

# Perseverance and Generosity

## A Methodology for Moving Towards Enterprise GIS

Douglas M. Adams, GISP  
Baltimore County, Maryland  
Department of Public Works



# Strategic Business Plan, 2007

## Annual Costs:

Total Operating Costs:	\$859,717	Hardware, Software, Supplies OIT GIS Personnel, Training
Total Capital Costs:	\$272,000	Enterprise Databases
Total Agency Costs:	\$976,353	GIS Database Maintenance Staff, Training, Supplies
<b>Total GIS Enterprise Costs:</b>	<b>\$2,108,070</b>	

## Annual Benefits:

Annual Hours Saved:	119,377
Annual Time Benefits:	\$4,052,895
Other Benefits:	\$606,626
<b>Total Annual Benefits:</b>	<b>\$4,659,521</b>

```
graph TD; A((Ortho Imagery)) --- B((Geodetic Control)); A --- C((National Spatial Data Infrastructure)); B --- C;
```

Ortho Imagery

Geodetic  
Control

National  
Spatial Data  
Infrastructure

Continuously Operating x CORS Map x Press Kit x federal government age x

www.ngs.noaa.gov/CORS\_Map/

Apps BCG BCnet Citrix ESS OCTC GoToM GIS GeoPlatform Kip Other bookmarks

# CORS Map

National Geodetic Survey

NGS Home About NGS Data & Imagery Tools Surveys Science & Education Search

**CHOOSE MAP**

Sampling Rate Map

Show/Hide Help Legend

**Zoom to CORS:**

Site ID:  Go

**Cursor Lat/Lon :**  
39.39800 , -76.60217

**Three Nearest Sites :**  
BACO 0.42 km  
UMBC 18.33 km  
LOYK 33.88 km

Enter a location  Go

Place X

Map showing CORS sites in the Baltimore area. The map includes a search bar, zoom controls, and a legend. The legend is open, showing a 250 km radius and a table of site filtering options.

