

2015 Statewide GIS Initiatives

- Tennessee Department of Finance and Administration
- Office for Information Resources – GIS Services
 - Dennis Pedersen, Director
- *TNGIC, April 22, 2015*



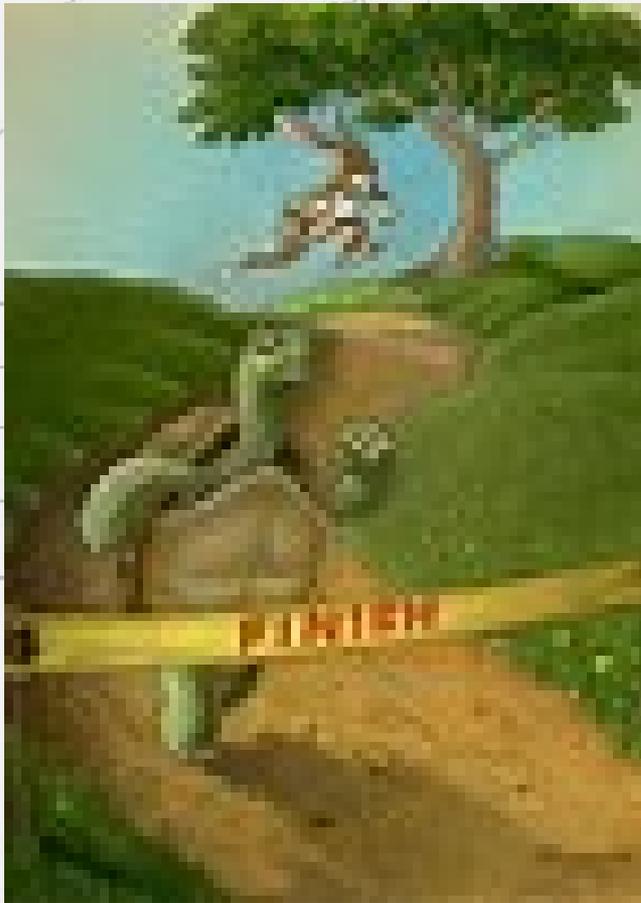
Agenda

- USGS 3DEP
- NG911
- Ortho Imagery Updates
- Geospatial Data Act of 2015





"...slow and steady wins the race"



USGS 3DEP Program

- Acquire nationwide high res. LiDAR elevation data
- Backed by a comprehensive business plan (2011)
- Estimated annual benefits of \$1.2 billion nationwide
- Goal to start data production in 2015
- Establishing partnerships/collaboration on funding the program
- USGS offered contributions up to 50%
- Sought proposals from 3DEP supporters at Fed, State, and local gov. levels

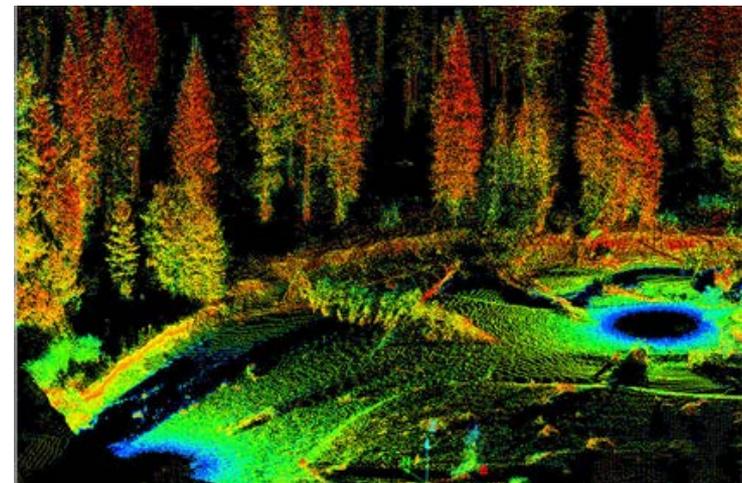


Benefits for Top Business Uses

Rank		Annual Benefits	
		Conservative	Potential
1	Flood Risk Management	\$295M	\$502M
2	Infrastructure and Construction Management	\$206M	\$942M
3	Natural Resources Conservation	\$159M	\$335M
4	Agriculture and Precision Farming	\$122M	\$2,011M
5	Water Supply and Quality	\$85M	\$156M
6	Wildfire Management, Planning and Response	\$76M	\$159M
7	Geologic Resource Assessment and Hazard Mitigation	\$52M	\$1,067M
8	Forest Resources Management	\$44M	\$62M
9	River and Stream Resource Management	\$38M	\$87M
10	Aviation Navigation and Safety	\$35M	\$56M
:			
20	Land Navigation and Safety	\$0.2M	\$7,125M
Total for all Business Uses (1 – 27)		\$1.2B	\$13B

