



CITY OF OREM
CITY COUNCIL MEETING
56 North State Street, Orem, Utah
April 26, 2022

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

3:30 P.M. WORK SESSION - CITY COUNCIL CHAMBERS

UPDATE - Parking Fee Schedule (15 min)

Discussion

Presenter: Lieutenant Michael Paraskeva, Orem Police Department

DISCUSSION - Service Line Warranties (15 min)

Discussion

Presenter: Steve Bieranouski, Service Line Warranties of America

UPDATE - City Branding (20 min)

Discussion

Presenter: Peter Brooks, Brooks Advertising

UPDATE - City Hall Build (30 min)

Discussion

Presenter: Lane Gray, Capitol Projects Manager

UPDATE - Water Tank (10 min)

Discussion

Presenter: Lane Gray, Capital Projects Manager

1. AGENDA REVIEW & PREVIEW OF UPCOMING AGENDA ITEMS

The City Council will review the items on the agenda.

2. CITY COUNCIL REPORTS (BOARDS & COMMISSIONS, NEW BUSINESS, ETC.)

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

3. CALL TO ORDER

4. INVOCATION/INSPIRATIONAL THOUGHT: Truman Larson

5. PLEDGE OF ALLEGIANCE: Patrick Larson

6. MAYOR'S REPORT/ITEMS REFERRED BY COUNCIL

6.1 ANNUAL REPORT - Natural Resources Stewardship Committee

Presenter: Darren Hawkins, Committee Member

7. PERSONAL APPEARANCES – 15 MINUTES

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.)

8. CONSENT ITEMS

8.1 APPROVAL OF MEETING MINUTES

Minutes of the City Council Meeting - April 12, 2022

8.2 RESOLUTION - Adopting the 2022 MAG Pre-Disaster Mitigation Plan

9. SCHEDULED ITEMS

9.1 PUBLIC HEARING / RESOLUTION - City to receive Public Comments on the Community Development Block Grant (CDBG) Projected Use of Funds for CARES ACT CDBG-CV funding and consider approval of a substantial amendment to the 2019-2020 Annual Action Plan.

Presenter: Ken Ransom, CDBG Commission Chairperson, and Kena Jo Mathews, Community Services Manager

10. CITY MANAGER INFORMATION ITEMS

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.

11. ADJOURN

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 801-229-7000)

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



**CITY OF OREM
CITY COUNCIL
MEETING
APRIL 26, 2022**

REQUEST:	APPROVAL OF MEETING MINUTES Minutes of the City Council Meeting - April 12, 2022
APPLICANT:	
NOTICES:	
SITE INFORMATION:	
PREPARED BY:	

REQUEST:

BACKGROUND:

RECOMMENDATION:

DRAFT

CITY OF OREM
CITY COUNCIL MEETING
56 North State Street Orem, Utah
April 12, 2022

3:00 P.M. WORK SESSION - CITY COUNCIL CONFERENCE ROOM

CONDUCTING

Mayor David A. Young

ELECTED OFFICIALS

David Spencer, LaNae Millett, Terry Peterson, Jeff Lambson, Debby Lauret, and Tom Macdonald

APPOINTED STAFF

Jamie Davidson, City Manager; Brenn Bybee, Assistant City Manager; Steven Downs, Deputy City Manager; Heather Schriever, City Attorney; Ryan Clark, Development Services Director; Charlene Crozier, Library Director; Steve Earl, Deputy City Attorney; Chris Tschirki, Public Works Director; Brandon Nelson, Finance Director; Bryce Merrill, Recreation Director; Keri Rugg, HR Director; Mark Sanderson, Fire Chief; Jason Bench, Planning Division Manager; and Nathan Nelson, Deputy City Recorder

NOTE: The referenced report and presentation documents for each discussion may be viewed at orem.org/meetings under “City Council Presentations”

DISCUSSION – Neighborhood Improvement Team

The Neighborhood Improvement Team introduced themselves and explained the history of code enforcement in Orem. Ms. Mathews stated that around 20 years ago, there was a unit within the police department which was set up to deal with basic nuisance complaints. Then in 2021, that unit was dissolved and reorganized into the current Neighborhood Improvement Team. (NIT) The current team consists of one police officer and three non-police full time employees.

Mr. Andreason explained why code enforcement is needed in Orem and discussed common examples of code violations the team deals with. These mainly included junk-filled yards, homeless encampments, and graffiti.

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1 Mr. Ledoux presented the council with other examples of nuisances the team works with. These
2 included various code violations such as weeds/landscaping, junk, occupancy violations, and
3 unregistered vehicles. He stated junk accumulation and parking violations are the two most
4 common nuisances they encounter.

5
6 Mr. Earl explained the process of reporting, contacting, and enforcing nuisance violations with
7 the council. He stated complaints can be received directly or through 311, at which point the
8 team will inspect the property, leave a door hanger explaining the violation and what the
9 property owner needs to change to come into compliance, and then continually follow up. Mr.
10 Earl expressed the team is as compassionate as possible and often gives people who are actively
11 working on their violation extra time to come into compliance. He also gave the council multiple
12 examples of times where the NIT team themselves have helped to clean up or otherwise assist
13 residents who cannot come into compliance on their own.

14
15 Mr. Turner described successes the team has had since July 1st. These included the team
16 addressing 687 cases, obtaining compliance in 442 of those cases, and having 70% of cases reach
17 compliance within 30 days. He then presented the council with various before and after project
18 photos.

19
20 Ms. Mathews concluded the presentation by showing the council other activities the team hosts,
21 such as picnics with police, neighborhood leader meetings, back to school nights, preservation
22 team projects, and the property all-star program.

23
24 General discussion ensued regarding neighborhood improvement tactics and goals. Mayor
25 Young suggested the team look into a more extensive education program to inform residents on
26 this topic, and common nuisances they can avoid.

DISCUSSION – Water Fee Abatement Program

27
28
29
30
31 Mr. Downs summarized the Water Fee Abatement Program stating it provides a monthly credit
32 towards utility billing for low-income families and builds off of an agreement the city has had
33 with Community Actions since September of 2017. He stated the program that is already in place
34 can help families receive up to 300 dollars to pay late utility billing. Mr. Downs then went on to
35 explain how the city wants to offer an additional program where low-income families can receive
36 an extra ten dollars per month to help pay for their water bill. He then listed the requirements a
37 family would need to meet to qualify for this program.

38
39 General discussion ensued regarding water conservation education and upcoming changes in
40 water fees.

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The City Council expressed their support for this new program and stated the existing program is very helpful and they can see the extra monthly credit going a long way as well.

DISCUSSION – Pre-Disaster Mitigation Plan

Mr. Stevenson introduced the Pre-Disaster Mitigation Plan and went through disaster vulnerabilities and at-risk locations in Orem. These included locations vulnerable to wildfires, mudslides, strong storms, and earthquakes. He then went through various mitigation projects and strategies Orem could do to prepare for natural disasters. Some of these included relocating water pipes to avoid fault lines, retrofitting facilities to meet current building code, practicing yearly emergency drills, rebuilding the City Center to withstand a major earthquake, “fire wise” education, and installing a water reuse facility at Sleepy Ridge golf course.

General discussion ensued regarding natural disaster risks, focus areas, and a possible emergency preparedness center to be built within the new Orem City Center.

DISCUSSION – Budget: Capital Improvement Projects

Mr. Kelly presented the council with capital improvement projects the city plans to undertake during the upcoming fiscal year. Some of these projects include various park, transportation, facility, water, street, and lighting improvement projects. After going through these main project fields, Mr. Kelly presented the council with other miscellaneous capital improvement projects and concluded his presentation by stating all planned projects add up to a total of \$31,385,186 dollars.

General discussion ensued regarding various capital improvement projects and the costs associated with them.

AGENDA REVIEW & PREVIEW OF UPCOMING AGENDA ITEMS

The City Council reviewed the evening’s agenda and discussion ensued regarding the scheduled items that would be considered.

Mr. Macdonald shared information regarding the commissions in which he represents. These included the Heritage Advisory Commission, the Orem Youth Council, and Orem Community Outreach. He stated the Heritage Advisory Commission is currently planning a Memorial Day

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program, the Youth Council just resumed meetings after a hiatus, and then informed the council about property the Orem Community Hospital has donated to the city.

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

CONDUCTING

Mayor David A. Young

ELECTED OFFICIALS

David Spencer, Terry Peterson, LaNae Millett, Jeff Lambson, Debby Lauret, and Tom Macdonald

APPOINTED STAFF

Jamie Davidson, City Manager; Brenn Bybee, Assistant City Manager; Steven Downs, Deputy City Manager; Heather Schriever, City Attorney; Joshua Adams, Police Chief; Ryan Clark, Development Services Director; Charlene Crozier, Library Director; Steve Earl, Deputy City Attorney; Chris Tschirki, Public Works Director; Brandon Nelson, Finance Director; Bryce Merrill, Recreation Director; Keri Rugg, HR Director; Mark Sanderson, Fire Chief; Jason Bench, Planning Division Manager; and Nathan Nelson, Deputy City Recorder

CALL TO ORDER

INVOCATION / INSPIRATIONAL THOUGHT – Ralph Olsen

PLEDGE OF ALLEGIANCE – Annette Olsen

MAYOR’S REPORT/ITEMS REFERRED BY COUNCIL

Members from the Beautification Advisory Commission presented an update and progress report to the council. The commission shared their mission statement, 2021 accomplishments, commission member roles, and examples of awards they have given to deserving yards. After this, the commission shared their 2022 goals with the council. Some of these included encouraging property owners to beautify their yards, exploring ways to recognize residents for wise water use, and participating in Summerfest.

PERSONAL APPEARANCES

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1 Alan Johnson expressed he would like to see the choker islands on Palisades Drive removed
2 while maintaining the installed speedbumps. He expressed the choker islands are unsightly and
3 can be unsafe because they force cyclists into the middle of the road.
4

5 Ralph Olsen stated he felt the choker islands installed on Palisades Drive can be dangerous
6 because they force cyclists into the center of the road and can make certain turns difficult. He
7 also expressed neighbors were not properly informed on what was being installed, and the city
8 should focus on better communication in the future.
9

10 Sierra Bradley stated she lives in a rental home with three other people, which violates city code
11 which states no more than three unrelated parties may live in a home at one time. She expressed
12 herself and the other residents of the property have done everything they can to meet
13 requirements and continue living together. She asked the council to review these regulations so
14 they may be able to continue living within Orem. Mr. Davidson responded and stated this
15 regulation is consistent with state law.
16

17 Jim Hadlock stated with reservoirs being well below normal, the city organization, as the largest
18 user of water within Orem, should look into conserving their water usage. He stated that as of
19 last year, the other two largest users of water in the city, Alpine School District and the Church
20 of Jesus Christ of Latter-Day Saints, did not have any set water conservation policy. Mr. Hadlock
21 then concluded by suggesting one way of saving water is to not cut grass any shorter than three
22 inches. That way, water would evaporate less easily and thus scheduled watering could be
23 reduced.
24

25 Douglas Vertell stated there is a development being built around 400 West and 1600 South
26 which neighbors are opposed to. He then informed the council about a neighborhood meeting the
27 developers of the project are holding and asked council members to attend.
28

29 Lori Tolman stated she is from the Springwater Park Neighborhood where multiple homes in the
30 area have been facing “settling issues.” She expressed those home are beginning to sink and lean,
31 causing cracks in walls and other noticeable damage that could cost over \$110,000 dollars to
32 repair. Ms. Tolman stated neighbors feel there is a link between the drilling of new wells and
33 damage to property. She concluded by asking the council to find answers for the many questions
34 residents in that area have, and to do an investigation into the matter before more damage occurs.
35

36 John Barrick expressed his concern of Northridge Elementary declining in quality over the past
37 few years, and issues with class sizes and building maintenance. Mr. Barrick then thanked the
38 council for taking on the school district split feasibility study. He concluded his statements by
39 explaining how he felt paying \$30,000 dollars for the feasibility study isn’t too much considering
40 how Orem pays \$55 million dollars in taxes to the Alpine School District.

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1 Cissy Rasmussen asked the council to limit the public comments to Orem residents only. She
2 then stated how she was at the meeting to share a petition she started which asks the council to
3 cancel their feasibility study contract with Discovery Education Consultants, and begin to search
4 for a new company to conduct the study. Ms. Rasmussen expressed that Orem residents deserve
5 a study done by an unbiased and experienced company. She then stated that in just two days, her
6 petition has garnered over 1,200 signatures, and explained how she felt this is a strong indication
7 of how residents feel about the company which was selected to conduct the study.

8
9 Mike Stiles stated he is for a feasibility study, but one done by a more experienced company. He
10 explained how property taxes in Orem could go up 25% for education that is not guaranteed to
11 be any better than it is now. Mr. Stiles then explained how he felt Discovery Education
12 Consultants is unfit to conduct the study, and encouraged the council find a new company to
13 contract with.

14
15 Ada Wilson stated she is one of two Orem representatives on the Alpine Board of Education, and
16 she specifically represents the Mountain View High School area. She expressed how at the
17 beginning of March, she sent the council an email containing four presentations regarding Alpine
18 School District reconfiguration, and stated her sole purpose of involvement is to protect Orem
19 families right to access the best educational opportunities for their children and to provide fair
20 and accurate information. Ms. Wilson stated she wants to ensure the 780 teachers, 863 staff, and
21 41 administrators who work in Orem schools will not be hurt by this decision.

22
23 Britney Lindsey from Cedar Hills expressed how she feels the Alpine School District suppresses
24 parent's voices and locks them out of school board meetings. She stated Alpine School District is
25 the largest, wealthiest, and most powerful school district in the state, and needs to be broken up.
26 Ms. Lindsey continued to explain how she is being criminally charged for honking her car horn
27 outside of a school board meeting which parents were locked out of.

28
29 Bart Francis stated he is a teacher in Orem and asked the council not to rush interpreting the
30 outcome of the feasibility study. He stated he has been a teacher in Orem for 15 years and
31 expressed how he would like to see the council take the proper time to understand the study
32 before they act on it.

33
34 Stephanie Grant stated the Alpine School District is encouraging and guiding parents to make the
35 petition against choosing Discovery Education Consultants to host the feasibility split study, and
36 asked why the school district is fighting so hard against a split study. Ms. Grant stated that
37 Alpine School District has shut down multiple schools within Orem and feels the district is much
38 too big to control what is actually being taught in school. She concluded by expressing how she
39 feels Alpine School District is trying to stall this process as much as possible so it won't get on
40 the ballot.

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1 Elizabeth Ludwig stated she is a teacher at Lakeridge Junior High and is not against the
2 feasibility study, but she does have some concerns. She expressed if Orem split off from the
3 district, many teachers would leave to stay with the Alpine School District. Mrs. Ludwig then
4 stated how she feels Discovery Education Consultants are not fit to conduct a feasibility study
5 and asked the council to contract instead with an unbiased, out of state company.
6

7 Kathy Owens stated she is in favor of the study and the team which the council have chosen to
8 conduct it. She expressed that Discovery Education Consultants have been involved in split
9 studies regarding Granite, Canyons, and Draper School Districts. Ms. Owens concluded by
10 expressing how she feels Alpine School District wants to delay the study and split investigation
11 because they plan to put a \$500 million dollar bond on the ballot.
12

13 Kara Ludwig voiced her concern about the action in which the council has taken to hire
14 Discovery Education Consultants to conduct the split feasibility study. She stated she feels it is
15 clear that if Orem splits from the district, it would reduce educational resources while raising
16 property taxes. Ms. Ludwig concluded by expressing how she feels Discovery Education
17 Consultants is inexperienced in conducting split feasibility studies, and the council should look
18 elsewhere for the service.
19

20 Brook Peterson thanked the council for supporting a feasibility study. She expressed how Alpine
21 School District wants to put a \$500 million dollar bond on the ballot this year, and she feels
22 Orem residents will be taxed for this bond, and then won't see their fair share of return from it.
23 Ms. Peterson concluded by expressing how she feels Alpine School District does not want Orem
24 to split from the district because they would lose lots of tax dollars.
25

26 Keith Wilson expressed how he feels the company selected to host the feasibility study could be
27 bias and inexperienced with conducting fair studies. Mr. Wilson stated a larger district is more
28 cost effective and expressed that if Orem splits from the Alpine School District, property tax
29 could increase significantly. Mr. Wilson concluded his remarks by stating the petition against
30 contracting with Discovery Education Consultants is not district backed, and the \$500 million
31 dollar bond Alpine School District wants to put on the ballot will not raise property taxes.
32

33 Aaron Davidson from Lindon expressed his confusion with people who think the school district
34 split is a done deal if the council goes forward with the study. He stated this study is just to see if
35 splitting from Alpine School District would be at all possible, and they are not going into it with
36 a direction already decided. Mr. Davidson then stated that at a recent County Convention, none
37 of the current Alpine School Board members received an endorsement from the Republican or
38 Democrat parties, then stated the school board does not treat parents properly.
39

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Kay Clark expressed how she feels it is not the Orem City Council's job to decide if Orem should split and form their own school district. She stated the council should be dealing with things such as beautification, budgeting, safety, and growth. Ms. Clark expressed how property taxes could raise significantly if Orem decides to split from the district, and many families would not be able to afford living in the city anymore. She concluded by asking the council how they would deal with declining student numbers and disabled students.

Scott Swain expressed that many parents would be willing to pay extra property tax to better educate their children. He then asked the council to be fiscally minded and cut costs where they can.

Mayor Young stated he feels there is a group of Orem residents who are against anything the council wants to do. He stated this group was very vocal and opposed the council hiring their own attorney, changing the Planning Commission structure, changing the State Street Master Plan, the school feasibility study, and are now opposed to the council's choice of who is conducting that study. Mayor Young expressed how he feels the petition against Discovery Education Consultants is inaccurate and stated the group against the council's decision are not dealing in facts. He expressed that it has been claimed property taxes will go up 35 percent, educational quality will go down, teachers will leave, and the amount of student resources will go down. Mayor Young then stated that if any of these were true, he would sign the petition, but he feels none of them have any basis in fact. He stated no one has any idea if splitting from the Alpine School District would be feasible, and that's why the council has voted to conduct a study.

After the Mayor's comments, Mr. Spencer went through a list of people from Discovery Education Consultants, and expressed why the council felt they were qualified to conduct the feasibility study.

Mayor Young then stated that by signing the petition against Discovery Education Consultants conducting the split feasibility study, they are saying these individuals are not qualified and should be disqualified immediately. Mayor Young then asked why Alpine School District is trying so hard to stop the study. He concluded by stating once the study is complete, the council will examine the results and see if there is something worth voting on. Mayor Young assured residents the council is focused on representing the people that elected them and will do what is best for the tax payers.

CONSENT ITEMS

- APPROVAL OF MEETING MINUTES
 - Minutes of City Council Meeting – March 22, 2022

DRAFT

1 **Mr. Macdonald moved** to approve the consent agenda as listed. **Mrs. Millett seconded** the
2 motion. Those voting aye: David A. Young, David Spencer, Debby Lauret, Tom Macdonald, Jeff
3 Lambson, Terry Peterson and LaNae Millett. The motion **passed**.

4 5 6 **SCHEDULED ITEMS**

7 8 APPOINTMENT TO THE ARTS COUNCIL

9
10 **Michael Smith**
11 **La Beene**
12 **Alex Malone**
13 **Scott Swain**
14 **Mike Ramsey**

15
16 **Mrs. Lauret moved** to accept the appointments as listed. **Mr. Macdonald seconded** the motion.
17 Those voting aye: David A. Young, David Spencer, Debby Lauret, Tom Macdonald, Jeff
18 Lambson, Terry Peterson and LaNae Millett. The motion **passed**.

19 20 21 APPOINTMENTS TO THE TRANSPORTATION ADVISORY COMMISSION

22
23 **Laura Redford**
24 **Jay Przybyla**

25
26 **Mr. Lambson moved** to accept the appointments as listed. **Mrs. Millet seconded** the motion.
27 Those voting aye: David A. Young, David Spencer, Debby Lauret, Tom Macdonald, Jeff
28 Lambson, Terry Peterson and LaNae Millett. The motion **passed**.

29 30 31 APPOINTMENTS TO THE SENIOR CITIZENS ADVISORY COMMISSION

32
33 **Joyce Ottens**
34 **Kathleen Thrugood**
35 **Sarah Paulson**
36 **Verl Hooley**
37 **Craig Huish**
38

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1 **Mr. Spencer moved** to accept the appointments as listed. **Mr. Macdonald seconded** the
2 motion. Those voting aye: David A. Young, David Spencer, Debby Lauret, Tom Macdonald, Jeff
3 Lambson, Terry Peterson and LaNae Millett. The motion **passed**.

4
5
6 PUBLIC HEARING – The City will receive public comment on the Community
7 Development Block Grant (CDBG) Project Use of Funds for Fiscal Year 2022-2023
8

9 Mr. Ransom and Ms. Mathews introduced the presentation and stated the City of Orem will be
10 receiving approximately \$684,750.00 in 2022-2023 CDBG funding plus program income
11 revenues of \$24,808.16. Unspent funding from previous years may also be available for
12 reallocation during FY 2022-2023, and is estimated at \$65,645.95. The total amount for
13 allocation in FY 2022-2023 is estimated to be approximately \$775,214.05 although this amount
14 is subject to change based on HUD allocation amount and unspent funding from previous
15 years. The CDBG Advisory Commission recommends that the Orem City Council allocates the
16 2022-2023 CDBG funding allocation for the following projects: City of Orem Victim Services
17 \$30,000, City of Orem Homeless Services \$4,237.50, City of Orem Code Enforcement
18 \$115,000, Section 8 Loan Payment \$94,000, City of Orem CDBG Administration \$136,950, City
19 of Orem Neighborhood Preservation \$5,000, Orem Senior Friendship Center Roof Replacement
20 \$196,733.45, City of Orem Critical Home Repair and Home Rehabilitation Program \$100,000,
21 Mountainlands Community Health Center \$19,745, Utah Valley Family Support \$26,580, Kids
22 on the Move \$8,860, and Community Health Connect \$13,290.

