

2023 Utah Landslide Hazards Update **June**



April 2023 Kolob Canyon Rockfall/Landslide

Bill Keach
Director



May 2023 Pleasant View

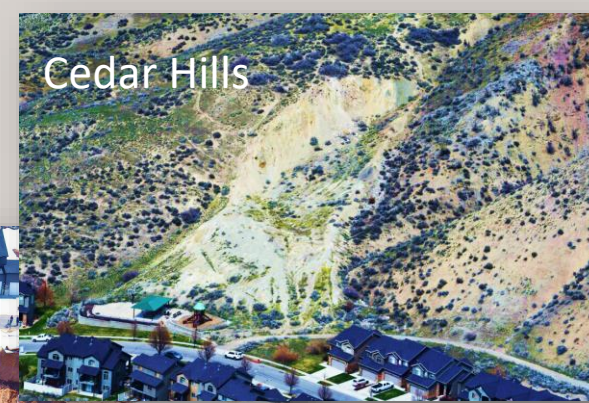
Steve D. Bowman, Ph.D., P.E., P.G.
Geologic Hazards Program Manager



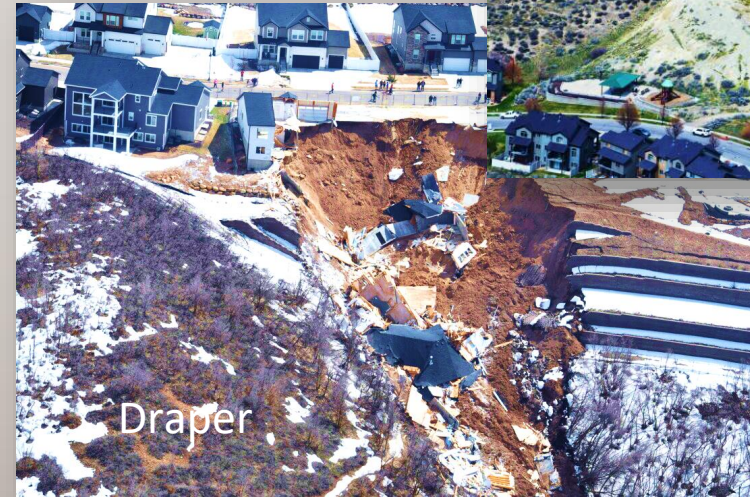
Landslides 2023 – by the numbers

- > 25 emergency responses
- ~ 500 staff hours in last 6 weeks
- ~ 209 that we know about, many more that we don't know about, probably orders of magnitude more
- ~ 1500 photos archived in 2023 alone
- ~ 8 drone videos (maybe more)
- KSL Chopper 5 - twice
- 2 homes collapsed (+1 razed by the city)
- Countless media interviews-TV, radio, press
- 4 geologists plus support staff

