS,** on June 14, 2016, the Western Weber Planning Commission, after appropriate notice, held a public hearing to consider public comments regarding amendments to the Weber County Land Use Code with respect to natural hazards, and on August 9, 2016, offered a positive recommendation to the County Commission for the changes; and

**WHEREAS,** on July 26, 2016, the Ogden Valley Planning Commission, after appropriate notice, held a public hearing to consider public comments regarding amendments to the Weber County Land Use Code with respect to natural hazards, and offered a positive recommendation to the County Commission for the changes; and

**WHEREAS,** on September 6, 2016, the Weber County Board of Commissioners, after appropriate notice, held a public hearing to consider public comments regarding amendments to the County Land Use Code with respect to natural hazards; and

**WHEREAS,** the Weber County Board of Commissioners find that the proposed ordinance amendments comply with the goals and objectives of the General Plan and provide clarification necessary to facilitate efficient administration of the Weber County Land Use Code;

**NOW THEREFORE,** the Weber County Board of Commissioners ordains an amendment to the Weber County Land Use Code as follows:

**See Exhibit A**

This ordinance shall become effective fifteen (15) days after publication.

Passed, adopted, and ordered published this_____day of _____, 2015, by the Weber County Board of Commissioners.

BOARD OF COUNTY COMMISSIONERS
OF WEBER COUNTY

By_____
Matthew G, Chair

Commissioner Bell voted _____
Commissioner Ebert voted _____
Commissioner Gibson voted _____

ATTEST:

_____
Ricky Hatch, CPA
Weber County Clerk/Auditor

**Title 101 - GENERAL PROVISIONS**

…

**Sec. 101-1-7. - Definitions.**

…

Building parcel designation. The term "building parcel designation" means two or more lots within an approved subdivision are recognized as one lot for building purposes. ~~This does not allow for the creation of additional lots, and the original lot lines as recorded do not change. The planning director can administratively approve a building parcel designation application.~~

…

Geologic and Geotechnical terms.

Active fault. The term "active fault" means a seismic (earthquake) fault displaying evidence of greater than four inches of surface displacement along one or more of its traces during Holocene time (approximately 10,000 years ago to the present).

Active landslide. The term "active landslide" means a landslide which is known to have moved or deformed and which has not been proven to be stable by a geotechnical investigation.

Aquifer. The term "aquifer" means a geological unit in which porous and permeable conditions exist or a geologic unit of stratified drift, and thus are capable of yielding usable amounts of water.

Aquifer recharge. The term "aquifer recharge" area means an area that has soils and geological features that are conducive to allowing significant amounts of surface water to percolate into groundwater.

Area of deformation. See "zone of deformation."

Critical acceleration. The term "critical acceleration" means the minimum amount of ground acceleration during seismically induced ground movement required to induce liquefaction or other forms of ground disruption.

Critical facilities. The term "critical facilities" means:

(1) Lifelines such as major communication, utility and transportation facilities and their connection to emergency facilities;

(2) Essential facilities, such as:

a. Hospitals and other medical facilities having surgery and emergency treatment areas;

b. Fire and police stations;

c. Tanks or other structures containing, housing, or supporting water or other fire-suppression materials or equipment required for the protection of essential or hazardous facilities, or special occupancy structures;

d. Emergency vehicle shelters and garages;

e. Structures and equipment in emergency-preparedness centers;

f. Standby power generating equipment for essential facilities;

g. Structures and equipment in government communication centers and other facilities required for emergency response;

(3) Hazardous facilities such as structures housing, supporting or containing sufficient quantities of toxic or explosive substances to be dangerous to the safety of the general public if released; or

(4) Special occupancy structures, such as:

a. Covered structures whose primary occupancy is public assembly (capacity greater than 300 persons);

b. Buildings for schools through secondary or day care centers (capacity greater than 50 students);

c. Buildings for colleges or adult education schools (capacity greater than 50 students);

d. Medical facilities with 50 or more resident incapacitated patients, but not included above;

e. Jails and detention facilities;

f. All structures with occupancy greater than 5,000 persons;

g. Structures and equipment in power-generating stations and other public utility facilities not included above, and required for continued operation;

h. Unique or large structures whose failure might be catastrophic, such as dams holding over ten acre feet of water. ~~lifelines, such as major communication, utility and transportation facilities and their connection to emergency facilities, unique or large structures whose failure might be catastrophic, such as dams or buildings where explosive, toxic or radioactive materials are stored or handled, high occupancy buildings such as schools, hotels, offices, emergency facilities, such as police and fire stations, hospitals, communication centers and disaster response facilities.~~

Debris flow. The term “debris flow” means a mass of rock fragments, soil, and mud which, when wet, moves in a flow-like fashion. Debris flows will follow a confined channel, but may alter course if present on an alluvial/debris fan surface.

Engineering geologist. The term “engineering geologist” means a geologist who, through education, training and experience, is able to assure that geologic factors affecting engineering works are recognized, adequately interpreted and presented for use in engineering practice and for the protection of the public. This person shall have:

(1) At least a four-year degree in geology, engineering geology, or a related field from an accredited university; and

(2) At least three full years of experience in a responsible position in the field of engineering geology.

(3) A Utah State Professional Geologist’s license.

Engineering geology. The term “engineering geology” means the application of geological data and principles to engineering problems dealing with naturally occurring rock and soil for the purposes of assuring that geological factors are recognized and adequately interpreted in engineering practice.

Fault. The term “fault” means a fracture in the earth's crust forming a boundary between rock or soil masses that have moved relative to each other (also see “active fault”).

Fault scarp. The term “fault scarp” means a steep slope or cliff formed directly by movement along a fault.

Fault trace. The term “fault trace” means the intersection of the fault plane with the ground surface.

Fault zone. The term “fault zone” means a corridor of variable width along one or more fault traces.

Geotechnical report. The term "geotechnical report" means a technical report or study prepared by a geotechnical professional who is qualified in the field of expertise examined and analyzed in such a report. A person shall be considered "qualified" upon presentation of credentials providing recognition in the professional field, an academic degree from an accredited college or university in geology, geotechnics and/or geotechnical engineering.

Landslide. The term "landslide" means a general term for the down slope movement of a mass of soil, surficial deposits or bedrock.

Liquefaction. The term "liquefaction" means a process by which certain water saturated soils lose bearing strength because of ground shaking and increase of groundwater pore pressure. Liquefaction potential categories depend on the probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction in those zones. High liquefaction potential means that there is a 50% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction. Moderate means that the probability is between 10% and 50%, low means that the probability is between 5% and 10%, and very low means less than 5%.

Natural hazard. The term "natural hazard" means any hazard listed in Section 108-22-2, including, but not limited to, liquefaction, surface fault rupture, rock fall, debris flow, flood, tectonic subsidence, landslide and other hazards.

Natural hazard map. The term "natural hazard map" means any map that has been published by a qualified professional or applicable governmental agency, which contains the best available information, as determined by the County Engineer, and which delineates a potential natural hazard.

Natural hazard study area. The term "natural hazard study area" means any area identified on any natural hazard map or within any natural hazard studies or reports as having potential for being a natural hazard. In addition, the County Engineer has discretion to identify a natural hazard study area as a new hazard or potential hazard becomes known.

Rock fall. The term "rock fall" means the gravity-induced drop of a newly detached segment of bedrock or perched rock of any size from a cliff or steep slope.

Structure designed for human occupancy. The term "structure designed for human occupancy" means any residential dwelling or any other structure used or intended for supporting or sheltering any use or occupancy which is expected to have occupancy rate of more than 2,000 person-hours per year.

Zone of deformation. The term "zone of deformation" means the zone along a fault in which natural soil and rock materials are disturbed as a result of movement along the fault.

**…**

**Title 102 - ADMINISTRATION**

**CHAPTER 1. - GENERAL PROVISIONS**

**Sec. 102-1-1. - Purpose and intent.**

The purpose of this section is to establish regulations and procedures for the processing and consideration of applications allowed by this Land Use Code.

**Sec. 102-1-2. - ~~Administrative~~ Planning director authority.**

(a) The planning director, or his designee, is authorized to deny, approve, or approve with conditions an application for an administrative approval. Administrative approval can be given for the following applications:

(1) Site plan approval, when required by this Land Use Code, for which the Land Use Authority is not otherwise specified by this Land Use Code;

(2) ~~site plans~~Design review for ~~with~~ buildings under 10,000 square feet ~~located on a parcel less than one acre in size,~~and which impact an area of less than one acre, as provided in Section 108-1-2;

(3) H~~h~~ome occupation~~s with or without visiting clientele,~~ , as provided in Section 108-13-2;

(4) Building parcel designation, as provided in Section 108-7-33;

(5) ~~combining of lots within an approved subdivision which meet ordinance requirements, minor~~ Small subdivisions ~~as defined by the subdivision definition~~, as provided in Section 106-1-8(f) of this Land Use Code; and

(6) F~~f~~lag lots, access to a lot/parcel using a private right-of-way or access easement, and access to a lot/parcel at a location other than across the front lot line~~.~~ , as provided in Title 108, Chapter 7 of this Land Use Code.

