Finding Spatial Data

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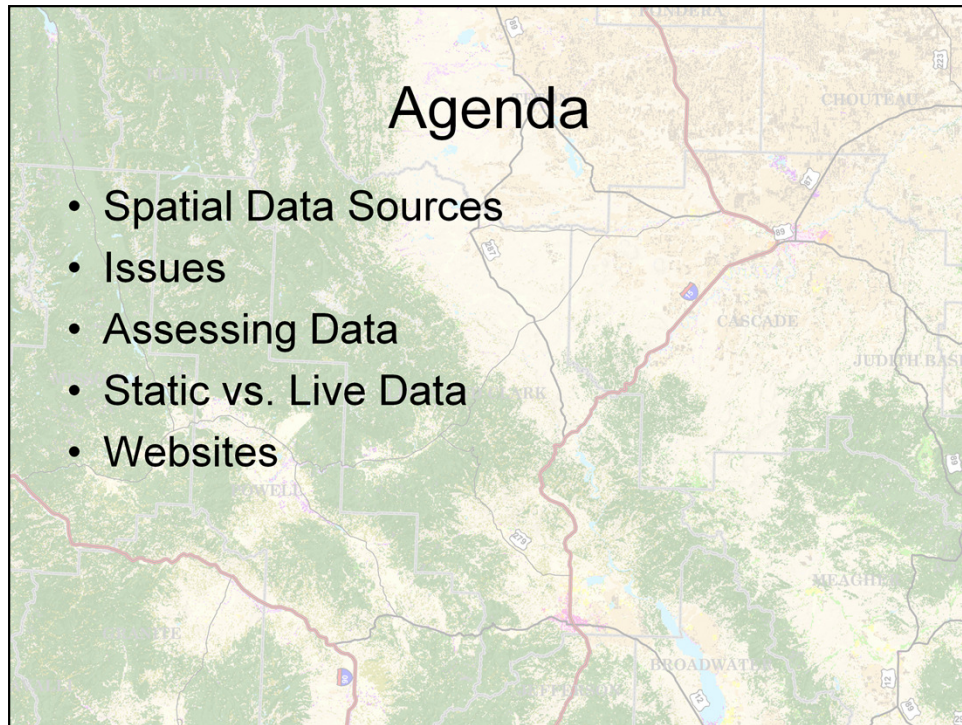http://geoinfo.msl.mt.gov

MONTANA
State
Library
Geographic Information

Handouts of slides and other handouts

Intro

Finding data is an opportunity to network with other GISers whether in Montana or elsewhere.
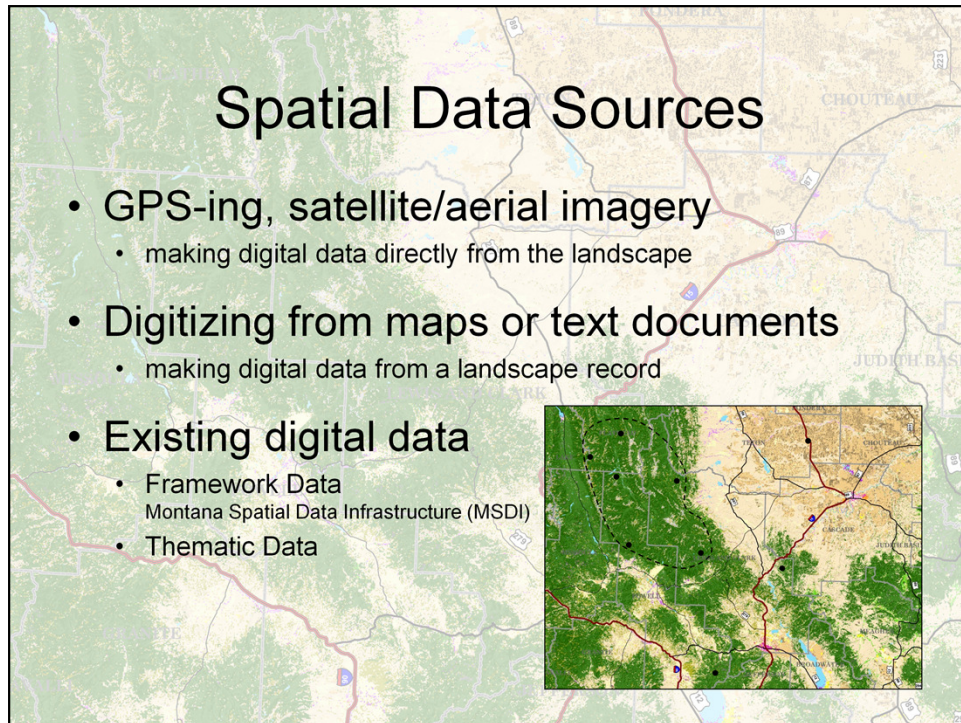
Agenda

