



NC OneMap

Geospatial Data for Decisions

NC Criminal Justice Information Network
October 13, 2011





Topics

- "The Geospatial Landscape"
- Statewide Orthoimagery
- Evolution of Tools to Discover and Access Data
- Next Steps



Geospatial Investment



- 100 counties have invested in data and systems
- Most provide access to data via Internet
- Data meets local needs for decision making
- Sharing between local and state





Geographic Information Coordinating Council (GICC)

- Statutory, policy body created by General Assembly in 2001
- Article 76, §143-725 thru 143-727
- 33 members
- Public and private sector representation
- CGIA serves as technical staff
- CGIA is leading NC OneMap implementation





GICC Mission

"Improve the quality, access, cost-effectiveness and utility of North Carolina's geographic information and promote geographic information as a strategic resource for the State."





NC OneMap Vision and Implementation

- Achieve statewide GIS data resource
- Developed through consensus
- Data documented through metadata
- Share data between local, state, and federal agencies
- Develop ways to share cost of data creation
- Support decisions throughout public sector





NC OneMap Data Layers

- Orthoimagery
- Elevation
- Roads
- Parcel boundaries
- Address points
- City and county boundaries
- Rivers and streams
- Law enforcement locations
- Correctional institutions
- Flood hazard zones
- Emergency shelters
- Fire stations
- Hospitals
- *plus many others ...*





Statewide Orthoimagery 2010

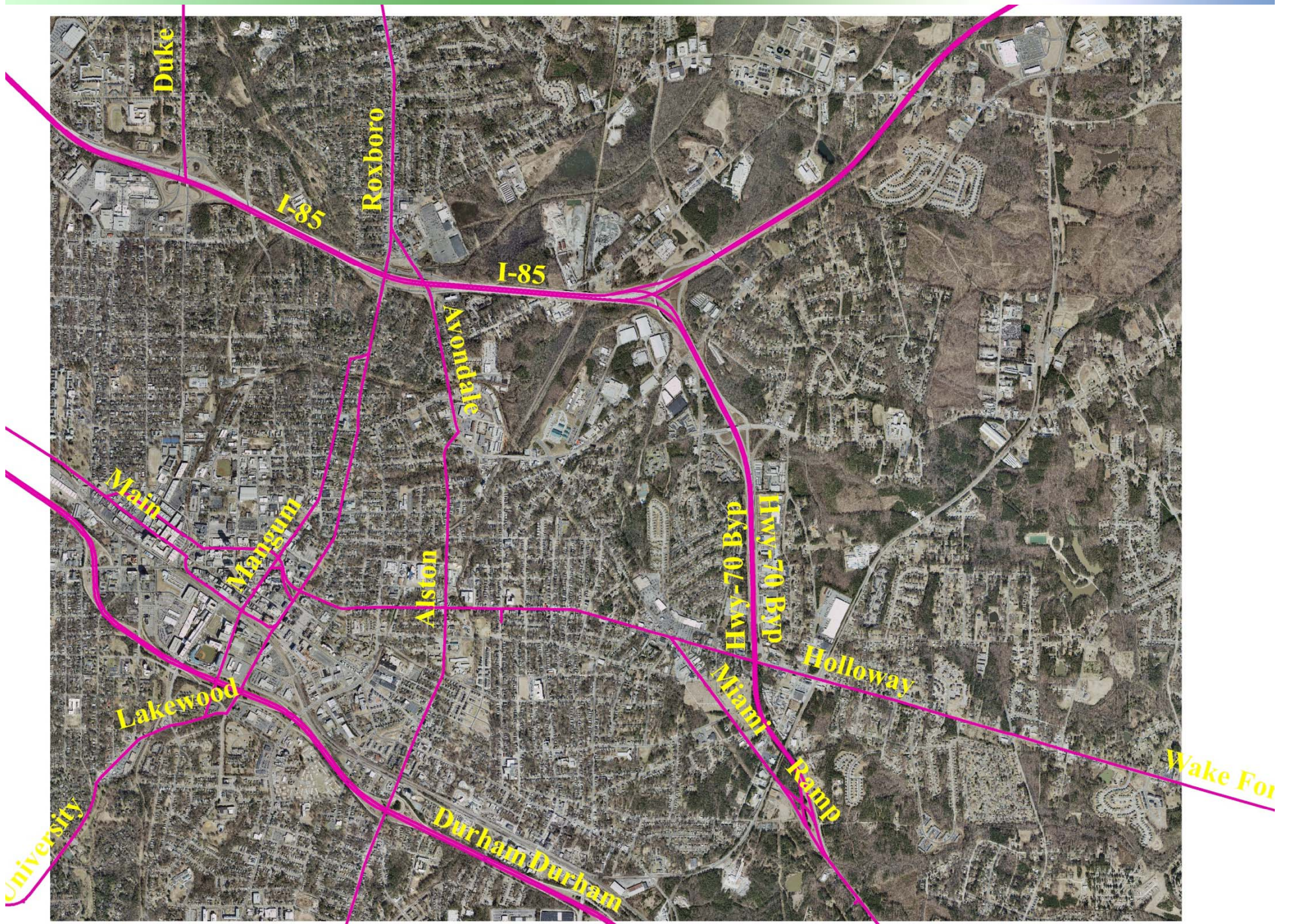


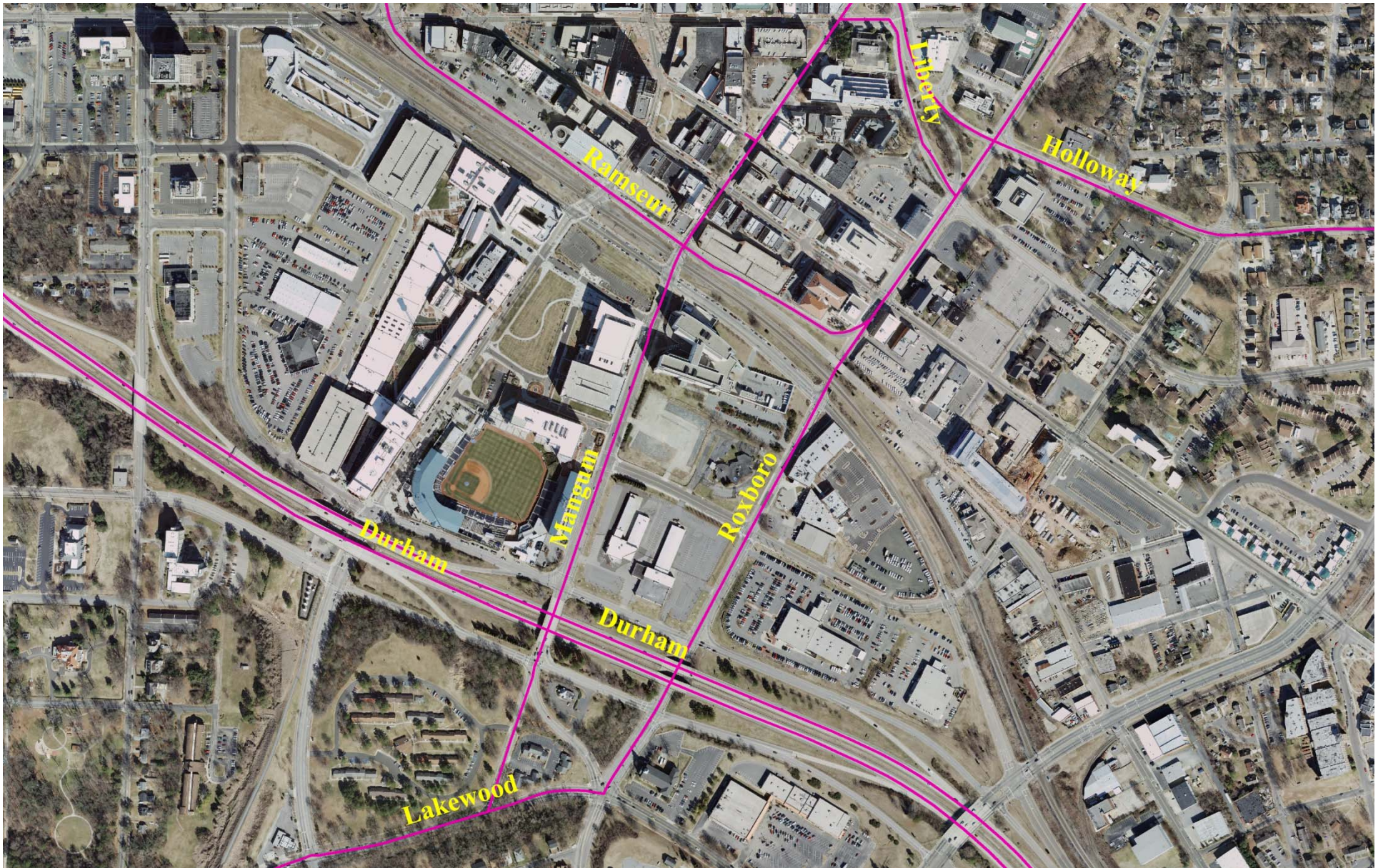


Project In Brief

- City of Durham
- Funded by 911 Board
- \$12.3 million grant
- 100 counties
- Flights – early 2010
- Imagery to counties – spring 2011
- 59,000 “tiles”
- 6-inch ground resolution