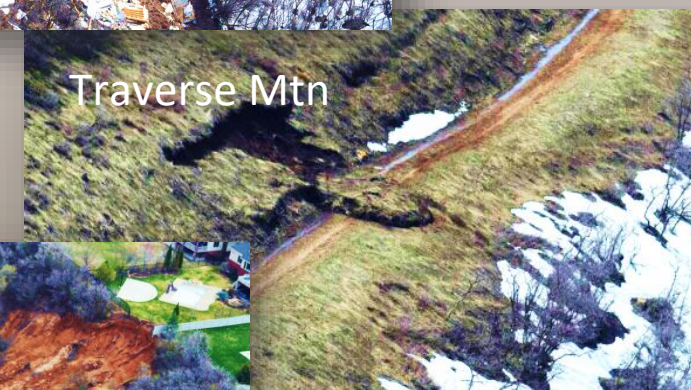
Cedar Hills



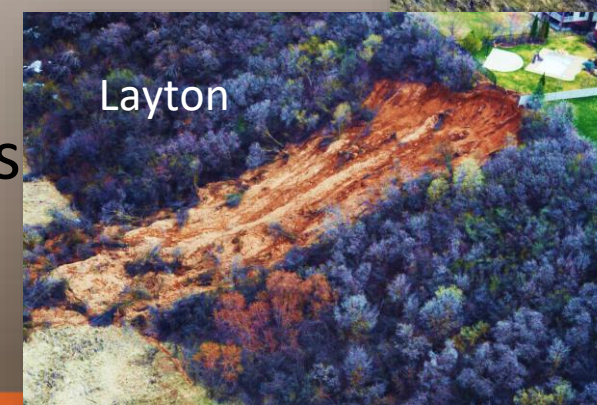
Draper



Traverse Mtn

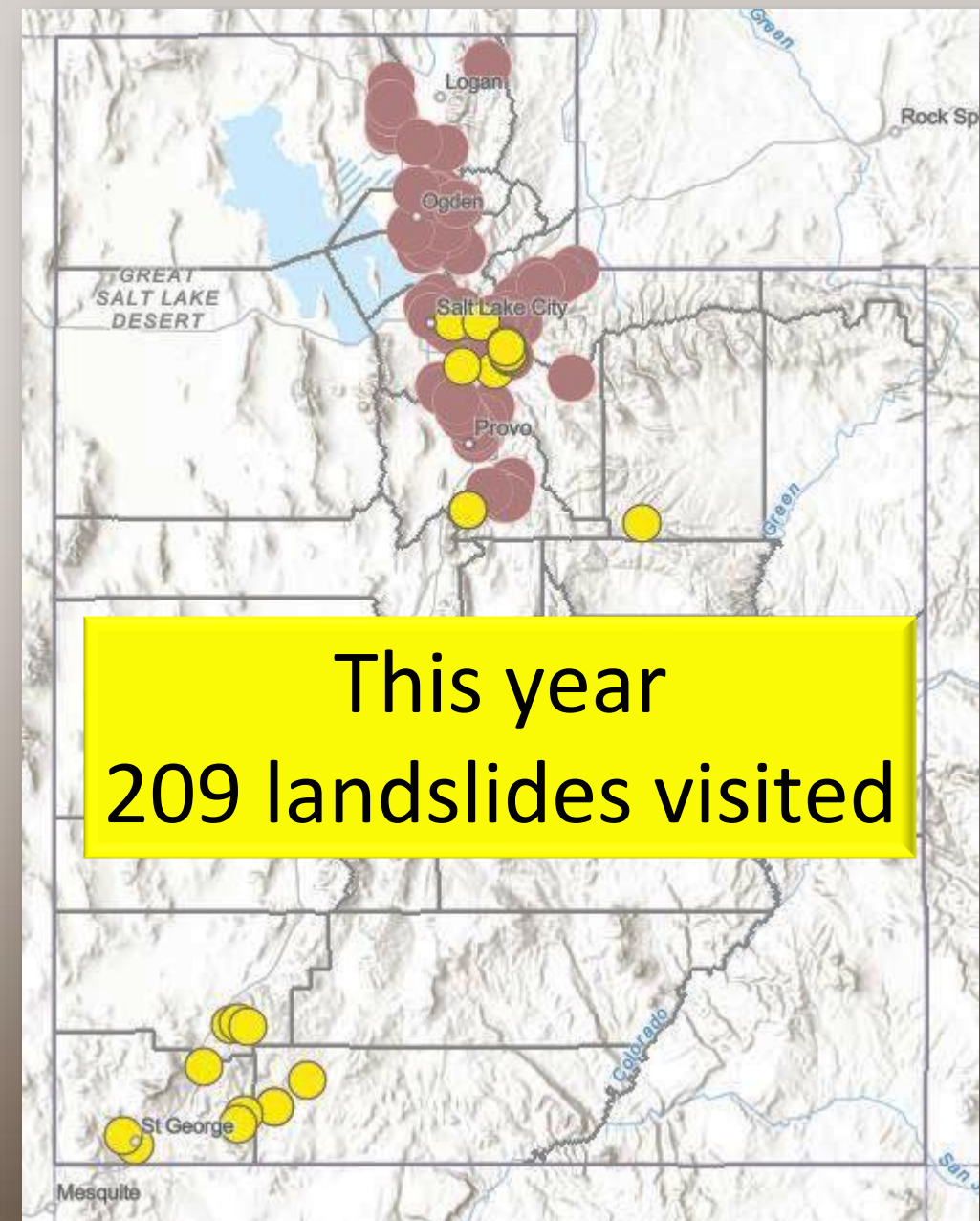


Layton



2023 UGS Landslide Emergency Responses

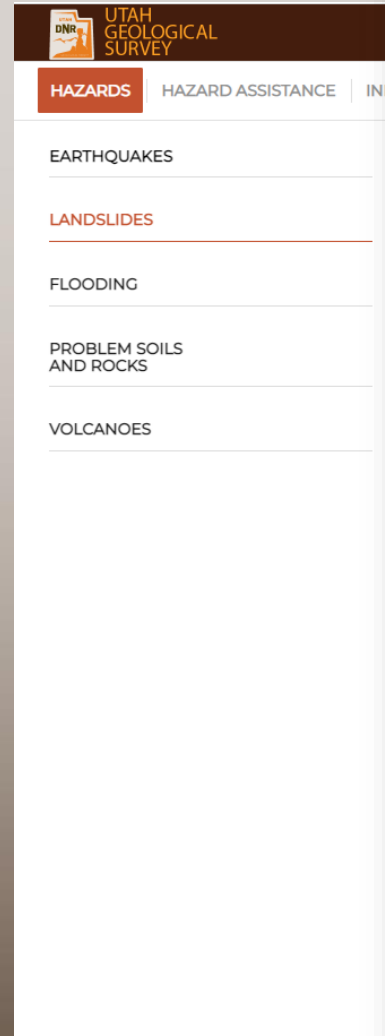
- Box Elder County
 - Willard
 - Cache County
 - Logan
 - Davis County
 - Fruit Heights
 - Layton Area*
 - Iron County
 - State Route 14/Coal Creek*
 - Kane County
 - State Route 9
 - Morgan County
 - Mountain Green Area*
 - Trappers Loop Road*
 - Rich County
 - North Cisco Road*
 - Salt Lake County
 - City Creek Canyon*
 - Emigration Canyon*
 - Parleys Canyon*
 - Summit County
 - Cove Canyon
 - Marriott Mountainside
 - Utah County
 - Springville Subsidence
 - Washington County
 - Truman Drive
 - Zion National Park*
 - Weber County
 - Various locations
- * denotes multiple landslides



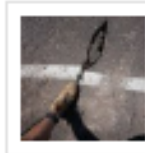
June Updates

Since the May 17 interim

- Six new events added to the UGS website
 - 2 per week
- Many more not yet posted (privacy concerns)

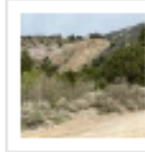


Select an event for more details.



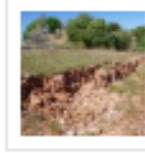
JUNE 6, 2023

Meadow Creek Landslide, Kane County



JUNE 6, 2023

Cedar Highlands Landslide, Iron County



JUNE 6, 2023

Truman Drive Landslide, Washington County



JUNE 6, 2023

Jordanelle Reservoir Landslides, Wasatch County



MAY 24, 2023

Payson Canyon Landslide, Wasatch County



MAY 20, 2023

Payson Canyon Flooding/Road Failure, Utah County



What Can the UGS do?

Improve understanding of landslides and other geologic hazards

