



CITY OF OREM
CITY COUNCIL MEETING
56 North State Street, Orem, Utah
September 12, 2017

*This meeting may be held electronically
to allow a Councilmember to participate.*

3:30 P.M. WORK SESSION – PUBLIC SAFETY TRAINING ROOM

1. **UPDATE – Major Crimes Task Force (30 min)**
Presenters: Chief Gary Giles
2. **UPDATE – UTOPIA/UIA Financial Synopsis (15 min)**
Presenters: Brandon Nelson
3. **DISCUSSION – Xeriscaping Options (15 min)**
Presenters: Jason Bench
4. **LEGISLATIVE UPDATE (45 min)**
Presenters: Utah House Representative Brad Daw

5:00 P.M. STUDY SESSION – PUBLIC SAFETY TRAINING ROOM

PREVIEW UPCOMING AGENDA ITEMS

5. **Staff will present to the City Council a preview of upcoming agenda items.**

AGENDA REVIEW

6. **The City Council will review the items on the agenda.**

CITY COUNCIL - NEW BUSINESS

7. **This is an opportunity for members of the City Council to raise issues of information or concern.**

6:00 P.M. REGULAR SESSION - COUNCIL CHAMBERS

CALL TO ORDER

INVOCATION/INSPIRATIONAL THOUGHT: Heidi Hilton

PLEDGE OF ALLEGIANCE: By Invitation

**THE PUBLIC IS INVITED TO PARTICIPATE IN ALL CITY COUNCIL MEETINGS.
If you need a special accommodation to participate in the City Council Meetings and Study Sessions,
please call the City Recorder's Office at least 3 working days prior to the meeting.
(Voice 229-7074)**

This agenda is also available on the City's Internet webpage at orem.org

APPROVAL OF MINUTES

8. MINUTES of City Council Meeting – August 29, 2017

MAYOR’S REPORT/ITEMS REFERRED BY COUNCIL

9. **UPCOMING EVENTS**
10. **REPORT – Library Advisory Commission**

PERSONAL APPEARANCES – 15 MINUTES

11. **Time has been set aside for the public to express their ideas, concerns, and comments on items not scheduled as public hearings on the Agenda. Those wishing to speak are encouraged to show respect for those who serve the city. Comments should focus on issues concerning the city. Those wishing to speak should have signed in before the beginning of the meeting. (Please limit your comments to 3 minutes or less.)**

CONSENT ITEMS

12. **RECOMMENDATION:** Motion for the City Council to accept the Consent Item(s) as noted.

MOTION – Cancel September 26, 2017 City Council Meeting

SCHEDULED ITEMS

- 6:00 P.M. PUBLIC HEARING – Setback Standards for State Street**
13. **ORDINANCE – Amending Section 22-8-8(B) of the Orem City Code pertaining to development standards for the State Street Corridor Area**

PRESENTER: Jason Bench

REQUEST: The Development Services Department requests the City Council, by ordinance, amend Section 22-8-8(B) pertaining to development standards in the State Street Corridor area.

POTENTIALLY AFFECTED AREA: Aspen, Cherry Hill, Geneva Heights, Hillcrest, Lakeridge, Northridge, Orem, Orem North, Orem Park, Sharon, Sharon Park, Stonewood, Suncrest, Timpview, and Windsor Neighborhoods

BACKGROUND: On April 25, 2017, the City Council adopted an ordinance pertaining to design standards for the State Street Corridor area. The newly adopted design standards changed the building setbacks along State Street to require buildings to have a maximum setback along the corridor of 10’ from back of sidewalk, or 20’ if the developer provided a

“space open to the public” in accordance with the parameters outlined in the same ordinance.

The intent of the aforementioned ordinance was to make buildings along State Street more appealing to and accessible for pedestrian-related uses. It was anticipated that the setback area would be landscaped or used as a space open to the public (outdoor dining, seating, etc.). The setback area was not intended to be used as additional space for parking, driveways, drive-throughs, or other auto-oriented purposes. Parking or drive-throughs conflict with the natural pedestrian flow from the sidewalk and could present a safety hazard as well as reduce the function of pedestrian improvements.

In order to eliminate any ambiguity regarding the use of the setback area, Staff have proposed an ordinance amendment that specifically states that the setback area must be used as landscaping or as a space open to the public. The proposed amendment would modify the language of Section 22-8-8(B) to add the following sentence:

“All area within a setback (the area between the building and back of sidewalk) shall be landscaped and/or used as a ‘space open to the public’ in accordance with subsection (5).”

This language would eliminate the possibility of using the setback area for drive-throughs or parking and would help achieve the purpose of the State Street Corridor Master Plan, which is to “enhance the open space system to encourage walkability, community gathering, healthy living, and active storefronts.”

A public hearing concerning this proposed amendment was held before the Planning Commission on August 16, 2017, and the Planning Commission recommended approval of the proposed amendment. There were no comments from the public regarding the proposed item.

RECOMMENDATION: The Planning Commission recommended the City Council amend, by ordinance, Section 22-8-8 (B) in the Orem City Code pertaining to the zone development standards for setbacks in the State Street Corridor Area. Staff supports the Planning Commission recommendation.

6:00 P.M. PUBLIC HEARING – Parking Standards for Affordable Senior Housing Overlay

14. ORDINANCE – Amending Section 22-12-7(O)(10) of the Orem City Code pertaining to parking requirements in the Affordable Senior Housing overlay zone

PRESENTER: Jason Bench

REQUEST: The Development Services Department requests the City Council, by ordinance, amend Section 22-12-7(O)(10) of the Orem City Code pertaining to parking requirements in the Affordable Senior Housing overlay zone.

POTENTIALLY AFFECTED AREA: Citywide

BACKGROUND: The Affordable Senior Housing (ASH) overlay zone was created to allow and encourage the development of affordable housing for seniors. In order to allow such housing to be affordable, the ASH zone allows up to four units to be built on a single residential lot. Developments in the ASH zone are also intended to be designed and constructed to be compatible with surrounding single-family neighborhoods.

The ASH overlay zone requires 1.5 parking stalls per unit with at least one stall covered. An ASH development with four units would thus require six parking stalls. Some recent ASH developers have proposed placing all six parking stalls in the front of the building. In Staff's opinion, this type of configuration does not fit in with surrounding single family homes because very few single family homes have six parking stalls in the front yard.

Staff proposes to amend the parking standards for the ASH zone to require that all parking be located in the rear of the lot. Exceptions would include a one or two car garage in the front yard when attached to the primary structure or parking in the side yard when screened appropriately as outlined in the proposed ordinance. This would make ASH developments fit in better with surrounding residential neighborhoods. The proposed amendment is outlined below:

Section 22-12-7(O)(10)

10. Parking. Each dwelling unit shall be provided no less than one and one-half (1.5) parking stalls. One (1) covered stall shall be required for each unit. All parking spaces shall measure at least nine (9) feet by eighteen (18) feet. All parking spaces, parking areas, and driveways shall be paved with asphalt and/or concrete and shall be properly drained. Drainage shall not be channeled or caused to flow across pedestrian walk ways. All parking for an ASH development shall be located in the rear yard with the following exceptions:

a. One garage containing either one or two parking spaces may be provided in front of or to the side of the primary building (the building containing the residential units) provided the garage is attached to the primary building.

b. Parking spaces are allowed in a side yard that is not adjacent to a public street if no part of the parking space(s) extends further into the side yard than the front elevation of the primary building. The purpose of this requirement is to require parking stalls to be screened from view from the street adjacent to the front yard.

The entire rear yard and any side yard containing parking spaces that are not fully enclosed in a garage shall be fenced with a sight-obscuring fence at least six feet in height and no more than eight feet in height. The required fence shall be constructed of wood, vinyl, or masonry.

RECOMMENDATION: The Planning Commission recommends the City Council amend Section 22-12-7(O)(10) of the Orem City Code pertaining to parking requirements in the Affordable Senior Housing Overlay zone. Staff supports the Planning Commission recommendation.

15. RESOLUTION – Adopt Mountainland Pre-Disaster Hazard Mitigation Plan

PRESENTER: Chief Scott Gurney and Heath Stevenson

RECOMMENDATION: It is recommended that the City Council adopt the Mountainland Pre-Disaster Hazard Mitigation Plan.

POTENTIALLY AFFECTED AREA: Citywide

BACKGROUND: Section 322 of the Federal Disaster Mitigation Act of 2000 (the “Act”) establishes mitigation planning requirements for state, local, and tribal governments. Under this section of the Act, States (and some of their political subdivisions) are eligible for federal hazard mitigation monies if they submit for approval a mitigation plan that identifies natural hazards, risks, vulnerabilities, and describes actions to mitigate the hazards, risks, and vulnerabilities.

The State of Utah, through the Utah Division of Emergency Management, works with local jurisdictions to implement and adopt mitigation measures through the seven regional Association of Governments. The Mountainland Association of Governments (MAG) covers the counties of Summit, Utah, and Wasatch. MAG and its members have drafted and proposed a Mountainland Pre-Disaster Hazard Mitigation Plan (the “Plan”) for consideration and compliance with state and federal laws, rules, and regulations. The Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Orem from the impacts of future hazards and disasters. A complete copy of the Plan can be found at <http://www.mountainland.org/articles/view/Hazard%20Mitigation%20Plan> (as of June 13, 2017). Part VII of the Plan, the part that addresses the City of Orem and its mitigation measures, is attached to the proposed resolution.

In early April 2017, the Utah Division of Emergency Management received an email stating that the updated Plan meets federal requirements pending its adoption by the MAG local jurisdictions. MAG staff members have ensured that each local jurisdiction covered by the Plan has met the participation requirements and will become eligible by adopting the Plan.

The Federal Emergency Management Agency (Region VIII) (FEMA) requires each local jurisdiction to pass a resolution adopting the Plan. In order to comply with FEMA’s requirements and to ensure that the City is eligible for all benefits under the Act, the applicants request that the City Council pass a resolution adopting the Plan.

COMMUNICATION ITEMS

- 16. There are no Communication Items.**

CITY MANAGER INFORMATION ITEMS

- 17. This is an opportunity for the City Manager to provide information to the City Council. These items are for information and do not require action by the City Council.**

ADJOURNMENT

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CITY OF OREM
CITY COUNCIL MEETING
56 North State Street Orem, Utah
August 29, 2017

4:00 P.M. WORK SESSION – PUBLIC SAFETY TRAINING ROOM

CONDUCTING Mayor Richard F. Brunst

ELECTED OFFICIALS Councilmembers Debby Lauret, Sam Lentz, Tom Macdonald, Mark Seastrand, David Spencer, and Brent Sumner

APPOINTED STAFF Jamie Davidson, City Manager; Brenn Bybee, Assistant City manager; Greg Stephens, City Attorney; Richard Manning, Administrative Services Director; Bill Bell, Development Services Director; Karl Hirst, Recreation Department Director; Scott Gurney, Fire Department Director; Gary Giles, Police Department Director; Charlene Crozier, Library Director; Jason Bench, Planning Division Manager; Steven Downs, Assistant to the City Manager; Reed Price, Public Works Maintenance Division Manager, Heath Stevenson, Emergency Manager; and Donna Weaver, City Recorder

INTRODUCTION – Mountainland Pre-Disaster Hazard Mitigation Plan

Chief Scott Gurney turned the time over to Heath Stevenson, Orem’s emergency manager. Mr. Stevenson reviewed a resolution that would come before the Council in the next City Council meeting that would propose adopting the Mountainland Association of Governments (MAG) predisaster hazard mitigation plan. By adopting the plan, the City would be eligible for federal mitigation grants should events happen. The plan would need to be adopted every five years in order to be eligible for grants.

INTRODUCTION – Utility Relief Program

Mr. Downs and Charmagne Wixom, Community Action Services, made a presentation on the Utility Relief Program.

Mr. Downs said the City had a partnership with Community Action to design and administer the program. It would be privately funded by resident donations and utility services partners.

Ms. Wixom reviewed the following:

- Objectives
 - Provide assistance to help those in our community that are truly in need.
 - Help people get out of an immediate crisis and get on a path to self sufficiency
- Qualifying

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- 1 ○ Guidelines: Must be under 150% of federal poverty level (unexpected financial
2 hardship)
 - 3 ▪ Individual: \$18,090
 - 4 ▪ Family of 4: \$36,900
- 5 ○ Up to \$250 per year (one use of fund); financial literacy course required for
6 second-chance help
- 7 ○ Shut-off notice with a date of shutoff
- 8 • Benefits
 - 9 ○ Provide relief for Orem residents that are in actual need
 - 10 ○ Connect residents with additional resources
 - 11 ○ Provide financial training and coaching on budget and money management
- 12 • Additional Information
 - 13 ○ 7% administrative fee paid per transaction
 - 14 ○ Fund will start with \$20,000, with \$7,500 added each year

15
16 Mr. Downs said it would be an ongoing program. Qualifying recipients would be allowed to use
17 the program once in a year for no more than \$250 in that single use. A year later, in order to
18 qualify again, recipients must have completed the budget education class.

19
20 Ms. Wixom said the program also included follow-up to help people find resources they might
21 be in need of.

22
23 Mr. Lentz suggested the City include an opt-in option on the utility bill for people to contribute
24 monthly to the program.

25 26 DISCUSSION – UIA/UTOPIA Update

27
28 Mr. Davidson informed the Council that the program continued to move forward. Revenues were
29 up as well as the number of business and residential subscribers.

30
31 While were working around Sleepy Ridge Golf Course, which had an irregular border between
32 Orem and Vineyard, many Vineyard had become interested in the UTOPIA. They had expressed
33 interest in being added to the system.

34
35 Mayor Brunst asked about businesses asking to do microtrenching rather than full trenching to
36 install fiber. Mr. Stephens said he did not know if there were standards for microtrenching, but if
37 it were allowed for one company, it must be allowed for all providers.

38
39 Mr. Davidson said UTOPIA was working on expanding into three “footprints” in Orem.

40
41 Mr. Macdonald said he imagined UTOPIA was researching areas and wondered how they were
42 making their determination, such as cost of installation. Mr. Davidson said they looked at the
43 footprints and the return on investment (ROI), including anticipated take-rates. Infill areas,
44 unless they were large, were less likely to be developed because of the cost. He noted that some
45 parts of Orem had soil that made installation expensive. Those areas also tended have larger lots.

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1 Mr. Davidson said the UTOPIA service scored high in customer satisfaction. A net promoter
2 score was like a report card and reflected how likely customers were to recommend a
3 product/service. Historically, telecommunication companies did not score well. UTOPIA had
4 recently engaged in such an evaluation and had a score of sixty, which was significant in the
5 industry.

6
7 Mr. Davidson said he was often asked how UTOPIA compared to Google Fiber. He said Google
8 Fiber had not been doing as well as they had anticipated. They were looking at wifi but also
9 recognizing the limitations of wifi and were looking to lease new fiber systems rather than buy
10 them. Some people suggested that there was no longer a need for fiber. Wifi technology needed
11 to connect to fiber.

12
13 Mr. Davidson then referred to the Public Works Advisory Commission and their efforts to work
14 with UTOPIA, including the relationship with member cities and options for going forward. The
15 issue of ongoing debt and the need for additional bonding to move forward in expanding the
16 system had been discussed. He noted there had been some discussion about a supposed
17 \$65 million dollar bonding cap that had been put in place. Upon researching the issues, he found
18 that that number was never spelled out. Instead, the 2010 agreement stipulation was for no more
19 than \$5.1 million annually. Current bonding was less than that and gave room for more within
20 the parameters of that 2010 agreement. As previous bonds were retired, there would be
21 additional room within that \$5.1 million cap. The UIA board was moving forward with
22 discussions about it, with action anticipated at the next UIA Board meeting in October.

23
24 Mr. Seastrand asked if it was becoming more expensive to connect homes to the system. Mr.
25 Davidson said the cost of technology was on the decline. Mr. Seastrand then inquired about some
26 of the parity issues that had been problems a few years ago, and Mr. Davidson said many of
27 those had been resolved.

28
29 Mr. Spencer expressed concern about that the difference between current bonding and the \$5.1
30 million cap was insufficient to the needs.

31
32 Mr. Macdonald asked if UTOPIA was losing money when considering cash flow. Mr. Davidson
33 said he did not believe there was a cash loss. UTOPIA was in the position to pledge current
34 system revenues for future, anticipated growth. He did not anticipate that UTOPIA would come
35 back in a couple of years to ask for the member cities to pledge additional resources. Mr. Lentz
36 noted that the last several tranches had not required the payment of pledges.

37
38 Mr. Lentz then said it cost about a fifth to add an additional address now to what it cost
39 compared to the first addresses. It made sense to add addresses now.

40
41 Mr. Spencer wondered why Orem did not have neighbors get together to pay for installation of
42 the system in their area.

43
44 Mr. Davidson said to have a resident-driven development would involve some review of the
45 various footprints in the city. Mayor Brunst added that it came down to how many homes were
46 part of the development and the return on investment.

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5:00 P.M. STUDY SESSION – PUBLIC SAFETY TRAINING ROOM

CONDUCTING

Mayor Richard F. Brunst

ELECTED OFFICIALS

Councilmembers Debby Lauret, Sam Lentz, Tom Macdonald, Mark Seastrand, David Spencer, and Brent Sumner

APPOINTED STAFF

Jamie Davidson, City Manager; Brenn Bybee, Assistant City manager; Greg Stephens, City Attorney; Richard Manning, Administrative Services Director; Bill Bell, Development Services Director; Karl Hirst, Recreation Department Director; Scott Gurney, Fire Department Director; Gary Giles, Police Department Director; Charlene Crozier, Library Director; Jason Bench, Planning Division Manager; Steven Downs, Assistant to the City Manager; Reed Price, Public Works Maintenance Division Manager, Heath Stevenson, Emergency Manager; and Donna Weaver, City Recorder

Preview Upcoming Agenda Items

Staff presented a preview of upcoming agenda items.

Agenda Review

The City Council and staff reviewed the items on the agenda.

City Council New Business

There was no City Council New Business.

The Council adjourned at 5:55 p.m. to the City Council Chambers for the regular meeting.

6:00 P.M. REGULAR SESSION – COUNCIL CHAMBERS

CONDUCTING

Mayor Richard F. Brunst

ELECTED OFFICIALS

Councilmembers Debby Lauret, Sam Lentz, Tom Macdonald, Mark Seastrand, David Spencer, and Brent Sumner

APPOINTED STAFF

Jamie Davidson, City Manager; Greg Stephens, City Attorney; Richard Manning, Administrative Services Director; Bill Bell, Development Services Director; Karl Hirst, Recreation Director; Chris Tschirki, Public Works Director; Scott Gurney, Fire Department Director; Charlene Crozier, Library Director; Jason Bench, Planning Division Manager; Steve Earl, Deputy City Attorney; Steven Downs, Assistant to the City Manager; Pete Wolfley,

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1 Communications Specialist; and Donna Weaver, City
2 Recorder

3
4 **INVOCATION /**

5 **INSPIRATIONAL THOUGHT**

McKay Meeves

6 **PLEDGE OF ALLEGIANCE**

Kimberley Meeves

7
8 **APPROVAL OF MINUTES**

9
10 Mr. Spencer **moved** to approve the August 8, 2017, City Council Meeting minutes. Mrs. Lauret
11 **seconded** the motion. Those voting aye: Richard F. Brunst, Debby Lauret, Sam Lentz, Tom
12 Macdonald, Mark Seastrand, David Spencer, and Brent Sumner. The motion **passed**
13 **unanimously**.

14
15 **MAYOR'S REPORT/ITEMS REFERRED BY COUNCIL**

16
17 Upcoming Events

18 The Mayor referred the Council to the upcoming events listed in the agenda packet.

19
20 Appointments to Boards and Commissions

21 Mr. Macdonald **moved** to reappoint Chris Bennett and Vickie Johnson to the CDBG Advisory
22 Commission. Mr. Lentz **seconded** the motion. Those voting aye: Richard F. Brunst, Debby
23 Lauret, Sam Lentz, Tom Macdonald, Mark Seastrand, David Spencer, and Brent Sumner. The
24 motion **passed unanimously**.