1:4,800 scale from GIS



 1:2,400 scale from GIS



1:1,200 scale from GIS



1:480 scale from GIS



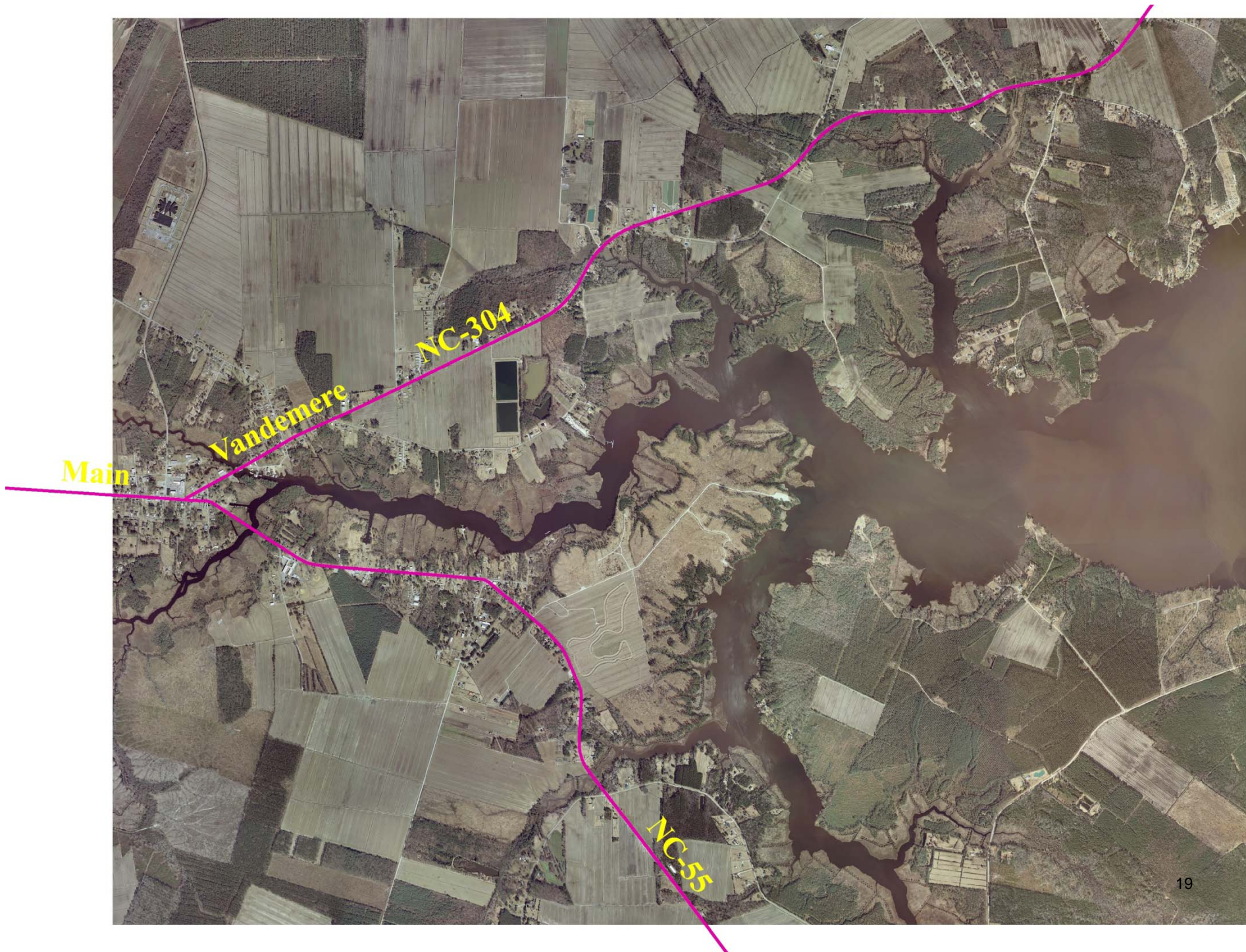




1:1,200 scale from GIS



1:600 scale from GIS





1:2,400 scale from GIS



1:1,200 scale from GIS

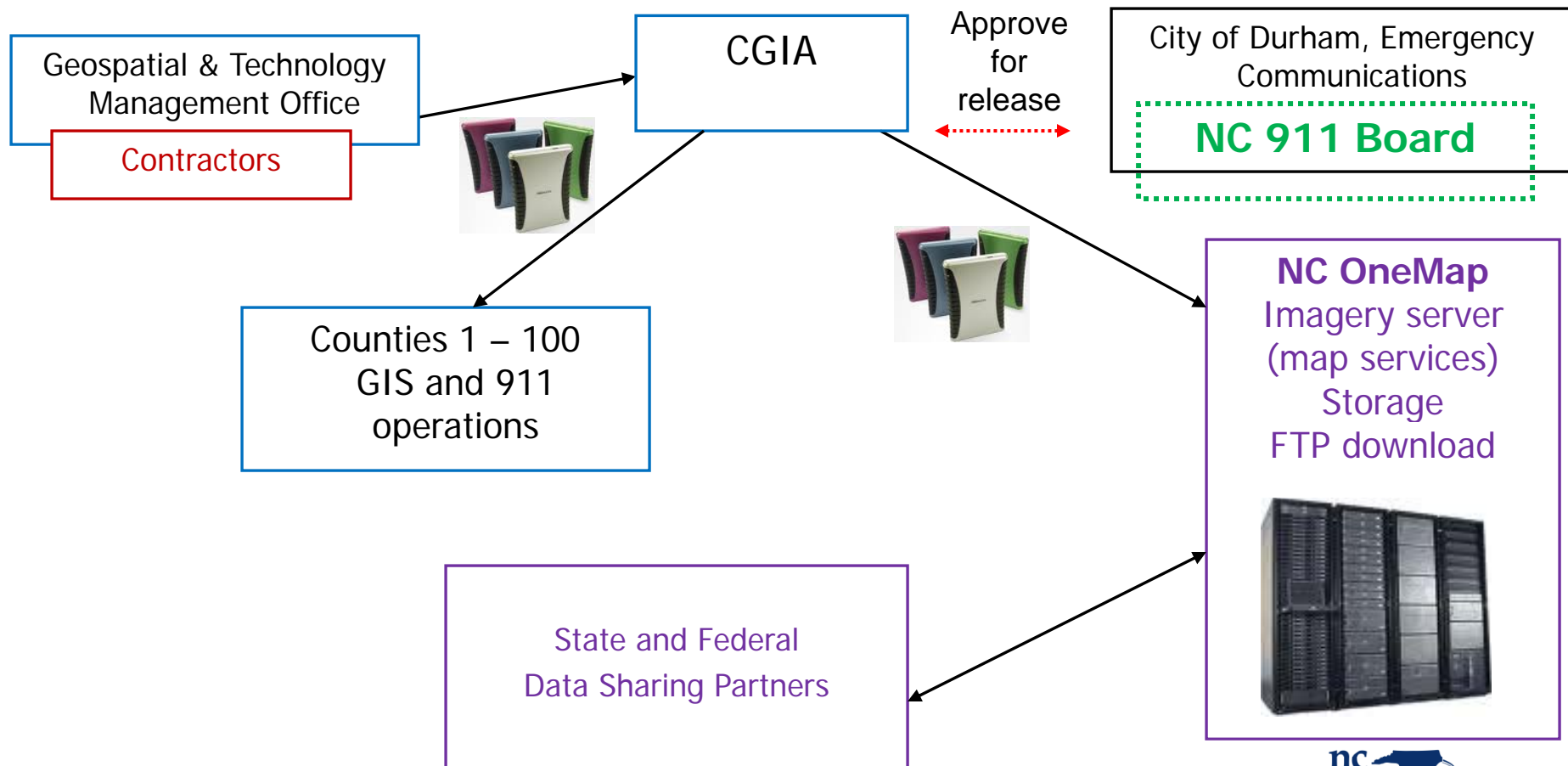


1:600 scale from GIS

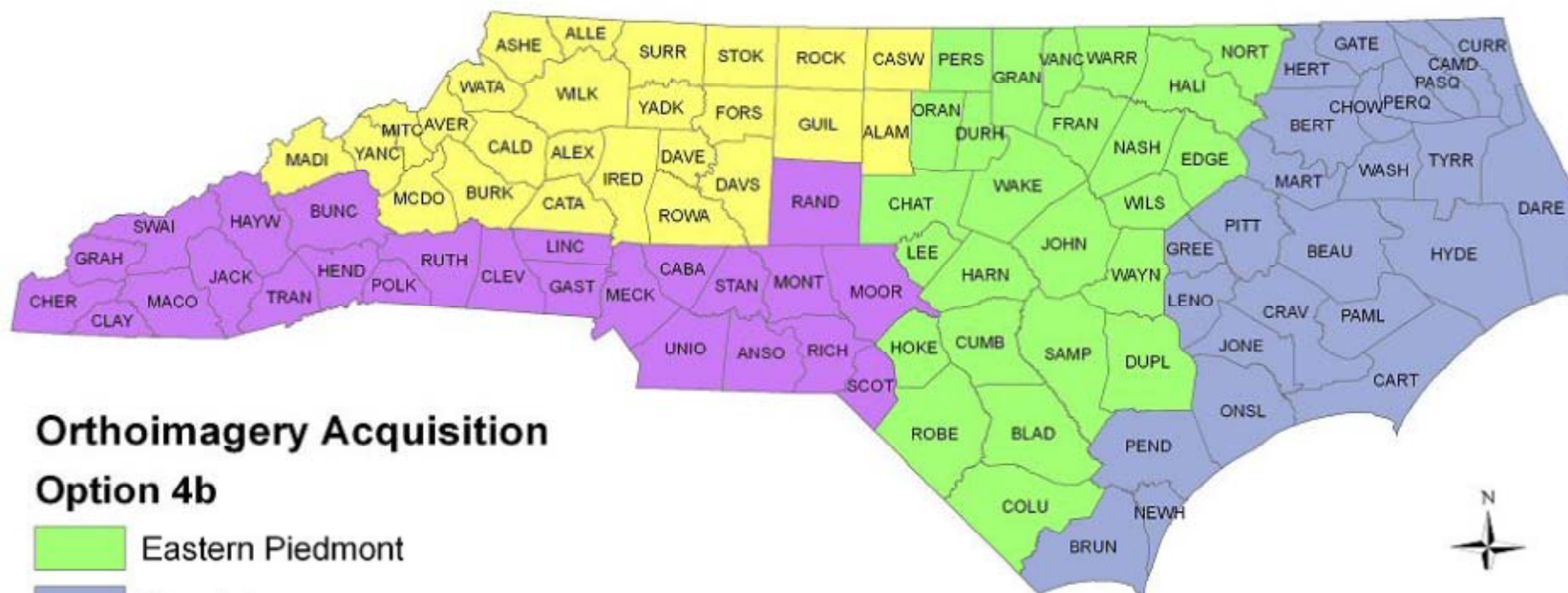


1:1,200 scale from GIS

Distributing Imagery Products

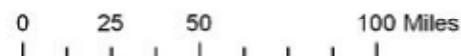


Statewide Digital Orthoimagery, Option 4b: State Divided in Fourths with Mountains and Western Piedmont Split North and South



Orthoimagery Acquisition

Option 4b



Sources: NC Center for Geographic Information and Analysis
and the Working Group for Orthophotography Planning,
Statewide Mapping Advisory Committee.

October 4, 2010

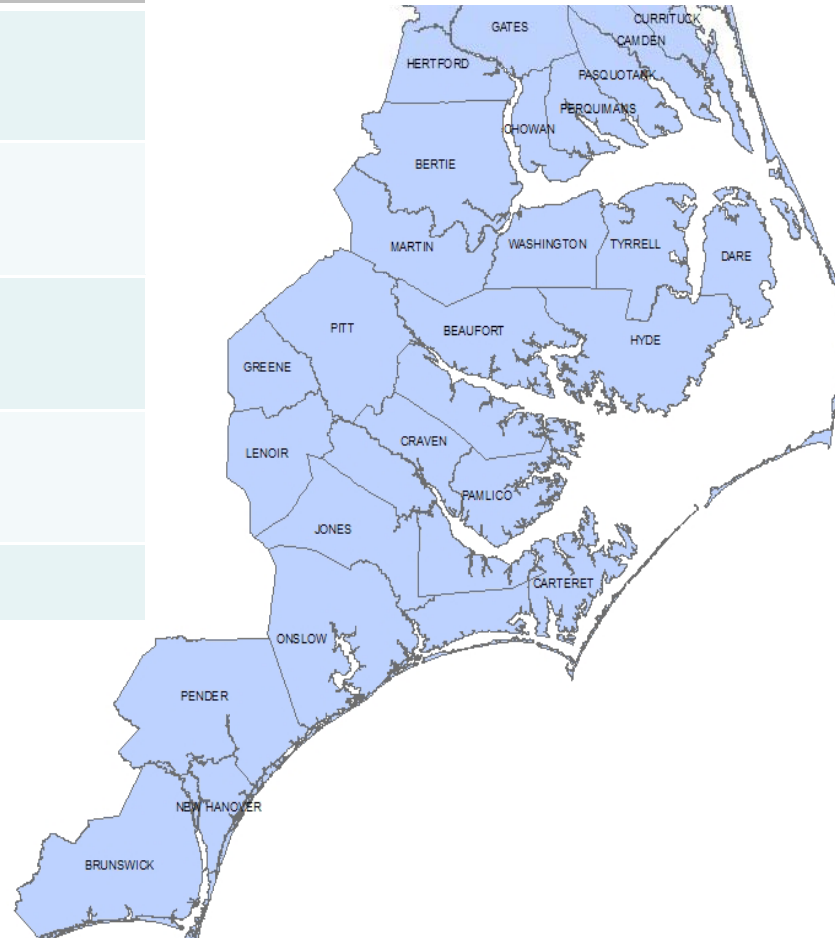


2012 Coastal Orthoimagery Flights



Coastal (Aug 2011 – Aug 2013)

Project Begin	Aug 2011
Flight Acquisition	Jan – Feb 2012
Production/Delivery	Nov 2012 – Feb 2013
Project End	Aug 2013
Cost	\$3,541,341





NC OneMap Geospatial Portal





Emerging NC OneMap

A bunch of disparate parts

Vector		
Layer Name (click name for more information about the data)	Filesize	Download
Airports	.03 MB	air.zip
Animal Operation Permits	.3 MB	aop.zip
Ambient Water Quality Monitoring Sites	.06 MB	awqms.zip
Beach Access Sites		Click Here