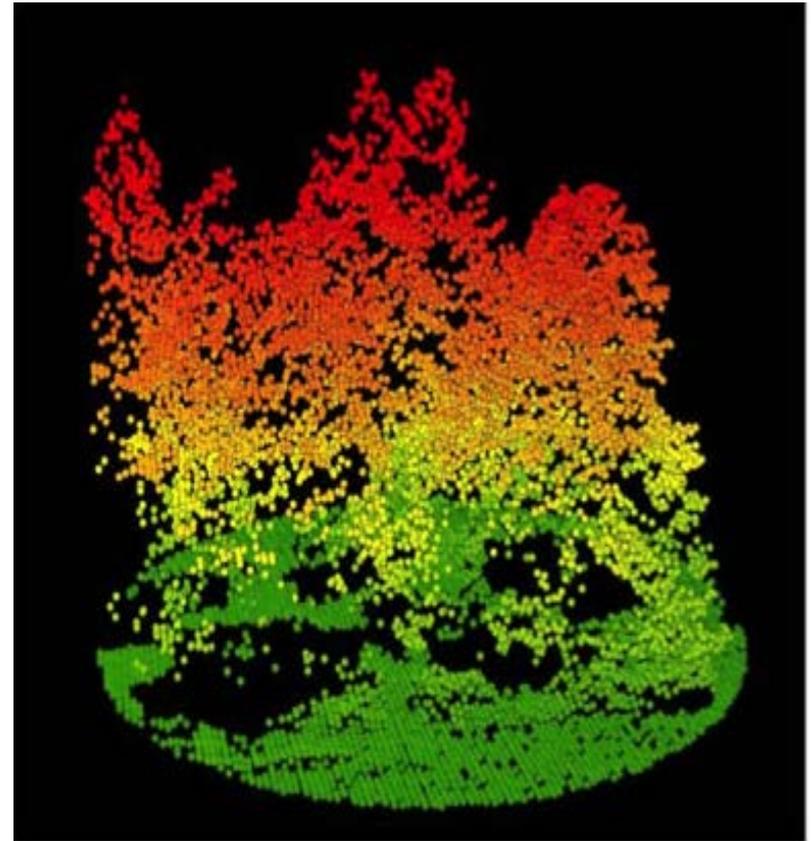
LiDAR Process for Acquiring Enhanced Elevation

- **LiDAR Process for Acquiring Enhanced Elevation**
 - Efficient
 - Less Costly
 - Accurate Direct Measurements
 - Preferred Technology for EE
 - Multiple Applications



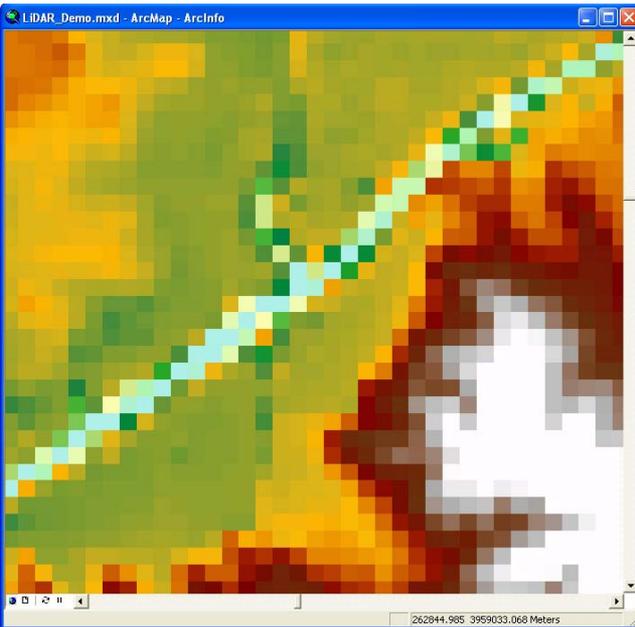
LiDAR Process for Acquiring Enhanced Elevation

- LiDAR Output
 - Many points
 - Many Returns
 - First, Interim, Last
 - Point Cloud
 - Classified Point Cloud
 - ASPRS Classes
 - TN:1,2,7,8,9,&12