(b) The planning director may deny an application for an administrative approval if the use fails to comply with specific standards set forth in this ~~chapter~~ Land Use Code or if any of the required findings are not supported by evidence in the record as determined by the director. At the discretion of the planning director, the planning commission can hear the request for an administrative approval.

(~~b~~c) The ~~administrative~~ planning director approval process includes public notice and comment from adjacent property owners, when~~as~~ required by this Land Use Code or state code.

…

**Sec. 102-1-4. - Notice of decision.**

After ~~hearing~~ reviewing the evidence and considering the application, the ~~approving authority (planning commission, planning director or his designee, board of adjustment, and county commission on land use applications)~~Land Use Authority, as designated by this Land Use Code, shall make its findings and decision. It shall then send ~~have them entered in the minutes. Upon a decision by the approving authority,~~ a notice of decision ~~shall be mailed~~ to the applicant at the address or e-mail address given in the application. A notice of decision can be a ~~new~~ written notice of decision, a copy of the written administrative approval ~~form~~ signed by the planning director or designee, or a copy of the approved minutes. A decision by the ~~approving authority~~Land Use Authority is final at the time the notice of decision is ~~issued~~sent. If a notice of decision is not sent, and the decision was made in a meeting where minutes are kept, the decision shall be final on the date the minutes from the meeting are approved by the ~~approving authority~~Land Use Authority. The planning division shall also mail notice of any decisions to any person or agency who, in writing, requested such notification before the decision was rendered. Unless the Land Use Authority's final decision specifies otherwise, ~~D~~the Land Use Authority's decision~~s~~ is~~are~~ subject to requirements and conditions stated in the staff report and, if applicable, listed in the meeting minutes.

…

**Title 104 - ZONES**

…

**CHAPTER 27. - RESERVED~~NATURAL HAZARDS OVERLAY DISTRICTS~~**

~~**Sec. 104-27-1. - Purpose and intent.**~~

~~(a) The purpose and intent of this chapter is to coordinate the application of natural hazards guidelines and standards, in order to protect the health, welfare and safety of the citizens of the county, and to minimize potential effects of natural and manmade hazards by identifying known hazardous~~

~~areas. This portion of the chapter specifies the areas for which an environmental analysis shall be performed prior to development, the content of the analysis and the procedure by which development applications requiring the analysis are reviewed and processed.~~

~~(b) The county recognizes individual property rights and shall make every effort to balance the right of the individual property owner with the health, welfare, safety and the common good of the general public.~~

**~~Sec. 104-27-2. - Potential hazards.~~**

~~The following potential hazards have been identified:~~

~~(1) Surface fault ruptures.~~

~~a. Surface faulting has been identified as a potential hazard in the county. Maps have been produced delineating the known area where a hazard may exist from surface fault ruptures. Broad subsidence of the valleys accompanying surface faulting may affect areas several miles away from the fault. These effects are not considered here, but are covered in subsection b of this section.~~

~~b. Studies along the Wasatch fault have indicated that during a "characteristic" earthquake which produces surface faulting, offsets of six feet or more may occur on the main trace of the fault zone. This offset will result in formation of a near-vertical scarp, generally in unconsolidated surficial deposits, that begin to ravel and erode back to the material's angle of repose (33-35 degrees) soon after formation. Antithetic faults west of the main trace may also form, generally exhibiting a lesser amount of offset, but sometimes as much as several feet. The zone between these two faults may be complexly faulted and tilted with offset along minor faults of several inches or more.~~

~~c. Based upon this data, it is difficult, both technically and economically, to design a structure to withstand six feet or more of offset through its foundation. Thus, avoidance of the main traces of the fault is the principal risk reduction technique that can be reasonably taken.~~

~~d. No critical facility or structure for human occupancy shall be built astride an active fault. In some areas adjacent to the main trace but still within the zone of deformation, avoidance may not be necessary. Less damaging (smaller) offsets of less than four inches, and tilting may occur and structural measures may be taken to reduce casualties and damage. However, structural damage may still be great, and buildings in the zone of deformation may not be safe for occupants following a large earthquake.~~

~~e. Due to the scale used to map these zones, there is not enough detail to delineate all fault traces and zones of deformation at a particular location, therefore, site specific plans and studies shall be required for development in or adjacent to the delineated areas.~~

~~f. Upon submittal, review and planning commission approval of site specific plans and studies with recommendations, produced by a qualified engineering geologist, setbacks shall be a minimum of 50~~

~~feet from an active fault trace. A reduction in the setback will be considered if the report presents evidence to justify a reduction acceptable to the planning commission.~~

~~(2) Landslide/tectonic subsidence.~~

~~a. Landslide. Landslides, historically, have been one of the most damaging geologic processes occurring in Weber County. Most active landslides, and most older slides, have been mapped and are shown on the Sensitive Lands Overlay District maps. These designations serve as an indication of unstable ground. The maps designate areas of landslides and slopes which are potentially unstable under static (non-earthquake) conditions, and are especially vulnerable under conditions of high to abnormally high precipitation. Landslides can damage structures, roads, railroads and power lines. Furthermore, landslides may rupture canals, aqueducts, sewers and water mains, all of which can add water to the slide plane and promote further movement. Flooding may also be caused.~~

~~b. Many methods have been developed for reducing landslide hazards. Proper planning and avoidance is the least expensive measure, if landslide-prone areas are identified early in the planning and development process. Care in site grading with proper compaction of fills and engineering of cut slopes is a necessary follow-up to good land use planning. Where avoidance is not feasible, various engineering techniques are available to stabilize slopes, including de-watering (draining), retaining structures, piles, bridging, weighting or buttressing slopes with compacted earth fills and drainage diversion. Since every landslide and unstable slope has differing characteristics, any development proposed within a designated landslide hazard area, as delineated on the Sensitive Lands Overlay District maps, shall require the submittal, review and approval by the planning commission, of specific site studies, including grading plans, cut/fill, and plans produced by a qualified engineering geologist and a Utah licensed geotechnical engineer. The site specific study shall address slope stability (including natural or proposed cut slopes), evaluate slope failure potential, effects of development and recommendations for mitigative measures. Slope stability analysis shall include potential for movement under static, development-induced and earthquake-induced conditions as well as likely groundwater conditions.~~

~~c. Tectonic subsidence. Tectonic subsidence, also called seismic tilting, is the warping, lowering and tilting of a valley floor that accompanies surface-faulting earthquakes on normal (dip slip) faults such as the Wasatch fault zone. Inundation along the shores of lakes and reservoirs and the ponding of water in areas with a shallow water table may be caused by tectonic subsidence. Certain structures which require gentle gradients or horizontal floors, particularly wastewater treatment facilities and sewer lines may be adversely affected.~~

~~d. Because subsidence may occur over large areas (tens of square miles), it is generally not practical to avoid the use of potentially affected land except in narrow areas of hazard due to lake shoreline flooding. For gravity-flow structures such as wastewater treatment facilities that are within areas of possible subsidence, it is advisable to consider the tolerance of such structures to slight changes in gradient. Some structures may have to be releveled after a large-magnitude earthquake. Critical~~

~~facilities which contain dangerous substances should have safety features to protect the structure, its occupants and the environment from both tilting and flooding.~~

~~e. Flooding problems along lakes from tectonic subsidence shall be reduced using standard techniques such as raising structures above expected flood levels and dikes can be built. Development adjacent to lakes or reservoirs shall be prohibited within three feet of elevation above projected lake levels to protect against natural rises from wet periods, storm waves and earthquake induced seiching, as well as hazards associated with tectonic subsidence.~~

~~f. Rises in the water table accompanying tectonic subsidence may cause water to pond, flood basements and disrupt buried facilities in areas of shallow groundwater adjacent to the fault on the down dropped side.~~

~~g. The principal application of the identified tectonic subsidence areas is to make the public aware of the hazard and to indicate those areas where further study may be necessary. Site specific tectonic subsidence studies are recommended only for critical facilities in areas of potential lake margin and ponded shallow groundwater flooding. However, certain vulnerable facilities such as high cost wastewater treatment plants and hazardous waste facilities should also consider potential tilting.~~

