

DIGITAL MAPPING TECHNIQUES 2023 LITE

The following was presented at DMT'23 Lite
(April 6, 2023 - A Virtual Event)

The contents of this document are provisional

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

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



An aerial photograph of Washington state is shown with a semi-transparent green overlay. The overlay covers the central and eastern parts of the state, highlighting a network of rivers and a grid-like pattern, possibly representing a geological survey area. The text is overlaid on this green area.

Washington Geological Survey Publishing

***Jessica Czajkowski,
Assistant State Geologist and
Assistant Director of Science and Research***

WGS PUBLISHING BY PROGRAM

- PUBLISHING SCIENCE PROGRAM
- SUPPORT PROGRAM
- OTHER PROGRAM

**STATE
GEOLOGIST**

**WASHINGTON
GEOLOGY LIBRARY**

**SCIENCE &
RESEARCH**

**REGULATORY
PROGRAMS**

PLANNING

**EARTH
RESOURCES**

LIDAR

**GEOLOGICAL
HAZARDS**

LANDSLIDES

**GEOLOGIC
MAPPING**

**GIS, EDITING &
PUBLICATIONS**

**SURFACE MINE
RECLAMATION**

STAKEHOLDER
ENGAGEMENT

GEOTHERMAL

CONTRACTS

TSUNAMI
MODELING

LANDSLIDE
MAPPING

SUBSURFACE &
GROUNDWATER

GEOLOGY
PORTAL

RECLAMATION
PERMITTING

COMPREHENSIVE
PLANNING SUPPORT

CARBON
SEQUESTRATION

ACQUISITION &
PROCESSING

FAULT
STUDIES

SUSCEPTIBILITY
ANALYSIS

GEOLOGIC
MAPPING

GIS DATA

MINE
INSPECTIONS

CLIMATE COMMITMENT
ACT IMPLEMENTATION

HYDROGEOLOGY

LIDAR
PORTAL

GEOPHYSICS

LANDSLIDE
RESPONSE

AGGREGATE
RESOURCES

EDUCATION &
OUTREACH

GEOHERMAL
REGULATION

UAV (DRONE)
MISSIONS

EVACUATION
MAPPING

POST-WILDFIRE
HAZARD ANALYSIS

PUBLICATIONS

OIL & GAS

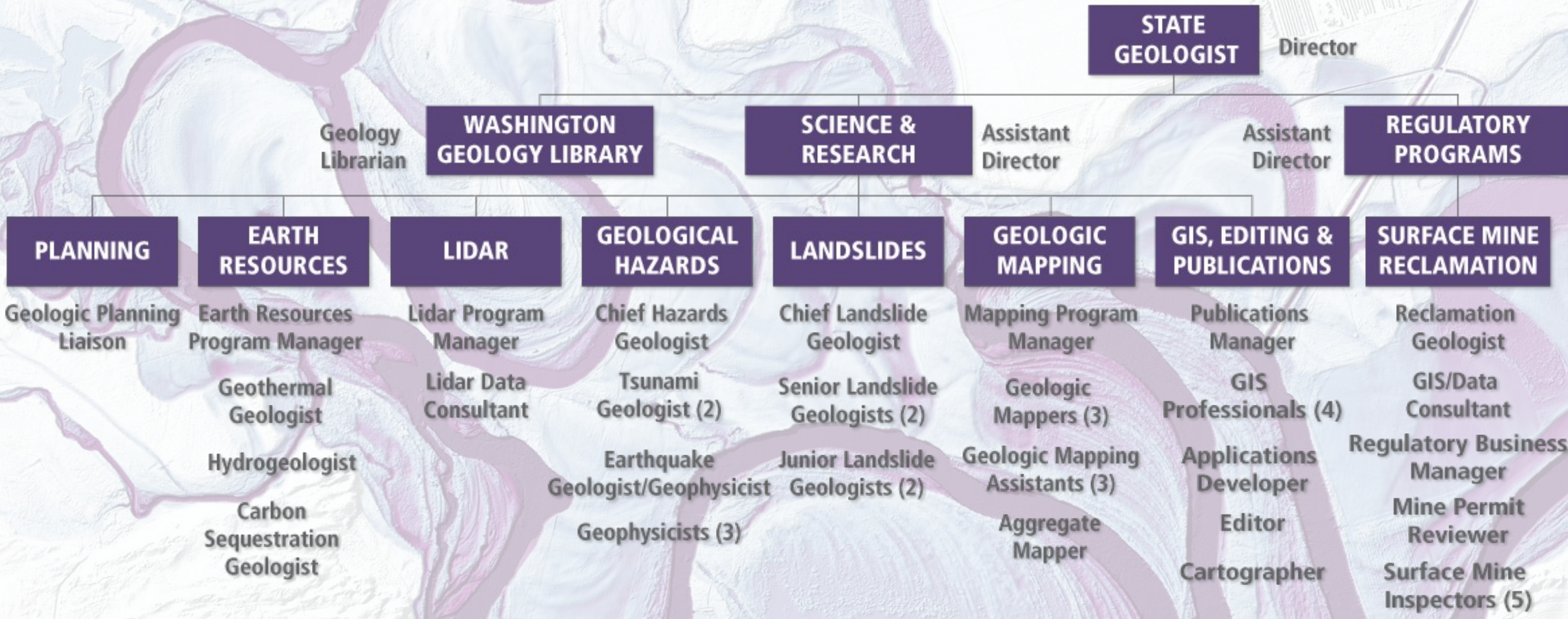


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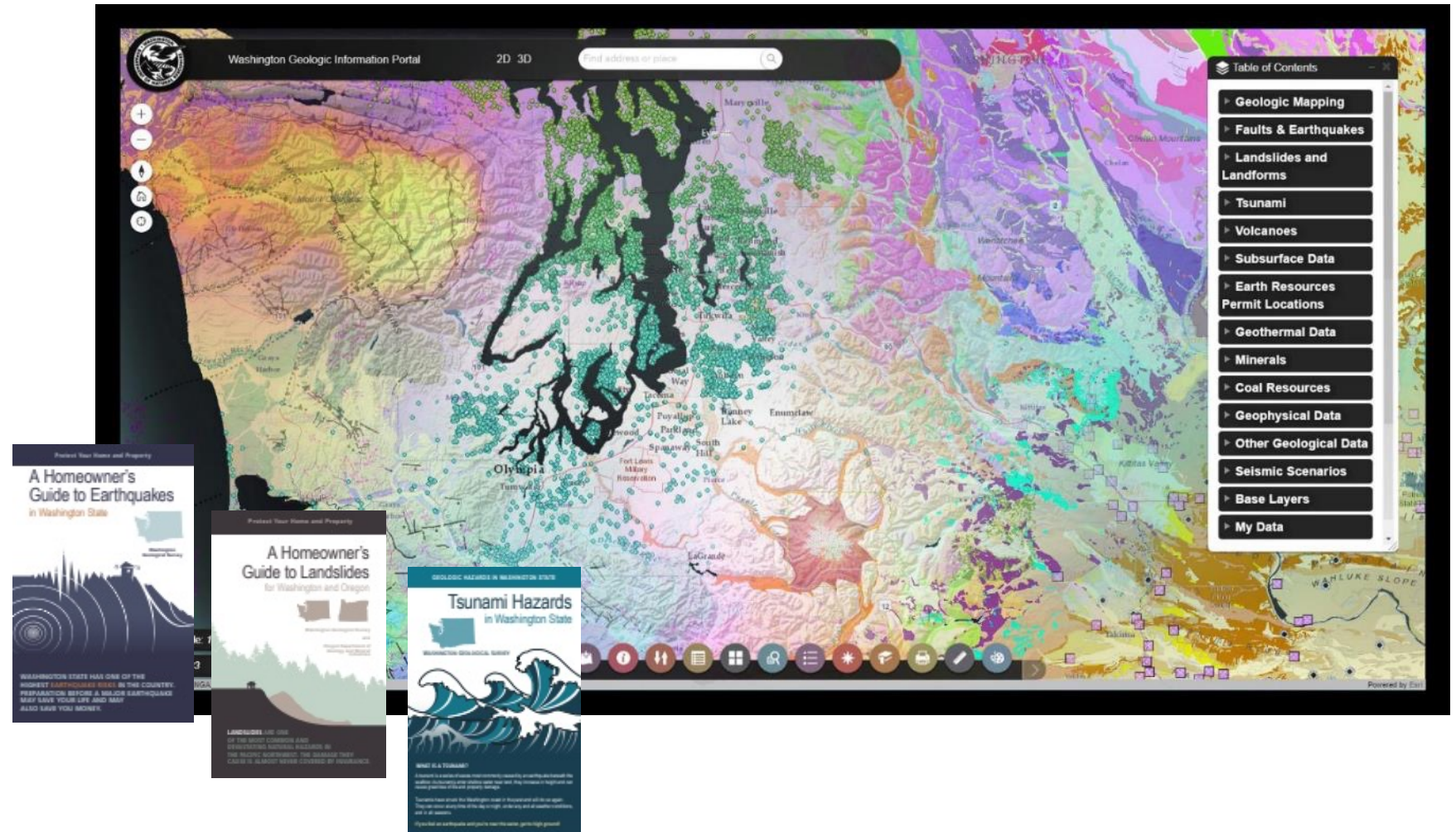
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WGS POSITIONS