25
26 RECOGNITION – Orem Recreation Volunteer of the Year – Alan Rex

27 Mr. Hirst presented Alan Rex with the Orem Recreation Volunteer of the Year. He said there
28 were many activities throughout the city, and none of those things happened without volunteers.
29 He stated that Alan Rex was everything that was good about youth sports. Mr. Hirst then
30 presented Mr. Rex with a plaque. Mayor Brunst invited him to shake hands with the Council.

31
32 **PERSONAL APPEARANCES**

33
34 Time was allotted for the public to express their ideas, concerns, and comments on items not on
35 the agenda. Those wishing to speak should have signed in prior to the meeting, and comments
36 were limited to three minutes or less.

37
38 Melodee Andersen said that she had spoken several times to the Council, and she asserted that
39 the Mayor had asked her not to bring religion into her comments. She questioned how his request
40 impacted her rights. She expressed concern about incentives given to businesses that paid money
41 toward election campaigns. She warned against handouts and entitlements.

42
43 Hans Andersen said he wanted to express his opposition to votes the Council has made in the
44 past and anticipated making in the future, such as the BRT project. He reviewed various projects
45 for mass transit that he asserted would run small businesses out of town and subsidize the mall.
46 He stated that the decisions were votes for socialism which were a reflection of the lack of faith
47 of Council members.

1 Mr. Macdonald said that, for the record, he disagreed with most of the representations made by
2 the previous two speakers and the lack of civility with which it was delivered. He said he would
3 be happy to share his thoughts with interested parties after the meeting.

4
5 **CONSENT ITEMS**

6
7 There were no Consent Items.

8
9 **SCHEDULED ITEMS**

10
11 MOTION – Canvass and Certification – 2017 Municipal Primary Election Results

12
13 Donna Weaver, City Recorder, recommended that the City Council complete the canvass and, by
14 motion, certify the 2017 Municipal Primary Election results.

15
16 Pursuant to State law (Section 20A-4-301(2)), the Primary Election Canvass must be conducted
17 between seven and fourteen days after completion of the ballot. However, it could not be held
18 prior to thirteen days if there are outstanding military/overseas ballots.

19
20 Mr. Lentz **moved** that the City Council:

- 21 1. Certify the election results as follows:

22 Mayor

Richard F. Brunst, Jr.	8,053
Hans V. Andersen Jr.....	4,115
Archie A. Williams III	492

26 City Council

Tom Macdonald	6,816
Brent Sumner.....	6,496
David M. Spencer.....	5,901
Melodee Andersen.....	3,677
Annette Harkness	3,063
Murray Low	2,644
Drew Clark	1,896
Garrett Bodily.....	1,161
Mattathias Westwood	1,017
Bart Richman.....	974
Tommy Williams.....	867
Kayson Max	395

- 39 2. Declare:

- 40 • Four-year term Mayoral candidates Richard F. Brunst, Jr. and Hans V. Andersen and
- 41 • Four-year term City Council candidates Tom Macdonald, Brent Sumner, David M.
- 42 Spencer, Melodee Andersen, Annette Harkness, and Murray Low to be nominated to
- 43 the General Municipal Election on November 7, 2017.

44
45 Mrs. Lauret **seconded** the motion. Those voting aye: Richard F. Brunst, Debby Lauret, Sam
46 Lentz, Tom Macdonald, Mark Seastrand, David Spencer, and Brent Sumner. The motion **passed**
47 **unanimously**.

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1 Mayor Brunst expressed appreciation for the efforts of the candidates, noting how difficult to
2 was to run for office.

3
4 6:00 P.M. PUBLIC HEARING – Residential Parking Permit Area
5 RESOLUTION – Establishing a Residential Parking Permit Area on the East side of
6 1200 West at 609 South and the South Side of 600 South just East of 1200 West

7
8 Chief Gary Giles, Chief of Police, recommends that the City Council, by resolution, establish a
9 residential parking permit area for 609 South 1200 West, for the East side of 1200 West at 609
10 South and the South Side of 600 South just East of 1200 West in Orem, Utah.

11
12 The City of Orem was responsible for protecting the health, safety, and general welfare of the
13 City. With the ongoing enrollment of students and the expansion of Utah Valley University,
14 there had been an increase in the number of nonresidents who were using 600 South, 1200 West,
15 as on-street parking during the university's business hours. The nonresident motor vehicles
16 remained on these streets for the majority of the day between 7:00 a.m. and 5:00 p.m. That
17 increase in use of these streets as parking for students and others visiting Utah Valley University
18 had caused increased traffic congestion and had contributed to the inability of residents and their
19 visitors to park near their homes. A homeowner who resided at 609 South 1200 West filed a
20 petition with the Orem City Police Department asking that a study be conducted to determine
21 whether it would be appropriate for the City to create a residential parking permit area between
22 600-609 South and 1150-1200 West.

23
24 The Orem Police Department conducted the study and concluded that (1) during business hours,
25 this area is congested with motor vehicles that are not owned by those living in the
26 neighborhood; and (2) after 5:00 p.m., the majority of the motor vehicles occupying on-street
27 parking were gone.

28
29 Having completed the study, the Orem City Police Department recommended that the City
30 Council create a residential parking permit area between 600-609 South and 1150-1200 West.

31
32 If the City Council created the residential parking permit area as proposed, any resident within
33 the residential parking permit area would be permitted to park any cars registered to his/her
34 dwelling in the residential parking permit area, and each dwelling within the residential parking
35 permit area will be given two visitor/guest permits.

36
37 Mayor Brunst opened the public hearing. No one came forward to speak, so he closed the public
38 hearing.

39
40 Mr. Sumner said the parking permit areas worked very well, and he had seen officers enforcing
41 the districts.

42
43 Mr. Seastrand **moved**, by resolution, establishing a Residential Parking Permit Area on the East
44 side of 1200 West at 609 South and the South Side of 600 South just East of 1200 West. Mr.
45 Macdonald **seconded** the motion. Those voting aye: Richard F. Brunst, Debby Lauret, Sam
46 Lentz, Tom Macdonald, Mark Seastrand, David Spencer, and Brent Sumner. The motion **passed**
47 **unanimously**.

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1 **COMMUNICATION ITEMS**

2
3 The monthly financial summaries for June and July 2017 were provided to the Council.

4
5 **CITY MANAGER INFORMATION ITEMS**

6
7 There were no City Manager Information Items.

8
9 **ADJOURNMENT**

10 Mr. Seastrand **moved** to adjourn. Mrs. Lauret seconded the motion. Those voting aye: Richard F.
11 Brunst, Debby Lauret, Sam Lentz, Tom Macdonald, Mark Seastrand, David Spencer, and Brent
12 Sumner. The motion **passed unanimously**.

13
14 The meeting adjourned at 6:25 p.m.

15

CITY OF OREM
CITY COUNCIL MEETING
 SEPTEMBER 12, 2017



REQUEST:	6:00 P.M. PUBLIC HEARING – STATE STREET CORRIDOR DEVELOPMENT STANDARDS ORDINANCE – Amending Section 22-8-8(B) of the Orem City Code pertaining to development standards for the State Street Corridor Area
APPLICANT:	Development Services Department
FISCAL IMPACT:	None

NOTICES:

- Posted in 2 public places
- Posted on City webpage
- Posted on the State noticing website Utah.gov/pmn
- Faxed to newspapers
- Emailed to newspapers

SITE INFORMATION:

General Plan Designation:
**Community Commercial,
 Regional Commercial, High
 Density Residential**

Current Zone(s):
**C2, C3, PD-23, PD-29, PD-34,
 PD-35, PD-37, PD-38, PD-39,
 PD-40**

Acreage:
566.09

Neighborhoods:
**Aspen, Cherry Hill,
 Geneva Heights, Hillcrest,
 Lakeridge, Northridge,
 Orem, Orem North, Orem
 Park, Sharon, Sharon Park,
 Stonewood, Suncrest,
 Timpview, Windsor**

PLANNING COMMISSION RECOMMENDATION
Vote: 6 - 0 for approval

PREPARED BY: Christian Kirkham Long Range Planner

REQUEST:

The Development Services Department requests the City Council, by ordinance, amend Section 22-8-8(B) pertaining to development standards in the State Street Corridor area.

BACKGROUND:

On April 25, 2017, the City Council adopted an ordinance pertaining to design standards for the State Street Corridor area. The newly adopted design standards changed the building setbacks along State Street to require buildings to have a maximum setback along the corridor of 10’ from back of sidewalk, or 20’ if the developer provided a “space open to the public” in accordance with the parameters outlined in the same ordinance.

The intent of the aforementioned ordinance was to make buildings along State Street more appealing to and accessible for pedestrian-related uses. It was anticipated that the setback area would be landscaped or used as a space open to the public (outdoor dining, seating, etc.). The setback area was not intended to be used as additional space for parking, driveways, drive-throughs, or other auto-oriented purposes. Parking or drive-throughs conflict with the natural pedestrian flow from the sidewalk and could present a safety hazard as well as reduce the function of pedestrian improvements.

In order to eliminate any ambiguity regarding the use of the setback area, Staff have proposed an ordinance amendment that specifically states that the setback area must be used as landscaping or as a space open to the public. The proposed amendment would modify the language of Section 22-8-8(B) to add the following sentence:

“All area within a setback (the area between the building and back of sidewalk) shall be landscaped and/or used as a ‘space open to the public’ in accordance with subsection (5).”

This language would eliminate the possibility of using the setback area for drive-throughs or parking and would help achieve the purpose of the State Street Corridor Master Plan, which is to “enhance the open space system to encourage walkability, community gathering, healthy living, and active storefronts.”

A public hearing concerning this proposed amendment was held before the Planning Commission on August 16, 2017, and the Planning Commission recommended approval of the proposed amendment. There were no comments from the public regarding the proposed item.

RECOMMENDATION:

The Planning Commission recommended the City Council amend, by ordinance, Section 22-8-8 (B) in the Orem City Code pertaining to the zone development standards for setbacks in the State Street Corridor Area. Staff supports the Planning Commission recommendation.

DRAFT

ORDINANCE NO. _____

AN ORDINANCE OF THE OREM CITY COUNCIL AMENDING SECTION 22-8-8(B) OF THE OREM CITY CODE PERTAINING TO THE ZONE DEVELOPMENT STANDARDS FOR THE STATE STREET CORRIDOR AREA

WHEREAS on July 10, 2017, the Department of Development Services filed an application requesting that the City Council amend Section 22-8-8(B) of the Orem City Code pertaining to the zone development standards for the State Street Corridor Area; and

WHEREAS a public hearing considering the subject application was held by the Planning Commission on August 16, 2017 and the Planning Commission recommended approval of the request; and

WHEREAS a public hearing considering the subject application was held by the City Council on September 12, 2017; and

WHEREAS the City posted the Planning Commission agenda and the City Council agenda in the City Offices at 56 North State Street, www.orem.org, and www.utah.gov/pmn; and

WHEREAS the matter having been submitted and the City Council having fully considered the request as it relates to the health, safety and general welfare of the City; the orderly development of land in the City; the effect upon surrounding neighborhoods; and the special conditions applicable to the request.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF OREM, UTAH, as follows:

1. The City Council finds this request is in the best interest of the City because the proposed amendment will make buildings along the State Street Corridor more appealing to and accessible for pedestrian-related uses.
2. The City Council hereby amends Section 22-8-8(B) of the Orem City Code as shown in Exhibit A which is attached hereto and incorporated herein by reference.
3. If any part of this ordinance shall be declared invalid, such decision shall not affect the validity of the remainder of this ordinance.
4. All ordinances, resolutions or policies in conflict herewith are hereby repealed.
5. This ordinance shall take effect immediately upon passage and publication in a newspaper in general circulation in the City of Orem.

DRAFT

PASSED, APPROVED and ORDERED PUBLISHED this 12th day of September 2017.

Richard F. Brunst, Jr., Mayor

ATTEST:

Donna R. Weaver, City Recorder

COUNCIL MEMBERS VOTING "AYE"

COUNCIL MEMBERS VOTING "NAY"

DRAFT

EXHIBIT A

22-8-8. Zone Development Standards.

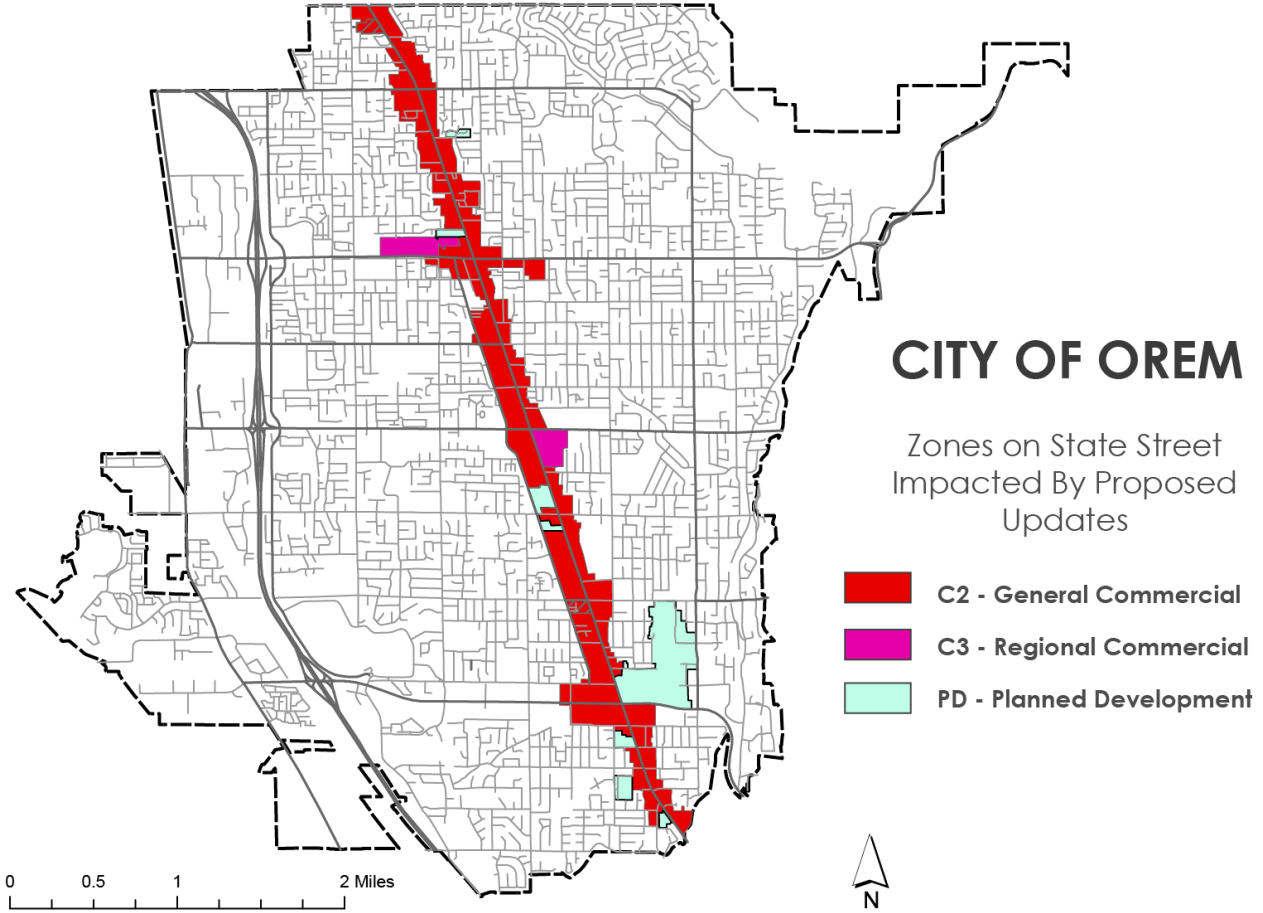
B. Zone Development Standards for the State Street Corridor Area. The following requirements shall apply to all development in the State Street Corridor Area including development in PD zones, unless the applicable PD zone expressly states that the standards of the State Street Corridor Area do not apply. The “State Street Corridor Area” refers to all lots that have frontage on State Street or frontage on a State Street Connector Street (that portion of a public street that intersects with and is located within 500 feet of the State Street right-of-way line). If not specifically governed by a provision of this Section 22-8-8(B), the “General Zone Development Standards” of 22-8-8 (A) shall apply to development in the PO, C1, C2, C3, and HS zones.

1. Minimum and Maximum Setbacks From State Street and From State Street Connector Streets. All buildings in the State Street Corridor Area shall be set back no more than ten feet (10’) from the back of the required sidewalk (the side furthest from the street) along State Street and State Street Connector Streets. There is no minimum setback from the State Street and State Street Connector Streets. Setbacks from other streets and property lines shall be as set forth in 22-8-8(A). All area within a setback (the area between the building and back of sidewalk) shall be landscaped and/or used as a “space open to the public” in accordance with subsection (5).

5. “Space open to the public” setback exception and height bonus: Maximum setbacks along State Street and State Street Connector Streets may be extended an additional ten feet (for a total of 20 feet from back of the required sidewalk) to accommodate outdoor dining areas or other spaces open to the public. Such a space must meet all the following to qualify for this exception:

- a. The extended area is accessible to the public;
- b. The space open to the public is designed to attract activity throughout the year and not on a limited special event basis;
- c. The area is not raised more than two feet above the public sidewalk grade;
- d. The area has at least 25% vegetation/seating coverage;
- e. The majority of the provided amenities are permanent in nature (e.g. built-in seating, fountains, plazas, landscaping rocks, short walls). Conceptual examples of “spaces open to the public” are found in Appendix “SS”.
- f. Lots with approved “spaces open to the public” may receive an additional maximum building height bonus of 15 feet (subject to applicable setback requirements in the C3 zone). Buildings with this added height must remain set back from residentially-zoned properties a distance equal to the (new) height of the building.

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CITY OF OREM
CITY COUNCIL MEETING
 SEPTEMBER 12, 2017



REQUEST:	6:00 P.M. PUBLIC HEARING – PARKING STANDARDS FOR AFFORDABLE SENIOR HOUSING OVERLAY ORDINANCE – Amending Section 22-12-7(O)(10) of the Orem City Code pertaining to parking requirements in the Affordable Senior Housing overlay zone
APPLICANT:	Development Services
FISCAL IMPACT:	None

NOTICES:

- Posted in 2 public places
- Posted on City webpage
- Posted on the State noticing website
- Faxed to newspapers

SITE INFORMATION:

- General Plan Designation:
N/A
- Current Zone:
N/A
- Acreage:
N/A
- Neighborhood:
N/A
- Neighborhood Chair:
N/A

**PLANNING COMMISSION
 RECOMMENDATION**

Vote: 5-0 for approve

PREPARED BY:

Jason Bench, AICP
 Planning Division
 Manager

REQUEST:

The Development Services Department requests the City Council, by ordinance, amend Section 22-12-7(O)(10) of the Orem City Code pertaining to parking requirements in the Affordable Senior Housing overlay zone.

BACKGROUND:

The Affordable Senior Housing (ASH) overlay zone was created to allow and encourage the development of affordable housing for seniors. In order to allow such housing to be affordable, the ASH zone allows up to four units to be built on a single residential lot. Developments in the ASH zone are also intended to be designed and constructed to be compatible with surrounding single-family neighborhoods.

The ASH overlay zone requires 1.5 parking stalls per unit with at least one stall covered. An ASH development with four units would thus require six parking stalls. Some recent ASH developers have proposed placing all six parking stalls in the front of the building. In Staff's opinion, this type of configuration does not fit in with surrounding single family homes because very few single family homes have six parking stalls in the front yard.

Staff proposes to amend the parking standards for the ASH zone to require that all parking be located in the rear of the lot. Exceptions would include a one or two car garage in the front yard when attached to the primary structure or parking in the side yard when screened appropriately as outlined in the proposed ordinance. This would make ASH developments fit in better with surrounding residential neighborhoods. The proposed amendment is outlined below:

Section 22-12-7(O)(10)

10. **Parking.** Each dwelling unit shall be provided no less than one and one-half (1.5) parking stalls. One (1) covered stall shall be required for each unit. All parking spaces shall measure at least nine (9) feet by eighteen (18) feet. All parking spaces, parking areas, and driveways shall be paved with asphalt and/or concrete and shall be properly drained. Drainage shall not be channeled or caused to flow across pedestrian walk ways. All parking for an ASH development shall be located in the rear yard with the following exceptions:

a. One garage containing either one or two parking spaces may be provided in front of or to the side of the primary building (the building containing the residential units) provided the garage is attached to the primary building.

b. Parking spaces are allowed in a side yard that is not adjacent to a public street if no part of the parking space(s) extends further into the side yard than the front elevation of the primary building. The purpose of this requirement is to require parking stalls to be screened from view from the street adjacent to the front yard.