Boating Access Areas	.3 MB	boatacc.zip
Bridges	.5 MB	brdqs.zip
Benthic Monitoring Sites	.2 MB	benthic.zip
Census Boundaries - 1970	1.8 MB	cen70.zip
Census Boundaries - 1980	3.4 MB	cen80.zip
Census Blockgroups - 1990	7.7 MB	cenbg90.zip
Census Blocks - 1990	60 MB	cenblk90.zip
Census Blockgroups - 2000	8.8 MB	cenbg00.zip
Census Blocks - 2000	68 MB	cenblk00.zip
Census Tracts - 2000		
Colleges and Universities		

Alphabetical list of data for download

[Local Orthophotography - Bertie County, NC \(2009\)*](#)
[Local Orthophotography - Bladen County, NC \(2008\)*](#)
[Local Orthophotography - Brunswick County, NC \(2008\)*](#)
[Local Orthophotography - Buncombe County, NC \(2008\)*](#)

Raster			
Layer Name (click name for more information about the data)	Format	Filesize	Download
2s) - 1993 (Grayscale)	JPEG	~9 MB/tile	By T
2s) - 1998 (Color Infrared)	MrSID	~7 MB/tile	By T
	MrSID	~2 MB/tile	By T
	IMG	403 MB	Sta
ntv, NC (2000)*	MrSID	~1.2 MB/tile	By T
intv, NC (1999)	MrSID	~1.3 MB/tile	By T
MrSID	MrSID	~7 MB/tile	By T

Map Services - Search, Preview, Use

NC OneMap relies on map services using the Web Map Services (WMS) specification to bring data together from distributed servers. WMS services are vendor-neutral. Simply put, no matter the map server software, if your software can read a WMS service then you can use it in your map.