~~(3) Rock fall.~~

~~a. Rock falls are a naturally occurring erosional process in mountain areas in Weber County. As development advances higher onto the bench areas and into the canyons the risk from falling rocks becomes greater. A primary mechanism responsible for triggering rock falls is water in outcrop discontinuities. Rock falls present a hazard because of the potential damage a large rock mass, traveling at a relatively high velocity, could cause to structures and personal safety. Buildings shall be located so that structures are not positioned in an area susceptible to rock falls. When new developments cannot be designed around a rock fall path, and hazard reduction measures must be considered, a site specific plan and hazard study, with recommendations for mitigation, shall be produced by a qualified engineering geologist, submitted for review and approval by the planning commission. Mitigation may require design by a Utah licensed geotechnical engineer, and may include rock stabilization techniques such as bolting, cable lashing, burying, and grouting discontinuities, removal or break up of potential rock clasts, as well as deflection berms, slope benches, and rock catch fences to stop or at least slow down falling rocks. Strengthening a structure to withstand impact is an example of modifying what is at risk. Mitigation problems can arise when rock source areas are located on land not owned by the developer.~~

~~b. In areas where the rock fall hazard is present but very low, disclosures of potential hazards to land owners and residents with an acknowledgment of risk and willingness to accept liability may be an acceptable alternative to avoidance or mitigation for single-family residences.~~

~~(4) Debris flows.~~

~~a. Debris flows are mixtures of water, rock, soil and organic material (70-90 percent solids by weight) that form a muddy slurry much like wet concrete and flow down slope, commonly in surges or pulses, due to gravity. They generally remain confined to stream channels in mountainous areas, but may reach and deposit debris over large areas on alluvial fans at and beyond canyon mouths.~~

~~b. The county debris flow hazard maps were constructed from the boundaries of active alluvial fans and areas with slopes steeper than 30 percent. Any proposed development in areas identified as debris flow hazard areas shall be evaluated prior to approval of the proposed development.~~

~~1. A study shall be prepared by an engineering geologist for any development proposed in or adjacent to a debris flow hazard area and shall include:~~

~~(i) An analysis of the past history of debris flow at the site based on subsurface exploration to determine the nature and thickness of debris flow and related alluvial fan deposits.~~

~~(ii) An analysis of the drainage basin's potential to produce debris flows based on the presence of debris slides and colluvium-filled slope concavities, and an estimate of the largest probable volumes likely to be produced during a single event.~~

~~(iii) An analysis of the stream channel to determine if the channel will supply additional debris, impede flow, or contain debris flows in the area of the proposed development.~~

~~(iv) An analysis of manmade structures upstream that may divert or deflect debris flows.~~

~~(v) Recommendations concerning any channel improvements, flow modifications and catchment structures, direct protection structures or floodproofing measures, if necessary, in order to protect the development.~~

~~(vi) Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

~~(5) Liquefaction areas.~~

~~a. Earthquake ground shaking causes a variety of phenomena which can damage structures and threaten lives. One of these is termed soil liquefaction. Ground shaking tends to increase the pressure in the pore water between soil grains, which decreases the stresses between the grains. The loss of intergranular stress can cause the strength of some soils to decrease nearly to zero. When this occurs, the soil behaves like a liquid. When liquefaction occurs, foundations may crack, buildings may tip, buoyant buried structures such as septic tanks and storage tanks may rise, and even gentle slopes may fail as liquefied soils and overlying materials move down slope.~~

~~b. Areas of potential liquefaction have been delineated and the following regulations and mitigation measures have been adopted in order to reduce the hazard and consequences. Areas of moderate to high liquefaction potential need not be avoided. Structural measures and site modification techniques are available to reduce hazards. A site specific liquefaction study shall be required to be~~

~~prepared, and shall be prepared by an engineering geologist and/or a state licensed geotechnical engineer.~~

~~(i) Standard soil foundation study, for the proposed development, shall include liquefaction potential evaluation based upon depth to groundwater, soil types and ground failure hazard.~~

~~(ii) If liquefiable soils are present, standard penetration tests and/or cone penetration tests shall be required to determine critical accelerations needed to induce liquefaction.~~

~~(iii) Report shall include accurate maps of the area showing any proposed development, the location of bore holes and/or test pits, the site geology, and location and depths of any liquefiable soils noted, along with the probability of critical accelerations needed to induce liquefaction in these soils being exceeded for appropriate time periods.~~

~~(iv) The report shall include recommendations for hazard reduction techniques.~~

~~(v) The county engineer shall concur with the scope of the report, techniques and methodology to be used in the preparation of the report and shall have input as to the specific types of information to be included in the report.~~

~~(vi) Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

~~(6) Flood. The floodplain standards are written to minimize the loss of life and property when floods do occur, not to ban development outright from the floodplain. The Federal Emergency Management Agency (FEMA) has produced official floodplain maps, depicting areas of potential stream flooding for major drainages in Weber County. FEMA recommends that no new development be permitted in the 100-year floodplain unless:~~

~~a. Detailed engineering studies, prepared by a state-licensed engineer, show that the proposed development will not increase the flood hazard to other property in the area. Recommendations shall be made for floodproofing or other mitigation techniques for development within flood hazard areas. (Site investigations for proposed development in lake-flooding areas near Great Salt Lake need only indicate the site elevation. Development proposals in areas with elevations less than 4,218 feet will be reviewed with respect to lake-flooding potential and compatibility of proposed use.)~~

~~b. The proposed development is elevated above the 100-year flood base elevation.~~

~~c. For federally-insured loans, flood insurance is purchased from a company participating with the Federal Insurance Administration or a like private carrier.~~

~~d. Upon approval of the county engineer, the report shall be presented to the planning commission along with review comments for recommendation of approval by the county commission.~~

1. Alluvial fan flooding, which is not mapped under the FEMA program, may be a hazard on all active alluvial fans designated on the debris flow hazard maps. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.

2. Sheet flow. Certain areas of the Ogden Valley have been identified and mapped as areas of sheet flow flooding. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.

(7) Other hazardous areas.

a. As in many counties in the Western United States, development in the county is constrained by the presence of natural and manmade hazards. These hazards include avalanche, slope movement, soils categorized as having severe building limitations and slopes exceeding 30 percent.

b. Not all hazardous sites and conditions have been identified in the county; however, development on those identified sites shall be permitted when projects are studied and designed by a qualified engineering geologist and a state licensed civil engineer, architect and/or an engineering geologist and certified to withstand the potential hazard for which it is designed, and that the site is buildable and that the site is safe. This allows development on hazardous sites with the full acknowledgment of the property owner. The use of hazardous sites for open space is encouraged.

**Sec. 104-27-3. - Supplementary hazards definitions.**

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Active fault means a fault displaying evidence of greater than four inches of displacement along one or more of its traces during Holocene time (about 11,000 years ago to the present).

Area of deformation means the zone along a fault in which natural soil and rock materials are disturbed as a result of movement along the fault. (Also Zone of Deformation.)

Critical acceleration means the minimum amount of ground acceleration during seismically induced ground movement required to induce liquefaction or other forms of ground disruption.

Critical facilities means:

(1) Lifelines such as major communication, utility and transportation facilities and their connection to emergency facilities;

(2) Essential facilities, such as:

a. Hospitals and other medical facilities having surgery and emergency treatment areas;

b. Fire and police stations;

~~c. Tanks or other structures containing housing or supporting water or other fire-suppression materials or equipment required for the protection of essential or hazardous facilities, or special occupancy structures;~~

~~d. Emergency vehicle shelters and garages;~~

~~e. Structures and equipment in emergency-preparedness centers;~~

~~f. Standby power generating equipment for essential facilities;~~

~~g. Structures and equipment in government communication centers and other facilities required for emergency response;~~

~~(3) Hazardous facilities such as structures housing, supporting or containing sufficient quantities of toxic or explosive substances to be dangerous to the safety of the general public if released; or~~

~~(4) Special occupancy structures, such as:~~

~~a. Covered structures whose primary occupancy is public assembly (capacity greater than 300 persons);~~

~~b. Buildings for schools through secondary or day care centers (capacity greater than 50 students);~~

~~c. Buildings for colleges or adult education schools (capacity greater than 50 students);~~

~~d. Medical facilities with 50 or more resident incapacitated patients, but not included above;~~

~~e. Jails and detention facilities;~~

~~f. All structures with occupancy greater than 5,000 persons;~~

~~g. Structures and equipment in power-generating stations and other public utility facilities not included above, and required for continued operation;~~

~~h. Unique or large structures whose failure might be catastrophic, such as dams holding over ten acre feet of water.~~