23
24 General discussion ensued regarding the funding vetting process and possible CDBG funding
25 projects.

26
27 Mayor Young opened the public hearing at 7:58pm. Hearing no comments, the mayor closed the
28 public hearing and brought the item back to the council for discussion.

29
30
31 MOTION – The Mayor and City Council will consider, by motion, the removal of bulb
32 out traffic calming devices along Palisade Drive (from 800 No. to Center Street) and 500
33 East (from 800 South to 1150 South)
34

35 Mayor Young stated the council has come to the conclusion that the bulb-outs along Palisade
36 Drive should be removed while maintaining the currently installed speed tables.

37
38 Mr. Lambson stated there had been some discussion regarding putting signs up in neighborhoods
39 near the University Mall that advertise the fact that you cannot access the mall through those

DRAFT

streets, and asked about the progress on those. Mr. Davidson responded and stated staff will talk about the signage with the traffic team.

Mr. Spencer asked if paint encouraging speed mitigation will be installed along Palisade Drive. Mr. Davidson responded and stated all bulb-outs along 500 East (Palisade Drive) will be removed and possible speed-mitigating painting/stripping will be explored.

Mr. Peterson expressed how he received comments from a BYU employee who conducts surveys for the US Military, who stated the survey with the city contracted for this topic was bias and only two of the 13 questions actually had to do with the traffic mitigation devices along 500 East. Mr. Peterson concluded by stating that in the future, surveys like this should be reviewed by the council beforehand.

Mrs. Millett asked if not only the bulb-outs, but also the traffic delineators on top of them will be removed as well. Mr. Davidson responded and stated the delineators are part of the bulb-out assembly and will be removed.

Mrs. Millett moved to remove the bulb-out traffic calming devices along Palisade Drive which includes 800 North to Center Street and 500 East from 800 South to 1150 South be removed.

Mr. Spencer seconded the motion. Those voting aye: David A. Young, David Spencer, Debby Lauret, Tom Macdonald, Jeff Lambson, Terry Peterson and LaNae Millett. The motion **passed**.

COMMUNICATION ITEMS

No communication items at this time.

CITY MANAGER INFORMATION ITEMS

Mr. Davidson expressed the city is having a hard time finding seasonal hires, and as such the city is looking into raising the seasonal hourly rates to remain competitive. He then also updated the council on the progress of Hillcrest Park, the new Orem City Center, and Utopia expansion within Orem.

ADJOURNMENT

Mayor Young moved to adjourn to a closed meeting for discussion of the character, professional competence, or physical or mental health of an individual, pursuant to Utah Code Section 52-4-205(1)(a) **Mr. Macdonald seconded** the motion. Those voting aye: David A. Young, David Spencer, Jeff Lambson, Terry Peterson, Debby Lauret, Tom Macdonald, and LaNae Millett. The motion **passed**.

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1

2 The meeting adjourned at 8:07 PM.



**CITY OF OREM
CITY COUNCIL
MEETING
APRIL 26, 2022**

REQUEST:	RESOLUTION - Adopting the 2022 MAG Pre-Disaster Mitigation Plan
APPLICANT:	
NOTICES:	
SITE INFORMATION:	
PREPARED BY:	Heath Stevenson

REQUEST:

BACKGROUND:

Disaster mitigation reduces or, in some cases, prevents damage that is caused by natural disasters such as earthquakes, weather events, and wildfires. Mitigation involves the actions taken before the disaster occurs rather than improving disaster response. Disaster mitigation protects lives and property and saves money; recent studies show savings of approximately \$6 in disaster recovery money for every \$1 spent on mitigation. As such, The MAG, at the request of the mayors and county commissioners in Summit, Utah, and Wasatch counties, has created a region-wide, Pre-Disaster Mitigation plan to help those participating access disaster funding, both before and after a disaster occurs. The Pre-Disaster Mitigation plan is updated through MAG, with participation from each jurisdiction working with MAG, every 5 years. Each time the plan is updated MAG will send the updated Pre-Disaster Mitigation plan to the Utah Department of Emergency Management (DEM). The DEM will ask for any corrections to be fixed and then pass the plan along to FEMA. Once FEMA approves the Pre-Disaster Mitigation plan each county, city, town, and school district will have the opportunity to adopt it through their commission, council, or board before the current plan expires on May 18, 2022. By participating in the Pre-Disaster Mitigation plan, with MAG, the City of Orem is more capable to handle emergency situations, due to mitigation meetings and projects that take place on a City, County, Region, and sometimes even State level. Also, by participating in and adopting this Pre-Disaster Mitigation plan, prior to May of 2022, the City of Orem will continue to be eligible to apply for FEMA grants and receive post-disaster funds.

RECOMMENDATION:

RESOLUTION NO. _____

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF OREM, UTAH
ADOPTING THE 2022 MAG PRE-DISASTER MITIGATION PLAN**

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

WHEREAS the City in conjunction with the Mountainland Association of Governments (MAG) has participated in the creation of a multi-hazard mitigation plan, hereby known as the 2022 MAG Pre-Disaster Mitigation Plan For Summit, Utah and Wasatch Counties in accordance with the Disaster Mitigation Act of 2000; and

WHEREAS the 2022 MAG Pre-Disaster Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in the City from the impacts of future hazards and disasters. A complete copy of the plan is available at <https://mountainland.org/static/files/2022%20Pre-Disaster%20Mitigation%20Plan%20for%20Summit%20Utah%20and%20Wasatch%20Counties.pdf> (as of April 12, 2022). Part 6 of the 2022 MAG Pre-Disaster Mitigation Plan is attached hereto as Exhibit A and is the part of the plan that profiles and outlines mitigation strategies for Utah County; and

WHEREAS adoption by the City Council demonstrates their commitment to hazard mitigation and achieving the goals outlined in the 2022 MAG Pre-Disaster Mitigation Plan.

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

1. The Orem City Council hereby adopts the 2022 MAG Pre-Disaster Mitigation Plan.
2. This Resolution shall become effective immediately upon its passage.
3. All other resolutions and policies in conflict herewith in whole or in part are hereby repealed.

PASSED and APPROVED this **26th** day of **April** 2022.

David A. Young, Mayor

ATTEST:

JoD'Ann Bates, City Recorder

COUNCILMEMBER

AYE

NAY

ABSTAIN

Mayor David A. Young

☐☐☐

Debby Lauret

☐☐☐

Jeff Lambson

☐☐☐

Tom Macdonald

☐☐☐

LaNae Millett

☐☐☐

David Spencer

☐☐☐

Terry Peterson

☐☐☐

EXHIBIT A

DRAFT



2022

PRE-DISASTER MITIGATION PLAN

For Summit, Utah, and Wasatch Counties



M A G

Expert Resources. Enriching Lives.



Part 6 Utah County Profiles and Mitigation

Background

Area: 2,014 square miles; *county seat*: Provo; *origin of county name*: after the Ute Indians

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.

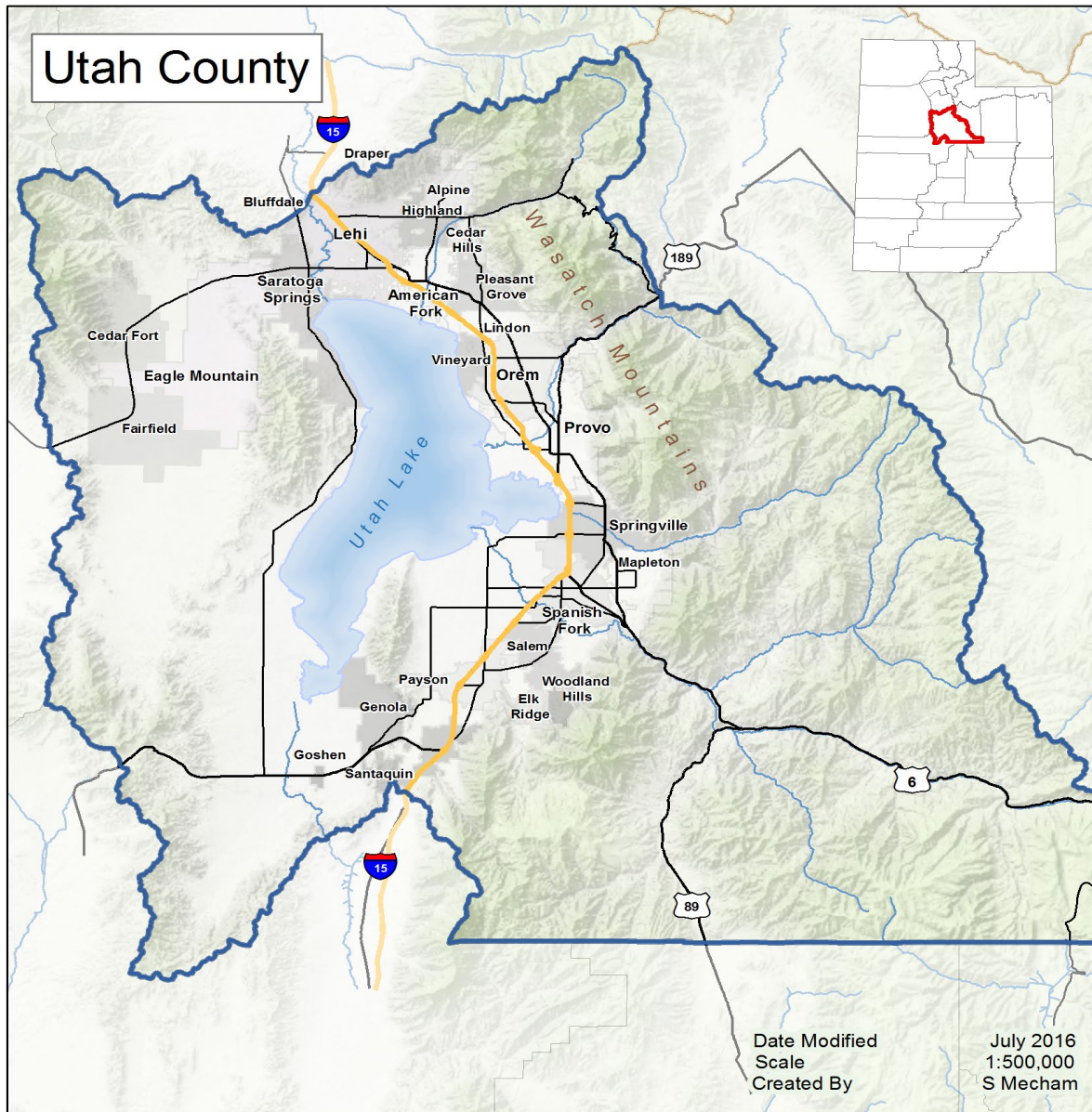
Mormon pioneers began settling Utah Valley in 1849. Like the Indians before them, they chose to settle on the fertile, well-watered strip of land between the mountains and Utah Lake. More than a dozen towns were established between Lehi on the north and Santaquin on the south. Provo, named for the French 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 and establish communities in Lehi, Alpine, American Fork, Pleasant Grove, Springville, Spanish Fork, Salem, and Payson.

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 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 over 36,000 students in 2021. The Utah Valley University in Orem has

grown rapidly to over 41,000 students as well. Other major Utah County employers include Vivint, Doterra and Young Living Essential Oils. 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 most other communities have their own celebrations.



Population

Demographics Utah County

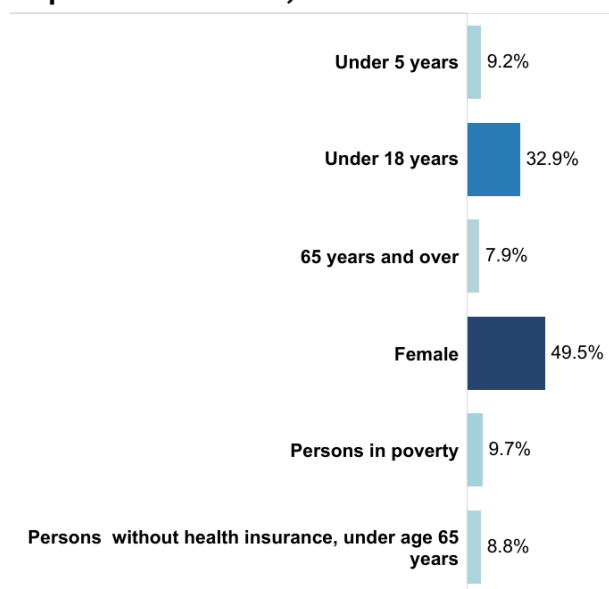
In Utah County, more than a third of residents are children under the age of 18, with less than 8% of the population over the age of 64. The average travel time to work is 22 minutes due in large part to those commuting to Salt Lake County for jobs.



2019 Race and Ethnicity

White, not Hispanic/Latino	81.7%
Hispanic/Latino***	12.2%
Two or More Races	2.8%
Asian	1.9%
Native Hawaiian/Other Pacific Islander	0.9%
American Indian/Alaska Native	0.8%
Black/African American	0.8%

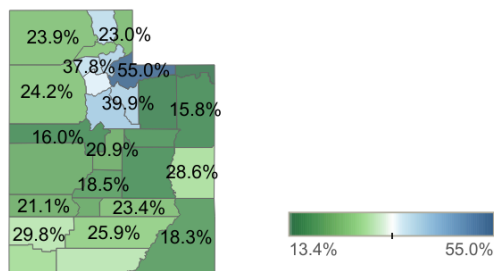
Population Shares, 2015-2019



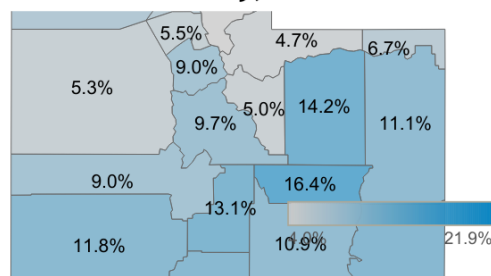
Other Facts

Households, 2015-2019	165,991
Housing units, July 1, 2019	186,554
Median value of owner-occupied housing units, 2015-2019	305,500
Persons per household, 2015-2019	4
Mean travel time to work (minutes), workers age 16 years+, 2015-2019	22
Veterans, 2015-2019	14,296
Veteran-owned firms, 2012	3,003
Women-owned firms, 2012	13,891

Bachelor's Degree or Higher, 2015-2019*



Persons Below Poverty, 2019



Updated 7/13/2021 8:10:38 PM

* Population 25 years and older. ** Population 5 years and older. *** Hispanics/Latinos may be of any race; also included in applicable race category. **** Civilian Population 16 years and older.

Source: U.S. Census Bureau. For more information: <http://www.census.gov>

Hazards Compared

Hazard Matrix

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

Standards from FEMA IS 235: Emergency Planning Course

Potential Magnitude

Catastrophic: More than 50% of community affected

Critical: 25 to 50%

Limited: 10 to 25%

Negligible: Less than 10%

Probability Calculated using # of event/years in record

Highly likely: Near 100% probability in next year

Likely: 10 -100% probability in next year, or at least one chance in next 10 years.

Possible: 1-10% probability in next year, or at least one chance in next 100 years.

Unlikely: Less than 1% probability in next 100 years

Standards we modified to fit our region

Severity per incident

Catastrophic: Many lives, a great deal of property

Critical: Multiple lives lost and/or multiple properties affected

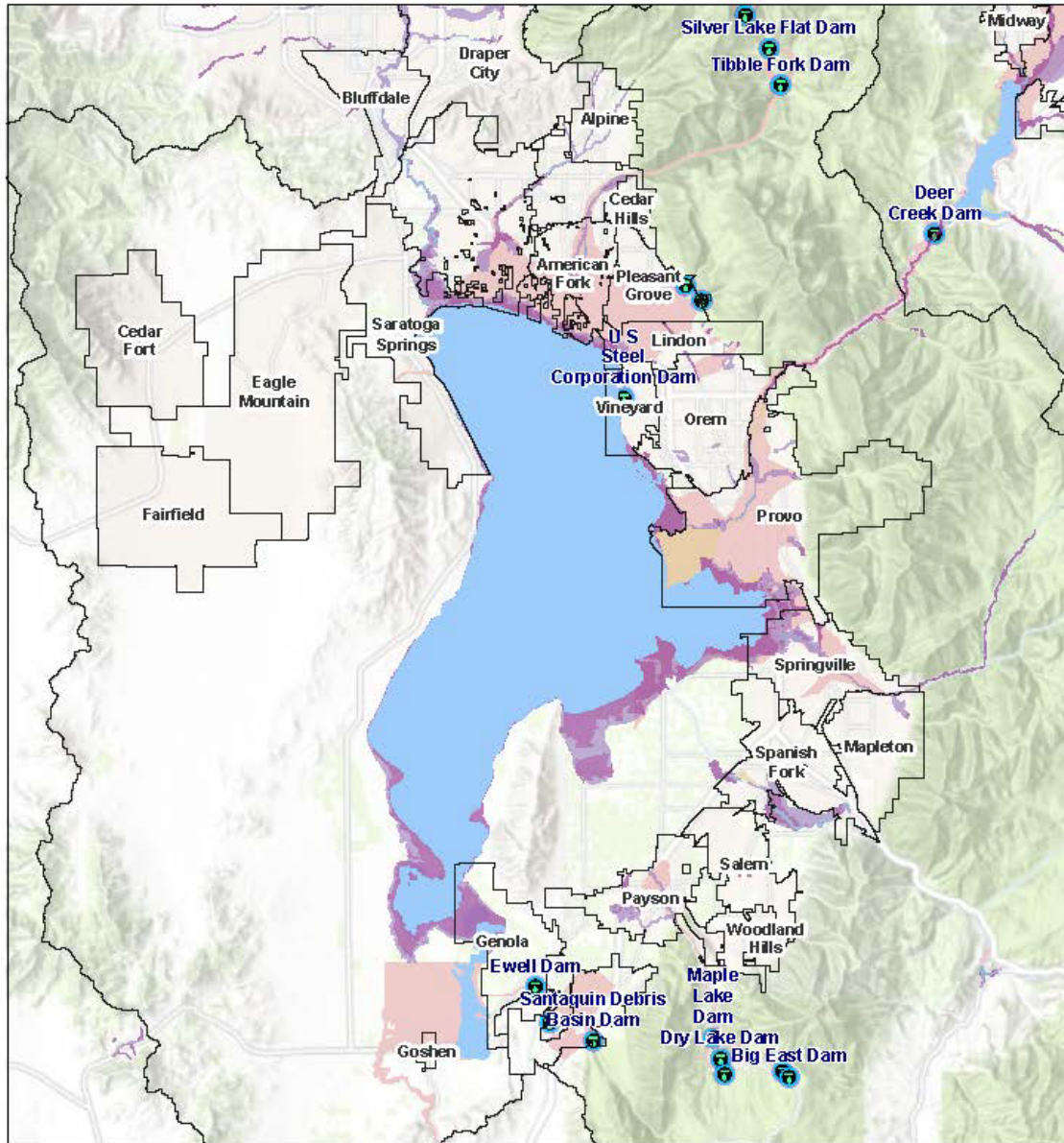
Limited: Some property loss, less than 3 lives lost

Negligible: Some property, no life lost

Hazard	Years in Record	Yearly Probability	Deaths Annualized	Injuries Annualized	\$ Losses Annualized	Source
Air Quality Unhealthy for all	12	75%	n/a	n/a	n/a	DEQ Monitoring Archive, days in exceedance of PM2.5 standard
Avalanche	25	128%	1.3	0.6	\$2,800	NOAA
Debris Flow	16	44%	0	0	\$23,000	NOAA
Drought, Moderate	2018	10%	0	0	n/a	National Integrated Drought Information System
Earthquake		1%	2.4	32	\$24,000,000	HAZUS Salt Lake City 7.0 & Provo Scenarios
Floods & Flash Floods	23	139%	0	0	\$283,000	NOAA, HAZUS, State Hazard Mitigation Plan
Hail	71	58%	2.7	32.7	\$17,208	NOAA/SHELDUS
Landslides	51	25%	0	0	NA	SHELDUS, skewed by Thistle slide
Lightning	25	32%	0.04	0.16	\$6,660	NOAA
Tornadoes	71	10%	0	0	\$2,582	NOAA
Volcanoes	5,000,000	0%				
Wildfires	6	1,167%			\$8,742,000	Utah FFSL and BLM with cost of fighting fire
Wind	71	97%	0.4	0.7	\$844,000	NOAA (High Wind, Strong Wind and Thunderstorm Wind)
Winter Weather	25	160%	0.56	2.36	\$65,636	NOAA (Blizzards/Heavy Snow/Winter Storm/Winter Weather)

Flooding

Flood Hazards in Utah County



12/27/2021

USA Flood Hazard Areas

1% Annual Chance Flood Hazard

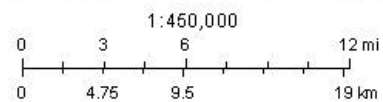
0.2% Annual Chance Flood Hazard

Regulatory Floodway

Area with Reduced Risk Due to Levee

Dams

Dam Failure



Sources: Esri, HERE, DeLorme, increment P Corp., NPS, NRCAn, Ordnance Survey, OpenStreetMap contributors, USGS, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatenzelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user

MAG

Overview

Although Utah is considered a dry state, flooding does occur. Most floods occur either from snow melt or severe thunderstorms. Oftentimes 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	Moderate - 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