The entire rear yard and any side yard containing parking spaces that are not fully enclosed in a garage shall be fenced with a sight-obscuring fence at least six feet in height and no more than eight feet in height. The required fence shall be constructed of wood, vinyl, or masonry.

RECOMMENDATION:

The Planning Commission recommends the City Council amend Section 22-12-7(O)(10) of the Orem City Code pertaining to parking requirements in the Affordable Senior Housing Overlay zone. Staff supports the Planning Commission recommendation.

DRAFT

ORDINANCE NO. _____

AN ORDINANCE BY THE OREM CITY COUNCIL AMENDING SECTION 22-12-7(O)(10) OF THE OREM CITY CODE PERTAINING TO PARKING REQUIREMENTS IN THE AFFORDABLE SENIOR HOUSING OVERLAY ZONE

WHEREAS on June 22, 2017, the Department of Development Services filed an application requesting the City Council amend Section 22-12-7(O)(10) of the Orem City Code pertaining to parking requirements in the Affordable Senior Housing overlay zone; and

WHEREAS a public hearing considering the subject application was held by the Planning Commission on July 19, 2017 and the Planning Commission recommended approval of the request; and

WHEREAS public hearing considering the subject application was held by the City Council on September 12, 2017; and

WHEREAS the agenda of the City Council meeting at which the subject application was heard was posted at the Orem Public Library, on the Orem City webpage at www.orem.org, at www.utah.gov/pmn, and at the City offices at 56 North State Street; and

WHEREAS the matter having been submitted and the City Council having fully considered the request as it relates to the health, safety and general welfare of the City; the orderly development of land in the City; the effect upon surrounding neighborhoods; and the special conditions applicable to the request.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF OREM, UTAH, as follows:

1. The City Council finds that the proposed amendment is in the best interest of the City because it will improve the compatibility of new developments in the Affordable Senior Housing overlay zone with surrounding residential neighborhoods.

2. The City Council hereby amends Section 22-12-7(O)(10) pertaining to parking requirements in the Affordable Senior Housing Overlay zone as shown below:

10. **Parking.** Each dwelling unit shall be provided no less than one and one-half (1.5) parking stalls. One (1) covered stall shall be required for each unit. All parking spaces shall measure at least nine (9) feet by eighteen (18) feet. All parking spaces, parking areas, and driveways shall be paved with asphalt and/or concrete and shall be properly drained. Drainage shall not be channeled or caused to flow across pedestrian walk ways. All parking for an ASH development shall be located in the rear yard with the following exceptions:

DRAFT

a. One garage containing either one or two parking spaces may be provided in front of or to the side of the primary building (the building containing the residential units) provided the garage is attached to the primary building.

b. Parking spaces are allowed in a side yard that is not adjacent to a public street if no part of the parking space(s) extends further into the side yard than the front elevation of the primary building. The purpose of this requirement is to require parking stalls to be screened from view from the street adjacent to the front yard.

The entire rear yard and any side yard containing parking spaces that are not fully enclosed in a garage shall be fenced with a sight-obscuring fence at least six feet in height and no more than eight feet in height. The required fence shall be constructed of wood, vinyl, or masonry.

3. This ordinance shall take effect immediately upon passage and publication in a newspaper of general circulation in the City of Orem.

4. If any part of this ordinance shall be declared invalid, such decision shall not affect the validity of the remainder of this ordinance.

5. All other ordinances, resolutions or policies in conflict herewith, either in whole or part, are hereby repealed.

PASSED, APPROVED and ORDERED PUBLISHED this 12th day of September 2017.

Richard F. Brunst, Jr., Mayor

ATTEST:

Donna R. Weaver, City Recorder

COUNCIL MEMBERS VOTING "AYE"

COUNCIL MEMBERS VOTING "NAY"

DRAFT

CITY OF OREM
CITY COUNCIL MEETING
 SEPTEMBER 12, 2017



REQUEST:	RESOLUTION – Adopting the Mountainland Pre-Disaster Hazard Mitigation Plan
APPLICANT:	Scott Gurney, Orem Fire Chief, with Heath M. Stevenson, Emergency Manager for the City of Orem
FISCAL IMPACT:	None

NOTICES:

- Posted in 2 public places
- Posted on City webpage
- Posted on the State noticing website
- Faxed to newspapers
- Emailed to newspapers
- Emailed Neighborhood Chairs

SITE INFORMATION:

- General Plan Designation:
N/A
- Current Zone:
N/A
- Acreage:
N/A
- Neighborhood:
N/A
- Neighborhood Chair:
N/A

PREPARED BY:
 Heather Schriever
 Deputy City Attorney

RECOMMENDATION:

It is recommended that the City Council adopt the Mountainland Pre-Disaster Hazard Mitigation Plan.

BACKGROUND:

Section 322 of the Federal Disaster Mitigation Act of 2000 (the “Act”) establishes mitigation planning requirements for state, local, and tribal governments. Under this section of the Act, States (and some of their political subdivisions) are eligible for federal hazard mitigation monies if they submit for approval a mitigation plan that identifies natural hazards, risks, vulnerabilities, and describes actions to mitigate the hazards, risks, and vulnerabilities.

The State of Utah, through the Utah Division of Emergency Management, works with local jurisdictions to implement and adopt mitigation measures through the seven regional Association of Governments. The Mountainland Association of Governments (MAG) covers the counties of Summit, Utah, and Wasatch. MAG and its members have drafted and proposed a Mountainland Pre-Disaster Hazard Mitigation Plan (the “Plan”) for consideration and compliance with state and federal laws, rules, and regulations. The Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Orem from the impacts of future hazards and disasters. A complete copy of the Plan can be found at <http://www.mountainland.org/articles/view/Hazard%20Mitigation%20Plan> (as of June 13, 2017). Part VII of the Plan, the part that addresses the City of Orem and its mitigation measures, is attached to the proposed resolution.

In early April 2017, the Utah Division of Emergency Management received an email stating that the updated Plan meets federal requirements pending its adoption by the MAG local jurisdictions. MAG staff members have ensured that each local jurisdiction covered by the Plan has met the participation requirements and will become eligible by adopting the Plan.

The Federal Emergency Management Agency (Region VIII) (FEMA) requires each local jurisdiction to pass a resolution adopting the Plan. In order to comply with FEMA’s requirements and to ensure that the City is eligible for all benefits under the Act, the applicants request that the City Council pass a resolution adopting the Plan.

DRAFT

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF OREM,
UTAH ADOPTING THE MOUNTAINLAND PRE-DISASTER
HAZARD MITIGATION PLAN

WHEREAS the City Council of the City of Orem (City Council) recognizes the threat that natural hazards pose to people and property within the City of Orem; and

WHEREAS the City of Orem in conjunction with the Mountainland Association of Governments (MAG) has participated in the creation of a multi-hazard mitigation plan, hereby known as the Mountainland Pre-Disaster Hazard Mitigation Plan in accordance with the federal Disaster Mitigation Act of 2000; and

WHEREAS Mountainland Pre-Disaster Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City of Orem from the impacts of future hazards and disasters. A complete copy of the plan is available at <http://www.mountainland.org/articles/view/Hazard%20Mitigation%20Plan> (as June 13, 2017. Part VII of the Plan, the part of the plan that profiles and outlines mitigation strategies for Utah County, is attached hereto as Exhibit A; and

WHEREAS adoption by the City Council demonstrates their commitment to hazard mitigation and achieving the goals outlined in the Mountainland Pre-Disaster Hazard Mitigation Plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF OREM, UTAH, as follows:

1. The City Council hereby adopts the Mountainland Pre-Disaster Hazard Mitigation Plan.
2. All acts, orders, resolutions, and ordinances and parts thereof in conflict with this resolution are hereby rescinded.
3. This resolution shall become effectively immediately upon its passage.

PASSED and APPROVED this 12th day of **September** 2017.

DRAFT

Richard F. Brunst, Jr., Mayor

ATTEST:

Donna R. Weaver, City Recorder

COUNCIL MEMBERS VOTING "AYE"

COUNCIL MEMBERS VOTING "NAY"

DRAFT

EXHIBIT A

Part VII Utah County
Mountainland Pre-Disaster Mitigation Plan

Part VII

Utah County

Profiles and Mitigation

Background

Area: 2,014 square miles; *county seat*: Provo; *origin of county name*: after the Ute Indians; *economy*: technology industry, light manufacturing, agriculture; *points of interest*: Fairfield Stagecoach Inn, historic downtown Provo, Brigham Young University (Monte L. Bean Life Sciences Museum, Museum of People and Culture, Harris Fine Arts Center), Utah Lake, Timpanogos Cave National Monument, Springville Museum of Art, Hutchings Museum of Natural History in Lehi, McCurdy Historical Doll Museum in Provo, Bridal Veil Falls, Sundance ski resort.

The most striking geographical features of Utah County are the Wasatch Mountains along the eastern boundary, and Utah Lake, the state's largest fresh-water lake. The high mountains, rising over 11,000 feet, receive heavy snowfall which feeds the numerous rivers and creeks that flow into the lake. Though large in surface area, Utah Lake is very shallow--18 feet at its deepest point.

Before the valley was settled by Mormon pioneers in the 1840s and 1850s it was the home of the Ute Indians. They lived along the eastern shore of the lake and used fish from the lake as their main food source. The Spanish Catholic priests Dominguez and Escalante, who observed them in 1776, described these Indians as peaceful and kind. Dominguez and Escalante were trying to find a route between Santa Fe, New Mexico, and what is now southern California. When they came down Spanish Fork Canyon in the summer of 1776 they were the first non-Indians to enter Utah Valley.

Mormon pioneers began settling Utah Valley in 1849. Like the Indians before them, they chose to settle on the fertile, well-watered strip of land between the mountains and Utah Lake. More than a dozen towns were established between Lehi on the north and Santaquin on the south. Provo, named for the French fur trapper Etienne Provost, has always been the largest town and the county seat.

In March 1849 thirty-three families, composed of about 150 people, were called to go to Utah Valley under the leadership of John S. Higbee to fish, farm, and teach the Indians. During the next two years - 1850 and 1851 - communities were established at Lehi, Alpine, American Fork, Pleasant Grove, Springville, Spanish Fork, Salem, and Payson.

Farming was the most important early industry in the county, with fruit growing and the processing of sugar beets being especially important. The first large-scale sugar beet factory in Utah was built in Lehi in 1890. In recent years, the center of the fruit industry in the county has shifted from Orem to the south end of the valley, where orchards are not threatened by housing developments.

Mining was also an important industry in Utah County. In the late 1800s and early 1900s there were many successful mines in American Fork Canyon and in the Tintic mining district centered near Eureka, Juab County but included part of western Utah County. Many of the fine homes and business buildings in Provo were constructed with mining money.

Today, Utah County is best known as the home of Brigham Young University. BYU was established in 1875 as a small high-school level "academy," but it has grown to become a major university with 29,000 students in 2014. The Utah Valley University at Orem has grown rapidly to nearly 31,000 students as

well. Other major Utah County employers include Omniture Corporation and Novell, two companies that began in Utah County and have become international leaders in the computer software industry. Each of the major communities in the county have high schools and libraries. A culturally active area, the county has its own symphony--the Utah Valley Symphony, and one of the state's finest art museums: the Springville Art Museum. Provo's Fourth of July Celebration is the largest in the state and other special community celebrations include Pleasant Grove Strawberry Days, the Lehi Round-up, Steel Days in American Fork, Fiesta Days in Spanish Fork, Golden Onion Days in Payson, Pony Express Days in Eagle Mountain and the World Folkfest in Springville.



Population

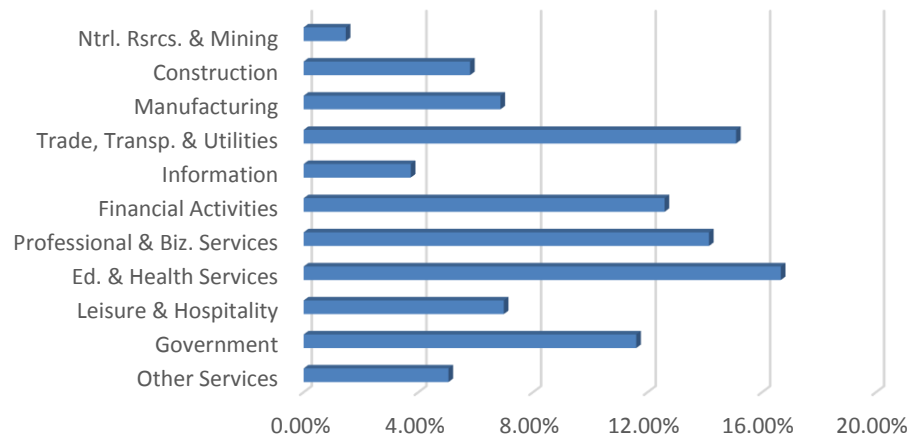
	Census			Short Range Projection			Long Range Projection	
	1990	2000	2010	2020	2030	2040	2050	2060
Mountainland Region	291,606	417,321	579,448	746,796	934,540	1,150,420	1,381,418	1,602,441
Summit County	15,693	30,034	36,473	45,491	56,890	71,433	88,334	107,671
Utah County	265,764	371,873	519,307	668,564	833,101	1,019,828	1,216,695	1,398,074
Wasatch County	10,149	15,414	23,668	32,741	44,549	59,159	76,389	96,696

2012 Baseline Projections, Governor's Office of Planning and Budget. Produced using results from the 2010 Census as the base. See <http://gomb.utah.gov/>

Utah County Employment by Industry 2010 Census

Economy

Utah County recovered relatively quickly from the 2009 Great Recession. Strong job growth, particularly in the technology sectors near the Point of the Mountain, has attracted numerous employees. The county unemployment levels are lower than the state's average and average monthly wages continue to increase.



Utah County	2010	2011	2012	2013	2014	2015
Employment:						
Average annual employment	212,729	216,768	227,084	238,806	246,942	257,594
Labor Force	229,820	231,334	239,088	249,399	255,870	266,078
Unemployment Insurance Compensation	121,996	80,953	58,694	44,690	31,162	N/A
Unemployment Rate	7.40%	6.30%	5.00%	4.20%	3.50%	3.20%
Income:						
Per capita personal income (\$)	27,441	29,025	30,875	31,272	32,274	
Sales and Use Tax						86,391,946
Gross taxable sales (\$ thousands)	1,189,659	1,324,336	1,360,925	1,469,760	1,570,920	
Construction (permit-authorized):						
Dwelling Unit Permits	N/A	1,865	2,464	3,240	4,946	\$4,455
Miscellaneous:						
Payment in Lieu of Taxes Act (\$ thousands)	\$1,566	\$1,576	\$1,623	\$1,677	\$1,713	\$1,745

*Adapted from US BLS, Utah DWS, Utah State Tax Commission, Utah Bureau of Economic and Business Research

Population Characteristics

Social Characteristics	Estimate	Percent	U.S.
Average household size	3.62	(X)	2.58
Average family size	3.94	(X)	3.14

Population 25 years and over	262,767		
High school graduate or higher	245,815	93.6	86.30%
Bachelor's degree or higher	96,981	36.9	29.30%
Disability status	38,650	7.2%	12.3%
Foreign born	38,752	7.2%	13.10%
Speak a language other than English at home (population 5 years and over)	63,858	13.2%	20.9%
Household population	527,182	(X)	(X)
Economic Characteristics	Estimate	Percent	U.S.
In labor force (population 16 years and over)	249,061	67.6%	63.90%
Mean travel time to work in minutes (workers 16 years and over)	21.3	(X)	25.7
Median household income	60,830	(X)	53,482
Median family income	66,063	(X)	86,963
Per capita income	20,973	(X)	28,555
Individuals below poverty level	(X)	12.6%	14.80%
Housing Characteristics	Estimate	Percent	U.S.
Total housing units	152,545		
Occupied housing units	145,469	95.4%	88.60%
Owner-occupied housing units	97,920	67.3%	65.1%
Renter-occupied housing units	47,549	32.7%	34.90%
Vacant Housing Units	7,076	4.6%	11.40%
Median value of Owner-occupied (dollars)	222,300	(X)	175,700
Median of selected monthly owner costs			
With a mortgage (dollars)	1,496	(X)	1,522

Without a mortgage (dollars)	393	(X)	457
Demographic Characteristics			
Male	258,761	50.1	49.20%
Female	257,803	49.9	50.80%
Median age (years)	24.6	(X)	37.2
Under 5 years	58,362	11.3	6.50%
18 years and over	334,587	64.8	76.00%
65 years and over	33,457	6.5	13.00%
One race	502,528	97.3	97.1%
White	461,775	89.4	72.4%
Black or African American	2,799	0.5	12.60%
American Indian and Alaska Native	3,074	0.6	0.90%
Asian	7,032	1.4	4.80%
Native Hawaiian and Other Pacific Islander	3,905	0.8	0.20%
Some other race	23,943	4.6	6.20%
Hispanic or Latino (of any race)	55,793	10.8	16.30%

*Source: 2010 American Community Survey 5-year estimates

Hazards Compared

Hazard Matrix

Probability	Highly Likely	Hail	Fire, Winter Weather, Wind, Avalanche		
	Likely	Lightning, Tornado	Flood, Drought, Landslide		
	Possible				
	Unlikely				Earthquake, Dam Failure
		Negligible	Limited	Critical	Catastrophic
		Severity			

Probability Calculations for Utah County

Hazard	Number of Events	Years in Record	Recurrence Interval (years)	Hazard Frequency and Probability/Year	Source
Avalanche (Injuries or damages)	26	19	0.8	1.4	NOAA
Drought (Moderate, PDSI<-2)	N/A	N/A	4.4	0.3	Utah State Water Plan
Earthquakes 3.0 and greater	11	115	10.5	0.1	University of Utah Dept. of Seismology
Floods	30	51	1.7	0.6	Various
Hail (all events)	42	19	0.5	2.2	NOAA
Landslides causing damage	13	51	4.0	0.3	SHELDUS

Lightning (fatalities and injuries)	3	19	6.7	0.2	NOAA
Wildfires (over 300 acres)	74	55	0.8	1.3	Utah Division of Forestry Fire and State Lands and BLM
Wildfires (over 50 acres)	140	55	0.4	2.5	Utah Division of Forestry Fire and State Lands and BLM
Urban Interface Fires	Unknown	Unknown	Unknown	Unknown	
Wind (with injuries or \$ damages)	66	60	0.9	1.1	NOAA (High Wind and Thunderstorm Wind with bodily harm or \$ damages)
Winter Weather (with injuries or \$ damages)	39	19	0.5	2.1	NOAA (Blizzards/Snow/Winter Weather/Cold/Wind Chill with bodily harm or \$ damages)
Tornadoes (all)	15	65	4.4	0.2	NOAA
Volcanoes	700	5,000,000	7142.9	0.0	

Recurrence interval: (number of years in record +1)/number of events.

Frequency: Number of events/Number of years in record.

Flooding/Dam Failure

Overview

Although Utah is considered a dry desert state, flooding does occur. Ranging from Most floods are occurring either from snow melt or severe thunderstorms. Often times flooding is increased by soils that are more impervious due to either wildfire or drying out. Floods occur on a regular basis in Utah County.

Profile

Frequency	Some flooding happens within Utah County on almost a yearly basis.
Severity	Moderate
Location	Primarily along streams, rivers and along the shores of Utah Lake
Seasonal Pattern	Spring time due to snow melt. Isolated events throughout the year due to severe weather (microburst).
Duration	A few hours to a few weeks depending upon conditions
Speed of Onset	1 to 12 hours
Probability of Future Occurrences	High - for delineated floodplains there is a 1% chance of flooding in any given year.

Development Trends

As development occurs on the bench areas of Utah Valley, along the shore of Utah Lake, or along river and stream corridors, more homes will be in danger of floods. Communities need to make developers and homeowners aware of the danger as well as contribute to mitigation actions. Cities should review every development that it is in compliance with NFIP guidelines.

The following table identifies the communities in Utah County with their NFIP Status.

