UTAH AGRC
Automated Geographic Reference Center

UTAH'S SGID

Unlocking Geospatial Data

Bridging the Gap Between Proprietary and Open Source GIS

A talk for Vermont's Enterprise GIS Consortium: The GeoEnlightenment Series
08/12/2020

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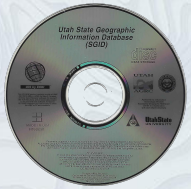
Utah's Statewide GIS Database

a.k.a., "The SGID"
(State Geographic Information Database)

Discussions for a statewide GIS database

GIS was being tested in a few state agencies. A committee was formed. It was decided that Utah could create a centralized DB for recorced management, planning, and interagency coordination

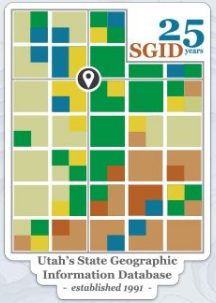


The SGID is born

1991 - the first SGID infrastructure is completed. Senate Bill 21 solidified the DB in state statue with legislated funding.
1995 - SGID on CD-ROM

SGID as geospatial resource

Today, the SGID has a broader meaning. It encompasses geospatial data, web services, api access, imagery, basemaps, networks, and geocoders.



1970s

1980s

ESRI and AGRC

1980 - ESRI was hired as a consultant to assist with Utah's GIS implementation plan.
1982 - AGR (later renamed AGRC) was established to catalog and maintain this data.
1984 - ARC/INFO on PRIME minicomputer is used at AGRC