GIS, Editing & Publications

- Publishes and distributes science to the public
- ~30 GIS datasets
- Geologic Information Portal
- Outreach materials
- ~60 Webpages

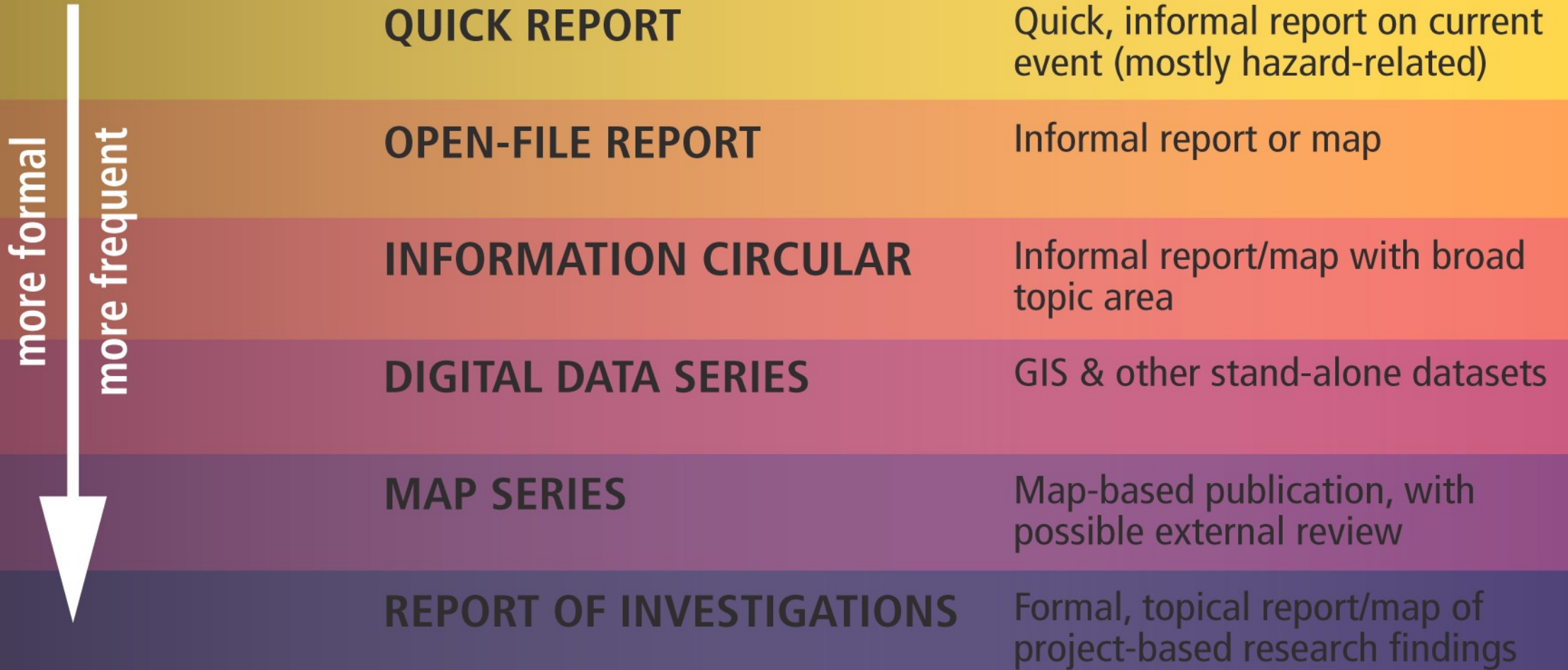


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WGS PUBLICATIONS



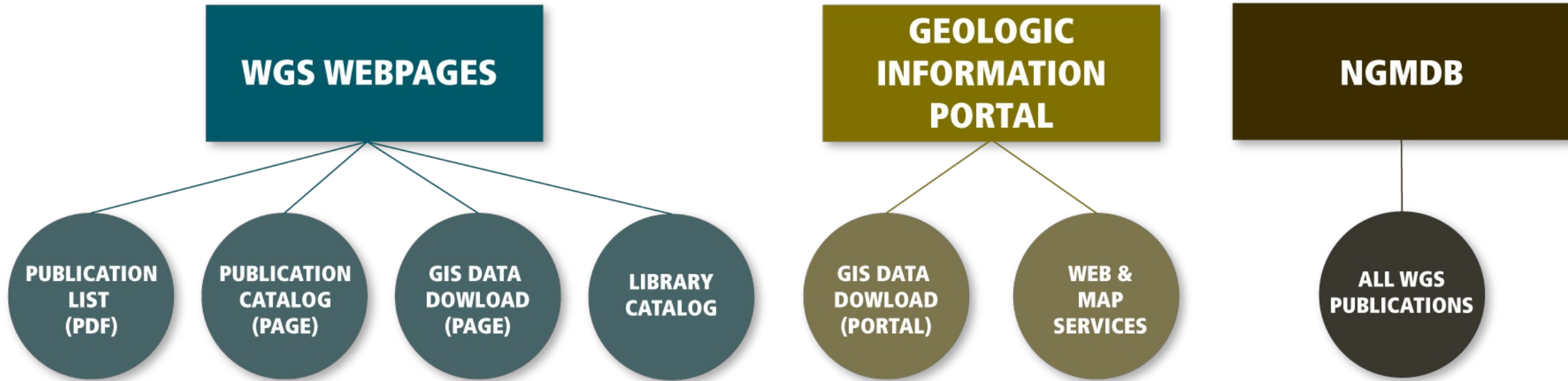
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HOW WGS DISTRIBUTES PUBLICATIONS



WGS GIS DATA PUBLISHING

WGS focuses efforts on 'statewide' databases

GIS data matches source information

WGS does not release GIS data with individual geologic map publications:

- Easier to publish mapping
- Easier for public to find the information
- Easier to ensure GIS matches the published mapping
- Easier to maintain fewer sets of metadata
- Easier to implement schema changes to datasets