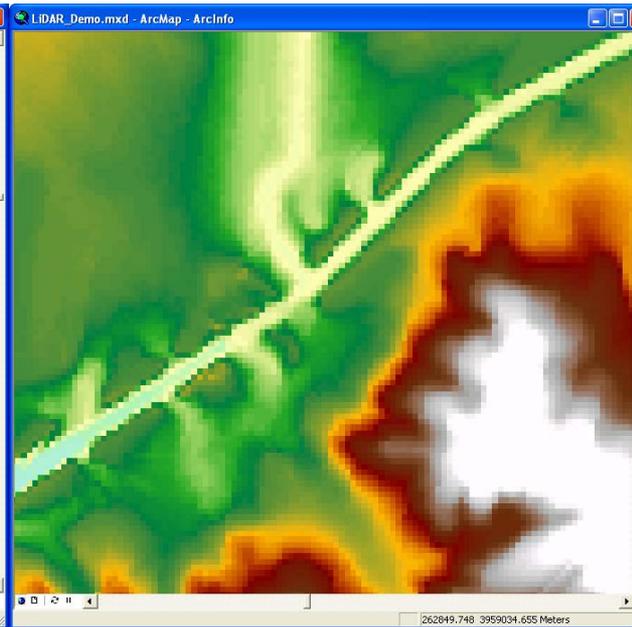


Examples of 30m, 10m, and 1m Elevation Products Derivatives – Digital Elevation Models

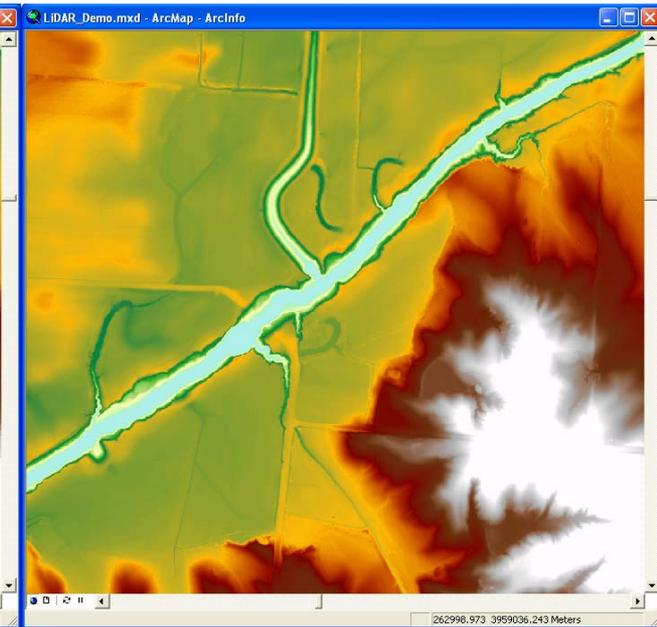
30 meter DEM (1:6,000)



10 meter DEM (1:6,000)



LiDAR
1 meter DEM (1:6,000)





Examples of 30m, 10m, and 1m Elevation Products

Derivatives - Hillshades

30 meter Hillshade
(1:6,000)

10 meter Hillshade (1:6,000)

LiDAR
1 meter Hillshade
(1:6,000)