Jurisdiction	Floodplain	Map Date	Floodplain Admin
Alpine	Alpine participates in the NFIP. Though a few homes are located in the floodplain, it is very narrow and no new buildings are expected. Alpine has a Floodplain Damage Prevention Ordinance and well-organized Floodplain Permit. Alpine spent \$400k in 2013 to construct a wall which effectively protected its repetitive loss property from a debris flow that year.	June 2020	Jed Muhlestein, City Engineer
American Fork	Participating in NFIP. City code 15.16 Addresses Floodplain Management, including floodplain administrator, building & subdivision requirements, etc.	June 2020	Rebecca Andrus, City Engineer
Cedar Fort	No Special Flood Hazard Area		Mayor Gustin
Cedar Hills	Not participating in NFIP. Cedar Hills does have a very small portion of 0.2% annual chance floodplain in the northernmost part of town, but none of it is developable; either on a golf course or in the Pleasant Grove Ditch. Code 11.7.10 addresses zoning for environmental hazards, including floods.	June 2020	Chandler Goodwin, City Manager
Eagle Mountain	No Special Flood Hazard Area		Ifo Pili, City Administrator
Elk Ridge	No Special Flood Hazard Area		Royce Swensen, City Recorder
Fairfield	No Special Flood Hazard Area		n/a
Genola	Participating in NFIP. Genola adopted a Flood Damage Prevention Ordinance in 2020. Floodplain is directly on or close enough to White Lake that development is not likely.	June 2020	Lucinda Thomas, City Clerk
Goshen	Not participating in NFIP. Goshen doesn't currently have any floodplain in city boundaries.		Mayor Staheli
Highland	Participating, incorporated 2021 NFIP updates, has projects for both rivers in city. Highland has a Flood Damage Prevention Ordinance as well as Provisions for Flood Damage Prevention.		Nathan Crane, City Administrator
Lehi	Participating in NFIP, has code sections for Flood Damage Prevention and Provisions for Flood Hazard Reduction as well as additional requirements for the Utah Lake Shoreline and Jordan River Protection zones.	June 2020	Jason Draper, Ben Hunter, Pallavi Pathak
Lindon	Participating in NFIP, has code for Flood Damage Prevention, Storm Drainage and Flood plans, and Methods of Reducing Flood Losses.	June 2020	Michael Florence, Planning Director

Mapleton	Participating in NFIP. Mapleton has a Flood Damage Prevention Ordinance and has several small projects and development standards designed to capture the first inch of water as it cannot discharge water to Springville.	June 2020	Cory Branch, City Administrator
Midway City	Participating in NFIP, has a Flood Damage Prevention Ordinance as well as Midway City Floodplain Overlay zones and a Sensitive Lands Overlay Zone that provides additional protection for streambeds and other flood-prone areas (Chapter 16.14) Any residential construction within 50 feet of a delineated flood zone shall have the lowest floor elevated 18 inches above the base flood elevation as shown on the FIRM and no construction is allowed within 50 feet of a floodplain in large-scale subdivisions.	2012	Michael Henke, City Planning Administrator
Orem	Participating in NFIP. City code sections 7, 10, and 17 address development standards in the floodplain, a Flood Damage Prevention Ordinance, and Supplementary Design Standards for high-risk areas.	June 2020	Planning Manager Jason Bench
Payson	Participating in NFIP, has a Flood Damage Prevention and Sensitive Lands Ordinance with additional requirements for lands near streambeds.	June 2020	City Engineer Travis Jockumsen
Pleasant Grove	Participating in NFIP, has Flood Damage Prevention and Sensitive Lands ordinances.	June 2020	Engineer Marty Beaumont
Provo	Participating in NFIP and CRS, adopted 2020 FIRMs, study of Provo River levees and Utah Lake underway. The General Plan has a Flood Hazard & Control and Environmental Hazards section, as well as sections of code for Floodplain Management and Development Standards.	June 2020	Robert Mills
Salem	Participating in NFIP and has adopted most recent FIRMs. Has a Flood Damage Prevention section of code, but there is more flooding risk at the base of canyons and from canals than in the 100-yr floodplain. Development code reads, "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."	June 2020	Ryan Steeley
Santaquin	Participating in NFIP, has a section of code for development in Floodplain Areas	June 2020	Community Development

			Director Jason Bond
Saratoga Springs	Participating in the NFIP, though there are no Special Flood Hazard Areas. The City recently completed a storm drainage study of the entire geographic area of the City. This study indicates areas more susceptible to flood damage and makes recommendations concerning the correct locations of detention ponds, storm channels and culvert facilities. The City will be installing these improvements over the next 10 years, as needed, to accommodate growth in existing and future neighborhoods. The City has also had the practice of trying to raise awareness of issues like flooding so that you can take whatever steps you need to ensure maximum protection. The City has already made or required developers to make improvements to install storm drain ponds, underground drain systems, and open storm channels leading to Utah Lake. The City also has several regional park facilities planned of over twenty (20) acres in size that will collect storm water during large storms. These facilities are all designed to divert and collect water away from residential areas. The City also requires Floodplain Development Permits (FDPs) any time that fill or structural improvements are proposed in the regulatory floodplain. The regulatory floodplain is that area shown on the approved FEMA Flood Insurance Rate Maps (FIRMs). These maps are available on the City website (see quick links) or at FEMA's Website. More complete and detailed information on floodplain management regulations and procedures can be found in Section 18.02 of the City Code." 4.4.3 Goals to reduce/avoid long-term vulnerabilities to the identified hazards (Requirement §201.6(c)(3)(i)) Mitigation of vulnerabilities in the long-term will be done in the following four ways: a) Mitigation options for currently known hazards are listed in Table 4.1. Table 4.1 provides a summary of currently identified hazard mitigation actions over the next ten years (2017 to 2026). This is the same table as in the MAG plan (since the City provided this table to MAG). b) Mitigation measures may be incorporated into capital improvement plans. Hazard mitigation is achieved over the long term by incorporation of hazard mitigation into capital improvement projects, as previously described in Section 4.3. c) Mitigation measures will be accomplished by participating in other mitigation regional actions in the MAG plan (not relisted here).	No Special Flood Hazard Area	City Engineer Jeremy Lapin

	d) Mitigation measures will be accomplished by incorporating mitigation actions in the State of Utah Plan, as described in Attachment E (not relisted here). As recommended by FEMA (in comments dated August 17, 2017) future plan updates may incorporate master planning updates and other updated plans, such as transportation corridor and storm water plans. Future plan updates to the City's Plan (done every five years) may also incorporate future MAG and State of Utah Plan updates, as appropriate.		
Spanish Fork	Participating in NFIP, Section 8.32 of City Code deals with Flood Control.	June 2020	Surveyor Travis Warren
Springville	Participating in NFIP, has a Flood Damage Prevention Ordinance and Floodplain Overlay Zone, and has projects underway to move homes out of the 100 yr floodplain.	June 2020	Engineer Jeff Anderson
Utah County	Utah County participates in the NFIP and uses the latest FIRMs. It is involved in multiple flood mitigation studies and projects and has Flood Protection and Critical Environmental Zone ordinances.	June 2020	Zoning Director Bryce Armstrong
Vineyard	Participating in NFIP, section 15 of the zoning code is a Flood Damage Prevention ordinance. There are no structures in the floodplain.	June 2020	Building Official George Reid
Woodland Hills	Participating in NFIP, City Code chapter 10 is the Flood Damage Prevention Ordinance and chapter 9 is a Flood Hazard and Natural Hazard Study requirement for new development in hazard-prone areas.	June 2020	Public Works Director Corbett Stephens

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

Assessing Vulnerability: Addressing Repetitive Loss Properties

There are 2 repetitive loss facilities, one each in Alpine and Provo. Alpine has done extensive work around their facility.

History

Following are the narratives from a few of the more damaging floods/flash floods in Utah County. Flooding following fire is a common theme.

Santaquin, 9/12/2002

\$3,200,000

Heavy rains over several days caused flash flooding and mudslides below a burn area in Santaquin. The rain also caused a canal to overflow its banks in the same area, making conditions even worse. An estimated 3 million dollars damage was done to to about 40 homes and several vehicles as mudslides up to 7 feet deep moved down the hillside. No injuries were reported.

Utah County, 9/7/2013

\$2,943,600

Heavy rain caused flash flooding across much of urban Utah County, with multiple locations recording 0.6-0.8 inches of rain in only 15 minutes. The most significant damage from flooding was reported in Provo, Orem, Payson, and Santaquin. Street flooding was widespread and some roads incurred major damage, with the worst damage occurring at 900 North and Grand Avenue in Provo, where water undercut and washed out a large portion of the asphalt road. Debris from the storm was scattered across most local roadways, taking several days to clean up, and even closed some roads for a period of time. Flowing water caused also caused significant damage to large concrete stairs at Lions Park in Provo. At University Mall in Orem, water quickly filled the parking lot, submerging many cars in more than a foot of water.

Residential areas also received significant flood damage. In Provo, at least 25 homes had major damage, with more than 50 receiving minor damage. In Orem, approximately 30 homes received flood damage. In Santaquin, about 30 homes had flooding a foot deep or more, while about 30 other homes had flooding with less than a foot of water. Water wasn't the only problem in Santaquin, as the storm drainage system became overwhelmed, and raw sewage flowed into many homes.

Finally, the flooding also impacted Timpanogos Cave National Monument, where heavy rain and associated debris stranded 150 hikers for several hours, before rangers were able to clear a path and rescue them. The Monument was closed for two full days while debris was cleaned up from both the hiking trails and nearby State Route 92.

Bald Mountain and Pole Creek, 10/7/2018

The Bald Mountain and Pole Creek Fires started on August 24, 2018 and September 6, 2018, about 15 miles south of Provo, Utah in the Uinta-Wasatch-Cache National Forest. The relative risk of both fires was determined to be low and they were monitored until September 10 when weather changes brought strong winds and a series of Red Flag Warnings. The two fires soon merged and burned together until they were fully contained on October 7, 2018. The Bald Mountain Fire caused mandatory evacuations of Elk Ridge

and Woodland Hills. The Pole Creek Fire triggered mandatory evacuations for the Covered Bridge and Birds Eye communities, along with Diamond Fork and Right Fork Hobbie Creek Canyon. The two fires combined resulted in a total of 120,851 acres burned.

As a result of the burn severity, the potential for flash flooding and debris flow was high in some areas; threatening critical infrastructure, watershed, and the safety of residents. Utah County utilized the Emergency Watershed Protection Program to fund mitigation projects in multiple locations across the County. The project was broken up into 7 separate Damage Survey Reports and 6 different project areas including Utah County, Payson, Salem, Elk Ridge, Spanish Fork, and Woodland Hills. Major areas of concern included Diamond Fork, Lake Fork, Bennie Creek, Nebo Creek, Santaquin Canyon, and drainages near Spring Creek. The following projects were included in the application, sponsored by Utah County:

DSR 1 – Santaquin City/Utah County

1. Summit Creek - stream rehabilitation and debris removal
2. Santaquin Eastside Park - debris removal and installation of various types of silt fence
3. Crooked Canyon/Picayune Canyon – drainage and channel rehabilitation, earthen berm and rock riprap as well as installation of various types of silt fence
4. Santaquin Debris Basin - sediment removal

DSR 2 – Payson City/Utah County

1. Peteetneet Creek – stream rehab items including rock riprap, gabion baskets, earthen berm, culvert rehabilitation, channel cleaning and debris removal, and various types of silt fence
2. Payson Debris Basin – sediment removal

DSR 3 – Elkridge City

1. Loafer Canyon – earthen berm construction, installation of various types of silt fence, channel cleaning and debris removal

DSR 5 – Spanish Fork City

1. Crab Creek Spring – collection protection including installation of various types of silt fence and stream rehab including rechannelization, rock riprap, earthen berm, and culvert rehabilitation

DSR 6 – Woodland Hills City

1. Drainage rehabilitation including various types of silt fence installation, debris removal, rock riprap, channel cleaning and debris removal, and earthen berm

DSR 7 – Utah County

1. Nebo Creek - stream rehab items including rock riprap, gabion baskets, earthen berm, culvert rehabilitation, channel cleaning and debris removal, and various types of silt fence
2. Nebo Bridge – inlet and outlet protection control utilizing various types of silt fence and rock riprap, removal of debris
3. Eagles Landing - drainage and channel rehabilitation, earthen berm and rock riprap as well as installation of various types of silt fence
4. Diamond Fork - drainage and channel rehabilitation, earthen berm and rock riprap as well as installation of various types of silt fence
5. Thistle Debris Basin – sediment removal

Utah County is currently working toward additional mitigation projects through the Watershed Operations Program by conducting environmental studies to determine more permanent and long term solutions to reduce flooding and debris flows affecting various communities.

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

Dam Failure

Although there are no recorded dam failures in Utah County, there are several high risk dams. Each has its own emergency action plan and is regularly inspected. See waterrights.utah.gov DamView for more information or the Regional Hazards section of this plan for an assessment of Deer Creek and Jordanelle dams.

Name	Miles to first downstream town	First downstream town	County
Battle Creek	0.2	Pleasant Grove	Utah
Big East	10	Payson	Utah
Box Lake	11	Payson	Utah
Dry Creek	3	Lehi	Utah
Grove Creek	0.1	Pleasant Grove	Utah
Highland Northwest Irrigation	0	Highland City	Utah
Highland Pressure Pond	0	Highland City	Utah
Hobble Creek Debris Basin	2	Springville	Utah

Israel Canyon	0	Saratoga Springs	Utah
Lehi Sandpit	0	Lehi	Utah
Lindon Dry Canyon Debris Basin	1	Orem	Utah
Lindon Irrigation Project I	0.1	Lindon City	Utah
Lindon Irrigation Project II	0.1	Lindon City	Utah
Maple Lake	8	Payson	Utah
Rock Canyon Debris Basin	0.1	Provo	Utah
Santaquin Debris	1	Santaquin	Utah
Santaquin Pressure Irrigation Reservoir	0	Santaquin	Utah
Saratoga Springs Secondary Water Pond	0	Saratoga Springs	Utah
Silver Lake Flat	12	American Fork	Utah
Slate Canyon Debris Basin I	0.1	Provo	Utah
Slate Canyon Debris Basin II	0.1	Provo	Utah
Spanish Fork Pressure Irrigation Pond	1	Spanish Fork	Utah
Tibble Fork	1	American Fork	Utah
Winward	8	Payson	Utah

Mitigation

Strategies include:

Incorporate flood mitigation into local planning by developing a floodplain management plan, mitigating hazards during planning, establishing a “green infrastructure” program to link greenways, and obtaining easements for water retention and drainage

Form partnerships to support floodplain management such as a regional watershed council or citizen committee to discuss issues and recommend projects.

Limit or restrict development in floodplain areas by providing incentives to develop elsewhere, protecting buffers around water resources, limiting impervious surfaced within developed parcels, or prohibiting development in the floodplain.

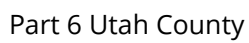
Adopt and enforce building codes and development standards such as the International Building Code and increasing “freeboard” requirements aka the number feet above base flood elevation that new building must have.

Improve stormwater management planning by completing stormwater drainage studies and master plans, regulating development in upland areas to reduce runoff, and encouraging low impact development techniques.

Adopt policies to reduce runoff such as more trees, on-site retention for stormwater and firefighting, and encouraging porous pavement and vegetation in parking areas.

Use natural systems such as preserving wetlands and riverbanks, restoring vegetation, acquire open space in targeted areas, and offer density bonuses to developers for leaving flood-prone areas vacant.

Protect and enhance infrastructure and critical facilities by elevating roads and bridges, floodproofing water treatment facilities, stabilizing shoulders and embankments, installing backup generators, expanding culverts, and require new critical facilities be built outside the floodplain.



Overview

Fire is a natural part of every ecosystem, but decades of wildland fire suppression during a historically cooler time period resulted in a buildup of fuels (vegetation) and development in wildfire-prone areas. With the 2010's megadrought, increased outdoor recreation, development pressure, and climate change the likelihood of damaging fire is increasing.

Though we have more assets in high-risk areas, the technology for early warning and fire-hardened homes has also advanced. This combined with better planning and enforcement can improve protection of assets already in place.

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. Burn scars near populated are particularly difficult to manage, contributing to landslides and floods during rain events.

Profile

Frequency	Multiple wildland fires occur in Utah County Every year.
Severity	Moderate/Limited
Location	Hillsides and mountainous areas, vegetated areas near rivers, open grass and rangelands.
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	Highly Likely 70 fires required management in the past 6 years alone

Development Trends

As development occurs on the bench areas of Utah Valley more homes will be in danger of wildfire. Utah County has one of the greatest percentages of developable lands in the

wildland-urban interface in the state. 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 losses.

History

Following are a few of the most significant since 2016. More than half of fires are human caused and even relatively small fires, if near critical facilities, can be quite costly. Fortunately, no lives have been lost and few structures destroyed in the past decade.

Incident Name	Start Date	\$ Spent Fighting Fire	Acres	Fire Cause	Specific Cause
Coal Hollow	August 4, 2018	\$14,832,358	24,571	Natural	Lightning
Bald Mountain	August 24, 2018	\$9,397,458	18,603	Natural	null
Bennion Creek	June 4, 2021	\$6,175,979	8,298	Natural	Lightning
William	September 6, 2020	\$5,733,509	5,832	Human	Fireworks (Consumer or Personal Use)
Range	October 17, 2020	\$2,728,834	3,379	Human	Fire Arms Use
Tank Hollow	August 11, 2017	\$1,235,985	1,200	Natural	Lightning
Knolls	June 28, 2020	\$1,081,424	12,584	Human	null
Ether Hollow	September 7, 2020	\$1,051,368	848	Human	Fire Arms Use
Round Peak	July 15, 2019	\$1,026,916	236	Human	Campfire
Pole Canyon	July 15, 2020	\$767,634	487	Human	Other, Unknown
Battle Creek 2	September 12, 2020	\$745,886	188	Human	Default
Goose Point	August 21, 2019	\$696,485	8,908	Unknown	Other Small Equipment
Goshen	September 13, 2020	\$691,557	372	Human	null

Battle Creek	August 16, 2020	\$621,704	40	Human	Default
Alaska	July 30, 2019	\$584,122	489	Unknown	Default

The Coal Hollow in 2018 began with a lightning strike in southeast Utah County and quickly grew to thousands of acres in hot, dry conditions. The fire prompted evacuations in Utah, Sanpete, and Carbon counties and required hundreds of firefighters to contain. It threatened hundreds of homes, rail lines, and I-6, a major trucking route. The fire also contributed to unhealthy air quality in adjacent counties, stifling summertime recreational activity. The fire was eventually suppressed as winds died down, consuming a total of 25,000 acres and costing over \$14 million to fight, not to mention lost productivity due to the closure of I-6 and evacuations. About a year after the fire, the Utah National Guard flew over the burn scar with the director of the Department of Air Quality, Congressmen Curtis and Ellertson, Utah National Guard Generals, Engineers and others.

Worries about secondary hazards (flood, debris flow, and mudslides) had the National Guard and residents staging equipment such as jersey barriers and sandbags along high-risk areas. A mudslide did close Diamond Fork Road temporarily.

(Deseret News, Daily Herald, and Utah National Guard)

"The Bald Mountain and Pole Creek Fires started last year on August 24 and September 6 respectively about 15 miles south of Provo, Utah in the Uinta-Wasatch-Cache National Forest. Both fires were initially managed in a less than full suppression mode — allowed to spread within lines drawn on a map. Rainfall amounts ranging from 1.3" to 2.3" on August 25 put a damper on the fire activity, but within days the Energy Release Component had returned to the 90+ percentile range. Meanwhile the area had been classified as in Severe Drought by the Drought Monitor.

"The weather changed on September 10, bringing strong winds and a series of Red Flag Warnings causing the two fires to burn together. The final size was 120,851 acres.

"The Bald Mountain Fire caused mandatory evacuation of two cities: Elk Ridge and Woodland Hills. The Pole Creek Fire triggered mandatory evacuations for the Covered Bridge Community of the Spanish Fork Canyon along with the Diamond Fork Canyon and the Right Fork Hobbie Creek Canyon areas." -Wildfire Today



Communities At Risk

The following list consists of communities throughout Utah that have been determined by wildland fire officials to be at risk from wildland fire. The “Overall Score” represents the sum of multiple risk factors analyzed for each community. Examples of some risk factors are fire history, local vegetation, and firefighting capabilities. The Overall Score can range from 0 (No risk) to 12 (Extreme risk). This score allows Utah’s fire prevention program officials to assess relative risk and create opportunities for communications with those communities on the list. Bolded communities are those with a Community Wildfire Preparedness Plan.