~~Debris flow means a mass of rock fragments, soil, and mud which, when wet, moves in a flow-like fashion. Debris flows will follow a confined channel, but may alter course if present on an alluvial/debris fan surface.~~

~~Engineering geologist means a geologist who, through education, training and experience, is able to assure that geologic factors affecting engineering works are recognized, adequately interpreted and presented for use in engineering practice and for the protection of the public. This person shall have at least a four-year degree in geology, engineering geology, or a related field from an accredited university and at least three full years of experience in a responsible position in the field of engineering geology.~~

~~Engineering geology means the application of geological data and principles to engineering problems dealing with naturally occurring rock and soil for the purposes of assuring that geological factors are recognized and adequately interpreted in engineering practice.~~

~~Fault means a fracture in the earth's crust forming a boundary between rock and soil masses that have moved relative to each other (See Active fault).~~

~~Fault scarp means a steep slope or cliff formed directly by movement along a fault.~~

~~Fault trace means the intersection of a fault plane with the ground surface.~~

~~Fault zone means a corridor of variable width along one or more fault traces.~~

~~Landslide means a general term for the downslope movement of a mass of soil, surficial deposits or bedrock.~~

~~Liquefaction means a process by which certain water-saturated soils lose bearing strength because of ground shaking and increase of groundwater pore pressure.~~

~~Natural hazard means avalanche, liquefaction, surface fault rupture, rock fall, debris flow, flood, tectonic subsidence and/or landslide.~~

~~Natural hazard maps means the overlay maps, which delineate hazards, such as avalanche, liquefaction, surface fault rupture, rock fall and/or landslide areas.~~

~~Rock fall means the gravity-induced drop of a newly detached segment of bedrock or perched rock of any size from a cliff or steep slope.~~

~~Structure designed for human occupancy means any residential dwelling or any other structure used or intended for supporting or sheltering any use or occupancy which is expected to have occupancy rate of more than 2,000 person-hours per year.~~

~~**Sec. 104-27-4. - Studies and reports required.**~~

~~(a) Requirement for report. Any applicant requesting development on a parcel of land within a natural hazards study area, as shown on the natural hazards maps, shall submit to the planning commission six copies of site-specific natural hazard studies and reports, where required for such development according to the following chart.~~

~~(1) The natural hazards report and studies shall be prepared by an engineering geologist. In the case of a snow avalanche hazard, the report shall be prepared by an experienced avalanche expert. The report shall be signed by the preparer and shall also include the qualifications of the preparer.~~

~~(2) The report shall be site-specific and identify all known or suspected potential natural hazards originating on-site or off-site affecting the particular property.~~

~~(3) The report shall include a detailed site map (scale: one inch equals 200 feet or larger), showing the location of the hazard with delineation of the recommended setback distances from the hazard and the recommended location for structures.~~

~~(4) The report shall address the potential effects of the hazard on the proposed development and occupants thereof in terms of risk and potential damage.~~

~~(5) The report shall contain recommendations for avoidance or mitigation of the effects of the hazard consistent with the purposes set forth in section 104-27-1 of this chapter. The evidence on which recommendations and conclusions are based shall be clearly stated in the report.~~

~~(6) Trench logs (scale: one inch equals five feet or larger), aerial photographs, references with citations, and other supporting information as applicable, shall also be included in the report.~~

| ~~Land Use (Type of Facility)~~ | ~~Liquefaction Potential High/Moderate~~ | ~~Landslide/Rock Fall/Debris Flow Special Study Area~~ | ~~Surface Fault Rupture Special Study Area~~ |
|---|---|---|---|
| ~~Critical facilities~~ | ~~Yes~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Industrial or commercial ;gt;2 stories/;gt;5,000 sq. ft.~~ | ~~Yes~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Multifamily (4 or more units) and all other industrial or commercial~~ | ~~Yes~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Residential subdivisions~~ | ~~No**~~ | ~~Yes~~ | ~~Yes~~ |
| ~~Residential, single lots/multifamily (less than 4 units/acre)~~ | ~~No**~~ | ~~Yes~~ | ~~Yes~~ |
| ~~**Although no special study is required, disclosure is required as described in section 104-27-7.~~ | | | |

~~-~~

~~(b) Review of report. In order to fulfill the purposes of this chapter, the planning commission (for conditional uses, site plan review, design review and subdivisions) shall review any proposed development which requires preparation of a natural hazards report under this chapter to determine the possible risks to the safety of persons or property from natural hazards.~~

~~(1) Prior to consideration by the planning commission of any such development, the planning director shall submit the report to the Utah Geological and Mineral Survey, the U.S. Forest Service,~~

~~and/or any other experts for review and recommendation. Any cost for the review shall be paid by the applicant prior to any planning commission action.~~

~~(2) Whenever the planning commission determines that an area is subject to natural hazards which present an unreasonable risk to the safety of persons or property, including public streets, such area shall not be approved for development unless the applicant can demonstrate that such a risk can be reduced to a reasonable and acceptable level in a manner which has a minimum effect on the natural environment.~~

~~(3) The planning commission may set requirements necessary to reduce the risks from natural hazards as a condition to the approval of any development which requires preparation of a natural hazards report.~~

~~(c) Active fault consideration. No critical facility (excluding transportation lines or utilities which by their nature may cross active faults) or structures designed for human occupancy shall be built astride an active fault. If a fault is discovered in the excavation for such a structure, a special study and report, as described in subsection (a) of this section, shall be performed to determine if the fault is active, and if the fault is determined to be active, the procedures set forth in subsection (b) of this section, shall be followed. No structure designed for human occupancy shall be built on a fault scarp. Footing setbacks from a fault scarp shall meet the requirements of chapter 29 of the Uniform Building Code. The planning commission may increase footing setback requirements where information from a geotechnical report indicates slope conditions warrant a greater setback distance.~~

**~~Sec. 104-27-5. Disclosure required.~~**

~~(a) When a natural hazard report shows that a hazard exists which affects a particular parcel, a copy of the report shall be kept for public inspection in the county planning commission office. The natural hazard report denoting the type and severity of the hazard, the professional who prepared the report, the fact that the report is available to the public at the county planning department, and any restrictions on the use of the parcel required within the natural hazards report shall be recorded as a deed covenant running with the land, in the office of the county recorder, in addition to the following:~~

~~(1) Notice that the parcel is located within a natural hazards special study area as shown on the natural hazards map.~~

~~(2) Notice of the existence and availability of the natural hazards report for public inspection in the county planning commission office.~~

~~(3) An agreement by the owner of the parcel and any successor in interest to comply with any conditions set by the planning commission to minimize adverse effects of the natural hazard.~~

~~(4) When a natural hazard report is not required, but where the parcel is located within a mapped hazardous area, as shown on one of the natural hazards overlay maps, notice that the parcel is located~~

~~within such an area shall be recorded as a deed covenant running with the land in the county recorder's office and shall be written in a form satisfactory to the county engineer and attorney.~~

~~(5) The natural hazards ordinance codified in this chapter and natural hazards maps represent only those hazardous areas known to the county, and shall not be construed to include all possible potential hazard areas. The natural hazards listed in this chapter and associated maps may be amended as new information becomes available. The provisions of this chapter do not in any way assure or imply that areas outside its boundaries will be free from the possible adverse effects of natural hazards. This chapter shall not create liability on the part of the county, any officer or employee thereof for any damages from natural hazards that result from reliance on this chapter or any administrative requirement or decision lawfully made thereunder.~~

**~~Sec. 104-27-6. - Exemptions from filling natural hazard report.~~**

~~Proposed development not occupied by humans shall not be required to provide a natural hazard report, except critical facilities which shall be required to provide a report.~~

**~~Sec. 104-27-7. - Costs to be the responsibility of the developer/applicant.~~**

~~Any of the above described technical reports and/or studies shall be performed by the required qualified professional on behalf of the county through a third-party contract where all fees, costs and expenses are the responsibility of the applicant. Any other costs incurred in providing technical reports or testimony by expert witnesses shall be solely the responsibility of the applicant and not the county.~~

**~~Sec. 104-27-8. - Change of use.~~**

~~No change in use which results in the conversion of a building or structure from one not used for human occupancy to one that is so used shall not be permitted unless the building or structure complies with the provisions of this chapter.~~

**~~Sec. 104-27-9. - Variances.~~**

~~(a) Ability to grant. The county board of adjustment, when deciding appeals for variances of distance or area within the Natural Hazards Overlay Zone shall follow both the standards of title 102, chapter 3 of the Weber County Land Use Code and the standards stated below.~~

~~(b) Items to consider. In deciding whether to grant a variance and what conditions to attach to its approval, the board of adjustment shall consider:~~

