

# Spatial Data Viewer (SDV) Training

September, 2011  
Instructor – Cathy Cole, GISP

# Welcome & Introductions



- Greeting
- Introductions
- Incidentals
- Ground rules

# SDV Training Schedule

- Objectives
  - Provide Hands-on training for SDV
- Estimated Time
  - Approximately 4 hours
- Method of Instruction
  - Show & Tell
  - FAQ
- Materials
  - PowerPoint
  - SDV Tool

# Training Expectations

- Learn about SDV development
- Assist with Geographic Information Systems  
<http://www.ncdot.org/it/gis/default.html>
- SDV “hands-on” Training workshop
- Workshop demonstrates the SDV tool
- SDV Spokesperson
- Network

# SDV Training




NCDOT NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
*Connecting people and places in North Carolina — safely and efficiently, with accountability and environmental sensitivity.*

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**GIS MAIN**

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[Links](#)

[Site Map](#)

[Data Distribution](#)

[Online SR# Lookup](#)

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**Data Distribution Overview**

**GIS Data Products**

[Hurricane Irene Damage Aerial Imagery](#)

[GIS Data Layers](#)

[DE Letters & Reports](#)

[Contour & Elevation Data](#)

[FEMA Flood Data](#)

[1993 Aerial Photography](#)

[USGS Topographic Maps](#)

[1998 Color-IR Images](#)

[USGS Topographic Map Images](#)

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**Map Products**

[Digital Bicycle Maps & Route Information](#)

## Welcome to GIS!



North Carolina  
Department of Transportation  
Geographic Information Systems

Thank you for visiting the North Carolina Department of Transportation GIS Unit web site.

Please explore the site to view online maps, reports, download data, obtain tools, learn about us, and see what's new in GIS.

<p>John Farley Jun Wu Janet Lowe Robert McKittrick</p>	<p>GIS Unit Manager Spatial Application Development and Analysis Manager Spatial Data Manager Technology Group Manager</p>
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### OUR MISSION

To provide quality geographic information and services supporting the business process of the North Carolina Department of Transportation (NCDOT) as well as for the transportation related functions of North Carolina state agencies, local governments, and other planning organizations.

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### OUR GOALS

- To become a national leader in Transportation GIS
- To maintain a comprehensive and useful road inventory of all roads in North Carolina
- To provide highly available and useful geospatial information
- To improve service to the public with improved information access
- Integration of GIS with existing and planned information systems
- To work cooperatively with other North Carolina state, county, and local agencies
- Foster a skilled support staff to develop, enhance, and maintain GIS elements

**Contact Us**

**North Carolina Department of Transportation**  
Geographic Information Systems  
New Hope Center  
4101 Capital Blvd.  
Raleigh, NC 27604

Mailing:  
NCDOT GIS Unit  
1521 Mail Service Center  
Raleigh, NC 27699-1521

Phone: (919) 707-2152  
FAX#: (919) 707-2210

**Who's in GIS?**

Send us your feedback: Do you have a question, comment, suggestion or data request to pass along to the GIS Unit? If so, here's how:

DOT Employee  
**GIS Help Desk**  
External Customers  
**Contact Us**

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# SDV Training Demonstration

## SDV Training Outline

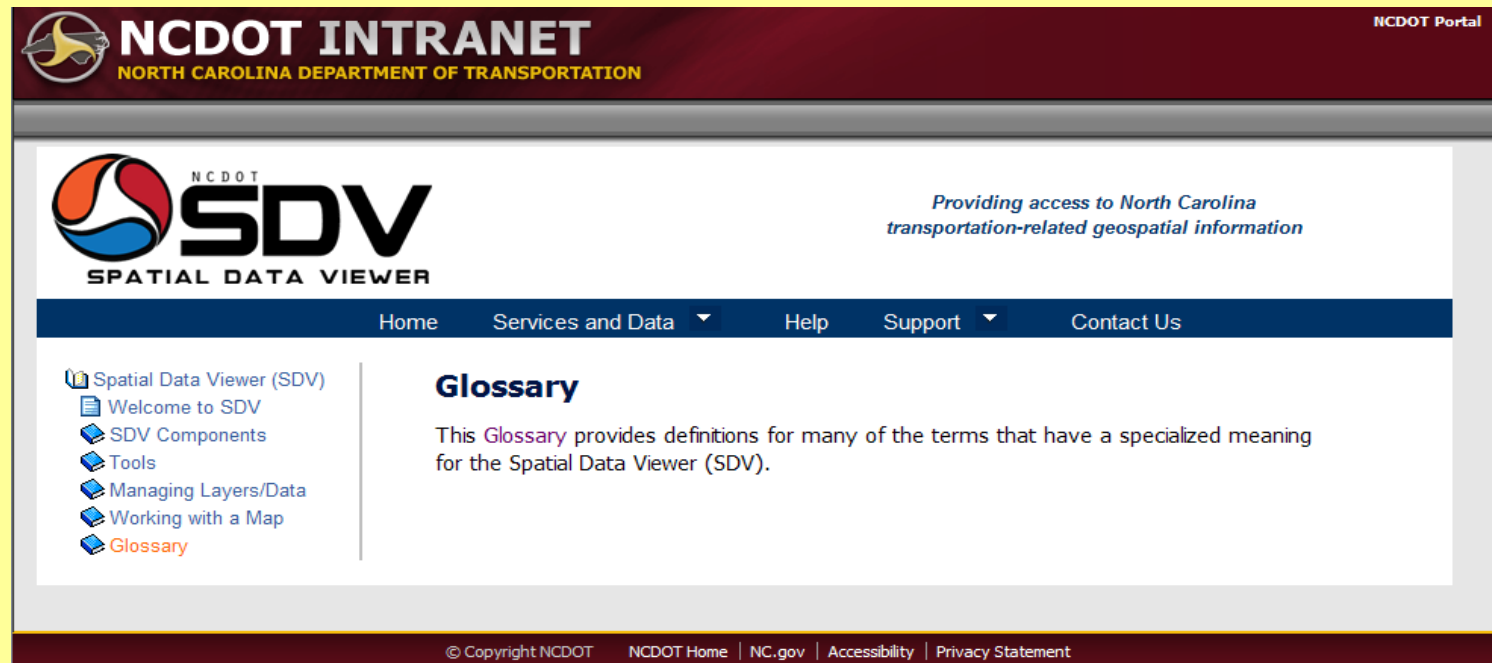
### Introduction to SDV

- Display Window
- Contents Window
- Ribbons
- ArcExplorer button
- Map Groups
- Tools
- SDV Resource Center
- Scenario

## SDV Training Outline

### Terminology

<http://gisi01.dot.nc.net/SDVResourceCenter/GlossaryParent.aspx>



The screenshot shows the NCDOT INTRANET interface. At the top left is the NCDOT logo and the text "NCDOT INTRANET NORTH CAROLINA DEPARTMENT OF TRANSPORTATION". At the top right is "NCDOT Portal". Below this is a banner for "NCDOT SDV SPATIAL DATA VIEWER" with the tagline "Providing access to North Carolina transportation-related geospatial information". A navigation bar contains "Home", "Services and Data", "Help", "Support", and "Contact Us". A sidebar on the left lists "Spatial Data Viewer (SDV)" with sub-items: "Welcome to SDV", "SDV Components", "Tools", "Managing Layers/Data", "Working with a Map", and "Glossary". The main content area is titled "Glossary" and contains the text: "This Glossary provides definitions for many of the terms that have a specialized meaning for the Spatial Data Viewer (SDV)." At the bottom, a footer contains copyright information and links to "NCDOT Home", "NC.gov", "Accessibility", and "Privacy Statement".



# SDV Training

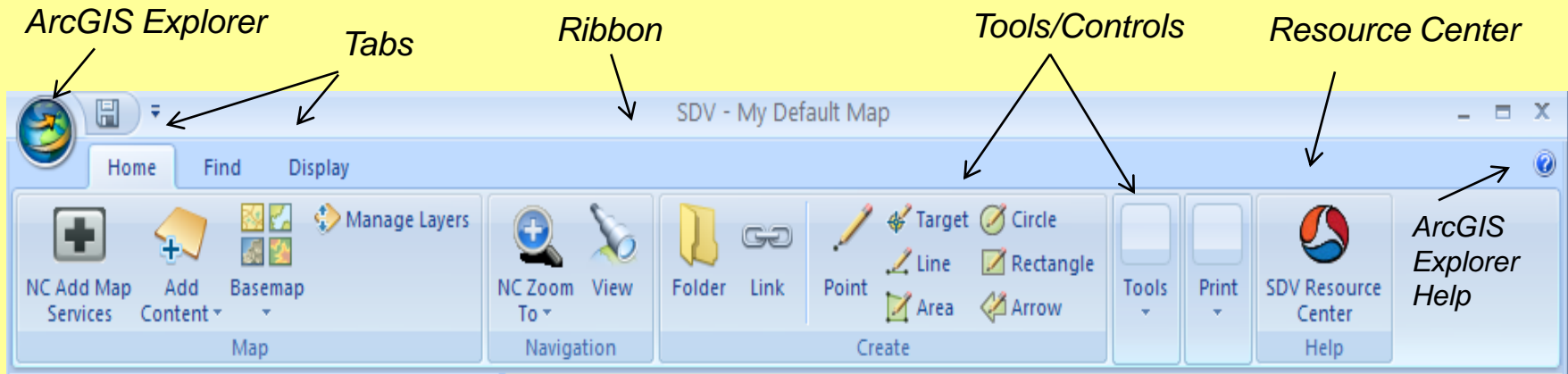
## SDV Components

The screenshot shows the SDV interface with the following components labeled:

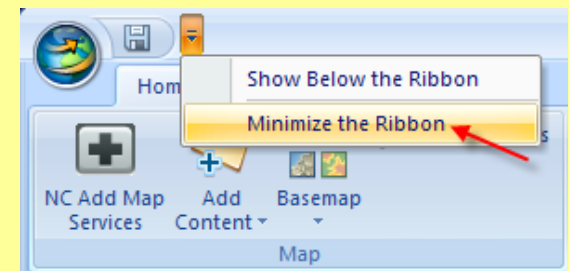
- ArcGIS Explorer**: Points to the globe icon in the top left.
- Home Find Display**: Points to the top navigation tabs.
- Manage Layers**: Points to the 'Manage Layers' button in the ribbon.
- Navigation**: Points to the 'NC Zoom To' button in the ribbon.
- Create**: Points to the 'Point', 'Line', 'Area', 'Target', 'Circle', 'Rectangle', and 'Arrow' buttons in the ribbon.
- Tools/Controls**: Points to the 'Tools', 'Print', and 'SDV Resource Center Help' buttons in the ribbon.
- ESRI help**: Points to the help icon in the top right.
- Resource Center**: Points to the 'SDV Resource Center Help' button.
- Contents Window**: Points to the 'Contents' panel on the left, which lists:
  - Boundaries - Division
  - Boundaries - State
  - Basemap (NCDOT Community Map)
- Preloaded Service Layers**: Points to the 'Basemap (NCDOT Community Map)' layer in the Contents Window.
- NCDOT Community Map Basemap**: Points to the 'Basemap (NCDOT Community Map)' layer in the Contents Window.
- Display Window**: Points to the main map area showing North Carolina and South Carolina.

# SDV Training

## SDV Ribbon



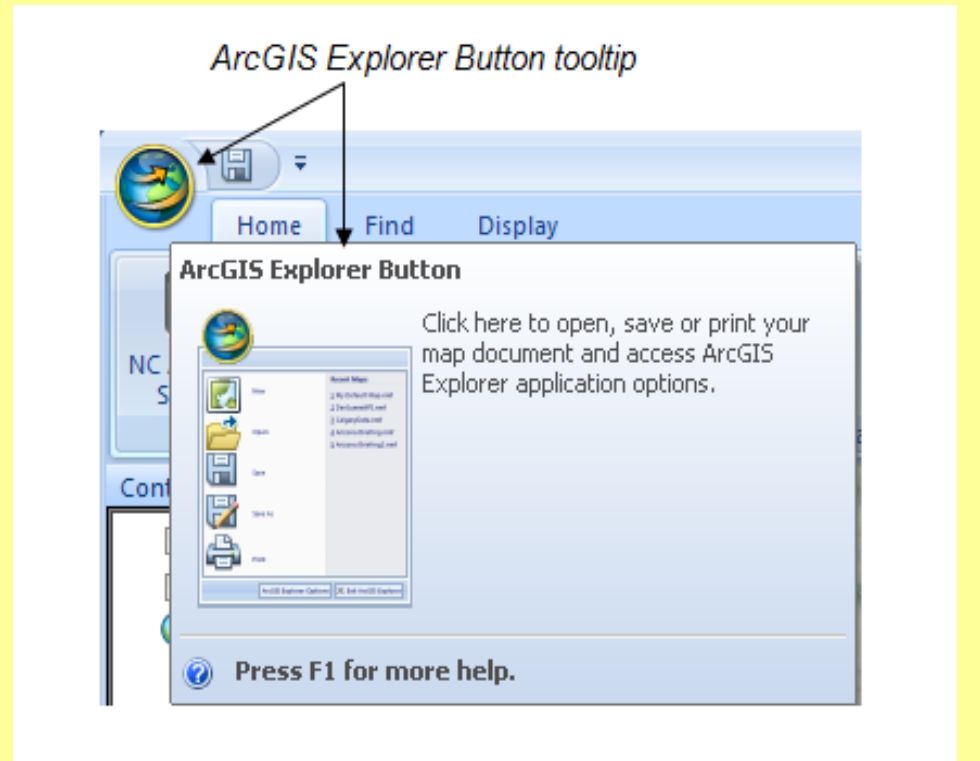
- To minimize The Ribbon right-clicking on it and select "Minimize the Ribbon," or select the "Minimize the Ribbon" option in the dropdown list to the right of the [ArcGIS Explorer button](#) and the save icon



# SDV Training

## ArcGIS Explorer Icon

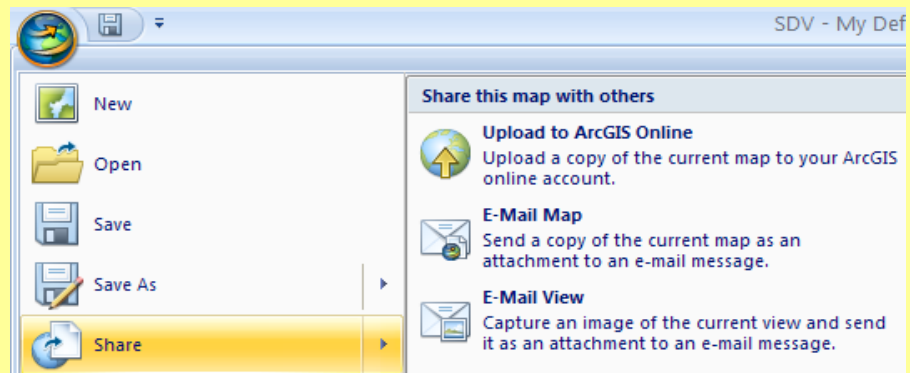
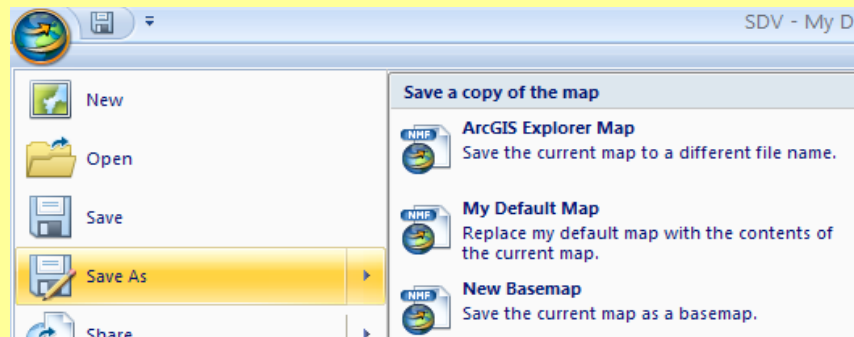
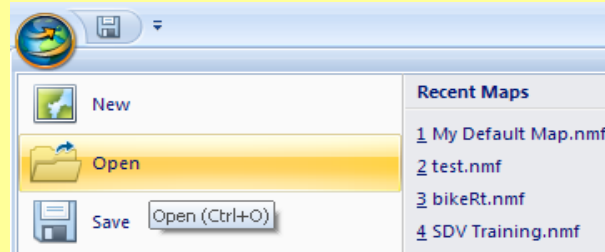
- New
- Open
- Save
- Save As
- ArcExplorer Map
- My Default Map
- New Basemap
- Share
- Upload ArcGIS Online
- E-mail map
- E-mail view
- Print



# SDV Training

## ArcGIS Explorer Icon

- Open
- Save As
- Share



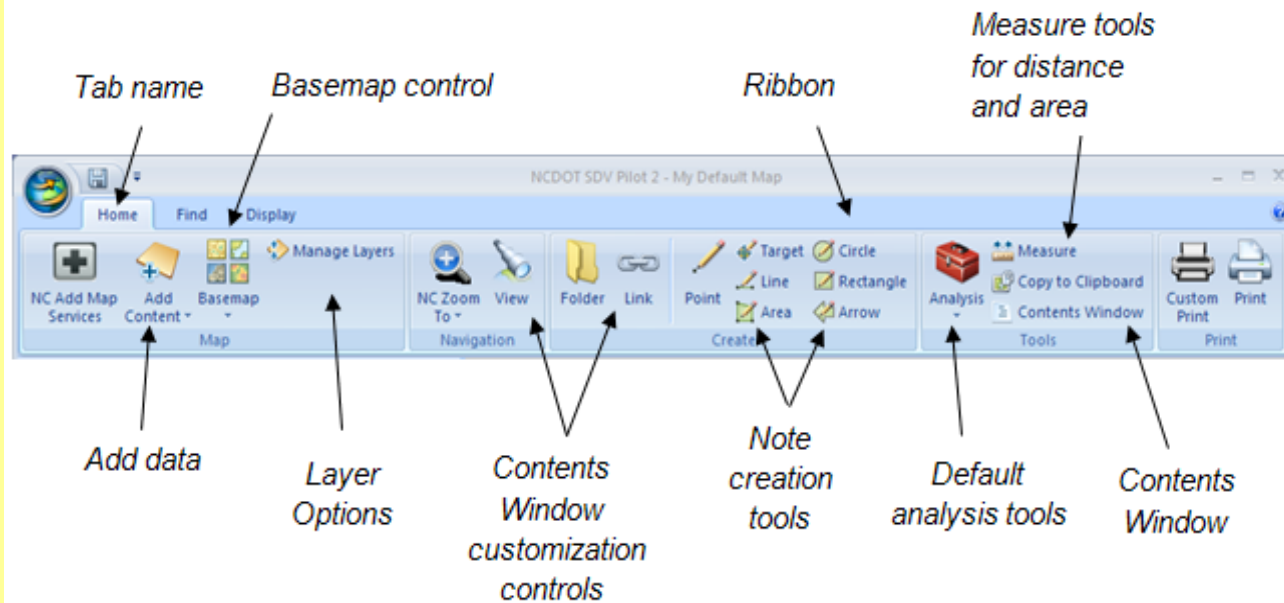
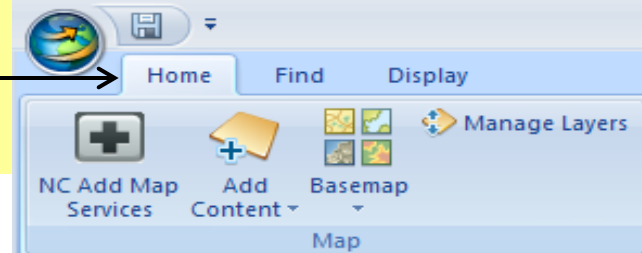
# SDV Training

## SDV Tabs

### Home Tab

There are 3 initial tabs on the Ribbon:

**Home** tab, which carries tools and functions common to all datasets:



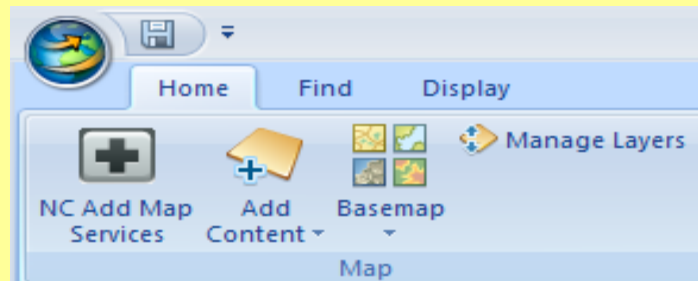
# SDV Training

## SDV Tabs

### Home Tab

#### Map Group

- NC Add Map Services
  - Add SDV map services to the Contents Window
- Add Content
  - ArcGIS online, layers, Map Content files, KML files, GIS Services, shapefiles, raster data, Geodatabase, text files, GPS data, Image overlays
- Basemap
  - NCDOT, ESRI's World Topo, Bing, My Basemap
- Manage Layers
  - Change layer position, remove, clear cache

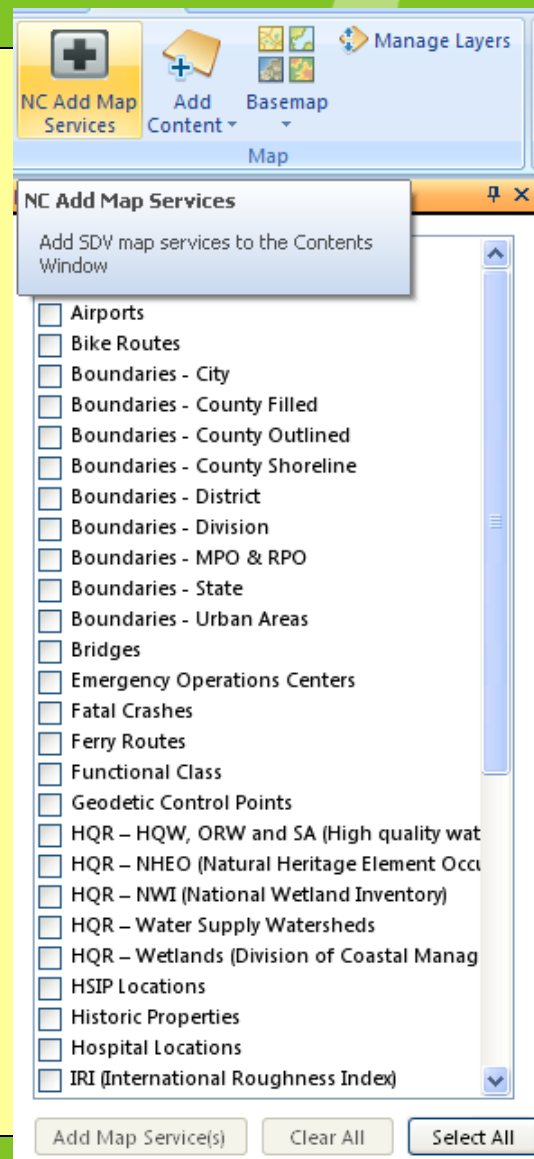


# SDV Training

## NC Add Map Services

- Over 40 map services
- New ones under development
- Guided by Business Unit
- SDV Resource Center announcements
- Send suggestions to:

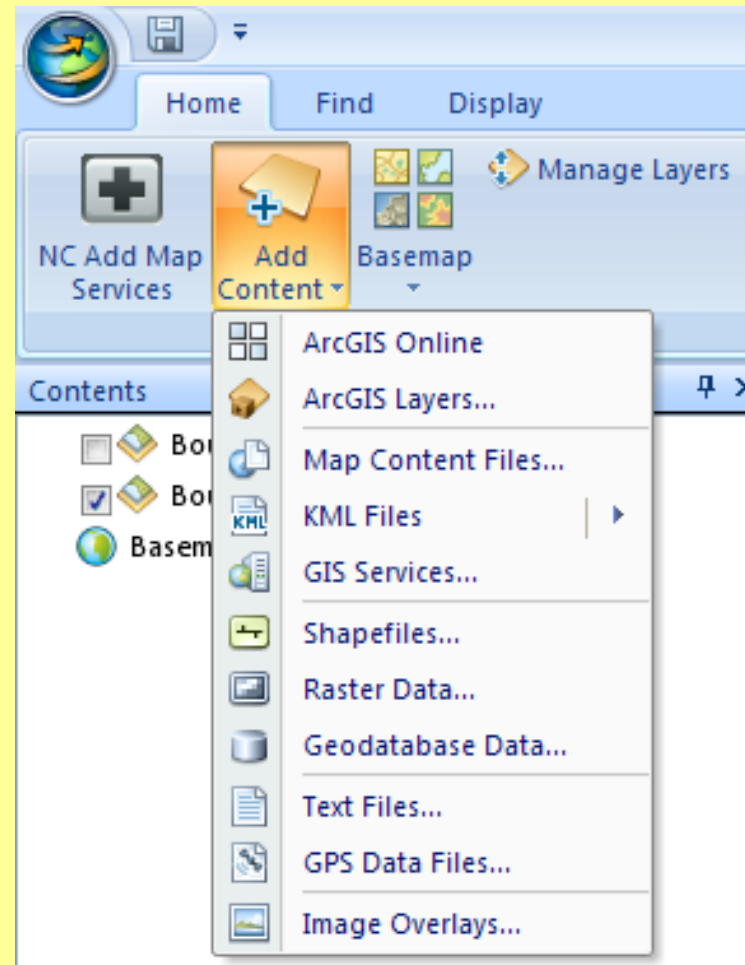
[gishelp@ncdot.gov](mailto:gishelp@ncdot.gov)



# SDV Training

## Add Content

- ArcGIS layers
- KML Files
- Shapefiles
- Geodatabase
- Rasters
- Text
- GPS data
- Overlays

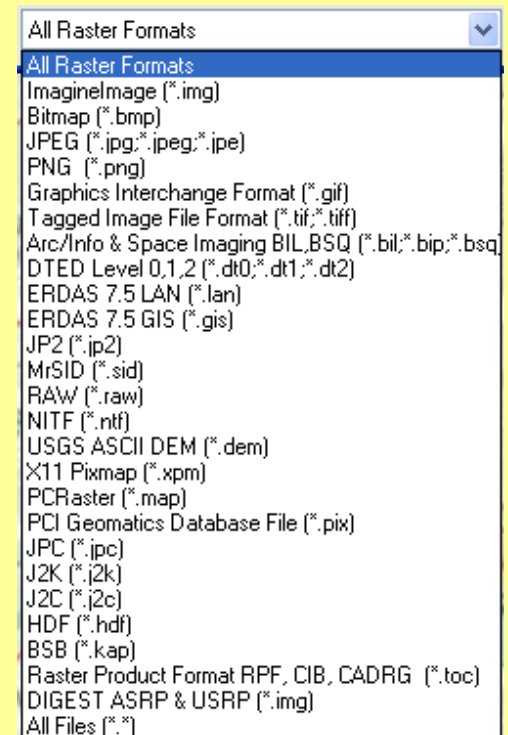
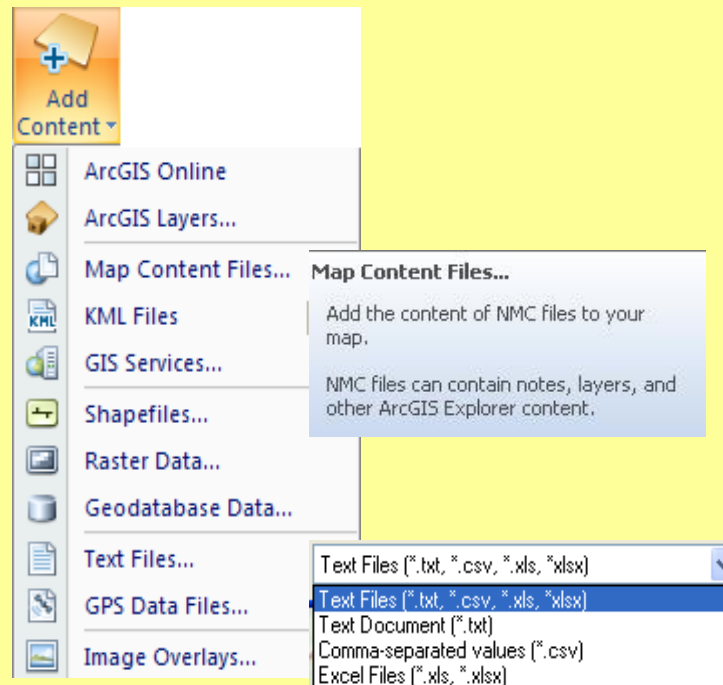




# SDV Training

## Add Content

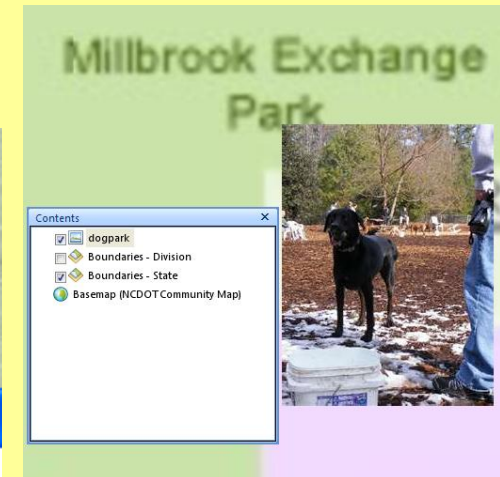
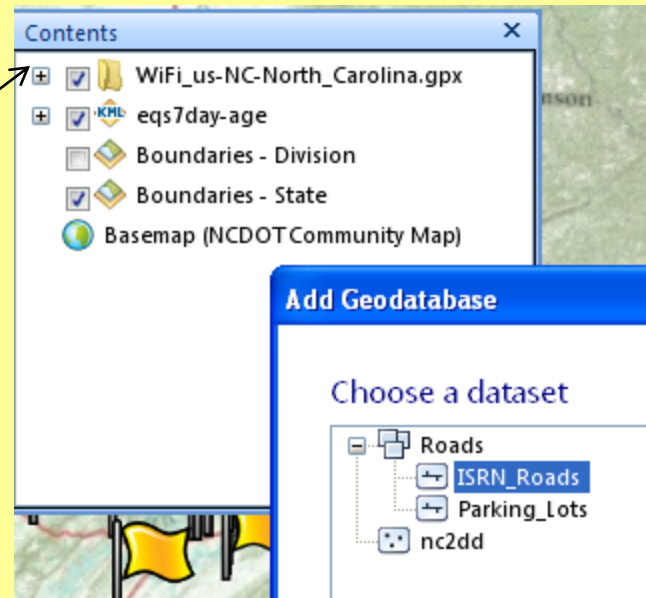
- ArcGIS layers
- KML Files
- Shapefiles
- Geodatabase
- Rasters
- Text
- GPS data
- Overlays



# SDV Training

## Add Content

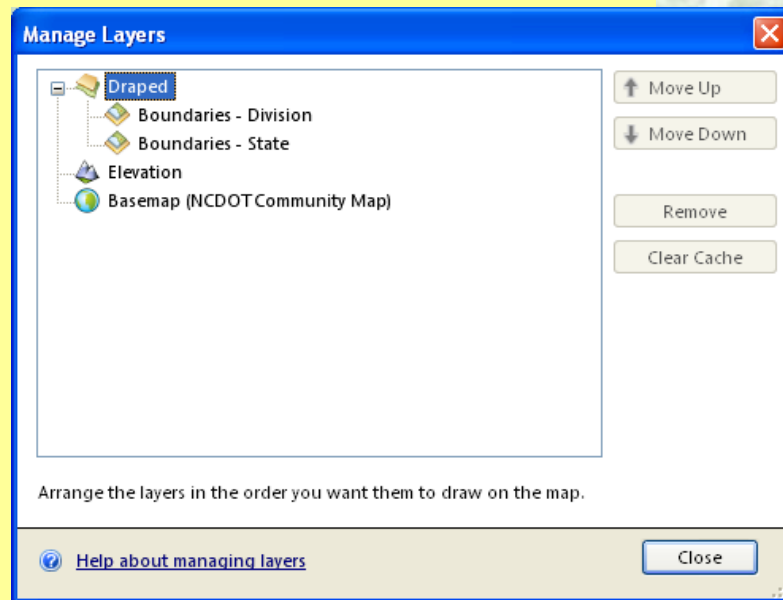
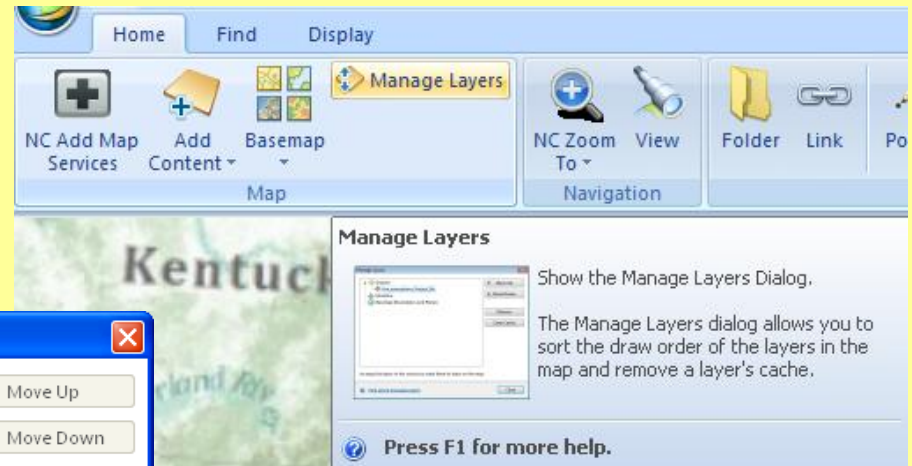
- ArcGIS layers
- KML Files (<http://earthquake.usgs.gov/earthquakes/shakemap/> )
- Shapefiles
- Geodatabase
- Rasters
- Text
- GPS data
- Overlays



# SDV Training

## Manage Layers

- Change draw order
- Remove cache



## SDV Resource Center



## SDV Help

- Hover over tool for description




SDV Home - Windows Internet Explorer provided by NC Dept. of Transportation

http://gisi01.dot.nc.net/SDVResourceCenter/

**NCDOT INTRANET**  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

**SDV**  
SPATIAL DATA VIEWER

Providing access to North Carolina transportation-related geospatial information

Home Services and Data Help Support Contact Us

### Welcome to the SDV Resource Center

The Spatial Data Viewer (SDV) is the NCDOT GIS Unit's unique solution to providing GIS-oriented maps, data, and tools to organizations interested in transportation-related geospatial information.

SDV is a lightweight desktop application utilizing Esri's free ArcGIS Explorer software supported by internal and external maps and data. SDV's purpose is to serve as a viewer for the most current 2D datasets published by the NCDOT Enterprise. With SDV, the enterprise can obtain access to the data and maps important to the business of NCDOT.

### Announcements

May 2, 2011  
Map Services for DOT Storm Damage and Cleanup Areas are now available!

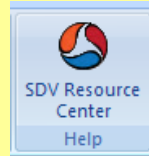
February 28, 2011  
NCDOT GIS launches SDV V1.0!

### Coming Soon

Training opportunities coming to your area soon!

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## SDV Resource Center



## Map Services


and


### Map / GIS Service

Layer type served out to users via ArcGIS Server, based on potentially several different layers containing specific feature symbology, labeling, and scaled views that cannot be changed by the user.

## Data Layers

- Map Service Layers
- Shapefiles
- Geodatabase layers
- ArcGIS layers
- ect..


NCDOT INTRANET  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
NCDOT Portal


Providing access to North Carolina transportation-related geospatial information

Home   Services and Data ▾   Help   Support ▾   Contact Us

Services and Data

Map Services

Data Layers

Tool Data

Basemaps

## Map Services

The following is a list of map services available in SDV.

**\*\*Click on link to view data layer metadata.**

Map Service	Description	Data Layers**
AADT Linear Segments	Statewide AADT Volume Groups segments	<a href="#">ROAD_AADT_EST_ARC</a>
AADT Count Stations	Statewide average daily traffic count stations	<a href="#">ROAD_AADT_CNT_STATION_POINT</a>
Airports	Statewide airport locations	<a href="#">AIRPORT_POINT</a>
Bike Routes	Statewide bicycle routes and Local suitability/routes	<a href="#">ROAD_BICYCLE_ROUTE_ARC</a>
Boundaries - City	Statewide municipal boundaries	<a href="#">BOUNDARY_MUNICIPAL_POLYGON</a>
Boundaries - County Filled	Statewide county polygon boundaries	<a href="#">BOUNDARY_COUNTY_POLYGON</a>
Boundaries - County Outlined	Statewide county line boundaries	<a href="#">BOUNDARY_COUNTY_ARC</a>
Boundaries - County Shoreline	Statewide county polygon boundaries, with shoreline	<a href="#">BOUNDARY_COUNTY_SHRLN_POLYGON</a>
Boundaries - District	Statewide NCDOT District boundaries	<a href="#">BOUNDARY_DOT_DISTRICT_POLYGON</a>
Boundaries - Division	Statewide NCDOT Division boundaries	<a href="#">BOUNDARY_DOT_DIVISION_POLYGON</a>

## SDV Resource Center



## Metadata

### BOUNDARY\_DOT\_DIVISION\_POLYGON



**Data format:** File Geodatabase Feature Class  
**File or table name:** BOUNDARY\_DOT\_DIVISION\_POLYGON  
**Coordinate system:** Lambert Conformal Conic  
**Theme keywords:** Boundary

**Abstract:** DOT Divisions (North Carolina)

#### FGDC and ESRI Metadata:

- [Identification Information](#)
- [Data Quality Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)
- [Geoprocessing History](#)
- [Binary Enclosures](#)

Metadata elements shown with blue text are defined in the Federal Geographic Data Committee's (FGDC) [Content Standard for Digital Geospatial Metadata \(CSDGM\)](#). Elements shown with green text are defined in the [ESRI Profile of the CSDGM](#). Elements shown with a green asterisk (\*) will be automatically updated by ArcCatalog. ArcCatalog adds hints indicating which FGDC elements are mandatory; these are shown with gray text.

#### Identification Information:

##### Citation:

##### Citation information:

**Originators:** The North Carolina Department of Transportation Geographic Information Systems Unit

##### \*Title:

BOUNDARY\_DOT\_DIVISION\_POLYGON

**\*File or table name:** BOUNDARY\_DOT\_DIVISION\_POLYGON

**Publication date:** Unknown

**Publication time:** Unknown

**\*Geospatial data presentation form:** vector digital data

##### Publication information:

**Publication place:** Raleigh, North Carolina

**Publisher:** The North Carolina Department of Transportation Geographic Information Systems Unit

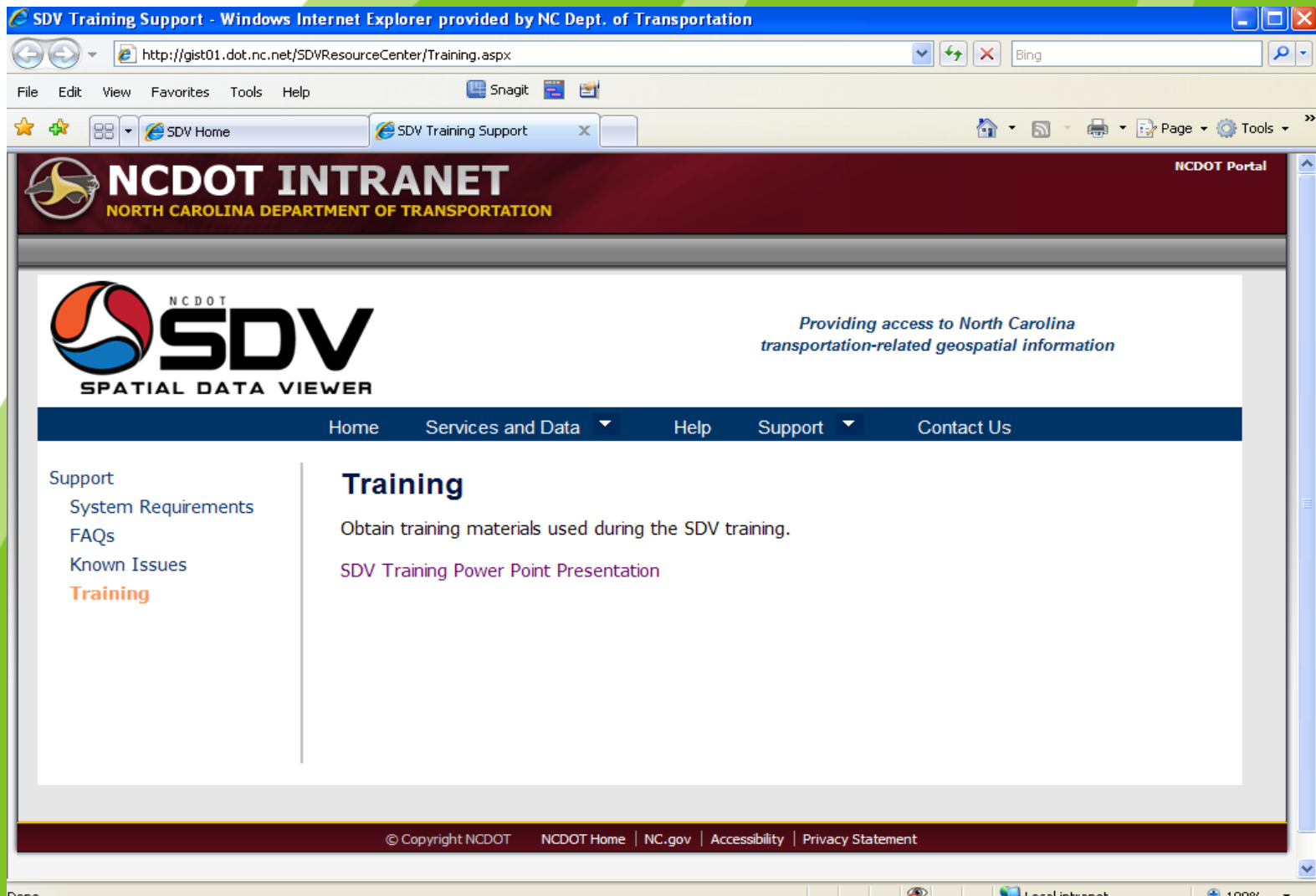
**\*Online linkage:** [Service=sde:oracle11g:/LOCAL=TCDDQ26;User=sdv\\_public;Version=SDE.DEFAULT](Service=sde:oracle11g:/LOCAL=TCDDQ26;User=sdv_public;Version=SDE.DEFAULT)

##### Description:

##### Abstract:

DOT Divisions (North Carolina)

<http://gisi01.dot.nc.net/SDVResourceCenter/home.aspx>



The screenshot shows a web browser window titled "SDV Training Support - Windows Internet Explorer provided by NC Dept. of Transportation". The address bar shows the URL "http://gisi01.dot.nc.net/SDVResourceCenter/Training.aspx". The browser interface includes a menu bar (File, Edit, View, Favorites, Tools, Help), a toolbar with icons for Snagit, and a tab bar with "SDV Home" and "SDV Training Support".

The main content area features the "NCDOT INTRANET" header with the NCDOT logo and the text "NORTH CAROLINA DEPARTMENT OF TRANSPORTATION". Below this is the "SDV SPATIAL DATA VIEWER" logo and the tagline "Providing access to North Carolina transportation-related geospatial information". A navigation menu includes "Home", "Services and Data", "Help", "Support", and "Contact Us".

The "Support" section is expanded, showing a list of links: "System Requirements", "FAQs", "Known Issues", and "Training" (highlighted in orange). The "Training" section contains the text "Obtain training materials used during the SDV training." and a link for "SDV Training Power Point Presentation".

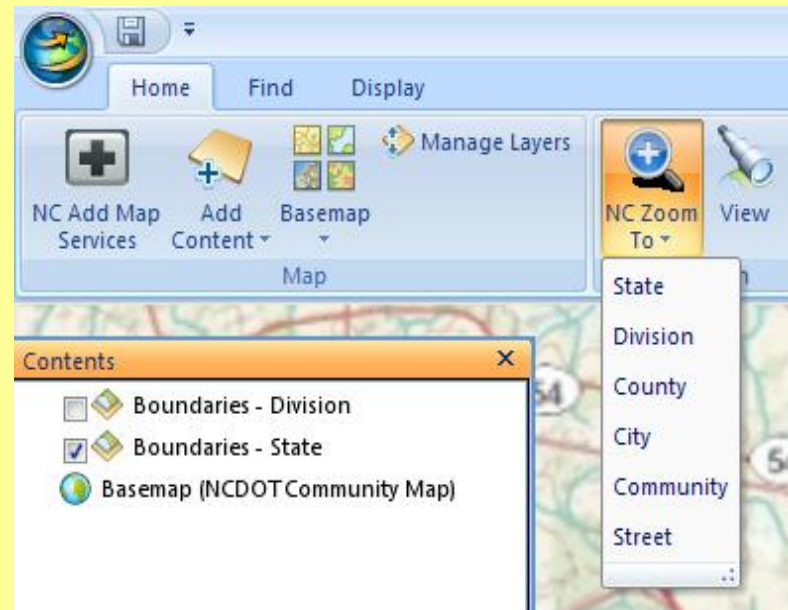
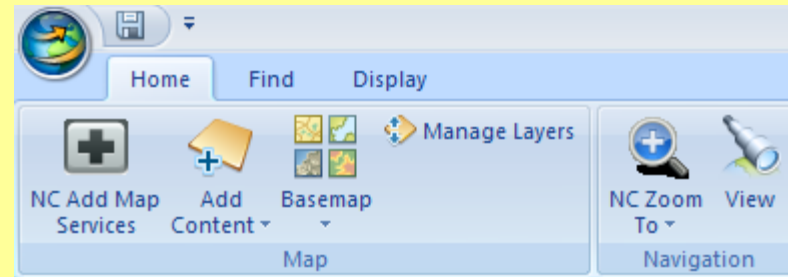
The footer of the page contains copyright information: "© Copyright NCDOT | NCDOT Home | NC.gov | Accessibility | Privacy Statement".

