

# DIGITAL MAPPING TECHNIQUES 2020

The following was presented at DMT'20  
(June 8 - 10, 2020 - A Virtual Event)

The contents of this document are provisional

See Presentations and Proceedings  
from the DMT Meetings (1997-2020)

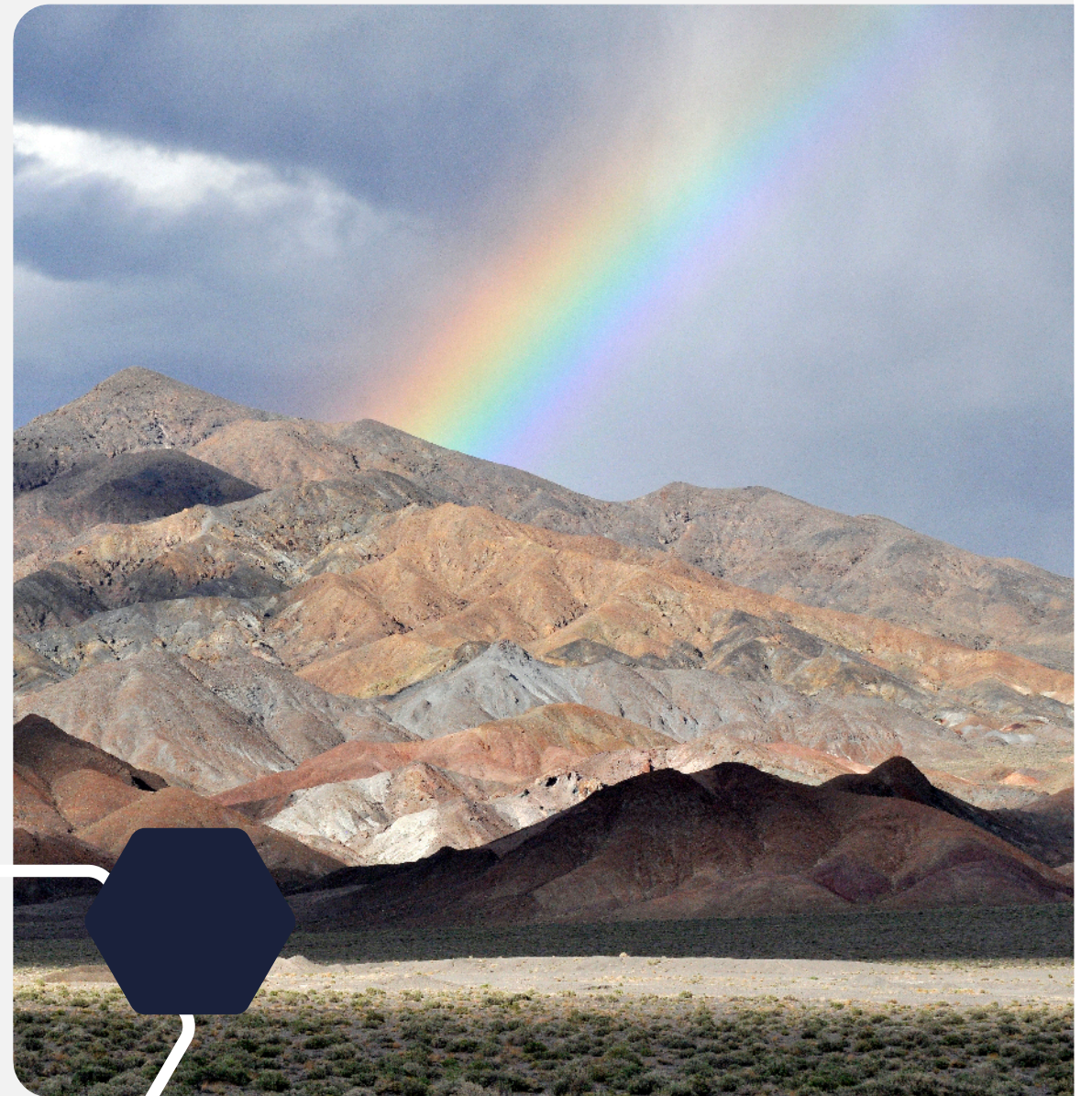
<http://ngmdb.usgs.gov/info/dmt/>





# What is Open Data?

- Data that can be freely used and re-used by anyone
- The ESRI Open Data platform makes it easy for users to share data
- Allows users to search these datasets and extract/download as needed
  - Shapefile, KML, or spreadsheet
  - All datasets can be filtered by some attributes
- Provides a location to share web applications, story maps, and other resources





# Nevada Bureau of Mines and Geology

Nevada's State Geological Survey

🔍 Search Open Data

NBMG Open Data Tour

Creation of map services and datasets have been an important component of the Nevada Bureau of Mines and Geology (NBMG) modernization and adding of new capabilities to maps. Here you can browse all datasets available for download on the NBMG open data page. As we update and change databases, our open data page will always reflect the most up-to-date data at NBMG.



# Data Goals:

- Creation of map and data services are an important part of NBMG modernization.
- Many datasets are freely available
- There is a need to make our data more easily accessible
- Share our data
  - Make it easy to discover and download.
    - For both non-GIS and GIS users.
  - This includes web applications and datasets.



# Why is it useful?

- Makes our free data more discoverable
- Separate from paid GIS files
- Enables the sharing of NBMG data across platforms and agencies/public
- Provides a central location for searching NBMG data and finding other resources
  - Web applications
  - Publications
  - Other digital products




**Maps and Data**

The NBMG Open Data page is now live! Use this platform to search GIS data, web applications, and download datasets currently available from NBMG. Please note that this is a beta-test of the maps and data page. [NBMG Open Data](#)