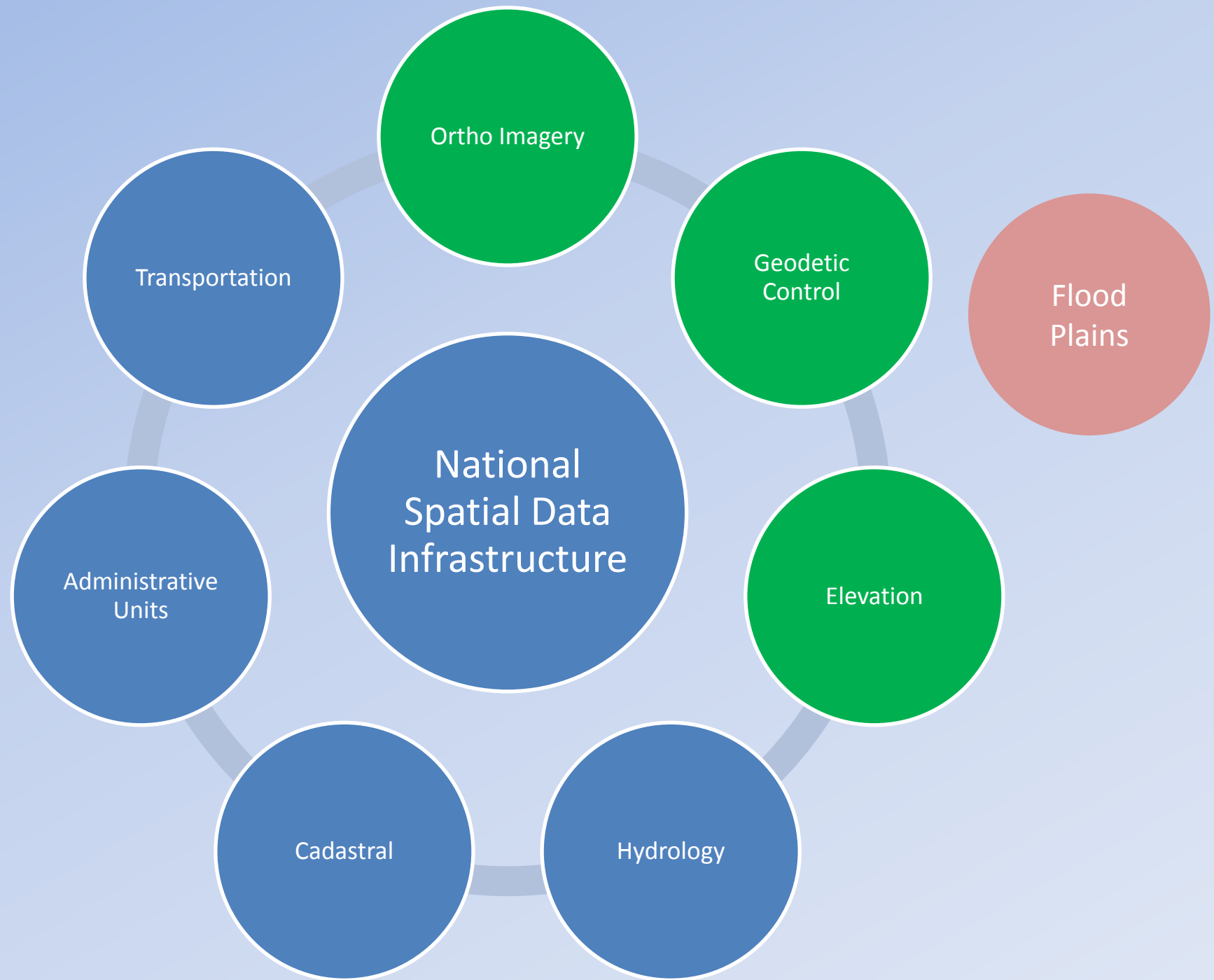
GPS	GNSS	All
		<u>1 sec rate</u>
		<u>5 sec rate</u>
		<u>15 sec rate</u>
		<u>30 sec rate</u>
		<u>All Active</u>
		<u>All Non-Operational</u>
		Decommissioned

[Download CORS KMZ](#)

Map data ©2015 Google Terms of Use Report a map error

Website Owner: National Geodetic Survey / Last modified by nas.infocenter Thursday, 12-Feb-2015 16:53:10 EST

NGA\_Seal\_300dpi.psd DOI.jpeg USDA.jpeg Show all downloads...