~~(1) The likelihood during a significant seismic or other geologic event that materials may be moved onto adjacent land areas causing injury to persons or property;~~

~~(2) The degree of susceptibility to damage by seismic or other geologic activity for the building design or use proposed;~~

~~(3) The importance of the services of the proposed facility to the community and the need for the facility to be functional following a significant event of geologic activity;~~

~~(4) The necessity of the facility to be in the proposed location or proposed design;~~

~~(5) Considering alternate locations and designs available;~~

~~(6) The ability of the community to provide emergency services to the facility in the event of a catastrophe;~~

~~(7) The degree of benefit received from the variance relative to the hazards posed to the facility's neighbors, visitors, and owners.~~

~~(c) Presumption relative to approval. Generally, the standards of this chapter shall not be varied unless an equally safe method of use and construction can be approved.~~

~~(1) The amount of variance approved shall be only the minimum amount required to provide relief.~~

~~(2) A variance shall be granted only if it will not result in a threat to public safety, cause extraordinary public expense, or create a nuisance.~~

~~(3) A variance shall be granted only if it will not result in a threat to public safety, cause extraordinary public expense, or create a nuisance.~~

~~(4) In a continuum beginning with hay barns and agricultural structures and going to high rise apartment buildings and auditoriums, the difficulty in obtaining a variance shall be greater for structures with a high percentage of time when the structure is utilized by humans or is occupied by a large number of people.~~

**~~Sec. 104-27-10. - Disputes; boundaries or mapped hazards.~~**

~~The boundary lines of the special study areas shown on the Natural Hazards Overlay Maps shall be determined by use of the scale appearing on the map. Where there is a conflict between the boundary lines illustrated on the map and actual field conditions, or where detailed investigations show that the mapped hazards are not present within a particular area, the dispute shall be settled as follows:~~

~~(1) The person disputing the hazard study area boundary or the mapped hazards present within a particular area shall submit technical and geologic evidence to support such claim to the planning commission in the form of a site-specific natural hazards report.~~

~~(2) The planning commission may request the Utah Geological Survey, the U.S. Forest Service, and/or other experts to review the evidence prior to making a decision concerning the dispute.~~

~~(3) The cost of the review shall be paid by the person disputing the map.~~

~~(4) The planning commission may allow deviations from the mapped boundary line only if the evidence clearly and conclusively establishes that the natural hazard study area boundary location is incorrect, or that the mapped hazards are not present within a particular area.~~

~~(5) Any decision of the planning commission may be appealed to the board of county commissioners by filing an appeal within 15 days of the planning commission's decision.~~

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**Title 106 - SUBDIVISIONS**

...

**CHAPTER 1. - GENERAL PROVISIONS**

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**Sec. 106-1-8. - Final plat requirements and approval procedure.**

...

(g) *Additional ~~documents~~provisions*. The Land Use Authority may impose conditions of approval as may be necessary to assure compliance with this Land Use Code. Unusual site specific conditions ~~of development~~ or ~~other~~ restrictions applied to the ~~use~~development of a lot or lots ~~resulting~~ attributed~~from~~ to topography, geologic or environmental conditions or potential hazards, location, ~~or zoning~~ or other site specific ~~regulations~~conditions or restrictions authorized by this Land Use Code~~,~~ ~~etc.,~~ shall be identified in the actual location of the condition or restriction on the subdivision drawing. A notice of the unusual site specific condition or restriction ~~, and~~ shall be recorded ~~as a protective covenant attached~~ to run with the lot or lots affected.

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**Title 108 - STANDARDS**

...

**CHAPTER 7. - SUPPLEMENTARY AND QUALIFYING REGULATIONS**

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**Sec. 108-7-33. - Building parcel designation**

(a) Separate adjoining lots within an approved subdivision plat may be combined for building purposes without filing a formal subdivision plat amendment. The original lot lines, as recorded, do not change.

(b) A building parcel designation shall be approved provided that:

(1) An application shall be submitted on a form approved by the Planning Director;

(2) The application shall include a copy of the subdivision plat;

(3) All lots proposed to be combined shall be under the same ownership;

(4) No additional lot shall be created; and

(5) The existing lots shall conform to the current zoning or be part of a platted cluster subdivision or PRUD. Existing lots that do not conform to current zoning shall require an amended subdivision plat.

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## CHAPTER 14. - HILLSIDE DEVELOPMENT REVIEW PROCEDURES AND STANDARDS

### Sec. 108-14-1. - Purpose and intent.

(a) It is recognized that the general provisions, definitions, procedures, improvements and design requirements, standards and principles set out in the Land Use Code of Weber County require supplementation to protect and preserve the public health, safety, and welfare in regard to hillside terrain and environmentally sensitive areas. When areas are subdivided or developed on sensitive areas, such features as special soil ~~and geologic~~ conditions, steep terrain, highly combustible native vegetation, and other conditions may pose serious potential consequences such as increased fire, flood or erosion hazards, traffic circulation problems, sewage disposal problems, property damage from extensive soils slippage and subsidence, and adverse effects from destruction of natural scenic beauty and unsightly developments. Such consequences may be avoided if special consideration is given to areas where one or more such conditions exist.

(b) In the administration of the provisions of this chapter, the hillside development review board shall strive to achieve the objective of preserving the natural contours of the hillside areas by encouraging and requiring, where necessary, the following:

(1) A minimum amount of grading which preserves the natural contours of the land.

(2) Retention of trees and other native vegetation (except in those cases where a high fire hazard results) which stabilizes steep hillsides, retains moisture, prevents erosion and enhances the natural scenic beauty.

(3) Construction of roads on steep hillsides in such a way as to minimize scars from cuts and fills and avoid permanent scarring of hillsides.

(4) Placement of building sites in such a manner as to permit ample room for adequate defensible area as defined by the fire code, landscaping and drainage between and around the buildings.

(5) Grading which will eliminate the sharp angles at the top and toe of cut and fill slopes, both with respect to building sites and to road cross-sections.

(6) Lot and structure designs and location which will be appropriate in order to reduce ~~geologic and environmental hazards, as required in of title 104, chapter 27, Natural Hazards Overlay District, as well as~~ grading and natural topographic disturbance.

(7) Cluster type development or other new concepts and techniques, where appropriate, in order to eliminate, as far as possible, construction on steep, sensitive or dangerous terrain.

(8) Early temporary or permanent planting, or other materials, wherever appropriate to maintain necessary cut and fill slopes in order to stabilize them with plant roots or other materials, thereby preventing erosion and to conceal the raw soil from view.

...

### Sec. 108-14-3. - Applicability.

(a) All parcels, subdivision lots, roads and accesses, where the natural terrain has average slopes at or exceeding 25 percent shall be reviewed by the Hillside Development Review Board as part of an application request for land use and building permits. Hillside Review is required as part of the preliminary subdivision review. This requirement may be waived by the P~~p~~lanning D~~d~~irector and the C~~c~~ounty E~~e~~ngineer on a case-by-case basis.

(b) The planning division shall not issue any land use permits, and the building official shall not issue any building permits until detailed plans and engineered drawings have been submitted to, and approved by the hillside development review board. Any condition attached to such approval by said board shall be a condition required with the issuance of land use permit. All parcels, subdivisions, lots, roads and accesses may come under consideration of the review board if requested by the owner, developer, or review agency. Other circumstances may warrant a review as found in the Title 108 Chapter 22 – Natural Hazard Areas. ~~"Natural Hazards Overlay Districts" of title 104, chapter 27.~~

**Sec. 108-14-4. - Procedure.**

Application plans and applications of the proposed development and any relevant information regarding building and excavation of the site are to be submitted to the planning division. Information shall include, but not be limited to the following:

(1) Detailed engineering plans and profiles for retaining wall, cuts, filling and/or excavating of land.

(2) Site plan with contours.

(3) Cross sections of improvements.

(4) Retaining wall designs with engineers stamp (if applicable).

(5) Geotechnical report (site specific for structures) and, if applicable, ~~an outside review of the geological report if deemed necessary.~~verification of compliance with the requirements of Title 108, Chapter 22 - Natural Hazard Areas.

(6) Other studies and/or information deemed necessary by the members of the board.

(7) Utah pollution discharge elimination system (UPDES) permit with stormwater pollution prevention plan (SWPPP) shall be required at the time of application. Erosion control landscaping on cuts, fills and other locations, considered necessary by the review board, shall be provided in order to prevent erosion.

(8) A landscape plan as per ~~section~~Section 108-14-10.