WGS GIS DATABASES

OIL AND GAS

GEOHERMAL
FAVORABILITY

24K GEOLOGY

PERMITTED SURFACE MINES

100K GEOLOGY

250K GEOLOGY

GEOHERMAL GRADIENT WELLS

TSUNAMI HAZARD MAPPING

GEOHERMAL

THERMAL SPRINGS

SUBSURFACE DATABASE

PERMIT LOCATIONS

25-99K GEOLOGY

GEOCHRONOLOGY

GEOCHEMISTRY

LANDSLIDE INVENTORY

TSUNAMI

500K GEOLOGY

VOLCANIC HAZARDS

EVACUATION

GEOPHYSICS

EARTHQUAKES & FAULTS

MAPPING

SEISMIC SITE CLASS

LIQUEFACTION POTENTIAL

SEISMIC SCENARIOS

SEISMIC DESIGN CATEGORY



500K & 250K MAPPING

- GeMS format
- Latest GIS release date: 2022



500K

Statewide, seamless

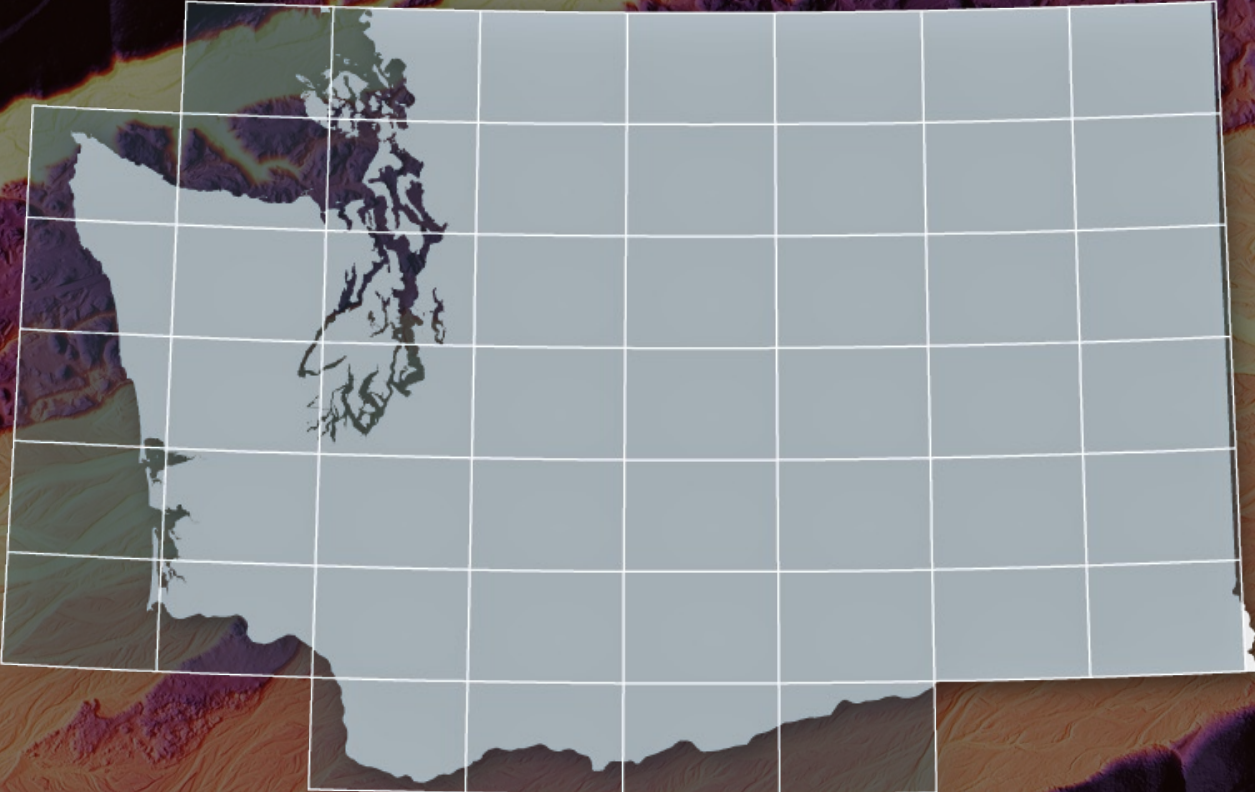


250K

Statewide, some seams



100K MAPPING



- **Statewide coverage**
- **Mostly seamless**
- **WGS and GeMS format**
- **Updated as new 100K quads are published**



25-99K MAPPING



- Not statewide (~13 maps now, 200 to go)
- Each map preserved as it was originally published
- Full of seams
- Some overlaps due to scale differences
- WGS Schema