# ArcGIS - Baltimore County DFIRM

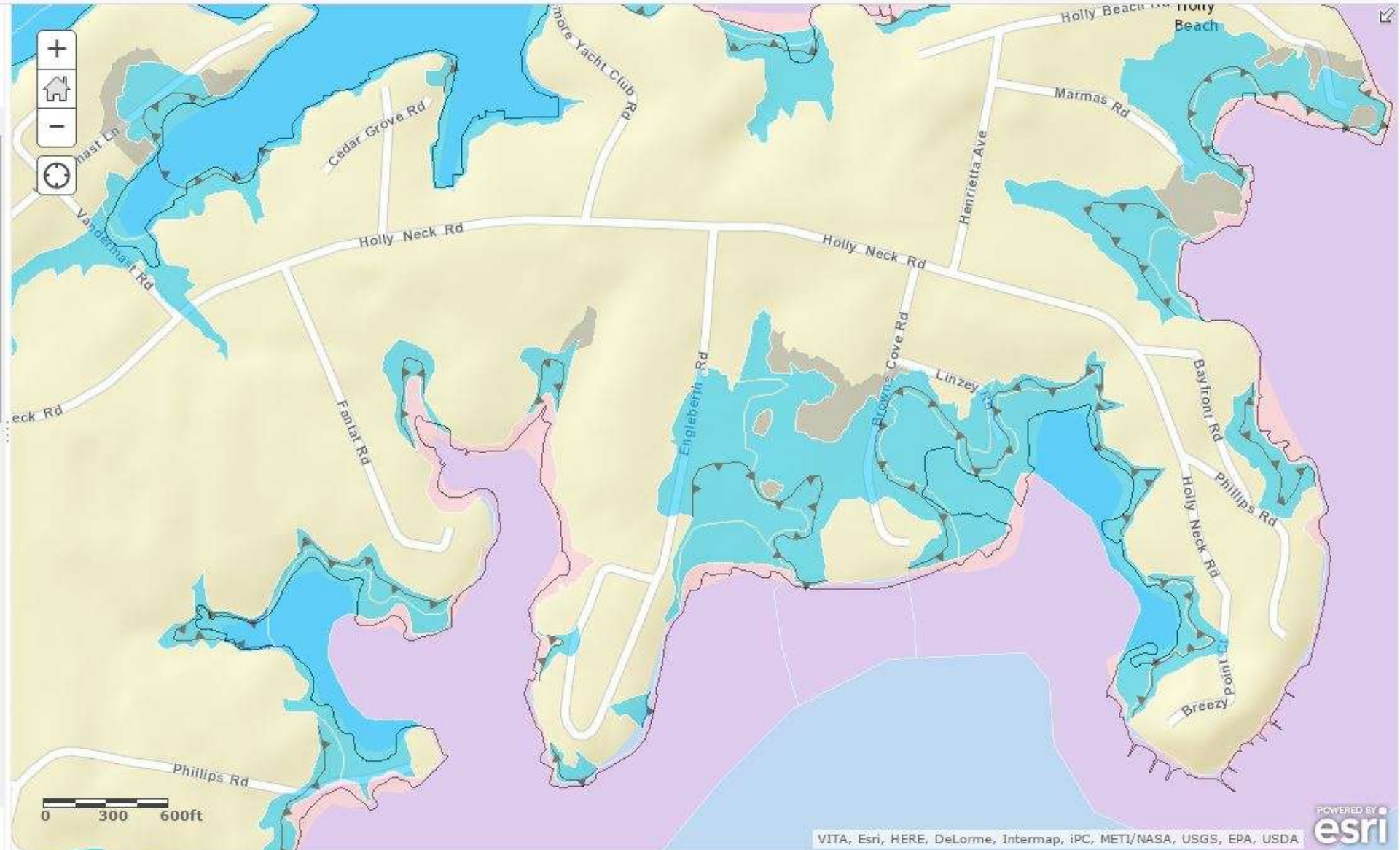
Modify Map Sign In

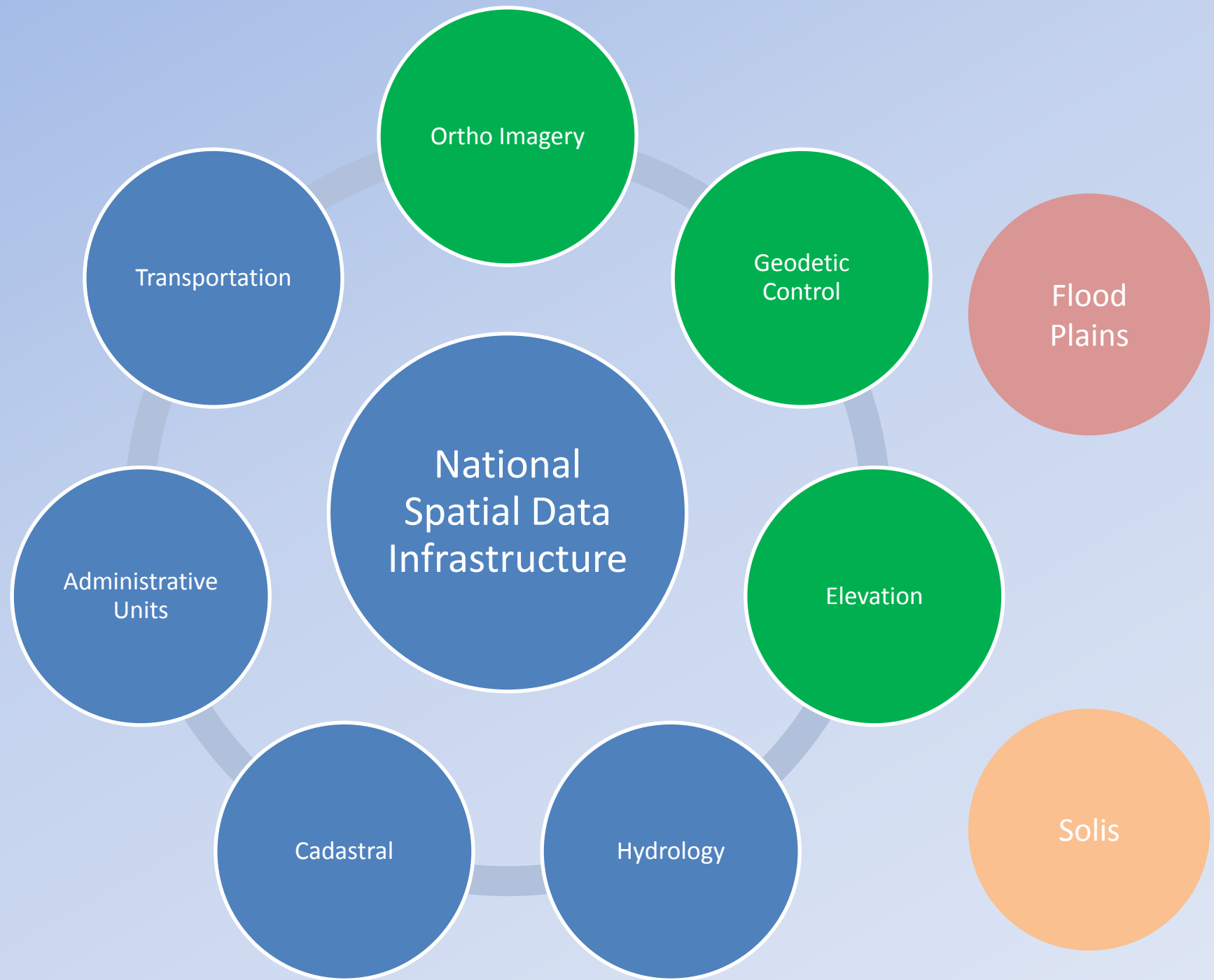
Details Basemap

Share Print Measure Find address or place

About Content Legend

- Contents
- HoodPlain ArcGISOnline
  - DFIRM
    - Limit of Moderate Wave Action (LiMWA)
    - FIRM Zone
    - FIRM Floodway
    - FIRM Panel
    - FIRM Base Flood Elevation
    - FIS Cross Section
    - FIRM Flood Hazard Line
    - Map Labels
    - NGS Benchmarks
    - Hydraulic Structures
    - Label Leader Line





Ortho Imagery

Geodetic Control

Flood Plains

National Spatial Data Infrastructure

Elevation

Solis

Hydrology

Cadastral

Administrative Units

Transportation





Table Of Contents

- Layers**
- Local Roads and Streets
    - <all other values> {DCD, >}
    - Very limited
    - Somewhat limited
    - Not limited
    - Not rated or not available

Soil Data Viewer - ArcMap

File View Help

Attribute Folders

- Building Site Development
  - Corrosion of Concrete
  - Corrosion of Steel
  - Dwellings With Basements
  - Dwellings Without Basements
  - Lawns, Landscaping, and Golf Fairways
  - Local Roads and Streets**
  - Shallow Excavations
  - Small Commercial Buildings
  - Unpaved Local Roads and Streets
- Construction Materials
- Disaster Recovery Planning
- Land Classifications
- Land Management
- Military Operations
- Recreational Development
- Sanitary Facilities
- Soil Erosion Factors
- Soil Physical Properties
- Soil Qualities and Features
- Vegetative Productivity
- Waste Management
- Water Features
- Water Management