**…**

**Sec. 108-14-9. ~~–~~ Reserved. ~~Geologic and other environmental considerations.~~**

~~(a) Geologic and other environmental constraints shall be considered by the review board when reviewing any developments on restricted lots or parcels of land. Mitigation measures shall be required as stated in title 104, chapter 27 the Natural Hazards Overlay District of the Weber County Land Use Code.~~

~~(b) An outside review of the geological report may be done by an independent firm, at the discretion of the county engineer if he deems it necessary; the independent firm will be selected from a list, provided by the county, with all costs associated with the review paid by the applicant. The hillside development review board shall consider the findings, recommendations, and requirements of the report. If the applicant disagrees with the finding and reconditions and requirements of the independent firm, they may appeal to the board of adjustment.~~

**…**

**Sec. 108-14-11. - Appeals.**

(a) Except as allowed in subsection (b) of this section, an appeal of any written decision in the application of this chapter shall be appealed in accordance with Title 102, Chapter 3 – Board of Adjustment, of this Land Use Code.

(b) When a written decision provided under this chapter contains technical aspects, an applicant may request the County to assemble a panel of qualified professionals to serve as the appeal authority for the sole purpose of determining those technical aspects[1].

(1) The technical aspects of the administration and interpretation of this chapter are decisions related to:

a. the acceptance or rejection of scope, techniques, methodology, conclusions or specific types of information presented in a study or report;

b. the review and recommendation of an acceptable study or report for the Land Use Authority's consideration; or

c. the interpretation or application of any technical provisions of a study or report that is required by this chapter.

(2) Unless otherwise agreed by the applicant and County, if an applicant makes a request under this subsection, the County shall assemble the panel consisting of:

a. one qualified professional designated by the County;

b. one qualified professional designated by the applicant; and

c. one qualified professional chosen jointly by the County's designated qualified professional and the applicant's designated qualified professional.

(3) A member of the panel may not be associated with the application that is the subject of the appeal.

(4) The applicant shall pay for one half the cost of the panel in addition to the County's appeal fee.

(5) The panel shall be governed by the same appeal provisions of the Board of Adjustment provided in Title 102, Chapter 3 - Board of Adjustment, of this Land Use Code.

~~An appeal of the Hillside Development Review Board's decision shall be submitted to the county planning division:~~

~~(1) The applicant, a board or officer of the county, or any person adversely affected by the Hillside Development Review Board's decision administering or interpreting Hillside Development Review procedures and standards ordinance may, within the time period provided by ordinance, appeal that decision to the appeal authority by alleging that there is error in any order, requirement, decision, or determination made by the Hillside Development Review Board in the administration or interpretation of the hillside development review procedures and standards ordinance.~~

~~(2) An applicant who has appealed a decision of the land use authority administering or interpreting the county's geologic hazard ordinance may request the county to assemble a panel of qualified experts to serve as the appeal authority for purposes of determining the technical aspects of the appeal.~~

~~(3) If an applicant makes a request under subsection (1) of this section, the county shall assemble the panel described in subsection (4) of this section consisting of, unless otherwise agreed by the applicant and county:~~

~~a. One expert designated by the county;~~

~~b. One expert designed by the applicant; and~~

~~c. One expert chosen jointly by the county's designated expert and the applicant's designated expert from a pre-approved list that the engineering division has assembled.~~

[1] Note to codifiers: provide reference to UCA §17-27a-703(2)

~~(4) A member of the panel assembled by the county under subsection (3) of this section may not be associated with the application that is the subject of the appeal.~~

~~(5) The applicant shall pay one-half of the cost of the panel and the county's published appeal fee.~~

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## CHAPTER 22. – NATURAL HAZARD AREAS

### Sec. 108-22-1. - Purpose and intent.

(a) The purpose and intent of this chapter is to coordinate the application of natural hazards guidelines and standards, in order to protect the health, welfare and safety of the citizens of the County, and to minimize potential effects of natural and manmade hazards by identifying known hazardous areas. This portion of the chapter specifies the areas for which an environmental analysis shall be performed prior to development, the content of the analysis and the procedure by which development applications requiring the analysis are reviewed and processed.

(b) The County recognizes individual property rights and shall make every effort to balance the right of the individual property owner with the health, welfare, safety and the common good of the general public.

### Sec. 108-22-2. - Potential hazards.

The following potential hazards have been identified:

(1) Surface-fault ruptures.

a. Surface faulting has been identified as a potential hazard in the County. Maps have been produced delineating the known area where a hazard may exist from surface fault ruptures. Broad subsidence of the valleys accompanying surface faulting may affect areas several miles away from the fault. These effects are not considered here, but are covered in subsection 3 of this section.

b. Studies along the Wasatch fault have indicated that during a "characteristic" earthquake which produces surface faulting, offsets of six feet or more may occur on the main trace of the fault zone. This offset will result in formation of a near-vertical scarp, generally in unconsolidated surficial deposits, that begin to ravel and erode back to the material's angle of repose (33-35 degrees) soon after formation. Antithetic faults west of the main trace may also form, generally exhibiting a lesser amount of offset, but sometimes as much as several feet. The zone between these two faults may be complexly faulted and tilted with offset along minor faults of several inches or more.

c. Based upon this data, it is difficult, both technically and economically, to design a structure to withstand six feet or more of offset through its foundation. Thus, avoidance of the main traces of the fault is the principal risk reduction technique that can be reasonably taken.

d. No critical facility (excluding transportation lines or utilities which by their nature may cross active faults) or structure designed for human occupancy shall be built astride an active fault. If a fault is discovered in the excavation for such a structure, a geologic hazard study and report, as provided in Section 108-22-3 of this Land Use Code, is required. In some areas adjacent to the main trace but still within the zone of deformation, avoidance may not be necessary. Less damaging (smaller) offsets of less than four inches, and tilting may occur and structural measures may be taken to reduce casualties and damage. However, structural damage may still be great, and buildings in the zone of deformation may not be safe for occupants following a large earthquake.

e. Due to the scale used to map these zones, there is not enough detail to delineate all fault traces and zones of deformation at a particular location, therefore, site specific plans,

studies, and reports shall be required, as provided in Section 108-22-3 of this Land Use Code, for development in or adjacent to the delineated areas.

f. Building setbacks shall be a minimum of 50 feet from an active fault trace. A reduction in the setback may be considered if the report presents evidence to justify a reduction acceptable to the Land Use Authority, after recommendation from the County Engineer.

(2) Landslide.

a. Landslides, historically, have been one of the most damaging geologic processes occurring in Weber County. Most active landslides, and most older slides, have been mapped. The maps identify areas of landslides and slopes which are potentially unstable under static (non-earthquake) conditions, and are especially vulnerable under conditions of high to abnormally high precipitation, heavy snowmelt, or excessive water application due to irrigation or septic system discharge. Landslides can damage structures, roads, railroads and power lines. Furthermore, landslides may rupture canals, aqueducts, sewers and water mains, all of which can add water to the slide plane and promote further movement. Flooding may also be caused.

b. Many methods have been developed for reducing a landslide hazard. Proper planning and avoidance is the least expensive measure, if landslide-prone areas are identified early in the planning and development process. Care in site grading with proper compaction of fills and engineering of cut slopes is a necessary follow-up to good land use planning. Where avoidance is not feasible, various engineering techniques are available to stabilize slopes, including de-watering (draining), retaining structures, piles, bridging, weighting or buttressing slopes with compacted earth fills and drainage diversion. Since every landslide and unstable slope has differing characteristics, any development proposed within an identified landslide hazard area shall require the submittal and review of a study and report, as provided in Section 108-22-3. The study and report shall address slope stability (including natural or proposed cut slopes), evaluate slope-failure potential, effects of development and recommendations for mitigative measures. Slope stability analysis shall include potential for movement under static, development-induced and earthquake-induced conditions as well as likely groundwater conditions.

(3) Tectonic subsidence.

a. Tectonic subsidence, also called seismic tilting, is the warping, lowering and tilting of a valley floor that accompanies surface-faulting earthquakes on normal (dip slip) faults such as the Wasatch fault zone. Inundation along the shores of lakes and reservoirs and the ponding of water in areas with a shallow water table may be caused by tectonic subsidence. Certain structures which require gentle gradients or horizontal floors, particularly wastewater treatment facilities and sewer lines may be adversely affected.

b. Because subsidence may occur over large areas (tens of square miles), it is generally not practical to avoid the use of potentially affected land except in narrow areas of hazard due to lake shoreline flooding. For gravity-flow structures such as wastewater treatment facilities that are within areas of possible subsidence, it is advisable to consider the tolerance of such structures to slight changes in gradient. Some structures may have to be releveled after a large-magnitude earthquake. Critical facilities which contain dangerous substances should have safety features to protect the structure, its occupants and the environment from both tilting and flooding.

c. Flooding problems along lakes from tectonic subsidence shall be reduced using standard techniques such as raising structures above expected flood levels and dikes can be built. Development adjacent to lakes or reservoirs shall be prohibited within three feet of elevation above projected lake levels to protect against natural rises from wet periods, storm waves and earthquake induced seiching, as well as hazards associated with tectonic subsidence.

d. Rises in the water table accompanying tectonic subsidence may cause water to pond, flood basements and disrupt buried facilities in areas of shallow groundwater adjacent to the fault on the down dropped side.

e. The principal application of the identified tectonic subsidence areas is to make the public aware of the hazard and to indicate those areas where further study may be necessary. Site specific tectonic subsidence reports and studies are recommended only for critical facilities in areas of potential lake-margin and ponded shallow groundwater flooding. However, certain vulnerable facilities such as high cost wastewater treatment plants and hazardous waste facilities should also consider potential tilting.