- Funding to Support Additional UGS Geologic Hazards Program Geologists
 - Increased Landslide Inventory Mapping (landslide footprints, type, etc.)
 - Increased Mapping of Other Geologic Hazards
 - Increased Technical Outreach to Utah's Local Governments
 - Landslides
 - Earthquakes
 - Shallow Groundwater Flooding
 - Problem Soils
 - Rockfalls



What More Can Be Done About Landslides and Other Geologic Hazards?

FY24 Building Block proposals

- Landslide Mapping
- Geotechnical Reports

Agency: Utah Geological Survey (UGS)
Division or Program: Geologic Hazards Program
Request Title: Landslide Mapping of Utah's Rapidly Growing Areas to Reduce Risk
Request Priority: 2
Please do not prioritize reallocation requests against standard budget requests.

\$120,000

Amount Requested:

SOURCE	FY 23 ONE-TIME	FY 24 ONE-TIME	FY 24 ONGOING	TOTAL REQUEST
GF, ITF, USF	\$0	\$5,000	\$203,000	\$208,000
OTHER	\$0	\$0	\$0	\$0
TOTAL	\$0	\$5,000	\$203,000	\$208,000

Agency: Utah Geological Survey (UGS)
Division or Program: Geologic Hazards Program
Request Title: Utah Subsurface Geologic Database Enhancement for Geologic Hazard Mapping and Land-Use Planning and Management
Request Priority: 3
Please do not prioritize reallocation requests against standard budget requests.

\$0,000

Amount Requested:

SOURCE	FY 23 ONE-TIME	FY 24 ONE-TIME	FY 24 ONGOING	TOTAL REQUEST
GF, ITF, USF	\$0	\$2,500	\$66,500	\$69,000
OTHER	\$0	\$0	\$0	\$0
TOTAL	\$0	\$2,500	\$66,500	\$69,000

ER	\$0	\$0	\$0	\$0
TOTAL	\$0	\$2,500	\$66,500	\$69,000

Summarize other sources besides General Fund (GF), Income Tax Fund (ITF), and Uniform of Fund (USF):