Attribute/Folder Description Rating Options Report Options

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

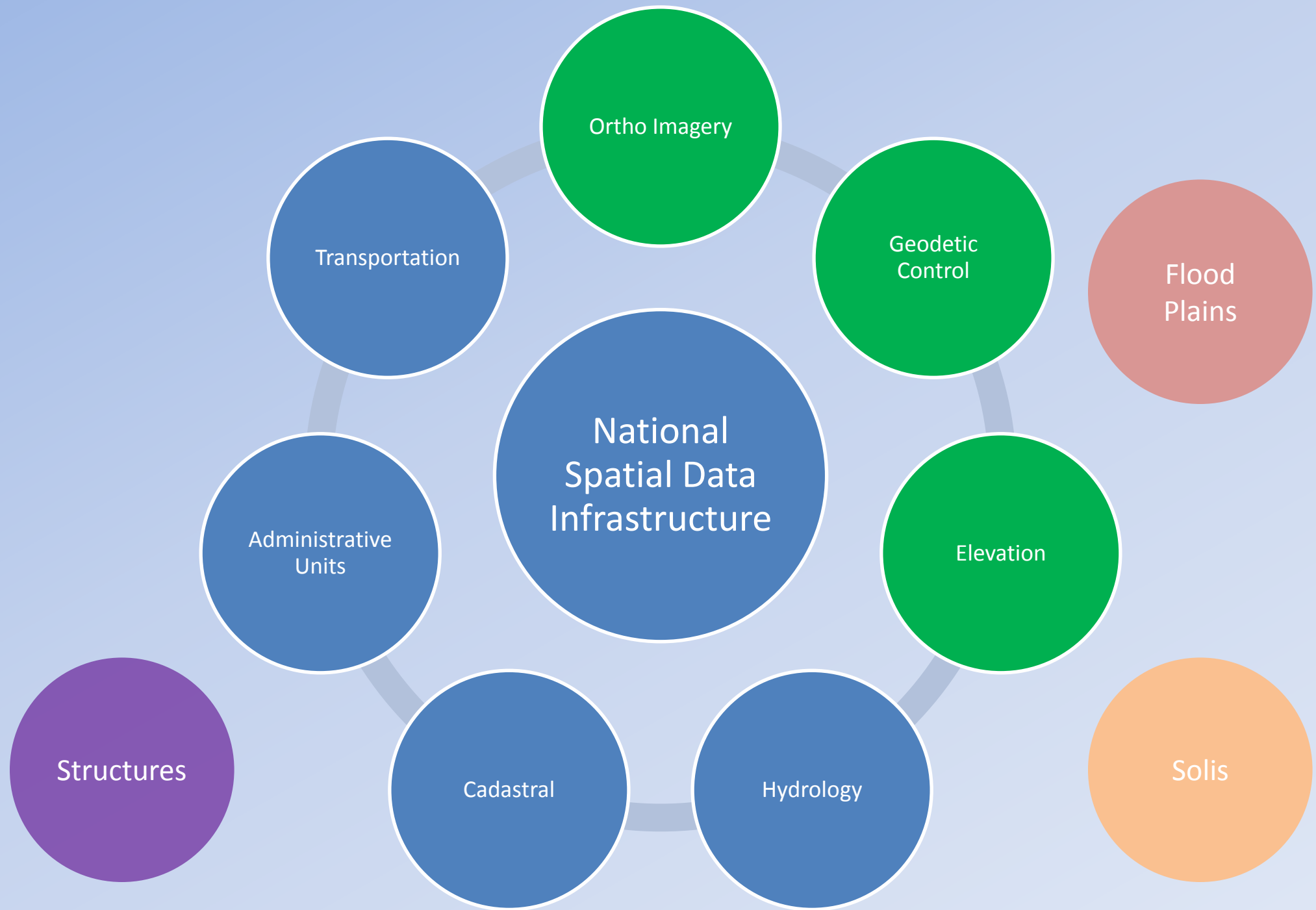
Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Basic Mode  Advanced Mode Aggregation Report Map Unit Desc. Report Map Synchronize Clear Theme

Synchronization Status: All map units in sync.