Steps to use NC OneMap map services:

1. Search for data layers by typing keyword(s) in the box (e.g., water, Buncombe, etc.)
2. Preview the data layer to make sure it is what you want
3. Copy/paste the map service information into your map application

Layer Search

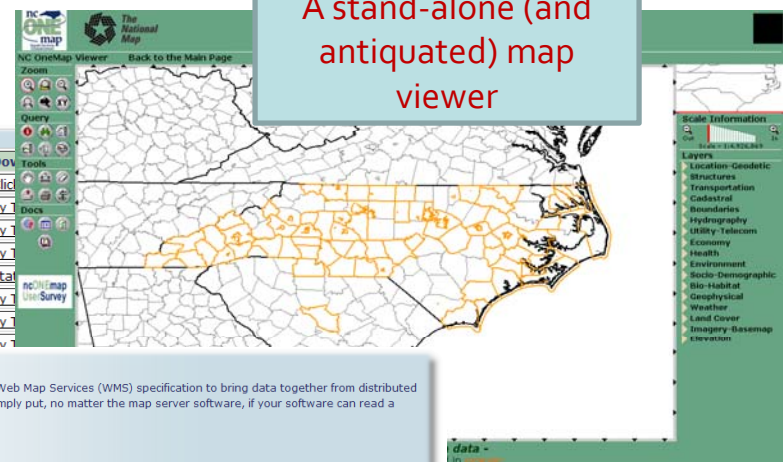
Buncombe Co, NC - Tax Parcels

Map service accessible
Map service not accessible

Layer Information

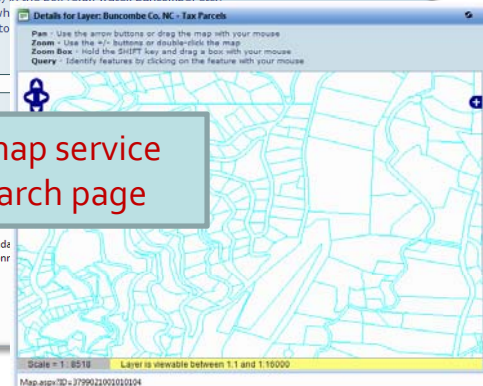
Service Host: <http://gis.buncombe.org>
Service Name: NCIMap_BuncombeCo_Parcels
Layer: Parcels
Description: Buncombe County, NC - Tax Parcels
Metadata Url: <http://gis.buncombe.org/metadata>
Service Url: http://gis.buncombe.org/wms?SERVICE=NCIMap_BuncombeCo_WMS

[View Capabilities Document](#)
[Preview Service](#)



A stand-alone (and antiquated) map viewer

A map service search page



NC OneMap Refresh Project

November 2010



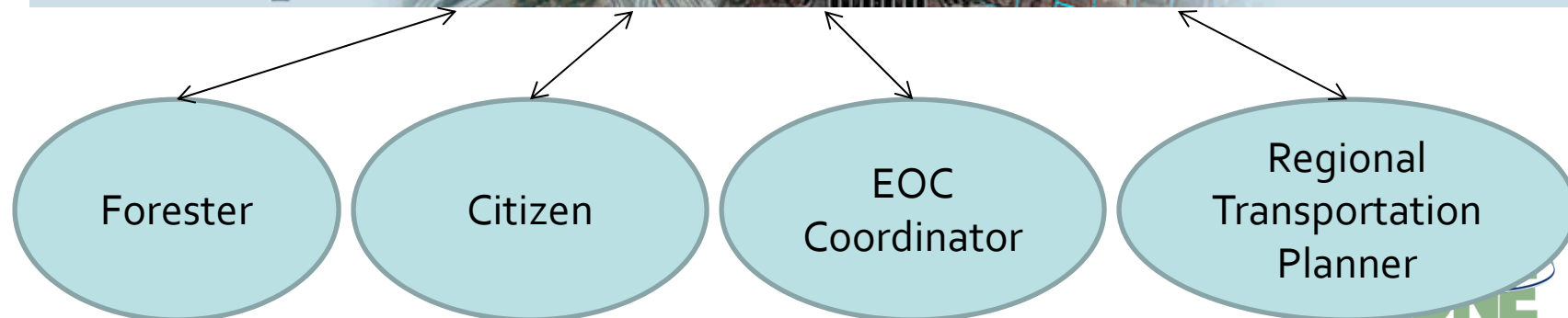
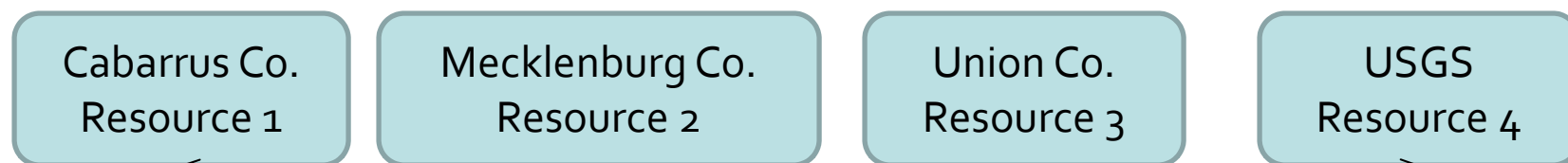
- Identify enhancements that can be achieved in the short term by NC OneMap staff
- Implement enhancements
- Specify requirements for system enhancements
- Identify funding sources for priority investments



NC OneMap Geospatial Portal



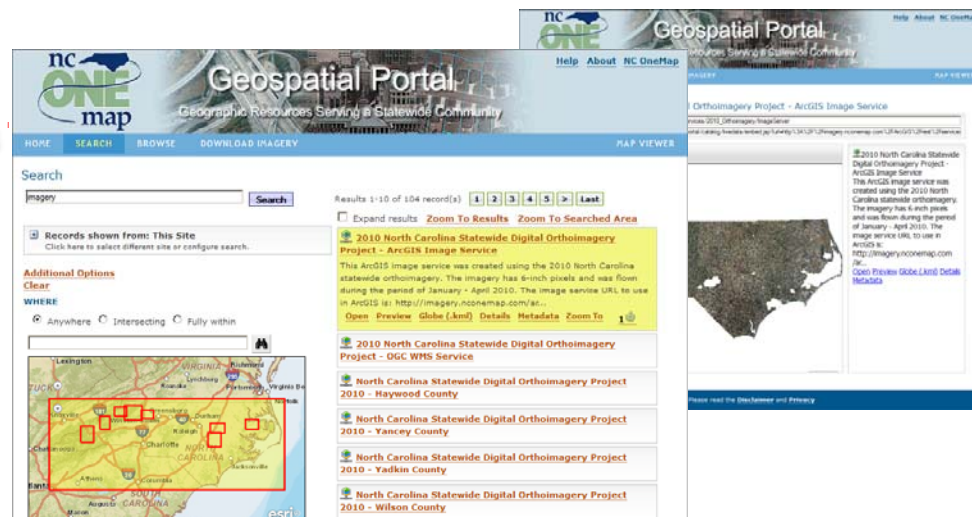
Def: Presenting information from diverse resources in a unified way





Discovering NC Data

- NC OneMap Geospatial Portal: data.nconemap.com
 - search for i.e., “imagery”
- ArcGIS.com – search for “NCOneMap imagery”



Geospatial Portal



Access NC Geospatial Data

- Download
 - Imagery and all vector data on CGIA servers
- Web Map / Image Services
 - Imagery, all CGIA data, and other published map services





Geospatial Portal

Geographic Resources Serving a Statewide Community

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[HOME](#) [SEARCH](#) [BROWSE](#) [DOWNLOAD IMAGERY](#) [MAP VIEWER](#)

Home

The NC OneMap GeoPortal makes it easy to discover and use geospatial information.

Find Resource

Featured Resource

North Carolina 2010 Orthoimagery

High-resolution, true color orthoimagery is now available statewide. Use as a high-performance [image service](#) or [download](#) a group of images.

Read the [FAQ](#).

Tutorial Videos



Introduction



Discovering Resources
- Using ESRI Based
Services in ArcGIS



Discovering Resources
- Using WMS and WFS
Services



Discovering Resources
- Using a Browser



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Search

Search

+ Records shown from: This Site

[Click here to select different site or configure search.](#)

Additional Options

[Clear](#)

WHERE

☒ Anywhere ☐ Intersecting ☐ Fully within



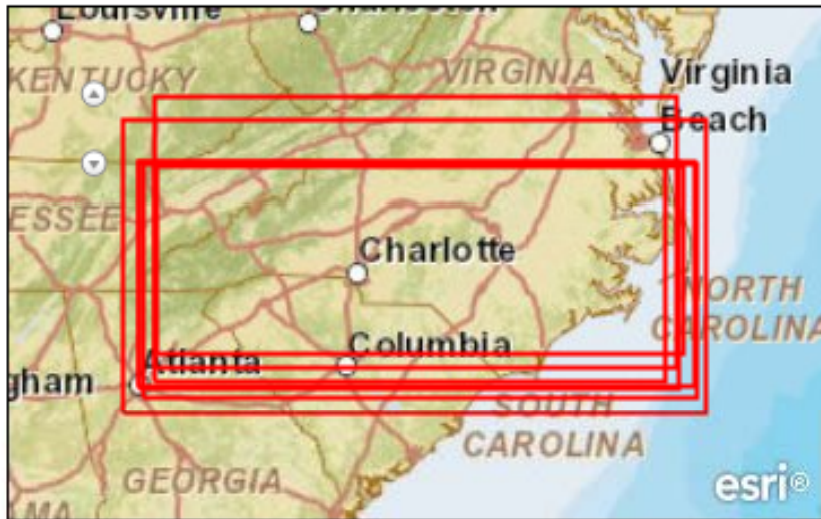
Search

Records shown from: This Site
Click here to select different site or configure search.