[NBMG ArcGIS Online Homepage](#)  
[NBMG Service Directory](#)  
[NBMG Publication Sales](#)  
[NBMG Virtual Clearinghouse for Nevada Geographic Information](#)  
[W.M. KECK Earth Sciences and Mining Research Information Center](#)

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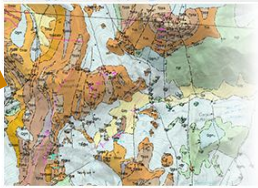
**Geohazards**



<b>Hazard Applications:</b>	<b>Links:</b>
<a href="#">MyHAZARDS</a>	<a href="#">MyHAZARDS User Guide</a>
<a href="#">MyPLAN - Nevada</a> (requires login for authorized users only)	<a href="#">MyHazards/MyPlan Layer List</a>
<a href="#">Quaternary Faults in Nevada</a>	

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**Geology and Mapping**




<b>Geology Applications:</b>	<b>Links:</b>
<a href="#">1:500k Geologic Map of Nevada</a>	<a href="#">Recently Published Maps</a>
<a href="#">Geologic Photo Tour of Nevada</a>	<a href="#">Active Mapping Projects</a>
<a href="#">Topographic Quad Index</a>	<a href="#">Geologic Map Index</a> (to be updated)
<a href="#">STATEMAP Progress</a>	<a href="#">OneGeology Portal</a>
<a href="#">Nevada Geologic Maps</a>	<a href="#">Quadrangle Mapping Program</a>
	<a href="#">Statewide Geology Maps</a>




**Explore NBMG Data**




Geohazards




Exploration Resources




Mineral Resources (in progress)




Geothermal (in progress)




Geology



Geophysical (coming soon)



Topographic Maps & Indexes



Oil, Gas, and Renewable Energy

# Challenges

- Organization and Clean-up
  - Shapefile/service organization
  - Categorization
  - Which datasets should be included?
- Metadata
  - Adding tags, keywords, and descriptions to each dataset
    - In our services and ArcGIS online
  - Makes it easy to credit datasets
- Copyright, Creative Commons, and Disclaimers



**Description** Edit

This layer shows earthquakes in the Great Basin that are greater than magnitude 2.0 and less than magnitude 3.0. Other data available is the date and time the earthquake occurred, and the source of the information.