Communities Participating in NFIP

490228#	Alpine	4/4/1983	Current, maps available online
490152#	American Fork	11/25/80(M)	Current, maps available online
490153	Cedar Fort	(NSFHA)	No special flood hazard area
490258	Eagle Mountain		Participating in NFIP Emergency program as of 2011
490154	Genola	(NSFHA)	No special flood hazard area
490254#	Highland		Current, maps available online
490209#	Lehi	7/17/2002	Current, maps available online
490210#	Lindon	02/19/86(M)	Current, maps available online
490156#	Mapleton	12/16/80(M)	Current, maps available online
490216#	Orem	09/24/84(M)	Current, maps available online
490157#	Payson	1/6/1981	Current, maps available online
490235	Pleasant Grove City	(NSFHA)	No special flood hazard area
490159#	Provo	9/30/1988	Current, maps available online
490160#	Salem	7/16/1979	Current, maps available online
490227	Santaquin	(NSFHA)	No special flood hazard area
490250#	Saratoga Springs	7/17/2002	Current, maps available online
490241#	Spanish Fork	02/19/86(M)	Current, maps available online
490163#	Springville	2/15/1985	Current, maps available online
495517#	Utah County	7/17/2002	Current, maps available online
490244#	Draper	9/25/2009	Current, maps available online

Adapted From FEMA's National Flood Insurance Program Community Handbook

The primary goal for non-participating communities is to become a participating member of the NFIP.

Assessing Vulnerability: Addressing Repetitive Loss Properties

There are no repetitive loss properties in Utah County (FEMA, 2016).

Utah County Flood and Dam Failure History

Flooding

Begin Date	Fatalities	\$ Damages	Details	Source
12/23/1964	0	\$545	Rain, flood, wind	SHELDUS
7/18/1965	0	\$51,000	Heavy rains and flash floods	SHELDUS
7/30/1965	0	\$12,750	Heavy rains and flash floods	SHELDUS
8/17/1965	0	\$3,750	Flash floods	SHELDUS
8/21/1965	0	\$1,500	Lightning, heavy rains and flash floods	SHELDUS
9/5/1965	0	\$4,000	Lightning, hail, heavy rain, and local flooding	SHELDUS
8/27/1971	0	\$1,000	Flash floods	SHELDUS
8/28/1971	1	\$6,375	Heavy rains and flash floods	SHELDUS
5/1/1983	0	\$7,142,857	Flood	SHELDUS
8/14/1983	0	\$167	Flash Flood	SHELDUS
8/18/1983	0	\$12,500	Flood	SHELDUS
4/16/1984	0	\$1,250	Landsides and Flooding	SHELDUS
5/14/1984	0	\$16,667	Landslide/Flood	SHELDUS
8/15/1984	0	\$250	Flash Flooding	SHELDUS

7/18/1985	0	\$5,000	Flash Flood, Thunderstorm Winds	SHELDUS
2/17/1986	0.09	\$45,455	Flooding	SHELDUS
2/19/1986	0	\$29,412	Flooding	SHELDUS
6/9/1986	0	\$83	Flooding	SHELDUS
8/20/1986	0	\$10,000	Flash Flooding	SHELDUS
5/22/1988	0	\$5,000	Flash Flood	SHELDUS
8/26/2000	0	\$10,000	Flood	SHELDUS
9/6/2002	0	\$200,000		SHELDUS
9/12/2002	0	\$3,200,000		SHELDUS
7/16/2004	0	\$400,000		SHELDUS
7/17/2004	0	\$350,000		SHELDUS
5/21/2005	0	\$2,500	Flood	SHELDUS
4/15/2006	0	\$25,000	Flood	SHELDUS
8/1/2010	0	\$10,000		SHELDUS
4/18/2011		\$452,859		SHELDUS
7/26/2011	0	\$50,000		FEMA
9/7/2013	0	\$2,943,600	Heavy rain esp. on burn scars. Provo, Alpine, Santaquin, and Pleasant Grove had over \$250,000 in damages each.	Utah Co. Emergency Manager

Utah county and cities have received a total of \$671,397.02 in NFIP claims since 1978.

Utah County and its cities in the NFIP program have 0 repetitive loss facilities



-  Dam Failure
-  Deer Creek Dam Failure
-  Jordanelle Dam Failure
-  100 yr Flood
-  500 yr Flood

Date Modified June 2016
 Scale 1:350,000
 Created By S Mecham
 Sources FEMA, Utah DWR & Army Corps of Engineers

Flooding represented here is a combination of official FEMA NFIP maps and modelling by HAZUS software, created by FEMA. Only NFIP maps can be officially used for insurance determinations.

Wildland Fire

Overview

Wildfires occur on a regular basis in Utah County. Most fires occur in the late summer to early fall. Although many fires occur from natural causes such as lightning, humans cause over half of all fires. Sparks from trains traveling on the railroad cause many small fires in south Utah County. People riding ATV's, using fireworks and campfires also start a number of fires in the area.

Profile

Frequency	Multiple wildland fires occur in Utah County Every year.
Severity	Moderate/Limited
Location	Hillsides and mountainous areas, open grass and range lands.
Seasonal Pattern	Summer and fall depending on weather conditions.
Duration	A few hours to a few weeks depending upon conditions
Speed of Onset	1 to 48 hours
Probability of Future Occurrences	High Major Fires: 1.3 (300 acres and larger) Moderate Fires: 2.5 (50 acres and larger)

Development Trends

As development occurs on the bench areas of Utah Valley more homes will be in danger of wildfire. Communities need to make developers and homeowners aware of the danger. Cities should also require firebreaks and access roads along urban/wildland interfaces. Although development brings homes closer to areas of potential wildfire, it also brings water and access for firefighters closer to the urban fringe. FIREWISE community development principles, such as not storing firewood near homes, installing fire resistant roofing and cleaning debris from rain gutters will reduce potential loses.

History

Fires 300 Acres and Over

Fire Name	Date	Acres	Source
Mona	12/31/2000	33852.69	BLM
Soldier Pass	6/20/1996	8915.04	FS
West Mountain 4	7/2/1966	8825.96	FS
M&M Complex	7/29/2007	8495.43	BLM
Mollie	8/18/2001	8021.38	FS
Cherry Creek 2	10/25/2003	6033.92	FS
Tenmilepas	8/6/2000	5867.00	BLM
Pinyon	8/11/2012	5766.59	BLM
Dump	6/26/2012	5502.40	BLM
Mercer	6/25/2007	5184.65	BLM
Nebo Creek	7/2/2001	4377.74	FS
Clay Pit	8/14/1999	4367.00	BLM
Moffida	6/29/2007	3342.00	BLM
Tunnel Road	6/13/2006	3201.00	BLM
Bismark	7/26/2000	3181.00	BLM
Tank Fire	8/5/1996	3031.65	FS
Trojan II	9/10/1994	2975.42	FS
Longridge	6/12/1996	2615.50	BLM

Pelican Point	8/25/2005	2574.61	BLM
Springville	6/30/2002	2259.12	FS
Quail	7/3/2012	2217.46	FS
Lake Fork	7/2/2009	2121.00	BLM
West Mountain 3	6/25/1999	2058.07	FS
Crooked	8/13/2003	2050.81	BLM
Cedar Fort	6/16/2007	1985.00	BLM
Red Bull	7/29/2004	1835.63	FS
East Vivian	7/26/2000	1833.60	FS
Elberta South	8/22/2006	1800.30	BLM
Red Ledges	8/19/2012	1682.83	FS
Ar Fire	6/1/2012	1678.80	BLM
Chaparral	8/7/2011	1597.72	BLM
Government Creek	8/24/2005	1547.47	BLM
Knowls	6/5/1994	1500.00	BLM
Hancock	10/4/2011	1405.51	BLM
Squaw Creek	8/5/1987	1369.57	FS
Westmt#2	9/18/1998	1315.00	BLM
Touch 2	8/10/1985	1200.00	BLM
West Mtn	9/4/1995	1118.00	BLM
Goose_Nest	2011	1078.67	BLM
Longridge	7/24/1999	1025.00	BLM
Bell	6/20/2006	989.92	BLM

Oak Hill	7/30/2000	911.22	FS
Impact	9/19/2006	860.00	BLM
Gra	7/24/1992	818.17	FS
Wing	6/10/2000	813.08	FS
Spring Lake	8/1/2008	762.00	BLM
Hells Kitchen	9/21/2005	671.46	BLM
West Mtn.	8/28/1997	650.00	BLM
Lake Mtn	8/11/1982	640.00	BLM
Orem Park	7/20/1960	604.03	FS
Box Elder Canyon	7/2/1961	599.57	FS
Middle Slide Canyon	9/2/1989	554.39	FS
West Mtn. 2	8/22/2006	553.58	BLM
Concrete	9/17/2004	544.24	BLM
Allen Rnch	8/10/1996	543.00	BLM
Dyno	2011	503.78	BLM
Y Mountain	7/21/2001	461.38	FS
Oak Brush	9/30/1976	447.31	FS
Tower	7/5/1983	428.18	FS
Big Jane	6/30/1987	416.61	FS
Vivian Park	8/11/1996	382.09	FS
West Mountain	9/15/2007	378.00	BLM
Clay Pit 2	8/29/1999	373.00	BLM
Pinyon	8/13/2003	369.03	BLM

Brimhall	8/6/1976	354.03	FS
Whitmore	8/2/1973	349.39	FS
Lake Mtn	8/26/2002	348.00	BLM
Fort Canyon Fire	8/31/1988	343.34	FS
Keigley West Mountain	9/21/2001	339.14	BLM
Highway	8/30/2008	323.00	BLM
Santaquin	8/4/1981	321.47	FS
Sierra	8/31/2006	316.56	BLM
Lott Canyon	9/10/2005	309.71	BLM
Dyno	6/5/2007	305.00	BLM

Total Fires 300 Acres and Over: 74

Total Acres: 178,394.24

Fires 50-300 acres

Fire Name	Date	Acres	Source
Goshen Can	6/21/2005	298.00	BLM
Diamond Fork	8/19/1985	291.98	FS
West Mountain	6/14/1998	278.40	FS
Dead Cow	6/20/1980	275.00	BLM
Waterwell	9/9/2009	260.00	BLM
Water Tank	8/10/2006	259.45	BLM
Little Cove	6/20/2006	257.00	BLM
Dry Creek	6/29/1992	255.18	FS

Bridal Falls 2	7/24/2008	246.00	BLM
Thistle	6/24/2007	244.00	BLM
Bear Canyon	7/20/1961	241.70	FS
Paysondump	8/25/2004	236.00	BLM
Clay Pit	6/1/2012	227.41	BLM
Wiley	6/17/2012	207.41	BLM
Keigley	8/26/2002	198.12	BLM
Pg	6/28/2007	198.00	BLM
Slate Jack	7/29/2012	194.35	BLM
Fairfield	7/27/2001	183.21	BLM
M31	7/15/2007	182.01	BLM
Pumpkin	8/6/2012	180.55	FS
Fairfield	7/9/2005	165.00	BLM
Springville	10/2/2005	157.83	FS
Hobble Creek	8/17/2009	157.00	BLM
Rock Canyon	7/5/1992	155.49	FS
Cathill	8/6/1983	150.00	BLM
Eureka	8/11/1983	150.00	BLM
Orchard	6/25/1983	150.00	BLM
Crowd Fire	8/10/2003	145.92	FS
Third Water	8/6/2013	132.56	FS
Bunnells Fork	4/27/1996	127.89	FS
Broadmouth	6/3/2007	127.68	BLM
Jacob Ranch	7/12/2003	124.18	BLM

Geneva Taylor	4/7/2005	122.43	BLM
Miner	10/3/1999	118.00	BLM
Yellowbrsh	9/13/1997	107.00	BLM
Little Cove	7/14/2007	105.00	BLM
Little Rock Canyon	8/15/2003	102.77	FS
Cedar Fire	7/5/1983	102.62	FS
West Mtn	9/1/2002	101.00	BLM
Oak Spring	8/3/2009	100.00	BLM
Mapleton 1	8/17/2009	98.00	BLM
Pelican	7/16/2006	98.00	BLM
Tank	9/2/2012	97.33	FS
Tank	8/11/2013	95.08	FS
Beehive Fire	7/18/1998	90.37	FS
Hobble Creek	6/5/2006	82.50	FS
Broad Hollow	7/15/1983	82.43	FS
Dog Canyon	7/1/1989	80.00	BLM
Wanrhoades	8/1/1996	71.16	FS
Israel Canyon 2	10/2/2003	69.44	BLM
Willey_Fire	8/22/2005	69.20	BLM
Soldier	8/13/2003	64.56	BLM
Lott	6/12/2006	64.41	BLM
Wignal	7/16/2013	62.72	FS
Lake	8/1/2004	61.28	BLM
Lake Mtn	7/9/1989	60.00	BLM

Explosion	8/10/2005	58.84	FS
Sagehen Spring	10/18/1970	57.81	FS
Slide Canyon	7/7/1979	55.20	FS
P Fire	7/21/2005	51.37	FS
Brimhall	7/17/2002	50.91	FS
Long Hollow	7/13/1982	50.36	FS

Island Com	7/3/2004	50.00	BLM
Railroad	7/1/2000	50.00	BLM
Sandhill	8/21/2005	50.00	BLM
Wales	6/28/1986	50.00	BLM

Total Fires 50 acres and over: 140

Total acres 187,481.36

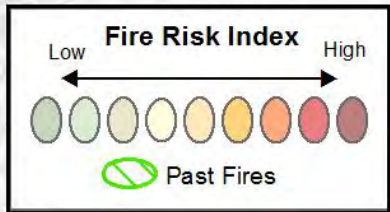
Mitigation

The FFSL has helped communities develop Community Fire Plans. According to the FFSL, the purpose of community fire planning is to:

- Empower communities to organize, plan, and take action on issues impacting community safety
- Enhance levels of fire resistance and protection to the community
- Identify the risks of wildland/urban interface fires in the area
- Identify strategies to reduce the risks to homes and businesses in the community during a wildfire

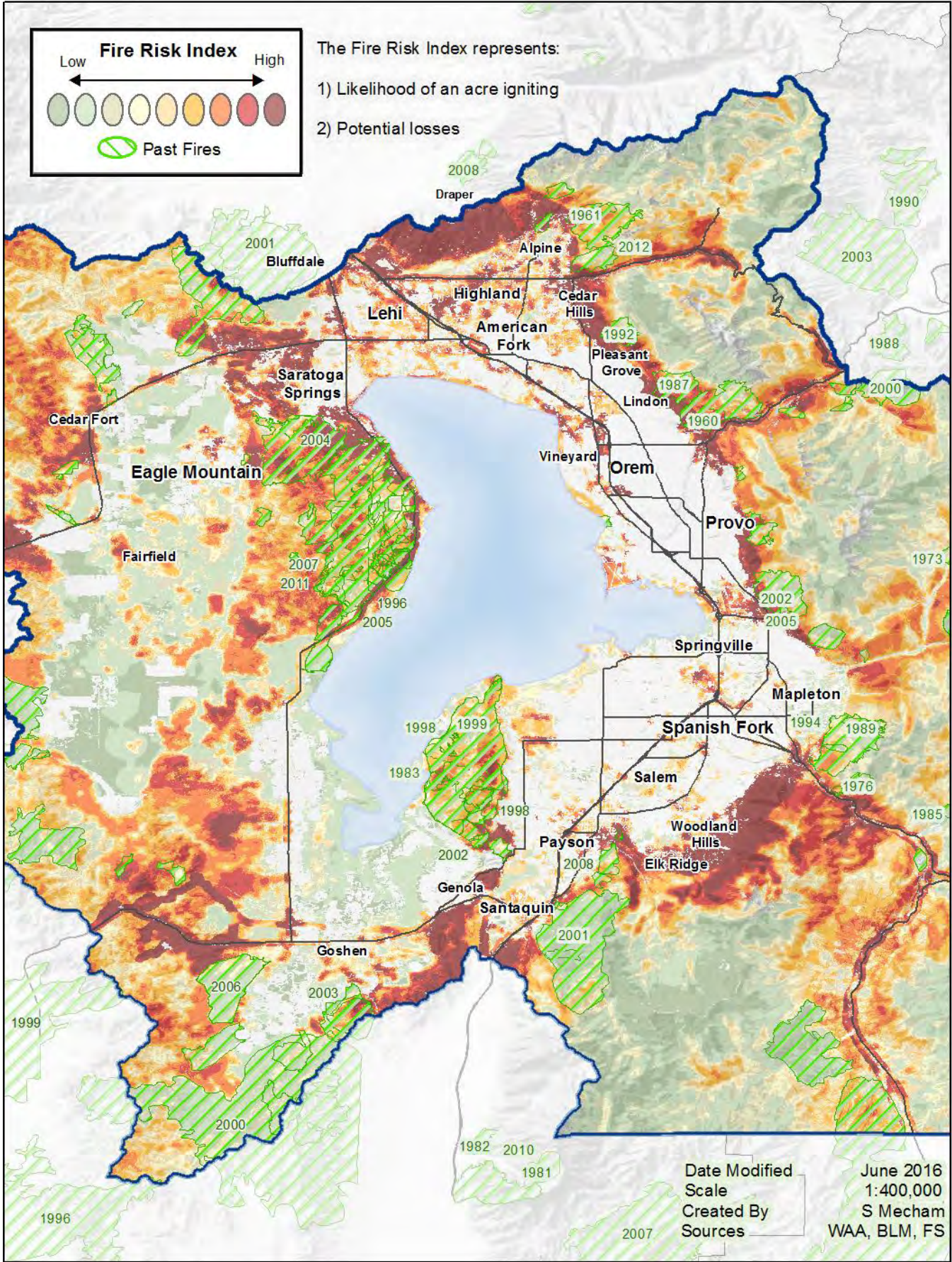
Community Name	County	Date Signed
Cedar Fort	Utah	Dec 2016
Covered Bridge (Between Spanish Fork and Thistle)	Utah	2002
Eagle Mountain	Utah	2014
Saratoga Springs	Utah	Dec 2003
Sundance*	Utah	April 1999
Woodland Hills*	Utah	Mar 2011
Santaquin	Utah	Aug 2014

- Nationally recognized as Firewise communities



The Fire Risk Index represents:

- 1) Likelihood of an acre igniting
- 2) Potential losses



Date Modified: June 2016
 Scale: 1:400,000
 Created By: S Mecham
 Sources: WAA, BLM, FS

Earthquake

Overview

Utah County is particularly susceptible to earthquakes and their secondary hazards due to its situation between (or in many cases, on top of) the fault line and Utah Lake's unstable soils. While Summit and Wasatch counties may see some damage due to shaking and certainly a few landslides, Utah County is certain to have mass movement along the bench and liquefaction in the numerous homes (and utilities) built near the lake in addition to the normal collapse of chimneys and broken glass from an earthquake magnitude 5.0 and above. Fires are also common following earthquakes in urbanized areas as gas lines break, electrical shorts occur, and response capabilities of firefighters are overwhelmed by the number of incidents and possibly damaged streets and water lines.

Profile

Frequency	Low: Events above 3.0 on the Richter scale are rare. Minor events (below 3.0) occur every month, but generally aren't felt.
Severity	High (up to 7.0)
Location	Multiple faults throughout the county with the primary Wasatch Fault along the mountain benches.
Seasonal Pattern	None
Duration	1 to 6 minutes excluding aftershocks.
Speed of Onset	Seconds
Probability of Future Occurrences	93% probability that an earthquake Magnitude 5 or higher will occur somewhere along the Wasatch Front in the next 50 years

Development Trends

As development occurs in Utah County, more buildings and people will be in danger from earthquakes. However, newer buildings will be built to better standards, which will actually decrease the risk of damage. It is interesting to note that when most residential structures are engineered, out the three categories of design criteria; seismic zone, wind shear and snow load; the design criteria for wind shear over-rides the other criteria.

