

DIGITAL MAPPING TECHNIQUES 2023

The following was presented at DMT'23

av 21 - 24, 2023

The contents of this document are provisional

See Presentations and Proceedings from the DMT Meetings (1997-2023)

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

State Geological Surveys Capabilities Building an Interactive Dashboard with Tableau

Sheelagh McCarthy, Jessica Czajkowski

Washington Geological Survey

DMT May 2023

Vision

Map-based application on Association of American State Geologists (AASG) and National Geologic Database Management (NGMDB) websites allowing filter/query of state capabilities for easy identification of states with those resources and their availability for loan, contract, and consultation.



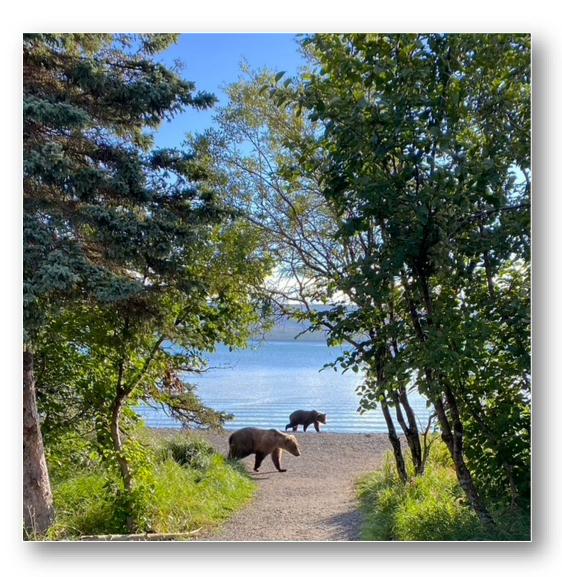
Questionnaires for state geological surveys

- Survey attributes
- Capabilities (GeMS, laboratory, equipment, etc.)
- Storage availability
- Staff positions



User Requirements

- 1. Must be **editable** in real time by state surveys as information changes
- 2. Must be 'fun' enough to use to gain traction
- 3. Must have ability to query/filter data
- 4. Must have a map
- 5. Must be **publicly available**



What tools to use?

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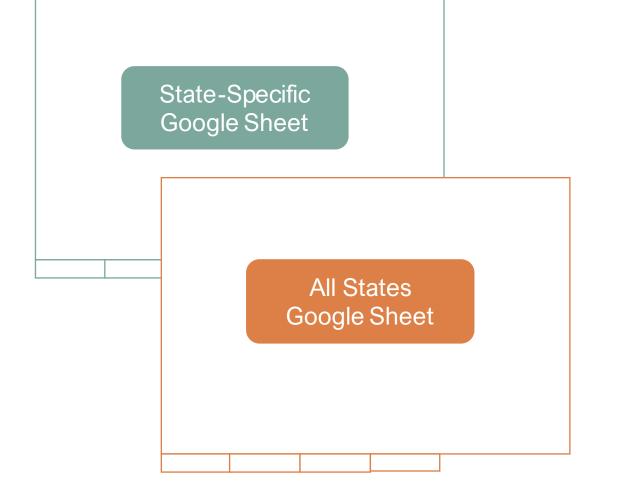


State-Specific Google Sheet

- Pre-formatted Google Sheet
- State fills out entries
- Updated by anyone with link