BACKGROUND & BUDGETARY DETAILS

Summarize the request, the specific problem it will solve, and how it will solve the problem.
 The request is for one FTE Geological Technician plus related one-time expenses to extract, assess and archive subsurface and other geologic hazard related data. The goal is to gather data reported at county and municipal levels for input to a statewide database. Currently, there is no requirement for reports required by local jurisdictions for building and construction to be submitted to a statewide database. This request will require a statutory change for data submittal and the needed to compile.
 One of the fastest growing states in the nation, Utah is experiencing rapid urban growth and development. With much of the relatively easy to develop open land already urbanized, development growth is now taking place in areas susceptible to more geologic hazards and with impacts at greater levels of impact than ever before. Most of these geologic hazards are not covered by homeowner's insurance and often not covered by commercial property insurance. In

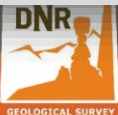


Your support is appreciated

FY 24 BUDGET RECOMMENDATIONS

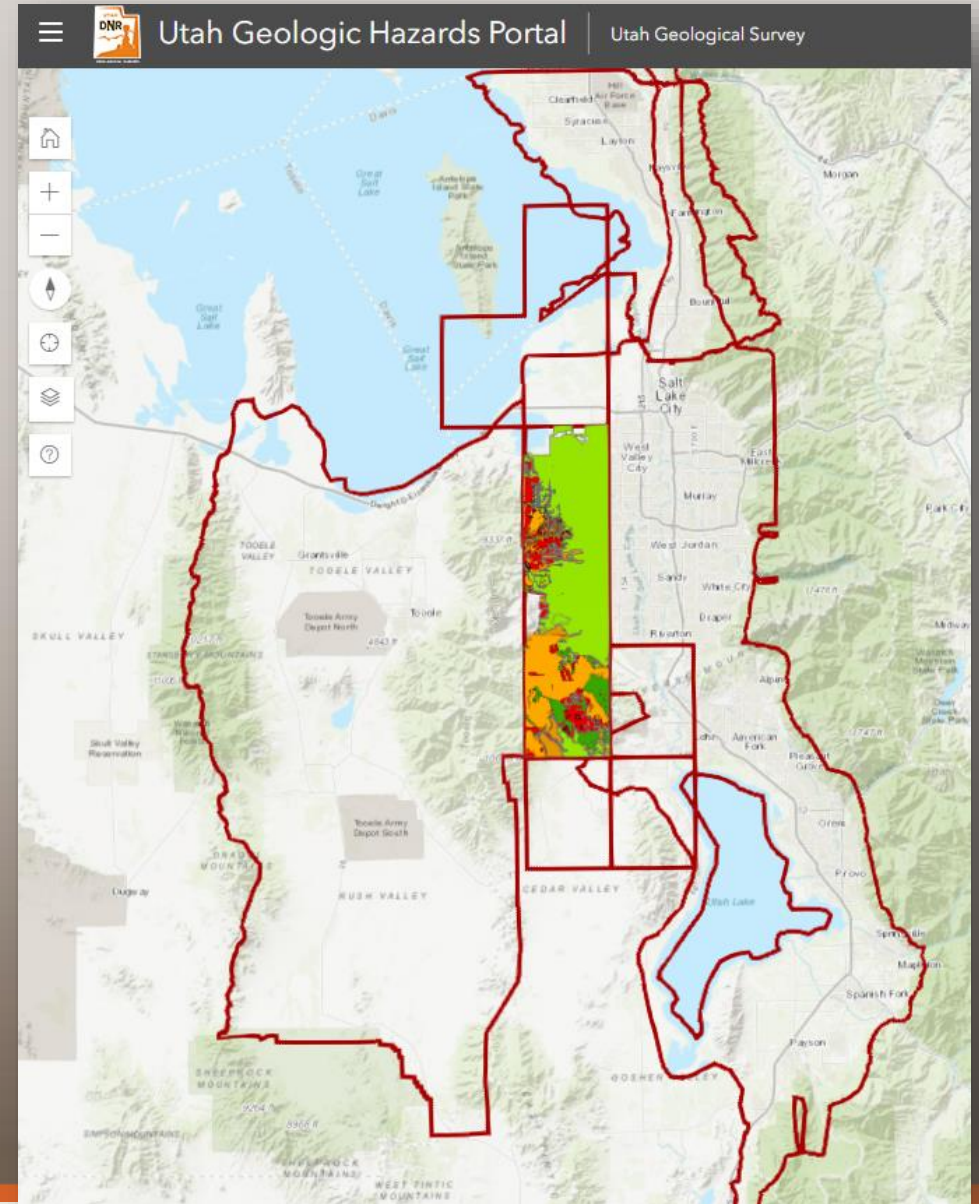
Carbon Sequestration Program	-	-	-	-	-	362,100	-	362,100
Cloud Seeding Program	2,195,800	-	-	-	-	-	-	2,195,800
CO River Basin Water Rights Distribution Priority Schedule	-	-	-	-	-	650,000	-	650,000
Coordinated Water Planning and Conservation	130,000	-	-	-	-	-	-	130,000
Designated Sales Tax Appropriation Correction	-	-	-	-	-	-	303,200	303,200
Emerging Energy Technologies Expert	180,000	-	-	-	-	-	-	180,000
Fish Hatchery Maintenance							-	633,200
Landslide Mapping of Utah's Rapidly Growing Areas						120,000		291,200
Mineral Lease Fund Increase							-	1,205,000
Outdoor Recreation Trail Crew	-	-	-	-	-	1,300,000	-	1,300,000
Sovereign Lands Management	-	-	-	-	-	2,000,000	-	2,000,000
State Match for IJJA Grid Resilience Formula Grant	-	-	-	5,860,000	-	-	-	5,860,000
State Parks Campground and Improvements	-	-	-	-	-	250,000	-	250,000
State Parks Operations Cost Increases	-	-	-	-	-	1,500,000	-	1,500,000
State Parks Retail Sales Merchandise	-	-	-	-	-	1,750,000	-	1,750,000