Community Name	Overall Score	Community Name	Overall Score
Payson Canyon	10	Soldiers Summit Development	8
Cedar Fort	9	Spanish Fork Canyon	8
Dream Mine	9	Springdell	8
Elk Ridge	9	Tibble Fork	8
Silver Lake	9	Alpine Cove	7
Vivian Park	9	Elberta	7
Woodland Hills	9	Fairfield	7
Alpine	8	Genola	7
Cedar Hills	8	Goshen	7
Covered Bridge	8	Lindon	7
Diamond Fork Canyon	8	Mapleton	7
Eagle Mountain	8	Payson	7
Highland	8	Pleasant Grove	7
Hobble Creek	8	Salem	7

Lehi	8	Santaquin	7
Lofer Canyon	8	Spanish Fork City	7
Orem	8	Spring Lake	7
Provo	8	Sundance	7
Sheep Creek	8	Vineyard	7
Soldiers Summit Development	8	American Fork Canyon	6
		Saratoga Springs	6
		Springville	6
		Wanrhodes Basin	6
*Bolded Communities have developed a Community Wildfire Preparedness Plan with FFSL			

Mitigation

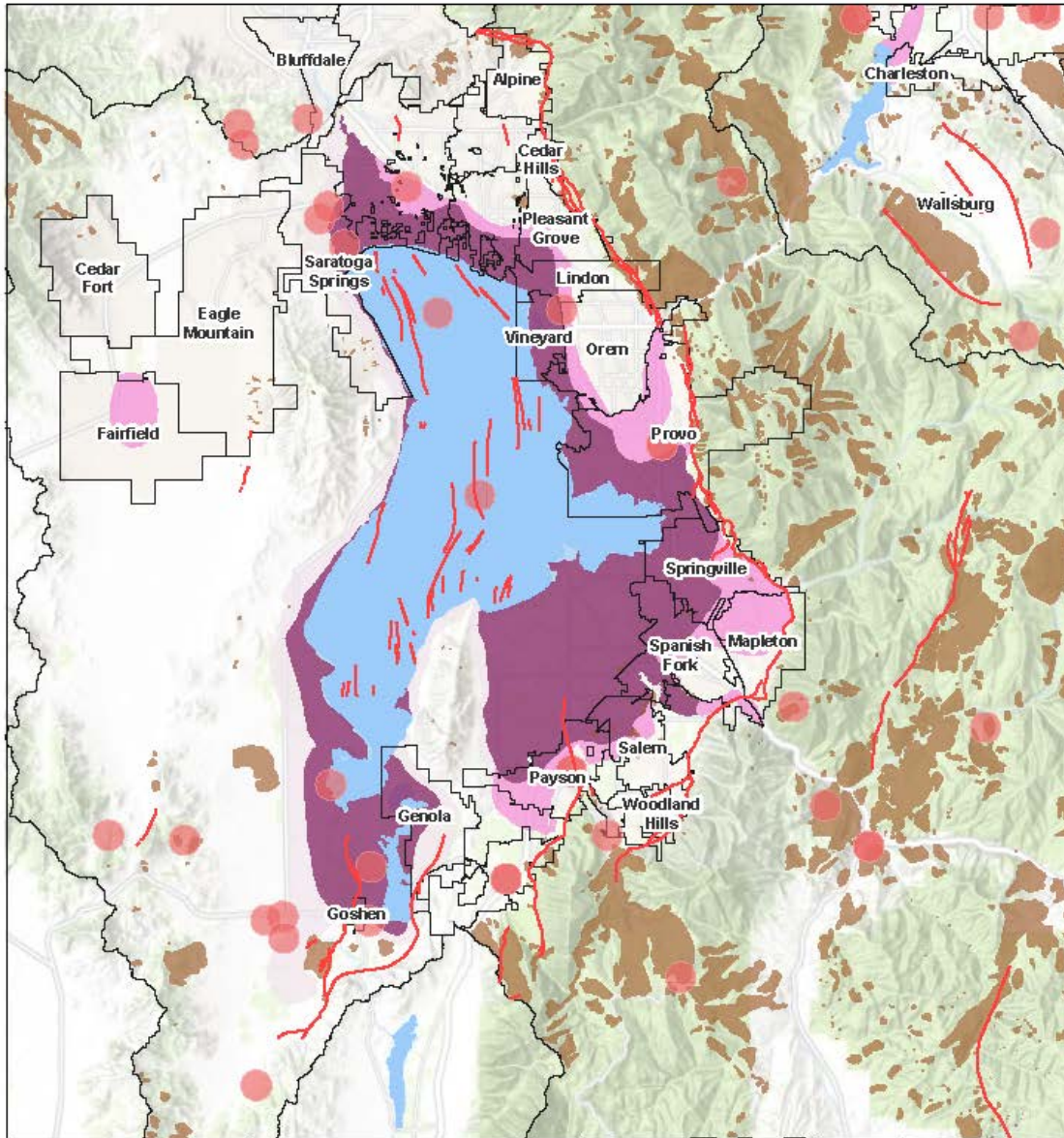
The FFSL has helped communities develop Community Fire Plans. According to the FFSL, the purpose of community fire planning is to:

- 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

Other strategies include limiting development in the Wildland Urban Interface, fuel management, prescribed burns, hardening buildings against fire with appropriate shingles, vent covers to prevent embers entering home, maintaining an emergency water supply and appropriate water pressures, using appropriate plantings around homes, and much more. See wildfirerisk.org or FEMA's [Strategies handbook](#) for a more complete list.

Landslide

Earthquake Hazards in Utah County



12/27/2021

- Earthquake Faults
- Historic Earthquakes
- Landslide
- Moderate
- High
- Water
- Liquefaction
- Low

1:600,000
0 3.25 6.5 13 mi
0 5 10 20 km

Sources: Esri, HERE, DeLorme, increment P Corp., NPS, NRCAn, Ordnance Survey, © OpenStreetMap contributors, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatasys, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user

MAG

Overview

Landslides are common natural hazards in Utah that occur when the pull of gravity becomes greater than the cohesion of soil. Land movement can occur without warning and can result in destructive, costly outcomes. Various types of landslides in Utah are debris flows, slides, and rockfalls.

Steep slopes, mountainous terrain, rock types, and narrow, debris-choked canyons all contribute to our region's susceptibility to landslide hazards. Wildfire can remove stabilizing vegetation and increase landslide risk. Many hillslopes are prone to mass movement, particularly where development has taken place on existing landslides or where grading has modified a slope and reduced its stability. Therefore, historical landslides, prehistoric landslides, and steep slopes prone to mass movement must be thoroughly investigated prior to development activities, along with regional groundwater and landscape and other irrigation activities. Excessive irrigation can easily cause a neighbor near or on a slope to lose their home from a landslide by elevating the groundwater table.

The foothills and alluvial fans on the bench areas of Utah County are quickly developing. 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	Critical, several structures have been condemned and major transportation routes temporarily closed
Location	Along most benches and hillsides, especially near burn scars.
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: 25%

Development Trends

Development along the foothills and bench areas is very desirable and as more development occurs, more homes will be at risk for landslide damage. As more of the county land is developed, marginal areas with problematic 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 landslides, including Thistle
Utah	1/1/1983	\$8,603,666.52	SHELDUS	
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 landslides, 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	
Utah County, Tank Hollow & Birdseye	9/8/2019	\$149,000	NOAA	Heavy rain over the Tank Hollow & Pole Creek Fire burn scars produced a debris flow across U.S. Highway 6 at milepost 202.

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 impassable 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 shipments 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 Marysville 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 McInerney 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 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.

Mitigation

In Utah County, most recent mass movement is the result of rain on burn scars, and the strategies to for fire will also apply to this secondary hazard.

Nearly all recent landslides have occurred as reactivations of pre-existing landslides. Some strategies include:

Prohibit building on steep slopes, require thorough investigations and geotechnical studies for buildings in areas prone to landslides, and prevent over-irrigating. The use of very-low water xeriscape landscaping and/or smart irrigation controllers that adjust the amount of water applied to landscapes based on weather, plant/turf, and soil data, can significantly reduce the amount of excess water that percolates through the soil as groundwater and save money.

- Creating a plan to implement reinforcement measures in high-risk areas.
- Defining steep slope/high-risk areas in land use and comprehensive plans and creating guidelines or restricting new development in those areas.
- Creating or increasing setback limits on parcels near high-risk areas.
- Locating utilities outside of landslide areas to decrease the risk of service disruption.
- Restricting or limiting industrial activity that would strip slopes of essential top soil.
- Incorporating economic development activity restrictions in high-risk areas.

See FEMA's [Strategies handbook](#) for a more complete list.

Earthquake

Overview

Earthquakes occur when tectonic plates suddenly release tension built up over decades of strain. The Wasatch Fault has a strong earthquake about every 300 years and we are "due" for another. While some scenic homes are built directly on a fault, the way a building is constructed and the stability of soils underneath are a large factor in its resilience. Pre-1990's brick homes are usually unreinforced and very brittle, posing a great risk to occupants during a quake.

Liquefaction occurs when loose soils such as those at the mouth of a canyon or near a lake begin to act like a liquid when subject to prolonged shaking.

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

Losses	2.4 deaths annualized, 32 injuries annualized	\$24,000,000 losses annualized
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Development Trends

Although Utah County faces rapid development, new buildings are designed to withstand earthquakes much better than pre-1990s structures. Many of the older multi-story unreinforced masonry structures, where immediate deaths often occur, are city buildings and schools that are being rebuilt to seismic standards.

Envision Utah recently looked at different growth scenarios and what percentage of Utah County would be affected by a seismic event. Their analysis found that focusing development west of the lake will result in greater losses than working toward infill development.

As people move to Utah from areas without disasters they will need to be educated on the simple things that homeowners can do to reduce the impacts of an earthquake in their homes, such as securing heavy furniture and having flexible piping.

History

There have been few events of note in recorded history within Utah County, but a 2020 event in Magna, Salt Lake County, gave the state a glimpse of what could happen. The State of Utah has also put a few earthquake scenarios through its HAZUS software, yielding loss estimates and maps of potential damages on the Wasatch Front.

Magna Earthquake: Days after the US shutdown to slow the COVID 19 pandemic, a 5.7 earthquake struck Magna township in Salt Lake County. The most noticeable damages occurred in multi-story building such as the brick façade of a large commercial building, but several mobile homes were condemned and the Utah Department of Public Safety estimates \$70-100 million in public structure and infrastructure damage. Fortunately, no one was injured or killed and the public facilities were insured.

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

		5/6/1994
Diamond Fork Campground, Utah County	3.2	
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
Bluffdale	3.2	11/25/2016
Bluffdale	3.7	2/15/2019

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

Mitigation

Strategies include restricting building on known fault lines or steep slopes, requiring geotechnical studies for buildings on problem soils, retrofitting critical infrastructure, educating homeowners on retrofitting options and securing items to the wall, requiring large/reinforced foundations or piers in liquefaction areas, and many more. See **Utah Earthquake Safety** or FEMA's **Strategies Handbook** for more details.

Severe Weather

Overview

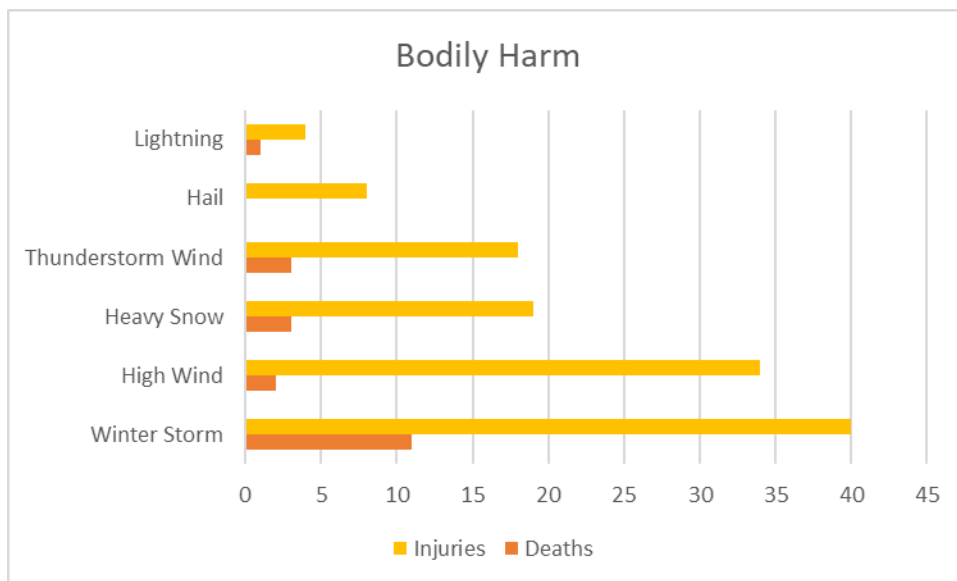
Utah County's mountainous terrain makes it particularly susceptible to Severe Weather, especially Winter Weather. Add to the topography those who seek snowy slopes for recreation and disaster can ensue, as seen in the table below. Avalanches, typically a voluntary risk, have caused the most deaths in 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 converted to urban.

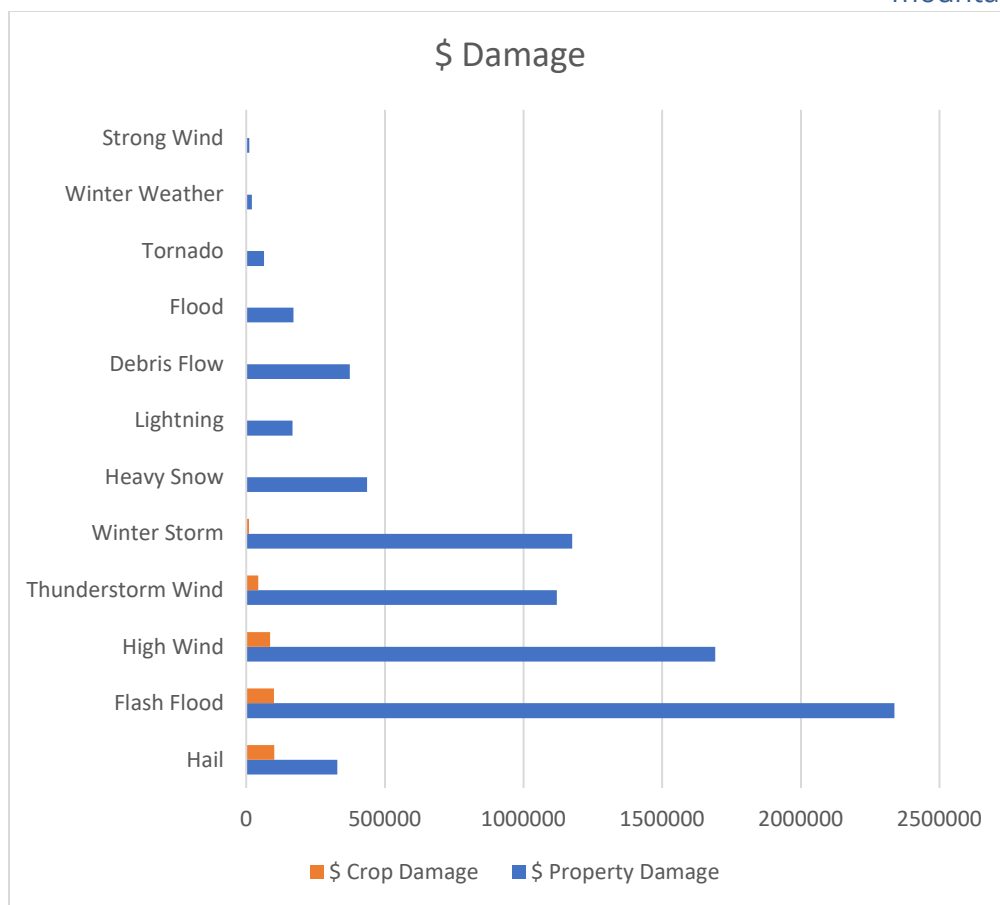
Profile

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

Row Labels	Deaths	Injuries	\$ Property Damage	\$ Crop Damage
Blizzard	0	0	0	0
Cold/wind Chill	0	0	0	0
Debris Flow	0	0	374000	0
Flash Flood	0	0	2338000	100000
Flood	0	0	170000	0
Hail	0	8	329000	101200
Heavy Snow	3	19	435500	400
High Wind	2	34	1691100	85800
Ice Storm	0	0	0	0
Lake-effect Snow	0	0	0	0
Lightning	1	4	166500	0
Strong Wind	0	0	11000	0
Thunderstorm				
Wind	3	18	1119600	44000
Tornado	0	0	64530	0
Winter Storm	11	40	1175000	10000
Winter Weather	0	0	20000	0
Grand Total	20	123	7894230	341400





Mitigation

For buildings: Adopt and enforce building codes related to roof snow loads and wind speeds. Require CO monitors.

For Infrastructure: Install redundancies in power lines, lightning protection and surge protection on critical infrastructure, and snow sheds over roadways.

For everyone: Educate homeowners on protecting water pipes during cold weather and travelling safely. Encourage participation in emergency alerts.

See FEMA's [Strategies handbook](#) for a more complete list.

Community 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 jurisdictions followed by an update of the community's mitigation strategies from the 2017 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. 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

The guiding factor in prioritizing mitigation strategies for local communities was the principle that mitigation should provide the ***greatest amount of good to the greatest number of people, after considering resources, staffing, and other constraints***. Probability of occurrence, past events, and damage estimates compiled during the risk assessment in this plan were heavily considered. Overall, each community individually considered their own capabilities, staffing, and resources as they prioritized their own mitigation strategies.

Utah County

Loss Estimates

Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	42,431	\$12,287,233	123.53	154.17	72.92
Fire Risk High	27,140	\$9,154,898	90.42	335.63	70.75
Fire Risk Moderate	18,775	\$5,605,592	75.31	285.05	78.31
Flood 1% Yearly Probability	910	\$229,828	5.72	30.92	1.73
Landslide	1,377	\$473,143	36.29	59.68	9.07
Liquefaction Moderate to High	70,362	\$20,556,665	272.45	409.51	180.53
Earthquake (Pre-1990 buildings)	2,459	\$597,467			

Utah County spends a great deal of time and money on wildland fire mitigation. It protects critical infrastructure such as waterways (Provo Canyon), airports, and evacuation routes. Wildfire has threatened water resources recently and triggered debris flows on de-vegetated slopes. We are also aware of the need to protect our resources from terrorism and have plans for doing so. The County Health Department is crucial for educating residents about preparing for natural disasters and improving the health of citizens at large so they are individually more resilient. We know that a large earthquake is likely in the next few decades and are building to code, gradually retrofitting and constantly educating to mitigate its damage. Utah County is one of the fastest-growing counties in the nation and we reduce the risk of fire to new buildings and infrastructure in an ever-expanding area with codes and guidelines for fire-hardened homes, seismic soundness, and adequate evacuation routes.

Hazard	Action	Priority	Timeline	Cost	Funding	Responsibility
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Participation in FFSL's Cooperative Wildfire System program, including brush removal, education, and a host of other prevention measures	Fire	High	Ongoing	55k/yr	Utah County, cities/towns	Utah County and participating cities
Replace roofs and targeted chipping program in Sundance	Fire	High	1-3 yrs	30k for chipping	Utah County, homeowners	Utah County
Perscribed burns in Hobble Creek	Fire	High	Ongoing	TBD	Utah County	Utah County
Install/improve the exit out the east end of Springdell in cooperation with UDOT on the Upper Dell dirt road across USFS property in both directions i.e. up Provo Canyon to the east or west to Squaw Peak Road) or the Lower Dell road that would exit onto Provo Canyon Road.	Fire	Mod	2-4 yrs	TBD	Utah County, UDOT	Utah County, UDOT, Springdell residents
Create and improve dipping sites near Covered Bridge	Fire	High	1-3 yrs	TBD	Utah County, DNR	Utah County, DNR
Educate on water conservation and good watering practices	Drought	Mod	Ongoing	TBD	Utah County	Utah County, Utah State
Evacuation planning, especially for inhabited canyons	Fire, All	Mod	Ongoing	MInimal	Utah County	Utah County, community
Construct an additional detention basin at the southeast end of Mapleton	Flood, debris flow	High	1-2 yrs	300k	Utah County, Grants, Mapleton	Utah County

Avalanche controls, including snow sheds and fences, in Provo Canyon	Avalanche, winter weather	High	Ongoing	TBD	UDOT, Utah State	UDOT
Purchase more chipping machines	Fire	Mod	1-2 yrs	\$65k each	Utah County	Utah County
Retrofit Historic Courthouse	Earthquake	Mod	5-10 yrs	10 million	Utah County, BRIC, other grants	Utah County
Update community wildfire protection plan	Fire	Mod	1 yr	Staff time	Utah County	Utah County
Participate in updating FIRMs for Utah Lake	Flood	Mod	1-3 yrs	Staff time	FEMA	FEMA

2017 Strategies Update							
Hazard	Action	Priority	Timeline	Cost	Funding Sources	Estimated Cost	Completed?
Wildfire	Fuel Mitigation plan with AF canyon	High	1 year	Minimal	Local Cash	Local Government	Yes
Flooding/ Drought	Highline Canal Retrofit	High	3 years	TBD	Local Cash, Water Conservancy District	Local Government, Water Conservancy District	In Progress
Flooding	Canal assessment with Provo City	High	2 years	TBD	Local Cash	Local government, Provo City	In progress
Terrorism	Natural Resource Protection	High	Ongoing	TBD	Local Cash, grants	Local government	Yes

All Hazards	Implement Early Notification System	High	1 year	TBD	Local Cash	Local Government	Yes
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Alpine

Loss Estimates

Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.00	0.00	0.00
Fire Risk High	789	\$429,868	0.00	0.08	0.00
Fire Risk Moderate	552	\$241,710	0.09	0.55	0.00
Flood 1% Yearly Probability	8	\$4,805	0.00	0.02	0.00
Landslide	5	\$2,433	0.00	0.00	0.00
Liquefaction Moderate to High	0	\$0	0.00	0.00	0.00
Earthquake (Pre-1990 buildings)	829	\$201,953			

Statement of Vulnerabilities: Alpine's chief concern is the increased probability of post-fire debris flows on de-vegetated hills along its east side. There is very little land left to develop and no new buildings planned in high-risk fire areas with the hillside ordinance.