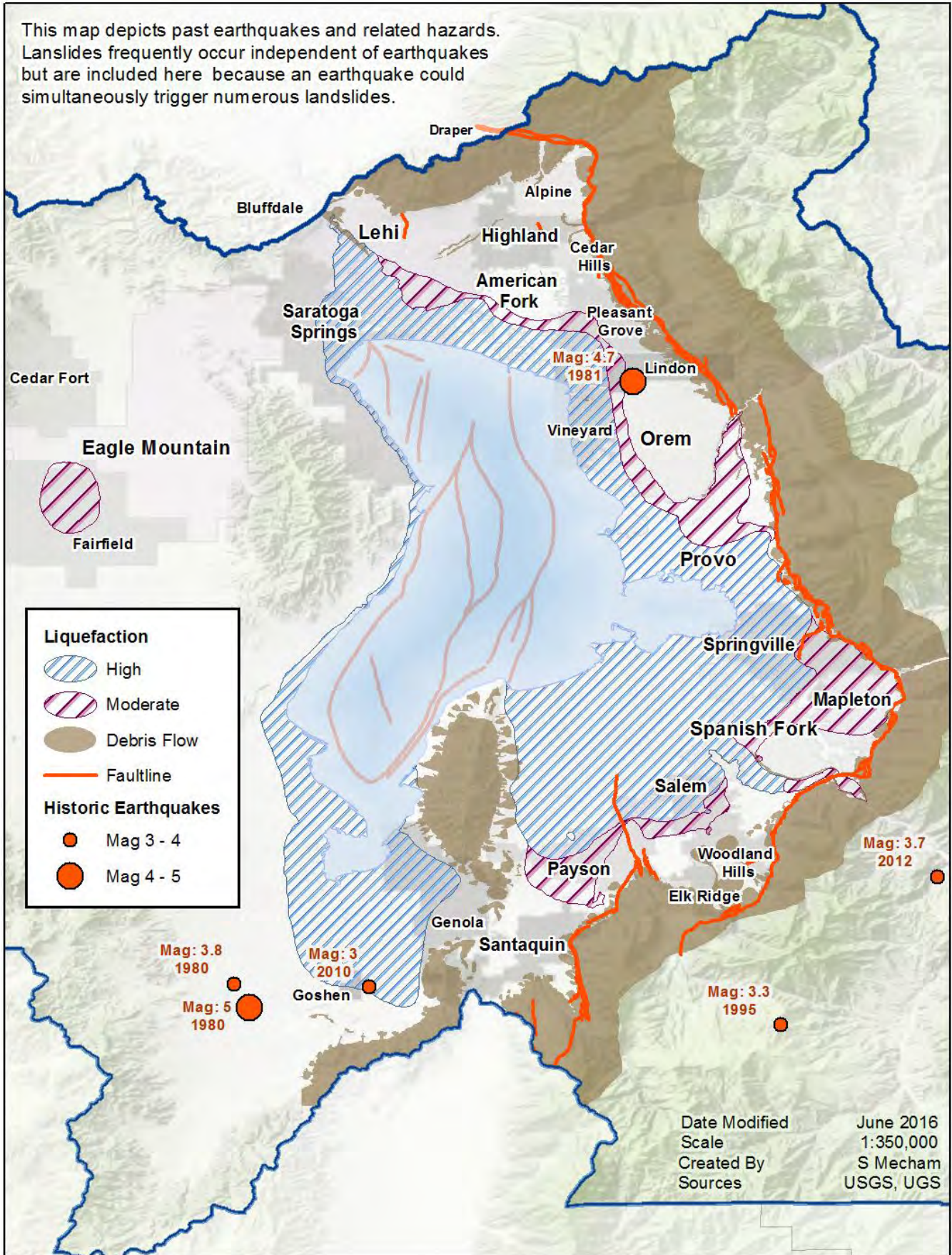
History

Earthquakes

Location	Magnitude	Date
Santaquin/Goshen	VI-VII	2-Oct-00
Elberta, Utah County	3.8	4/6/1980
Elberta, Utah County	5	5/24/1980
Lindon, Utah County	4.7	2/20/1981
Diamond Fork Campground, Utah County	3.2	5/6/1994
Payson Lakes Campground, Utah County	3.3	7/6/1995
Near Strawberry Reservoir, Utah County	3	1/5/1998
Goshen, Utah County	3	1/23/2010
Rocky Ridge, Juab/Utah County	3.2	7/5/2011
Rocky Ridge, Juab/Utah County	3.6	7/22/2011
Thistle, Utah County	3.7	2/4/2012

*United States Geologic Survey: earthquake.usgs.gov/earthquakes/search

This map depicts past earthquakes and related hazards. Landslides frequently occur independent of earthquakes but are included here because an earthquake could simultaneously trigger numerous landslides.



Date Modified June 2016
 Scale 1:350,000
 Created By S Mechem
 Sources USGS, UGS

Landslide

Overview

Due to the topography of Utah County, landslides are an issue. The foothills and alluvial fans on the bench areas are desirable for home locations. Landslides and debris flows often occur after a wildfire event. The following table illustrates the vulnerability assessment for landslides in Utah County.

Profile

Frequency	Movement occurs nearly every year.
Severity	Moderate several structures have been condemned.
Location	Along most benches and hillsides.
Seasonal Pattern	Spring when ground saturation is at its peak.
Duration	Minutes to years.
Speed of Onset	Seconds to days.
Probability of Future Occurrences	Moderate: 0.2

Development Trends

Development along the foothills and bench areas is very desirable as more development occurs, more homes will be at risk for landslide damage. As more of the county land is developed, more marginal areas with problems soils will be developed. Increased analysis and geotechnical reports should become an integral part of the development and building process. Careful consideration should be given to ensure cutting and filling for any project is minimized.

History

Landslide/Debris Flow

Location	Date	Damages	Source	Details
Utah	12/27/1964	\$500	SHELDUS	
Utah	1/1/1983	\$200,000,000	SHELDUS	Record precipitation triggered many

Utah	1/1/1983	\$8,603,666.52	SHELDUS	landslides, including Thistle
Utah	1/1/1984	\$1,471,256.97	SHELDUS	
Santaquin	9/12/2002	\$500,000	Utah Geologic Survey	The Mollie fire in 2001 and days of light rain created the conditions for the debris flow by exposing bare soil and saturating ground.
Provo	9/10/2003	\$0	SHELDUS	Debris-Flow, Fire related. Damages prevented by diversion works.
Spring Lake, Santaquin	7/26/2004	\$500,000	SHELDUS, the Geological Society of America	Debris-Flow, Fire related
Sage Vista Lane, Cedar Hills	4/28/2005	\$1,000,000	FEMA Disaster Declaration & Utah Geological Survey	Above-average precipitation reactivated historic landslide, exacerbated by development at the base of the hill.
Provo	5/12/2005	One guest house damaged	SHELDUS, Utah Geological Survey	A 13-ton rock rolled down Y mountain over a mile after a spring storm, coming to a stop in a guest house.
Sherwood Hills, Provo	6/28/2005	Multiple homes condemned	SHELDUS	High groundwater tables after a wet winter triggered slow slide
Utah County	9/7/2013	\$200,000	NOAA	Summer storms combined with fire scars resulted in several landslides this year.
Utah County	8/22/2013	\$15,000	NOAA	
Utah County	7/16/2013	\$10,000	NOAA	

Case Studies

Thistle Slide

In 1983 the town of Thistle, Utah, known to many highway travelers as the small community where both the Spanish Fork River and nearby U.S. highways branch, was eliminated by the costliest landslide on record in the United States.

Thistle was located at the triple junction of transportation systems leading south to Sanpete County, east to the coal counties of Carbon and Emery and points beyond, and northwest to the Wasatch Front and Salt Lake City. Two major highways converged at Thistle (U.S. Highways 89 and 6). Until the landslide, two rail lines also converged at Thistle--the main line of the Denver and Rio Grande Western Railroad (D&RGW) joining Denver and Salt Lake City, and a branch line to Marysvale.

Storms heralding the 1982 to 1986 wet cycle kicked off the wettest month ever recorded at the Salt Lake City International Airport in September 1982, and saturated the ground before the winter snows. The winter was neither exceptionally wet nor cold. However, snows and cold nights continued late into April and May 1983, and resulted in an unusually late and sudden snowmelt when temperatures did warm up. May snowpacks of northern Utah averaged two to three times their normal. Utah's landslide problems correlate with precipitation and snowmelt. Two large landslides in the early spring alerted geologic experts to the situation. The National Weather Service briefed local and national officials about the unusual conditions. Yet even with the geologic and climatic indicators, the events of April, May, and June caught the state by surprise.

Starting in January, the D&RGW watched the Thistle area as well as several other landslide-prone areas near Soldier Summit. Their geotechnical experts visited the area on April 12. Days later, when the Thistle landslide began to move visibly, no one recognized it as a major hazard. The railroad tracks went out of alignment on Wednesday, 13 April. The highway became bumpy, fractured, and became impassible on Friday, 15 April. The streambed and deposits on the canyon floor rose approximately one foot an hour as a huge tongue of earth piled up against the bedrock buttress of Billies Mountain, filled the canyon, and dammed the river. The waters of the Spanish Fork River rapidly created Thistle Lake upstream of the landslide dam.

The railroad company and the Utah Department of Transportation (UDOT) initially tried to keep the railroad tracks, highway, and river open. Sunday, 17 April the landslide defeated efforts to cut down through the rising toe of the landslide and allow passage of the river water. Efforts to siphon waters rising behind the landslide dam also failed. Rising lake waters drowned the community of Thistle. That very day, the president of the D&RGW announced at Thistle that the railroad would tunnel a new railroad course through Billies Mountain. To be successful, the tunnel had to be above Thistle Lake's eventual highest water line. Railroad experts in consultation with the state decided to form the landslide into a dam and to construct an overflow spillway tunnel to control the uppermost rise of the lake. Having calculated how fast an overflow tunnel could be constructed, and how fast the lake would rise, they began drilling. The state took charge of public safety priorities. Armies of workers and heavy equipment shaped the landslide dam while it moved by transferring 500,000 cubic yards of earth from

the middle area of the landslide onto its toe. This also provided a platform from which to construct the tunnels. The state constructed a third tunnel to drain the impounded water. UDOT decided to relocate the highway over Billies Mountain. The Army Corps of Engineers constructed a pumping system to keep Thistle Lake from rising to dangerously high levels.

The impounded water rose at approximately the rate predicted and the D&RGW contractors completed the overflow tunnel system with two days to spare. Trains passed through the new tunnel on 4 July, eighty-one days after the initiation of the project and eleven days before the contracted completion date. The new tunnel provided a permanent bypass for the Spanish Fork River around the landslide. The relocated highway encountered difficult geotechnical problems. The highway opened at the end of the year but was often closed due to major rockfalls and slope stability problems.

The town of Thistle was destroyed. The Marysvale branch line of the railroad was never reopened, leaving a large area of central Utah without rail service. Thistle resulted in Utah's first presidential disaster declaration and became the most costly landslide the United States had experienced. The Utah Business and Economic and Research Bureau reported the following dramatic impacts of the landslide. The D&RGW and Utah Railway embargoed all shipment that normally went through Thistle. The rerouting surcharge of \$10 per ton virtually stopped coal shipments. Two trucking companies laid off workers, cancelled contracts, and even suspended operations. Most of the area's coal mines laid off miners, cancelled contracts, and experienced shut downs. Some miners' commutes suddenly exceeded 100 miles. Some coal haulage commutes trebled. Due to market conditions and the Thistle landslide, coal production dropped nearly 30 percent in 1983. Uranium producers paid substantially more for supplies in an already soft market. At least one oil company became non-competitive due to increased travel costs. Tourism in the area, particularly in-state tourism, sagged in response to negative publicity and difficult access. To the south, the blockage of route 89 and the Marysvale line hurt coal companies, turkey and feed operations, and gypsum, cement, and clay shipments.

The Thistle landslide caused total estimated capital losses of \$48 million and revenue losses of \$87 million, plus associated losses in tax revenues. Direct costs of Thistle tally over \$200 million, including relocating the railroad at a cost of \$45 million, relocating the highway at a cost of \$75 million, and lost revenue to the railroad of \$1 million per day (which totaled \$80 million, including \$19 million in charges that the D&RGW paid the Union Pacific to use their rail lines).

See: O.B. Sumsion, Thistle . . . Focus on Disaster (1983).

Buckley Draw- Springville Fire

The Springville fire started on June 30, 2002 at 7:19 p.m. The fire burned a total of 2,207 acres above dozens of homes. The immediate post fire impacts for Provo City were: loose surface rock, silty and sandy soils, and blackened steep (40% grade) hillsides. Steep terrain and impervious soils cause rapid run off with rocks. Post fire conditions increased sediment expectations to 13 tons per acre. Brian McNerney of the NWS stated our risk level was the highest in the state.

Recommendations for mitigation offered to Provo City included the Uinta National Forest rehabilitating the burn area with vegetation (seed and mulch) and installing wire fences in the upper channel. The Natural Resource Conservation Service (NRCS) and the Emergency Watershed Program (EWP) implemented temporary measures to reduce the transport of sediment. Additionally, a Rain Activated Weather Station (RAWS) unit was relocated to the Buckley Draw area (elevation of 9,143 feet) to monitor site conditions on Sunday, July 13, 2002.

Provo City held public meetings on Sunday, July 13, and Monday, July 14, 2002 to present information and resources for the residents. National Flood Insurance Program (NFIP) information distributed. Sandbags and sand drops were scheduled and delivered.

On July 15, 2002, information was distributed to the Neighborhood regarding the increase in risk of post fire debris flow, with information about the NFIP program. Communication links to relay current hazard information to the residents were established. The evacuation plan was updated.

On July 16, 2002 a helicopter overview of the burn area was taken. Provo Public Safety responders had a Post Fire Debris Flow Risks in Utah class on July 31, 2002. NRCS and the EWP engineered of a trench to redirect potential debris flow. Provo City obtained the necessary property agreements. Two debris flow events just to the north and just to the south of Provo in September, 2002 provided motivation to secure agreements and build the trench.

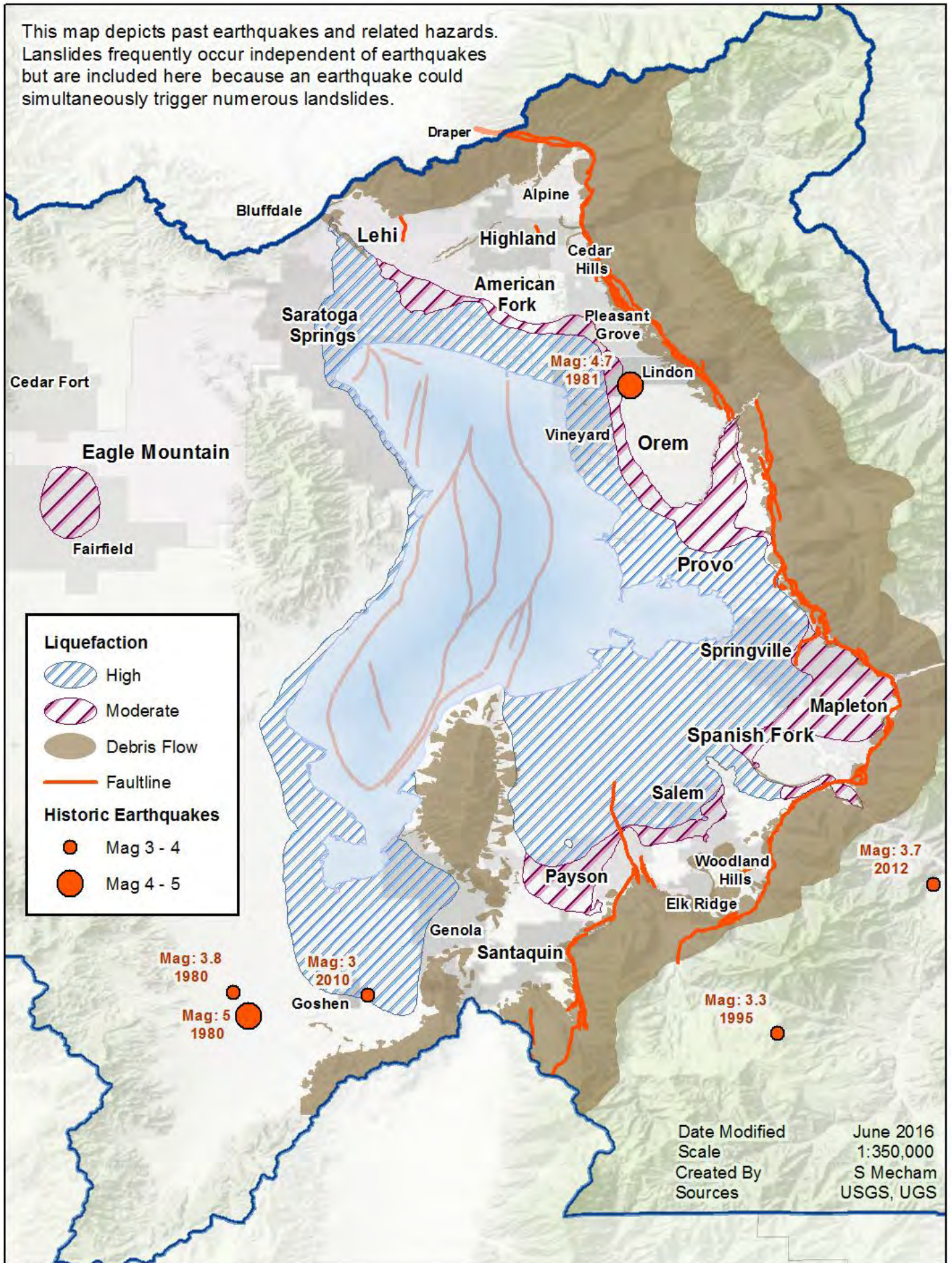
A SNOTEL was installed above the Little Rock Canyon drainage to monitor soil moisture and snow pack conditions on 22 October, 2002.

At the April 29, 2003 neighborhood meeting, the debris flow in Santaquin was contrasted with the conditions at the Buckley Draw. Plans for trench construction were discussed. A flag notification system and evacuation plan for the residents for the risk level was proposed and accepted. A web link with updated hazard information, a phone 'hot line' with an updated message, and a notification procedure alerting the Neighborhood Chair of any changes in the hazard level were implemented. A practice evacuation drill was held on Saturday, May 10, 2003.

The 1500 feet long trench was essentially complete on July 28, 2003. Weather conditions continued to be monitored on a daily basis.

At approximately 3:00 a.m. on September 10, 2003, four separate debris flows were triggered. The second largest flow came down the newly finished trench. There was little or no warning. This flow would have been life threatening and would have caused significant property damage without the debris trench in place. The spreader fences in the debris field distributed the runoff materials and completely contained this debris flow.

This map depicts past earthquakes and related hazards. Landslides frequently occur independent of earthquakes but are included here because an earthquake could simultaneously trigger numerous landslides.



Severe Weather

Overview

Utah County’s mountainous terrain makes it particularly susceptible to Severe Weather, especially Winter Weather. Add to the topography those who seek snowy slopes for recreation and disaster can ensue, as seen in the table below. Avalanches, typically a voluntary risk, have caused the most deaths in Utah County. Winter weather has caused the most injuries. Wind is responsible for the most monetary damages of any type of severe weather. These numbers will only increase as the population grows, though crop damages should decrease as agricultural land is developed.

Profile

Frequency	Frequent Multiple events happen each year.
Severity	Moderate
Location	Region wide with some locations more frequent due to geography.
Seasonal Pattern	All year depending upon the type of event.
Duration	Seconds to Days
Speed of Onset	Immediate
Probability of Future Occurrences	Highly probable. Winter Weather and Hail have the highest probability of occurrence of all weather hazards facing Utah County.