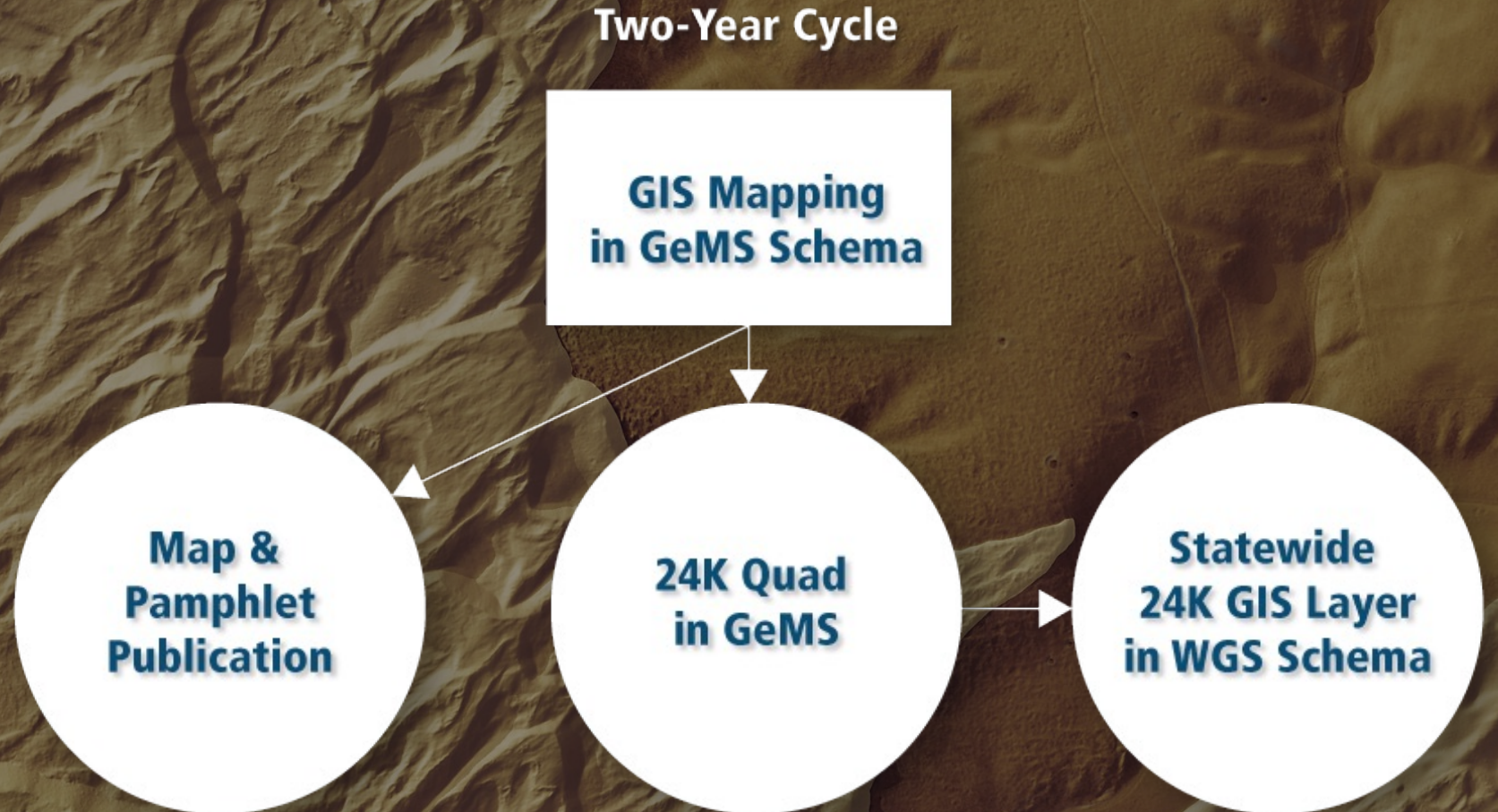


24K MAPPING

- **Incomplete coverage (376 quads out of 1,400)**
- **Nearly every quadrangle is a scratch boundary**
- **Data is preserved as it was published**
- **WGS schema**
- **2023 GeMS delivery to USGS to meet USGS requirements**



WGS STATEMAP WORKFLOW



WGS PUBLISHING PROCESS

SCOPING

Determine project area,
budget, tasks,
personnel, outcome

Determine audience,
level of review, format,
publication type



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WGS PUBLISHING PROCESS

SCOPING

SCIENCING

Mapping, modeling,
sampling, etc.

Analysis

Synthesis

GIS prep

Writing



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WGS PUBLISHING PROCESS

SCOPING

SCIENCING

REVIEWING

Supervisor field visits

Program-level peer review

Iterative editing exchange of draft GIS, figures, and text

Cartography

*External peer review

Layout

Internal, Survey-wide, week-long review



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WGS PUBLISHING PROCESS

SCOPING

SCIENCING

REVIEWING

PUBLISHING

Upload to web

Blog post

*Portal update

Publication List &
Publication Catalog
update

*Webpage editing

*Press release and
media prep

NGMDB submission



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WGS PUBLISHING PROCESS

SCOPING

SCIENCING

REVIEWING

PUBLISHING

GIS-ING

Appending GIS data to production statewide datasets

Updating Portal

Blog post

Updating Publication List & Catalog

Updating webpages



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