- Spatial Data Sources
- Issues
- Assessing Data
- Static vs. Live Data
- Websites

Finding data in the context of how data is created

Issues and Assessing Data we'll discuss in greater detail

We'll look at some web resources

Spatial Data Sources

- GPS-ing, satellite/aerial imagery
  - making digital data directly from the landscape
- Digitizing from maps or text documents
  - making digital data from a landscape record
- Existing digital data
  - Framework Data
    Montana Spatial Data Infrastructure (MSDI)
  - Thematic Data

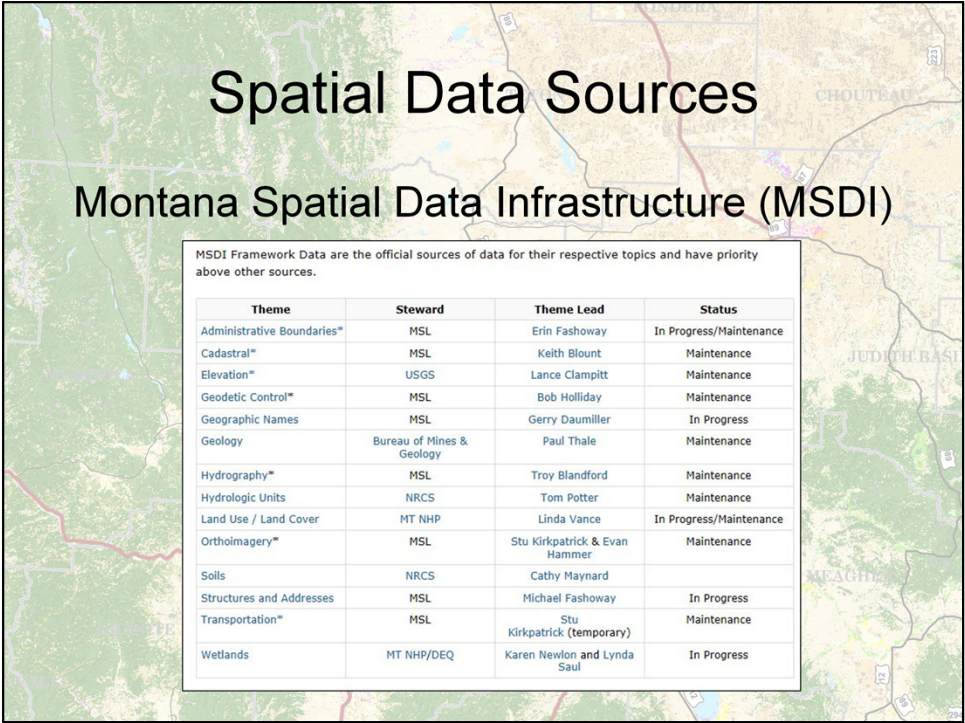Starting from the most expensive

1 GPS, satellite/aerial imagery

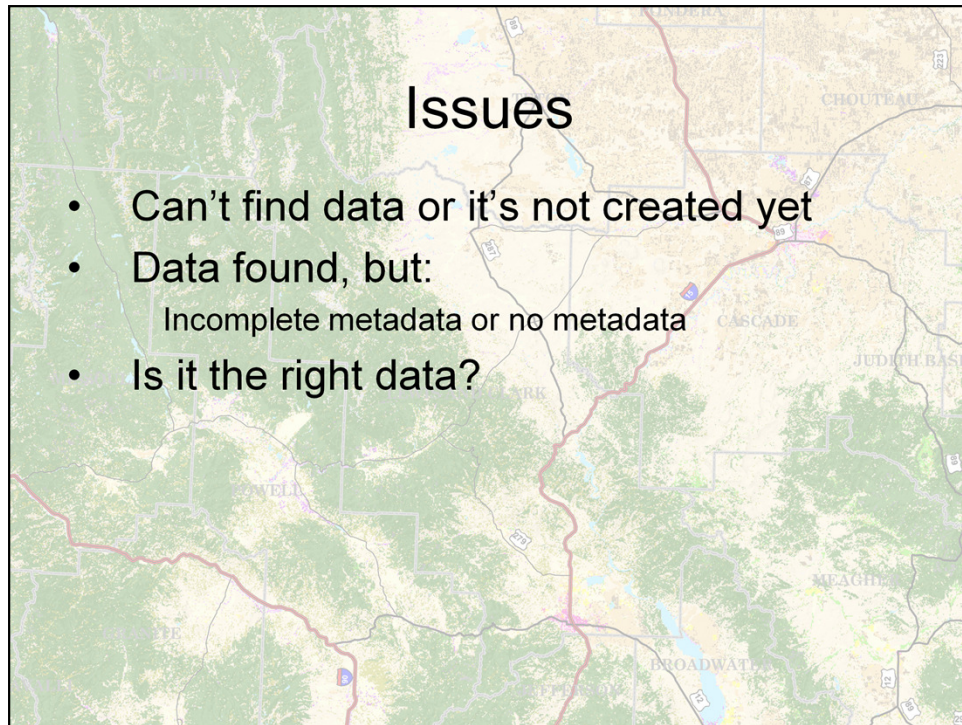2 Digitizing

3 Existing Digital Data

-What's on this map? (referring to the background image)

5—Framework Data examples: Roads, streams, boundaries, elevation, water bodies, background imagery like air photos and digital topographic maps, land cover/land use (what's the pink?). In Montana, Framework data is referred to as "Montana Spatial Data Infrastructure" or MSDI