Additional Options

WHERE

☒ Anywhere ☐ Intersecting ☐ Fully within




Results 1-7 of 7 record(s)


☐ Expand results [Zoom To Results](#) [Zoom To Searched Area](#)


 [River Basins - ArcGIS Map Service](#)

 [USGS Stream Gages](#)

 [Ecosystem Enhancement Program Targeted Local Watersheds](#)

 [Ecosystem Enhancement Program Local Watershed Plans](#)

 [County Boundary \(North Carolina\)](#)

 [Surface Water Intakes](#)

 [12-Digit Hydrologic Units](#)

See results through REST

API: [GEORSS](#) [ATOM](#) [HTML](#) [FRAGMENT](#) [KML](#) [JSON](#)



Search

☐ **Records shown from: This Site**

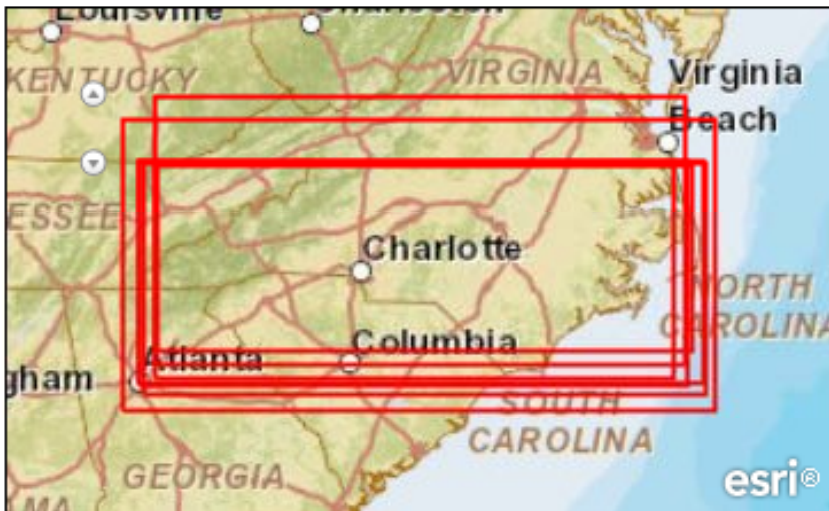
[Click here to select different site or configure search.](#)

Additional Options

[Clear](#)

WHERE

☒ Anywhere ☐ Intersecting ☐ Fully within



Results 1-7 of 7 record(s)

☐ [Expand results](#) [Zoom To Results](#) [Zoom To Searched Area](#)

River Basins - ArcGIS Map Service

North Carolina river basins created from 12-digit hydrologic units - from NC OneMap.

[Service Info](#) [Preview](#) [Globe \(.kml\)](#) [ArcGIS \(.nmf\)](#)
[ArcGIS \(.lyr\)](#) [Add To Map](#) [Details](#) [Metadata XML](#) [Zoom To](#)

USGS Stream Gages

Ecosystem Enhancement Program Targeted Local Watersheds

Ecosystem Enhancement Program Local Watershed Plans

County Boundary (North Carolina)

Surface Water Intakes

12-Digit Hydrologic Units

See results through REST

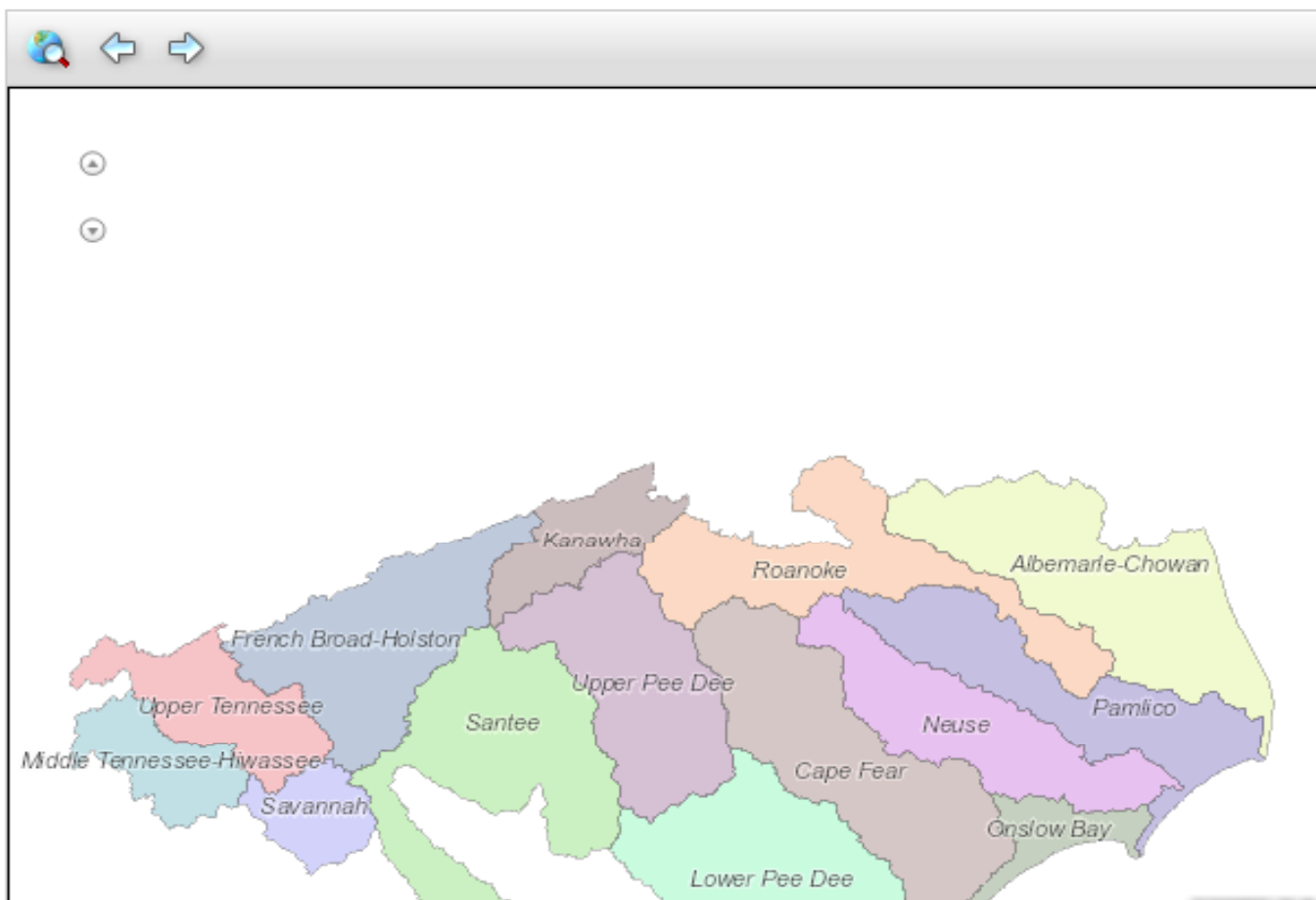
API: [GEORSS](#) [ATOM](#) [HTML](#) [FRAGMENT](#) [KML](#) [JSON](#)



River Basins - ArcGIS Map Service

URL: http://149.168.87.13/ArcGIS/rest/services/NC1Map_RiverBasins/MapServer

Embed: `<iframe src="http://data.nconemap.com/geoportal/catalog/livedata/embed.jsp?url=http%3A%2F%2F149.168.87.13%2FArcGIS%"`



River Basins - ArcGIS Map Service

North Carolina river basins created from 12-digit hydrologic units - from NC OneMap.

[Service Info](#) [Preview](#) [Globe](#)
[\(.kml\)](#) [ArcGIS \(.nmf\)](#) [ArcGIS](#)
[\(.lyr\)](#) [Add To Map](#) [Details](#)
[Metadata XML](#)



Browse

Use this page to browse geospatial resources by type or ISO category in the catalog.

Catalog

Content Type

- Applications
- Clearinghouses
- Documents
- Downloadable Data
- Geographic Activities
- Geographic Services
- Live Map Services
- Map Files
- Offline Data
- Static Map Images


ISO Topic Category

- Administrative and Political
- Agriculture and Farming
- Atmosphere and Climate
- Biology and Ecology
- Business and Economic
- Cadastral
- Cultural, Society and Demographics
- Elevation and Derived Products
- Environment and Conservation

7 results


Filter Clear

Showing 1-7


Road Characteristics - NC Dept. of Transportation


An Arc Layer for visual representation of a subset of road characteristics for the state road system. Each arc/record is split where road characteristics change along a route. This is a digital file of the North Carolina Department of Transportation's road...

[Details](#) [Metadata XML](#) [Download](#)


NC Multimodal Investment Network (NCMIN) Tier Designations


An Arc Layer for visual representation of the state road system where each arc/record is split at each road intersection. This is a digital file of the North Carolina Department of Transportation's Linear Referencing System that represents the routes an...