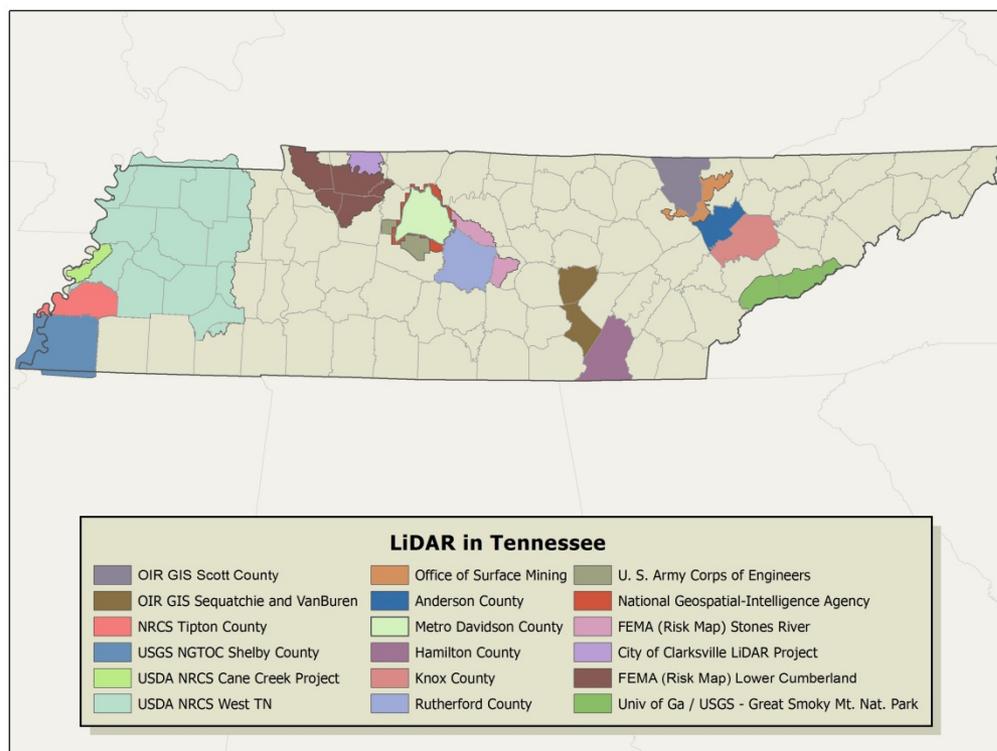


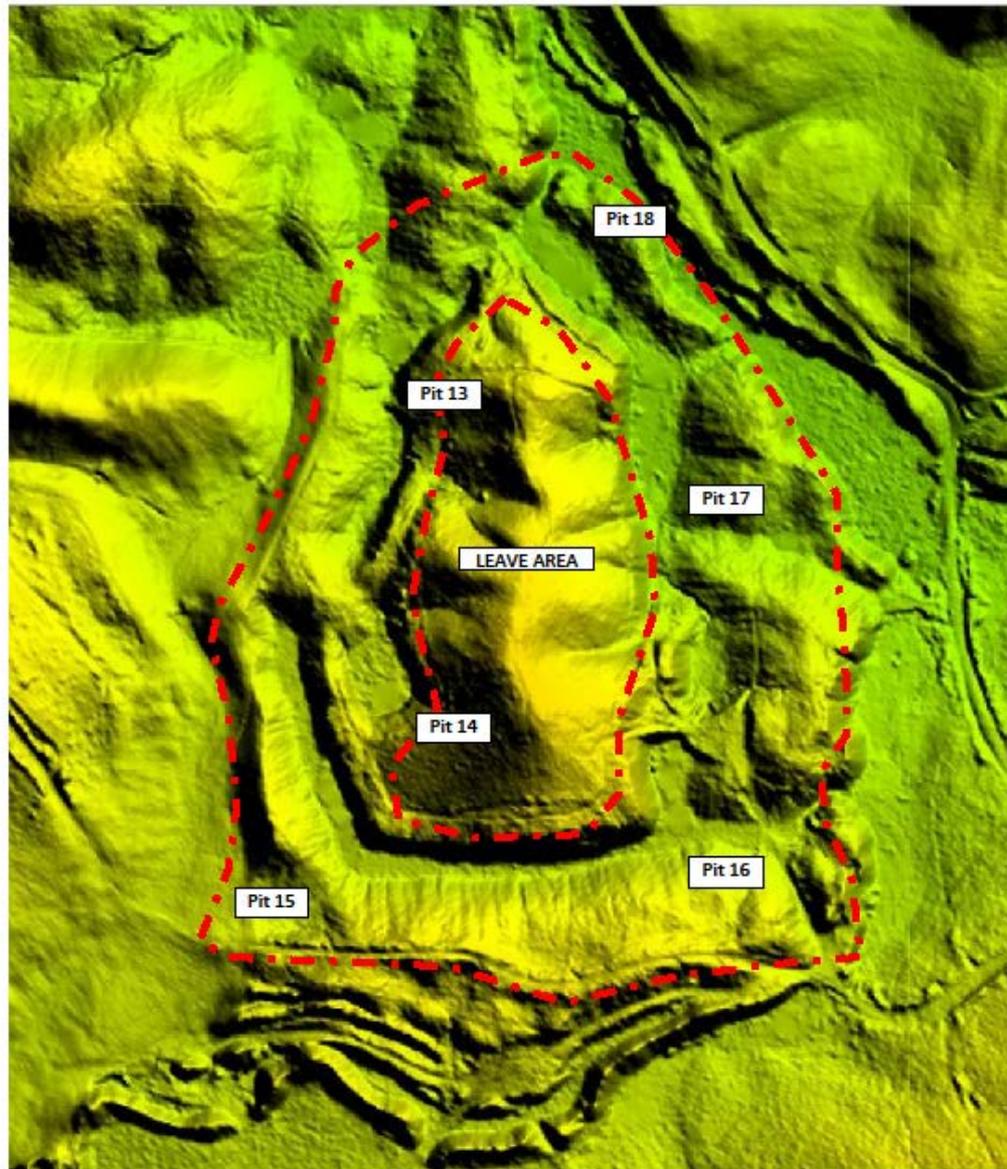
Existing LiDAR in TN

- **Approximately 20% coverage in the state**
- **Estimated cost of remaining 80% is: \$7-8 million**