5--Thematic Data examples: points showing wildlife/auto collisions, location of abandoned mines, polygons showing pollution at superfund site (basically, all other data that is not framework data)

Spatial Data Sources

Montana Spatial Data Infrastructure (MSDI)

MSDI Framework Data are the official sources of data for their respective topics and have priority above other sources.

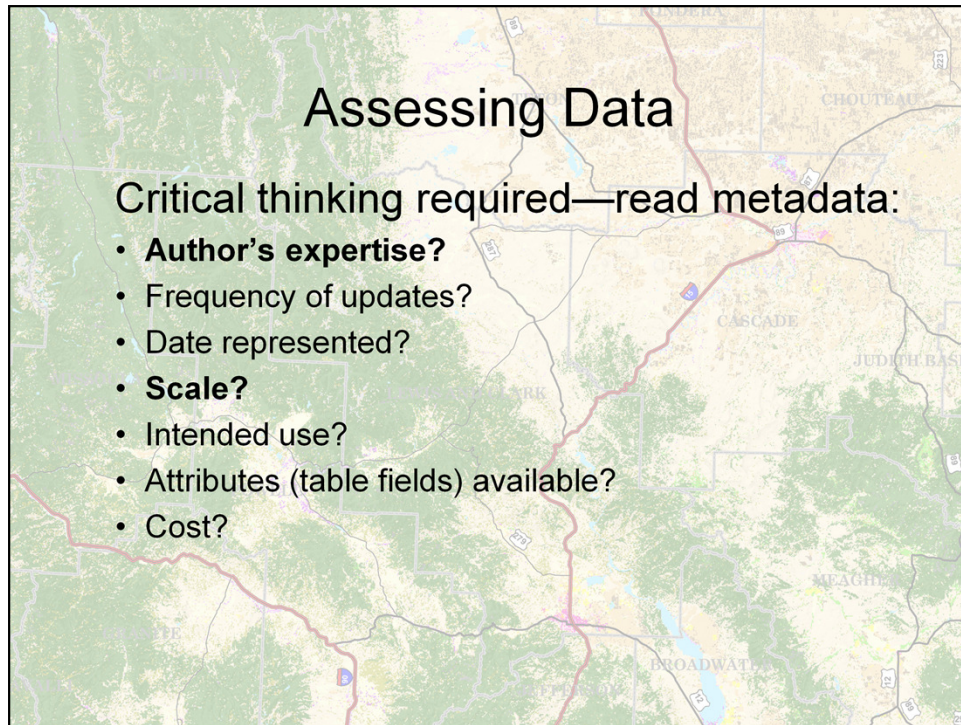| Theme	Steward	Theme Lead	Status
Administrative Boundaries*	MSL	Erin Fashoway	In Progress/Maintenance
Cadastral*	MSL	Keith Blount	Maintenance
Elevation*	USGS	Lance Clampitt	Maintenance
Geodetic Control*	MSL	Bob Holliday	Maintenance
Geographic Names	MSL	Gerry Daumiller	In Progress
Geology	Bureau of Mines & Geology	Paul Thale	Maintenance
Hydrography*	MSL	Troy Blandford	Maintenance
Hydrologic Units	NRCS	Tom Potter	Maintenance
Land Use / Land Cover	MT NHP	Linda Vance	In Progress/Maintenance
Orthoimagery*	MSL	Stu Kirkpatrick & Evan Hammer	Maintenance
Soils	NRCS	Cathy Maynard	
Structures and Addresses	MSL	Michael Fashoway	In Progress
Transportation*	MSL	Stu Kirkpatrick (temporary)	Maintenance
Wetlands	MT NHP/DEQ	Karen Newlon and Lynda Saul	In Progress