# SDV Training

## Home Tab

### Navigation Group

- NC Zoom To
  - State, Division, County, City, Community, Street
- View
  - Create a view of map to return to



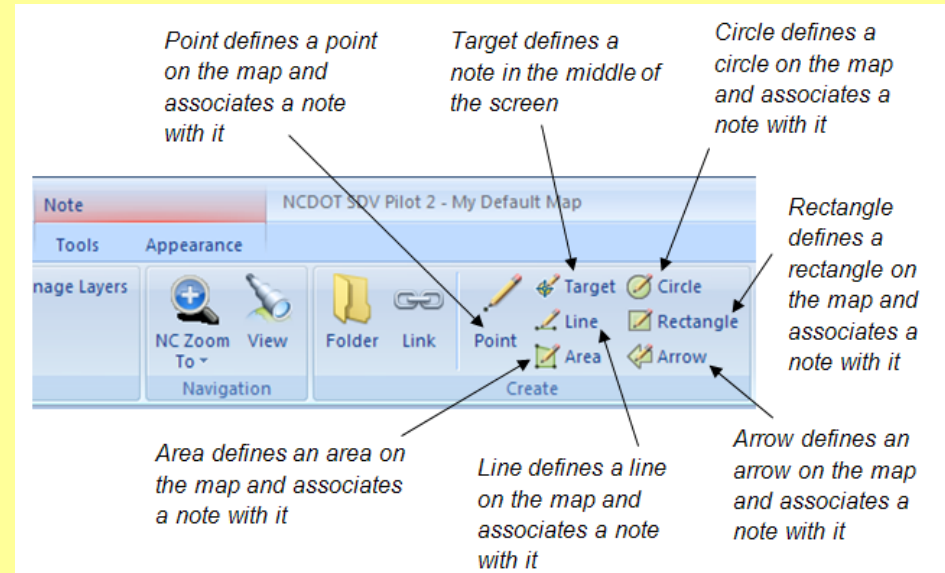
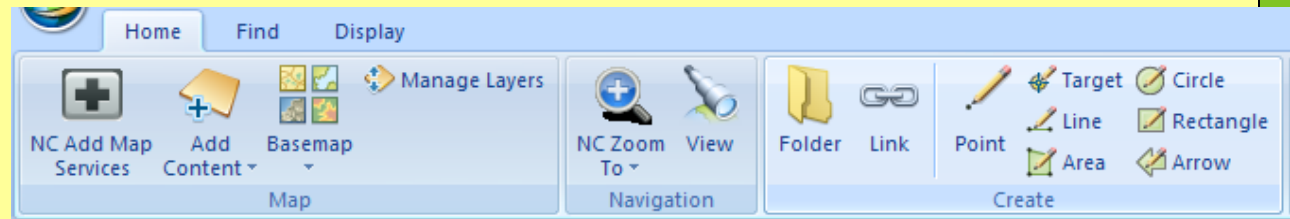


# SDV Training

## Home Tab

### Create Group

- Folder
- Link
- Point
- Target
- Line
- Circle
- Rectangle
- Area



SDV Resource Center

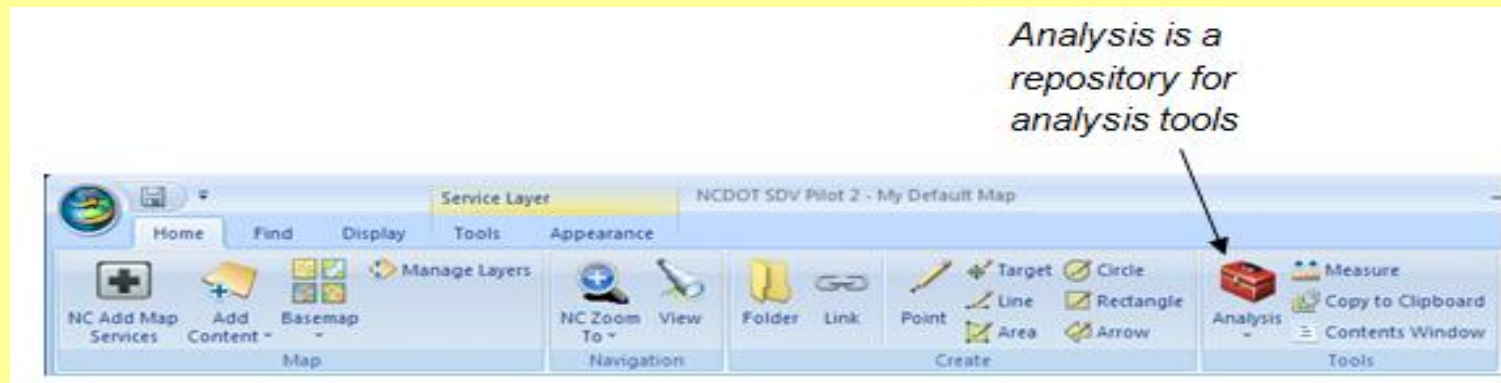
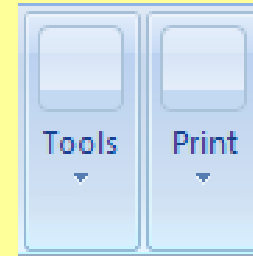
<http://gisi01.dot.nc.net/SDVResourceCenter/Notes.aspx>

# SDV Training

## Home Tab

### Tools Group

- Analysis
- Measure
- Copy to Clipboard
- Contents Window



## SDV Resource

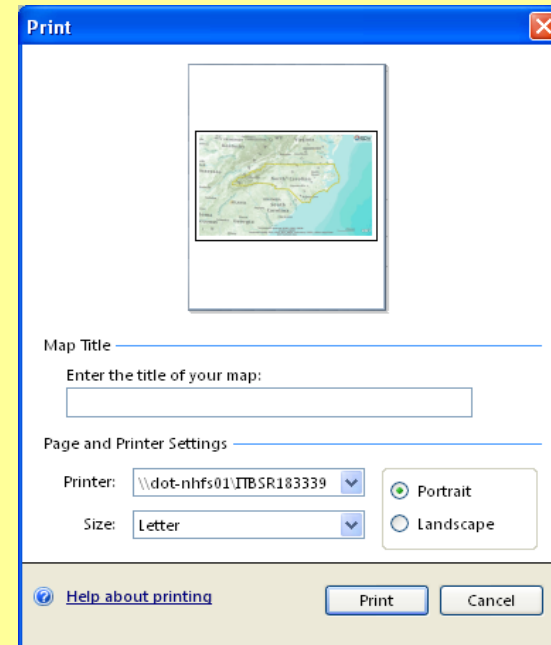
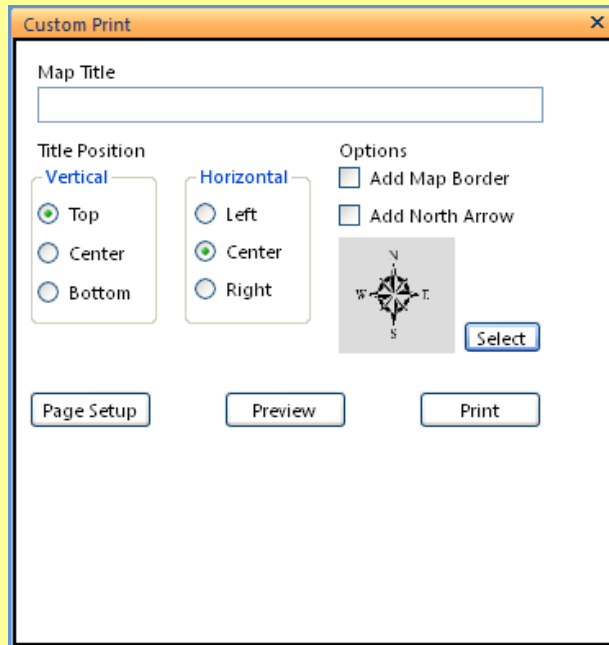
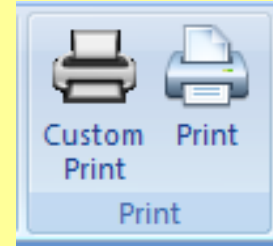
<http://gisi01.dot.nc.net/SDVResourceCenter/MeasureToolHighlights.aspx>

# SDV Training

## Home Tab

### Print Group

- Custom Print - Map title, border, North Arrow
- Print - Map title, printer, size, orientation

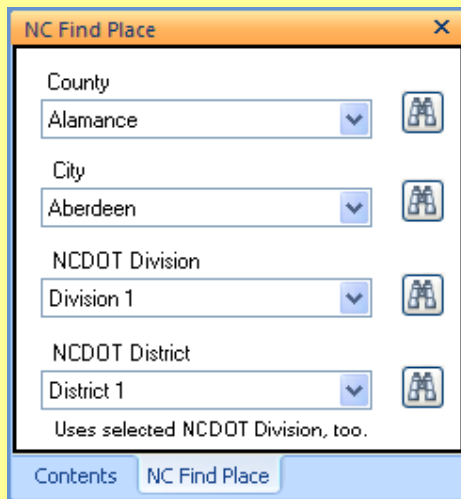


# SDV Training

## Find Tab

### Find Group

- NC Find Place
  - County, City, NCDOT Division, NCDOT District
- NC Find Structure
  - County, Route, TIP Number, Bridge Number



**NC Find Place**

County  
Alamance

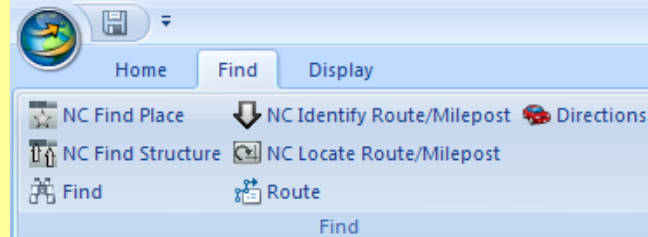
City  
Aberdeen

NCDOT Division  
Division 1

NCDOT District  
District 1

Uses selected NCDOT Division, too.

Contents NC Find Place



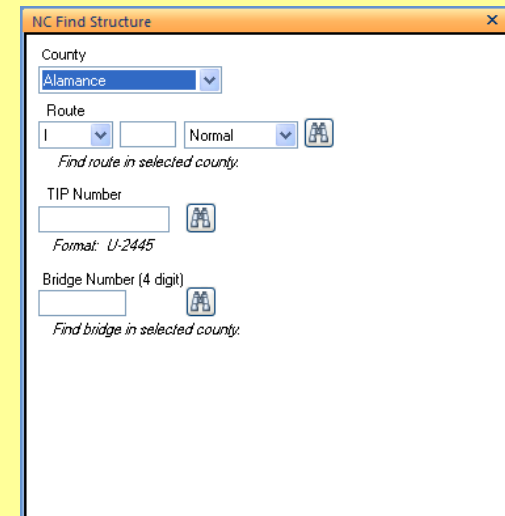
Home Find Display

NC Find Place NC Identify Route/Milepost Directions

NC Find Structure NC Locate Route/Milepost

Find Route

Find



**NC Find Structure**

County  
Alamance

Route  
I Normal

Find route in selected county.

TIP Number

Format: U-2445

Bridge Number (4 digit)

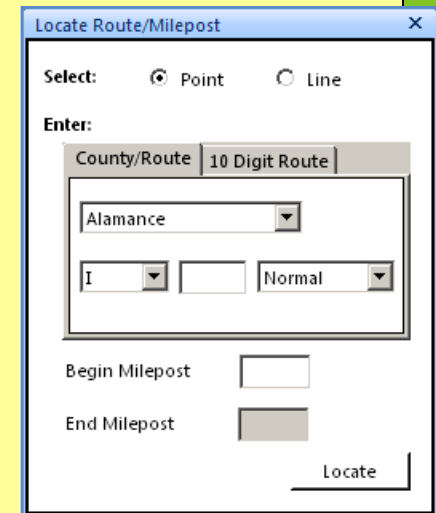
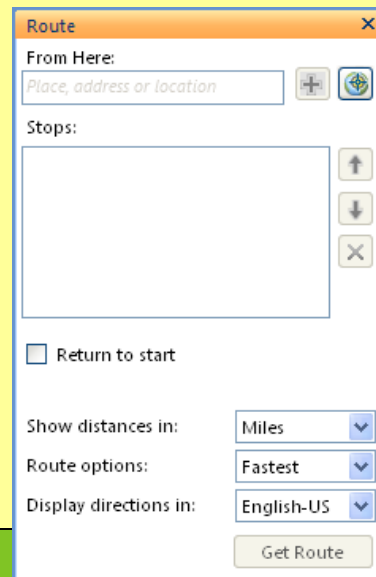
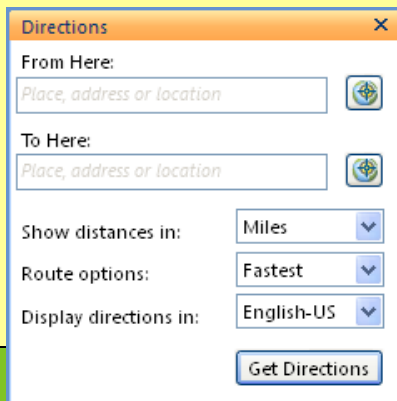
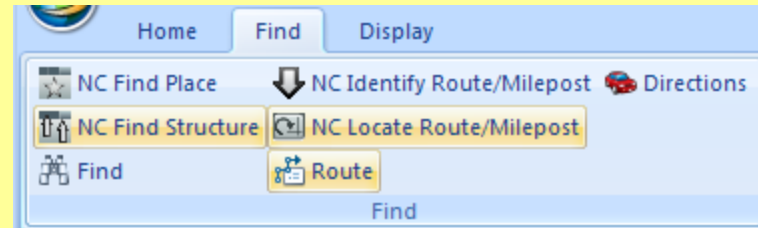
Find bridge in selected county.

## Find Tab

### Find Group - continued

#### Find

- NC Identify Route/Milepost
  - provides a mechanism to identify a route and its milepost information at a specified point
- NC Locate Route/Milepost
  - Route
  - Directions

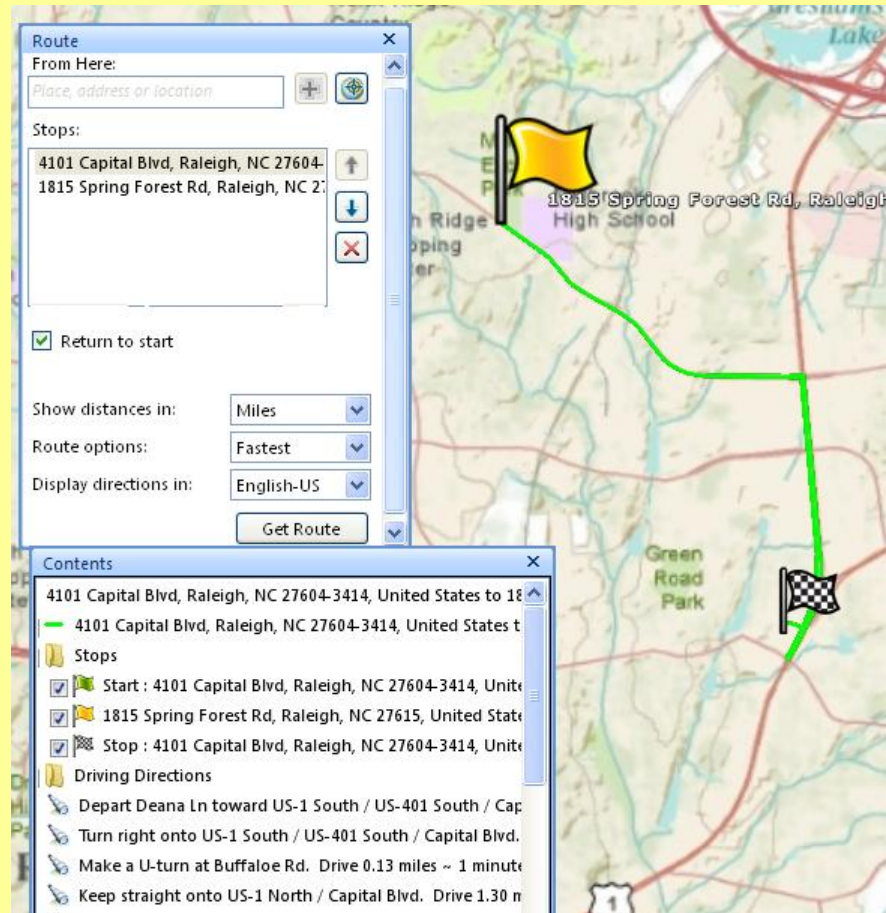
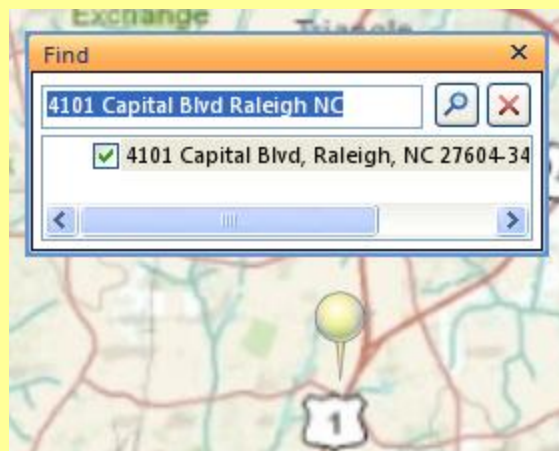


## Find Tab

### Find Group - continued

#### Find

- Find
- Find Route

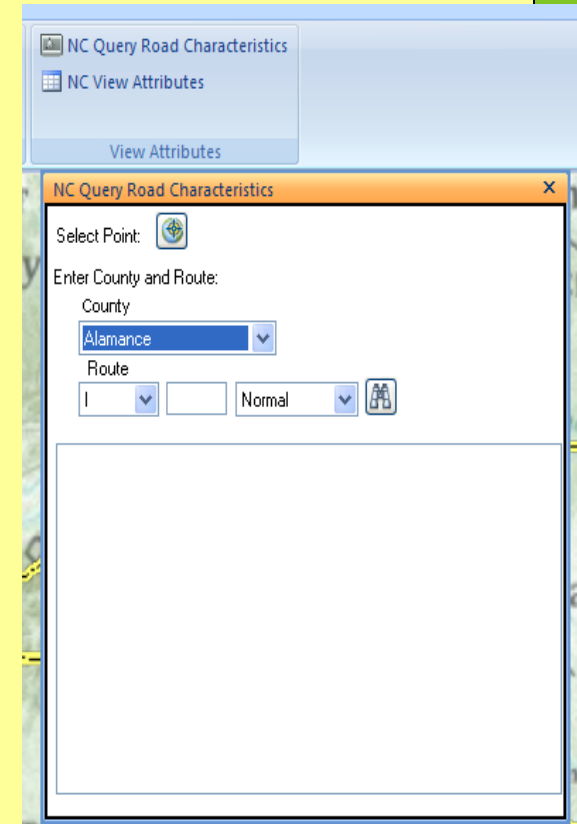
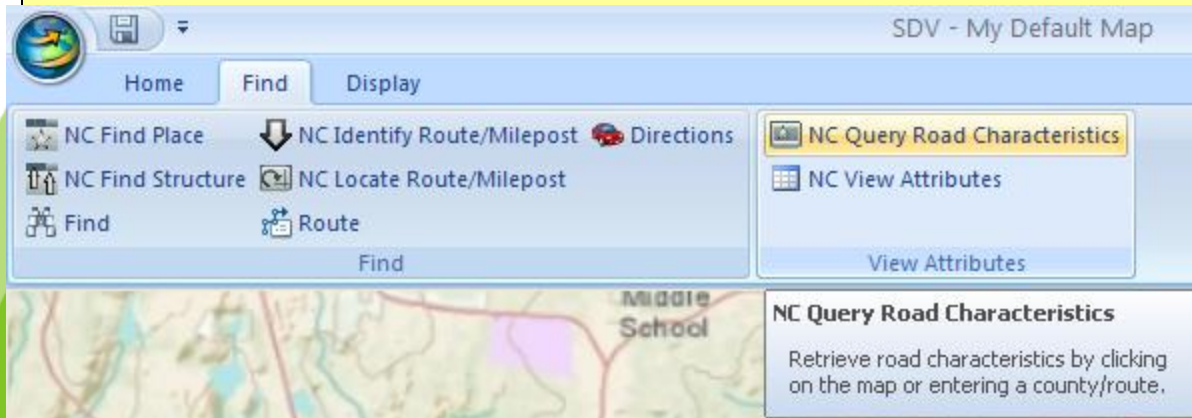


# SDV Training

## Find Tab

### View Attributes Group

- NC Query Road Characteristics
  - Retrieve road characteristics
- NC View Attributes
  - View feature layer attributes

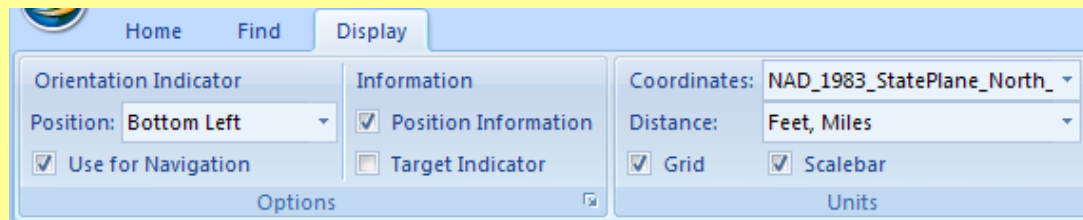


# SDV Training

## Display Tab

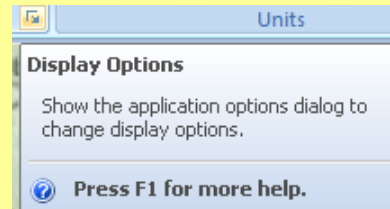
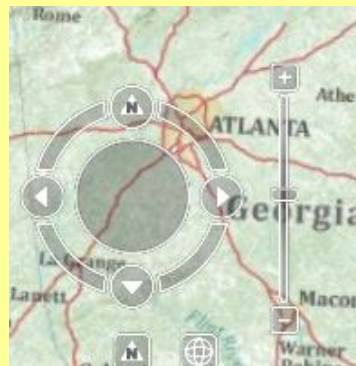
### Options Group

- Orients the zoom/pan tool to move around the Display Window



### Units Group

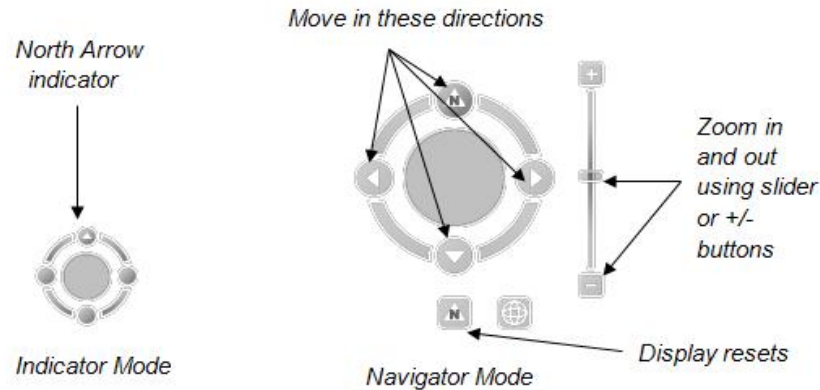
- Select coordinate system, units of measurement
  - Select Grid, Scalebar



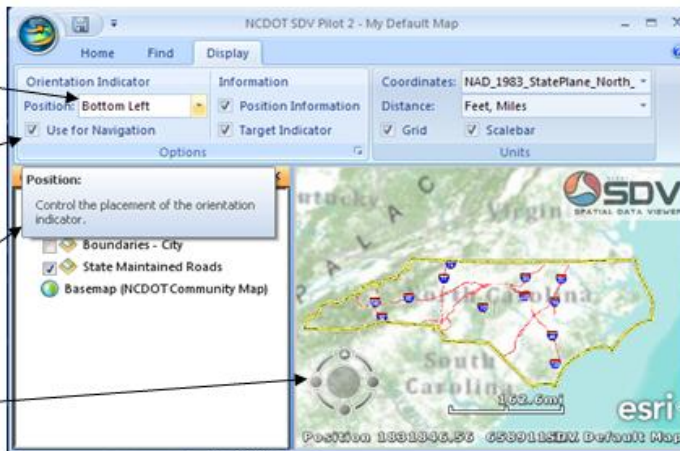


# SDV Training

## Display Tab Navigator



The Navigator can be repositioned and turned on or off using controls under the Display tab.