1990s

Early 2000s

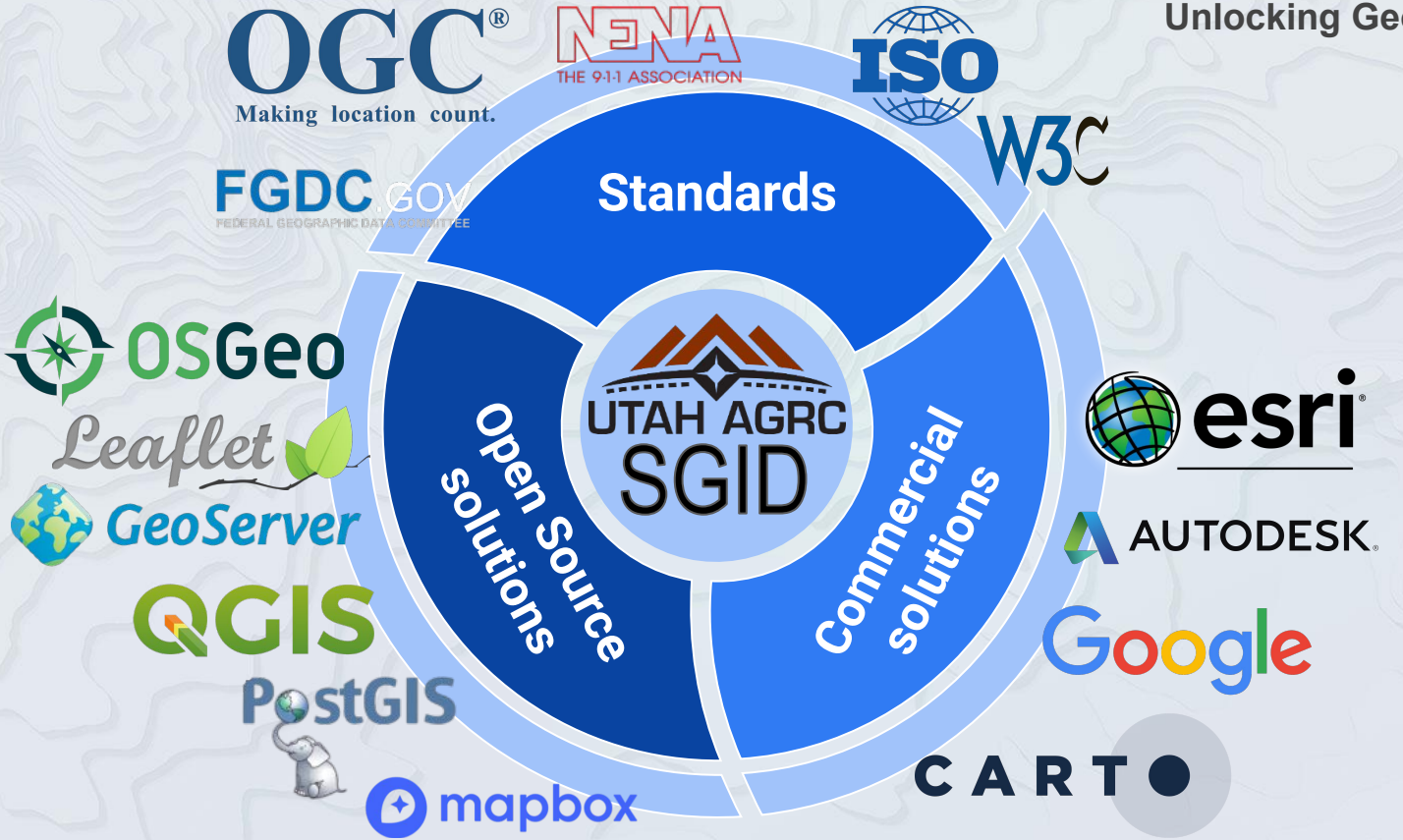
SGID meets WWW

By the early 2000s the SGID user guide, data, and data viewer were all solely available over the Web.

Today

Utah's SGID

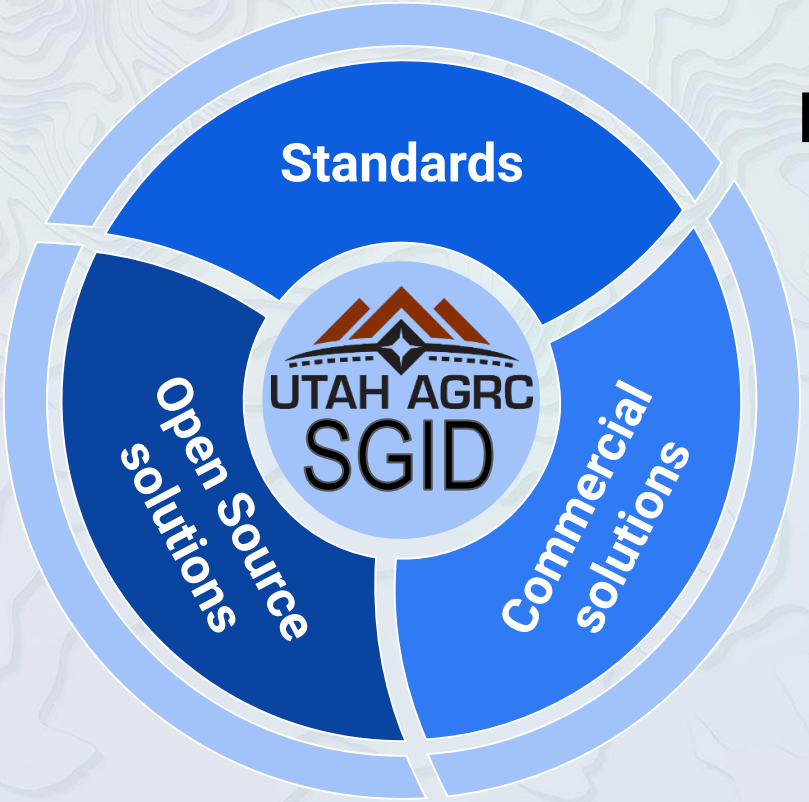
Unlocking Geospatial Data



Open GIS

Data and Storage
KML, GML, OGC/ISO Simple Features (PostGIS - WKT/WKB), GeoPackage, GeoJSON, Shapefile

Data Exchange and Services
WMS, WFS, WCS, WMTS, WPS, CLDXF (NENA911/FGDC)