Map of existing
LiDAR coverage

<http://gis.tn.gov/>





CHERRY BRANCH 3 RECLAMATION PROJECT - SITE 1
DIGITAL ELEVATION MODEL (DEM) IMAGE
SEQUATCHIE COUNTY – COLLINS QUAD



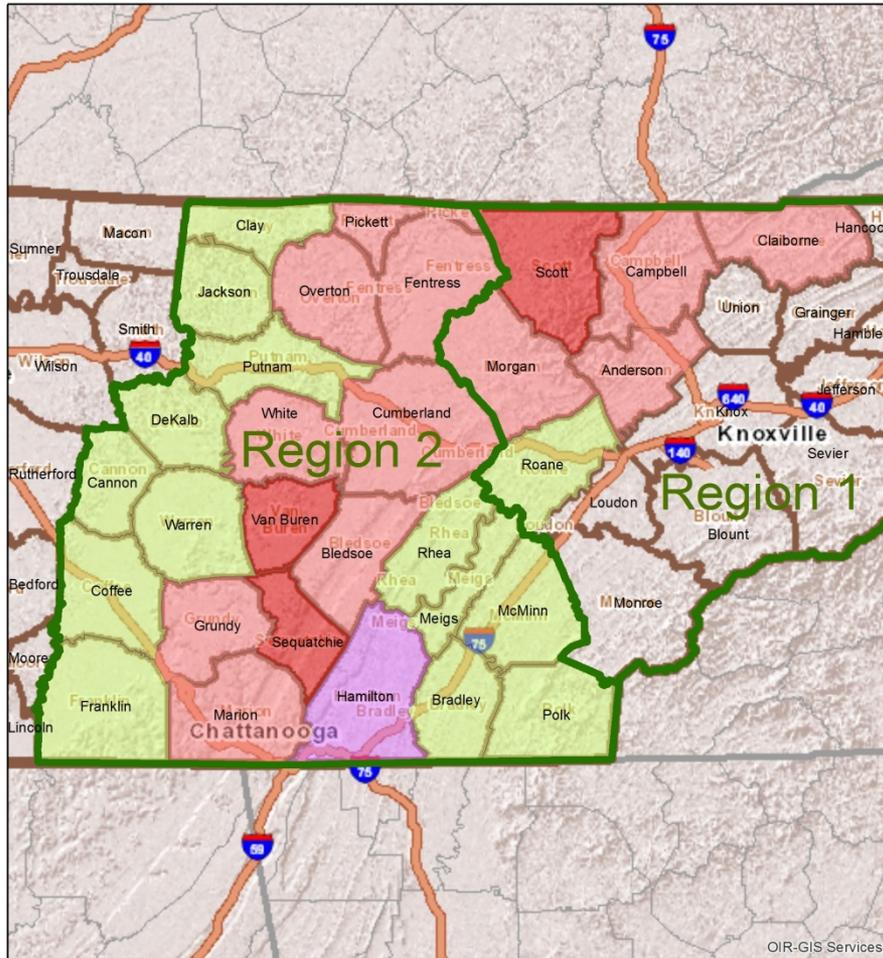
10/22/2014



Cherry Branch Rd

Google earth

Proposed Tennessee 3DEP Counties



-  TDOT Region Boundaries
- LiDAR**
-  Existing QL2 Data
-  TVA/Hamilton Co. Area of Interest
-  DOI-OSM Area of Interest
-  TDOT Area of Interest



2015 TN 3DEP Partnership Funding Model

- TN Dept. of Transportation – 25% (\$670,000)
- US DOI. – Office Surface Mining – 25% (\$670,000)
- Other government sources – 25%
 - USDA/NRCS – (\$75,000)
 - TVA – (\$50,000)
 - Hamilton Co./City of Chattanooga – (\$71,000)
 - DOE – Oak Ridge Office – (\$25,000)
 - TN Dept. of F&A – OIR-GIS Services – (\$450,000)
 - **USGS 3DEP Funding – 25% (\$670,000)**
 - Estimated 27 county total cost - \$2.7 million