Change location of the Navigator

Toggle between Indicator/Navigator

Tooltip displayed

Navigator default position

NC DOT SDV Pilot 2 - My Default Map

Home Find Display

Orientation Indicator

Information

Coordinates: NAD\_1983\_StatePlane\_North

Position: Bottom Left

Distance: Feet, Miles

Use for Navigation

Position Information

Grid

Target Indicator

Scalebar

Units

Options

Position:

Control the placement of the orientation indicator.

- Boundaries - City
- State Maintained Roads
- Basemap (NC DOT Community Map)

SDV SPATIAL DATA VIEWER

esri

Position 1881346.56 -65301181M Default Map

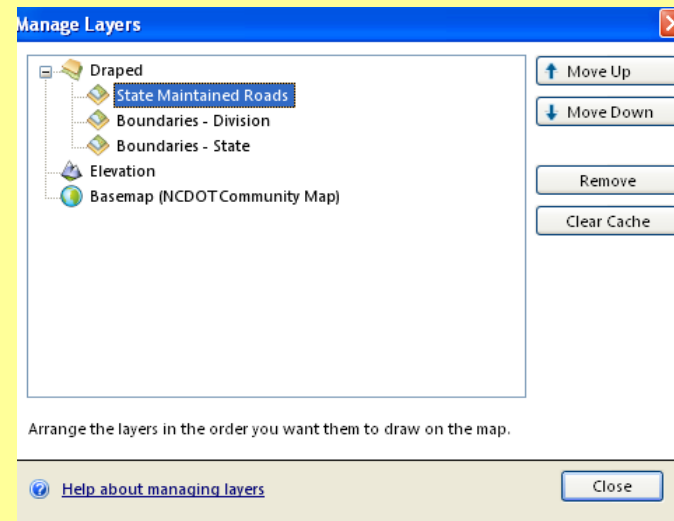
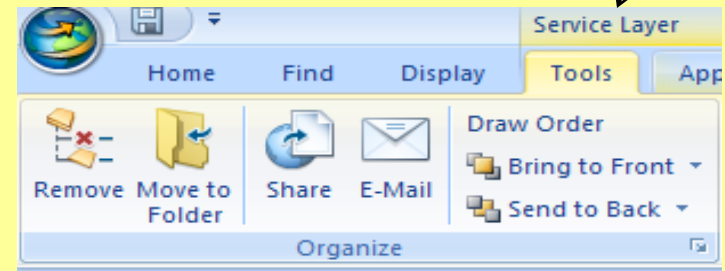
# SDV Training

## Tools Tab

Visible when Layers or Notes are selected in Contents Window

### Organize Group

- Remove
- Move to Folder
- Share
- E-Mail
- Draw Order
  - Bring to Front
  - Send to Back

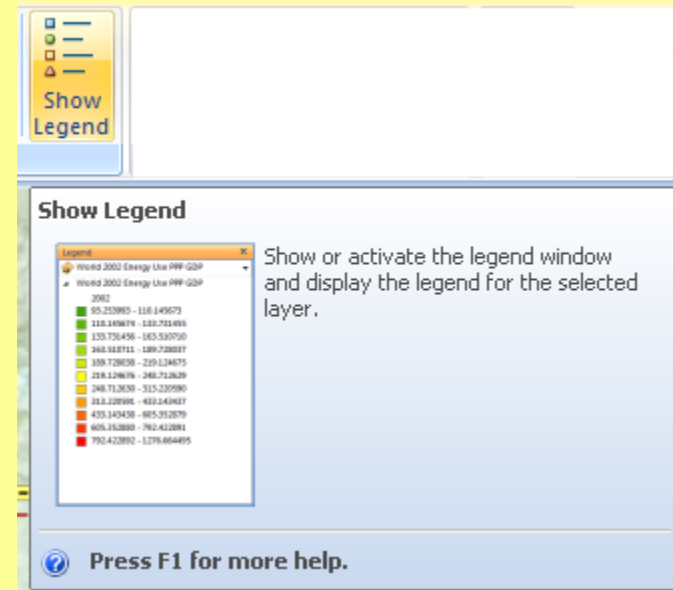


# SDV Training

## Tools Tab

### View Group

- Go To
  - Zooms to selected content layer
- Set Default View
  - Bookmarks the map
- Show Legend
  - Shows features of selected content layer



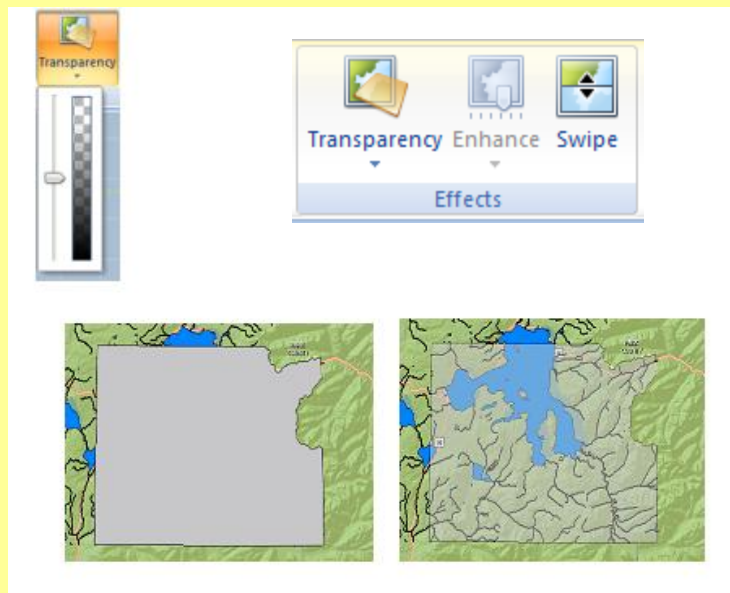
# SDV Training

## Tools Tab

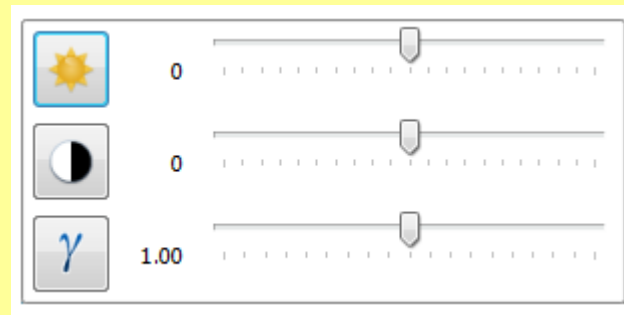
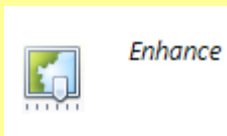
### Effects Group

- Transparency
- For selected layer

(Also accessed from Appearance tab)



- Enhance
- For image



# SDV Training

## Tools Tab

### Effects Group

- Swipe
  - For selected layer



*Swipe*

Use Swipe to reveal layers beneath the layer you chose to swipe and, depending on how you've set the [Layers options](#), the layers above it. This button makes it easy to quickly see what is underneath a particular layer without having to turn it off in the *Contents* window or reorder layers.

#### **To reveal layers beneath the layer you've selected**

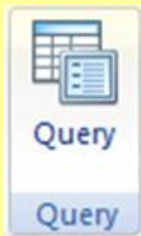
Choose the layer or group layer you want to swipe from the *Contents* window, then move the cursor over the map. You'll notice that the cursor changes based on whether you are resting the mouse pointer on the top, bottom, left, or right of the map. This lets you choose the direction in which you want to swipe the layer. Hold down the left mouse button and drag in the direction indicated by the mouse pointer.

# SDV Training

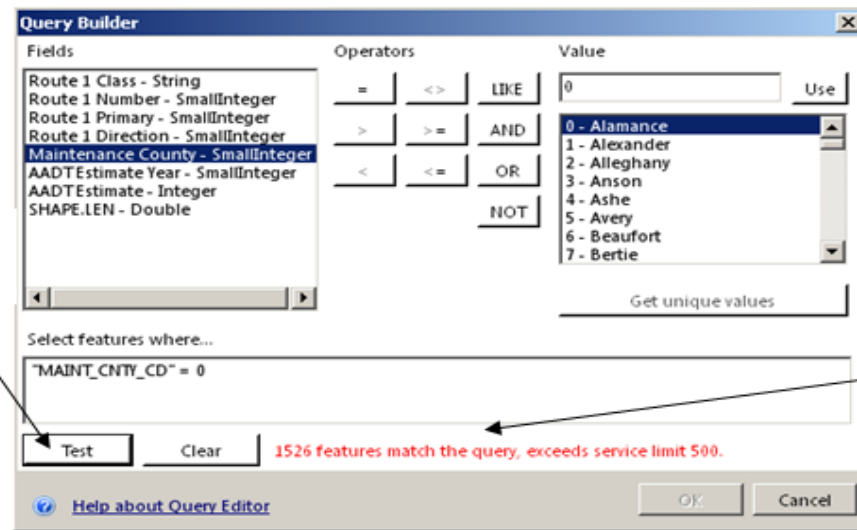
## Tools Tab

### Query Group

- To query a selected layer from the Contents Window
- Access SDV Resource Center for Help



Click  
"Test"...



...to  
get  
this  
result.

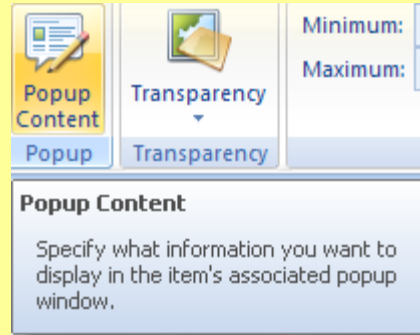
*Queries are limited  
to 500 records!*

# SDV Training

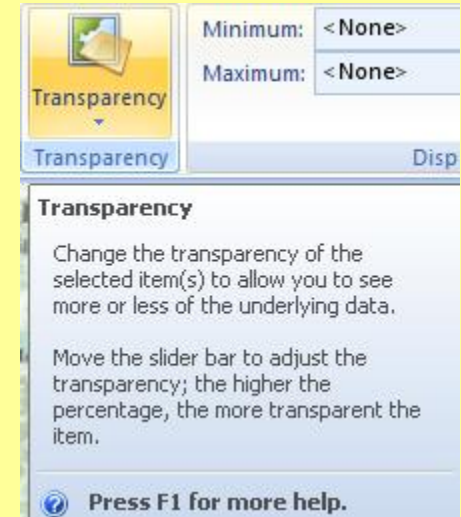
## Appearance Tab

### Popup Group

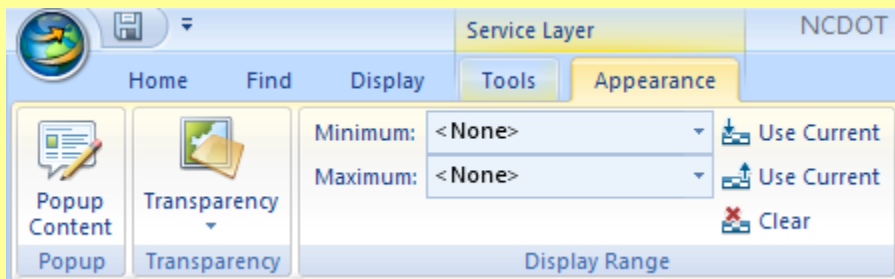
- Provides information about item selected



### Transparency Group



### Display Range Group



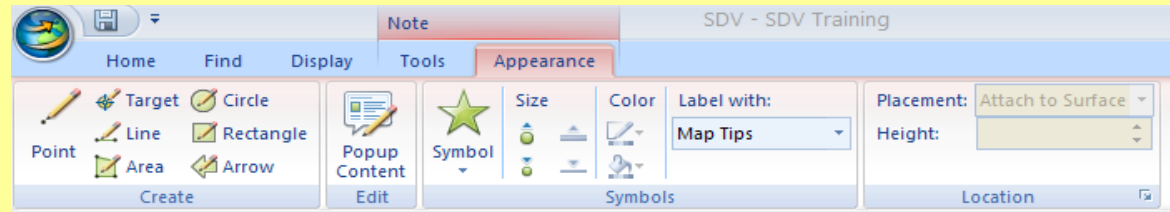
#### Use Current

Use the current map display to set the maximum zoom level.

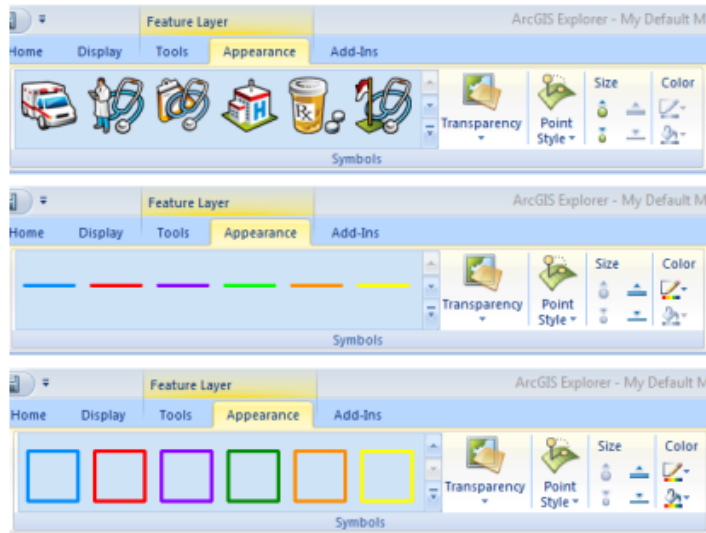
# SDV Training

## Appearance Tab

- Change the display options
- Notes
- Symbols
- Labels



The *Appearance* tab includes a *Symbol* group that contains various controls for selecting symbols to draw the GIS data with and controls for modifying properties of the symbol. Notice the different galleries for points, line, and areas (polygons):





# SDV Training

## FACILITATE

- Measure
- Access NC and NCDOT data
- Share information

## FUNCTIONALITY

- More NC map services
- More NC tools
- SDV Resource Center -  
<http://gisi01.dot.nc.net/SDVResourceCenter/>

## FUTURE

- Suggestions/Help emails go to [gishelp@ncdot.gov](mailto:gishelp@ncdot.gov)

## TRAINING

- Contact your Training Coordinator to sign up for training

# SDV Training

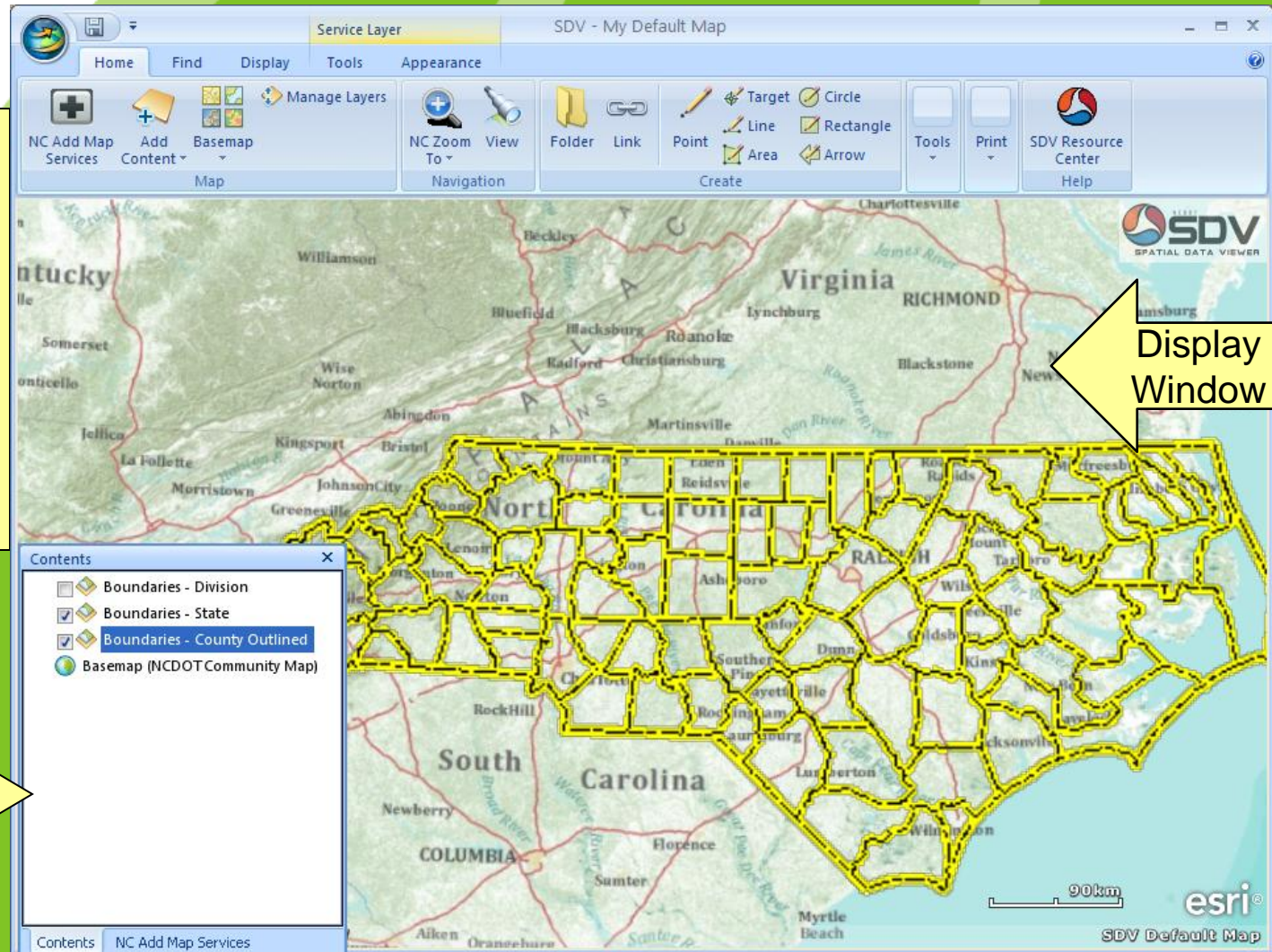
## Collapsed Bridge Scenario



- **Collapsed Bridge Scenario**
  - Add Map Services
  - SDV Resource Center
  - NC Find Tools
  - Query Tools
  - Zoom to incident area (mouse, NC Zoom, navigation tool)
  - Change Basemap
  - Find road characteristics, bridge, pavement, & fatal accident data
  - View attributes of collapsed section
  - Create note for area in question
  - Email the map
  - Add external data to the map
  - Measure area around collapsed bridge, distance to alternate route
  - Add North Arrow, Print preview Map, save as PDF