Proprietary GIS

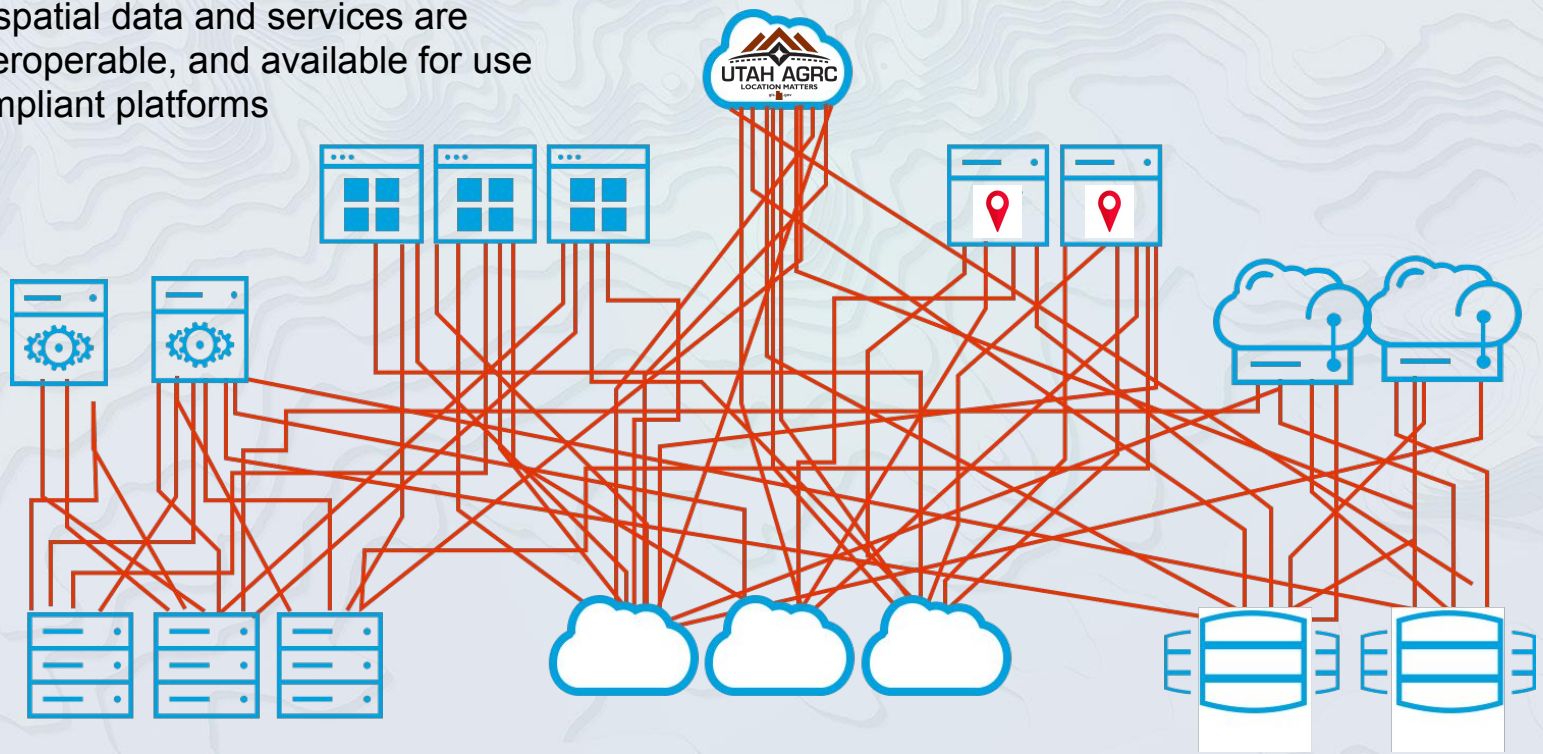
Data and Storage
File Geodatabase, Personal Geodatabase, ESRI Enterprise Geodatabase (SDE)

Data Exchange and Services
GeoServices REST (ArcGIS Rest API),

Interoperability

Unlock Geospatial Data

Our Goal
That geospatial data and services are open, interoperable, and available for use on all compliant platforms



Lessons learned (and still learning) on maintaining and serving interoperable GIS data

Data Standards

- OGC Simple Feature Access for SQL and PostgreSQL/PostGIS
  - duplicate features
  - null geometry
  - invalid geometry
- State-use requirements
  - duplicate vertices
  - bezier curves
  - orphans/dangles
  - topology
- Attribute Domains
  - code v. description
- Metadata
  - ESRI Item Description
    - Open Data (formatting)
  - AGRC data pages
- Spatial Reference
  - WGS84 v. local projection

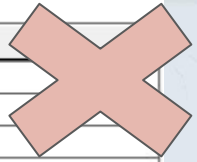
Database Policies

gis.utah.gov/about/policy/sgid/

- Attributes Domains
  - A plan moving forward
- Metadata Guidelines
  - gis.utah.gov/about/policy/metadata
- Data QA/QC
  - Sweeper, Auditor, Porter

Coded Values:

Code	Description
A	Class A - State
B	Class B - County
C	Class C - Municipality
D	Class D - County, Other
E	Federal Agency Maintenance



Coded Values:

Code	Description
Bike	Bike
Pedestrian	Pedestrian
Multiuse	Multiuse

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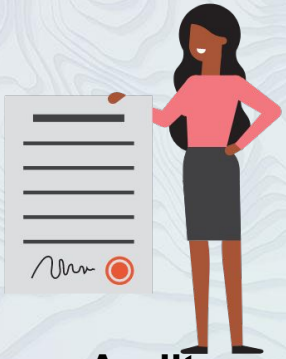
SGID Data Flow

Meet the Team

Porter
github.com/agrc/porter



Auditor
github.com/agrc/auditor

Farm to AGOL
github.com/agrc/warehouse

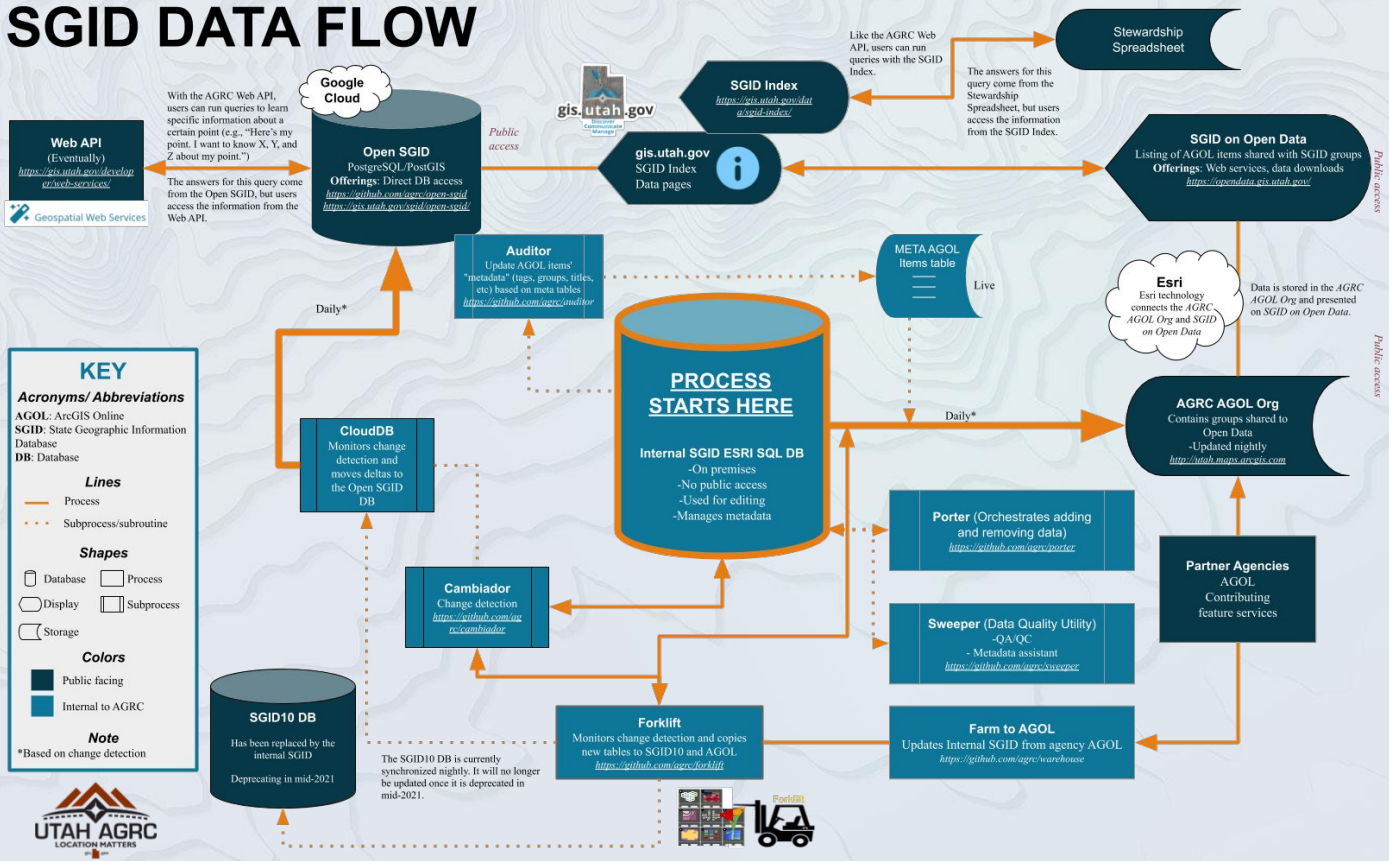
Sweeper
github.com/agrc/sweeper

Cambiador
github.com/agrc/cambiador

Forklift
github.com/agrc/forklift

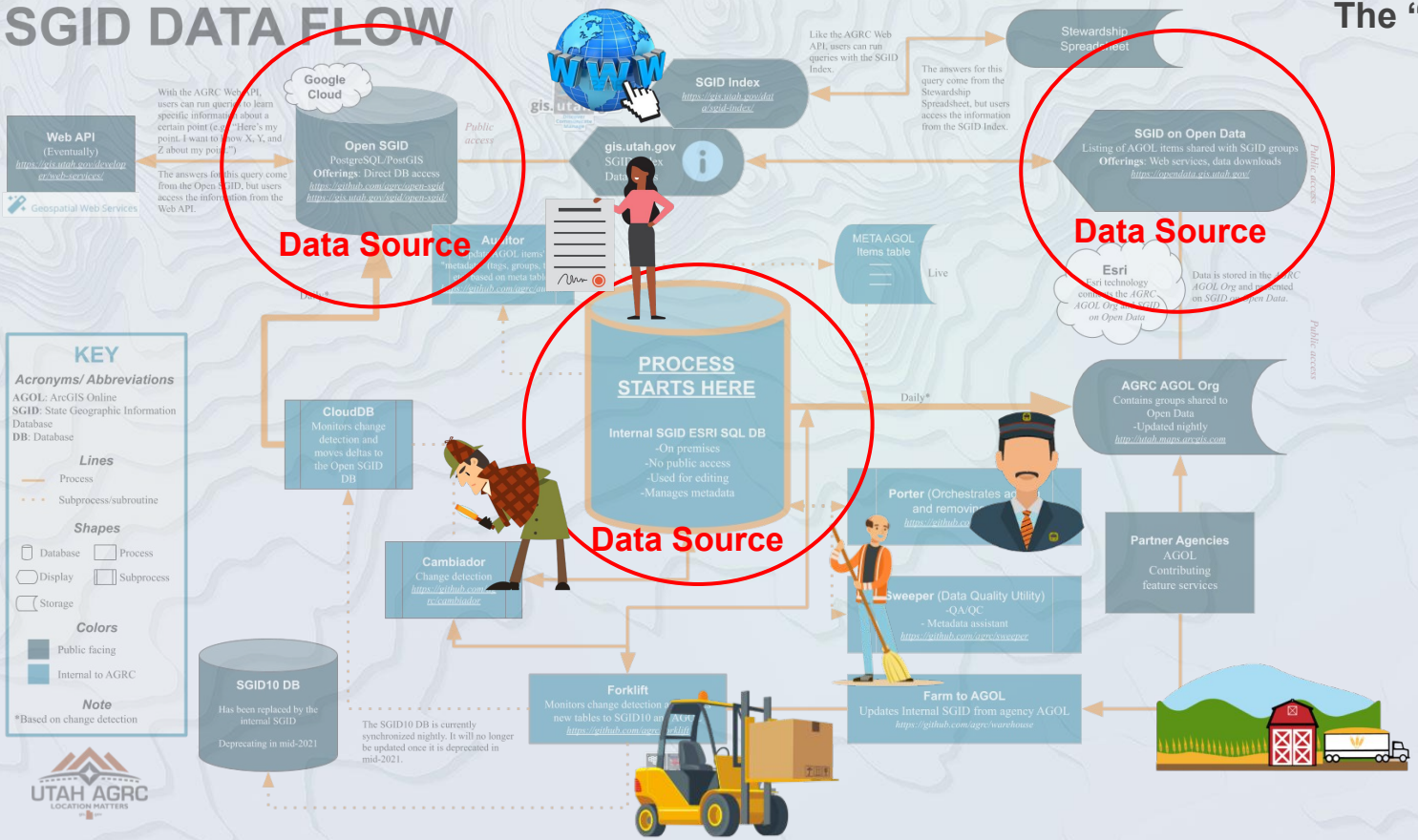
SGID Data Flow

The “ins and outs”