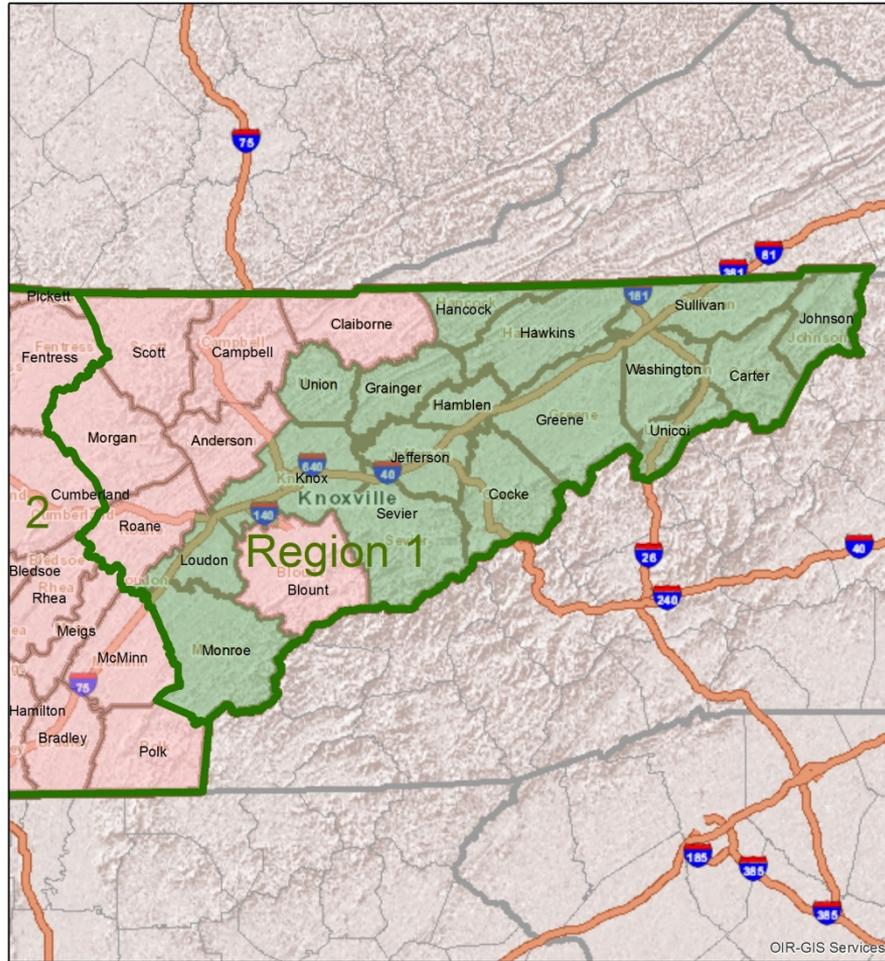


Recent Events and Current Status:

- Submitted Pre-Proposal 11/7/14
- Submitted Full Proposal 12/12/14
- 3DEP Award notification on 1-21-15 !!!! Yeah!!!
- Contract Negotiations between USGS and State of TN
- Fall 2015 acquisition (Late Oct. – Early Dec.)
- Planning for 2016 lidar collection in east TN.
- Existing LiDAR data available on TN Spatial Data Server: <http://tngis.org/lidar.htm>



2016 Proposed LiDAR



 TDOT Region Boundaries

LiDAR

 Proposed 2016 LiDAR counties

 Planned 2015 LiDAR coverage



Other Current State GIS Efforts:

- Next Generation 911 Status
 - GIS data used to support call routing and location validation
 - TIPS data QC scripts installed in 911 districts
 - Create GIS address point based MSAG
 - Rollout: Summer 2015 goal for West TN



Other Current State GIS Efforts:

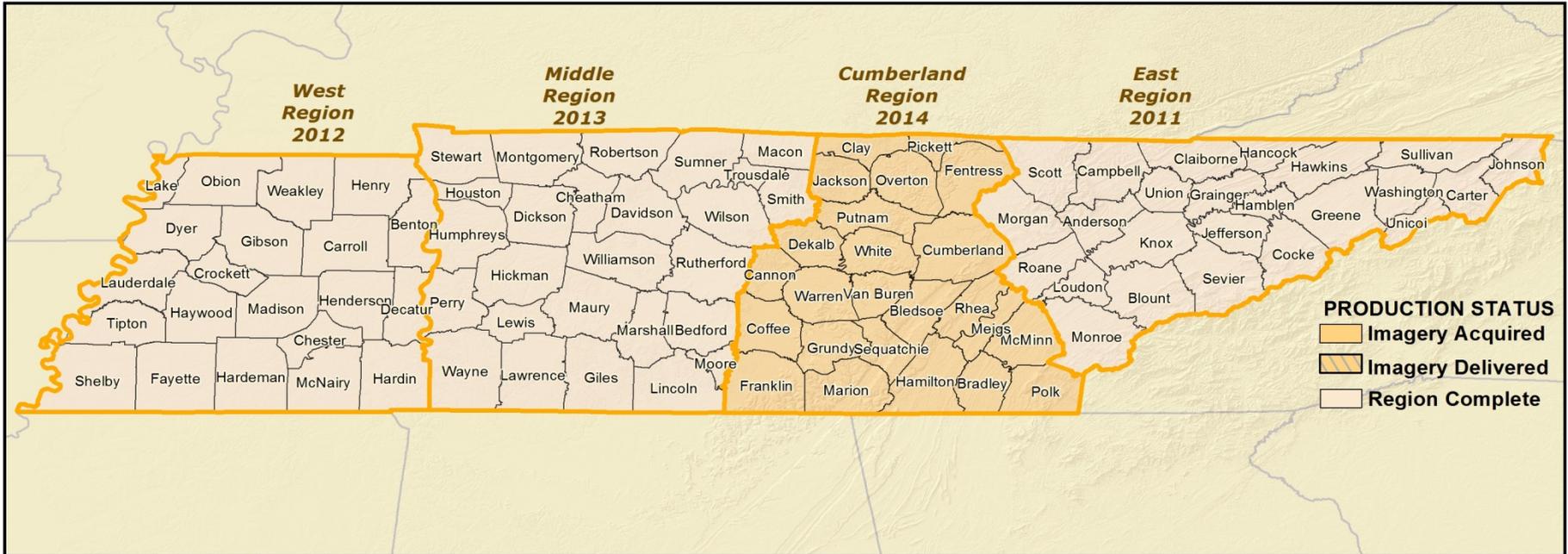
- **USDA NAIP Imagery – (1 meter / leaf – on)**
 - Acquired 2014 imagery statewide
 - Created image cache for TNMap enterprise GIS users
- **TDOT Ortho Imagery – (1 foot / leaf – off)**
 - 24 of 24 counties received for middle TN (TDOT Region 3)
 - OIR - GIS delivered to local gov.
 - Created image cache for TNMap enterprise GIS users
 - Region 2 delivery in 2015
 - Region 1 acquired in spring 2015 for 2016 delivery