-	A State	B Survey Taken?		Washington File Edit View	☆ 🖻 🛆 Insert Format Data Te	ools Extensions Help					0 🗉 🗅	🖌 🔹 🕥 Sha					
	State	Did state Survey fill out this form?		ち さ 母 号 100% マ \$ % .º, .º, 123 Calibri マ - 11] + B I ÷ <u>A</u> <u>み</u> 田 語 マ 트 · 보 · ド · A · Co 圧 匹 ▼ · Σ													
			A B C D E F G H														
			1	State		The Method/Procedure		Capability	= Additional Detail		Comments =						
Washington Yes 🔻		Yes V		State	Capability category. Add additional capabilities in rows below (optional)	Method or procedure for capability category	Type of method/procedure	For each row, indicate whether this is a tool/method your survey is capable of completing in-house with current infrastructure, equipment, and staff.		If you answered 'Yes' in Capability, use the dropdown to select appropriate response. This field indicates willingness on the part of your Survey to loan equipment or contract a service OR willingness to advise/discuss the equipment/use/specifications with others. This is not intended to capture capabilities a state Survey may access from others or capabilities	Qualified answers can be clarified by using the comments field						
ł										that state Surveys must contract out to obtain.							
				Washington	Boreholes	Inclinometers	Logging			•							
				Washington	Boreholes	Extensometer	Logging	No		•							
			30	Washington	Boreholes	Piezometers	Logging	No		•							
				Washington	Boreholes	Hand auger	Logging	No									
			32	Washington	Boreholes	Russian sampler	Logging	No			BOREHOLES						
				Washington	Boreholes	Eijkelkamp	Logging	No		STAFF &	LABORAT						
			34	Washington	Boreholes	Roto-sonic	Logging	No		SKILLS							
			35	Washington	Boreholes	Sonic drilling	Drilling	No									
				Washington	Boreholes	Directional drilling	Drilling	No									
			37	Washington	Laboratory	General sample preparation	Description and analysis	Yes		Item/Capat I loan STORAGE		GEOCHRO					
			38	Washington	Laboratory	Bulk sampling, sample splitting, mechanical size separation	Description and analysis	Yes		Item/Capabl		GEOCHAC					
			39	Washington	Laboratory	Particle size (sedigraph, pipette, hydrometer, sieve, etc)	Analysis	Yes		Item/Capability is not available for loan							
			40	Washington	Laboratory	Carbonate content (Chittick, Leco)	Analysis	No									
				Washington	Laboratory	X-ray diffraction	Analysis	Yes		Able to pontract for	STATE						
				Washington	Laboratory	Bulk density, water content, void ratio	Analysis	Yes		Item/c IT & le for loan •		LOGIS					
				Washington	Laboratory	Atterburg limits (LL, PL)	Analysis	No	•	MISC	CAPABILITY						
				Washington	Laboratory	Degradation	Analysis	No		•							
				Washington	Laboratory	Bulk magnetic susceptibility	Analysis	Yes		Item/Capability is pot unilable for loan 🔻							
	+ ≡ a	attributes 👻 🛛	46	Washington	Laboratory	Thermal conductivity	Analysis	No		•							
			47			Sensitive geochemistry (pore water Eh-pH	,										
				Washington	Laboratory	O2, some C, S)	Analysis	No		3D 🔹		GEOPHYSI					
			48	Washington	Laboratory	Organic geochemistry of sediments	Analycic	No		·							



All States (Combined) Google Sheet

- Combines data from state-specific sheet
 using IMPORTRANGE function
- Owner has editing access