**Layers**

Earthquakes Open In Service URL

**Access and Use Constraints** Edit

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Nevada Bureau of Mines and Geology, Nevada Seismological Laboratory

**URL** View  
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## DISCLAIMER

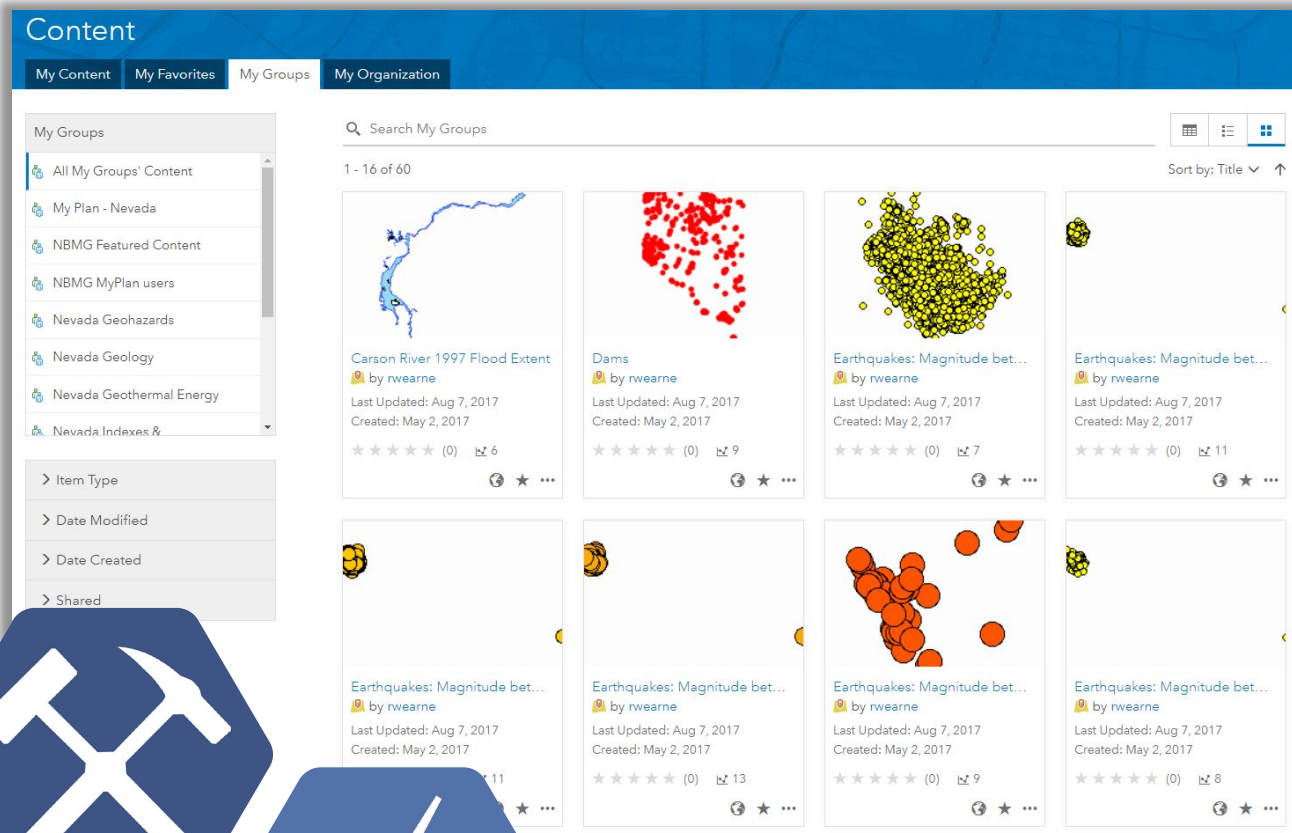
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# Methods