Tennessee Base Mapping Program

Production Status as of March 2015



Tennessee Counties

Complete, In Progress, and Projected Production

2012 TDOT Imagery

County Imagery Delivered & Published

Benton	Hardin	Shelby
Carroll	Haywood	Tipton
Chester	Henderson	Weakley
Crockett	Henry	
Decatur	Lake	
Dyer	Lauderdale	
Fayette	Madison	
Gibson	McNairy	
Hardeman	Obion	

2013 TDOT Imagery

County Imagery Delivered & Published

Bedford	Lewis	Rutherford
Cheatham	Lincoln	Smith
Davidson	Macon	Stewart
Dickson	Marshall	Sumner
Giles	Maury	Trousdale
Hickman	Montgomery	Wayne
Houston	Moore	Williamson
Humphreys	Perry	Wilson
Lawrence	Robertson	

2010 TDOT Imagery

County Imagery Delivered & Published

Bledsoe	Grundy	Putnam
Bradley	Hamilton	Rhea
Cannon	Jackson	Sequatchie
Clay	Marion	VanBuren
Coffee	McMinn	Warren
Cumberland	Meigs	White
Dekalb	Overton	
Fentress	Pickett	
Franklin	Polk	

2011 TDOT Imagery

County Imagery Delivered & Published

Anderson	Hancock	Scott
Blount	Hawkins	Sevier
Campbell	Jefferson	Sullivan
Carter	Johnson	Unicoi
Claiborne	Knox	Union
Cocke	Loudon	Washington
Grainger	Monroe	
Greene	Morgan	
Hamblen	Roane	

Agenda

- USGS 3DEP
- NG911
- Ortho Imagery Updates
- **Geospatial Data Act of 2015**



Geospatial Data Act of 2015 *(S. 740)*

- Background
 - 1994 – President Clinton signed EO 12906
 - Purpose: develop the National Spatial Data Infrastructure (NSDI)
 - Cadastral
 - Elevation
 - Geodetic Control
 - Governmental Units
 - Hydrography
 - Orthoimagery
 - Transportation