Action	Hazard	Priority	Timeline	Cost	Potential Funding	Responsible Party
Require geotechnical reports for any proposed development on problem soils or steep slopes	Landslide	Mod	Ongoing	Minimal	Developer	Local gov, Developer

Restructure water rates	Drought	High	1 yr	Staff time	Local gov	Local gov
Educate residents on disaster preparedness and promote the Great Utah Shake Out	Earthquake, All	Mod	Ongoing	Staff time	Local gov	Local gov
Maintain foothill trails as access roads for vegetation maintenance and fire response	Fire	High	Ongoing	10k	Local gov	Local gov
Improve drought restrictions plan	Drought	Mod	1-2 yrs	Staff time	Local gov	Local gov
Educate homeowners on firewise practices, especially defensible space	Fire	Mod	Ongoing	Staff time	Local gov	Local gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Funding	Responsibility	Completed?
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	Not necessary, none built before 2000
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.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes, ongoing
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	Yes
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.	Ongoing	1 year	Minimal	Local Cash, Grants	Local Government	Yes
Drought	Identify drought assessment criteria. Notify residents of drought conditions.	Medium	2 years	TBD	Local Cash	Local Government	Yes

American Fork

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	5,777	\$1,711,775	18.75	9.52	6.99
Fire Risk High	418	\$277,078	3.61	0.58	0.39
Fire Risk Moderate	707	\$299,228	2.20	1.43	1.94
Flood 1% Yearly Probability	19	\$2,923	0.39	0.01	0.00
Landslide	180	\$55,588	0.49	0.00	0.00
Liquefaction Moderate to High	2,973	\$1,091,471	17.28	8.59	6.39
Earthquake (Pre-1990 buildings)	4,584	\$1,213,659			

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 are studying with the Army Corps of Engineers.

Action	Hazard	Priority	Timeline	Cost	Potential Funding	Responsibility
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Install secondary water metering	Drought	High	2 yrs	9 million	Bureau of Reclamation, Local Cash	Local Gov
Improve outflow and grades for the debris basin	Flood	High	1-2 yrs	250k	Debris Basin board (American Fork, Highland, and Cedar Hills)	Debris Basin board (American Fork, Highland, and Cedar Hills)
Repair and expand culverts on American Fork River	Flood	High	Ongoing	TBD	Local gov	Local gov
Adopt 2021 NFIP maps and update ordinances	Flood	Mod	1 yr	Staff time	Local gov	Local Gov
Inventory historic City Hall for possibility of earthquake retrofits	Earthquake	Mod	2-5 yrs	TBD	Local gov	Local gov
Complete an environmental assessment for the watershed and a plan to better assess the vulnerabilities and determine a procedure to mitigate flooding issues.	Flood	High	2-3 yrs	400k	Local gov, NRCS	Local gov, NRCS

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Flood	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, most buildings are new. City Hall should be checked.

Landslide, Drought	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes
Flood	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	Somewhat
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

Cedar Fort

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.00	0.00	0.00
Fire Risk High	45	\$9,671	0.85	0.00	0.00
Fire Risk Moderate	83	\$14,398	0.23	0.00	0.00
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	0	\$0	0.00	0.00	0.00
Liquefaction Moderate to High	0	\$0	0.00	0.00	0.00
Earthquake (Pre-1990 buildings)	90	\$11,672			

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. The only real development pressure comes from land on the east side that property owners request be annexed into Eagle Mountain.

Action	Hazard	Priority	Timeline	Estimated Cost	Potential Funding	Responsibility
Participate in Utah County Chipping program to reduce fuels	Fire	High	Ongoing	Volunteer hours	Local gov, Utah County	Local gov
Educate firewise principles such as defensible space during the 24th of July celebration and in the water bill.	Fire	Mod	Ongoing	Staff time	Local gov	Local gov
Encourage participation in CERT.	All	Mod	Once every 4 years	Minimal	Local gov	Local gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Earthquake	Provide CERT classes	High	1 year	Minimal	Local Cash	Fire Department, Local Government	No
Wildfire	Fuel Thinning	High	2 years	Minimal	BLM, DNR, SITLA	BLM, DNR, SITLA	Yes, as needed
Wildfire	Education (Pamphlets at 24 July Celebration, notices in Water Bill)	High	Yearly	Minimal	Local Cash, Forest Service	Local Government, Forest Service	Yes, with Fire Department

Cedar Hills

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.22	0.13	0.00
Fire Risk High	1,156	\$363,034	0.18	3.34	0.00
Fire Risk Moderate	164	\$51,781	0.00	0.08	0.00
Flood 1% Yearly Probability	0	\$0	0.14	0.00	0.00
Landslide	100	\$29,644	0.00	0.77	0.00
Liquefaction Moderate to High	0	\$0	0.00	0.00	0.00
Earthquake (Pre-1990 buildings)	208	\$59,572	NA	NA	NA

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 and modified piping to include an upgraded supply line with locked joint pipe. Regarding wildland fire, many homes are in the Wildland Urban Interface. Cedar Hills is improving the access road that serves as a fire break and improving the codes for any development in the WUI.

Action	Hazard	Priority	Timeline	Estimated Cost	Potential Funding	Responsibility
Install secondary water metering	Drought	High	2 yrs	2.5 million	Bureau of Reclamation, Local Cash	Local Gov
Improve Wildland Urban Interface development standards with defensible space, roofing materials, etc.	Fire	High	1yr	Staff time	Local Gov	Local Gov

Encourage xeriscaping and Central Utah Water Conservancy District's localscapes	Drought/Fire	High	1 yr	Staff time	Local Gov	Local Gov
Improve maintenance roads and Bonneville shoreline trail used as a firebreak and access points for fire response vehicles	Fire	High	Ongoing	5k	Local Gov/American Fork Fire Dept	Local Gov
Clear ditches and remove dead vegetation	Flood, Fire	Mod	Ongoing	15k	Local Gov	Local Gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Flooding	Storm Water/ Ditch System Cleaning	Medium	2 years	TBD	Local Cash	Local Government	Yes, ongoing
Earthquake	Participate in Great Shakeout	High	1 Year	N/A	Local Cash	Local Government	Yes
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk	Medium	1 year	Minimal	Local Cash, Grants	Local Government	No, in progress
Landslide	Update landslide mapping with UGS and USGS.	Medium	2 years	TBD	Local Cash, Grant	Local Government, USGS, UGS	No, coordination efforts fell through
Drought	Identify drought assessment criteria. Notify residents of drought conditions.	Medium	2 years	TBD	Local Cash	Local Government	Yes

Central Utah Water Conservancy District

Due to the sensitive nature and complexity of CUWCD assets, they performed an independent risk analysis to create and prioritize the following mitigation strategies. Contact Blake Buehler of CUWCD for more information.

Vulnerabilities: The future development of the CUWCD water system will mainly be with a strong emphasis on water conservation, planning of needed additional regional water supply facilities, and incorporation of natural hazard mitigation. The District will also continue in its current efforts to address and incorporate natural hazard mitigation (i.e., seismic upgrades/standards, lightning protection, backup power, wildfire – both direct and indirect effects, etc.) into future design and

construction projects whether they are for new facilities or for capital replacement projects. The following proposal is to help fulfill said efforts.

Priority	Mitigation Package: Facilities	BCR	Mitigation Description	Outside Contractor	In- House	CUWCD O&M	CUWCD CRP	CUWCD CIP	FEMA Grant	Timeline	Package Subtotal
1	Alpine Aqueduct Reach 1 Resiliency Project (Earthquake & Landslide): <i>Alpine Reach 1</i>	-	New Construction	X			X		X	1-3 Years	\$39.4 million
2	DACRWTP Pkg #1 (Tornado): <i>LOX & Vaporizers, Ozone Transformers, Substation</i>	>100	Nonstructural Retrofit	X			X		X	1-3 Years	\$248,649
3	DACRWTP Pkg #2 (Lightning): <i>Operations Bldg, Filter Bldg, FW & WWW Bldg, Rec Bldg, Pump Bldg</i>	>100	Nonstructural Retrofit	X			X		X	1-3 Years	\$159,564
4	DACRWTP Proj #3 (Earthquake): <i>15 MG Reservoir</i>	14.8	Structural Retrofit	X			X		X	1-3 Years	\$3,304,211
5	Olmsted Proj #2 (Avalanche): <i>Olmsted Diversion</i>	>100	Structural Retrofit	X			X		X	1-3 Years	\$231,088

6	CWP Pkg #1 (Earthquake): <i>Geneva Wells & Pony Express PS</i>	22.9	Nonstructural Retrofit	X	X	X	X		X	3-5 Years	\$2,210
7	Alpine Pkg #1 (Earthquake): <i>Alpine Reach 3, North Branch Pipeline</i>	3.3	Nonstructural Retrofit	X	X	X	X		X	3-5 Years	\$21,329
9	CWP Pkg #2 (Lightning): <i>Geneva Wells</i>	>100	Nonstructural Retrofit	X			X	X	X	3-5 Years	\$359,974
10	CWP Pkg #3 (Lightning): <i>Pony Express PS</i>	37.9	Nonstructural Retrofit	X			X	X	X	3-5 Years	\$716,408
14	Olmsted Pkg #6 (Earthquake & Landslide): <i>Olmsted Diversion, Olmsted Bifurcation Reservoir</i>	-	Geological Investigation	X			X			6-10 Years	\$80,212
15	Diamond Fork Pkg #1 (Landslide): <i>Spanish Fork & Sixth Water Flow Control Structures, Sixth Water Aqueduct, Diamond Fork Pipeline</i>	-	Geological Investigation	X			X			6-10 Years	\$505,952

17	General Pipeline #1 - Stockpile Materials	-	Material Stockpiling		X	X	X			6-10 Years	\$755,950
18	General Pipeline #2 - Training	-	Training	X	X	X				6-10 Years	\$19,538

Eagle Mountain

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.00	0.00	0.00
Fire Risk High	3,679	\$919,235	4.10	7.22	0.00
Fire Risk Moderate	1,774	\$388,039	2.54	9.57	0.00
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	0	\$0	0.00	0.00	0.00
Liquefaction Moderate to High	0	\$0	0.00	0.69	0.00
Earthquake (Pre-1990 buildings)	94	\$54,568	na	na	na

Statement of Vulnerabilities: Eagle Mountain's primary concern is wildland fire and the large-scale evacuations it might trigger. The Kiowa Valley subdivision is particularly at risk due to single-lane roads leaving the subdivision and main thoroughfares (SR73, Pioneer Crossing, and Porter's Crossing) would be overwhelmed. More people recreating in the hills also increases fire likelihood. Eagle Mountain works with the Kern River Pipeline and others to maintain firebreak trails. Eagle Mountain is attracting a great deal of development throughout. Because most development is recent, buildings and infrastructure are largely up to seismic and fire code, but new residents require education on water conservation, firewise practices, and

evacuation plans. The city would like to attract businesses and a hospital, in particular, to become less dependent on other commercial areas of the county.

Action	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Install backup generator at well house	All	High	2-3 yrs	300k	Local gov	Local gov
Upgrade backup generator at City Hall	All	High	2 yrs	200k	Local gov, grants	Local gov
Educate homeowners in WUI about firewise principles and notify at-risk residents	Fire	High	Ongoing	Minimal	Local gov	Local gov
Educate homeowners on good watering practices, how to reduce water use, and encourage xeriscaping	Drought	Mod	Ongoing	Staff time	Local gov	Local gov
Educate on earthquake preparedness, including Be Ready, CERT, yearly Shakeout drill, and monthly emergency meetings	Earthquake, All	Moderate	Ongoing	Staff time	Local gov	Local gov
Require multiple ways in/out of all new subdivisions	Fire, all	High	Ongoing	Minimal	Developer	Developer, Local gov
Maintain fire access roads that serve as Bike and OHV trails	Fire	Mod	Ongoing	Minimal	Local gov, OHV and Mountain Biking groups	Local gov, OHV and Mountain Biking groups
Maintain Kern River Pipeline firebreak and tree trimming	Fire, flood	Mod	Ongoing	None	Kern River Pipeline Co	Kern River Pipeline Co

Achieve Firewise Community Status	Fire	Mod	1-2 yrs	Staff time	Local gov	Local gov
Encourage hospital to be built in city limits	All	Mod	5-10 yrs	Unknown	Intermountain Healthcare, MountainStar Healthcare	Private Healthcare organization, Local gov encouragement
Update Emergency Operations Plan with a focus on evacuation routes and inform citizens	Fire, Earthquake	High	1 yrs	Staff time	Local gov	Local gov

2017 Strategy Update

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	No, no special flood hazard area
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No, all built after 1990
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.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes, ongoing for drought
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes, through CERT

							teams, Shakeout, Be Ready program, and monthly training meetings
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	Efforts fell through

Elk Ridge

Loss Estimates						
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles	
Dam Failure	0	\$0	0.00	0.00	0.00	
Fire Risk High	582	\$175,465	1.64	0.00	0.00	
Fire Risk Moderate	167	\$46,436	0.17	0.14	0.00	
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00	
Landslide	0	\$0	0.00	0.00	0.00	
Liquefaction Moderate to High	0	\$0	0.00	0.00	0.00	
Earthquake (Pre-1990 buildings)	199	\$44,625	na	na	na	

Statement of Vulnerabilities: Though a second evacuation road has been constructed since 2016, infrastructure is insufficient to handle a major disaster. As growth occurs developers will be required to install proper infrastructure, which should improve the overall situation. Loafer Canyon is a particular concern with its older roads and continual maintenance of debris basins.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Encourage water conservation through education & tiered water rates	Drought	Mod	Ongoing	Minimal	Local gov	Local gov
Complete seismic evaluation of City Hall and Pump Houses, get estimates for retrofiting	Earthquake	Mod	1-2 yrs	TBD	Local gov	Local gov
Conduct yearly disaster drills	All	Mod	Ongoing	Staff time	Local gov	Local gov, Fire Dept
Construct new Canyon View road to provide another evacuation route	All	High	1-2 yrs	TBD	Developers, Local gov	Developers, Local gov
Chipping program in Wildland Urban Interface	Fire	High	Ongoing	Volunteer-hour match	Local gov, citizens, Utah County	Local gov, Utah County
New Firetruck	Fire	Mod	2-3 yrs	1 million	Local gov	Local gov
Well-maintained trail on S side serving as firebreak road to be installed as development occurs	Fire, Debris Flow	Mod	5-10 yrs	TBD	Developers, Local gov	Developers, Local gov
Fire Chief must sign off on all plans in WUI, including requirements for fire hydrant proximity, defensible space, and building materials	Fire	High	Ongoing	Staff time	Local gov	Local gov

Geotechnical study required for all new development in hazard areas	All	High	Ongoing	Staff time	Developers	Developers, Local gov
Bury power lines, especially those that may cause fires	All	Mod	Ongoing	\$700k/mile	Local gov, developers	Local gov

2017 Goals Strategies Update

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?
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	No SFHA
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No, not enough staff time
Wildfire	Educate homeowners on FIREWISE practices. seek assistance for upgraded fire suppressing equipment	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA	Yes - education Upgraded equipment still needed
Landslide	Create infrastructure that will eliminate/prevent future erosion of the dugway.	Extremely high	1 year	TBD	Local Cash, Grants	Local Government, UGS, FEMA	Yes, ongoing
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	No SFHA
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
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Fairfield

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.00	0.00	0.00
Fire Risk High	2	\$728	0.69	0.00	0.00
Fire Risk Moderate	10	\$1,217	1.28	0.00	0.00
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	0	\$0	0.00	0.00	0.00
Liquefaction Moderate to High	55	\$11,249	3.25	0.00	0.00
Earthquake (Pre-1990 buildings)	36	\$5,607	na	na	na

Statement of Vulnerabilities: Fairfield has only moderate liquefaction and fire risk and only a small handful of new buildings each year. The Utah County fire marshal approves any permits for new construction. There are no city buildings and neighbors look out for each other. The biggest problem is probably winter weather. The only real development pressure comes from land on the east side that property owners request be annexed into Eagle Mountain.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
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Encourage residents to participate in Utah County's Emergency Notification System	All	Mod	Ongoing	Minimal	Local gov, Utah County	Local gov, Residents
Make sure neighbors know who has backup generators and trucks sufficient for snow removal	Winter weather, all	Mod	Ongoing	None	Local gov	Local gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No critical buildings
All Hazards	Add texting to Emergency Notification System	Med	1 year	Minimal	Local Cash	Local Government	Yes
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes

Genola

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	1	\$118	0.19	0.00	0.00
Fire Risk High	31	\$6,571	0.74	0.05	0.06
Fire Risk Moderate	39	\$7,973	0.41	0.00	0.00
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	0	\$0	0.00	0.00	0.00
Liquefaction Moderate to High	408	\$92,407	7.11	0.00	0.00
Earthquake (Pre-1990 buildings)	214	\$32,681	na	na	na

Statement of Vulnerabilities: Genola needs a second source of water to provide redundancy for drought and fire. Fires burn Goshen Hill on the East side of town almost every year, resulting in lower fuel loads and less intense fires. Since the town uses septic and propane, development pressure is limited.

Mitigation Strategies	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Fire Marshall must approve new development, including 1 hr fire resistant construction, appropriate landscaping & defensible space, sprinklers, and 2 ingress/egress routes	Fire	High	Ongoing	Staff time	Local gov	Local Fire Dept
New buildings must submit a geotechnical/soil feasibility study to the County to account for liquefaction and problem soils	Liquefaction	Mod	Ongoing	Staff time	Local gov, Developers	Local gov, Developers
Build a second well and water tank on north end of town	Drought, Fire	High	2 yrs	1 million	Local gov	Local gov
Educate homeowners in debris flow areas about risk during permitting process	Debris flow	Mod	Ongoing	Staff time	Local gov	Local gov
Bring gas lines to town so propane isn't the only source of heating	All	Mod	5-10 yrs	TBD	Local gov, gas company, grants	Local gov
Work with Utah County to manage vegetation in high fire risk areas	Fire	Mod	Ongoing	5k	Utah County, local gov	Utah County, local gov

2017 Strategy Update

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?
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Earthquake	Upgrade City Office Building	High	4 years	TBD	Local Cash, Grants	Local Government	Yes
Landslide	Educate homes in Landslide/ Debris Flow areas on risk	Med	Ongoing	Minimal	Local Cash	Local Government	Yes, ongoing
Flood	Adopt new FEMA flood plains, participate in NFIP	Med	3 years	Minimal	Local Cash, FEMA	Local Government, FEMA	Yes
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk	Medium	3 years	Minimal	Local Cash, Grants	Local Government	No, not many houses in fire risk
Flood	Adopt new FEMA flood plains, participate in NFIP	Med	3 years	Minimal	Local Cash, FEMA	Local Government, FEMA	Yes

Goshen

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	63	\$9,070	0.28	0.00	0.00
Fire Risk High	26	\$3,816	0.02	0.04	0.00
Fire Risk Moderate	206	\$28,384	0.07	0.11	0.00
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	0	\$0	0.00	0.00	0.00
Liquefaction Moderate to High	253	\$33,989	1.19	0.00	0.00
Earthquake (Pre-1990 buildings)	241	\$28,614	na	na	na

Statement of Vulnerabilities: Though the Fire Department was built post-1990 and the church was retrofitted in about 2010, many older homes are in the liquefaction area. We only build 2-3 homes a year, so we don't have development pressure on those problem soils. Reliance on septic tanks keep lot sizes large and limits potential growth.

Mitigation Action	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Support Fix-the-Bricks	Earthquake	Moderate		0	FEMA	Utah County
Collect spring water and measure output	Drought	High	1 year	350k	CDBG	Local Gov
Bring natural gas to city	All	High	2 years	11 mil	State	State/Dominion Energy
New Water Tank and replace most distribution lines	Drought	High	2 years	4 million	USDA	USDA/Local Gov
Display hazard maps in city hall	All	Moderate	1 year	0	NA	MAG/Local Gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Flooding/ Dam Failure	Promote NFIP participation.	High	3 years	TBD	Local Cash, Grants	Local Government, FEMA, UDHS	No Special Flood Hazard Area
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	Minimal	Local Cash, Grants	Local Government	Not necessary, no critical facilities build pre 1990
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	No, very little fire risk in or immediately near Goshen.
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 SFHA
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes

Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	2 years	Minimal	Local Cash, Grants	Local Government	No, very little fire risk in or immediately near Goshen.
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Highland

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	215	\$97,681	0.99	0.42	0.00
Fire Risk High	2,028	\$804,729	3.16	3.95	0.00
Fire Risk Moderate	1,361	\$483,444	1.48	1.19	0.00
Flood 1% Yearly Probability	32	\$14,448	0.37	0.43	0.00
Landslide	0	\$0	0.00	0.00	0.00
Liquefaction Moderate to High	0	\$0	0.00	0.00	0.00
Earthquake (Pre-1990 buildings)	1,012	\$266,520	na	na	na

Statement of Vulnerabilities: Highland is particularly concerned about flooding and debris flow following fires. With more land developed, there are more impervious surfaces and increased runoff. This will continue with development pressure on Highland's agricultural and open space. The American Fork River and debris basin also need attention to mitigate flooding and fire.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
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Complete installation of secondary water meters	Drought	High	4-5 yrs	Several million	Local gov, grants	Local gov
Upgrade debris basin structure	Flood	Mod	1-2 yrs	200k	Highland, American Fork & Alpine	Highland, American Fork & Alpine
Educate residents on disaster preparedness, in particular earthquakes and winter weather	All	Mod	Ongoing	Staff time	Local gov	Local gov
Cut native grasses in fire hazard areas of City owned property by July of each year.	Fire	Mod	Ongoing	10k	Local gov	Local gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes, ongoing
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	Yes
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	Ongoing	Minimal	Local Cash, Grants	Local Government, UGS	Yes
Earthquake	Promote earthquake awareness and preparation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, UGS, USGS	No, most development is post-1990 and relatively safe.
Drought	Educate Residents on water conservation practices.	High	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes

Extreme Temperatures	Educate property owners about freezing pipes.	Med	Ongoing	Minimal	Local Cash	Local Government	Yes
Severe Winter Weather	Educate residents on winter weather preparedness.	Med	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes
Multiple Hazards	Update Emergency Operations Plan	High	2 years	Minimal	Local Cash, Grants	Local Government, Public Safety District	Yes
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	Yes
Flooding/ Dam Failure	Maintain drainage ways.	Med	Ongoing	TBD	Local Cash	Local Government	Yes
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	TBD	Local Cash, Grants	Local Government, UGS, USGS	No, coordination efforts fell through
Landslide	Review Development standards for issues with hillside development.	Med	2 years	Minimal	Local Cash	Local Government	No, deemed unnecessary

Lehi

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	3,778	\$934,606	5.94	12.15	6.09
Fire Risk High	6,245	\$2,357,674	11.83	11.36	9.70
Fire Risk Moderate	3,830	\$1,189,356	3.61	8.20	1.75
Flood 1% Yearly Probability	157	\$35,459	1.01	1.39	0.71
Landslide	0	\$0	0.00	0.06	0.08
Liquefaction Moderate to High	8,795	\$2,177,717	11.70	35.31	7.28
Earthquake (Pre-1990 buildings)	2,867	\$1,730,698	na	na	na

Statement of Vulnerabilities: Lehi faces development pressure along the northern the Wildland Urban Interface and near Jordan River. Flood Insurance Rate Maps around Utah Lake and Dry Creek are being updated, which will clarify where development can and shouldn't occur. Drought has strained Lehi's water resources, necessitating restrictions.