(4) Rock fall.

a. Rock falls are a naturally occurring erosional process in mountain areas in Weber County. As development advances higher onto the bench areas and into the canyons the risk from falling rocks becomes greater. A primary mechanism responsible for triggering rock falls is water in outcrop discontinuities. Rock falls present a hazard because of the potential damage a large rock mass, traveling at a relatively high velocity, could cause to structures and personal safety. When new developments cannot be designed around a rock fall path, and hazard reduction measures must be considered, a study and report as provided in Section 108-22-3, is required. Mitigation shall require design by a Utah licensed geotechnical engineer, and may include rock stabilization techniques such as bolting, cable lashing, burying, and grouting discontinuities, removal or break-up of potential rock clasts, as well as deflection berms, slope benches, and rock catch fences to stop or at least slow down falling rocks. Strengthening a structure to withstand impact is an example of modifying what is at risk. Mitigation problems can arise when rock source areas are located on land not owned by the developer.

b. In areas where the rock fall hazard is present but very low, disclosure of a potential hazard to land owners and residents with an acknowledgment of risk and willingness to accept liability may be an acceptable alternative to avoidance or mitigation for single-family residences.

(5) Debris flows.

a. Debris flows are mixtures of water, rock, soil and organic material (70-90 percent solids by weight) that form a muddy slurry much like wet concrete and flow down slope, commonly in surges or pulses, due to gravity. They generally remain confined to stream channels in mountainous areas, but may reach and deposit debris over large areas on alluvial fans at and beyond canyon mouths.

b. The County debris flow hazard maps were constructed from the boundaries of active alluvial fans and areas with slopes steeper than 30 percent. Any proposed development in areas identified as debris flow hazard areas shall be evaluated prior to approval of the proposed development. A study and report, as provided in Section 108-22-3, shall be prepared by an engineering geologist for any development proposed in or adjacent to a debris flow hazard area and shall include:

1. An analysis of the history of debris flow at the site based on subsurface exploration to determine the nature and thickness of debris flow and related alluvial fan deposits. If, in the engineering geologist's professional opinion, geologic conditions have changed enough to render a debris flow inactive, the analysis may estimate the nature and approximate thickness of the debris flow and related alluvial fan deposits in lieu of subsurface exploration.

2. An analysis of the drainage basin's potential to produce debris flows based on the presence of debris slides and colluvium-filled slope concavities, and an estimate of the largest probable volumes likely to be produced during a single event.

3. An analysis of the stream channel to determine if the channel will supply additional debris, impede flow, or contain debris flows in the area of the proposed development.

4. An analysis of manmade structures upstream that may divert or deflect debris flows.

5. Recommendations concerning any channel improvements, flow modifications and catchment structures, direct protection structures or floodproofing measures, if necessary, in order to protect the development.

(6) Liquefaction areas.

a. Earthquake ground shaking causes a variety of phenomena which can damage structures and threaten lives. One of these is termed soil liquefaction. Ground shaking tends to increase the pressure in the pore water between soil grains, which decreases the stresses between the grains. The loss of intergranular stress can cause the strength of some soils to decrease nearly to zero. When this occurs, the soil behaves like a liquid. When liquefaction occurs, foundations may crack, buildings may tip, buoyant buried structures such as septic tanks and storage tanks may rise, and even gentle slopes may fail as liquefied soils and overlying materials move down slope.

b. Areas of potential liquefaction have been delineated and the following regulations and mitigation measures have been adopted in order to reduce the hazard and consequences. Areas of moderate to high liquefaction potential need not be avoided. Structural measures and site modification techniques are available to reduce a hazard. A site specific liquefaction study and report shall be required pursuant to Section 108-22-3, and shall be prepared by an engineering geologist and/or a state licensed geotechnical engineer and shall comply with the following:

1. Standard soil foundation study, for the proposed development, shall include liquefaction potential evaluation based upon depth to groundwater, soil types and ground failure hazard.

2. If liquefiable soils are present, standard penetration tests and/or cone penetration tests shall be required to determine critical accelerations needed to induce liquefaction.

3. The study and report shall include an accurate map of the area showing any proposed development, the location of bore holes and/or test pits, the site geology, and location and depths of any liquefiable soils noted, along with the probability of critical accelerations needed to induce liquefaction in these soils being exceeded for appropriate time periods.

4. The report shall include recommendations for hazard reduction techniques.

(7) Flood.

a. The floodplain standards are written to minimize the loss of life and property when floods do occur, not to ban development outright from the floodplain. In the event the following provisions conflict with those in Title 22 of the Weber County Code, the most restrictive shall apply. The Federal Emergency Management Agency (FEMA) has produced official floodplain maps, depicting areas of potential stream flooding for major drainages in Weber County.

b. FEMA recommends that no new development be permitted in the 100-year floodplain unless:

1. Detailed engineering study and reports, as required by Section 108-22-3, prepared by a state-licensed engineer, show that the proposed development will not increase the flood hazard to other property in the area. Recommendations shall be made for floodproofing or other mitigation techniques for development within flood hazard areas. (Site investigations for proposed development in lake-flooding areas near Great Salt Lake need only indicate the site elevation. Development proposals in areas

with elevations less than 4,218 feet will be reviewed with respect to lake-flooding potential and compatibility of proposed use.)

2. The proposed development is elevated above the 100-year flood base elevation.

3. For federally-insured loans, flood insurance is purchased from a company participating with the Federal Insurance Administration or a like private carrier.

c.. The study and report, as may be required by Section 108-22-3, shall consider the following:

(i) Alluvial fan flooding, which is not mapped under the FEMA program, may be a hazard on all active alluvial fans identified on debris flow hazard maps. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.

(ii) Sheet flow. Certain areas of the Ogden Valley have been identified and mapped as areas of sheet flow flooding. The hazard from such flooding shall be addressed and appropriate hazard reduction measures taken.

(8) Other hazards.

a. As in many counties in the Western United States, development in the County is constrained by the presence of natural and manmade hazards. These hazards include, but are not limited to, avalanche, slope movement, soils categorized as having severe building limitations and slopes exceeding 30 percent.

b. Not all hazardous sites and conditions have been identified in the County. As a hazard or potential hazard becomes known, the County has discretion to require any study and report that is necessary to understand how the hazard or potential hazard may impact development. The study or report shall provide appropriate hazard mitigation measures.

**Sec. 108-22-3. - Studies and reports required.**

(a) *Requirement for a study and report.* Unless exempted in Section 108-22-5, any application for development on a parcel of land within a natural hazard study area shall be submitted to the planning division with two hard copies and one electronic (pdf) copy of a site-specific natural hazard study and report, where required for such development according to the following chart:

| Land Use (Type of Facility) | Liquefaction Potential High/Moderate | Landslide/Rock Fall/Debris Flow Study Area | Surface Fault Rupture Study Area | Tectonic Subsidence Study Area | Flood Study Area | Other Hazardous Areas |
|---|---|---|---|---|---|---|
| Critical facilities | Yes | Yes | Yes | Recommended | Yes | As determined by the County Engineer |
| Industrial, commercial, or multifamily (4 or more units) | Yes | Yes | Yes | No | Yes | As determined by the County Engineer |
| Residential subdivisions | No** | Yes, unless otherwise provided by Section 108-22-2(4)b. | Yes | No | Yes | As determined by the County Engineer |
| Residential, single lots/multifamily (less than 4 units) | No** | Yes, unless otherwise provided by Section 108-22-2(4)b. | Yes | No | Yes | As determined by the County Engineer |

**Although no study and report is required, disclosure is required as described in Section 108-22-4.

(1) Each natural hazard study and report shall be prepared by an engineering geologist. In the case of a snow avalanche hazard, the study and report shall be prepared by an experienced avalanche expert. The study and report shall be signed by the preparer and shall also include the qualifications of the preparer.