The Montana Spatial Data Infrastructure or MSDI contains 15 spatial framework layers. These layers are comprised of seven federally defined "geospatial framework data layers" (see asterisks) and seven additional themes defined by the MLIAC. These data layers are in various states of development and the completion, dissemination, and ongoing maintenance of the MSDI is identified as a top priority by the entire GIS community.

Issues

- Can't find data or it's not created yet
- Data found, but:
  Incomplete metadata or no metadata
- Is it the right data?

1 Unfortunate—this is expensive to create

2 All too common

3 Cover this in greater detail next

Assessing Data

Critical thinking required—read metadata:

- **Author's expertise?**
- Frequency of updates?
- Date represented?
- **Scale?**
- Intended use?
- Attributes (table fields) available?
- Cost?

1 Does the author have expertise in this area of data? Is your task related to **policy** decisions?

We'll talk more about data creators in a moment…

2 How often is the data updated?

2 What is the date of collection? –the "effective" date of the data. Know that this is likely different from the publication date

2 Is it too generalized for your task. Bring in the difference between GIS data and Survey-grade data.

2 Why was the data produced? (how accurate: map scale and how the data was created). Reference map of wilderness areas for legislators versus using it to plan a legal outing using a 4-wheeler.
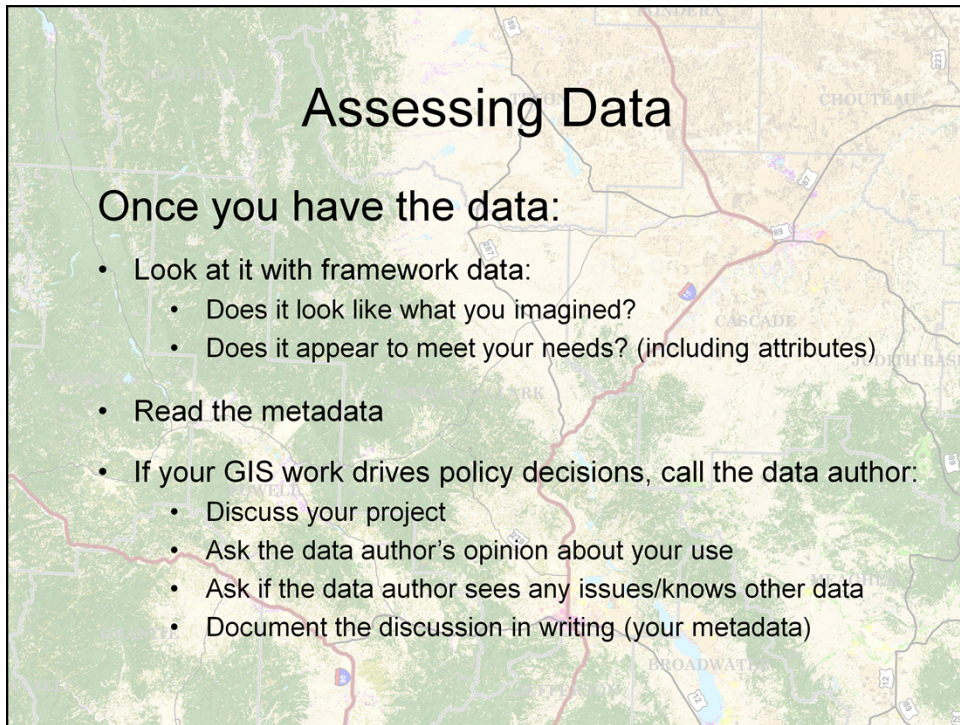
2 Does it have the attributes and fields for your task? How do you figure that out (attribute table and metadata)? Does it have a field you can use to join with other tabular data? Example: 20 year history of Fire starts (lightning versus human caused). Have points of ignition, but is the cause info present? If no, will any info in the layer permit you to join the data to a table with the cause data?