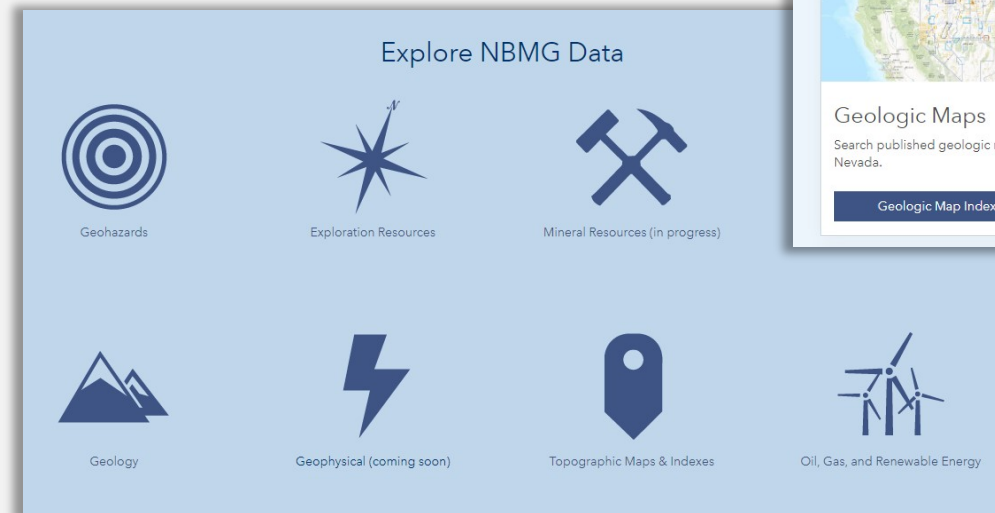
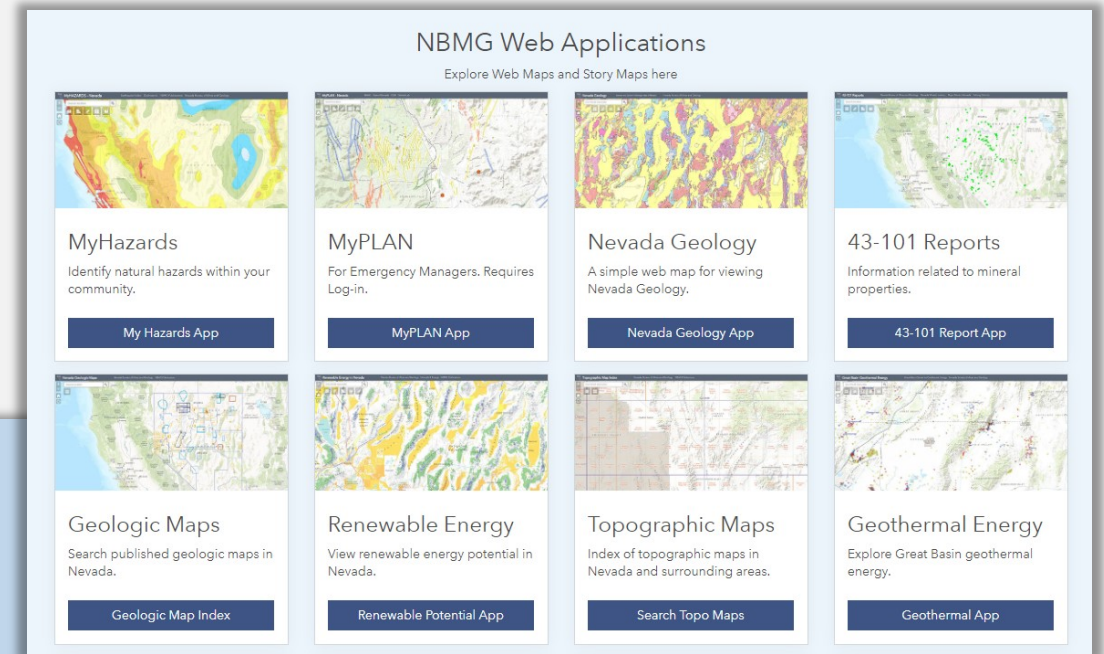
- Publish Data
  - Datasets published to ArcGIS Server
  - Added to ArcGIS Online from REST services directory.
- Create groups
  - Created groups in ArcGIS online to feed open data pages.
    - Groups identified as “open data groups”
  - Each dataset was assigned to a group
    - Currently we have 7 groups with a total of 92 datasets.