Map Layer: C:\Users\dadams\Documents\soils\_SSURGSDM\_mn061\_2851732\_11\soils\wss\_SSA\_MN061\_soildb\_MN\_21 soilmu\_a\_mn061

Database: C:\Users\dadams\Documents\soils\_SSURGSDM\_mn061\_2851732\_11\soils\wss\_SSA\_MN061\_soildb\_MN\_2003\_[2014-09-16]\MN061\soildb\_MN\_2003.r





National Geospatial Program

# Lidar Base Specification

Chapter 4 of  
Section 8, U.S. Geological Survey Standards  
Book 11, Collection and Delineation of Space



Techniques and Methods T1-B4  
Version 1.1, August 2012  
Version 1.1, October 2014  
Version 1.2, November 2016

U.S. Department of the Interior  
U.S. Geological Survey



National Mapping Program Technical Instructions

## Part 2 Specifications

### Standards for Revised Primary Quadrangle Maps

U.S. Department of the Interior  
U.S. Geological Survey



# FEMA

October 2011

## Guidelines and Standards Risk Analysis and Mapping Appendix L: Guidance for Data and Flood Insurance Databases



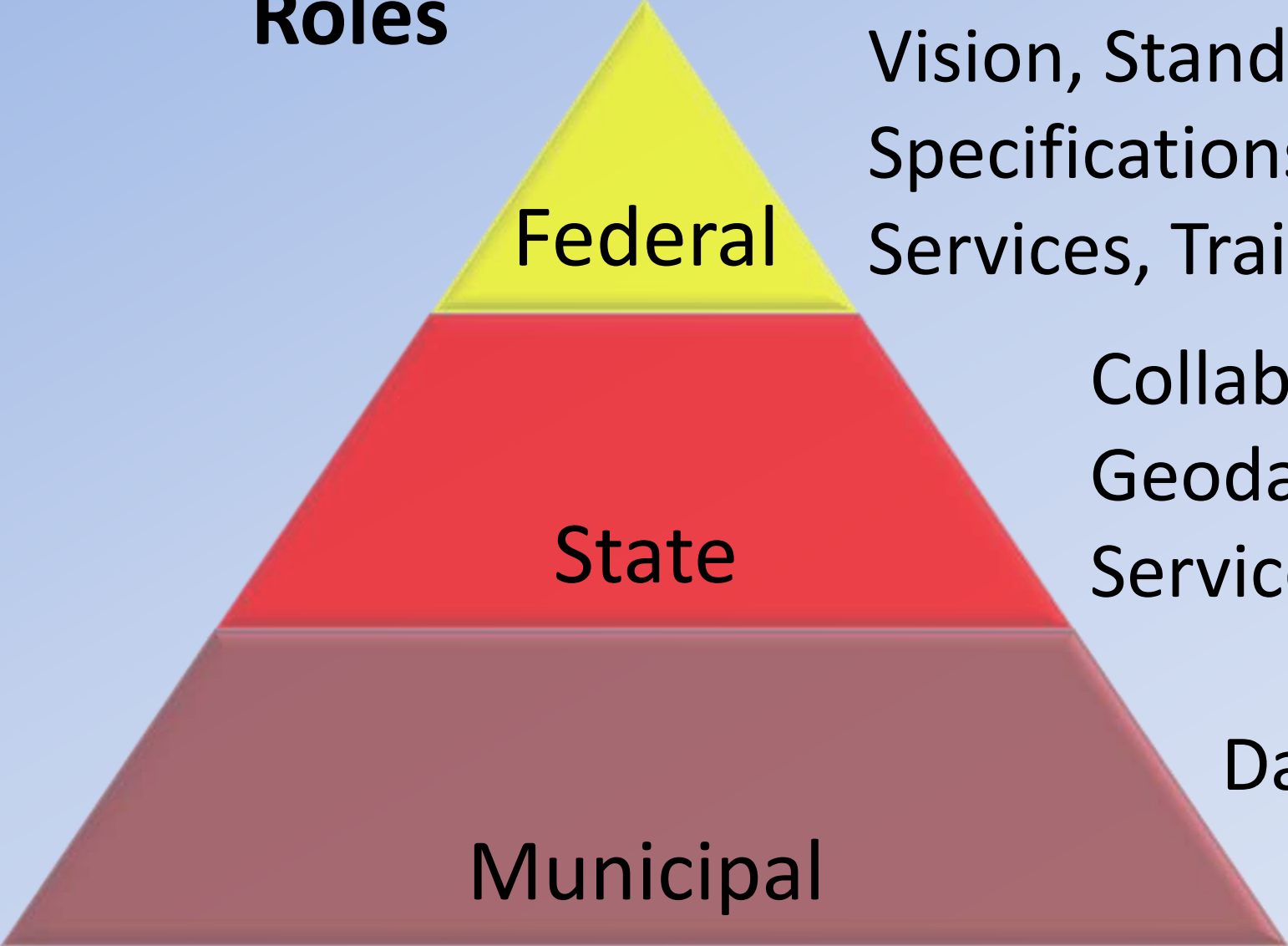
FGDC Document Number FGDC-STD-016-2011

## United States Thoroughfare, Landmark, and Postal Address Data Standard

Sponsored by the Urban and Regional Information Systems Association (URISA) and the  
National Emergency Number Association (NENA)  
FGDC Subcommittee for Cultural and Demographic Data