# SDV Training

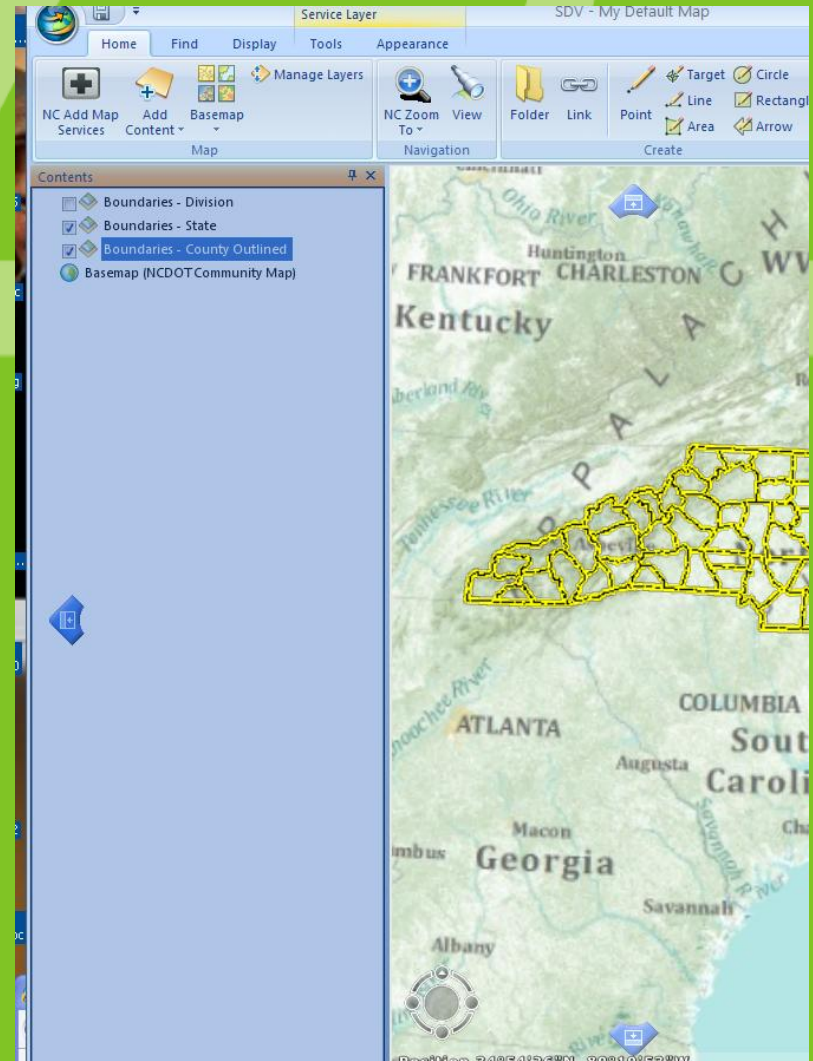
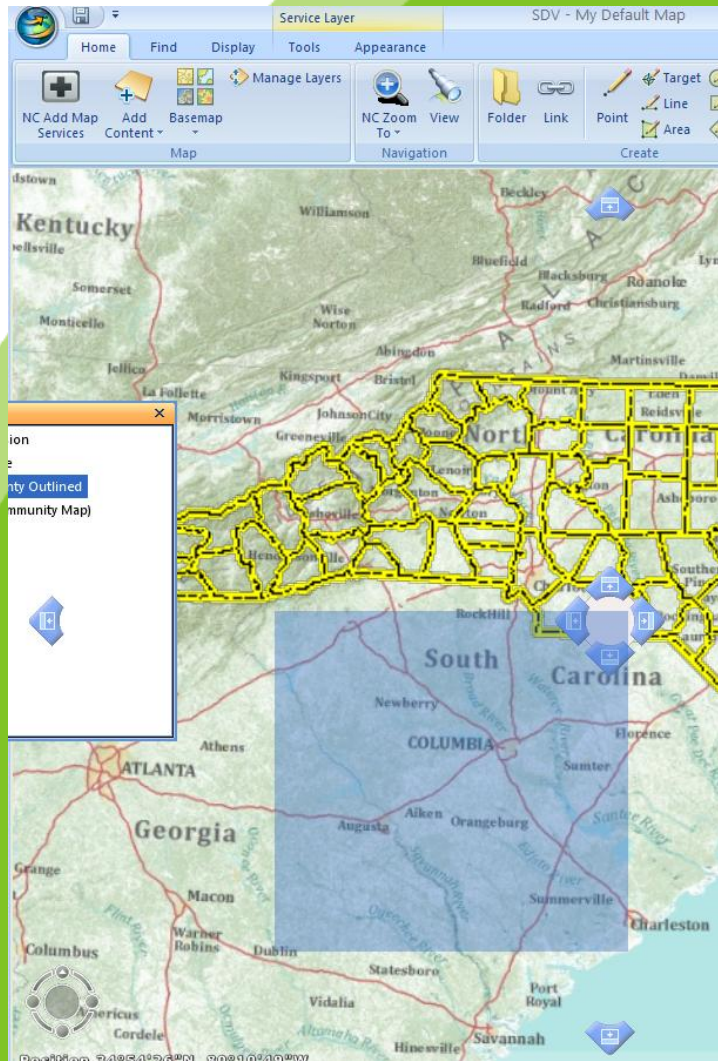
- Open SDV
- Add NC Map Service
- Select layer



Contents Window  
(docking)

Display  
Window

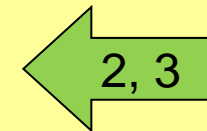
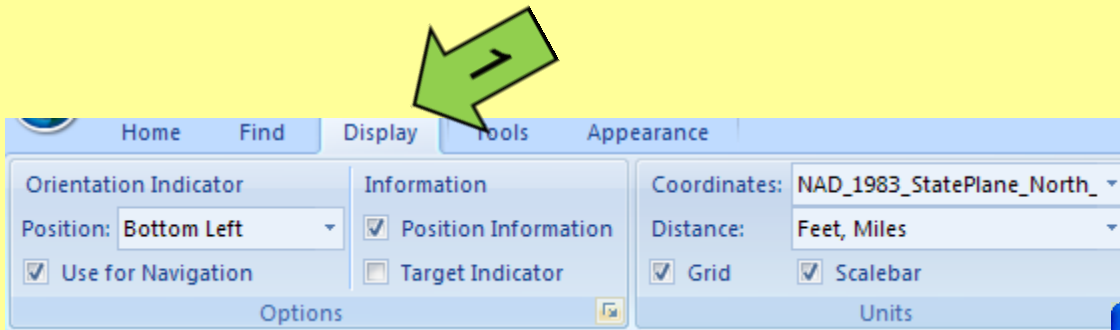
# SDV Training



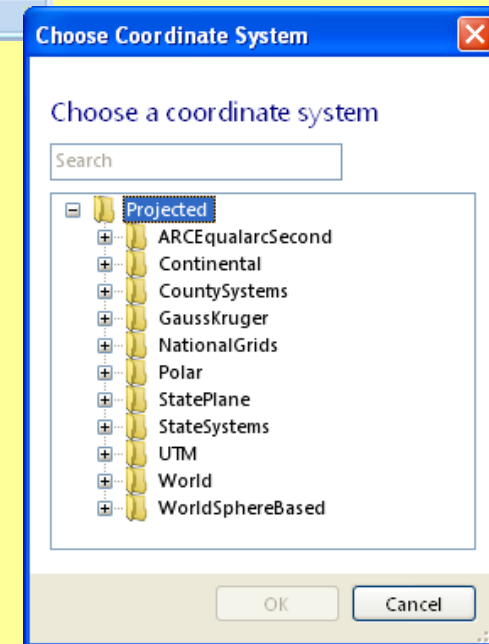
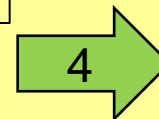
Docking

# SDV Training

To change the map coordinate system:



1. Click Display tab
2. Click the coordinates dropdown
3. Click <More>
4. Choose the correct coordinate system



# SDV Training

## Coordinate Systems

 Feedback

 E-mail this topic

 Print this topic

### About Coordinate Systems

A coordinate system is a fixed reference framework superimposed onto the surface of an area to designate the location of features within it. The positions of objects on the earth's spherical surface are measured in geographic coordinates. While latitude and longitude can locate exact positions on the surface of the earth, they are not uniform units of measure; only along the equator does the distance represented by one degree of longitude approximate the distance represented by one degree of latitude. To overcome measurement difficulties, data is often transformed from three-dimensional geographic coordinates to two-dimensional projected coordinates.

### [Learn more about Map Projections](#)


Coordinate systems (either geographic or projected) provide a framework for defining real-world locations. In ArcGIS Explorer, the coordinate system is used as the method to automatically integrate the geographic locations from different datasets into a common coordinate framework for display and analysis.

### To work with coordinate systems in ArcGIS Explorer

ArcGIS Explorer provides two property sheets that allow you to work with coordinate systems and geographic transformations, one for 2D Coordinate Systems and the other for 3D Coordinate Systems.

In the 2D Coordinate System property sheet you can choose the coordinate system as well as the geographic transformation(s) to use when projecting layers to the map coordinate system when your map is in 2D Display mode. In the 3D Coordinate System property sheet you can select the geographic transformation(s) to use when projecting layers to the map coordinate system when your map is in 3D Display mode.

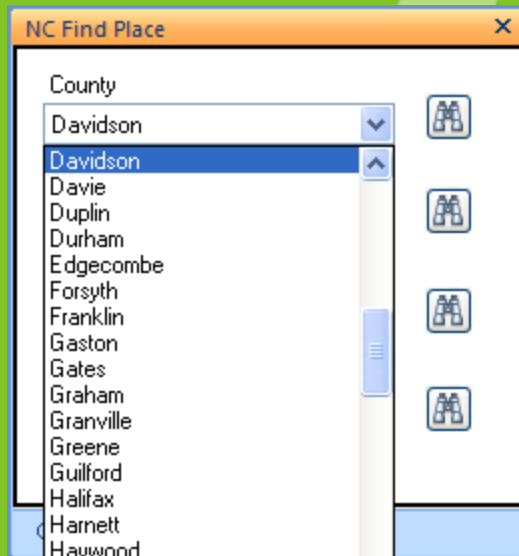
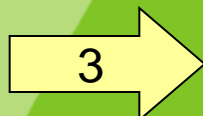
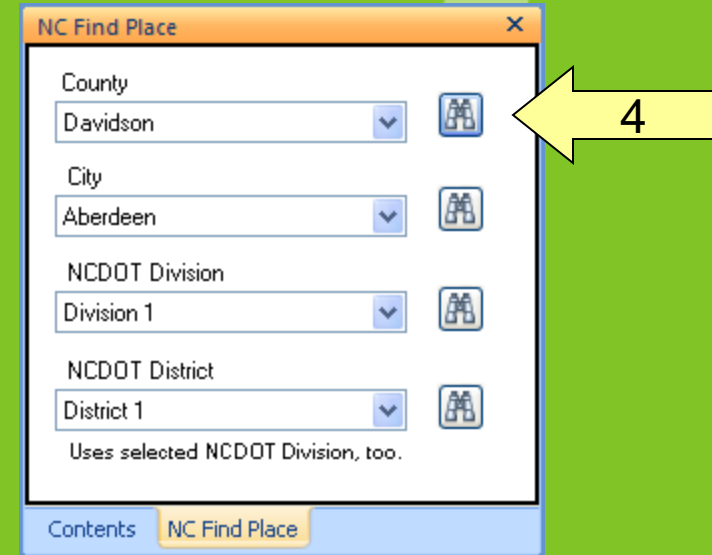
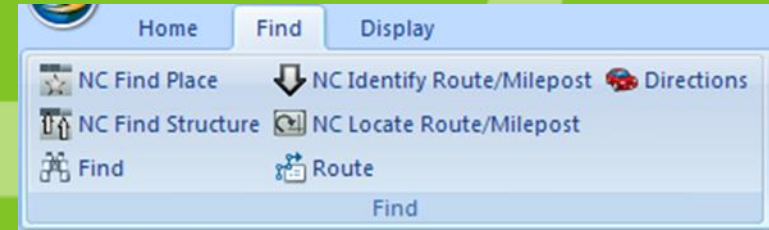
### To display the Coordinate System properties

1. Click the *ArcGIS Explorer Button* .
2. Click *Map Properties*.
3. Choose *3D Coordinate System* or *2D Coordinate System*.

# SDV Training

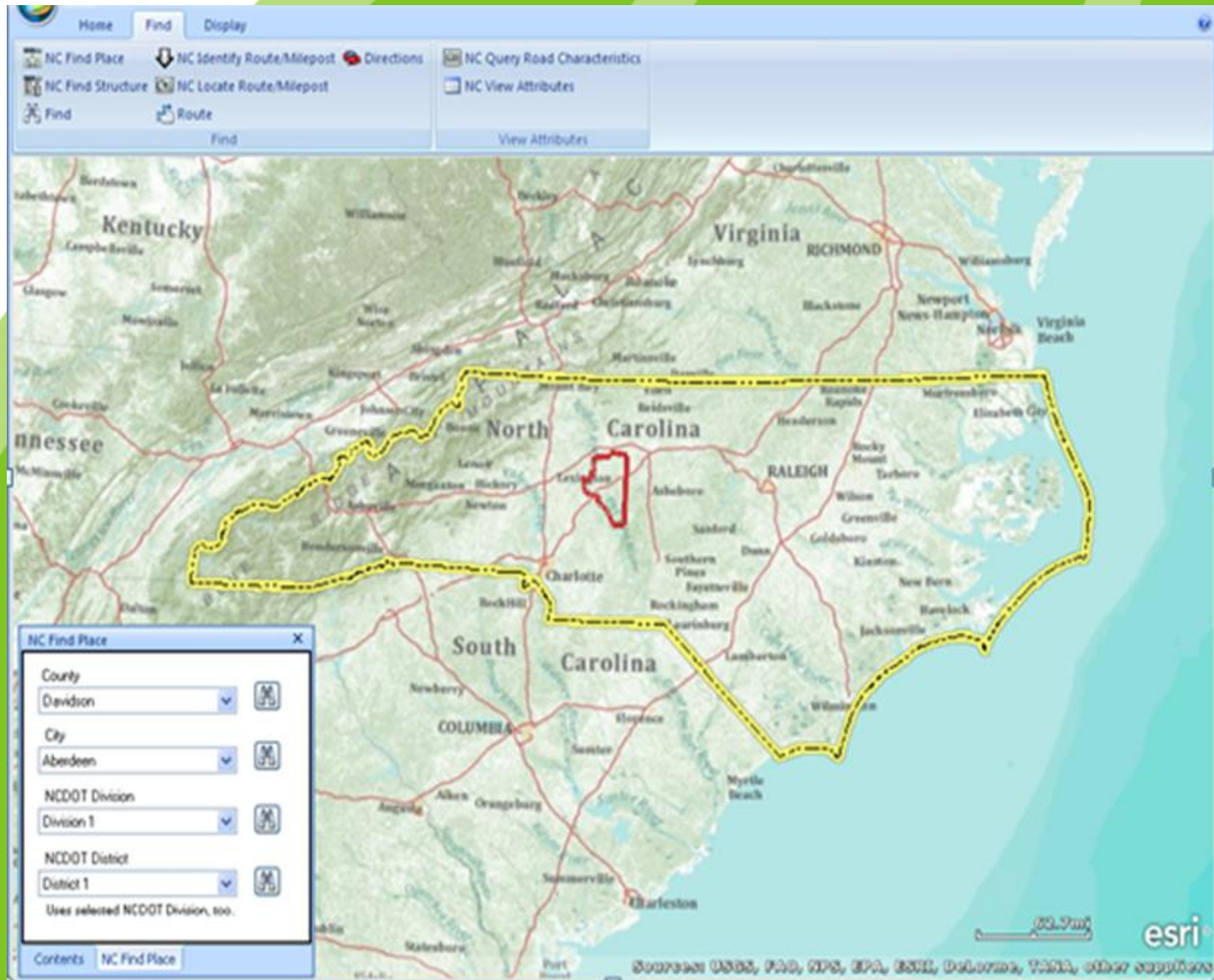
## Find Davidson County

1. Click Find tab
2. Click NC Find Place
3. From the County drop down list choose Davidson County
4. Click the search button





# SDV Training

The screenshot displays the SDV software interface. At the top, there are tabs for 'Home', 'Find', and 'Display'. Below these are several tool buttons: 'NC Find Place', 'NC Identify Route/Milepost', 'Directions', 'NC Query Road Characteristics', 'NC Find Structure', 'NC Locate Route/Milepost', and 'NC View Attributes'. A 'Find' button is also present.

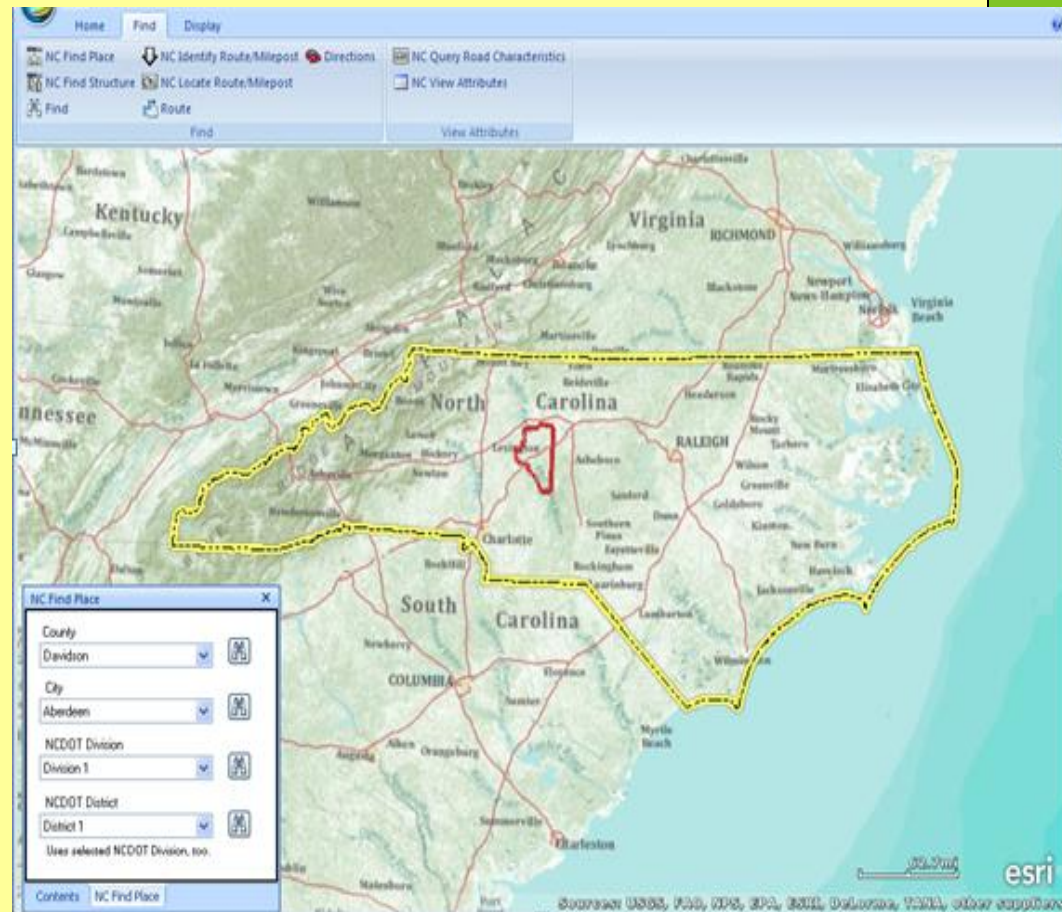
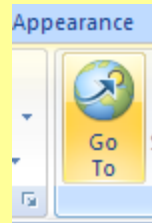
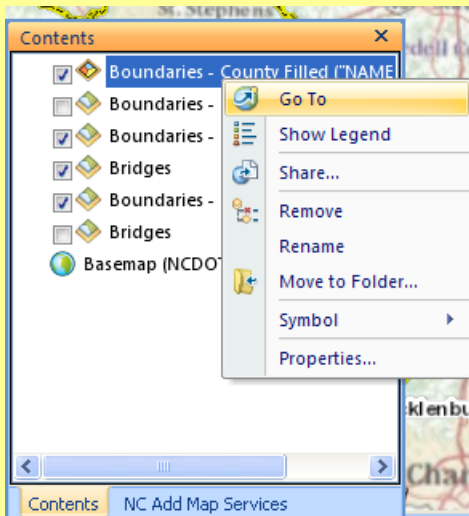
The main map area shows a geographical view of North Carolina, with state boundaries and major cities labeled. A yellow dashed line outlines the state, and a red solid line highlights a specific county, Davidson County. A search window titled 'NC Find Place' is open in the bottom-left corner, showing the following search criteria:

- County: Davidson
- City: Aberdeen
- NCDOT Division: Division 1
- NCDOT District: District 1

Below the search criteria, it states 'Uses selected NCDOT Division, too.' The search window also includes a 'Contents' tab and the text 'NC Find Place'.

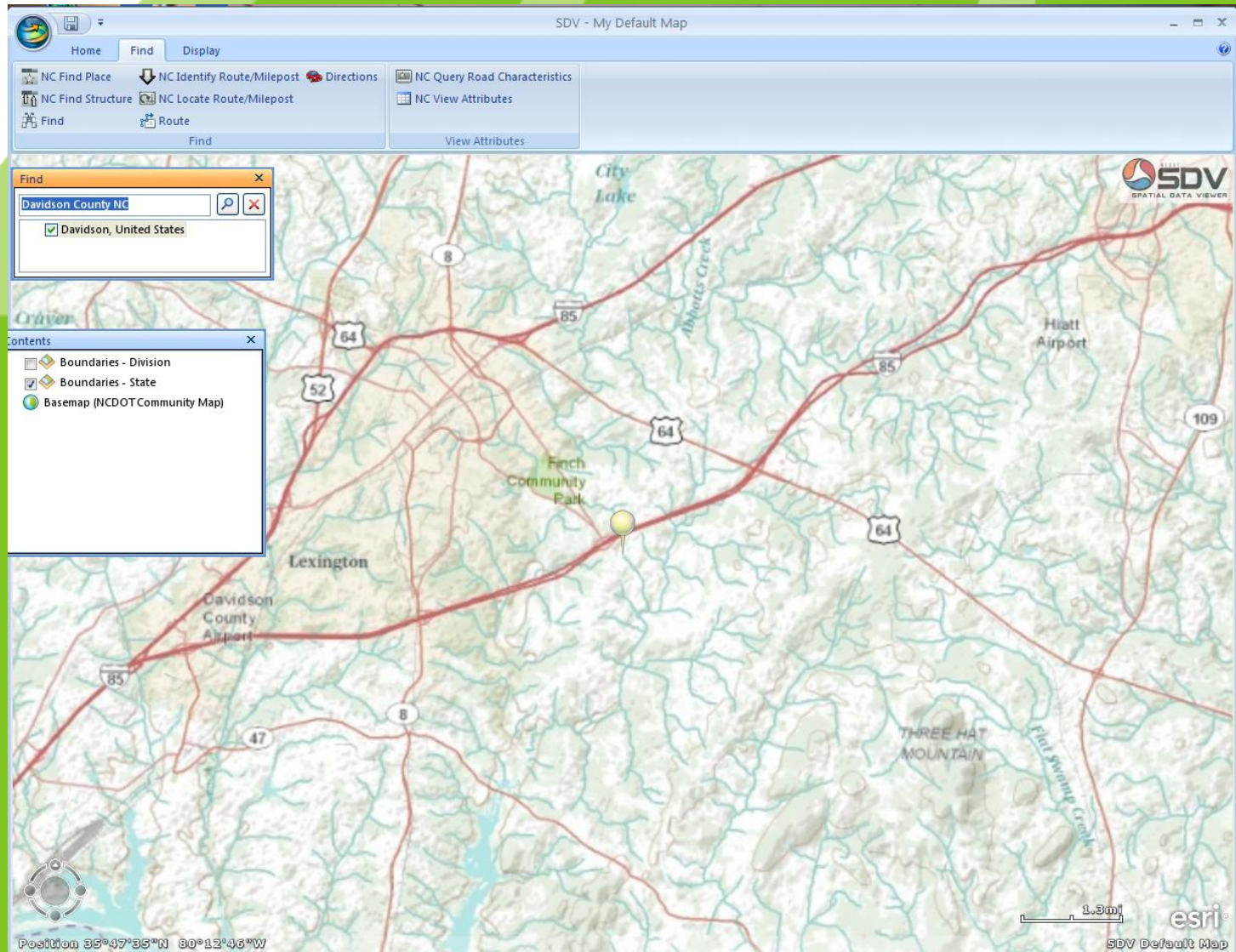
At the bottom of the map, there is a scale bar and the Esri logo. The text 'Sources: USGS, FAD, NPS, EPA, ESRI, DeLorme, VANA, other suppliers' is visible at the bottom right of the map area.

- County is located, now zoom in
  - Right Click, Go To
  - Scroll button on mouse
  - GO To Icon under Appearance tab



# SDV Training

You can also use the FIND option to get to general area



# SDV Training

## Additional Tools:

Find    Display

NC Identify Route/Milepost

NC Locate Route/Milepost

Route

Find

**NC Identify Route/Milepost**

Click on a route to identify the route and milepost at that location.