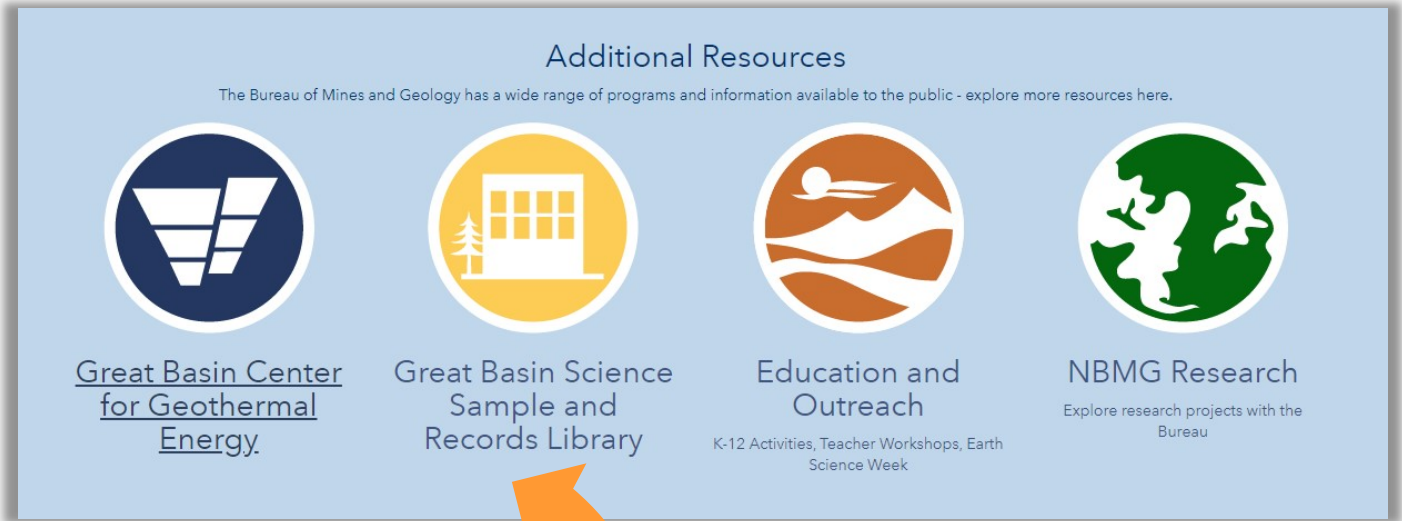
# Building the Open Data site

- Create pages for data categories
  - Geohazards, exploration resources, mineral resources, geothermal, geology, and oil, gas, and renewable energy
- More pages will be developed as we acquire more data.
  - Ex Remote Sensing, Geochemical, and Geophysical