Mitigation Action	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Winter preparedness bulletins	Winter weather	Mod	Ongoing	Minimal	Local gov	Local gov
Repair and replace water distribution systems to control leakage and pressure problems, especially downtown	Drought	High	Ongoing	?? (ross)	Local gov	Local gov, Fire Dept
Reduce water consumption, offer rebate programs for fixtures and equipment	Drought	Mod	Ongoing	Minimal	CUWCD, Local Gov	CUWCD, Local gov
Install secondary meters on 1/4 acre or greater properties	Drought	High	1-3 yrs	2k/installation	Local gov, Water Division grants	Local gov
Clear ditches and remove dead vegetation	Flood, Fire	Mod	Ongoing	?? (ross)	Local gov	Local gov
Require developers to provide site-specific environmental information to identify possible on and off-site methods for mitigating impacts	Liquefaction, Flood, Fire	High	Ongoing	Minimal	Developers	Developers, Local gov
Work with FEMA and the Army Corps of Engineers to update FIRMs on Utah Lake and study choke points on Dry Creek	Flood	High	1-2	Staff time	FEMA	FEMA, Army Corps of Engineers

Consider a Critical Lands Overlay in the Wildland Urban Interface and some waterways	Fire, Flood	Mod	1-2 yrs	Staff time	Local gov	Local gov
Encourage maintenance of existing vegetation and retain natural drainage, ie debris flow basins	Debris flow	Mod	Ongoing	Minimal	Local gov	Local gov
Bury power lines to prevent damage	Severe weather	High	Ongoing	??	Developers, Local gov	Developers, Local gov
Provide inspections and maintenance operations to prune trees throughout the city to prevent damage to homes, power, and other cables	Severe weather, Earthquake, Fire	Mod	Ongoing	??	Local gov	Local gov
Improve outflow of Dry Creek and rehab Dry Creek dam	Flood, Fire	High	2 yrs	??	NRCS, BRIC, Local gov	NRCS, Local gov
Expand pipes under Lehi Elementary	Flood	Mod	??	??	Local gov	Local gov
Build a new city hall and library to seismic standards	Earthquake	Mod	5-10 yrs	TBD	Local gov	Local gov
Develop trails along Traverse Mountain to connect to Draper, providing fire access and limiting development in WUI	Fire	Mod	2-3 yrs	??	Local gov	Local gov
Consider a "Flip the Strip" program to reduce water use in parking strips	Drought	Mod	2-3 yrs	TBD	Local gov, CUWCD	Local gov
Participate in the Utah Shakeout, provide community preparedness classes and maintain a Community Emergency Response Team	Earthquake, all	Mod	Ongoing	Minimal	Local gov	Local gov

2017 Strategies Update

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Result
Winter Weather	Winter preparedness bulletins	Med	Ongoing	Minimal	Local Government	Fire Department, Local Government	Yes
Drought	Repair water distribution systems to control leakage and pressure problems	High	Ongoing	Moderate	Local Government	Local Government	Yes
Drought	Reduce water consumption, offer rebate programs for fixtures and equipment	Med	Ongoing	Minimal	Local Government, Water Conservation Program	Water Conservation Program	Yes, rebates through CUWCD
Drought	Retrofit showers and toilets, increase meter efficiency and maintenance, promote leak detection and repair programs	Med	4 years	Moderate	Local Government	Local Government	Yes, ongoing
Earthquake	Seismic Building Retrofitting Program	High	4 years	TBD	FEMA's Project Impact	FEMA, Local Government	No, too difficult for city to administer
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	Yes, upgrading and maintaining ditches
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	Yes
Flood	Implement strategies for flood mitigation outlined in the City's Critical Areas Regulations	Med	Ongoing	TBD	Local Government	Local Government	Yes, flood ordinances were updated

Landslide	Control development in sensitive areas through Hillside and Grading ordinance	High	Ongoing	Minimal	Local Government	Local Government	Yes
Landslide	Encourage maintenance of existing vegetation and retain natural drainage	Med	Ongoing	Minimal	Local Government	Local Government	Yes
Snow Storms	Bury power lines to prevent damage	High	4 years	Moderate	Local Government	Local Government	Yes
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	Yes

Lindon

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	1,512	\$676,801	12.08	8.38	4.39
Fire Risk High	290	\$206,955	0.81	5.28	2.26
Fire Risk Moderate	399	\$145,370	1.10	2.54	0.12
Flood 1% Yearly Probability	27	\$7,215	0.00	2.45	0.00
Landslide	8	\$5,684	0.00	0.48	0.00
Liquefaction Moderate to High	869	\$534,599	14.00	10.02	5.60
Earthquake (Pre-1990 buildings)	1,196	\$568,465	na	na	na

Statement of Vulnerabilities: Lindon's chief concerns are wildland fire in the foothills and having adequate water infrastructure that could survive and earthquake. Lindon works with Utah County to educate residents, manage fuels, and maintain firebreak trails. There are a few homes that would benefit from seismic retrofits as well as the Canberra water tank. Development pressure is mostly toward the lake and every new building must mitigation for liquefaction.

Mitigation Action	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Adopt new 2021 NFIP maps and update city code	Flood	Mod	1 yr	Staff time	Local gov	Local Gov
Educate pre-1980 URM's of low-cost retrofits, like strapping water tanks, flexible pipes, etc.	Earthquake	Mod	Ongoing	Staff time	Local gov	Local Gov
Support bringing the Fix-the-Bricks program to Utah County	Earthquake	Mod	1-2 yrs	Staff time	Local gov	Local Gov
Install secondary water meters on 2400 unmetered connections	Drought	Mod	5-10 yrs	4 million	Local gov	Local gov
Update stormwater management plan with PG to address PG discharge	Flood	Mod	1-2 yrs	Staff time	Local gov	Lindon, Pleasant Grove cities
Educate homeowners in WUI about firewise principles	Fire	High	Ongoing	Staff time	Local gov	Local gov
Improve fire breaks adjacent for Forest Service land	Fire	Mod	Ongoing	7.5k	Local gov	Local gov
Maintain ponds for Pleasant Grove to use in fire emergencies	Fire	Mod	Ongoing	10k	Local gov	Local gov
Construct more debris flow basins	Flood	Low	20 yrs	TBD	Local gov	Local gov
Study Canberra water tank for seismic soundness	Earthquake	Mod	5-10 yrs	TBD	Local gov	Local gov
Install generators for booster station & wells	All, earthquake	High	2 yrs	430k	BRIC grant, local gov	Local gov

Construct additional well	Drought	Mod	2 yrs	1.5 million	Local gov	Local gov
Provide dumpsters for spring and fall yard waste	Fire	Mod	Ongoing	500k	Local gov	Local gov
Encourage teleworking on poor air quality days	Air quality, Climate change	Mod	Ongoing	Staff time	Local gov	Local gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
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	Yes
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
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
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	2 years	Minimal	Local Cash, Grants	Local Government	Yes
Debris Flow	Maintain debris flow basins. Monitor wildfire and landslide areas.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes

Mapleton

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	5	\$1,546	0.00	0.02	0.00
Fire Risk High	12	\$4,766	0.81	8.30	0.00
Fire Risk Moderate	247	\$243,027	0.79	9.48	0.00
Flood 1% Yearly Probability	6	\$765	0.00	0.01	0.00
Landslide	0	\$0	0.00	0.04	0.00
Liquefaction Moderate to High	2,901	\$1,101,786	5.37	9.20	0.46
Earthquake (Pre-1990 buildings)	1,063	\$424,672	na	na	na

Statement of Vulnerabilities: Mapleton lacks a stormwater outfall and cannot obtain a discharge permit for Hobble Creek due to Springville's high water table. The city relies on detention ponds and stormwater storage vaults, but high water accumulation events could result in flooding. The city is implementing innovating design and technology to better capture rain on-site, such as bioswales, rain gardens, and improved storage vaults. Maple Mountain has a high likelihood of catching fire, which could move into the WUI and cause secondary hazards such as flooding and mudslides.

Action	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Educate residents on good watering practices and how to conserve during a drought	Drought	High	Ongoing	Minimal	Local gov	Local gov
Educate residents on wildfire mitigation, such as defensible space and roof materials	Fire	High	Ongoing	Minimal	Local gov	Local gov

Participate in the yearly Shakeout drill	Earthquake	Mod	Ongoing	Minimal	Local gov	Local gov
Create a mountain biking trail along the fire break road to improve maintenance and access	Fire, Mudslide	Mod	2-3 yrs	Included in new development	Developers	Local gov, Developers
Exchange density in other areas for development on hillside	Fire, Mudslide	High	Ongoing	0	Local gov	Local gov
Strengthen city code to require more fire-mitigating principles in WUI	Fire	Mod	1-2 yrs	Staff time	Local gov	Local gov
Require development in the floodplain elevate homes	Flood	High	Ongoing	Minimal	Developers	Local gov, Developers
Create localscapes/xeriscape demonstration garden	Drought	Low	2-4 yrs	TBD	Local gov	Local gov
Support bringing the Fix-the-Bricks program to Utah County	Earthquake	Mod	2-5 yrs	Unknown	BRIC grants	Utah State or Utah County

2017 Strategies Update

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding	Responsible Party	Completed?
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
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

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
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	Yes, Ether Hollow

Nebo School District

Vulnerabilities: Nebo has a handful of older elementary schools that could be retrofitted or rebuilt to current seismic code. Nebo has already bonded to rebuild some of the larger schools. It is important that schools are prepared to serve as evacuation centers. Also, Turf fields are increasingly expensive and the quality of artificial grass makes a transition attractive. A great deal of development is occurring in Nebo School District and new schools are being built to accommodate it.

Action	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Look for opportunities to retrofit or rebuild schools built before seismic code, including Spanish Fork and Payson Jr High, Santaquin, Goshen, Sage Creek, Cherry Creek, and Park Elementaries.	Earthquake	High	Ongoing	TBD	Nebo School District, BRIC grants	Nebo School District
Replace grass on sports fields with artificial turf in all 5 high schools	Drought	High	2 yrs	1 mil/field	Nebo School District	Nebo School District
Replace or build Spanish Fork, Payson, and Springville high schools up to current building code	Earthquake	High	2024, 2025, and 2026	Tens of millions	Nebo School District	Nebo School District

Ensure high schools have the capability to serve as evacuation centers, including emergency power and water	All	High	Ongoing	A few thousand	Nebo	Nebo School District
alem 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 fires and mudslides.	Flood	Mod	1-2 yrs	Staff time	Local gov	Local gov

Orem

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	1,492	\$404,918	2.43	4.42	0.00
Fire Risk High	597	\$291,838	4.35	12.34	4.34
Fire Risk Moderate	254	\$74,252	0.27	0.05	2.10
Flood 1% Yearly Probability	11	\$2,781	1.12	0.72	0.00
Landslide	21	\$8,331	0.09	3.16	0.00
Liquefaction Moderate to High	3,019	\$1,046,381	17.25	11.47	17.97
Earthquake (Pre-1990 buildings)	15,720	\$3,947,009	na	na	na

Statement of Vulnerabilities: Orem's most pressing hazard is the potential for wildland fire along the east bench with associated secondary hazards such as mudslides. Though the gun range fire in 2020 cost 4 million, it could have done much more damage had circumstances been different. An earthquake would cause widespread damage to Orem. Orem is considering rebuilding the City Center, which does not meet current seismic requirements, in addition to ongoing citizen education and yearly drills. There are also critical facilities on the East Bench faultlines that would be disrupted in an earthquake, such as the Salt Lake Aqueduct and Central Utah Water lines. Orem is working with Central Utah to relocate their pipes to a safer location.

Mitigation Action	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Relocating CUWCD's 10' water pipes on the east bench to avoid fault lines	Earthquake	Mod		millions	CUWCD	CUWCD
Retrofit wastewater facilities on Carterville and Geneva to meet current building code	Flood	Mod	2-5 yrs	4 million	Local gov	Local gov
Require geotechnical studies for new construction in the foothills and in the Southwest annexation area	Landslide, Liquefaction	Mod	Ongoing	Minimal	Developer	Developer
Citywide yearly emergency drill, CERT team, staff participation in Shakeout drill	Earthquake	High	Ongoing	Minimal	Local gov	Local gov
Rebuild City Center to withstand major earthquake	Earthquake	Mod	5-10 yrs	23 million	Local Gov, grants	Local Gov
Encourage Fix-the-Bricks program serving Utah County	Earthquake	Mod	1-2 yrs	TBD	BRIC grants	Utah State or Utah County
Firewise Education	Fire	High	Ongoing	Minimal	Local gov	Local gov/Fire Dept
Maintain fire break and remove vegetation along the east bench with a focus near the gun range	Fire	High	Ongoing	2-3k	Local gov	Local gov

Participate in County-led chipping program	Fire	Mod	1-2 yrs	TBD	Local gov, Utah County	Local gov, Utah County
Exemplify good water use on city facilities during drought, ie xeriscaping, focus on trees and shrubs, watering turf grass at night	Drought	Mod	Ongoing	Minimal	Local gov	Local gov
Install water re-use facility for Sleepy Ridge golf course and Lakeside Sports Park	Drought	High	3 yrs	5 million	Local gov	Local gov

2017 Strategy Update

Hazard	Action	Priori ty	Timelin e	Estimat ed Cost	Potential Funding Sources	Responsible Party	Completed?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoin g	Minima l	Local Cash, Grants	Local Government, FEMA, UDHS	Yes, ongoing
Earthqua ke	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes
Wildfire	Educate homeowners on FIREWISE practices.	High	Ongoin g	Minima l	Local Cash, Grants	Local Government	Yes, ongoing
Landslide	Public education on correct watering practices and retaining measures in susceptible areas.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes, in Hillside Ordinance
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	Yes
Earthqua ke	Promote earthquake awareness and preparation.	High	1 year	Minima l	Local Cash, Grants	Local Government, UGS, USGS	Yes, Ongoing

Wildfire	Promote FIREWISE landscaping to resident's living in vulnerable areas of the city	High	1 year	Minima l	Local Cash, Grants	Local Government	Yes, Ongoing
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 years	Minima l	Local Cash, Grants	Local Government, UGS, USGS	No, efforts fell through

Payson

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	1,057	\$178,637	1.65	0.61	0.00
Fire Risk High	1,199	\$275,117	2.68	2.47	0.95
Fire Risk Moderate	1,339	\$246,738	1.94	1.43	2.23
Flood 1% Yearly Probability	330	\$83,145	0.79	0.02	0.48
Landslide	0	\$0	0.00	0.09	0.00
Liquefaction Moderate to High	2,487	\$560,660	15.44	7.54	8.51
Earthquake (Pre-1990 buildings)	2,694	\$562,128	na	na	na

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. 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. Also concerning is a high-pressure gas line that crosses the fault.

Mitigation Action	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Continue monthly preparedness meetings	All	Mod	Ongoing	Minimal	Local gov	Local gov
Promote the Utah Shakeout and share family preparedness booklet	Earthquake, All	Mod	Ongoing	1k	Local gov	Local gov
Support Fix-the-Bricks expanding to Utah County	Earthquake	Mod	4 yrs	TBD	Grants	TBD
Upgrade Water Treatment Plant and oxidation ditch	Drought, all	High	by 2024	23 million	Local gov	Local gov
Hire more personnel for Fire Marshall	Fire, all	High	1-2 yrs	80k	Local gov	Local gov
Protect water sources with regular chanel cleaning, silt fence	Fire, Flood	High	Ongoing	10-15k	EWP/NRCS	NRCS, Local gov
Complete design phase for upsizing culverts in Dry Creek	Flood	Mod	2 yrs design, 4 yrs to construct	TBD	NRCS, Local gov	NRCS, Local gov
Culvert cleaning in high snowpack years	Flood	Mod	Ongoing	Volunteer hours	Local gov, Volunteers	Local gov
Tiered water rate program	Drought	High	1-2 yrs	Staff time	Local gov	Local gov
Install pressure irrigation pond	Drought, Flood	Mod	5-10 yrs	TBD	Local gov, grants	Local gov
Install water tank	Drought, Fire	Mod	3 yrs	500k	Local gov	Local gov
Drill a new well	Drought	High	1 yr	1.5 million	Local gov	Local gov
Install water metering	Drought	High	1 yr	5.3 million	Local gov	Local gov

Any development in Wildland Urban Interface must have defensible space, clustered homes, etc.	Fire	High	Ongoing	Staff time	Local gov	Local gov
Highline Canal Retrofit	Earthquake	High	5-10 yrs	150 million	Pipeline Company	Pipeline Company
Participate in County Chipping Program	Fire	High	Ongoing	30k	Local gov, Volunteers, State Fire program, Utah County	Local gov, Utah County
Participate in Utah County Emergency Notification System	All	Mod	Ongoing	6k	Local gov	Local gov, Utah County

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	High	1 year	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

Pleasant Grove

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles

Dam Failure	5,915	\$1,504,596	6.36	0.70	2.59
Fire Risk High	637	\$170,120	0.19	2.54	0.01
Fire Risk Moderate	1,185	\$389,306	0.49	0.31	0.03
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	24	\$7,557	0.00	1.00	0.00
Liquefaction Moderate to High	3,437	\$1,026,021	6.04	0.92	2.86
Earthquake (Pre-1990 buildings)	3,902	\$904,610	na	na	na

Statement of Vulnerabilities: Pleasant Grove's main concerns are fire and drought. An uptick of recreational activity in the foothills makes fires more likely and an increasing population requires new sources/better use of water. Pleasant Grove has a varied stock of homes and some older properties could use earthquake retrofitting. There is development pressure in formerly agricultural land toward the lake. Slope requirements prohibit much more development in the foothills.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Adopt new 2021 NFIP maps and update city code	Flood	Mod	1 yr	Staff time	Local gov	Local Gov
Support bringing the Fix-the-Bricks program to Utah County	Earthquake	Mod	2 yrs	Staff time	Local gov	Local gov
Install generator for well pump	All, earthquake	Mod	2-3 yrs	300k	Local gov	Local gov
Require metering on all new development	Drought	Mod	Ongoing	None	Local gov, developers	Local gov, developers
Install water meter on all buildings	Drought	Mod	5-10 yrs	millions	Local gov	Local gov
Update Stormwater Master Plan with Lindon	Flood	Mod	1 yr	Staff time	Local gov	Lindon, Pleasant Grove cities

Implement chipping program	Fire	Mod	1-2 yrs	8k	Local gov, Utah County	Pleasant Grove
Maintain fire access roads	Fire	Mod	Ongoing	10k	Local gov	PG Fire department, hillside property owners
Include firewise principles in WUI code	Fire	Mod	1-2 yrs	Staff time	Local gov	Local gov
Construct new well	Drought	High	2 yrs	4.5 million	Local gov	Local gov
Provide dumpsters for spring and fall yard waste	Fire	Mod	Ongoing	30k	Local gov	Local gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Earthquake	Study on vulnerabilities of Critical Facilities	High	3 years	\$20,000	FEMA, Local Government	Local Government	No, mostly newer critical buildings
Fire	Install emergency generator to pump water for fire prevention.	High	5 years	1 million	FEMA, Local Government	Local Government	Not yet, limited resources
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	Upgraded Battle Creek, Grove Creek yet to come.
Drought	Public education on correct watering practices	High	Ongoing	Minimal	Local Government	Local Government	Yes
Earthquake	Promote earthquake awareness and preparation	High	Ongoing	Minimal	Local Government	Local Government	Yes
Landslide	Require geotechnical reports for proposed structures in landslide-prone areas, conform to Hillside ordinance	High	3 years	Minimal	Local Government	Local Government	Yes
Flooding	Update storm water master plans to reduce flooding in developing areas	High	3 years	Minimal	Local Government	Local Government	No, limited resources

Provo

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	16,883	\$5,531,865	36.42	41.71	32.05
Fire Risk High	652	\$364,479	0.94	29.04	0.20
Fire Risk Moderate	227	\$76,906	0.60	4.20	0.69
Flood 1% Yearly Probability	48	\$23,058	0.47	9.80	0.25
Landslide	290	\$108,752	0.00	4.46	0.00
Liquefaction Moderate to High	19,338	\$6,140,581	40.33	48.54	49.49
Earthquake (Pre-1990 buildings)	15,358	\$4,386,424	na	na	na