February 2011

# Potential Roles



Vision, Standards,  
Specifications,  
Services, Training

Collaboration, Mentoring,  
Geodatabase Designs,  
Services, Training

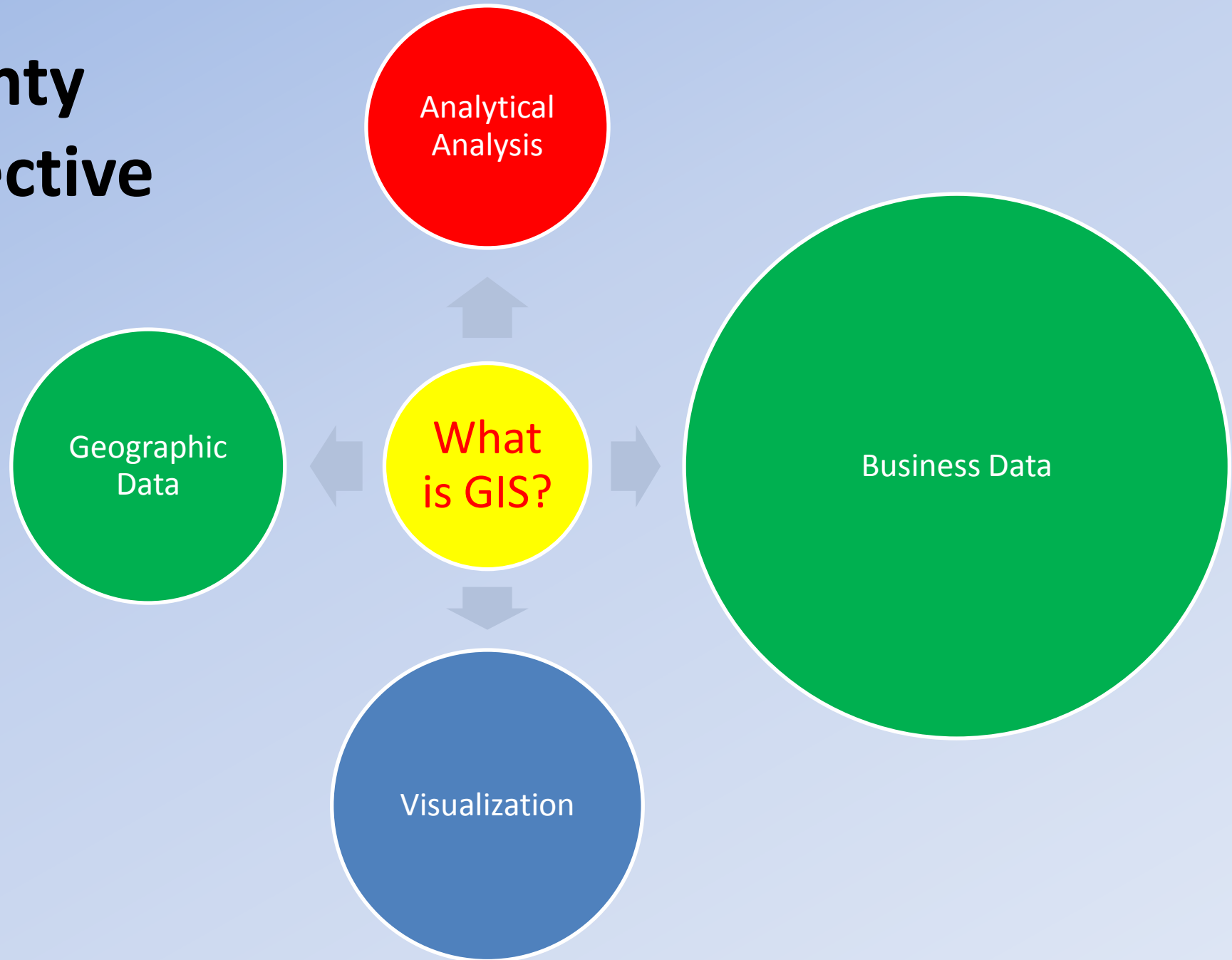
Data, Data, Data

Federal

State

Municipal

# County Perspective





Agricultural  
Preservation



Shopping  
Centers



Snow  
Routes



Traffic  
Signs



Water  
Master  
Plan



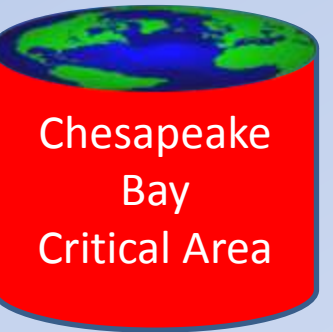
Metropolitan  
District



Facilities



Cadastral



Chesapeake  
Bay  
Critical Area



ZIP Codes



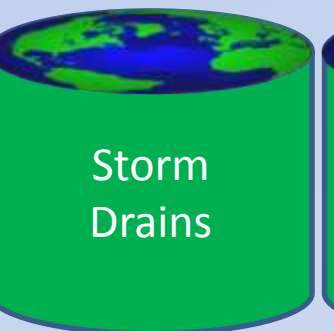
Industrial  
Parks



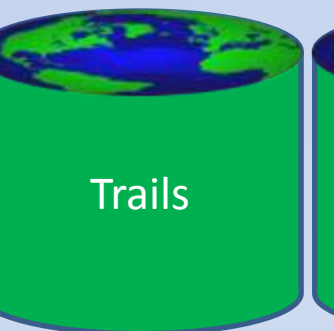
Business  
Parks



Road  
Closure



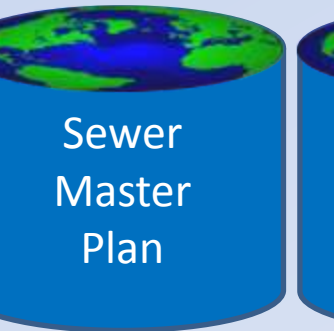
Storm  
Drains



Trails



Sewer



Sewer  
Master  
Plan



Traffic  
Signals



Traffic  
Calming



Capital  
Projects



Basic Services  
Maps



Letter of Map  
Amendment



Highway  
Districts



Fire  
Districts



Police  
Districts

# Secrets to Our Success

- Agile approach
- Requirements – Business Rules
- Spreadsheets, Word documents, PowerPoint Illustrations
- Normalized databases – leveraging existing domains
- Compilation from best available sources
- Adherence to standards/best practices

# Questions?

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