[Website](#) [Details](#) [Metadata XML](#) [Download](#)


Primary and Secondary Road Routes - NC Dept. of Transportation

A Route Layer for visual representation of attributes stored by County/Route/Milepost linear reference. This is a digital file of the North Carolina Department of Transportation's Linear Referencing System that represents the routes and attributes of t...

[Details](#) [Metadata XML](#) [Download](#)


Primary and Secondary Road Arcs - NC Dept. of Transportation

An Arc Layer for visual representation of the state road system where each arc/record is split at each road intersection. This is a digital file of the North Carolina Department of Transportation's Linear Referencing System that represents the routes an...

[Details](#) [Metadata XML](#) [Download](#)

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Select imagery for download

Download the latest 2010 orthoimagery for North Carolina. Download it by zooming to your desired area (with either the controls provided or by holding the SHIFT key and dragging a box) by defining a box on the map below. When your request is ready an email will be sent to you containing a link to the file. The file will be available from the server for 24 hours. For fast access to the seamless statewide imagery, you are strongly encouraged to use the [image service](#). Read the [FAQ](#).

Please Note: An issue has arisen that causes the filenames of the imagery downloaded to contain an erroneous suffix (e.g. '@rasterIds=<26925>'). Simply rename the files after unzipping the download (i.e. remove the @rasterIds=raster_ID_number part of the filename) to make them useable in your software. Apologies for the inconvenience. A solution is being worked on. The image services are unaffected.

Zoom in and select an area for download

Pan/zoom: 

Draw desired area:  



Enter email address

Email:

[Download](#)



Using the Geospatial Portal to Support a Current Issue

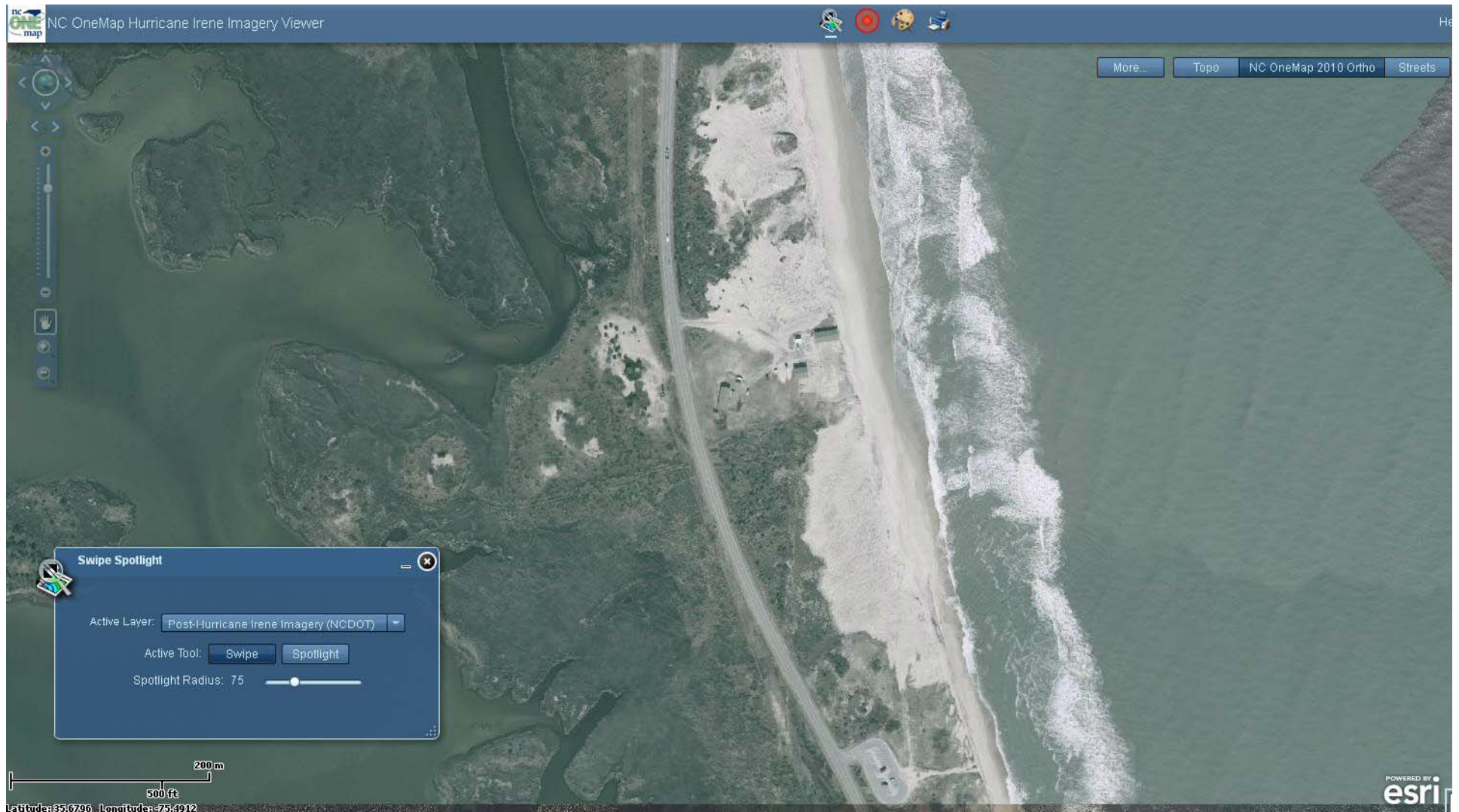




Hurricane Irene

- NCDOT and NOAA flights (8/28 and 8/29)
- New image services to the [NC OneMap Geospatial Portal](#): search on "Irene"
- App to view "before and after." The URL is: data.nconemap.com/geoportal/hurricane_irene/index.html