2 Is there a fee involved?
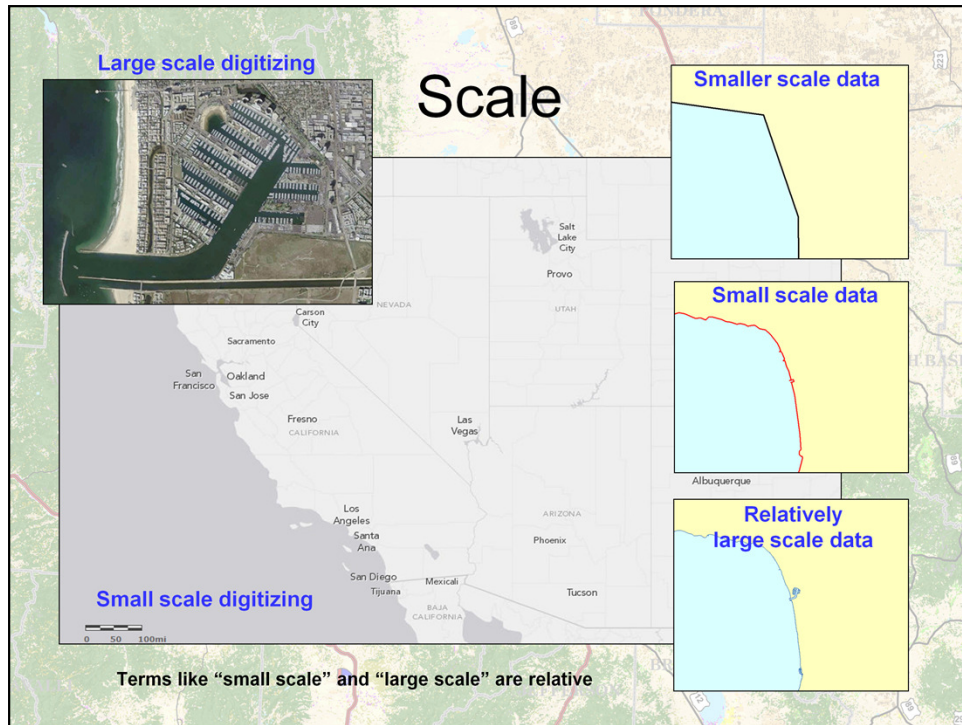
Know what I mean by digitizing?

Image source: http://www.gislounge.com/understanding-scale/ (scale website with Marina del Rey)
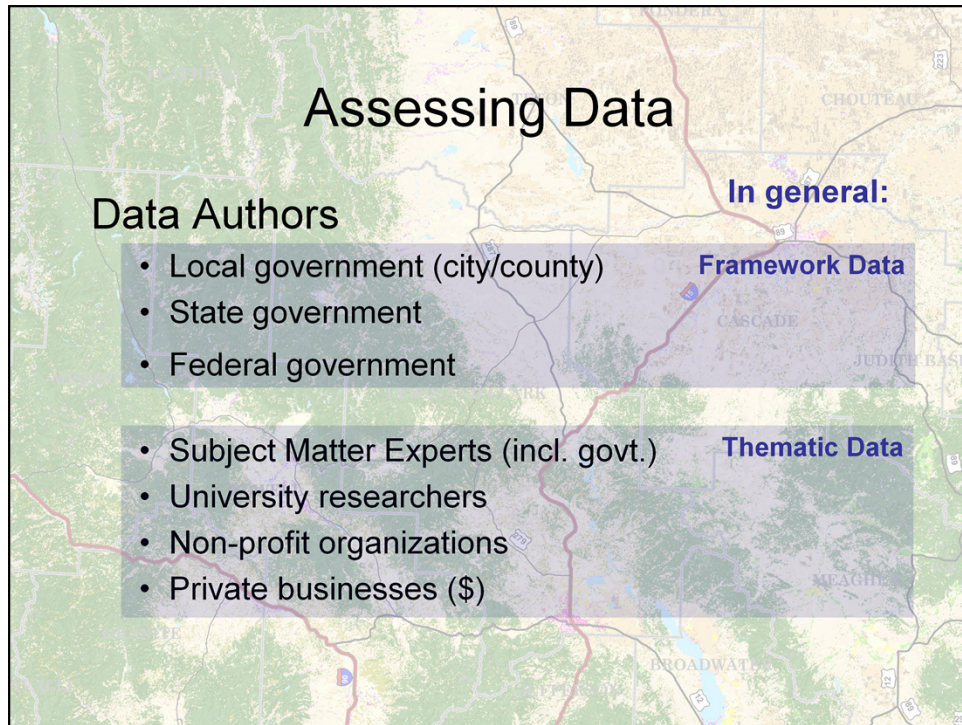
Assessing Data