8	DNR	UGS	Groundwater Monitoring and Investigations	Gov	283,200
9	DNR	Water Rights	Groundwater Monitoring and Investigations	Gov	350,000
10	DNR	FFSL	Assistant County Fire Wardens & Vehicles	Gov	215,000
11	DNR	UGS	Landslide Mapping of Utah's Rapidly Growing Areas	Gov	120,000
12	UDAF	Marketing and Development	Livestock Show	RFA	35,000
			LeRay McAllister Critical Lands Conservation		



What More Can Be Done About Landslides and Other Geologic Hazards?

- Current hazard mapping is inconsistent
- Completeness and detail vary
- Current focus is on Salt Lake and Utah Counties

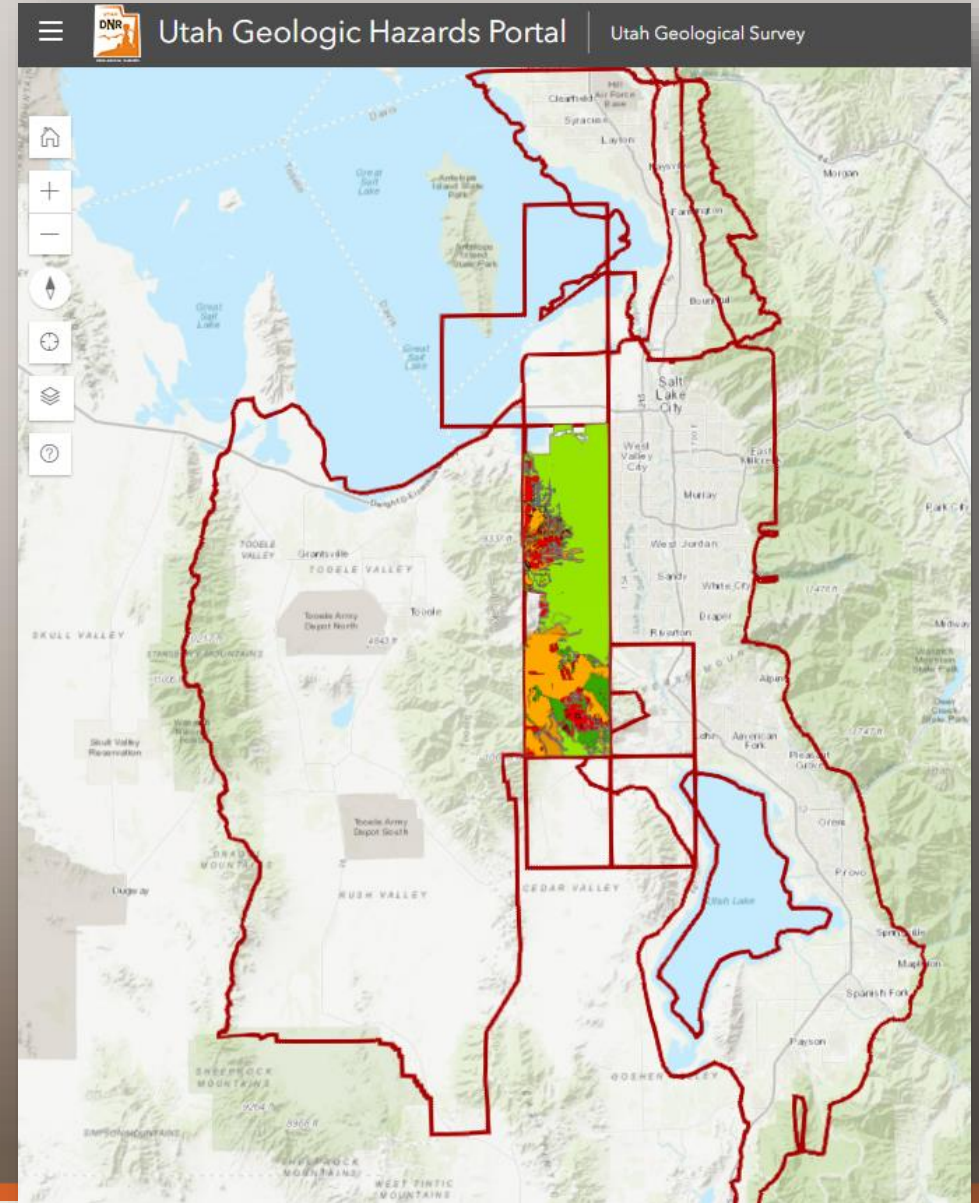


What More Can Be Done About Landslides and Other Geologic Hazards?

Moving forward –

Need to push this level of detail to:

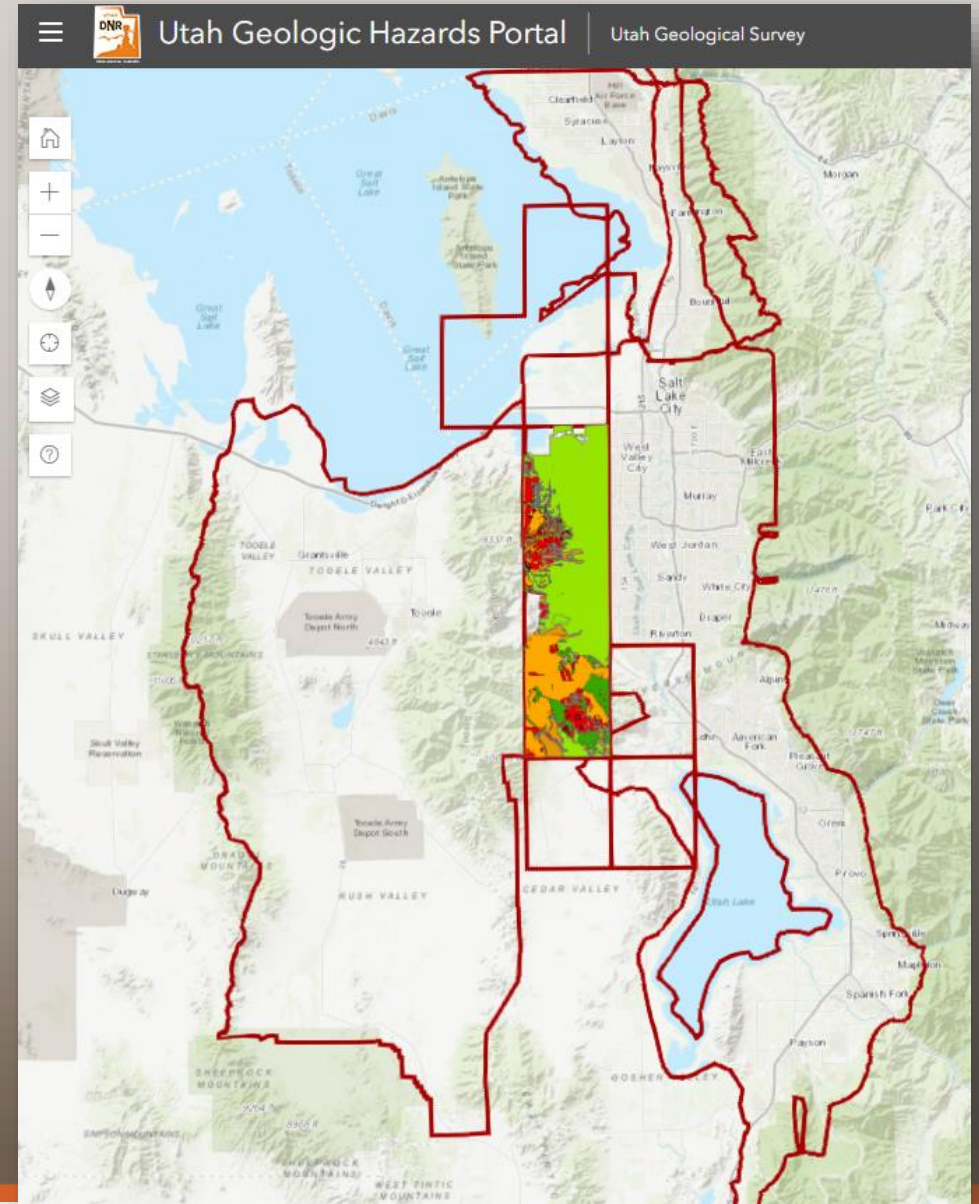
- All metropolitan areas
- Urban-wildland interfaces
- Rapid development
- High recreational use
- Anywhere with significant hazards