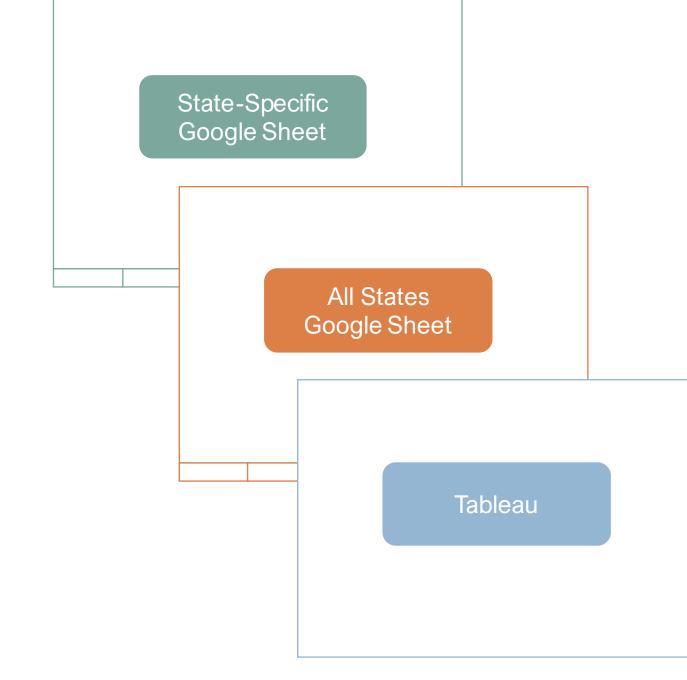


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A1		State														
	A	В	С	D	E	F	G	Н	1	J	К	L	М	N	0	Р
1	State 👳	Survey Taken? –	Update Year =	Survey Name -	 Staff	ァ Address ァ	Work Centers	External	EMAC Membe	Universi ty =	State Agency =	= Leadership =	Comments 👳	Form respondent name =		
2	Alabama	Yes	2022	Geological Survey of Alabama		50 420 Hackberry Lane, Tu	L.	2 Yes	Yes	No	Yes	Other	Agency is led by	the State Geolog	jist who also serve	es as the lead
3	Alaska	Yes	2022	Alaska Division of Geological & Geophysical Surveys		54 3354 College Road Fair	t	1 No	Unknown	No	Yes	Elected official				
4	Arizona	No														
5	Arkansas	Yes		Department of Energy and Environment Arkansas Geological Survey		22 5301 Northshore Drive	,	2 Yes	Yes	No	Yes	Appointed cabir	Department cor	nprised of six dist	inct entities	
6	California	Yes	2022	California Geological Survey		140 715 P Street MS`19, Sa	c	6 No	Yes	No	Yes	Appointed cabir	net-level official			
7	Colorado	No														
8	Connecticut	No														
9	Delaware	No														
10	Florida	Yes	2022	Florida Geological Survey		33 3000 Commonwealth E	3	2 No	Indirectly	No	Yes	Appointed cabir	FGS is part of th	e Florida Departr	nent of Environm	ental Protecti
11	Georgia	No														
12	Hawaii	No														
13	Idaho	No														
14	Illinois	Yes		Illinois State Geological Survey		80 615 East Peabody Dr. C	r	1 Yes	Yes	Yes	No					
15 16	Indiana	No		Indiana Geological & Water Survey												
17	lowa	No		Iowa Geological Survey												
18	Kansas Kentucky	No No		Kansas Geological Survey Kentucky Geological Survey												
19	Louisiana	No		Louisiana Geological Survey												
20	Maine	No		Maine Geological Survey												
	Maryland	Yes		Maryland Geological Survey		19 2300 St. Paul Street. Ba	1	1 No	Yes	No	Yes	Appointed cabir	net-level official			
	,	No		Massachusetts Geological Survey												
	Michigan	Yes		Michigan Geological Survey		1 1903 W. Michigan Aver	1	2 Yes	No	Yes	No	Appointed cabir	MGS can accept	work if through	the University	
24	Minnesota	Yes	2022	Minnesota Geological Survey		30 2609 Territorial Road,	s	1 No	No	Yes	No					
25	Mississippi	No		Mississippi Department of Environmental Quality Office of Geology												
26	Missouri	Yes	2022	Missouri Geological Survey		114 not reported		1 Yes	Unknown	No	Yes	Appointed cabir	MGS is part of t	he Missouri Depa	rtment of Natura	l Resources. P
27	Montana	Yes	2022	Montana Bureau of Mines and Geology		70 1505 West Park Street,		2 Yes	No	Yes	Yes				within a university	
28	Nebraska	No		Nebraska Geological Survey												

+ = attributes - capabilities - skills - staff - storage - lookup -

All States Data Google Sheet

Explore





Tableau

- Reads from All States Google Sheet
- Automatic updates
- Owner has editing access