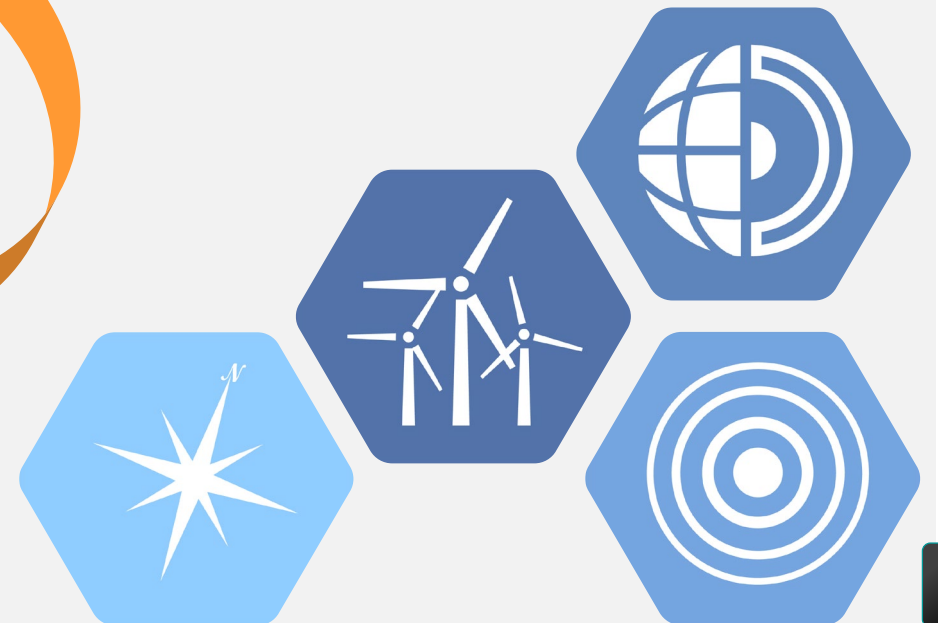
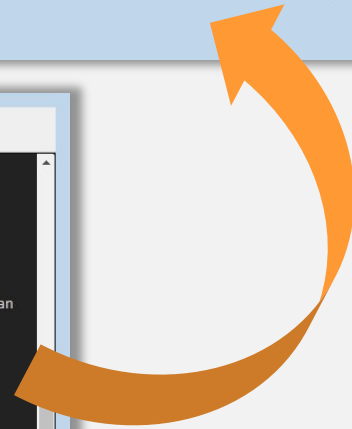


# Building the Open Data site

- ESRI Open Data CMS
- Easy to use content management system
- Uses HTML and CSS
- Best results were obtained by using HTML to create “custom” pages within the CMS



```
A B I G [list icons] + </> ?
<div class="p-body" >
<h3 class="text-center">Great Basin Science Sample and Records Library</h3>
</div></div>
</a></div>
<div class="col-xs-12 col-sm-6 col-md-3"><a href="http://www.nbmj.unr.edu/ScienceEducation/ScienceEducation.html">
<div class="p p-default">
<div class="p-heading"><center></center></div>
<div class="p-body">
<h3 class="text-center">Education and Outreach</h3>
<p class="text-center">K-12 Activities, Teacher Workshops, Earth Science Week</p>
</div></div>
</a></div>
<div class="col-xs-12 col-sm-6 col-md-3"><a href="http://www.nbmj.unr.edu/Research/index.html">
<div class="p p-default">
<div class="p-heading"><center></center></div>
<div class="p-body">
<h3 class="text-center">NBMG Research</h3>
<p class="text-center">Explore research projects with the Bureau</p>
</div></div>
</a></div>
</div>
```

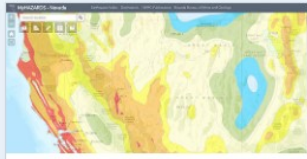
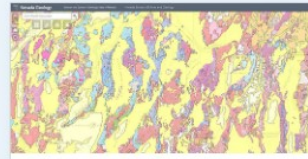
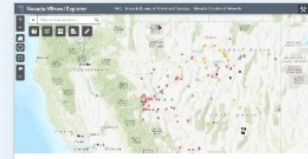


# Results

- More robust and organized location for searching NBMG geospatial data
  - Better public interface
  - Makes NBMG more relevant as a state survey
  - Easy for us to maintain and update
  - Free datasets are easier to find and download
  - Web applications are more organized and easier to locate.