## NC Identify Route/Milepost



## NC Locate Route/Milepost

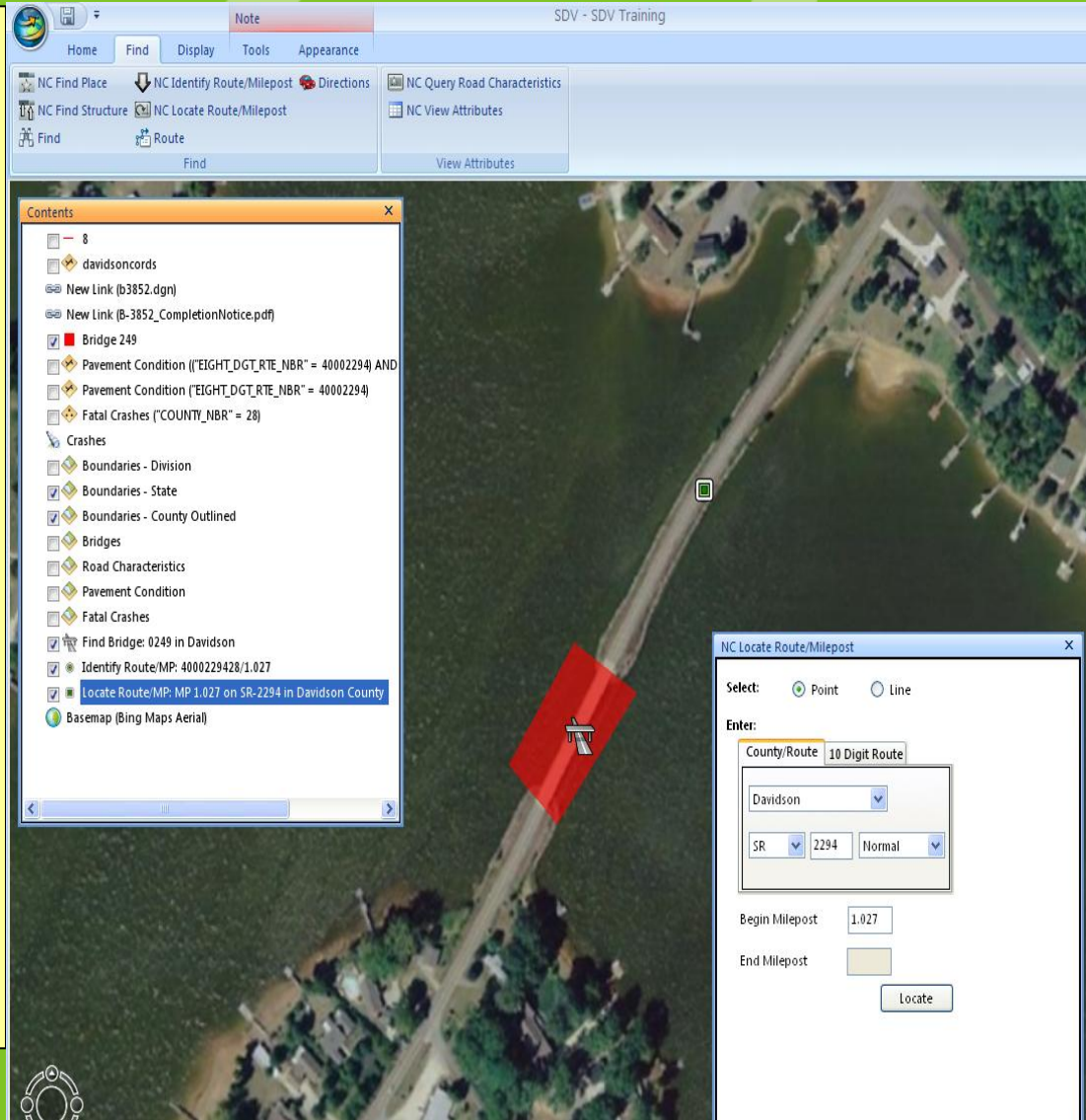
NC Locate Route/Milepost

Route

Find

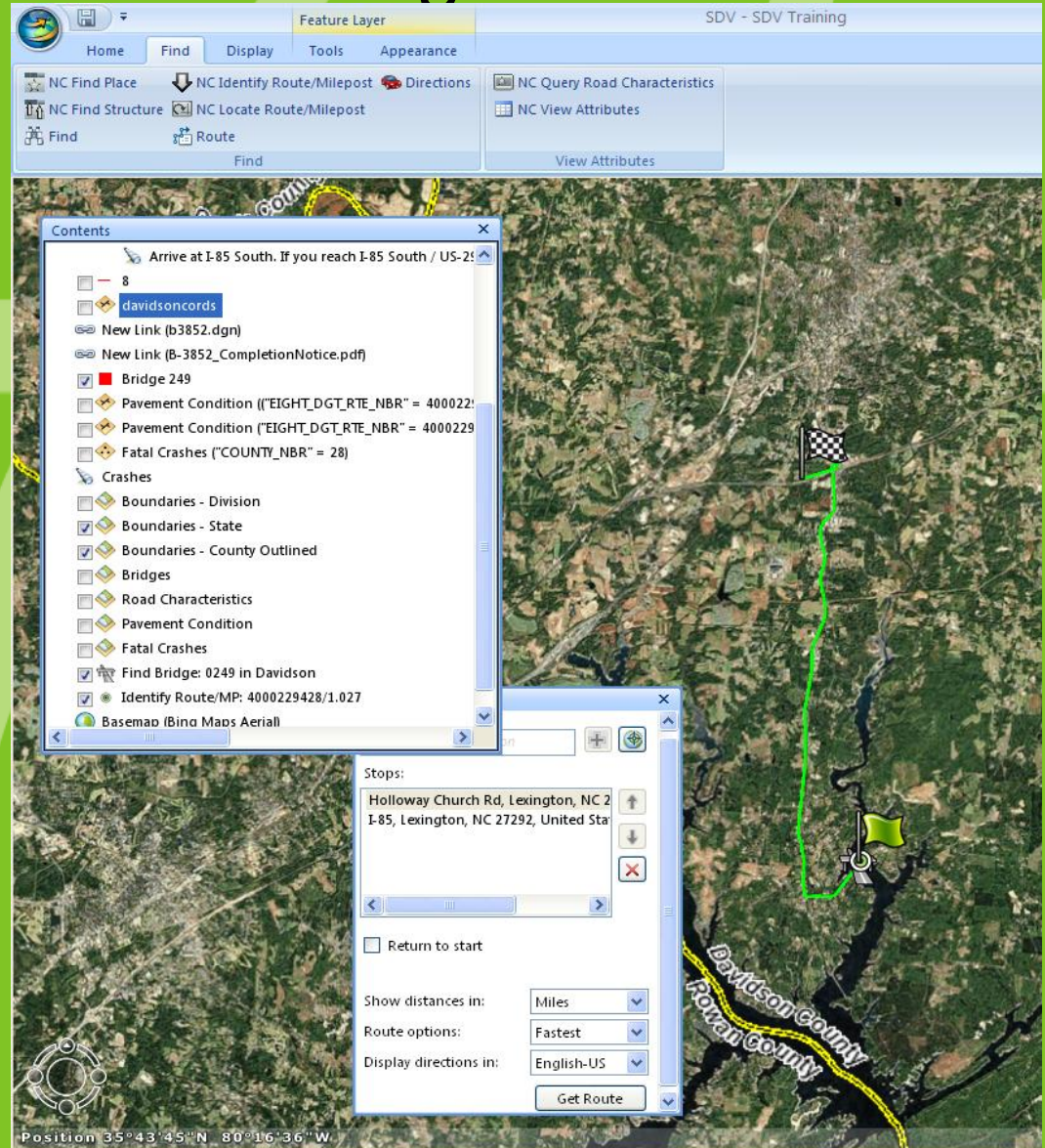
**NC Locate Route/Milepost**

Locate a route and milepost on the map.



The screenshot shows the SDV software interface. The 'Contents' pane on the left lists various layers, including 'Bridge 249', 'Pavement Condition', 'Fatal Crashes', 'Boundaries', 'Bridges', 'Road Characteristics', and 'Basemap (Bing Maps Aerial)'. The 'NC Locate Route/Milepost' dialog box is open, showing the 'Select' options (Point and Line) and the 'Enter' section with fields for County/Route (Davidson), SR (2294), and Begin Milepost (1.027). A red arrow on the map points to a road segment.

# SDV Training

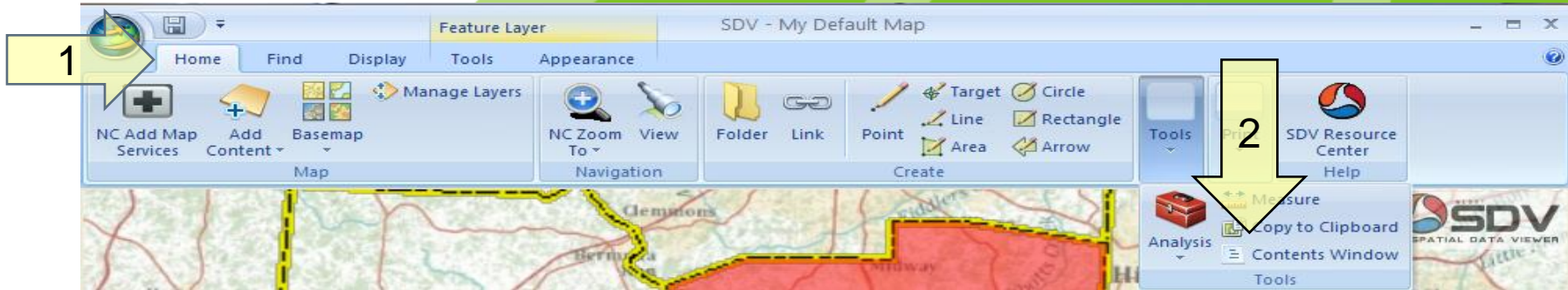


## Additional Tools: Route

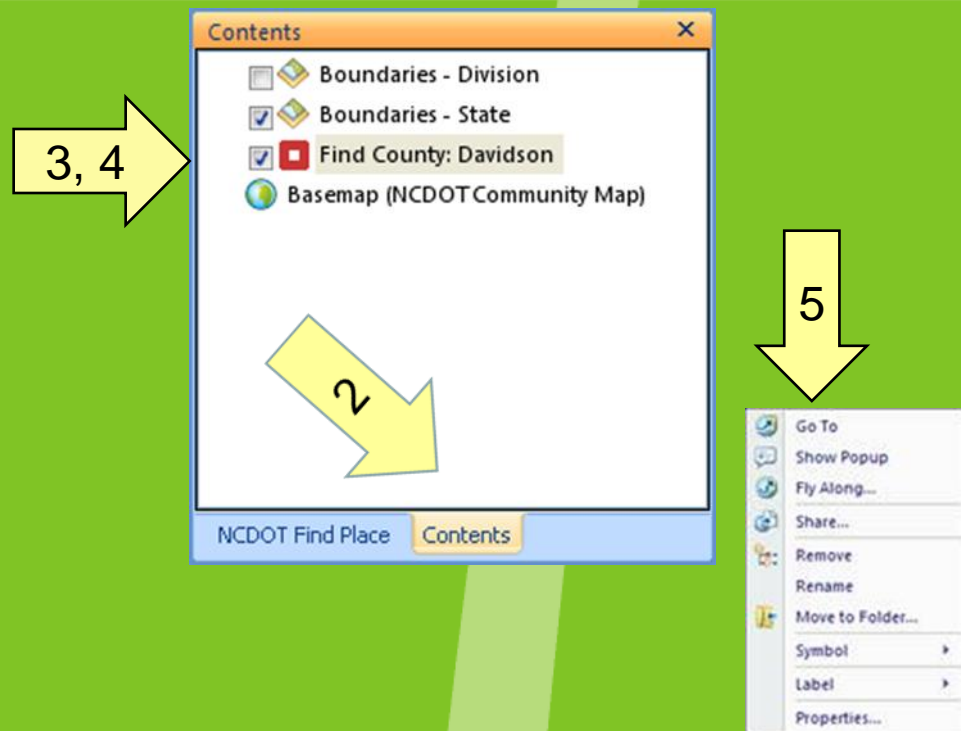
Find the route and driving directions for a collection of locations on the map.

Press F1 for more help.

# SDV Training



1. Click Home tab
2. Click Contents Window (there are 2 ways to get there)
3. Check the Find County: Davidson option box
4. Right click on Find County: Davidson
5. Click "Go to"
6. Or Double Click Find County: Davidson
7. SDV zooms in to county

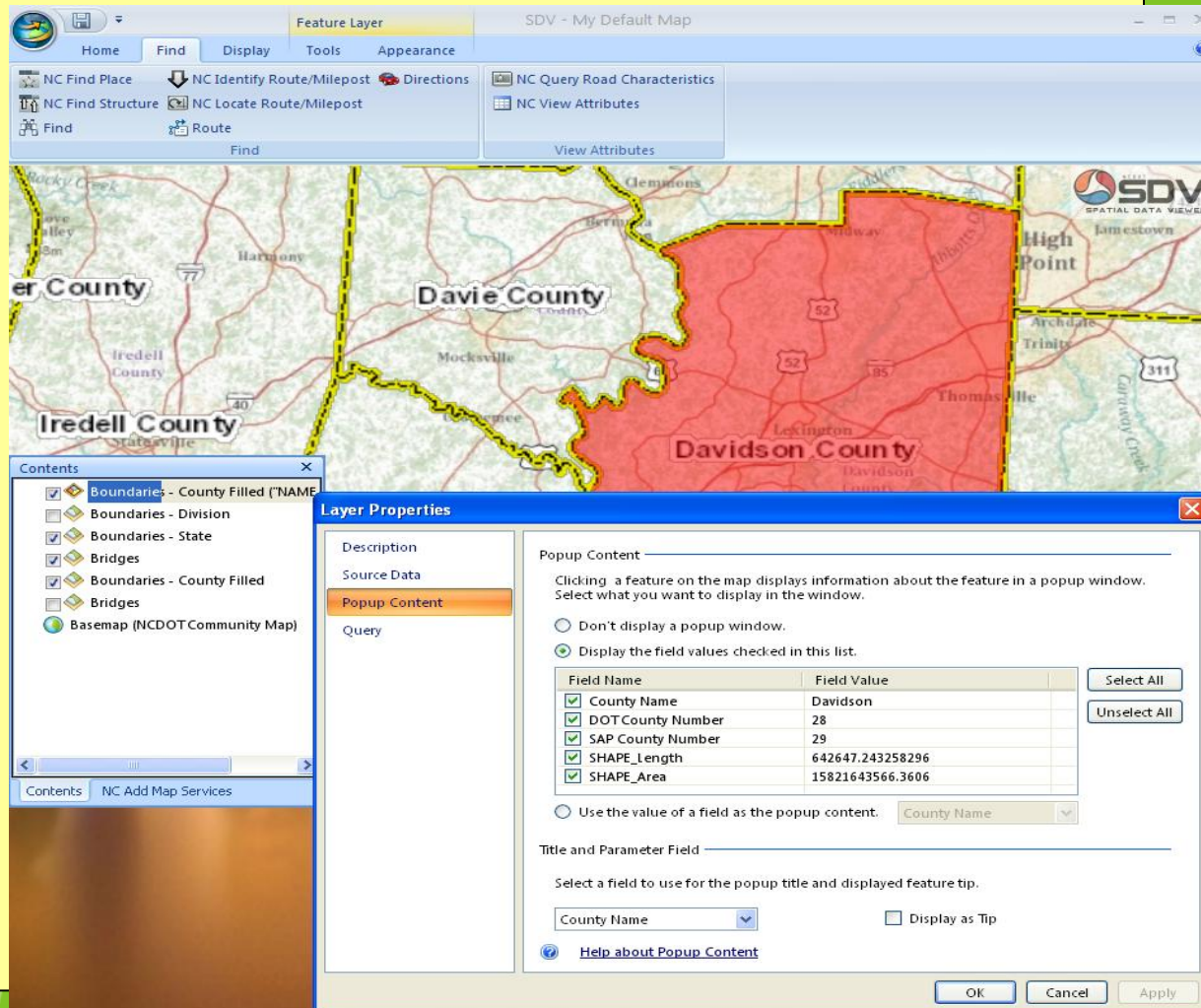


# SDV Training

- To view Layer Properties
  - Right Click Layer

## Layer Properties

- Description
- Source Data
- Popup Content
- Query



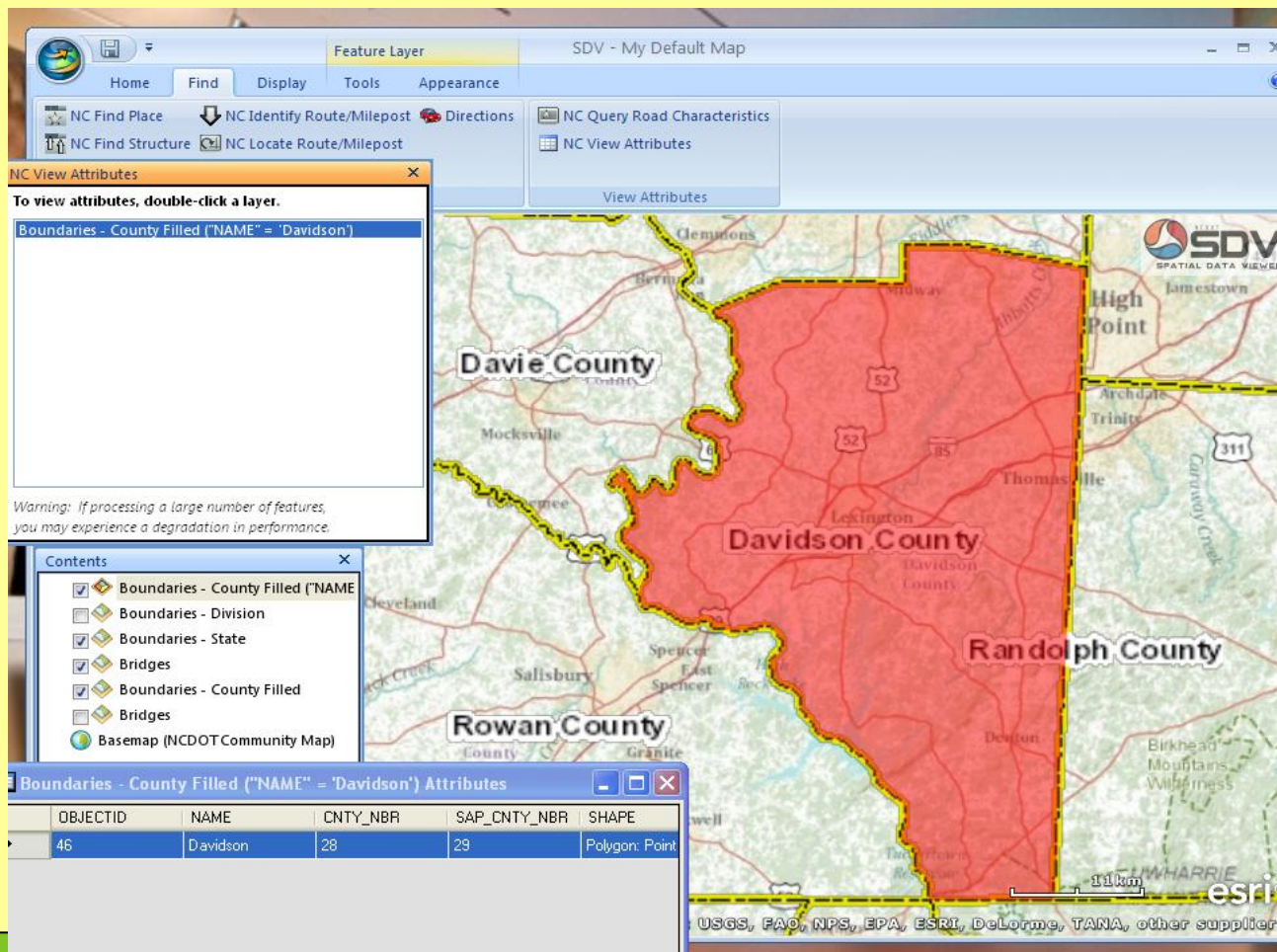
The screenshot shows the SDV - My Default Map application. The map displays several counties, with Davidson County highlighted in red. The Layer Properties dialog box is open for the 'Boundaries - County Filled' layer. The 'Popup Content' tab is selected, showing options to display field values in a popup window. The following table shows the selected fields and their values:

Field Name	Field Value
<input checked="" type="checkbox"/> County Name	Davidson
<input checked="" type="checkbox"/> DOT County Number	28
<input checked="" type="checkbox"/> SAP County Number	29
<input checked="" type="checkbox"/> SHAPE_Length	642647.243258296
<input checked="" type="checkbox"/> SHAPE_Area	15821643566.3606

The 'County Name' field is selected as the popup content. The 'Title and Parameter Field' section shows 'County Name' selected for the popup title and displayed feature tip. The 'Display as Tip' checkbox is unchecked.

# SDV Training

- To view Attributes after Selection
  - Click NC View Attributes



The screenshot shows the SDV software interface with the 'NC View Attributes' dialog box open. The dialog box contains the following text:

To view attributes, double-click a layer.

Boundaries - County Filled ("NAME" = "Davidson")

Warning: If processing a large number of features, you may experience a degradation in performance.