Statement of Vulnerabilities: Regarding drought, Provo's water distribution division utilizes dozens of local springs to supplement wells, such as Provo Canyon springs supplying 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 those lines for access. Provo needs enhanced water storage capacity for long-term droughts. Provo's position between Utah Lake and the Wasatch Mountain range create a challenge for large-scale evacuations, as does Provo River, the Union Pacific Rail Line, and Interstate 15. West of I-15, residents have limited routes for evacuation. There are 2 exits with underpasses and 3 other underpasses to the east side, all of which would bottleneck during a large evacuation. The Wasatch Fault is located on Provo's east bench. There are slow moving landslides occurring in neighborhoods that impact residents and infrastructure. These slides are being monitored by the Utah Geological Survey and there are considerations for planning. Provo Airport is a Part 139 FAA Certified airport. It is growing and will increase traffic and the need for emergency response. Vegetation between the airport and Utah Lake is difficult to manage.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Adopt a Conservation and Resilience section of the general plan that addresses emissions, wildland preservation and resiliency to disasters.	All, Climate Change	Mod	1 yr		Local gov	Local gov
Complete design for and construct/rehab levees around the Provo River and Provo Airport	Flood	High	2-5 yrs	50 million	Local Gov, BRIC and other grants	Local Gov, FEMA
Implement <i>Ready Set Go</i> program, including education on defensible space and a chipping program	Fire	High	Ongoing	50k	Local Gov	Local Gov
WUI Program? See Chris email	Fire					
Encourage a statewide Fix-the-Bricks program	Earthquake	High	1-2 yrs	minimal	FEMA, Utah State	FEMA, Utah State Gov
Continue with Aquifer Storage and Recovery, including a water treatment plant and infiltration in Rock Canyon	Drought	High	1-2 yrs	80 million	Local Gov, WIFIA, ARAP, BRIC, Water Smart program, Water Resources Board and Drinking Water Board State revolving loans	Local Gov
Deepen wells	Drought	High	1-2 yrs	300k	Local Gov	Local Gov
Tree Trimming	Severe weather,	High	Ongoing	??	Provo Power	Provo Power

	wind, earthquake					
Provo Delta Restoration Project	Flood	Mod	3 yrs	51 million	State of Utah, Western Area Power Administration, Central Utah Water Conservancy District, and federal appropriations.	CUWCD, US Dept of Interior, Utah Reclamation, Mitigation, and conservation commission, June Sucker Recovery Program
Hillside Management in Carterville, Grandview, and Slate Canyon areas	Fire	Mod	1yr	??	Local Gov	Local Gov
Participate in the Provo River Levee Analysis and Mapping Process (LAMP) to identify potential improvements to levee system	Flood	High	1 yr	Staff time	Local Gov, Grants	Local Gov
Replace vulnerable areas of large diameter pipe	Flood/Dam Failure	High	Ongoing	CIP	Local Cash	Local Gov
Replace city buildings to meet seismic code	Earthquake	High	1 yr	69 million	Local Cash, Grants	Local gov

2017 Strategies Update

Hazard	Action	Priority	Timeline	Cost	Potential Funds	Responsible Party	Completed?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes/recertify every 5 years

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	Yes
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?	Ongoing, almost complete
Flooding/ Dam Failure	Replace vulnerable areas of large diameter pipe.	High	5 years	CIP	Local Cash	Local Government	Ongoing
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Yes
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.	Medium	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes, through new Hillside Ordinance
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	Yes, through new Hillside Ordinance
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	Yes
Flooding/ Dam Failure	Replace vulnerable areas of large diameter pipe.	High	5 years	Identified in CIP	Local	Local Government	Yes/Ongoing
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes with CERT, Shakeout drill
Wildfire	Incorporate Ready Set Go landscaping requirements into local ordinances within areas at risk.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes
Wildfire	Restrict use of fireworks at highly vulnerable areas.	High	1 year	Minimal	Local Cash	Local Government	Yes
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	Yes, with new Hillside Ordinance

Drought	Promote water saving programs.	High	1 year	Minimal	Local Cash, Grants	Local Government	Yes
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Salem

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.00	0.00	0.00
Fire Risk High	188	\$41,205	0.04	1.02	0.00
Fire Risk Moderate	990	\$255,991	0.58	0.78	0.00
Flood 1% Yearly Probability	17	\$3,452	0.02	0.00	0.00
Landslide	27	\$7,392	0.00	0.00	0.00
Liquefaction Moderate to High	639	\$167,356	2.61	2.06	0.00
Earthquake (Pre-1990 buildings)	886	\$188,562	na	na	na

Statement of Vulnerabilities: Salem City has two canals that run through our city limits. We are concerned about breaches and the issues associated with that, especially post-earthquake flooding. We are keenly aware of the fire risk with resulting debris flow damage since the Bald Mountain fire. Many people are moving to and building in Salem. New homes are expected on the East side of town and we need codes that address hazards in the area and for developers to participate in mitigation projects such as water retention basins.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
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Pipe Salem Canal and build trail on top	Flood	High	1-3 yrs	60 million	CUWCD, Local Gov, MAG, Salem Canal Irrigation Company, Division of Water Resources	CUWCD, Salem City, Salem Canal Company
Build detention basin coming out of Loafer Canyon	Flood, Debris Flow	High	3-4 yrs	500k land, TBD construction	Salem, Elk Ridge, Woodland Hills, NRCS	Salem, Elk Ridge, Woodland Hills
Update codes and ordinances to guide development in hazard-prone areas	All	High	1-2 yrs	Staff time	Local gov	Local gov
Build water retention basin at the base of Maple Canyon	Flood, Debris Flow	Mod	3-4 yrs	TBD	Local gov, Developers	Local gov, Developers
Hire code enforcement officer	All	Mod	1 yr	50k/yr	Local gov	Local gov
Participate in Great Utah Shakeout and educate citizens on earthquake safety	Earthquake	Mod	Ongoing	Staff time	Local gov	Local gov
Green Waste dumpsters for Spring-Fall	Fire	Mod	Ongoing	5k	Local gov	Local gov
Incentives for water-use reduction such as Flip-the-Strip, Localscapes, Smart Meters, etc.	Drought	Mod	Ongoing	Unknown	CUWCD	CUWCD, Local gov
Build independent Public Safety Building	Earthquake, All	High	3-4 yrs	TBD	Local gov	Local gov
Construct new water tanks as development occurs	Drought, Fire	Mod	5-10 yrs	TBD	Local gov, Developers	Local gov, Developers

Pipe Highline Canal	Flood, Drought	Mod	10-15 yrs	TBD	Local gov, Highline Canal Company, grants	Local gov, Highline Canal Company
Require any new water retention basins to be entirely xeriscaped	Drought, Flood	Mod	Ongoing	Minimal	Developers	Developers
Educate citizens on emergency preparedness through City Calendar printed and shared with all homes	All	Mod	Ongoing	A few thousand	Local gov	Local gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	Yes
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	Ongoing
Earthquake	Inventory current critical facilities for seismic standards.	High	Ongoing	TBD	Local Cash, Grants	Local Government	In Progress, getting cost estimate for separate Public Safety building
Wildfire	Educate homeowners on FIREWISE practices.	Med	Ongoing	Minimal	Local Cash, Grants	Local Government	Yes, Ongoing
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Med	Ongoing	TBD	Local Cash, Grants	Local Government, UGS	Yes, Ongoing
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	Yes

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	Ongoing
Earthquake	Promote earthquake awareness and preparation.	High	Ongoing	TBD	Local Cash, Grants	Local Government	Yes
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk.	Med	Ongoing	Minimal	Local Cash, Grants	Local Government	In progress
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	Med	Ongoing	TBD	Local Cash, Grants	Local Government, UGS	In progress

Santaquin

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	1,718	\$321,873	4.85	0.76	0.88
Fire Risk High	930	\$208,811	1.85	4.62	1.16
Fire Risk Moderate	1,243	\$257,246	2.27	2.25	1.08
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	57	\$10,546	0.00	0.08	0.00
Liquefaction Moderate to High	0	\$0	0.20	0.00	0.00
Earthquake (Pre-1990 buildings)	848	\$143,262	na	na	na

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 has adopted hillside development standards to address future development in these areas. There is also a large quantity of hazardous materials that pass through Santaquin on the railroad and State Routes.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Work with Utah County and NRCS to rebuild Santaquin Debris Flow Basin	Flood	High	4 yrs	20 million	NRCS, Utah County, Santaquin	NRCS, Utah County, Santaquin
Complete final design of 6 debris basins on the east bench currently threatening homes and a charter school	Debris flow, flood	Mod	3-5 yrs	9.1 million	NRCS	NRCS, Santaquin responsible for land acquisition
Install backup generators for Public Safety/Admin building	All	High	2 yrs	250k/generator	BRIC grants, Local gov	Local gov
Build new City Hall with Emergency Ops Center	All	High	2-4 yrs	6 million	Local gov	Local gov
Perform seismic study of pre-1990 water tanks and drinking-water wells	Earthquake	Mod	2-4 yrs	\$25k	Local gov, BRIC grants	Local gov
Retrofit historic 1900s museum	Earthquake	Low	TBD	6 million	Local gov	Local gov
Conduct yearly chipping program	Fire	Mod	Ongoing	\$15k	Utah County, Local gov, Forest Service	Utah County, Local gov, Forest Service
Review and adopt new IBC code for the WUI, including specification of WUI zones	Fire	High	1 yr	Staff time	Local gov	Local gov
Fire Marshall must approve new development, including 1 hr fire	Fire	High	Ongoing	Staff time	Local gov	Local Fire Dept

resistant construction, appropriate landscaping & defensible space, sprinklers, and 2 ingress/egress routes						
Allow and encourage xeriscaping	Drought	Mod	Ongoing	Staff time	Local gov	Local gov
Drill another drinking well	Drought	Mod	20 yrs	\$1.5 million	Local gov	Local gov
Construct a second fire station with a ladder truck	Fire	Mod	5-10 yrs	\$8 million	Local gov	Local gov
Educate homeowners on wildfire risk and home hardening by sharing literature	Fire	Mod	Ongoing	Minimal	Local gov	Local Fire Dept
Participate in the Shakeout Drill	Earthquake	Mod	Ongoing	Minimal	Local gov	Local gov
Continue to work with Summit Creek Management Group to construct runoff capture and recharge areas	Flood	High	Ongoing	\$15k/yr	Local gov & Developers	Local gov & Developers

2017 Strategies Update

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?
Flooding/ Dam Failure	Promote NFIP participation.	High	Ongoing	Minimal	Local Cash, Grants	Local Government, FEMA, UDHS	No Special Flood Hazard Area
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	No, Few critical facilities build pre-2000
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.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes, Ongoing
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	Yes, Ongoing
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 Special Flood Hazard Area
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, with Hillside Ordinance
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, with NRCS

Saratoga Springs

HAS THEIR OWN PLAN, INDEPENDENTLY CREATED AND ADOPTED

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	237	\$47,094	0.12	1.19	0.00
Fire Risk High	4,797	\$1,259,118	3.81	13.19	0.00
Fire Risk Moderate	937	\$235,667	2.28	6.90	0.00
Flood 1% Yearly Probability	10	\$1,195	0.05	1.06	0.00

Landslide	7	\$1,521	0.00	0.03	0.00
Liquefaction Moderate to High	6,283	\$1,633,749	19.98	7.81	0.00
Earthquake (Pre-1990 buildings)	127	\$103,907	na	na	na

Statement of Vulnerabilities: Saratoga Springs' highest priority hazards are 1) Wildfire 2) Debris FloOd and 3) Severe Storms. The recent Dump Fire and subsequent evacuations underscored the importance of fuel reduction and fire breaks to avoid large-scale evacuations on the few routes in and out of the city. There are several master-planned developments in progress throughout the city. These new developments will follow the most recent code and zoning requirements, making them relatively safe. The city works extensively to ensure adequate drainage and retention basins in new development.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Conduct fuel reduction projects on undeveloped lands adjacent to City boundaries, where such lands pose a wildfire hazard to the City. This will be done cooperatively with the BLM, DNR, and private land owners.boundaries	Fire	Mod	1-2 yrs	100,000	PDM, HMGP, FMA, DNR	Local gov
Construct fire breaks along or near certain boundaries of the City. This may be done in cooperation with trail development projects,	Fire	High	4 yrs	300000		
Reduce fuels on undeveloped lands that are in close proximity to City owned infrastructure, such as wells and pump stations.	Fire	High	4 yrs	100000	PDM, HMGP, DNR	Local gov
Conduct public education programs, in cooperation with other agencies, such as BLM and DNR to promote fire safe practices on public lands.	Fire	Mod	Ongoing	TBD		

Perform a detailed hazard assessment of other potential debris flow areas	Debris Flow	High	1 yr	100,000		
Implement other debris flow hazard mitigation projects, if warranted by the hazard assessment	Debris Flow	Mod	4 yrs	1000000		
Consider further zoning restrictions as an alternative to debris flow mitigation projects	Debris Flow	Mod	2 yrs	Minimal	Local gov	Local gov
Consider purchasing and installing additional emergency generators. These generators would be serve critical facilities	All, Flood	Mod	1-2 yrs	400,000	PDN, HMGP	Local gov
Consider the installation of gravel drains at buried vaults, use of flexible piping (such as HDPE piping), SCDA upgrades, and earthquake-triggered shut-off valves around certain infrastructure	Earthquake, Flood	Mod	4 yrs	Minimal	TBD	Local gov
Coordination of Water Savings Projects Occurs with Local and Regional Water Management Entities, including CUWCD and Local Canal Companies	Drought	Mod	Ongoing	Minimal	Local gov, CUWCD	Local gov
Installations of berms around low lying sewer lift stations or well pump houses	Flood	Mod	4 yrs	500,000	PDM, HMGP	Local gov
Construction of additional drainage culverts under transportation infrastructure	Flood	Mod	TBD	TBD	Local gov, UDOT	Local gov
As new culinary water storage tanks, pump stations, and well houses are built, the designs may integrate further seismic, fire, and flood protection into the buildings and equipment. • As new sources are developed, more stringent source protection plans can be integrated	All, Flood	High	4 yrs	TBD	Local gov, developers	Local gov

to protect against specific hazards identified in the multi-hazard mitigation plan for the specific source locations. • As new transmission lines are designed and constructed (in high hazard areas) mitigation measures may be incorporated into the design. An example would be transmission lines that will be servicing areas (that have been identify as high risk for wildfire) could have additional fire protection and flow capacity, and fire hydrants placed more frequently than in low hazard areas.						
System improvements near undeveloped areas of the town and near areas identified as high risk for wildfire can have fire protection uses designed into the system, such as the utilization of green strips and defensible space. • Open channel ditches can be sized for flood control in high hazard flood areas.	Fire	Mod	4 yrs	TBD	Local gov	Local gov
Sewer Systems: As lift stations, pump stations, and wastewater treatment plants are improved, additional seismic, fire, and flood protections may be integrated to help protect against unforeseen natural disasters. • As waste water systems are inspected and repairs are made in high risk areas, such as areas identified to have the potential for liquefaction, seismic protection factors may be incorporated as identified by the plan.	All, liquefaction	Mod	5 yrs	TBD	Local gov	Local gov

Storm Drains: Culverts in areas that are identified as debris flow basins can be sized appropriately to pass debris without clogging, or have protections placed on them to prevent damage from debris flow. • Open channel storm drain channels can be sized to help channel flood flows in areas identified as high hazard for floods.	Debris flow, flood	Mod	6 yrs	TBD	Local gov	Local gov
Transportation: Culverts in areas that are identified as debris flow basins can be sized appropriately to pass debris without clogging, or have protections placed on them to prevent damage from debris flow. • Roads in areas identified as high hazard for wildfire can be designed and laid out as fire breaks.	Debris flow, flood, fire	Mod	7 yrs	TBD	Local gov	Local gov
Berm construction at Lift Stations	Flood	Mod	4 Yrs	500,000	PDM, HMGP	Saratoga Springs
Design and construction of seismic retrofit measures for existing facilities	Earthquake	Mod	2 yrs	100,000	PDN, HMGP	Saratoga Springs
Retrofit design and construction of vulnerable below grade utilities	Earthquake, all	Mod	4 yrs	1.5 mil	PDM, HMGP	Saratoga Springs
Cooperation with other entities to construct canal lining or piping projects	Drought	Mod	4 yrs	TBD	WS	Saratoga Springs

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?

Flooding	Promote NFIP participation	High	Ongoing	Minimal	Local cash, grants	Local Gov, FEMA, UDHS	Yes
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local cash, grants	Local gov	No, mostly new buildings
Wildfire	Educate homeowners on FIREWISE practices	High	Ongoing	Minimal	Local cash, grants	Local gov	Yes
Landslide	Public education on and correct watering practices and retaining measures in susceptible areas.	Medium	1 yr	TBD	Local cash, grants	Local gov, UGS	Yes
Flooding	Update Flood and Innundation mapping and incorporate into general plans and ordinances	High	2 yrs	TBD	Local cash, grants	Local gov, FEMA, UDHS	Partial: 1.5 of 3 detention basins built
Earthquake	Promote earthquake awareness and preparation	High	1 yr	Minimal	Local cash, grants	Local gov, UGS, USGS	Partial: Info on website and social media, starting CERT
Wildfire	Incorporate FIREWISE landscaping requirements into local ordinances within areas at risk	High	1 yr	Minimal	Local cash, grants	Local gov	Yes
Landslide	Coordinate and update landslide mapping within the area with UGS and USGS.	High	3 yrs	Minimal	Local cash, grants	Local government, UGS, USGS	Partial: Some hillside stabilized through construction efforts

Spanish Fork

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.00	0.00	0.00
Fire Risk High	503	\$200,435	2.31	6.84	4.39
Fire Risk Moderate	1,304	\$348,125	2.81	4.18	1.79
Flood 1% Yearly Probability	3	\$380	0.00	0.09	0.01

Landslide	16	\$3,669	0.00	0.33	0.00
Liquefaction Moderate to High	5,757	\$1,490,565	25.55	26.03	9.25
Earthquake (Pre-1990 buildings)	3,585	\$874,641	na	na	na

Statement of Vulnerabilities: We focus on homes surrounding Spanish Fork River. There is pressure to develop in the 100 yr floodplain where agricultural land is abundant. Our main waterline runs below the Crab Creek Slide, which will eventually move onto the line itself. Many older homes are located in high-liquefaction areas.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Chipping Program	Fire	Moderate	3 years	10k	Local Gov, County	Local Gov, County
Identify properties for LeRay McAllister Critical Land Preservation	Flood	Moderate	Ongoing	Staff time	LeRay McAllister Critical Land Conservation Fund	Local Gov
Support Fix-the-Bricks	Earthquake	Moderate		0	FEMA	Utah County
Replace Library	Earthquake	High	1 yr	TBD, several million	Local Gov	Local Gov
New Fire & EMS Station	All	High	2 yr	Multiple millions	Tax raise	Local Gov
Stabilize at-risk sections of the riverbank	Flood	Mod	5 yrs	250k	NRCS Grant, Local Gov	Utah County/Local Gov
Water metering and online portal to view water use	Drought	Mod	Ongoing	Millions	Local Gov	Local Gov
Free Smart Controllers for private landscaping	Drought	Mod	Ongoing	60/unit	Local Gov, CUWCD	Local Gov, CUWCD
Extensive river clearing in high-snowpack years	Flood	High	Ongoing	10-15k	Local Gov	Local Gov

2017 Strategy Update							
Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Flooding	Remove debris from riverine areas	High	Ongoing	Minimal	Local Government	Local Government	Yes
Fire	Yearly Inspections from Fire Marshall, FIREWISE education	High	Yearly	Minimal	Local Government	Local Government	Yes
HAZMAT	Fire dept. HAZMAT certified	High	1 Year	Minimal	Local Government	Local Government	Yes
Landslide	Public education on correct watering practices and retaining measures	Med	Ongoing	Minimal	Local Government	Local Government	Yes
Earthquake	Promote earthquake awareness and preparation through CERT, ShakeOut	Med	Ongoing	Minimal	Local Government	Local Government	Yes, ongoing
Landslide	Public education on correct watering practices and retaining measures	Med	Ongoing	Minimal	Local Government	Local Government	Yes
Flooding/ Dam Failure	Update Flood and Inundation mapping and incorporate them into general plans and ordinances.	Med	2 years	Minimal	Local Government	Local Government	Yes

Springville

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	3,506	\$801,793	7.65	10.36	4.58
Fire Risk High	260	\$90,150	0.72	4.26	2.25
Fire Risk Moderate	656	\$192,114	0.95	4.77	2.85
Flood 1% Yearly Probability	147	\$33,075	0.00	5.93	0.05
Landslide	120	\$25,047	0.17	0.58	0.00

Liquefaction Moderate to High	5,757	\$1,490,565	21.27	39.84	24.15
Earthquake (Pre-1990 buildings)	4,045	\$1,013,790	na	na	na

With the promulgation of new FIRMs, 200+ homes now sit in the 100 yr floodplain due to potential for flooding caused by 2 Union Pacific Railroad bridges. We are pursuing various grants to build levees and dikes to protect those homes. The entire west side of our town (west of 400 west) is designated as a high liquefaction potential area. This is a high growth area and all new buildings are required to submit a geotechnical study and mitigate individual properties with large-spread footings, elevating buildings, and prohibiting basements where necessary.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Protect 200+ homes in the newly-designated floodplain by building levees and dikes in the Spring Creek Area	Flood	High	4-5 yrs	24 million	NRCS and BRIC grants, Local gov	Local Gov
Participate in the Utah Lake FIRM update	Flood	Mod	2-3 yrs	Staff time	Local gov, FEMA	Local gov
Require development west of the freeway to elevate homes out of the floodplain and submit geotechnical studies	Flood, Liquefaction	High	Ongoing	Minimal	Developers	Local gov, Developers
Rebuild Springville High School to seismic standards	Earthquake	High	5 yrs	30 million	Nebo School District bonding	Local gov
Train new Emergency Coordinator	All	High	1 yr	Staff time	Local gov	Local gov
Outfit more staff with short-wave radios	Earthquake	Mod	1-2 yrs	??	Grants	Local gov
Educate developers and remodelers on low-cost seismic retrofits	Earthquake	Mod	1 yr	Staff time	Local gov	Local gov
Educate residents on good watering practices and how to conserve during a drought	Drought	High	Ongoing	Minimal	Local gov	Local gov