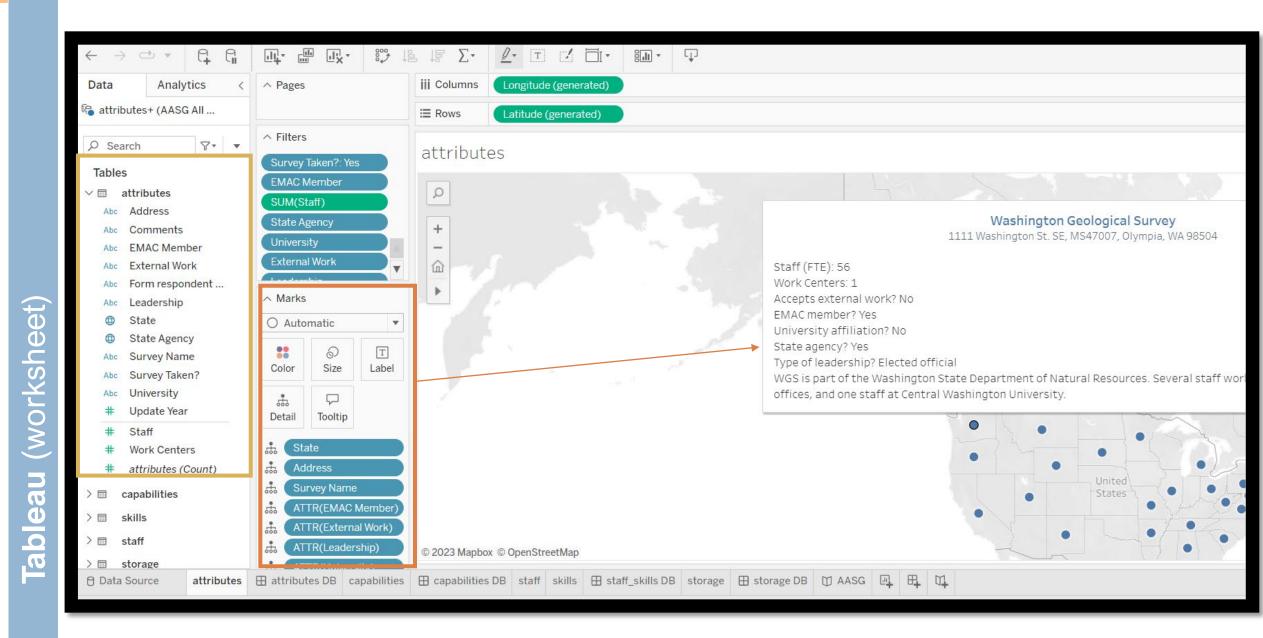
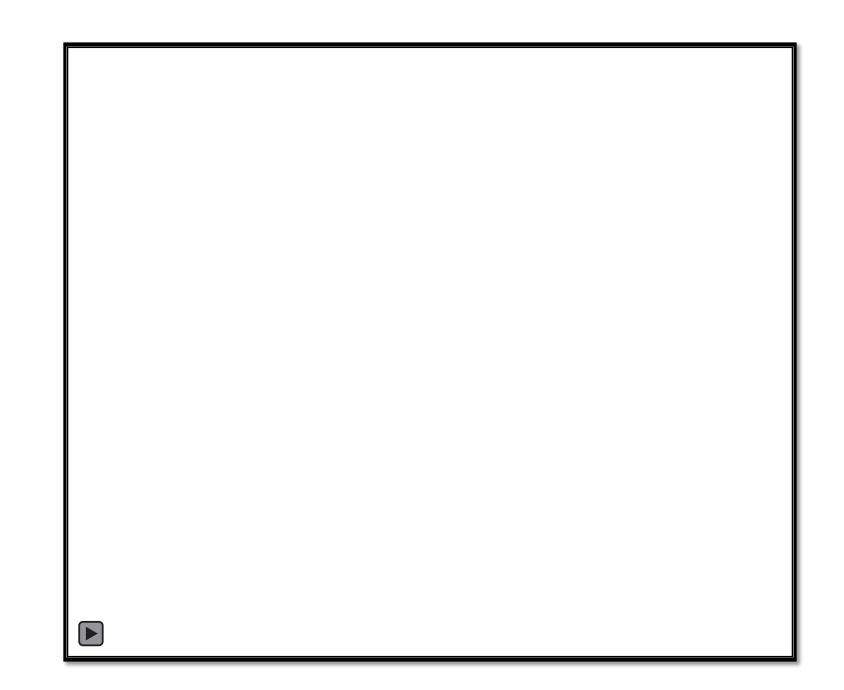