The 'Contents' panel shows the following layers:

- Boundaries - County Filled ("NAME" = "Davidson")
- Boundaries - Division
- Boundaries - State
- Bridges
- Boundaries - County Filled
- Bridges
- Basemap (NCDOTCommunity Map)

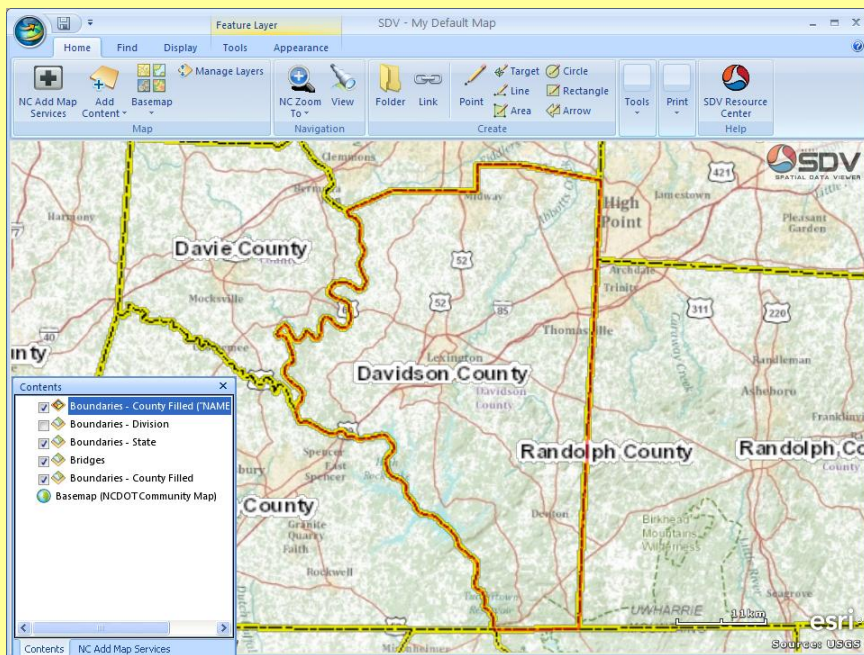
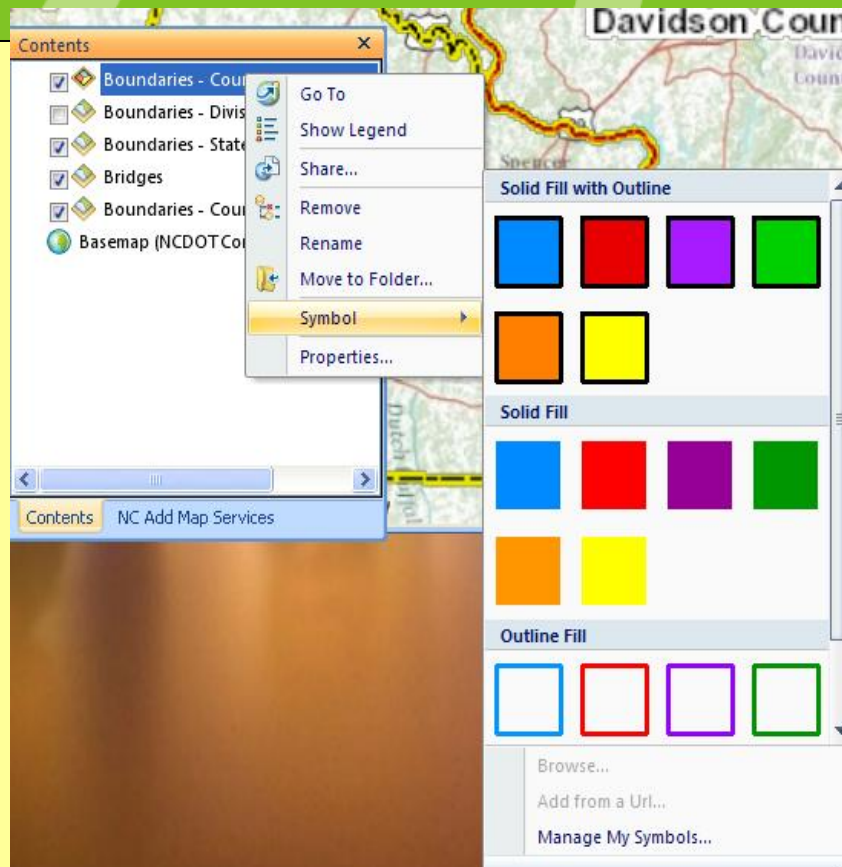
The 'Attributes' table for the selected feature is as follows:

OBJECTID	NAME	CNTY_NBR	SAP_CNTY_NBR	SHAPE
46	Davidson	28	29	Polygon: Point



# SDV Training

- To Change appearance of layer
  - Right Click Layer
  - Scroll to Symbol
  - Select from options



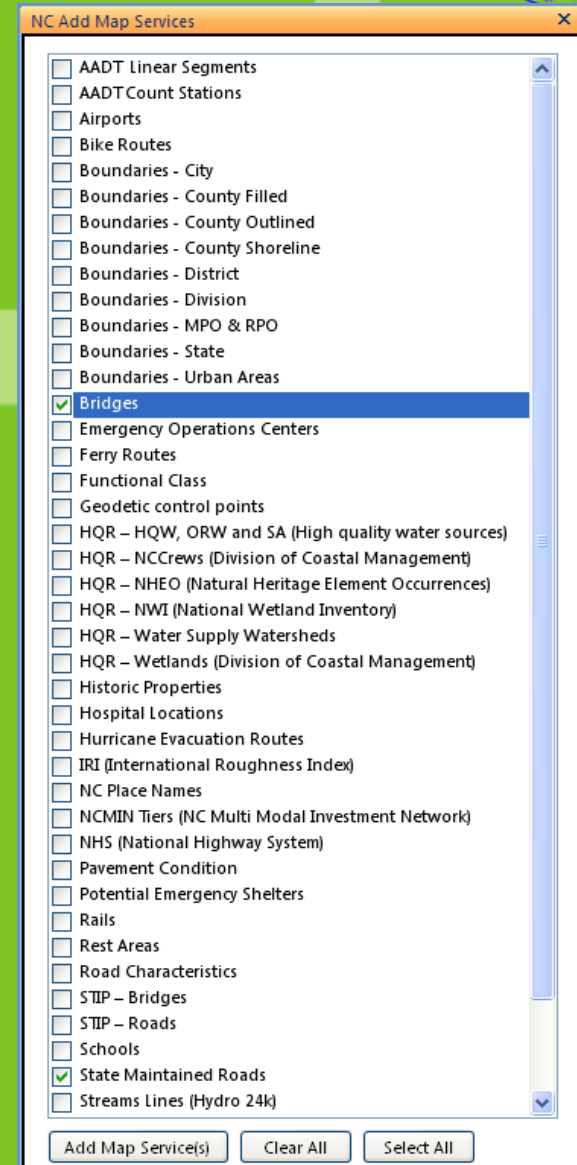
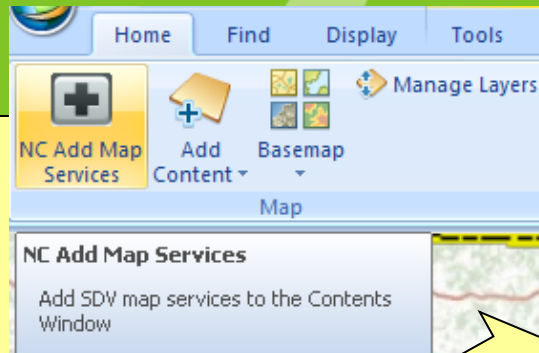
# SDV Training

1. NC Add Map Services

2. Click box for layers of interest

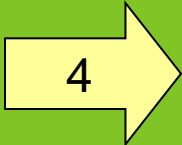
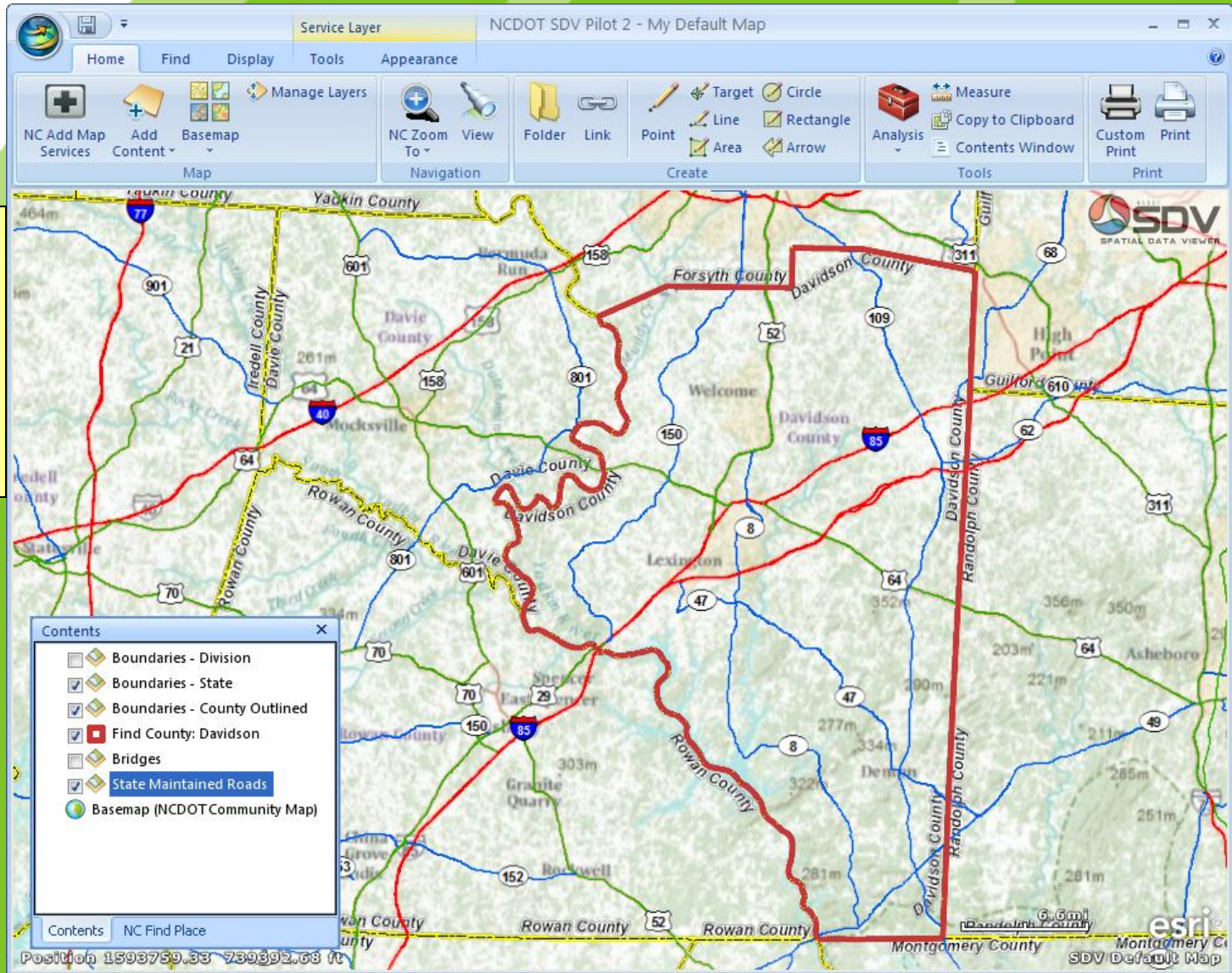
3. Click Add Map Service(s) button

4. Click the map service checkbox in the Contents Window (con't on next slide)



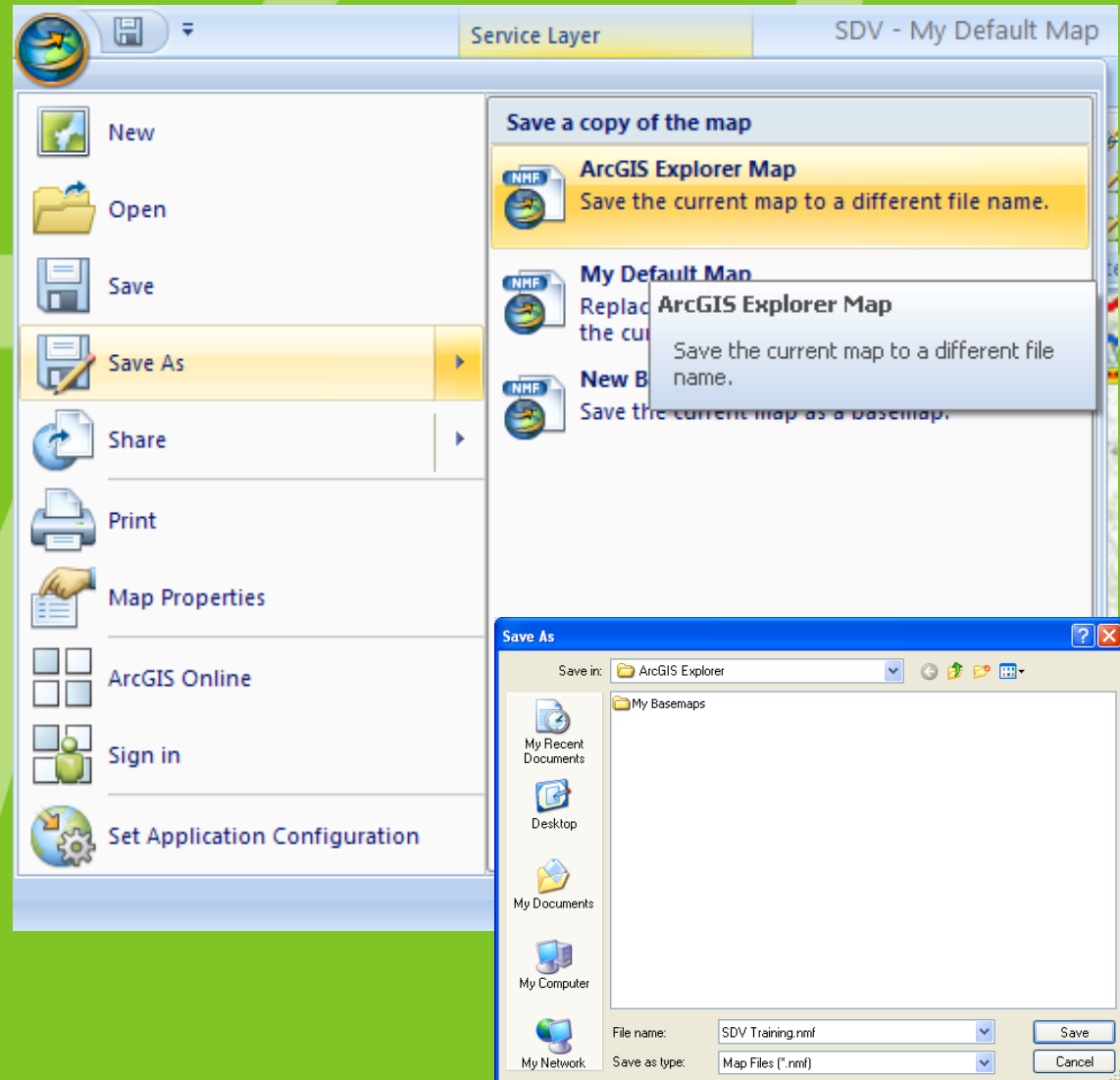
# SDV Training

4. Click the map service checkbox in the Contents Window




## Save Map


1. Click AGX Icon
2. Click Save As
3. Click ArcGIS Explorer Map
4. Navigate to folder
5. Type name
6. Map Name Changes




## About ArcGIS Explorer Options

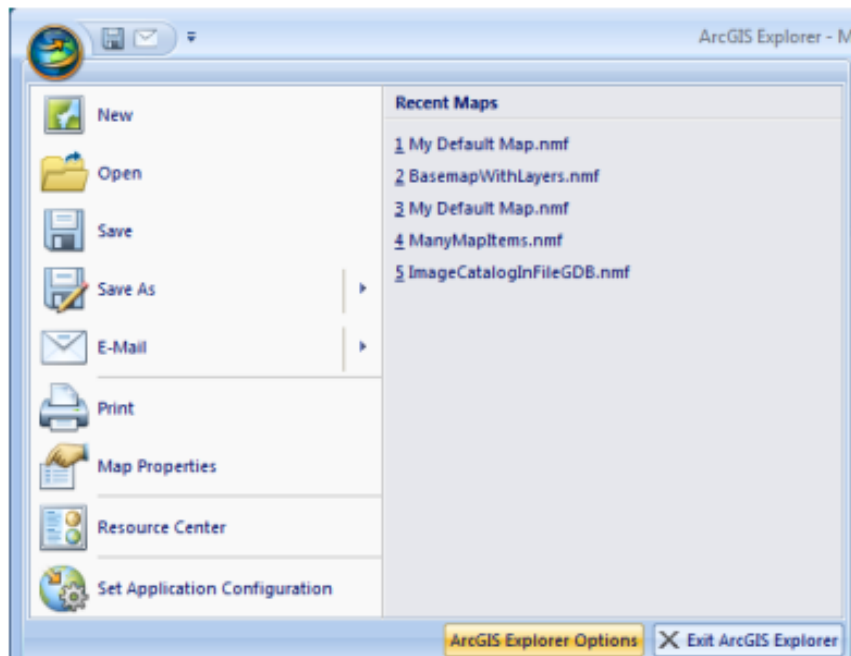
 Feedback

 E-mail this topic

 Print this topic

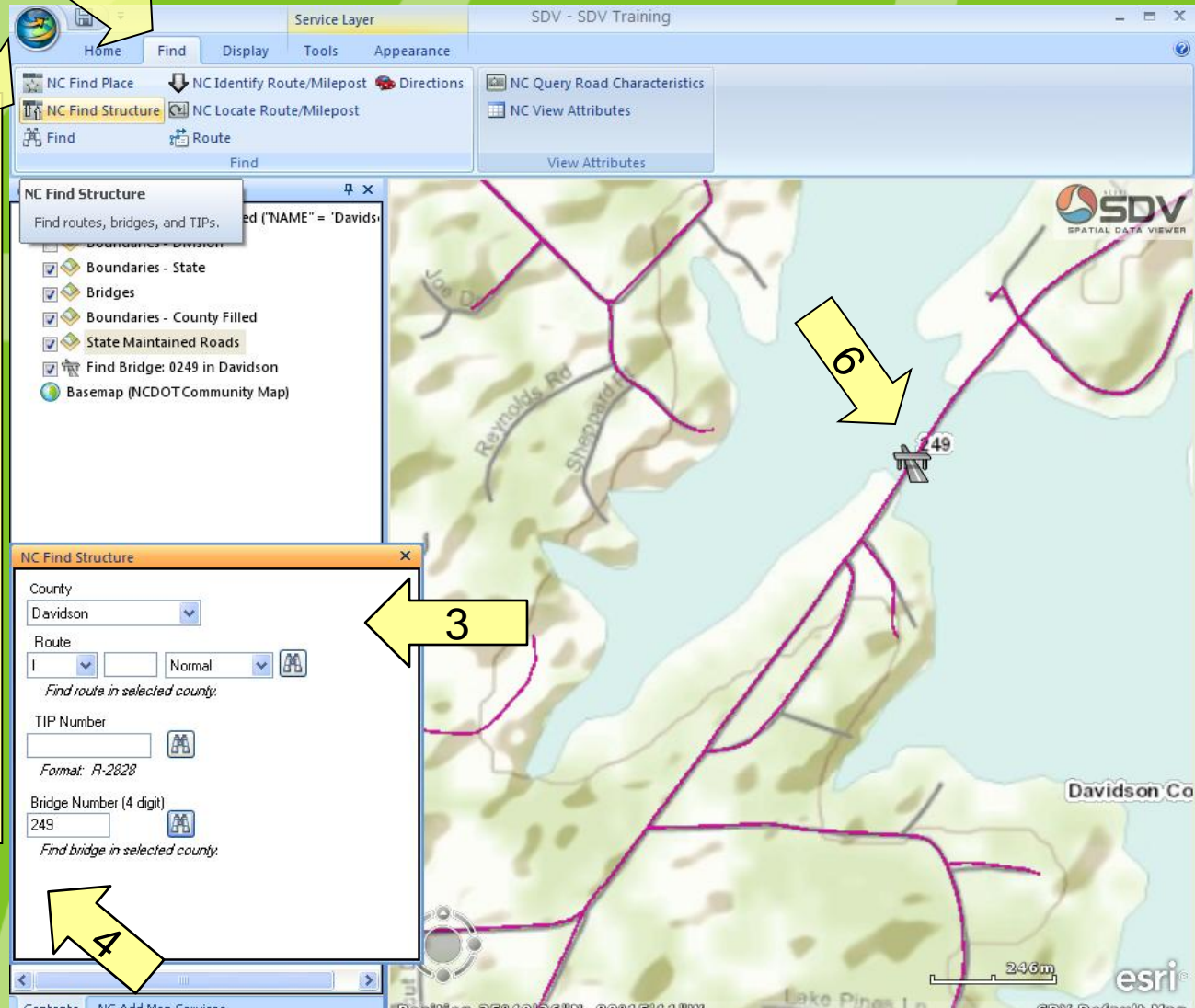
You can set options that apply to the application and are retained from session to session.

To display the *ArcGIS Explorer Options* dialog, click the *ArcGIS Explorer Button*  , then click the *ArcGIS Explorer Options* button:



# SDV Training

1. Click Find Tab
2. NC Find Structure
3. Enter County
4. Enter Bridge Number
5. Click Find symbol
6. Point is symbolized on map
7. Double Click to zoom to result

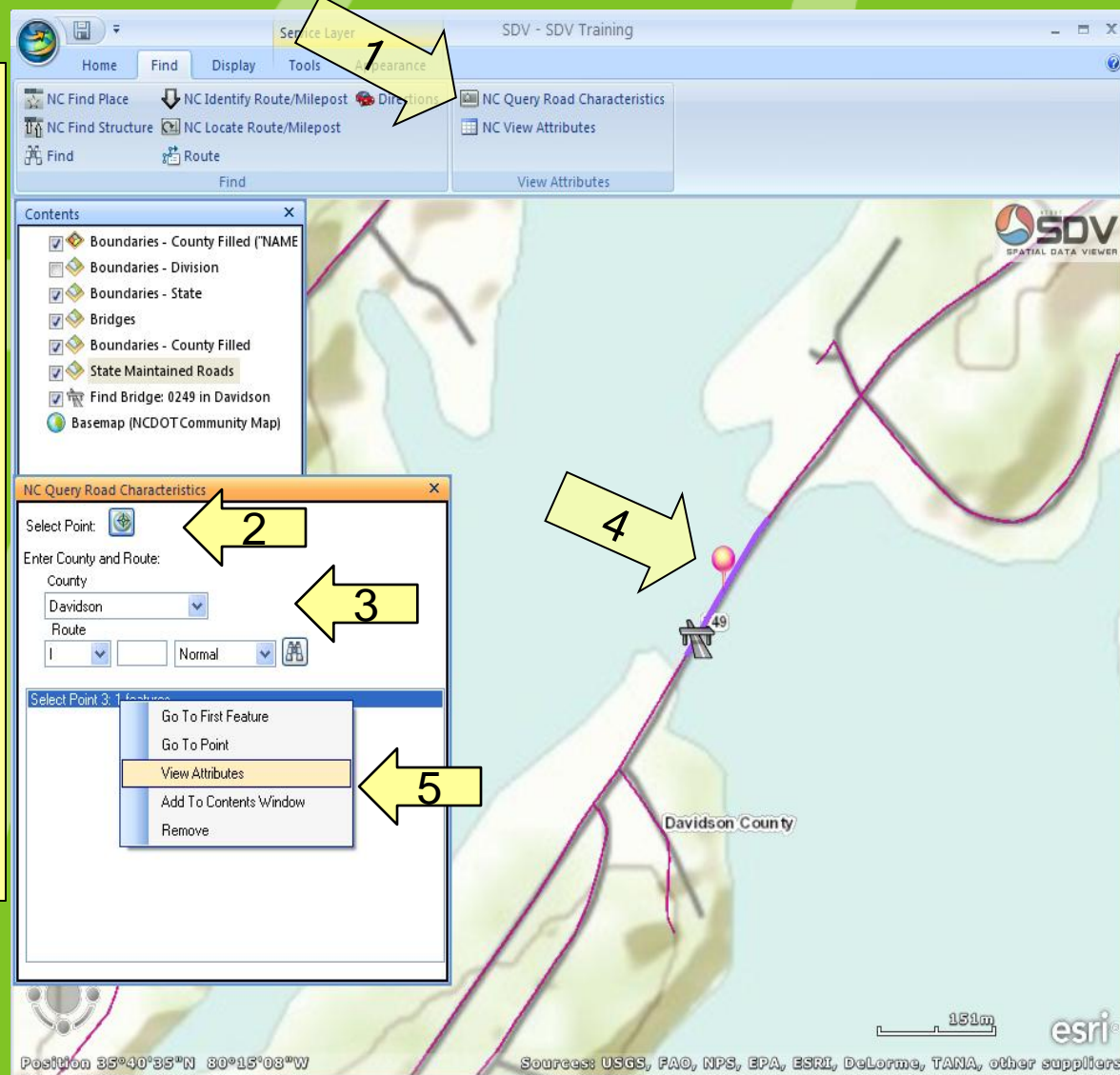


The screenshot shows the SDV - SDV Training application window. The 'Find' tab is active, and the 'NC Find Structure' tool is selected. A search panel is open, showing the following settings: County: Davidson; Route: I; TIP Number: (empty); Bridge Number (4 digit): 249. The search results are displayed on the map as a purple line with a bridge symbol labeled '249'. A yellow arrow points to the bridge symbol on the map, and another yellow arrow points to the 'Find Bridge' search field in the search panel.