### NBMG Web Applications




Web apps provide simple access to information and tools for understanding information available from the Bureau. We recommend exploring the web applications listed below for more in-depth information on geohazards, mining and renewable resources in Nevada, and geologic maps

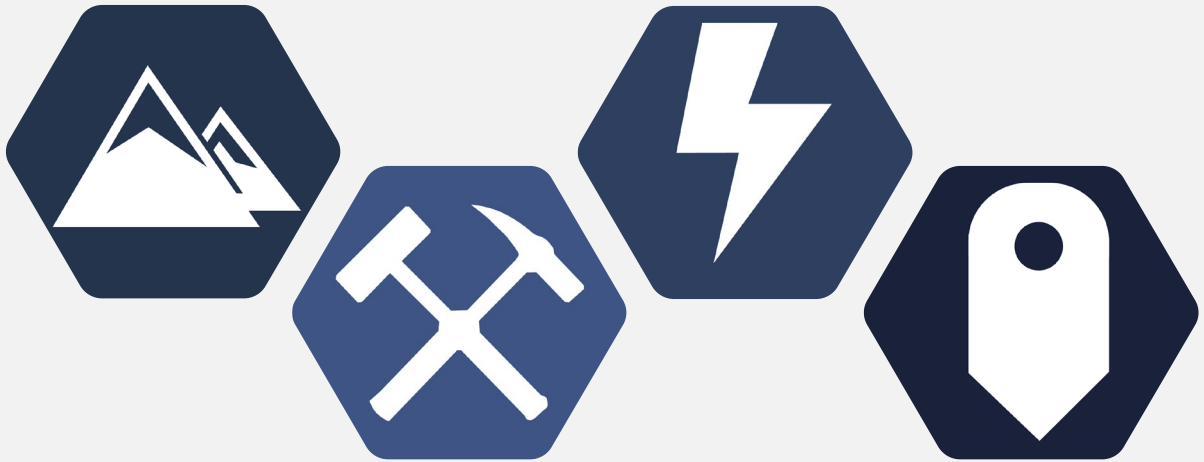
 <p><b>2017 Lidar</b> Explore the new QL1 and QL2 Lidar data!</p> <p><a href="#">Reno-Carson Lidar</a></p>	 <p><b>MyHazards</b> Identify natural hazards within your community.</p> <p><a href="#">My Hazards App</a></p>	 <p><b>Nevada Geology</b> A simple web map for viewing Nevada Geology.</p> <p><a href="#">Nevada Geology App</a></p>	 <p><b>Mineral Explorer</b> Identify and discover mineral resources</p> <p><a href="#">NV Mineral Explorer</a></p>
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[Explore More Apps](#)



### Minerals and Energy

	<p><b>Geothermal Applications:</b></p> <p><a href="#">Geothermal Energy</a></p>	<p><b>Links:</b></p> <p><a href="#">National Geothermal Data System</a></p> <p><a href="#">Geothermal HUB Service Directory</a></p>
	<p><b>Other Energy Applications:</b></p> <p><a href="#">Oil and Gas Resources</a></p> <p><a href="#">Renewable Resources</a></p>	
	<p><b>Mining Applications:</b></p> <p><a href="#">Mining District Database Files</a></p> <p><a href="#">Reno Mineral Resources</a></p> <p><a href="#">43-101 Reports</a></p>	<p><b>Links:</b></p> <p><a href="#">Mining District Text Search</a></p> <p><a href="#">Mining District user guide</a></p> <p><a href="#">Horton Card Index File of Nevada Mines, Minerals, Mine Owners and Operators, and Related References</a></p>



# Future Goals

- NBMG has historically acted as a clearinghouse for GIS data in Nevada
  - There is a need to continue to provide this service
  - Connect users to other open data sites
- Continue to expand the Open Data site

*Make more geospatial data available!*



# Thank You!

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