Educate residents on wildfire mitigation, such as defensible space and proper roof materials	Fire	High	Ongoing	Minimal	Local gov	Local gov
Participate in the yearly Shakeout drill	Earthquake	Mod	Ongoing	Minimal	Local gov	Local gov
Retrofit 60" water pipe coming from Strawberry Reservoir	Earthquake	Mod	??	??	CUWCD, BRIC	CUWCD
Support bringing the Fix-the-Bricks program to Utah County	Earthquake	Mod	2-5 yrs	Unknown	BRIC grants	Utah State or Utah County
Add joints to 24" penstock that brings water from Hobble Creek where it crosses the fault	Earthquake	Mod	5-10 yrs	TBD	CUWCD	CUWCD

2017 Strategies Update

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?
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
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.	Medium	2 years	TBD	Local Cash, Grants	Local Government, UGS	Yes, ongoing

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	Yes
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Yes, Shakeout
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	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	Yes

Vineyard

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.29	2.89	0.00
Fire Risk High	303	\$110,191	1.45	3.06	2.02
Fire Risk Moderate	184	\$49,068	0.83	2.46	1.10
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	0	\$0	0.00	0.00	0.00
Liquefaction Moderate to High	2,418	\$789,322	4.67	9.18	9.98
Earthquake (Pre-1990 buildings)	125	\$123,886	na	na	na

Statement of Vulnerabilities: Although 90%+ of buildings were constructed after 2000, liquefaction would affect most of the town, potentially destabilizing the four sections of road that traverse the railroad and making evacuation difficult for residents on the developing west side of town. Critical infrastructure is built on piers that extend down to the bedrock, but homes depend on each builder's geotechnical survey. Previously fire-prone area have been developed and no homes are located in the floodplain. Vineyard is home to many young families, first-time home buyers, and out-of-state landlords who are less familiar with the area or involved with town issues. Awareness and education, especially of evacuation plans, will need to be continuous.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Install grinders in 3 sewer lift stations	Flood	High	3-5 yrs	150k	NFIP, Local Gov	Local Gov
Develop evacuation plan and share with the public	All	High	1 yr	Staff time	Local Gov	Local Gov
Bolster fund for replacement and updates of infrastructure via utility bill and impact fees	All	High	1 yr	Staff time	Local Gov	Local Gov
Seismically retrofit Vineyard Connector bridge	Earthquake	Mod	2-5 yrs	200k	UDOT, Local Gov, BRIC grant	UDOT, Local Gov
Require geotechnical studies for large buildings and frontrunner station	Earthquake	High	Ongoing	\$2,000/lot	Developers, Local Gov	Developers, Local Gov
Construct a 6 million gallon water tank with pump station and future expansion	Drought	High	2 yrs	5 million	Local Gov	Local Gov

2017 Strategy Update

Hazard	Action	Priority	Timeline	Estimated Cost	Potential Funding Sources	Responsible Party	Completed?
Earthquake	Build overpasses to be usable after earthquake. Overpasses	High	5-10 years	\$10 million	Local Government, FEMA grants, MAG	Local Government, MAG	Partly, new Center St

	are the main access across railroad.						overpass is earthquake safe
Earthquake	Develop evacuation plan	High	1-3 years	\$50,000	Local Government	Local Government	Yes
All Hazards	Share disaster planning via city Social Media platforms	Med	Ongoing	Minimal	Local Government	Local Government	No, messaging for liquefaction is unusual
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	No, but should happen next year
All Hazards	Interactive parcel map including hazard information	Med	1 year	Minimal	Local Government	Local Government	No, doesn't make sense for liquefaction, geotechnical study already required
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	Partly
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	Ongoing, city center buildings are new or not yet built
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	Yes
Earthquake	Develop evacuation plan	High	1-3 years	\$50,000	Local Government	Local Government	Yes
All Hazards	Share disaster planning via city Social Media platforms	Med	Ongoing	Minimal	Local Government	Local Government	No

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	No, should happen within a year
All Hazards	Interactive parcel map including hazard information	Med	1 year	Minimal	Local Government	Local Government	Not practical

Woodland Hills

Loss Estimates					
Hazard	# Buildings	Building value (thousands)	Major Road Miles	Transmission Miles	Railroad Miles
Dam Failure	0	\$0	0.00	0.00	0.00
Fire Risk High	398	\$147,917	0.00	0.00	0.00
Fire Risk Moderate	11	\$5,431	0.00	0.00	0.00
Flood 1% Yearly Probability	0	\$0	0.00	0.00	0.00
Landslide	3	\$869	0.00	0.00	0.00
Liquefaction Moderate to High	0	\$0	0.00	0.00	0.00
Earthquake (Pre-1990 buildings)	81	\$21,256	na	na	na

Statement of Vulnerabilities: Woodland Hills' chief concern is managing wildfire and having enough funding to unkeep current infrastructure. There are many homes in the WUI and limited roads for getting in and out of town. Evacuations in a recent nearby fire brought this reality to a point. Woodland Hills works with Utah County and others to educate homeowners, manage fuels, and plan response. If the city had more money it would bury powerlines, bring water lines up code, and purchase a firetruck. Lack of local sales tax and a desire to keep property taxes low means there is a limited budget devoted to maintenance. There is some development pressure in the hills and more in the canyon above Woodland Hills. Large lot requirements and wastewater requirements limit how much can be built.

Mitigation Strategy	Hazard	Priority	Timeline	Cost	Funding	Responsibility
Chipping program in Wildland Urban Interface	Fire	High	Ongoing	50k/volunteer labor	Local gov, citizens, Utah County	Local gov, Utah County
New Firetruck	Fire	Mod	2-3 yrs	500k	Local gov	Local gov
Fire Chief must sign off on all plans in WUI, including requirements for fire hydrant proximity, defensible space, and building materials	Fire	High	Ongoing	Staff time	Local gov	Local gov
Construct avalanche basin above main water tank to reroute and protect tank and downhill homes	Avalanche	Mod	3-5 yrs	3 million	Local gov, BRIC and other grants	Local gov
Geotechnical study required for all new development in hazard areas	All	High	Ongoing	Staff time	Developers	Developers, Local gov
Replace 30% of water lines, bringing up to current seismic standards	Fire, Flood, Drought	High	5 yrs	3.2 million	Local bond	Local gov
Participate in Utah Shakeout	Earthquake	Mod	Yearly	Minimal	Local gov	Local gov
Week-long Fire Expo to educate residents on fire safety	Fire	High	Yearly	Minimal	Local gov	Local gov, Utah County
Create dipping ponds for helicopters to use in fire suppression	Fire	Mod	2-3 yrs	TBD	Local gov, Utah County, grants	Local gov, Utah County
Bury power lines, especially those that may cause fires	All	Mod	Ongoing	\$700k/mile	Local gov, developers	Local gov
Create Watershed Operations Program	Flood, Drought, Fire	Mod	2-5 yrs	TBD	Local gov	Local gov

2017 Strategy Update

Hazard	Action	Priority	Timeline	Cost	Potential Funding	Responsibility	Completed?
Earthquake	Inventory current critical facilities for seismic standards.	High	3 years	TBD	Local Cash, Grants	Local Government	Partly, water lines being replaced.
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.	Med	1 year	TBD	Local Cash, Grants	Local Government, UGS	Yes
Earthquake	Promote earthquake awareness and preparation.	High	1 year	Minimal	Local Cash, Grants	Local Government, UGS, USGS	Somewhat
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	No, coordination efforts fell through

Contacts

See Part III: Process for a complete accounting of participation

Position	Name	Phone	Email	Small Meeting	Group Meeting
Alpine	Shane Sorensen	801-420-2962	ssorensen@alpinecity.org	6/17/2021	Yes
American Fork Engineer	Scott Sensanbaugher	801-763-3060	ssensanbaugher@afcity.net	6/14/2021	Yes
American Fork Public Works/Engineer	Ben Hunter	801.854.5930	bhunter@afcity.net	6/14/2021	
Cedar Hills City Council	Mike Geddes		mgeddes@cedarhills.org		
Cedar Hills City Manager	Chandler Goodwin		cgoodwin@cedarhills.org	6/14/2021	
Cedar Hills Emergency Manager	Laurie Petersen	801-785-9668 x104	lpetersen@cedarhills.org		
Cedar Hills/AF Fire	Aaron Brems	801-763-3045	abrems@americanfork.gov	6/14/2021	
Eagle Mountain	Greg Stone		gstone@emcity.org	6/22/2021	Yes
Eagle Mountain Engineer	Chris Trusty		ctrusty@emcity.org		Yes
Eagle Mountain Fire Chief	Embret Fossum		efossum@UFA-SLCO.org	6/22/2021	

Part 6 Utah County Damage Assessment and Mitigation

Eagle Mountain Planning	Tayler Jensen	(801) 789-6615	tjensen@emcity.org		
Eagle Mountain Primary	Jeff Weber		jweber@emcity.org	6/22/2021	Yes
Elk Ridge City Manager	Royce		royce@elkridgecity.org	7/8/2021	
Elk Ridge Fire Chief Primary	Seth Waite		firechief@elkridgecity.org		
Elk Ridge Public Works Director	David Gene	801.423.2300	davidj@elkridgecity.org		
Fairfield	Chianne Barnson	435-231-4027	chybarnson_fairfieldtown@yahoo.com		
Fairfield Mayor	Brad Gurney	801-874-8386	mayor@fairfieldtown.org	12/17/2020	
Genola	Chris Steele	801-754-5300	gcpw@rburst.com		
Genola Planning & Zoning			genolapz@gmail.com		
Genola Town Clerk	Lucinda Daily	801.754.5300	Genolaclerk@gmail.com	7/29/2021	Yes
Goshen	Steven Staheli		goshentown@gmail.com	6/9/2021	
Highland Finance Director	Tyler Bahr			6/17/2021	
Highland Mayor	Rod Mann				Yes
Highland Planning	Nathan Crane	801-756-5751x3	ncrane@highlandcity.org	6/17/2021	
Highland Planning	Joann		joann@highlandcity.org		
Highland Planning	Erin Wells	801-772-4566	erin@highlandcity.org		
Lehi City Council	Paige Albrecht				Yes
Lehi Emergency Management	Scott Debell		sdabell@lehi-ut.gov	7/7/2021	Yes

Committee director					
Lehi Emergency Management Committee director	Scott Sampson	385-201-2268	ssampson@lehi-ut.gov	7/7/2021	Yes
Lehi Engineering	Ross		rdinsdale@lehi-ut.gov	7/7/2021	
Lehi Environmental Sustainability	Todd Munger		tmunger@lehi-ut.gov		Yes
Lehi Planning	Kim Struthers	385-201-2521	kstruthers@lehi-ut.gov	7/7/2021	Yes
Lehi Planning	Mike West			7/7/2021	Yes
Lehi Planning				7/26/2021	
Lindon Administration (sedondary)	Adam Cowie	801-785-5043	acowie@lindoncity.org	6/15/2021	Yes
Lindon Emergency Manager (primary)	Kelly Johnson		kjohnson@lindoncity.org	6/15/2021	Yes
Mapleton Planner	Brian Tucker	801-806-9108	btucker@mapleton.org	6/30/2021	Yes
Mapleton Public Works	Steven Lord	(801) 489-6253	slord@mapleton.org	6/30/2021	
Mapleton Ready	Derek Haynie	(801) 491-1111	derek@mapletonready.org		
Mayor Cedar Fort	David Gustin	801.768.2147	mayor@cedarfort.town	12/17/2020	
Orem Emergency Manager	Heath Stevenson	801-229-7146	hmstevenson@orem.org	6/22/2021	Yes
Orem Engineer	Sam Kelly	801-229-7328	srkelly@orem.org	6/22/2021	
Payson	Jill Spencer	801-465-5233	jills@payson.org	6/14/2021	Yes
Payson	Travis Jockumsen		travisj@payson.org	6/14/2021	Yes

Payson Facilities Manager	Shane Spencer	801.404.6473		6/14/2021	
Payson Fire Marshall	Scott Spencer	801-465-5252	scottss@payson.org	6/14/2021	
Pleasant Grove Community Development	Daniel Cardenas		dcardenas@pgcity.org		
Pleasant Grove Engineering	Marty Beaumont	801-785-2941	mbeaumont@pgcity.org		Yes
Pleasant Grove Engineering	Aaron Wilson		awilson@pgcity.org	6/15/2021	Yes
Pleasant Grove Fire Chief	Andrew Engermann		aEngemann@pgcity.org		
Provo	Melissa McNalley		MMcNalley@provo.utah.gov	6/10/2021	
Provo Airport	Donavon Cheff				Yes
Provo EM	Chris Blinzinger	801-404-6368	cblinzinger@provo.org	6/10/2021	Yes
Provo Planner	Robert Mills	801-852-6407	rmills@provo.org	6/10/2021	Yes
Provo Stormwater Engineer	Jared Penrod		jpenrod@provo.org	6/10/2021	Yes
Salem	Bruce Ward		brucew@salemcity.org		
Salem	Greg Gurney		ggurney@salemcity.org		Yes
Santaquin	Jason Bond	801-754-1011 ex 223	jbond@santaquin.org	7/26/2021	Yes
Santaquin	Jon Lundell				Yes
Santaquin EM	Chris Lindquist	(801)754-1940	clindquist@santaquin.org	7/26/2021	Yes
Santaquin Engineer	Jason Lidet			7/26/2021	

Santaquin Engineer	Norm Beagley			7/26/2021	Yes
Santaquin Fire Chief	Ryan Lind	(801)754-1940		7/26/2021	
Saratoga Fire	Spencer Kyle	801-766-9793	skyle@saratogaspringscity.com		
Saratoga Planning	David Stroud	801.766.9793x4	dstroud@saratogaspringscity.com		
Saratoga Springs Engineer		801-766-9793x5			
Spanish Fork	Jered Johnson	801-804-4575	jjohnson@spanishfork.org		
Spanish Fork	Travis Warren			6/9/2021	Yes
Spanish Fork Economic Development	Dave Anderson	801-804-4586	danderson@spanishfork.org	6/9/2021	Yes
Spanish Fork Emergency Manager	Trevor Sperry	801.804.4768	tsperry@spanishfork.org	6/9/2021	
Spanish Fork Floodplain Engineer	John Little		jlittle@spanishfork.org		
Spanish Fork Public Works	Chris Thompson	801-804-4556	cthompson@spanishfork.org		
Spanish Fork Public Works	Marlo		msmith@spanishfork.org	6/9/2021	
Springville EM	JoAnna Larsen	801-635-5776	em@springville.org		Yes
Springville emergency prep mtgs			EM@springville.org		

Springville Engineer	Jeff Anderson	801-491-2719	janderson@springville.org	6/30/2021	
Springville Head Building Official-secondary	Jason Van Ausdal	801-491-7832	jvanausdal@springville.org		
Springville Planner	Laura Thompson		lthompson@springville.org		
Vineyard	George Reid		Georger@vineyardutah.org	6/7/2021	Yes
Vineyard Engineer	Nassim			6/7/2021	Yes
Vineyard Planner	Morgan Brimm	385-248-7029	morganb@vineyardutah.org		
Vineyard Planner	Briam Perez	385-329-1730	briamp@vineyardutah.org	6/7/2021	
Vineyard Public Works	McDermott, Kinsli	801-226-1929	kinslim@vineyardutah.org		
Woodland Hills	Corbett Stephens	801-857-0788	works@woodlandhills-ut.gov	7/8/2021	
Woodland Hills	Jodie Stones	801-423-1962	recorder@woodlandhills-ut.gov		
Woodland Hills	Greg Northup		fire@woodlandhills-ut.gov		
Others					
WUI Coordinator	Dax Reid	801-678-1655	daxreid@utah.gov	6/30/2021	Yes
Utah County Fire Warden FFSL	Josh Berg	385-254-8010	jberg@utah.gov	6/30/2021	
County Commissioner	Bill Lee		WilliamL@utahcounty.gov		
	Thomas SAKIEVICH		Thomas@utahcounty.gov		
			AmeliaP@utahcounty.gov		
Health Dept Emergency	Ryan Strabel	801.851.7525	ryanst@utahcounty.gov	6/30/2021	

Response Coordinator					
BOR	Dale		dthamilton@usbr.gov		
Central Utah Water Conservancy District	Mike Whimpey		mwhimpey@cuwcd.com		
CUWCD	Blake Buehler	801.226.7133	blake@cuwcd.com	12/8/2021	
CUWCD	Chris Elison			12/8/2021	
CUWCD	Cort Lambson			12/8/2021	
CUWCD	KC Shaw			12/8/2021	
Alpine School District	Frank Pulley		frankpulleyjr@alpinedistrict.org		
Alpine School District	Kimberly Bird		kbird@alpinedistrict.org		
Alpine School District	Mike Browning		mbrowning@alpinedistrict.org		
Nebo Risk Management	Kathy Carling	801-354-7474	kathy.carling@nebo.edu	7/20/2021	
Utah Co. Emergency Manager	Peter Quittner	801-404-6050	peterq@utahcounty.gov	6/30/2021	
Utah County Emergency management	Allison Jester/Janeen Olson		AllisonJ@utahcounty.gov	6/30/2021	
Provo Airport	Heather	8018526715	hrollins@provo.org		

Utah County Emergency Management			ryanst@utahcounty.gov		
Utah County Temporary employees	Emily, Lindsey, James			6/30/2021	
Provo School District Facilities Director	Mark Wheeler	801-374-4923			
MAG's TAC				Presented 7/26/2021	
Utah County Emergency Manager Monthly Meeting				Presented 10/26/2021	



**CITY OF OREM
CITY COUNCIL
MEETING
APRIL 26, 2022**

REQUEST:	PUBLIC HEARING / RESOLUTION - City to receive Public Comments on the Community Development Block Grant (CDBG) Projected Use of Funds for CARES ACT CDBG-CV funding and consider approval of a substantial amendment to the 2019-2020 Annual Action Plan.
APPLICANT:	
NOTICES:	
SITE INFORMATION:	
PREPARED BY:	

REQUEST:

BACKGROUND:

In response to the Coronavirus Pandemic (COVID-19), the U.S. Department of Housing and Urban Development Community Development Block Grant provided the City of Orem with a second CDBG allocation of \$287,940 to be used to prevent, prepare for, and respond to COVID-19. The CDBG Advisory Commission recommends that the Orem City Council allocates \$10,000 of the previously allocated \$70,928.28 in CDBG-CV public services funding to the Orem Library to provide 25 hotspots for low to moderate income household use to help respond to the pandemic and mitigate the impacts of COVID-19 and \$5,500 to Sharon Elementary to purchase of five picnic tables to help prevent and mitigate COVID-19.

RECOMMENDATION:

The Community Services Manager recommends that the City Council hold a public hearing to receive public comment on the projected uses of the funds for the CARES ACT CDBG-CV funding, adopt the recommendations of the CDBG Advisory Commission, and approve a substantial amendment to the 2019-2020 Annual Action Plan.

RESOLUTION NO. _____

**A RESOLUTION AUTHORIZING PROJECTS AND A SUBSTANTIAL AMENDMENT
TO THE CITY OF OREM ANNUAL ACTION PLAN
FOR FISCAL YEAR 2019-2020**

WHEREAS, the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), signed in March 2020 authorized Community Development Block Grant Coronavirus (CDBG-CV) funds, made available from the United States Department of Housing and Urban Development (HUD), to be allocated to prevent, prepare for, and respond to the COVID-19 Pandemic; and

WHEREAS the City of Orem, a CDBG entitlement, has been allocated a second round of CDBG-CV funding in the amount of \$287,940; and

WHEREAS, the Orem City Council approved a Substantial Amendment to the City of Orem's Annual Action Plan and budget for FY 2019-2020 on January 12, 2021, Resolution No. 2021-0002; and

WHEREAS, the approved amendment allocated \$258,049.16 of CDBG-CV funds to public service projects; and

WHEREAS, the City of Orem seeks to dedicate \$10,000 of the previously allocated \$70,928.28 in CDBG-CV public services funding the Orem Library to provide 25 hotspots for low to moderate income household use to help respond to the pandemic and mitigate the impacts of COVID-19 and \$5,500 to Sharon Elementary to purchase of five picnic tables to help prevent and mitigate COVID-19.

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

1. That the City Council will authorize the use of CDBG-CV funds described above by adopting this Resolution and will approve the proposed Substantial Amendment to the City of Orem's Annual Action Plan.
2. This Resolution shall take effect immediately upon passage.
3. All other resolutions and policies in conflict herewith, either in whole or in part, are hereby repealed.

PASSED AND APPROVED this **26th** day of **April** 2022.

David A. Young, Mayor

ATTEST:

JoD'Ann Bates, City Recorder

COUNCILMEMBER	AYE	NAY	ABSTAIN
Mayor David A. Young	☐	☐	☐
Jeff Lambson	☐	☐	☐
Debby Lauret	☐	☐	☐
Tom Macdonald	☐	☐	☐
LaNae Millett	☐	☐	☐
Terry Peterson	☐	☐	☐
David Spencer	☐	☐	☐