SGID Data Flow

The “ins and outs”



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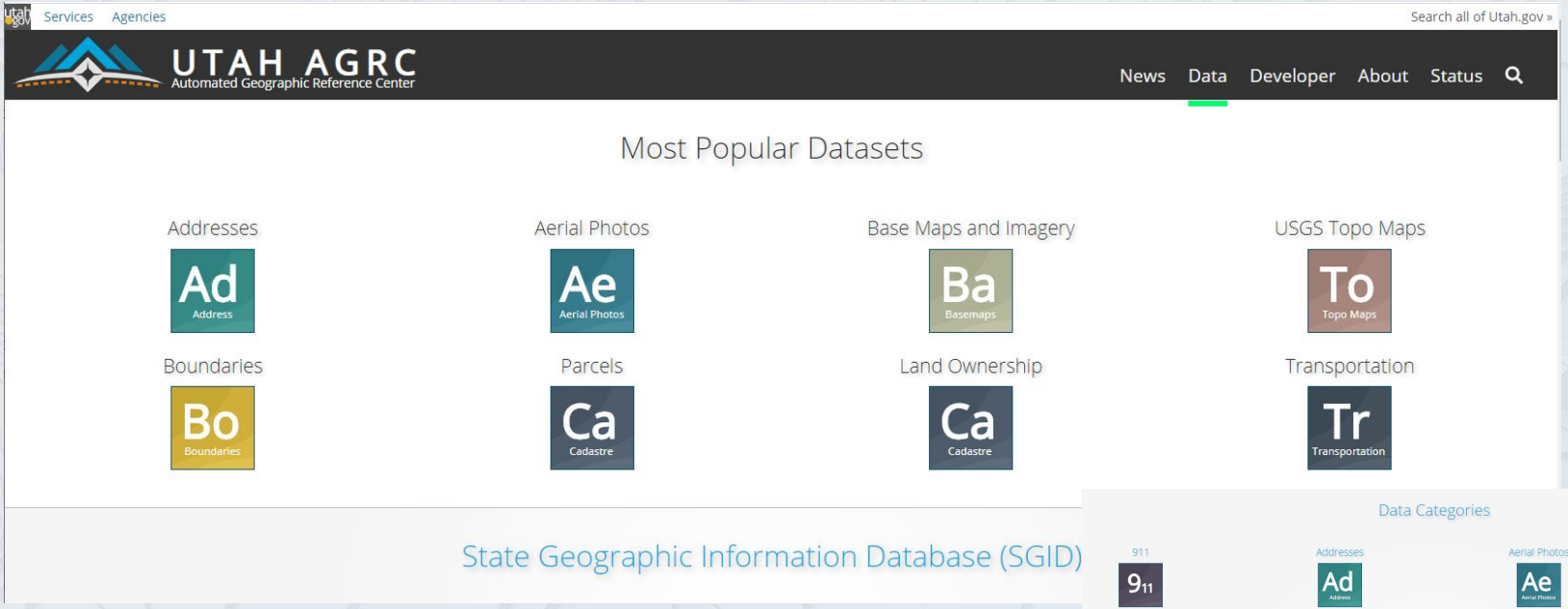
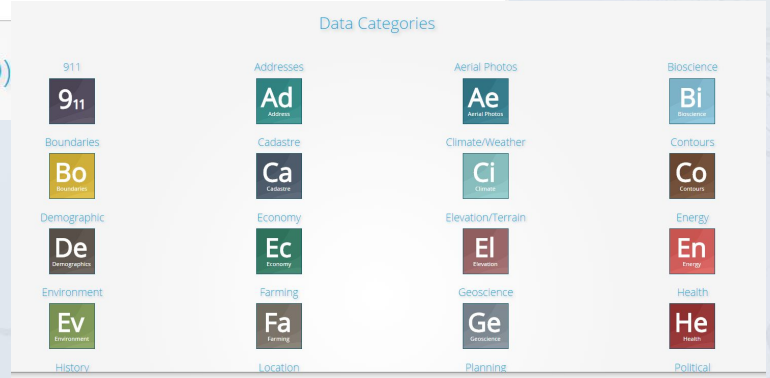
gis.utah.gov/data





Thank You

UTAH AGRC
LOCATION MATTERS
gis.utah.gov

Let's stay in touch...

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Tell Ryan and Jessica Bunce I said hi!