History

NOAA Extreme Weather Events Summary

Countywide	Deaths			Injuries			Property Damage			Crop Damage		
	1950-1999	2000-2009	2010-2015	1950-1999	2000-2009	2010-2015	1950-1999	2000-2009	2010-2015	1950-1999	2000-2009	2010-2015
Avalanche	4	16	6	6	7	0	\$50,000	\$20,000	0	0	0	0

Winter Weather	10	4	0	39	20	0	\$622,500	\$918,000	\$90,000	\$400	\$10,000	0
Dense Fog	-	4	-	-	5	-	-	\$520,000	-	-	0	-
Hail	0	0	0	8	0	0	\$327,000	\$2,000	0	\$101,200	0	0
Heavy Rain	0	-	-	0	-	-	\$308,000	-	-	\$17,000	0	0
Wind	1	3	1	22	2	26	\$50,913,700	\$7,744,500	\$792,000	\$16,800	\$113,000	0
Lightning	0	0	-	1	2	-	\$160,000	\$6,500	-	0	0	-

*Numbers from the National Oceanic and Atmospheric Administration. See <http://www.ncdc.noaa.gov/stormevents> for more information

**Winter Weather includes Winter Weather, Blizzard, and Snow Storm, Cold/Wind Chill/Extreme Cold. Wind includes High Wind, Thunderstorm Wind, Strong Wind

Damage Assessment and Mitigation

Overview

Each jurisdiction represented by this plan has participated in the creation of its contents and given local input into their individual mitigation goals and priorities. Listed below are the damage assessments for each of the participating jurisdiction followed by an update of the community's mitigation strategies from the 2010 plan, after which are the strategies the community wishes to pursue in the course of this plan.

Damage assessments were calculated using the methodologies mentioned in the Methods section. Strategies were developed by each community with assistance from MAG as requested. The subsequent county and city strategies reflect the advancement of local and regional goals and continue the community’s vision for the security and prosperity of the region. These goals include:

- Reducing the impact of natural hazards on life, property, and preserving the environment
- Minimizing damage to infrastructure and services and protecting their ability to respond
- Preventing potential hazards from affecting area or mitigating its effects
- Increasing public awareness, capabilities and experience
- Ensuring the safety of citizens and visitors
- Enabling cooperation between citizens and emergency and public services
- Maintaining cooperation with, and adherence to, FEMA guidelines
- Developing zoning and other plans that decrease development in hazardous areas

Utah County/Unincorporated	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	403	\$59,305,624	
500 Year Flood	444	\$65,463,124	5711.4
Dam Failure (Deer Creek)	135	\$25,050,624	732.1
Dam Failure (Local Dams)	149	\$22,221,560	1320.0
Fire (High and Moderate Risk)	1028	\$246,108,258	20451.8
Landslide	96	\$15,042,200	2475.8
Debris Flow	179	\$35,505,109	3689.4
Liquefaction	1629	\$259,915,180	15916.0

Statement of Vulnerabilities: One of Utah County’s biggest priorities is terrorism, as it relates to our infrastructure. We have key components in Utah County that we need to protect, such as waterways (Provo Canyon), airports, and such. We will be placing emphasis on our natural resource protection from terrorism. Another priority is emergency notification. We are in the process of implementing our Emergency Notification system throughout Utah County. This will be used to notify citizens of evacuations in the event of a natural disaster, such as a wildfire or flood. The system will also be used to notify first responders in the event of a natural disaster. Lots of our resources will be directed at our Emergency Notification system.

Addressing the Floodplain: Land Use Ordinances Chap 3 part 2 "FLOOD PROTECTION" states "In all zones other than the Flood Plain Overlay Zone, the following regulations shall apply: A. No dwelling or other building used for human habitation shall be constructed within one hundred (100) feet from the banks of a stream, gully, or other flood channel. Exception: A permit may be issued by the Zoning Administrator within the 100-foot limit, upon a favorable review of the County Engineer based on existing engineering reports or his own on-site investigations, when it is determined: 1. That the structure will be above water during normal spring runoff and the water levels of a base flood; and 2. The design of the building and any appurtenant residential accessory structures, grading work, driveways, and landscaping features will be sufficient to protect both the building and other property from damage due to flooding. However, if the Zoning Administrator, with the assistance of the County Engineer, cannot determine that the above criteria are met based on the available information, an engineering study and report by a Professional Engineer licensed to practice in the State of Utah may be obtained by the applicant and submitted for approval by the Zoning Administrator, after favorable review of the County Engineer. B. No use or structure (except flood control works or irrigation diversion dams) shall be permitted in any flood channel if such use or structure will adversely affect normal flow, will increase flooding of land above or below the property, will increase erosion within or adjoining the flood channel, will cause diversion of flood waters in a manner more likely to create damage than does flow in a normal course, will increase peak flows or velocities in a manner likely to add to property damage or hazards to life, or will increase amounts of damaging materials (including those likely to be injurious to health) which might be carried downstream in floods."

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Canyon Debris Basins	High	Ongoing	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	In Progress	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes	

Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes, same principles not FIREWISE	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	In Progress	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Ongoing	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Coordination efforts fell through

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Wildfire	Fuel Mitigation plan with AF canyon	High	1 year	Minimal	Local Cash	Local Government

Flooding/ Drought	Highline Canal Retrofit	High	3 years	TBD	Local Cash, Water Conservancy District	Local Government, Water Conservancy District
Flooding	Canal assessment with Provo City	High	2 years	TBD	Local Cash	Local government, Provo City
Terrorism	Natural Resource Protection	High	Ongoing	TBD	Local Cash, grants	Local government
All Hazards	Implement Early Notification System	High	1 year	TBD	Local Cash	Local Government
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Promote earthquake awareness and preparation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
All Hazards	Implement Early Notification System	High	1 year	TBD	Local Cash	Local Government

Alpine	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	98	\$31,986,500	86.6
500 Year Flood	109	\$35,614,400	106.1
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	971	\$367,019,400	1079.5
Landslide	89	\$33,932,000	308.2
Debris Flow	183	\$84,921,500	400.6
Liquefaction	0	0	0.0

Statement of Vulnerabilities: Alpine has two water tanks that are located near a fault line. Alpine City is located at the base of the mountains. Because of this, we have areas that are prone to debris flows, potential landslides, rockfall hazards and alluvial fan flooding. Due to our proximity to the mountains, we have areas that are prone to wildfires. There are some homes that currently have only one wildfire evacuation route.

Addressing the Floodplain: Development Code 3.4.1 “Environmentally Sensitive Areas” and 3.12.8 “Flood Damage Prevention Overlay” address floodplains. See Section X Policy and Program Capability of this document for an example of the comprehensive “Flood Damage Prevention Overlay” code.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Staffing not identified
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Coordination fell through

Protecting Current Residents and Structures (Alpine)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	Ongoing	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	Ongoing	1 year	Minimal	Local Cash, Grants	Local Government
Drought	Identify drought assessment criteria. Notify residents of drought conditions.	Medium	2 years	TBD	Local Cash	Local Government

American Fork	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	71	\$11,861,800	44.9
500 Year Flood	259	\$38,444,100	112.7
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	5107	\$1,064,310,300	2135.5
Fire (High and Moderate Risk)	786	\$311,950,500	584.6
Landslide	5	\$1,357,300	2.4
Debris Flow	5	\$1,357,300	2.4
Liquefaction (Moderate to High)	2385	\$571,855,800	1244.7

Statement of Vulnerabilities: The main vulnerability identified by American Fork is the cross section of the American Fork River. Through the core of American Fork, the river goes through a series of culverts, many of which may be sized too small. This poses a flooding risk to many surrounding homes and businesses. This is something that we as a city would like to study and analyze more in depth.

Addressing the Floodplain: City Code Chapter 15.16 comprehensively addresses floodplain management. See Section X Policy and Program Capabilities of this document for an example.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Lack of funding
Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party		
Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Lack of funding
Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Efforts fell through

Protecting Current Residents and Structures

Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government

Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS
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Protecting Future Residents and Structures

Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Cedar Fort	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	0	\$0	0.0
500 Year Flood	0	\$0	0.0
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	54	\$9,011,300	312.0
Landslide	0	\$0	0.0
Debris Flow	0	\$0	0.0

Liquefaction	0	0	0.0
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Statement of Vulnerabilities: Past fires near Cedar Fort have presented a significant risk and future fire could reach the town itself, affecting community assets like the fire station and school building. Increased efforts to clear brush on the hillsides have proven difficult.

Addressing the Floodplain: There is no floodplain in Cedar Fort boundaries.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	Minimal	Local Cash, Grants	Local Government	All of the critical structures are seismically sound except the Town Hall which is a 100 year old converted school house	Town Hall has only 2 meetings per month – no employees
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	We distribute information and brochures. Properties on the wildland interface are encouraged to eliminate fire fuel.	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	Minimal	Local Cash, Grants	Local Government , UGS	This is a minimal situation with no current structures affected. Most steep terrain is heavily vegetated and unimproved.	

Protecting Future Residents and structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	CERT and other awareness classes have been presented and future ones are planned	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	DNR and BLM have done fuel thinning projects to reduce fuel in interface areas.	At risk areas are not developed
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Updated UGS maps showing landslide potential have been produced. No building is allowed in steep areas	

Protecting Current Residents and Structures (Cedar Fort)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Provide CERT classes	High	1 year	Minimal	Local Cash	Fire Department, Local Government
Wildfire	Fuel Thinning	High	2 years	Minimal	BLM, DNR, SITLA	BLM, DNR, SITLA
Wildfire	Education (Pamphlets at 24 July Celebration, notices in Water Bill)	High	Yearly	Minimal	Local Cash, Forest Service	Local Government, Forest Service

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Provide CERT classes	High	1 year	Minimal	Local Cash	Fire Department, Local Government
Wildfire	Fuel Thinning	High	2 years	Minimal	BLM, DNR, SITLA	BLM, DNR, SITLA
Wildfire	Education (Pamphlets at 24 July Celebration, notices in Water Bill)	High	Yearly	Minimal	Local Cash, Forest Service	Local Government, Forest Service

Cedar Hills	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	0	\$0	0.0
500 Year Flood	0	\$0	0.0
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	1303	\$322,886,318	416.4
Landslide	316	\$69,918,500	88.2
Debris Flow	472	\$97,371,300	104.8
Liquefaction	0	0	0.0

Statement of Vulnerabilities: Cedar Hills City lies on the Wasatch Front and within close proximity to the Wasatch fault line. The fault line runs north-south along the foothill interface. While no homes or development are immediately on the fault line, major culinary and irrigation water transmission lines do cross a known fault zone. Due to the potential hazard, the city has installed earthquake valving at the upper supply tanks. Also, the piping through the fault zone has been modified to include an upgraded supply line with locked joint pipe. The eastern city limit line of Cedar Hills includes an open space interface. Much of the area is contiguous to Forest Service land and is primarily inaccessible. Cedar Hills maintains an access road which also includes a pressurized irrigation transmission line.

Addressing the Floodplain: Codes and Ordinances 11-7-10 "Improvement Requirements-Environmental Hazards" states:

"Environmental hazards must be eliminated as required by the planning commission as follows:

- A. No cut or fill slopes shall be constructed in a location or in such a manner that produces a slope face exceeding the critical angle of repose unless, in the opinion of the planning commission, adequate measures will be taken to prevent the soil from moving under force of gravity until such slope is stabilized. All cut and fill slopes shall be covered with topsoil and reseeded to the same extent as the prior existing natural conditions unless, in the opinion of the planning commission, alternative or additional treatment of the slope is necessary to avoid the creation of a significant soil erosion, flood or other environmental hazard.
- B. Location of streets and buildings on unstable soil shall be avoided.
- C. Surface water produced from the subdivision development shall be properly disposed within the subdivision or shall be drained into natural channels in a manner that will reduce the exposure to flood hazard and will prevent the soil within and outside of the subdivision from eroding, and will not produce an undue flood hazard to adjacent properties.
- D. The subdivision layout shall make adequate provision for natural drainage channels and floodways.
- E. All water, sewer and other utility systems and facilities located in flood hazard areas shall be designed to minimize infiltration of floodwater into the system, or discharge of the system into the floodwaters.
- F. Other environmental hazards must also be eliminated or adequately handled as directed by the planning commission. (Ord. 4-11-79A, 4-24-1979)"

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed ?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Staffing not identified

Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed ?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Unable to coordinate

Protecting Current Residents and Structures (Cedar Hills)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding	Storm Water/ Ditch System Cleaning	Medium	2 years	TBD	Local Cash	Local Government
Earthquake	Participate in Great Shakeout	High	1 Year	N/A	Local Cash	Local Government

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk	Medium	1 year	Minimal	Local Cash, Grants	Local Government
Landslide	Update landslide mapping with UGS and USGS.	Medium	2 years	TBD	Local Cash, Grant	Local Government, USGS, UGS
Drought	Identify drought assessment criteria. Notify residents of drought conditions.	Medium	2 years	TBD	Local Cash	Local Government

Eagle Mountain	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	43	\$7,919,500	59.6
500 Year Flood	57	\$9,855,600	70.2
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	3972	\$630,849,566	2770.6
Landslide	0	\$0	0.0
Debris Flow	0	\$0	0.0
Liquefaction (Low to Moderate)	42	\$6,399,600	6.2

Statement of Vulnerabilities: It would be difficult to evacuate the subdivision (Kiowa Valley) due to single lane roads leaving the subdivisions and in the near future city evacuation. Thoroughfares (SR 73, SR 68 and Porter's Crossing) going out of the city will not be feasible to handle a mass evacuation of the city.

Addressing the Floodplain: Title 15 Chap 15.105 Flood Damage Prevention, has comprehensive floodplain management objectives and building requirements within 100 yr floodplain, also designates the Floodplain Administrator. See Section X Policy and Program Capabilities of this document for an example.

Protecting Current Residents and Structures: 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding	Join NFIP community/participation.	Med	1 year	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Most facilities are newer
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes, but not FIREWISE specific	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	Not a priority

Protecting Future Residents and Structures: 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party		
Flooding	Join NFIP community/participation.	Med	1 year	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	No staff assigned

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes, but not FIREWISE specific	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Efforts fell through

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding	Join NFIP community/participation.	Medium	1 year	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding	Join NFIP community/participation.	Medium	1 year	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas	High	1 year	Minimal	Local Cash, Grants	Local Government

	at risk.					
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Elk Ridge	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	0	\$0	0.0
500 Year Flood	0	\$0	0.0
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	675	\$138,558,700	354.9
Landslide	99	\$27,625,000	61.2
Debris Flow	123	\$32,441,300	81.8
Liquefaction	0	0	0.0

Statement of Vulnerabilities: Because of location and growth in Elk Ridge the current infrastructure is inadequate to handle a natural disaster, which Elk Ridge considers to be its greatest vulnerability. The current goals will be to educate the community and to develop proper infrastructure that will provide safety to Elk ridge.

Addressing the Floodplain: Though there is no FEMA floodplain within city boundaries, there is some mention in Article B "Critical Environmental Zones" that "Development setbacks from sensitive areas shall be delineated when required detailed work is done at the development stage."

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes/Ongoing	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes, rebuilt public works building.	
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	No	No resources allocated
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	No resources allocated

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes/Ongoing	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	No resources allocated
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes/Partial	Local ordinances not FIREWISE

								specific
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Too difficult to coordinate.

Protecting Current Residents and Structures: 2017 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation. Promote educating our current residents on flooding risks. upgrade infrastructure	High	Ongoing	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices. seek assistance for upgraded fire suppressing equipment	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA
Landslide	Create infrastructure that will eliminate/prevent future erosion of the dugway.	Extremely high	1 year	TBD	Local Cash, Grants	Local Government, UGS, FEMA

Protecting Future Residents and Structures: 2017 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood mapping and provide to future residents and promote NFIP participation. Promote educating our current residents on flooding risks. upgrade infrastructure	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS

Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government

Fairfield	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	0	\$0	0.0
500 Year Flood	0	\$0	0.0
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	8	\$1,009,400	830.0
Landslide	0	\$0	0.0
Debris Flow	0	\$0	0.0
Liquefaction (Moderate Risk)	39	\$7,943,400	1845.0

Statement of Vulnerabilities: Earthquake and hazmat incidents on SR-73 would be biggest problems for Fairfield, but its situation is relatively safe from fire and flood, liquefaction potential is only moderate, there are 4 possible evacuation routes and few residents to worry about. There is an emergency notification through email and Fairfield is working on implementing emergency text notification as well.

Addressing the Floodplain: There is no floodplain within Fairfield's boundaries.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	No	Does not apply
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	In process, should be done by the end of 2016
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party		
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	No	Does not apply
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	In process, should be done by the end of this year
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes	

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
All Hazards	Add texting to Emergency Notification System	Med	1 year	Minimal	Local Cash	Local Government

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
All Hazards	Add texting to Emergency Notification System	Med	1 year	Minimal	Local Cash	Local Government

Genola	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	1	\$100,300	6.4
500 Year Flood	16	\$1,875,500	187.7
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	1	\$115,200	0.3
Fire (High and Moderate Risk)	37	\$4,876,633	300.0

Landslide	2	\$151,100	10.5
Debris Flow	28	\$4,253,500	106.0
Liquefaction (Moderate to High)	82	\$13,548,318	467.9

Statement of Vulnerabilities: Strawberry Highline Canal could cause flooding, though it has been altered recently to lessen that likelihood. Santaquin sometimes sends extra floodwater downstream, to Genola. Genola has added pipes to redirect water should this occur, but there would be problems if the pipes broke. A mountain on the Northeast side of town often washed debris onto the road during high rainfall events.

Addressing the Floodplain: The only floodplain is the lake bed, and no structures are in the floodplain, or potential to build in the lake.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Partly-	Santaquin Irrigation dam rebuilt, established storm drain for flood water for \$5,000.
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Fire Dept. recently built, other critical facilities being remodeled.

Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	No	Fire Dept. recently built
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	Not applicable to Genola's topography

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Partly. New General Plan made	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes, through CERT	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	No	Fire Dept. recently built
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Coordination efforts fell through

Protecting Current Residents and Structures (Genola)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Upgrade City Office Building	High	4 years	TBD	Local Cash, Grants	Local Government
Landslide	Educate homes in Landslide/ Debris Flow areas on risk	Med	Ongoing	Minimal	Local Cash	Local Government
Flood	Adopt new FEMA flood plains, participate in NFIP	Med	3 years	Minimal	Local Cash, FEMA	Local Government, FEMA

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk	Medium	3 years	Minimal	Local Cash, Grants	Local Government
Flood	Adopt new FEMA flood plains, participate in NFIP	Med	3 years	Minimal	Local Cash, FEMA	Local Government, FEMA

Goshen	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	0	\$0	0.0
500 Year Flood	0	\$0	0.0
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Mona Dam)	67	\$6,493,095	69.2

Fire (High and Moderate Risk)	66	\$7,333,352	37.4
Landslide	0	\$0	0.0
Debris Flow	0	\$0	0.0
Liquefaction	162	\$13,326,984	121.5

Statement of Vulnerabilities: Our large elderly demographic would be difficult to contact and relocate in the event of an emergency.

Addressing the Floodplain: No 100/500 year floodplain within town boundaries.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	No	No SFHA
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	No resources allocated
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	No	No resources allocated

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	No	No SFHA

Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	No resources allocated
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	No	No resources allocated

Protecting Current Residents and Structures (Goshen)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	3 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	Minimal	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	2 years	Minimal	Local Cash, Grants	Local Government

Highland	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	29	\$11,288,800	32.8
500 Year Flood	57	\$20,573,700	45.7
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Silver Lake, Tibble Fork, American Fork Debris)	185	\$72,594,500	124.8
Fire (High and Moderate Risk)	2894	\$875,492,900	1927.7
Landslide	25	\$10,021,600	30.5
Debris Flow	25	\$10,021,600	30.5
Liquefaction	0	0	0.0

Statement of Vulnerabilities: Highland City is located against the Wasatch Mountains on both the north and east border. This geography, while beautiful leads to potential vulnerabilities. Two floodplains exist throughout the city, one stemming from Dry Creek and the other from the American Fork River. In addition, there are a few small areas that have the potential for debris flow or landslide due to their high slopes. Further, a fault line has been identified on the east border of the community along the American Fork Canyon. The potential hazard that impacts the largest area from a geographic perspective is in the area north of Dry Creek. That area is comprised of steep slopes and clay-like soils which has the potential to lead to critical runoff and erosion.

Addressing the Floodplain: Code of Ordinances Chapter 13.52 comprehensively addresses floodplain issues. See Section X Policy and Program Capability of this document for an example.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Highland Glen Park Bridge Replacement (Culvert Expansion)	High	1 year	\$370,000	Local Cash, HMGP and FMA Grants	Local Government	No	Lack of funds.
Flooding/ Dam Failure	Pheasant Hollow Bridge Replacement (Culvert Expansion)	High	1 year	\$360,000	Local Cash, HMGP and FMA Grants	Local Government	No	Bridge is still in good shape.
Flooding/ Dam Failure	Hidden Oaks Bridge Replacement (Culvert Expansion)	High	1 year	\$525,000	Local Cash, HMGP and FMA Grants	Local Government	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	All but one City structure has been built recently and as such is up to current seismic standards
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	Small number of residents in susceptible area.