Once you have the data:

- Look at it with framework data:
    - Does it look like what you imagined?
    - Does it appear to meet your needs? (including attributes)

- Read the metadata

- If your GIS work drives policy decisions, call the data author:
    - Discuss your project
    - Ask the data author's opinion about your use
    - Ask if the data author sees any issues/knows other data
    - Document the discussion in writing (your metadata)

Example: GIS Analyst at the Library of Congress' Congressional Research Office

Assessing Data

Data Authors

In general:

Framework Data

- Local government (city/county)
- State government
- Federal government

Thematic Data

- Subject Matter Experts (incl. govt.)
- University researchers
- Non-profit organizations
- Private businesses ($)

Author examples by type (IN GENERAL)

Know the framework layers for your state (or for the nation). 15 in MT.

Framework examples: Transportation or School Districts which are part of Administrative boundaries

Thematic examples: Fire extents, wildlife/auto collisions, accident locations, pollution plumes
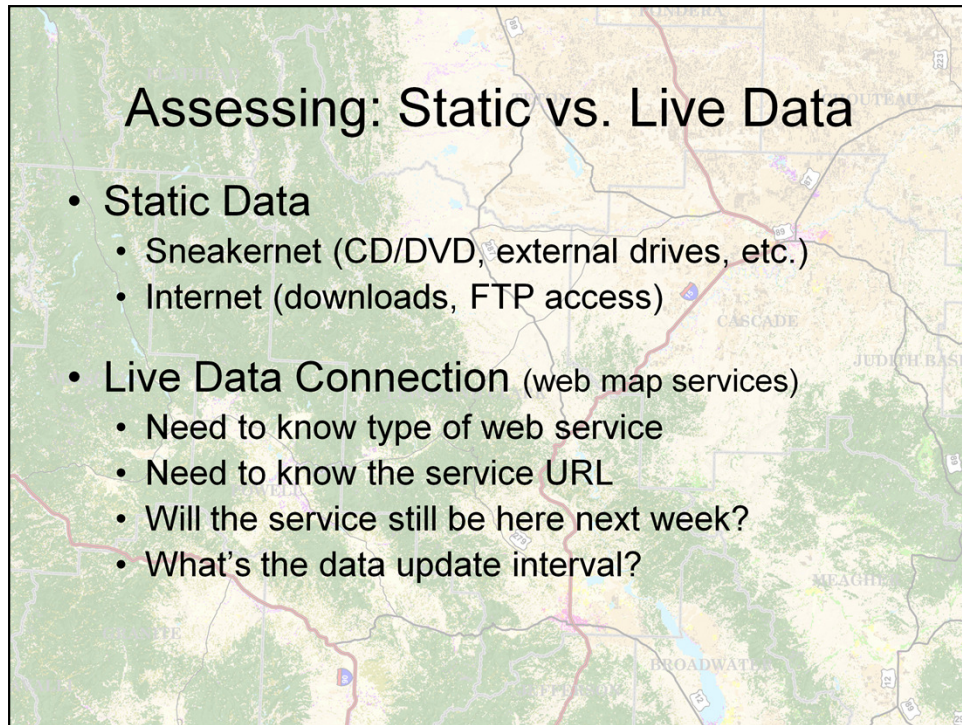
Framework Data Exceptions:

Universities involved with Framework data:

-Geology: Montana Bureau of Mines and Geology (MBMG) at Montana Tech

-Land Use/Land Cover: MT Natural Heritage Program (University of Montana)

Thematic Data Exceptions:

Government agencies involved with thematic mapping

-DEQ: Coal mine permit boundaries

-U.S. Census: Census tracks with urbanized areas

-U.S. NFS: Inventoried Roadless areas

Assessing: Static vs. Live Data

- Static Data
  - Sneakernet (CD/DVD, external drives, etc.)
  - Internet (downloads, FTP access)

- Live Data Connection (web map services)
  - Need to know type of web service
  - Need to know the service URL
  - Will the service still be here next week?
  - What's the data update interval?

What do you think I mean by Static versus Live data?

Static Data is data you download and have possession of. It won't be updated (remains static) until you go get another copy.
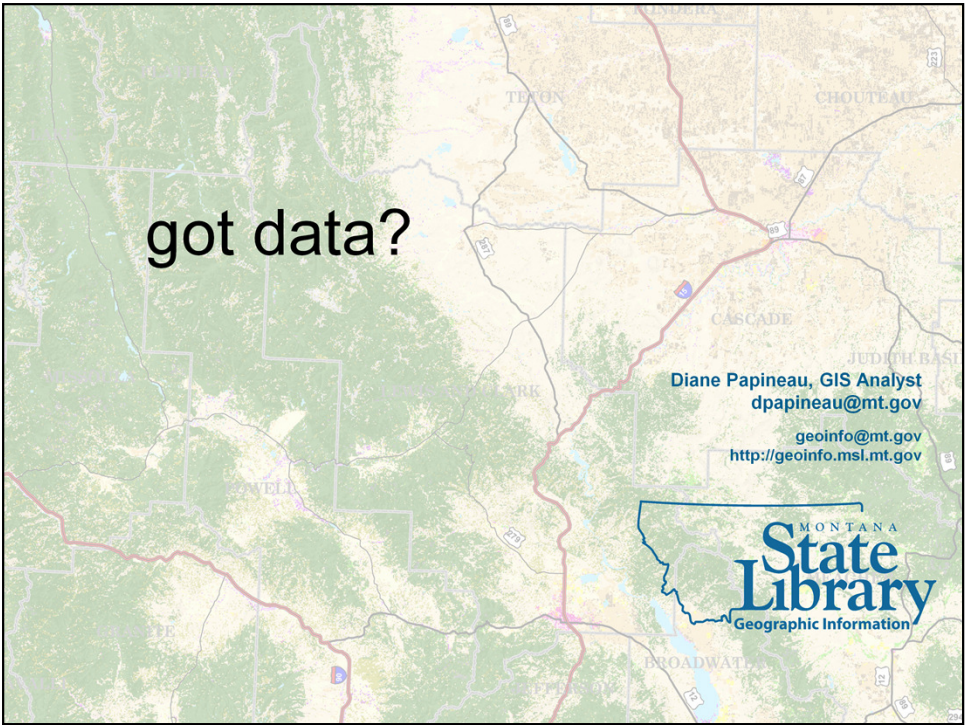
Live data is data your ArcMap project is electronically connected to with a live data link via the internet to data stored on the author's server. No data is downloaded to your machine, it's just accessed machine to machine.

Compare to downloading or printing an Independent Record webpage with list of available apartments versus viewing that bookmarked page as needed. The bookmarked page is always up to date, versus a printed copy of that page

FREQUENCY OF UPDATES IS CRITICAL TO KNOW. THE DATA CAN CHANGE WITHOUT YOU KNOWING

Website Examples

- Google (GIS, <topic>, <geography>, <author>)
- Montana Agencies
  - Montana Geographic Information Clearinghouse (State Library)
  - Montana GIS Data List (State Library)
  - Montana Fish, Wildlife & Parks
  - Montana Census and Economic Information Center (CEIC)
- Federal Agencies
  - Geo.Data.Gov
  - U.S. Census data via the American Fact Finder
- Other
  - Montana Board of Oil and Gas
  - National Historical Geographic Information System

got data?

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