What More Can Be Done About Landslides and Other Geologic Hazards?

Benefits

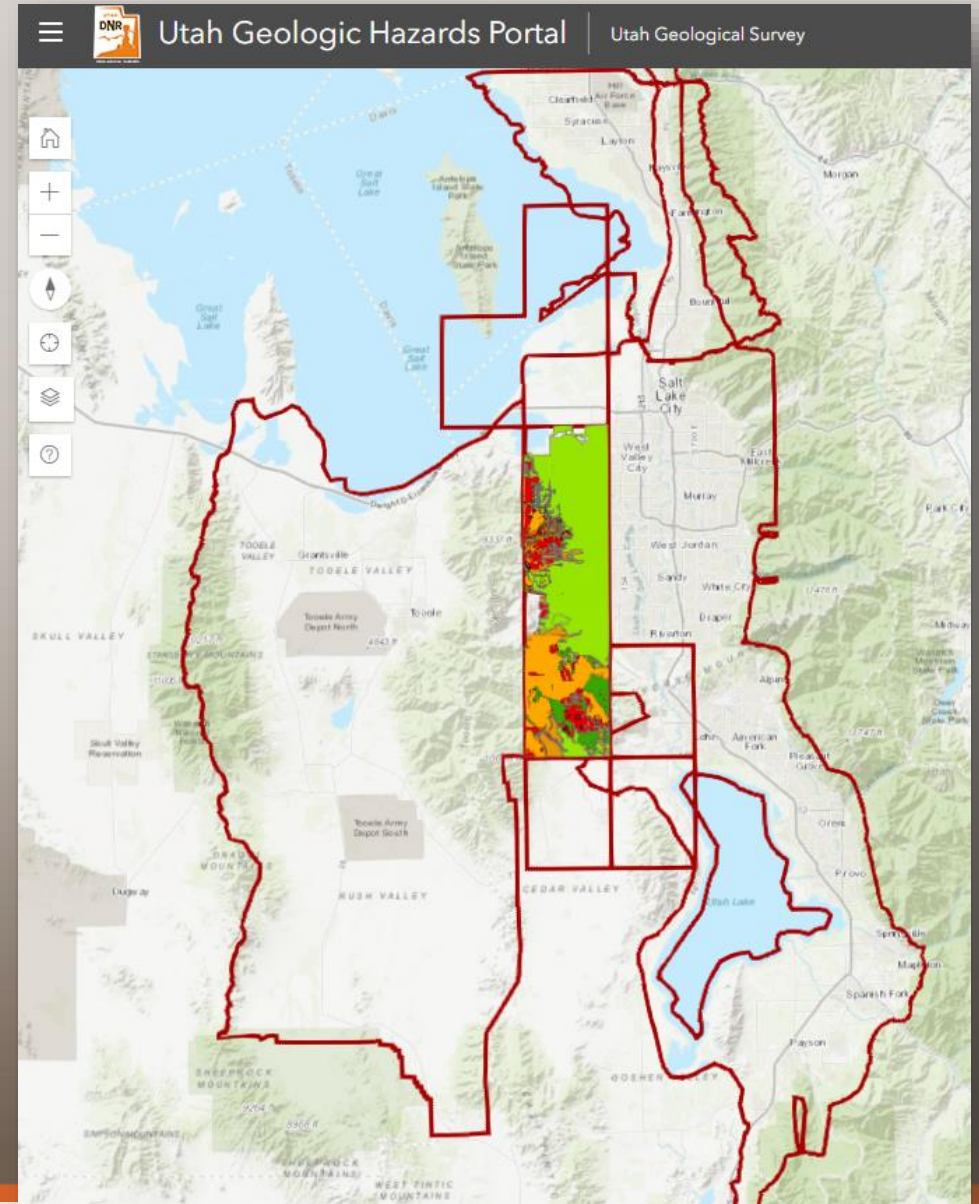
- Facilitate land-use planning and management
- Pre-development engineering
- More resilient development and infrastructure



What More Can Be Done About Landslides and Other Geologic Hazards?