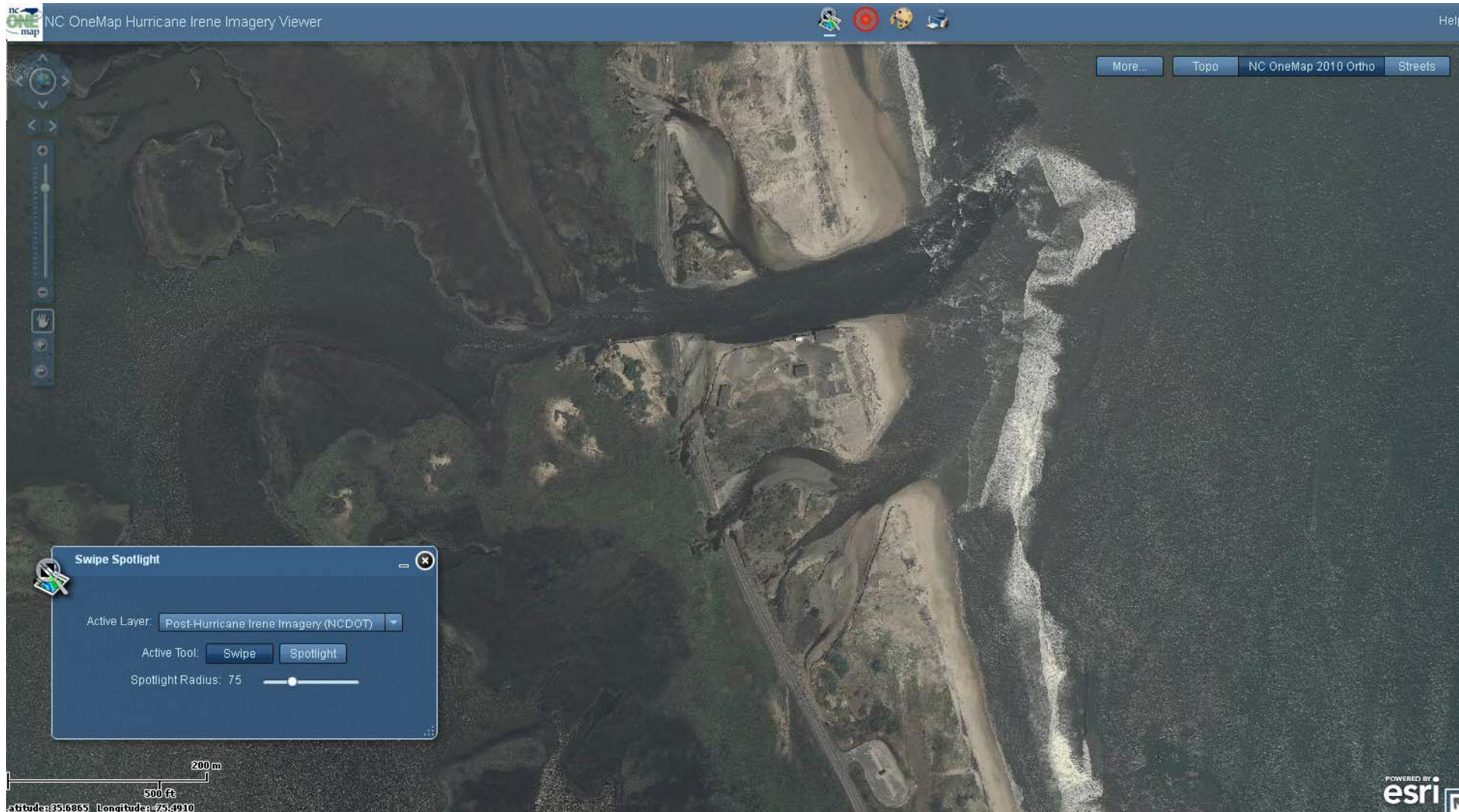




January 2010, Outer Banks near Rodanthe, NC

18S VE 562490



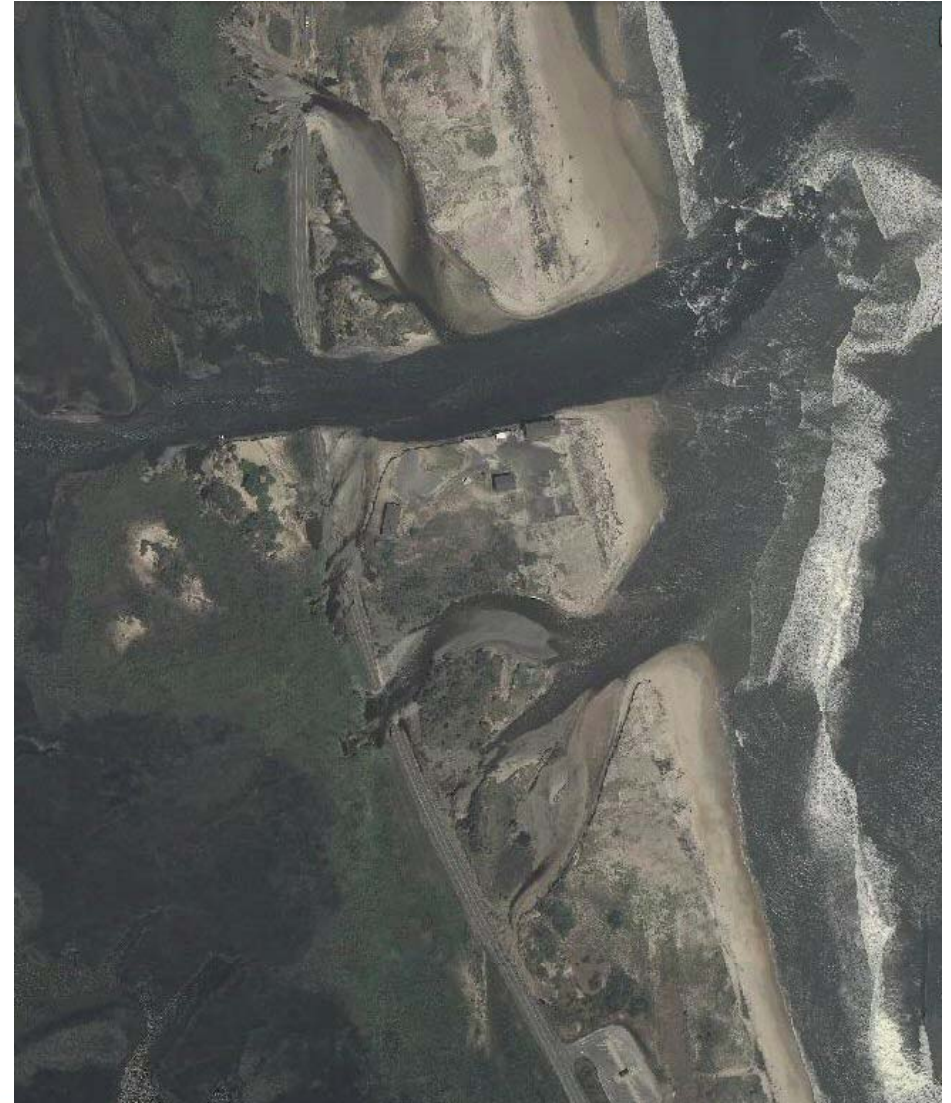


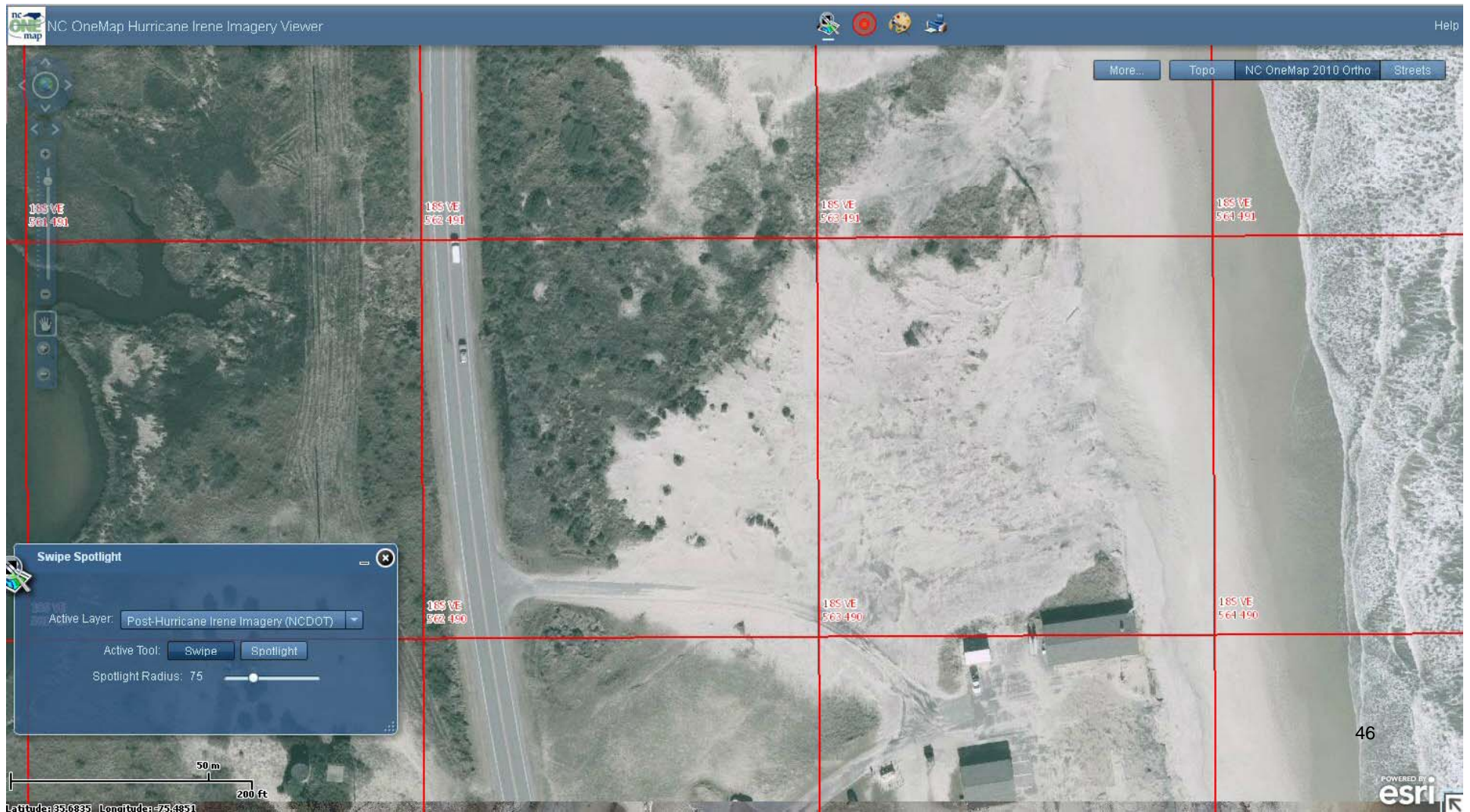
August 28, 2011, Post Irene

18S VE 562490



Before and After Irene





Detail - After



NC OneMap Hurricane Irene Imagery Viewer

More... Topo NC OneMap 2010 Ortho Streets

18S VE 502 481 18S VE 502 481 18S VE 502 481 18S VE 504 481

18S VE 502 480 18S VE 502 480 18S VE 504 480

Swipe Spotlight

Active Layer: Post-Hurricane Irene Imagery (NCDOT)