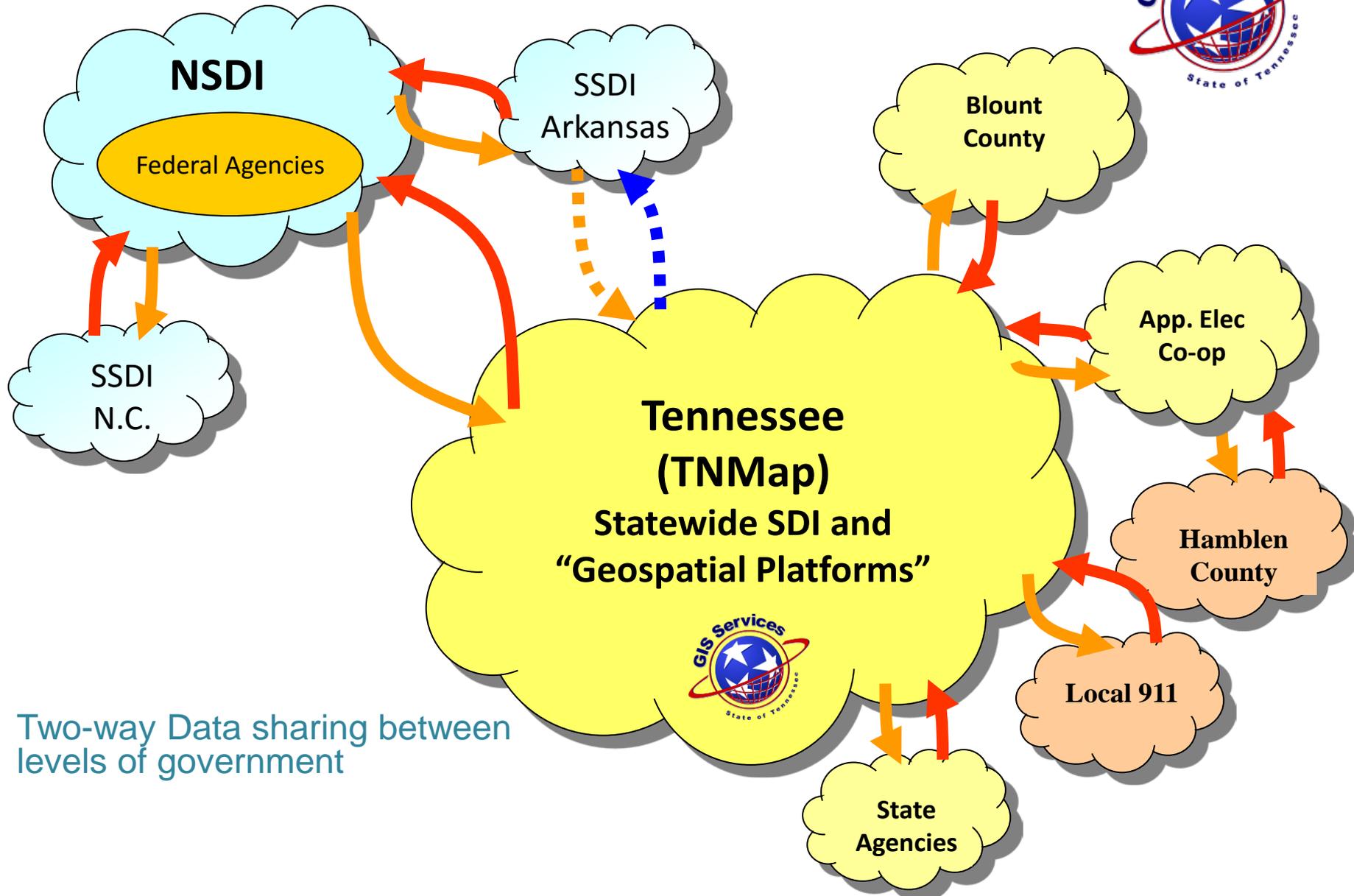


Geospatial Data Act of 2015 *(S. 740)*

- NSDI shortcomings
 - Failed to collaborate on a truly federated NSDI
 - Federal agencies in particular, duplicating effort and not sharing among themselves
 - Tennessee has done well State/local coordination
 - Built all framework data layers
 - Data maintenance/updates and enhancements
- Congress asked GAO to evaluate NSDI
 - Report concludes many problems with fed agencies
- COGO Report Card on NSDI
 - “C” – framework data development
 - “C-” – infrastructure to support the data



Statewide Spatial Data Infrastructure (SSDI) & NSDI



➤ Two-way Data sharing between levels of government

Geospatial Data Act of 2015

(S. 740)

- What the Geospatial Data Act Does (NSDI improvements):
 - Codify existing Federal guidance documents that created the Federal Geographic Data Committee
 - Provide FGDC with authority to make other agencies follow rules
 - Provide congressional oversight to make FGDC and other agencies accountable
 - Track progress on NSDI, where money is spent
 - Requires Federal agencies to coordinate with other Federal and State agencies, and local government



Geospatial Data Act of 2015 *(S. 740)*

- What does the Geospatial Data Act mean for Tennessee (assuming it becomes law)?
 - Hope for:
 - Improved coordination translates into efficiencies in funding GIS data development
 - Improved GIS data quality
 - Improved GIS data accessibility
 - Stay Tuned.....



Wrap Up: TNMap Services

- <http://tnmap.tn.gov>
 - Downloadable GIS datasets (Opendata)
 - Links to GIS applications
 - ArcGIS REST Services Directory
 - » Image and map services for web apps and ArcGIS desktop users
 - » Geocoding service