Beneficiaries

- Local governments
- Professional consultants
- Public
- Researchers, Universities



What More Can Be Done About Landslides and Other Geologic Hazards?

Recommendation for UGS Funding

UGS – Landslide Mapping 3.3 FTEs

- Project Geologist (1.0)
- Sr Geo. Technician (1.0)
- GIS Analyst (0.5)
- InSAR specialist (0.8)

Cost ~\$365K

UGS – Geotechnical Reports 1-2 FTEs

- Geotech (1.0)
- Project Geologist (1.0)

Cost ~\$85-208K

Similar to last year's Building Block proposals.
\$120K in Governor's FY24 proposed budget



What More Can Be Done About Landslides and Other Geologic Hazards?

Recommendation for Legislation

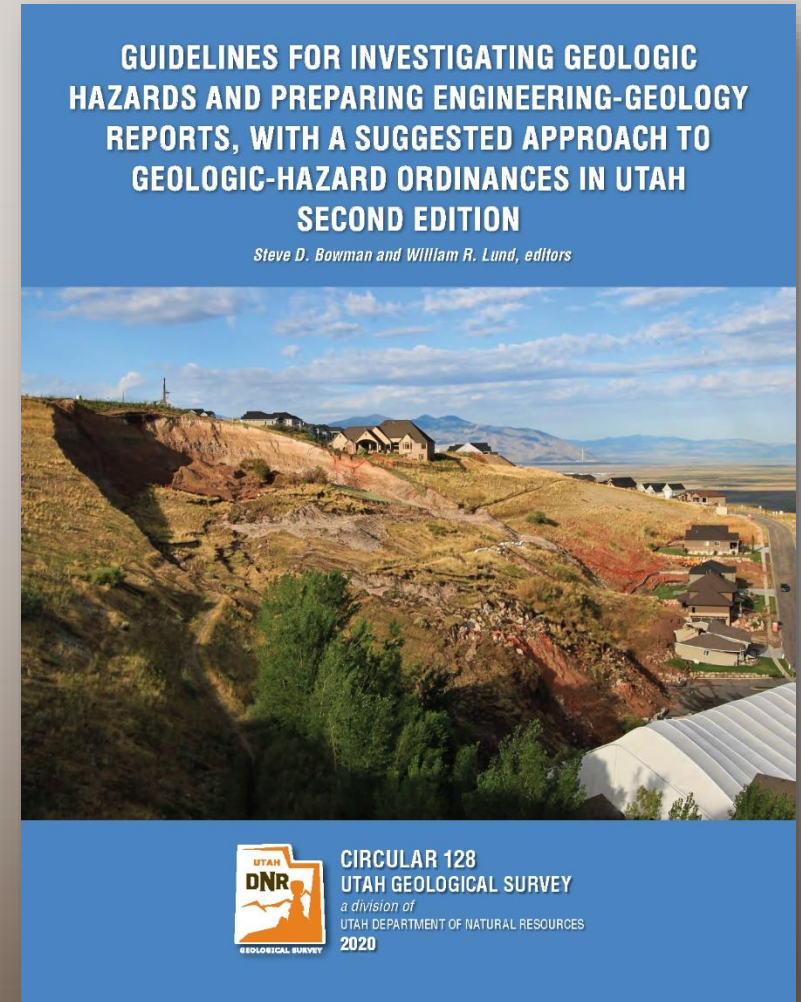
- Require Local Governments to Submit Geologic Reports to the UGS for Archiving
 - Improves data available for geologic hazard mapping and investigation
 - Will require the addition of 1-2 people at the UGS (previous slide)



What More Can Be Done About Landslides and Other Geologic Hazards?

Recommendation for Legislation

- Adoption of the UGS Guidelines for Investigating Geologic Hazards and Preparing Engineering-Geologic Reports
 - Latest edition (2020, UGS Circular 128)
- Adoption of the UGS Model Geologic Hazard Ordinance
 - Contained in UGS Circular 128 (Appendix E)
 - Most geologic hazards are not covered in the statewide adopted
 - 2021 International Building Code (IBC) and
 - 2021 International Residential Code (IRC).
- Adoption and Enforcement of Mass Grading Codes/Ordinances Covering Construction Cuts and Fills



Questions and Discussion

Society can, and should, prepare for geologic hazards