Active Tool: Swipe Spotlight

Spotlight Radius: 75

50 m 200 ft

Latitude: 35.16852 Longitude: 75.9852

47

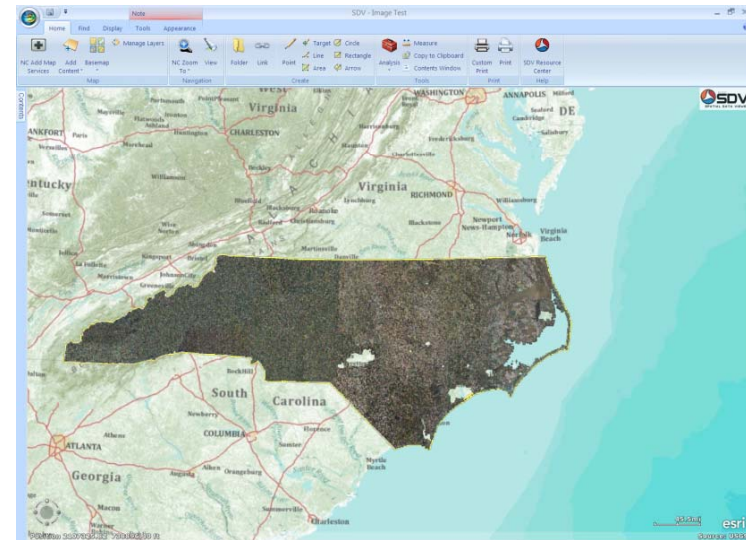
POWERED BY esri

Geospatial Portal

2010 Image Service Uses



- NC Dept. of Transportation
 - Cost savings
- NC Historic Preservation Office
- City of Asheville
- Cherokee County

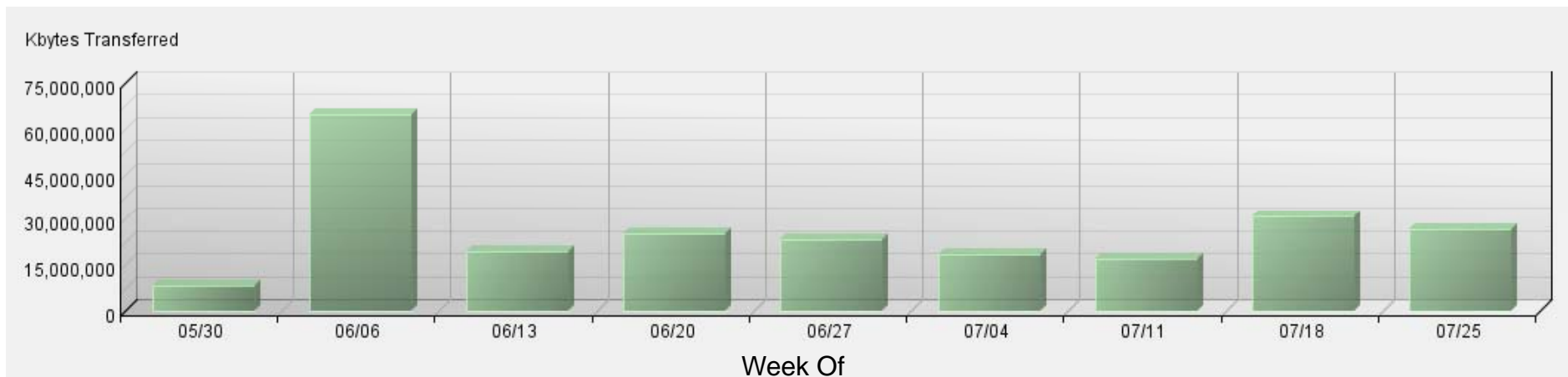


Geospatial Portal

Usage Statistics



Data Transferred (in Kilobytes)



Total is approximately 224GB (99.1% being from ZIP files). There were 1,131 imagery ZIP files downloaded during the reporting period.

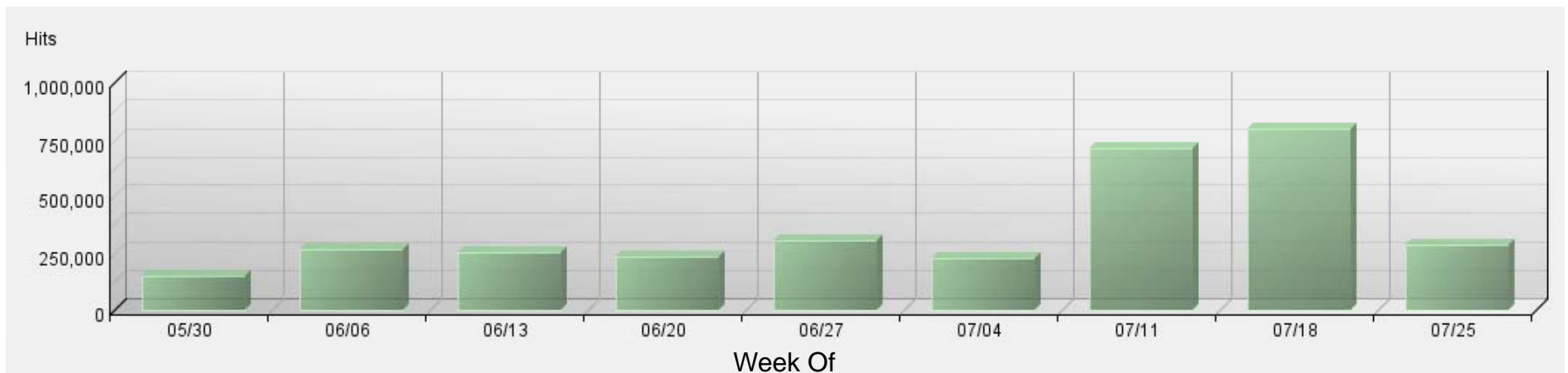


Geospatial Portal

2010 Image Service Usage Statistics



Image Service Hits



Every zoom in, zoom out, pan on the map counts as a hit.

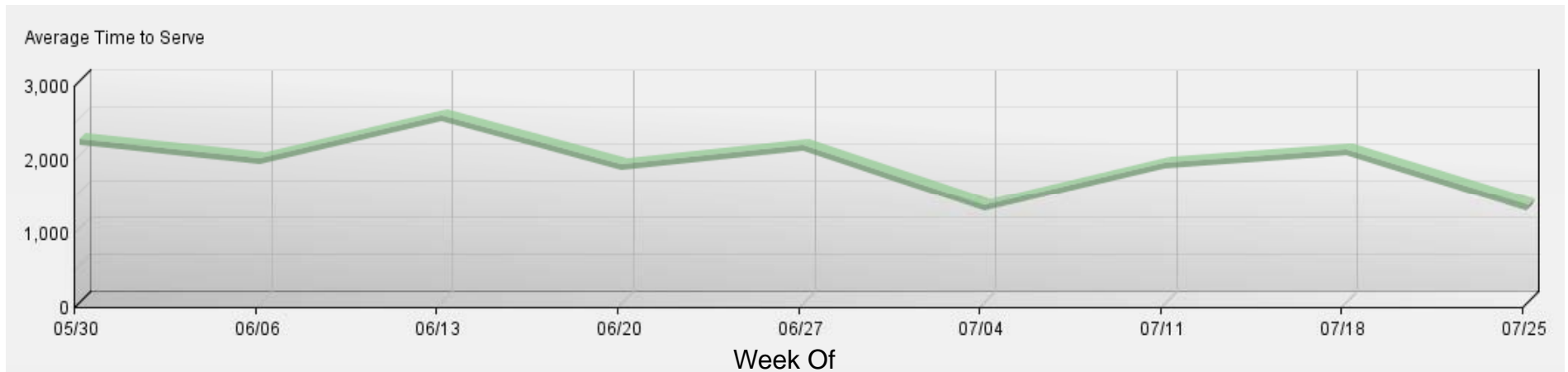


Geospatial Portal

2010 Image Service Usage Statistics



Average Time to Serve Pages (in milliseconds)



Time it takes for the server to process the request and return the image back to the user.





Next Steps

- Consolidate data logically into map services
- Create a new map viewer
- Auto-notification of partner-maintained map services

ArcGIS Services Directory

[Home](#)

Folder: /

Current Version: 10.01

View Footprints In: [Google Earth](#)

Services:

- [GPT_search](#) (MapServer)
- [GPT_search2](#) (MapServer)
- [GPT_search3](#) (MapServer)
- [GPT_search_excludedTiles](#) (MapServer)
- [NC1Map_Animal](#) (MapServer)



fgdc Service Status Checker

Service Analysis Report for 2011-09-12 10:39:24

Service Information
The following test determines if the service URL is valid or invalid.

Service Type: wms
Service URL: <http://indemo.cit.usgs.gov/arcgis/rest/info?format=json>

Test Results

The following test determines if the service URL is valid or invalid.

Registered Service: <http://indemo.cit.usgs.gov/arcgis/rest/info?format=json>

Test Results

The getMap is the main operation tested and scored.

Test Results

The following table summarizes the full suite of tests performed on this service:

Test	Status	URL	Error
httpServer	✓	http://indemo.cit.usgs.gov	
getCapabilities	✓		
generateGetCapabilities	✗	http://indemo.cit.usgs.gov/arcgis/rest/info?format=json	
getMap	✓		



"In the Future..."



Driven by NC geospatial community. What do users desire/need?



Questions/Comments?



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Jeff Brown
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jeff.brown@nc.gov

www.nconemap.com
data.nconemap.com