(2) Each natural hazard study and report shall be site-specific and identify, to the extent practicable, all known or suspected potential natural hazard(s) originating on-site or off-site which present a reasonable likelihood of adversely affecting the particular property.

(3) Each natural hazard study and report shall include a detailed site map (scale: one inch equals 200 feet or larger), showing the location and type of hazard with delineation of the recommended setback distances from the hazard and the recommended location for structures.

(4) Each natural hazard study and report shall address the potential adverse effects of the hazard on the proposed development and occupants thereof in terms of the reasonable likelihood of potential damage.

(5) Each natural hazard study and report shall contain recommendations for avoidance or mitigation of the identified adverse effects of the hazard consistent with the purposes set forth in

Section 108-22-1 of this chapter. The evidence on which recommendations and conclusions are based shall be clearly stated in the report.

(6) Trench logs (scale: one inch equals five feet or larger), trench photos, aerial photographs, references with citations, and other supporting information, as applicable, shall also be included in each natural hazard study and report.

(b) *Review of the study and report.* In order to fulfill the purposes of this chapter, the Land Use Authority shall review any proposed development which requires preparation of a natural hazard study and report under this chapter to determine the possible risks to the safety of persons or property from a natural hazard.

(1) Prior to consideration by the Land Use Authority of any such development, the County Engineer may submit the study and report, and, if applicable, site specific plan, to outsourced qualified professionals for review and recommendation. Any cost for the review shall be paid by the applicant prior to any Land Use Authority action.

(2) The County Engineer has discretion to reject the scope, techniques, methodology, conclusions, or specific types of information presented in the study and report if industry standards of care were not used. All conclusions of the study and report shall be supported by adequate data.

(3) The County Engineer shall prepare a final review and recommendation of an acceptable study and report, and, if applicable, site specific plans, for the Land Use Authority's consideration.

(4) Whenever the Land Use Authority determines that an area is subject to a natural hazard which present an unreasonable risk to the safety of persons or property, including public streets, such area shall not be approved for development unless the applicant can demonstrate that such a risk can be reduced to a reasonable and acceptable level in a manner which has a minimum effect on the natural environment.

(5) The Land Use Authority may set requirements or conditions necessary to reduce the risks from a natural hazard as a condition to the approval of any development which requires preparation of a natural hazard study and report.

(c) *Study and report verification.* The project engineering geologist shall submit with the study a signed and sealed verification letter stating that the study was conducted in accordance with industry standards of care, and that it complies with this Land Use Code and all other applicable laws. Written verification shall be provided from the issuer of professional errors and omissions liability insurance, in the amount of one million dollars ($1,000,000.00), which covers the engineering geologist, and which is in effect on the date of preparation of all required studies and reports.

(d) *Development design verification.* Whenever possible, avoidance of development in an area with an identified natural hazard is strongly encouraged. However, pursuant to requirements of this chapter, development in an area with an identified natural hazard shall be permitted when it is designed to mitigate, and is reasonably safe from, the identified hazard. Final design of the development shall not be accepted by the County unless:

(1) The development's state licensed engineer, or if applicable, engineers, provide(s) the County with a signed and sealed verification letter stating that, pursuant to the considerations, findings, recommendations, and conclusions of the development's engineering geologist's study and report, the development has been designed to mitigate, and is reasonably safe from, the identified hazard.

(2) The development's engineering geologist submits a signed and sealed verification letter stating that the final design of the development adequately provides for the considerations, findings, recommendations, and conclusions of the study and report, and is reasonably safe from the identified hazard.

(3) Written verification is provided from the issuer(s) of professional errors and omissions liability insurance, in the amount of one million dollars ($1,000,000.00), which covers the engineering

geologist and state licensed engineer(s), and which is in effect on the date of preparation of all required reports and certifications.

**Sec. 108-22-4. - Disclosure required.**

(a) When a natural hazard report shows that a hazard exists which affects a particular parcel:

(1) a copy of the report shall be kept for public inspection in the County Planning Division Office.

(2) A notice that runs with the land shall be recorded, and, if applicable, a note on the subdivision plat shall be required, which provide:

a. Notice that the parcel is located within a natural hazard study area;

b. Notice that a natural hazard study and report is available for public inspection in the County Planning Division Office;

c. Notice that a hazard has been identified on the parcel and the type and severity of the hazard;

d. The professional who prepared the report, with his or her contact information; and

e. Any restrictions on the use of the parcel required within the natural hazard report, or by the Land Use Authority.

(b) When a natural hazard report is not required, but where the parcel is located within a natural hazard study area, notice that the parcel is located within such an area shall be recorded running with the land and noted on the subdivision plat (if applicable), and shall be written in a form satisfactory to the County Engineer and County Attorney.

(c) The natural hazard ordinance codified in this chapter and natural hazard map represent only those potentially hazardous areas known to the County, and shall not be construed to include all possible potential hazard areas. The natural hazards listed in this chapter may be amended as new information becomes available. The provisions of this chapter do not in any way assure or imply that areas outside its boundaries will be free from the possible adverse effects of a natural hazard. This chapter shall not create liability on the part of the County, any officer or employee thereof for any damages from a natural hazard that result from reliance on this chapter or any administrative requirement or decision lawfully made thereunder.

**Sec. 108-22-5. - Exemptions from natural hazard study and report.**

The following are exemptions from natural hazard study and report requirement:

(1) A proposed structure that is not a structure designed for human occupancy shall not be required to provide a natural hazard report; except, a report shall be provided for a critical facility if required by Section 108-22-3, or when otherwise required by the Planning Director or County Engineer due to natural hazards conditions known to be in the area.

(2) When clear evidence exists that no study and report is necessary, the Planning Director or County Engineer may waive the requirement.

**Sec. 108-22-6. - Costs to be the responsibility of the developer/applicant.**

Any of the above described technical reports and/or studies shall be performed by qualified professionals on behalf of the applicant. The cost of outsourced qualified professionals used by the County to aid in the review required in Section 108-22-3 is the responsibility of the applicant. Any other costs incurred in providing technical reports or testimony by qualified professionals or expert witnesses shall be solely the responsibility of the applicant and not the County.

**Sec. 108-22-7. - Change of use.**

No change in use which results in the conversion of a building or structure not designed for human occupancy to one designed for human occupancy shall be permitted unless the building or structure complies with the provisions of this chapter.

**Sec. 108-22-8. - Conflict between boundaries of study area or identified hazard.**

Where there is a conflict between the boundaries of an identified natural hazard study area and actual field conditions, or where detailed investigations show that the identified hazard is not present within a particular area, the conflict shall be settled as follows:

(1) The person disputing the natural hazard study area boundary shall submit technical and geologic evidence to support such claim to the County Engineer in the form of a site-specific natural hazard report.

(2) The County Engineer may request outsourced qualified professionals to review the evidence and make a recommendation prior to making a final written decision concerning the dispute. The cost of the outsourced qualified professional's review shall be paid by the person disputing the boundary.

(3) The County Engineer may allow modifications to the boundary only if the evidence clearly and conclusively establishes that the natural hazard study area boundary location is incorrect, or that the identified hazard is not present within a particular area.

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**Sec. 108-22-9. - Appeals.**

(a) Except as allowed in subsection (b) of this Section, an appeal of any written decision in the application of this chapter shall be appealed in accordance with Title 102, Chapter 3 – Board of Adjustment, of this Land Use Code.

(b) When a written decision provided under this chapter contains technical aspects, an applicant may request the County to assemble a panel of qualified professionals to serve as the appeal authority for the sole purpose of determining those technical aspects[2].

(1) The technical aspects of the administration and interpretation of this chapter are decisions related to:

a. the acceptance or rejection of scope, techniques, methodology, conclusions or specific types of information presented in a study or report;

b. the review and recommendation of an acceptable study or report for the Land Use Authority's consideration;

c. the interpretation or application of any technical provisions of a study or report that is required by this chapter; or

d. the modification of a natural hazard study area boundary.

(2) Unless otherwise agreed by the applicant and County, if an applicant makes a request under this subsection, the County shall assemble the panel consisting of:

a. one qualified professional designated by the County;

b. one qualified professional designated by the applicant; and

c. one qualified professional chosen jointly by the County's designated qualified professional and the applicant's designated qualified professional.

(3) A member of the panel may not be associated with the application that is the subject of the appeal.

[2] Note to codifiers: provide reference to UCA §17-27a-703(2)

(4) The applicant shall pay for one half the cost of the panel in addition to the County's appeal fee.

(5) The panel shall be governed by the same appeal provisions of the Board of Adjustment provided in Title 102, Chapter 3 - Board of Adjustment, of this Land Use Code.