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	No	Lack of funding and staffing
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	No	City employees take precautions in susceptible areas, but nothing has been codified.
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Lack of funding and staffing

Protecting Current Residents and Structures (Highland)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Wildfire	Create maintenance plan to cut native grasses in fire hazard areas of City owned property by July of each year.	High	1 year	Minimal	Local Cash	Local Government

Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	Ongoing	Minimal	Local Cash, Grants	Local Government, UGS
Earthquake	Promote earthquake awareness and preparation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Drought	Educate Residents on water conservation practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Extreme Temperatures	Educate property owners about freezing pipes.	Med	Ongoing	Minimal	Local Cash	Local Government
Severe Winter Weather	Educate residents on winter weather preparedness.	Med	Ongoing	Minimal	Local Cash, Grants	Local Government
Multiple Hazards	Update Emergency Operations Plan	High	2 years	Minimal	Local Cash, Grants	Local Government, Public Safety District

Protecting Future Residents and Structures (Highland)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	3 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Flooding/ Dam Failure	Maintain drainage ways.	Med	Ongoing	TBD	Local Cash	Local Government
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	TBD	Local Cash, Grants	Local Government, UGS, USGS
Landslide	Review Development standards for issues with hillside development.	Med	2 years	Minimal	Local Cash	Local Government

Lehi	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	1199	\$205,498,110	448.4
500 Year Flood	1802	\$303,171,455	757.5
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Dry Creek and Silver Lake)	3443	\$599,089,314	1352.6
Fire (High and Moderate Risk)			
Landslide	254	\$64,870,900	441.8
Debris Flow	382	\$92,897,100	464.4
Liquefaction	6832	\$1,246,309,425	3539.6

Statement of Vulnerabilities: Continued growth of high intensity uses in the area, and population growth including increases in special populations (elderly, handicapped, etc.) increase potential impacts from natural and man-caused disasters to both people and property.

Addressing the Floodplain: Policies set forth in the Lehi City Development Code 12.060 “Infrastructure Provision and Environmental Criteria”:

- Supporting comprehensive management of activities in sensitive and hazard areas to avoid risks or actual damage to life and property.
- Using a variety of techniques to manage activities affecting water and the land to prevent degradation and minimize risks to life and property.
- Requiring developers to provide site-specific environmental information to identify possible on and off site methods for mitigating impacts.
- Working with city residents, businesses, builders, and the development community to promote low impact development to minimize surface water runoff.
- Minimize the construction of impervious surfaces.
- Specific tools to implement strategies for flood mitigation include those outlined in the City’s Critical Areas Regulations.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
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Flooding/ Dam Failure	Promote NFIP participation/Clean dam drainage and remove debris from water ways	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Promote earthquake awareness and preparation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	
Wildfire	Implement a power line inspection and maintenance program in the wild land areas.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Create a vegetation placement and management plan	High	1 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	

Protecting Current Residents and Structures (Lehi)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Winter Weather	Winter preparedness bulletins	Med	Ongoing	Minimal	Local Government	Fire Department, Local Government
Drought	Repair water distribution systems to control leakage and pressure problems	High	Ongoing	Moderate	Local Government	Local Government
Drought	Reduce water consumption, offer rebate programs for fixtures and equipment	Med	Ongoing	Minimal	Local Government, Water Conservation Program	Water Conservation Program
Drought	Retrofit showers and toilets, increase meter efficiency and maintenance, promote leak detection and repair programs	Med	4 years	Moderate	Local Government	Local Government
Earthquake	Seismic Building Retrofitting Program	High	4 years	TBD	FEMA's Project Impact	FEMA, Local Government
Flood	Manage activities affecting water and the land to prevent degradation and minimize risks to life and property	Med	Ongoing	Minimal	Local Government	Local Government

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flood	Requiring developers to provide site-specific environmental information to identify possible on and off site methods for mitigating impacts	High	Ongoing	Minimal	Developers	Developers
Flood	Implement strategies for flood mitigation outlined in the City's Critical Areas Regulations	Med	Ongoing	TBD	Local Government	Local Government
Landslide	Control development in sensitive areas through Hillside and Grading ordinance	High	Ongoing	Minimal	Local Government	Local Government
Landslide	Encourage maintenance of existing vegetation and retain natural drainage	Med	Ongoing	Minimal	Local Government	Local Government

Snow Storms	Bury power lines to prevent damage	High	4 years	Moderate	Local Government	Local Government
Winter Weather & Fire	Provide inspections and maintenance operations to prune trees throughout the city to prevent damage to homes, power, TV and telephone lines	Med	Ongoing	TBD	Local Government	Local Government

Lindon	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	161	\$41,124,700	98.1
500 Year Flood	176	\$44,723,600	102.2
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Lindon Irrigation, Lindon Squaw Hollow, Battle Creek, Grove Creek, and Silver Lake Flat)	1382	\$417,301,134	1162.7
Fire (High and Moderate Risk)	494	\$191,230,082	468.3
Landslide	371	\$101,494,400	160.9
Debris Flow	485	\$133,556,500	201.0
Liquefaction	725	\$298,554,682	820.9

Statement of Vulnerabilities: Many of Lindon’s residents, structures, utilities, roads and other improvements are vulnerable to the identified hazards due to our location along the Wasatch Mountains. In a hazard event, the city recognizes that the city’s eastern portion may be greatly impacted. The city will continue to look for and identify hazards to present and future residents and structures.

Addressing the Floodplain: City Code chapter 17.62 “Flood Damage Prevention” comprehensively addresses floodplain issues. See Section X Policy and Program Capability of this document for an example.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why?
Flooding/ Dam Failure	Promote NFIP participation. Ditch improvements. Annual dam inspections (Dry Canyon, Squaw Hollow)	High	Ongoing	Moderate	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Follow and apply current building codes adopted by City.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Ongoing	
Wildfire	Educate homeowners on FIREWISE practices. Fire suppression required in homes on steep slopes.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	
Debris Flow	Construct / Install debris flow basins in inventoried hazard areas.	Medium	5 years	High	Local Cash, Grants	Local Government, UGS	Yes, at Bald Mtn Subdivision	

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why?
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Flooding/ Dam Failure	Restrict development in hazard areas, maintain storm drainage facilities, update ordinances.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Promote earthquake awareness and preparation. Avoid hazard areas (faults), Canberra tank fault study.	High	3 years	Moderate	Local Cash, Grants	Local Government, UGS, USGS	Yes, Hillside Protection District	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	2 years	Minimal	Local Cash, Grants	Local Government	Pending	Lack of funding
Debris Flow	Maintain debris flow basins. Monitor wildfire and landslide areas.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes, limited development	

Protecting Current Residents and Structures (Lindon)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation. Ditch improvements. Annual dam inspections (Dry Canyon, Squaw Hollow)	High	Ongoing	Moderate	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Follow and apply current building codes adopted by City.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices. Fire suppression required in homes on steep slopes.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Debris Flow	Construct / Install debris flow basins in inventoried hazard areas.	Medium	5 years	High	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures (Lindon)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
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Flooding/ Dam Failure	Restrict development in hazard areas, maintain storm drainage facilities, update ordinances.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Promote earthquake awareness and preparation. Avoid hazard areas (faults), Canberra tank fault study.	High	3 years	Moderate	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	2 years	Minimal	Local Cash, Grants	Local Government
Debris Flow	Maintain debris flow basins. Monitor wildfire and landslide areas.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Mapleton	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	122	\$32,326,700	192.2
500 Year Flood	149	\$39,029,700	246.1
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Hobble Creek)	3	\$727,200	18.5
Fire (High and Moderate Risk)	38	\$10,367,500	193.0
Landslide	11	\$2,765,200	70.0
Debris Flow	37	\$16,775,500	160.2
Liquefaction (Moderate)	2492	\$543,732,235	2636.2

Statement of Vulnerabilities: Lack of a city-wide storm water system and reliance on detention ponds and storm water storage vaults beneath streets mean areas of city are prone to flooding during high water accumulation events.

Addressing the Floodplain: City Code 15.44 comprehensively addresses floodplain issues. See Section X Policy and Program Capability of this document for an example.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Funding shortfalls
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Ongoing. City has implemented a tiered water rate structure for Pressurized Irrigation	City is growing and new residents move in all the time

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
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Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Mapping is consistent with fema.gov mapping. Ordinances and General Plan are ongoing.	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Ongoing	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Ongoing	Other ordinance priorities superseded this priority
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Ongoing	

Protecting Current Residents and Structures (Mapleton)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures (Mapleton)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Orem	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	26	\$17,864,000	132.4
500 Year Flood	191	\$48,439,200	172.0
Dam Failure (Deer Creek)	257	\$108,893,500	282.4
Dam Failure (Lindon City Dry Canyon Debris Basin, and Rock Canyon)	1226	\$209,895,600	323.3
Fire (High and Moderate Risk)	726	\$224,204,700	700.5

Landslide	284	\$86,763,900	254.0
Debris Flow	321	\$94,823,800	266.0
Liquefaction (Moderate and High)	2646	\$696,327,300	1404.3

Statement of Vulnerabilities: Orem's highest priority natural disaster is severe winter weather storm (freezing conditions : snow, blizzard, ice, etc.) because it affects the largest area most frequently. Earthquake is also high priority because activity along the Wasatch Fault is inevitable, but impossible to predict with accuracy. Structure/Wild fire is also a high priority.

Addressing the Floodplain: City Code Chapter 10 "Flood Damage Prevention" comprehensively addresses floodplain issues. See Section X Policy and Program Capability of this document for an example.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes, partially: Most critical facilities owned and operated by the City of Orem have been seismically studied and identified.	Need a comprehensive list of critical infrastructure with seismic vulnerabilities.
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Partially complete: Educational materials/resources are available to all Orem residents.	

Landslide	Public education on correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	Lack of available resources
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Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes, ongoing effort.	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes: CERT, "Putting Down Roots in Earthquake Country", website, city-wide drill.	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	No	Difficulty passing legislation with requirements on homeowners.
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	In-process of re-evaluating current hillside ordinance and producing maps that identify sensitive slope areas as well and poor soil areas	

Protecting Current Residents and Structures (Orem)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures (Orem)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances	High	2 years	TBS	Local Cash, Grants	Local Government
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Promote FIREWISE landscaping to resident's living in vulnerable areas of the city	High	1 year	Minimal	Local Cash, Grants	Local Government
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Payson	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	977	\$123,861,800	477.1
500 Year Flood	1046	\$141,017,400	549.0
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Big East, Box Lake, Dry Lake, Maple Lake, McClellan Lake, Red Lake, Winward)	1033	\$120,395,000	347.0
Fire (High and Moderate Risk)	1566	\$246,094,200	740.9
Landslide	22	\$2,633,400	106.3
Debris Flow	55	\$8,317,500	121.8
Liquefaction	2345	\$347,283,200	2349.0

Statement of Vulnerabilities: Payson City currently has two areas of the City that have been designated as flood plains by FEMA. When a new home or structure is requested to be constructed in one of the flood plain areas we require that the applicant meet certain requirements to be able to construct a building in the flood plain. FEMA is currently in the process of updating the flood plain and Payson City will adjust our requirements as needed to address these changes. These are a concern because some homes and structures were built before today's current standards existed and Payson City does all that it can in a large rainfall event to protect these structures from getting flooded. Payson City also has a few subdivisions that have only one evacuation route and due to the hillside development that they were constructed on this is a concern that we deal with if there ever is a need to evacuate. We also have one development that has an earthquake fault line running through it, with one existing home sitting directly on the fault line. This has been addressed with the home owner but is a concern in a large earthquake.

Addressing the Floodplain: Payson has a floodplain overlay zone and requires anyone currently living in or building on the land to purchase insurance accordingly. Payson updates maps and incorporates them into city plans and ordinances as available. There are some areas where an

insufficient storm drain system results in flooding after heavy downpours, but it is not damaging enough to justify upgrading the system just yet. Title 21, "Sensitive Lands ordinance", includes some provisions for development not exacerbating flood, providing notice to homes located in flood-prone areas, indication of flood prevention for new basements.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes, Ongoing	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	In Progress	Cost
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes, Ongoing	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes, Ongoing	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	

Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes, Ongoing	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes, Ongoing	

Protecting Current Residents and Structures (Payson)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS

Pleasant Grove	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	290	\$61,163,200	32.2
500 Year Flood	290	\$61,163,200	32.2

Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Silver Lake Flat, Tibble Fork, American Fork Debris and Battle Creek, Grove Creek)	5634	\$1,011,169,976	1813.0
Fire (High and Moderate Risk)	1710	\$379,002,466	794.4
Landslide (High and Moderate)	968	\$171,562,200	337.5
Debris Flow	1433	\$245,528,900	487.7
Liquefaction (High and Moderate)	3180	\$646,612,176	993.4

Statement of Vulnerabilities: Pleasant Grove has multiple critical facilities, including the old police station, Battle Creek and Grove Creek dams that need to be retrofit for earthquake safety.

Addressing the Floodplain: Though HAZUS software predicts some areas of flooding within city limits, there is no official NFIP 100 or 500-year floodplain within Pleasant Grove city limits.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	N/A	No special flood hazard area

Flooding/ Dam Failure	Pipe water from flood basin 200 S. and 500 N. to canal. Approx. 8000 ft. high pressure pipe	High	Ongoing	2 million	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes	
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	No	Few homes at risk
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	Public education not applicable with city ordinances

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	No	No SFHA
	Pipe water from flood basin 200 S. and 500 N. to canal. Approx. 8000 ft. high pressure pipe	High	Ongoing	2 million	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Ongoing	

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	No	Few homes in danger
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Coordination fell through.

Protecting Current Residents and Structures (Pleasant Grove)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Study on vulnerabilities of Critical Facilities	High	3 years	\$20,000	FEMA, Local Government	Local Government
Fire	Install emergency generator to pump water for fire prevention.	High	5 years	1 million	FEMA, Local Government	Local Government
Dam Failure	Upgrade Battle Creek and Grove Creek dams to conform to seismic standards	High	2 years	TBD	North Utah County Water Conservancy District	North Utah County Water Conservancy District
Drought	Public education on correct watering practices	High	Ongoing	Minimal	Local Government	Local Government
Earthquake	Promote earthquake awareness and preparation	High	Ongoing	Minimal	Local Government	Local Government

Protecting Future Residents and Structures (Pleasant Grove)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Landslide	Require geotechnical reports for proposed structures in landslide-prone areas, conform to Hillside ordinance	High	3 years	Minimal	Local Government	Local Government

Flooding	Update storm water master plans to reduce flooding in developing areas	High	3 years	Minimal	Local Government	Local Government
Earthquake	Promote earthquake awareness and preparation	High	Ongoing	Minimal	Local Government	Local Government

Provo	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	1160	\$493,454,778	930.3
500 Year Flood	2120	\$669,148,102	1161.4
Dam Failure (Deer Creek)	14713	\$3,878,874,280	5076.8
Dam Failure (Rock Canyon and Slate Canyon Dams)	4459	\$1,439,046,416	1760.0
Fire (High and Moderate Risk)	759	\$285,905,900	960.6
Landslide	1549	\$402,340,500	972.0
Debris Flow	2226	\$513,693,300	1145.8
Liquefaction (High and Moderate)	18864	\$4,616,610,780	6224.0

Statement of Vulnerabilities: Provo has experienced large growth over the past decade and while efforts have been taken to enhance water storage capacity, a long term drought could create water shortages in the community. Provo water distribution division utilizes dozens of local springs to supplement wells for distribution. Several of the springs in Provo Canyon are used to supply water to the treatment facility. Some of the old lines lie below the Provo River Bed and current policy does not allow construction on the river to move and replace these lines for access. The position of the city between Utah Lake and the Wasatch Mountain range create an evacuation challenge. Utah Lake is Provo's West border while the Wasatch Mountain Range is Provo's East border. Provo City is dissected by Provo River running from the mouth of Provo Canyon to

Utah Lake, as well as the Union Pacific Rail Line and Interstate 15. These barriers and restrictions constrict large scale movement of motorists. The Wasatch Fault is located under Provo's east bench. There are currently slow moving landslides occurring in neighborhoods that are impacting residents and infrastructure. These slides are being monitored by the Utah Geological Survey and area considerations for planning. Provo residents and businesses located on the west side of Interstate 15 have limited routes for evacuation. There are 2 exits with underpasses as well as 3 other underpasses to east side access. During evacuation, each of these will create a bottleneck. Provo Airport is a Part 139 FAA Certified airport. It is growing and in the coming years will have significantly increased traffic. The increase in traffic increases the potential for emergency response.

Addressing the Floodplain: City Code Chapter 14.33 “Flood Plain Zone” includes portions of the comprehensive version example found in Section X Policy and Program Capability of this document, such as, Purpose and Objectives, Flood Study and Map, Use in Combination, Permitted Uses, Building and Development Permit, Administration, Use of Other Base Flood Data, Records, Certificate by Engineer or Architect, Development Standards, and Definitions.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Ongoing	
Wildfire	Educate homeowners on “Ready Set Go” practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	Ongoing	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Ongoing	
Wildfire	Incorporate "Ready Set Go" landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	

Protecting Current Residents and Structures (Provo)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Flooding/ Dam Failure	Review existing ordinances related to flood plain hazards to identify needed revisions, if any.	High	1 – 2 years	Minimal	Local Cash, Grants	Local Government
Flooding/ Dam Failure	Participate in the Provo River Levee Analysis and Mapping Process (LAMP) to identify potential improvements to levee system.	High	3 years	TBD	Local Cash, Grants	Local Government, FEMA, Others?
Flooding/ Dam Failure	Replace vulnerable areas of large diameter pipe.	High	5 years	CIP	Local Cash	Local Government

Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on Ready Set Go practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS
Landslide	Review existing ordinances related to slide area hazards to identify needed revisions, if any.	High	1 2 years	Minimal	Local Cash, Grants	Local Government

Protecting Future Residents and Structures (Provo)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Participate in the Provo River Levee Analysis and Mapping Process (LAMP) to identify potential improvements to levee system.	High	3 years	TBD	Local Cash, Grants	Local Government, FEMA
Flooding/ Dam Failure	Replace vulnerable areas of large diameter pipe.	High	5 years	Identified in CIP	Local	Local Government
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate Ready Set Go landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government
Wildfire	Restrict use of fireworks at highly vulnerable areas.	High	1 year	Minimal	Local Cash	Local Government
Landslide	Review existing ordinances related to slide area hazards to identify needed revisions, if any.	High	1-2 years	Minimal	Local Cash, Grants	Local Government
Drought	Promote water saving programs.	High	1 year	Minimal	Local Cash, Grants	Local Government

Salem	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	21	\$2,392,300	76.1
500 Year Flood	44	\$5,978,400	100.6
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	734	\$149,218,820	1454.5
Landslide	4	\$709,100	1.8
Debris Flow	426	\$96,255,200	1125.9
Liquefaction (Moderate to High)	491	\$82,628,596	812.1

Statement of Vulnerabilities: Salem City is aware of the different vulnerabilities within and around our city. Salem City has two canals that run through our city limits. We are concerned about breaches and the issues associated with that. We are also aware of the area and the risk of earthquakes, as we are on a major fault line. To the east of our city is the mountain range, knowing issues with fire's and mudslides. Most of the situations are discussed among the city leaders and directors of departments.