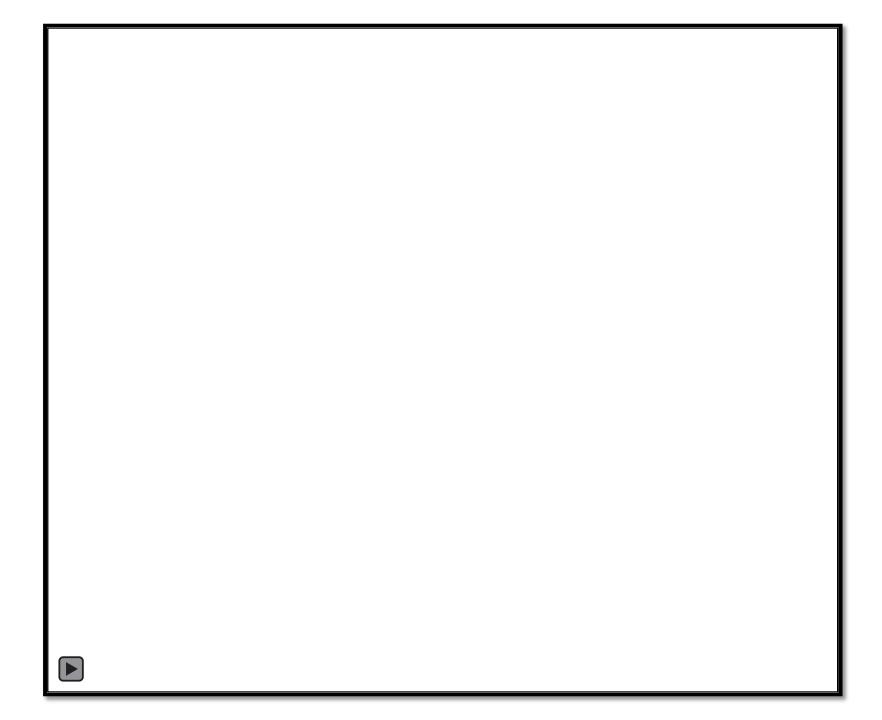




Tableau (dashboard)

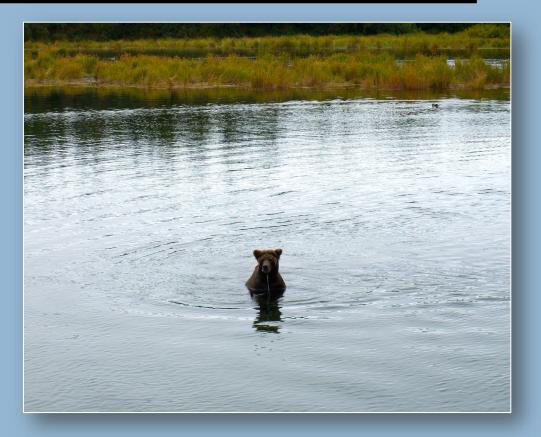






Tableau

- Free version available with limitations
- Connects to Google Drive and other data sources
- Quickly import and visualize data
- Create custom dashboards with filter, query tools
- Includes a basic but useful spatial mapping component
- Users can view and download information



State Geological Surveys Capabilities Dashboard

Tableau Link

Sheelagh McCarthy GIS Specialist | Washington Geological Survey

sheelagh.mccarthy@dnr.wa.gov