Addressing the Floodplain: Title 13-3-120 "Storms, Sewers - Drainage" states: All subdivision proposals shall be consistent with the need to minimize flood damage. The subdivision layout shall make adequate provision for natural drainage channels and floodways. All water, sewer, and other utility systems and facilities located in designated flood areas shall be designed and constructed to minimize flood damage, including the infiltration of flood water into the system, or the discharge of the system into the flood waters. Base flood data shall be provided by the developer as part of the preliminary plat.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes	
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Ongoing	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Ongoing	

Protecting Current Residents and Structures (Salem)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Flooding/ Canal Breach	Coordinate efforts with Salem Canal, Strawberry Highline Canal and bureau of reclamation	High	Ongoing	TBD	State and Federal	BOR, Salem Canal Highline Canal, local government
Earthquake	Inventory current critical facilities for seismic standards.	High	Ongoing	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	Med	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	Ongoing	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Flooding/Canal Breach	Coordinate efforts with Salem Canal, Strawberry Highline Canal and bureau of reclamation	High	Ongoing	TBD	State and Federal	BOR, Salem Canal Highline Canal, local government
Earthquake	Promote earthquake awareness and preparation.	High	Ongoing	TBD	Local Cash, Grants	Local Government
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	Med	Ongoing	Minimal	Local Cash, Grants	Local Government

Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	Med	Ongoing	TBD	Local Cash, Grants	Local Government, UGS
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Santaquin	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	4	\$739,500	1.0
500 Year Flood	6	\$965,000	1.4
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Santaquin Debris Dam)	1490	\$195,014,797	718.3
Fire (High and Moderate Risk)	1565	\$226,765,000	835.8
Landslide	10	\$1,552,900	103.2
Debris Flow	318	\$49,987,600	218.7
Liquefaction (Moderate to High) (All bldgs low-very low)	0	0	0.0

Statement of Vulnerabilities: Santaquin faces several vulnerabilities due to local geology, proximity to wildlands, and past development policies. These vulnerabilities include homes which have been built along the eastern border of the town (US Forest Service boundary) which are at risk for wildfires, landslides, and debris flow impacts. These same homes are also built in close proximity to a fault line. Santaquin recently adopted hillside development standards to address future development in these areas. There are currently over 500 homes in the southwest area of Santaquin, which are accessed via one rail separated bridge. Santaquin is working to establish two additional emergency access routes to nearby highways and through the hilly terrain.

Addressing the Floodplain: City Code Chapter 11-6-21 "Floodplain Areas" to 11-6-22 "Alteration of Natural Waterways" states that "A. Any subdivision in or adjacent to a floodplain identified by the federal emergency management agency (FEMA) shall be required to comply with the provisions of this section. B. The design and development of the subdivision shall provide each lot with a buildable area that will permit the lowest floor elevation, including the basement, to be constructed one foot (1') above the 100-year flood elevation. The developer shall be required to obtain an elevation certificate prior to issuance of building permits. C. The design of the subdivision shall minimize the effects of flooding and facilitate the flow of surface water runoff. D. The following base flood elevation data shall be submitted with the application for preliminary plat approval: 1. The elevation of the 100-year floodplain in relation to mean sea level, as noted in FEMA data and maps; and 2. The elevation of the lowest floor level, including basements, for all proposed dwelling lots. An elevation certificate will be required for all dwellings in areas adjacent to a floodplain. E. The developer and/or subdivider shall deliver a copy of all information required in this section to the Santaquin City community development department. F. The subdivider may be required to install or replace, when required by the city, all sewer and water systems within an identified floodplain in such a manner as to eliminate or minimize possible damage to such systems, discharge from such systems into floodwater, infiltration of floodwaters into such systems, or the contamination of ground water. G. To assure compliance with all applicable regulations, the developer and/or subdivider shall obtain the approval of the Santaquin City public utilities department and/or engineer of all new storm drain and water systems. (Ord. 05-01-2003, 5-7-2003, eff. 5-8-2003) 11-6-22: ALTERATION OR RELOCATION OF NATURAL WATERWAYS: A. Prior to approval of a preliminary plat by the city, the developer/subdivider shall complete any alteration or relocation of any natural waterway, which the army corps of engineers and/or the Utah County flood control department, or its successor, require in connection with the subdivision. B. Any request for alteration or relocation of a natural waterway on a subdivision plat shall be accompanied by the appropriate approval of the city engineer to ensure: 1. That the proposed alteration or relocation will not decrease the flow capacity or increase the velocity of the waterway, or otherwise result in any condition that could reasonably be anticipated to cause an increased danger to the safety of persons or property; 2. That the soil conditions in the proposed location will not increase flooding potential; and 3. That the proposed waterway can be adequately maintained. (Ord. 05-01-2003, 5-7-2003, eff. 5-8-2003)"

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Ongoing	Santaquin is continually updating through survey and GPS work our city's GIS and facility plans
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Ongoing	A Fire Chief was hired by the City who is conducting citizen education outreach opportunities and providing materials
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Ongoing	Santaquin implemented a Hillside Overlay zone that provides standards for hillside protection and grading practices for current and future residents.

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Ongoing	Santaquin has been working with state and federal agencies to identify greatest flood hazard potential and constructing

								infrastructure to protect future residents. City ordinances have been adopted to address protection of sensitive areas and protection standards.
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	City ordinance now requires mapping of geologic sensitive areas and limiting development areas and noticing based on study results.
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Ongoing	

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS

Flooding/ Dam Failure	Continue to work with Summit Creek Management Group to construct runoff capture and recharge areas	High	Ongoing	\$1,500,000	Local, Private, Grants	Private Irrigation Company
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Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Saratoga Springs	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	215	\$30,520,800	388.1
500 Year Flood	245	\$34,703,800	391.6
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	236	\$35,909,700	58.0
Fire (High and Moderate Risk)	4412	\$868,343,400	2063.7
Landslide	0	\$0	0.0

Debris Flow	0	\$0	0.0
Liquefaction	1633	\$332,900,100	732.3

Statement of Vulnerabilities: Ten of the 59 licensed explosive manufacturers and handlers in the whole state are licensed in Saratoga Springs. The proximity to the plants is certainly a vulnerability, as is the proximity to the NSA and Camp Williams. Redwood Road is only one main access road to the north for most of the city. Most neighborhoods are vulnerable to wildfire due to the wildland/urban interface and consequent flooding from lost vegetation, especially where there is hillside development built in or near drainages from Lake Mountain i.e. Lake Mountain Estates, Jacobs Ranch, Saratoga Hills, Stillwater, and Fox Hollow. There is also potential for fire in the phragmites along the lake. Proximity to Utah Lake brings liquefaction concerns during seismic events.

Addressing the Floodplain: City Code Title 18.02 "Flood Damage Prevention" comprehensively addresses floodplain issues. See Section X Policy and Program Capability of this document for an example.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Mostly new buildings
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	Partial: 1.5 of 3 detention basins built	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Partial: Info on website & social media, starting CERT	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Partial; some hillside stabilized through construction efforts.	

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Continue phases of building 2 nd Detention basin above Jacobs Ranch development. Further education and participation in NFIP.	High	3 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS

Earthquake	Continue to promote awareness and provide self-reliance training, CERT training. NIMS – ICS for city staff.	High	Ongoing	TBD	Local Cash, Grants	Local Government, FEMA, DHS
Wildfire	Continue Fire-Wise concepts and compliance with the Utah Wildland Urban Interface city adopted ordinance.	High	Ongoing	Minimal	Local Cash, and Fire Wise Resources	Local Government
Acts of Terror	Full risk analysis of critical infrastructure. NIMS – ICS Training for city staff and local stakeholders.	Medium	3 year	Minimal	Local Cash	Local Government, DHS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Develop and incorporate building zones to reduce risk and exposure to potential flooding.	High	3 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Incorporate awareness with all community events. Continue compliance with NIMS – ICS training and exercising.	High	3 years	TBD	Local Cash, Grants	Local Government, USGS, UGS
Wildfire	Insure compliance with UWUI city ordinance and defensive spaces with and around proper fuel types.	High	3 years	Minimal	Local Cash, Grants	Local Government
Acts of Terror	Continuation of risk analysis of existing and to be built critical infrastructure. Compliance with NIMS – ICS training maintained and exercised with city staff and local stakeholders.	Medium	3 years	Minimal	Local Cash, Grants	Local Government, FEMA, DHS
Landslides	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Spanish Fork	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	627	\$107,845,833	425.3
500 Year Flood	733	\$124,168,033	475.8
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	835	\$201,167,417	1004.0
Landslide	190	\$36,106,100	83.8
Debris Flow	190	\$36,106,100	83.8
Liquefaction (High and Moderate)	5136	\$892,004,169	3017.7

Statement of Vulnerabilities: Streets often flood due to old railroad infrastructure. The railroad company is reluctant to replace infrastructure and is difficult to coordinate with.

Addressing the Floodplain: City Code 15.4.20 comprehensively addresses floodplain issues. See Section X Policy and Program Capability of this document for an example. There are additional specifications for the Spanish Fork River.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Replace Millrace Diversion Structure	High	2 years	\$3 Million	Local Cash, HMGP	Local Government FEMA	Yes (2015)	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	Scheduled 2019
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes (2012)	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government UGS	Pending	Only occurs after fire, heavy rain.

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government FEMA UDHS	Yes (2011)	
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government UGS, USGS	Ongoing	

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes (2015)	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government UGS, USGS	No	Unable to coordinate.

Protecting Current Residents and Structures (Spanish Fork)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding	Remove debris from riverine areas	High	Ongoing	Minimal	Local Government	Local Government
Fire	Yearly Inspections from Fire Marshall, FIREWISE education	High	Yearly	Minimal	Local Government	Local Government
HAZMAT	Fire dept. HAZMAT certified	High	1 Year	Minimal	Local Government	Local Government
Landslide	Public education on correct watering practices and retaining measures	Med	Ongoing	Minimal	Local Government	Local Government

Protecting Future Residents and Structures (Spanish Fork)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Promote earthquake awareness and preparation through CERT, ShakeOut	Med	Ongoing	Minimal	Local Government	Local Government
Landslide	Public education on correct watering practices and retaining measures	Med	Ongoing	Minimal	Local Government	Local Government
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	Med	2 years	Minimal	Local Government	Local Government

Springville	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	2002	\$388,160,065	904.8
500 Year Flood	2131	\$411,159,765	1091.8
Dam Failure (Deer Creek)	46	\$75,280,100	394.6
Dam Failure (Hobble Creek)	3341	\$497,984,034	1128.9
Fire (High and Moderate Risk)	352	\$99,796,102	290.3
Landslide	156	\$37,150,102	105.0
Debris Flow	651	\$119,458,502	259.8
Liquefaction (High and Moderate)	8080	\$1,423,133,172	3728.3

Statement of Vulnerabilities: Springville City is aware of several “vulnerabilities” that could cause issues should a certain type of disaster and/or events occur within our city. The city is working to better safeguard these areas or are working on contingency plans on how to deal with them should the event occur. A few of these “vulnerabilities” are listed below:

- The UPRR railroad bridges crossing Hobble Creek at 400 W and 1500 W are deep girder bridges and sit very low to the annual average water elevation of Hobble Creek. During high water events debris continually collects at these locations and can/has caused flooding.
- The city has 2 water tanks located at the top of 400 S (approx. 400S and 2000 E) that are within 30-70 feet of a known and mapped fault line.
- There are several major water trunk lines/supply lines running from our water tanks that cross over known and mapped fault lines.
- The entire west side of our town (west of 400 west) is designated as a high liquefaction potential area. This is disclosed to all developers and home builders and is presently where most of our growth is occurring.

Addressing the Floodplain: City Code Chapter 5 Article 1 11-5 “Floodplain Overlay Regulations” addresses floodplain issues, including Objectives, Permitted uses, Development Standards and Conditions, Specific Requirements in FPO Subzone, Information to be Obtained and Maintained, and Administration.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes	
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	It did not get funded in budget and no grants were obtained.
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	Program was never developed for this due to lack of resources.

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	No	FEMA was doing an update of the NIFP 100-year flood maps. New legislation was passed that effected the NFIP mapping and FEMA began the process over again. FEMA expects to have new maps available in 2 years.
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	No	FIREWISE landscaping requirements were not added to the municipal code.
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	At the time we were developing our GIS system and due to lack of communication with the USGS/UGS.

Protecting Current Residents and Structures (Springville)

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	2 years	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Flooding/ Dam Failure	Update NFIP 100-Year Flood Plain and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Recommend FIREWISE landscaping practices to developments or homes within areas at risk. Educate new home owners of these practices.	High	1 year	Minimal	Local Cash, Grants	Local Government
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Vineyard	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	0	\$0	0.0
500 Year Flood	0	\$0	0.0
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Battle Creek and Grove Creek)	1	Pacificorp Power Plant	20.0
Fire (High and Moderate Risk)	75	\$23,452,600	336.8
Landslide	0	\$0	0.0
Debris Flow	0	\$0	0.0
Liquefaction (High and Moderate)	397	\$112,524,200	780.2

Statement of Vulnerabilities: Liquefaction would affect most of the town, potentially destabilizing the four sections of road that allow access across the railroad. Residents on the west side of town, where development is ongoing, would be difficult to evacuate if those access points were damaged. Additionally, Vineyard is comprised of many young families who are prone to move as employment changes, first-time homebuyers who are less familiar with the ins and outs of homeownership, and renters that are less involved with or aware of town issues.

Addressing the Floodplain: Vineyard has only a small section of NFIP floodplain along its north most border. That area is zoned Open Space, does not have any structures, and contains a trail mostly used by the adjoining city, Lindon. Water release along that waterway is controlled and any flooding would be minimal. Vineyard does not participate in the NFIP.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	No	No homes in floodplain
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes	

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Implemented?	If not, why not?
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	High	2 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	No	No NFIP floodplain
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Recent population boom, previously no staff.

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Build overpasses to be usable after earthquake. Overpasses are the main access across railroad.	High	5-10 years	\$10 million	Local Government, FEMA grants, MAG	Local Government, MAG

Earthquake	Develop evacuation plan	High	1-3 years	\$50,000	Local Government	Local Government
All Hazards	Share disaster planning via city Social Media platforms	Med	Ongoing	Minimal	Local Government	Local Government
All Hazards	Maintain fund for timely replacement and updates of infrastructure via utility bill	High	Ongoing	\$4/household per month	Utility fees	Individual/ Local Government
All Hazards	Interactive parcel map including hazard information	Med	1 year	Minimal	Local Government	Local Government

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Build overpasses to be usable after earthquake. Overpasses are the main access across railroad.	High	5-10 years	\$10 million	Local Government, FEMA grants, MAG	Local Government, MAG
Liquefaction	Geotechnical study in town center area for potential tall buildings and frontrunner station	High	1-3 years	\$200,000	Local Government, FEMA grants, developers	Local Government
Earthquake/ Liquefaction	All building permits require geotechnical study including site visit to be in accordance with earthquake standards	High	Ongoing	\$2,000 per lot	Builder/ Individual	Builder/ Individual
Earthquake	Develop evacuation plan	High	1-3 years	\$50,000	Local Government	Local Government
All Hazards	Share disaster planning via city Social Media platforms	Med	Ongoing	Minimal	Local Government	Local Government
All Hazards	Maintain fund for timely replacement and updates of infrastructure via utility bill	High	Ongoing	\$4/household per month	Utility fees	Individual/ Local Government
All Hazards	Interactive parcel map including hazard information	Med	1 year	Minimal	Local Government	Local Government

Woodland Hills	Buildings at Risk	Monetary Loss	Acreage
100 Year Flood	0	\$0	0.0
500 Year Flood	0	\$0	0.0
Dam Failure (Deer Creek)	0	\$0	0.0
Dam Failure (Local Dams)	0	\$0	0.0
Fire (High and Moderate Risk)	376	\$105,726,000	661.7
Landslide	0	\$0	0.0
Debris Flow	222	\$63,236,600	308.3
Liquefaction	0	0	0.0

Statement of Vulnerabilities: Woodland Hills is a bedroom community with little funding and few employees. This makes costly mitigation efforts and quick response difficult for most hazards. Due to its small size, the city is unlikely to receive priority attention and/or funding in the event of a regional disaster. With that said, it has a strong CERT program, several residents who actively prep for disasters and excellent volunteers.

Fire: Woodland Hill's greatest threat is fire, since any fire started downhill could quickly make its way up to the city, endangering lives. Many of the homes are within the Wildland Urban Interface and need to work diligently to decrease the fuel load. To mitigate the potential disaster, Woodland Hills has an ongoing fire prevention and awareness campaign including a "chipper" day for dead wood, familiarizing children with firemen, drills every 2-3 months, an active CERT program and zoning inspections by the Fire Chief. Their volunteer fire department has a 3-6 min response time and the city's monthly newsletter always contains a note from the Fire Chief.

Earthquake: Woodland Hills also sits on a fault. Earthquake activity would break the water lines, the majority of which are old, ductile iron installed around 1965. A breakage near the water tank could drain the entire tank in less than a minute, leaving the city with some flooding and without water until it could be trucked up its steep roads.

Mass movement: Avalanches and debris flows have done some damage on the periphery of the city. Berms and buried infrastructure mitigated some of the effects of mass movement in the past, but the relative unpredictability of these occurrences makes them difficult to plan for.

Addressing the Floodplain: There is no NFIP floodplain within Woodland Hills’ boundaries.

Protecting Current Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No	No resources allocated
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes, but not FIREWISE specific	
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	No	No resources allocated

Protecting Future Residents and Structures: Analysis of 2010 Goals

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?	If not, why not?
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes	

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes, but not FIREWISE specific	
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No	Coordination efforts fell through

Protecting Current Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS

Protecting Future Residents and Structures

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minimal	Local Cash, Grants	Local Government, UGS, USGS

Other City Participation

The following jurisdictions participated in meetings discussing the Hazard Mitigation Plan. Every city was contacted by phone and email on multiple occasions and given a packet describing the purpose of the plan, future probability of events countywide, county history of disaster, and buildings at risk per city. Fairfield, Cedar Fort, and Genola also had separate meetings with MAG.

Hazard Mitigation Plan Update
 March 15, 2016 Orem, Utah
 Facilitated by Mountainland Association of Governments
 Aaron Cloward and Shauna Mecham

Name	City	Phone	Email
DAVID STROUD	OREM	801-229-7095	dstroude@orem.org
JoAnna Larsen	Orem	801-229-7146	jalarsen@orem.org
Peter Quittner	Utah Co.	801-404-6050	peterq@utahcounty.gov
Chris Blinzinger	Provo City	801-964-6368	cblinzinger@provo.org
ROBERT MILLS	PROVO CITY	801-957-1407	rmills@provo.org
Brandon Snyder	Lindon	801-785-7687	bsnydera@lindoncity.org
DON DORSON	Vineyard	385.215.4060	dono@vineyardtown.com
Dave Sanderson	Spanish Fork	801-804-4586	dsanderson@spanishfork.org
BRIAN TUCKER	MAPLETON	801-860-9108	btucker@mapleton.org
Jeff Anderson	Springville	801-491-2719	janderson@springville.org

Hazard Mitigation Plan Update
 March 1, 2016 Lehi, Utah
 Facilitated by Mountainland Association of Governments
 Aaron Cloward and Shauna Mecham

Name	City	Phone	Email
Howard Anderson	Cedar Fort	801-318-0184	jhowardanderson22@yahoo.com
SHANE Sorenson	Alpine	801-420-2962	ssorenson@alpinecity.org
Erin Wjells	Highland	801-772-4566	erin@highlandcity.org
Spencer Kyle	Saratoga	801-766-9713	skyle@saratoga-spring-city.com
Jess Campbell	Saratoga	801-766-6505 ERIN	JCAMPBELL@SARATOGASPRINGCITY.COM
Christie Hutchings	Lehi	385-201-2515	chutchings@lehi-ut.gov
DAVID BUNKER	Cedar Hills	801-785-9668 x101	dbunker@cedarhills.org
BEY BAILEY	CEAR HILLS	801-420-2529	bbailey@cedarhills.org
Trent Andrus	American Fork	801-763-3060	tandrus@afcity.net

Southern Cities meeting March 29, 2016

Goshen	Josh Cummings	801-420-4019	joshcummings75@gmail.com
Salem	Brad James	801-423-2312	bjames@salemcity.org
Salem	Jeff Nielsen	801-423-2770	jeffn@salemcity.org
Payson	Jill Spencer	801-465-5233	jills@payson.org
Santaquin	Dennis	801-420-3725	dmarker@santaquin.org
Elk Ridge Commissioner	Stacey Petersen	801-423-2300, 318-4293	stacey@elkridgecity.org

Other Participation

Eagle Mountain	Spoke with Ikani on the phone multiple times in June and July to discuss vulnerabilities and strategies.
Pleasant Grove	Met with Pleasant Grove Planners, Police, Fire and others on 07 June. Worked through all the background and decided on new strategies then.
Woodland Hills	Met with Corbett in Woodland Hills in Feb 2017. Discussed hazards and outlined strategies then.