# SDV Training

## View Road Attributes

1. Click NC Query Road Characteristics
2. Select Point
3. Enter Davidson
4. Click on Road where bridge collapsed
5. When feature is selected, right click feature, View Attributes

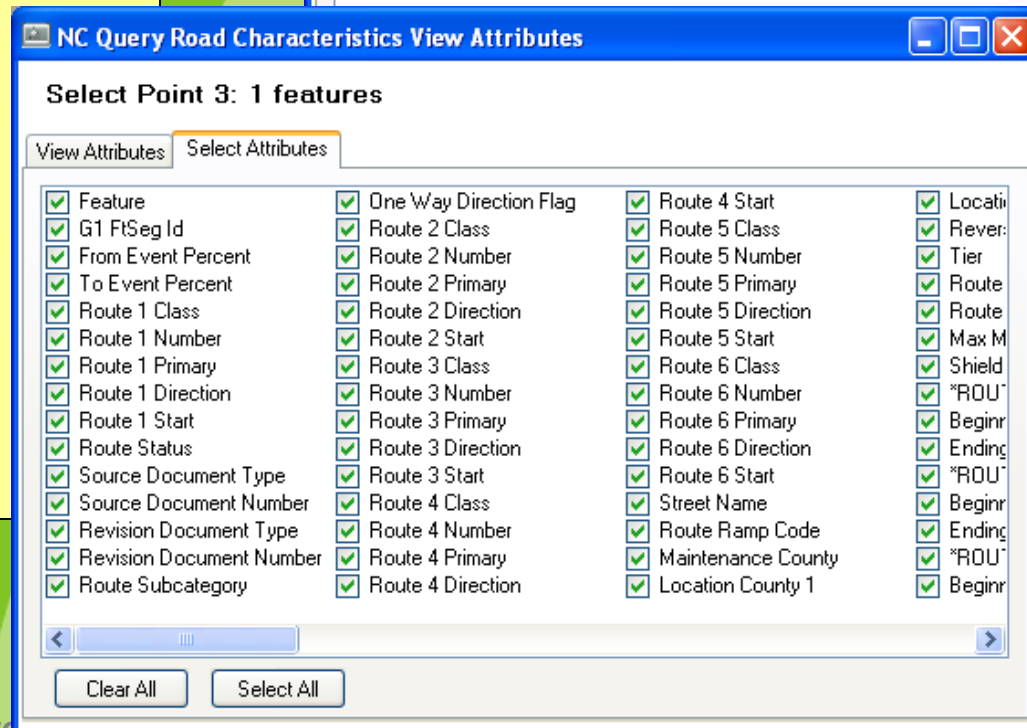
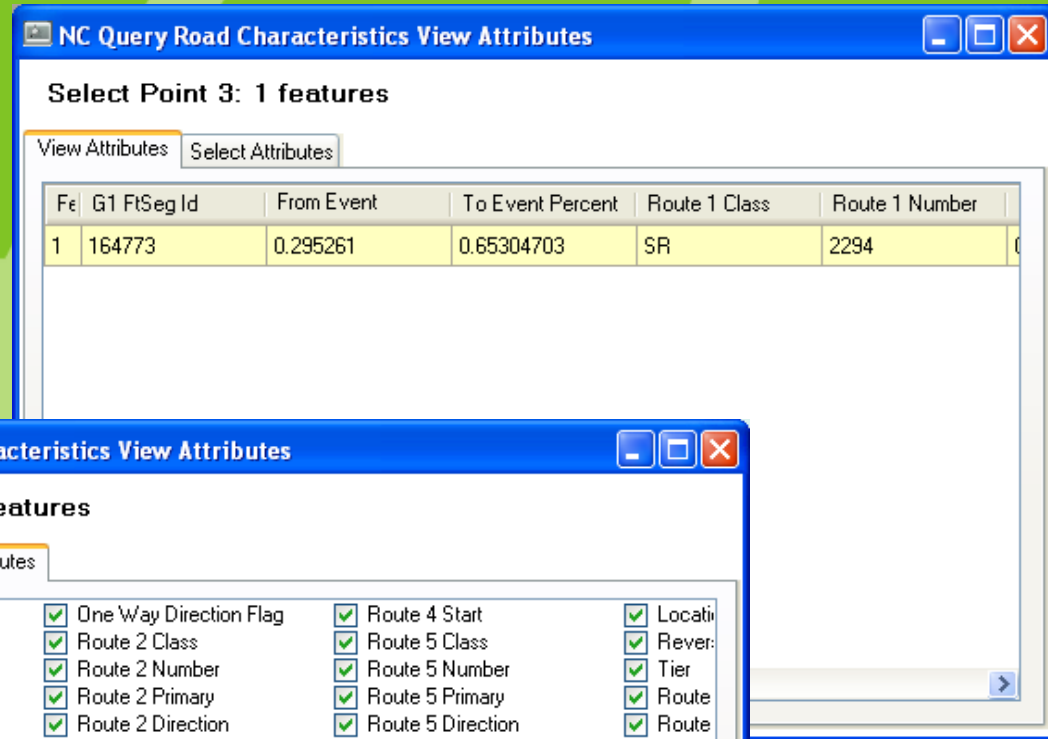


The screenshot shows the SDV - SDV Training application window. The 'Tools' menu is open, and 'NC Query Road Characteristics' is highlighted with a yellow arrow labeled '1'. The 'Contents' window on the left shows various layers, including 'Boundaries - County Filled', 'Bridges', and 'State Maintained Roads'. The 'NC Query Road Characteristics' dialog box is open, with 'Select Point' highlighted by a yellow arrow labeled '2'. The 'Enter County and Route' section shows 'Davidson' selected in the 'County' dropdown, with a yellow arrow labeled '3' pointing to it. The map shows a road network in Davidson County, with a red pin placed on a road feature, highlighted by a yellow arrow labeled '4'. A context menu is open over the pin, with 'View Attributes' highlighted by a yellow arrow labeled '5'. The map also shows a scale bar for 151m and the ESRI logo.

# SDV Training

## View Attributes

- Feature Selected
- Or, Select Attributes from the database and view only fields needed





# SDV Training

## To Query

1. Click Tools Tab
2. Click layer from Contents Window
3. Click Query
4. Click field, operator, and value
5. Click Test
6. Click OK
7. Notice symbology change

The screenshot shows the SDV interface with the following components:

- Service Layer:** SDV - SDV Training
- Contents Window:** Lists layers including 'Boundaries - County Filled', 'Boundaries - Division', 'Boundaries - State', 'Bridges', 'Boundaries - County Filled', 'State Maintained Roads', 'Find Bridge: 0249 in Davidson', and 'Basemap (NCDOT Community Map)'. The 'State Maintained Roads' layer is selected.
- Query Builder:**
  - Fields:** Route 1 Class - String, Route 1 Number - SmallInteger, Route 1 Primary - SmallInteger, Route 1 Direction - SmallInteger, Route 1 Start - SmallInteger, Length 3D - Double, Route Status - String, Source Document Type - String, Source Document Number - Strir, Revision Document Type - String, Revision Document Number - Str, Route Subcategory - String.
  - Operators:** =, <>, LIKE, >, >=, AND, <, <=, OR, NOT.
  - Value:** 2294
  - Query:** "RTE\_1\_NBR" = 2294
  - Buttons:** Test, Clear, OK, Get unique.
  - Status:** 36 features match the query.
- Map:** Shows Davidson County with a highlighted road. A scale bar indicates 151m. Position coordinates are 35°40'33"N 80°14'56"W. Source: NASA, NGA, US.

Click Selected Road

icon pops up

Select SR option

View Attributes

The screenshot shows the SDV - SDV Training application interface. The main map displays a road network in Davidson, NC, with a red road selected. An information popup (i icon) is visible over the selected road. The interface includes a menu bar (Home, Find, Display, Tools, Appearance), a toolbar with various tools (NC Add Map Services, Add Content, Basemap, NC Zoom, View, Folder, Link, Point, Target, Circle, Line, Area, Rectangle, Arrow, Tools, Print, SDV Resource Center, Help), and several panels:

- 9 feature(s) found:** A list of features including "Boundaries - County Filled ('NAME' = Davidson)" and "State Maintained Roads" with sub-items "Secondary Road".
- Contents:** A list of layers including "State Maintained Roads ('RTE\_1\_NBR')", "Boundaries - County Filled ('NAME' = Davidson)", "Boundaries - Division", "Boundaries - State", "Bridges", "Boundaries - County Filled", "State Maintained Roads", "Find Bridge: 0249 in Davidson", and "Basemap (NCDOTCommunity Map)".
- Secondary Road:** A table of attributes for the selected road.

Attribute	Value
Route 1 Class	Secondary Road
Route 1 Number	2294
Route 1 Primary	Normal
Route 1 Direction	Inventory
Route 1 Start	Not start
Length 3D	0.66
Route Status	System
Source Document Type	Not-Verified
Source Document Number	Null
Revision Document Type	Not-Verified
Revision Document Number	Null
Route Subcategory	2-Lane Undivided
One Way Direction Flag	Both directions
Route 2 Class	NA
Route 2 Number	0
Route 2 Primary	NA
Route 2 Direction	NA
Route 2 Start	NA
Route 3 Class	NA
Route 3 Number	0
Route 3 Primary	NA
Route 3 Direction	NA
Route 3 Start	NA
Route 4 Class	NA
Route 4 Number	0
Route 4 Primary	NA
Route 4 Direction	NA
Route 4 Start	NA
Route 5 Class	NA

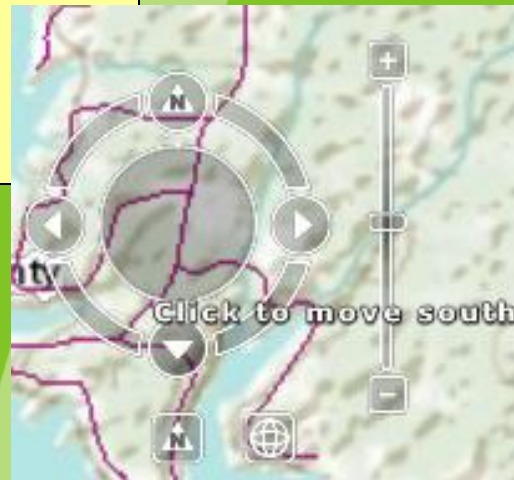
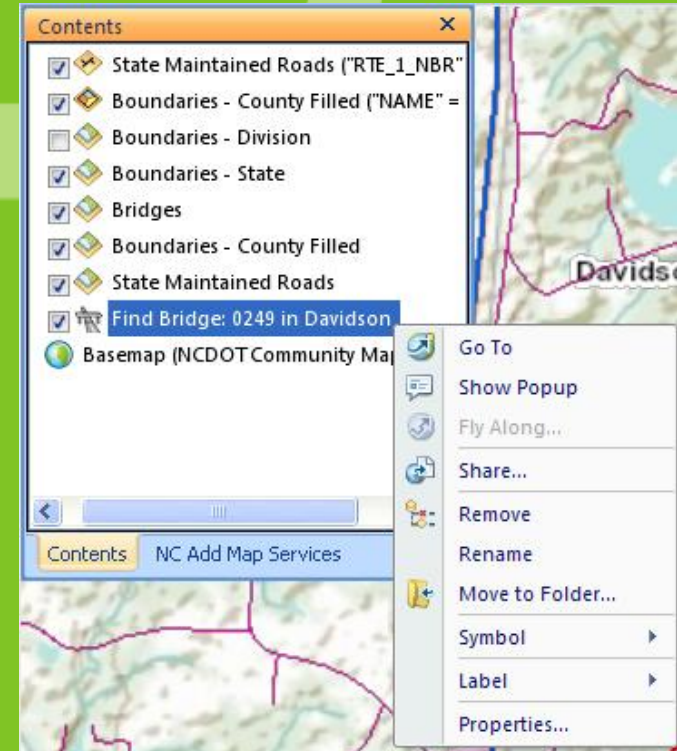
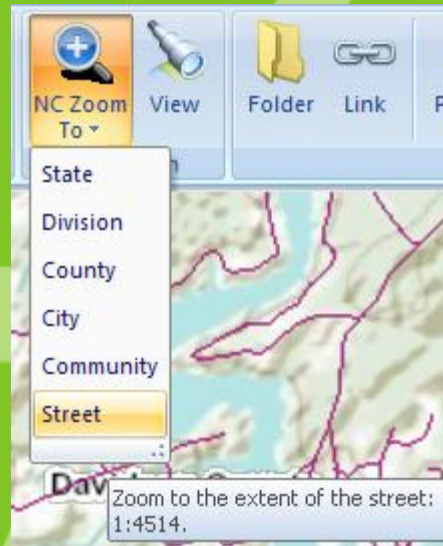
Position 35°40'39"N 80°14'39"W  
Sources: NASA, NGA, USGS

# SDV Training

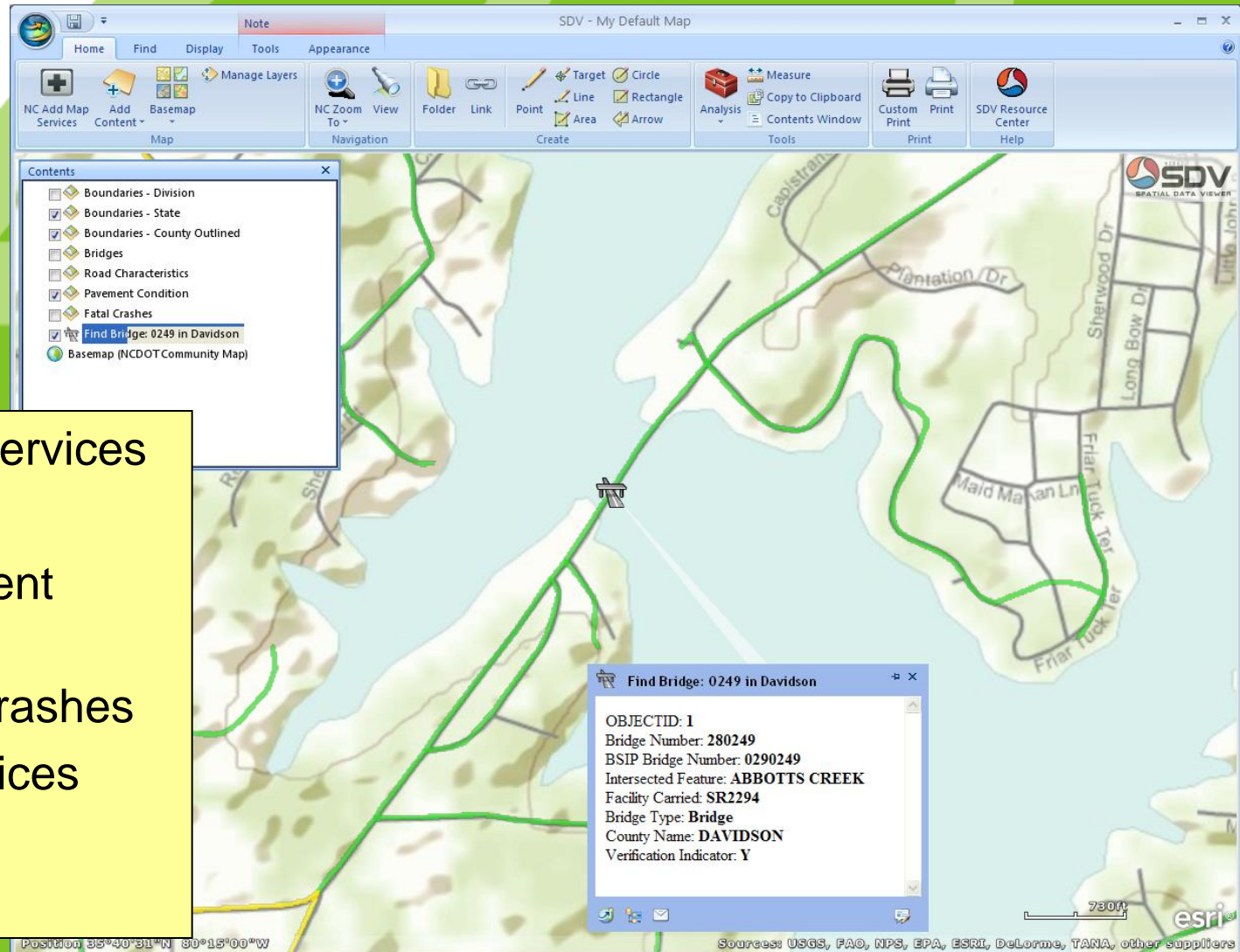


## Zoom Tools

1. NC Zoom To Street
2. Mouse -Scroll
3. Go To option
4. Orientation Indicator



# SDV Training



SDV - My Default Map

Home Find Display Tools Appearance

NC Add Map Services Add Content Basemap Map

NC Zoom To View Navigation

Folder Link

Create Point Line Area Arrow Target Circle Line Rectangle

Analysis Measure Copy to Clipboard Contents Window

Custom Print Print SDV Resource Center Help

Contents

- Boundaries - Division
- Boundaries - State
- Boundaries - County Outlined
- Bridges
- Road Characteristics
- Pavement Condition
- Fatal Crashes
- Find Bridge: 0249 in Davidson
- Basemap (NCDOT Community Map)

Find Bridge: 0249 in Davidson

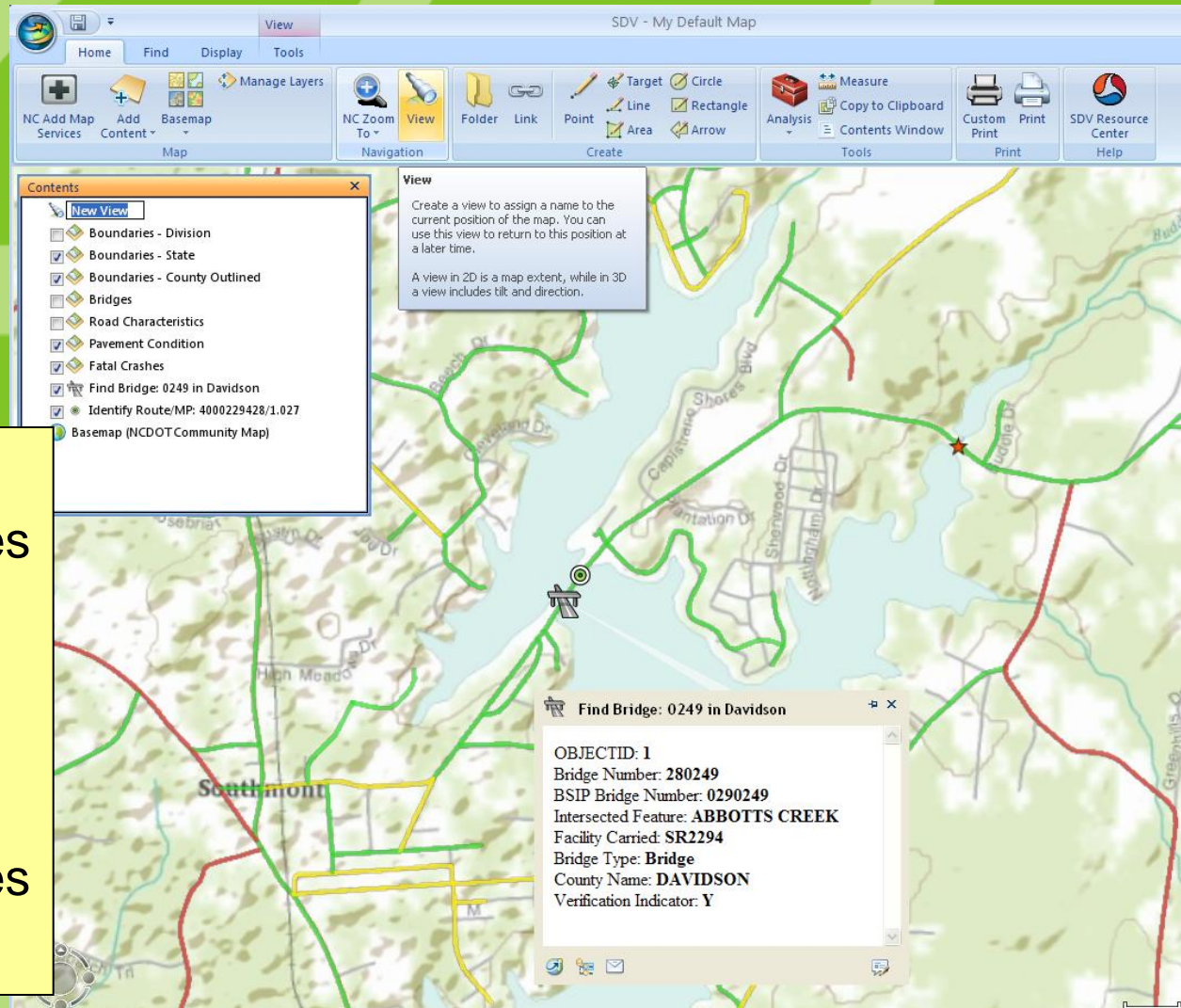
OBJECTID: 1  
 Bridge Number: 280249  
 BSIP Bridge Number: 0290249  
 Intersected Feature: ABBOTTS CREEK  
 Facility Carried: SR2294  
 Bridge Type: Bridge  
 County Name: DAVIDSON  
 Verification Indicator: Y

Position 35°30'31"N 80°15'00"W

Sources: USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers

## Add more Map Services

1. Home tab
2. Select Pavement Condition
3. Select Fatal Crashes
4. Add Map Services



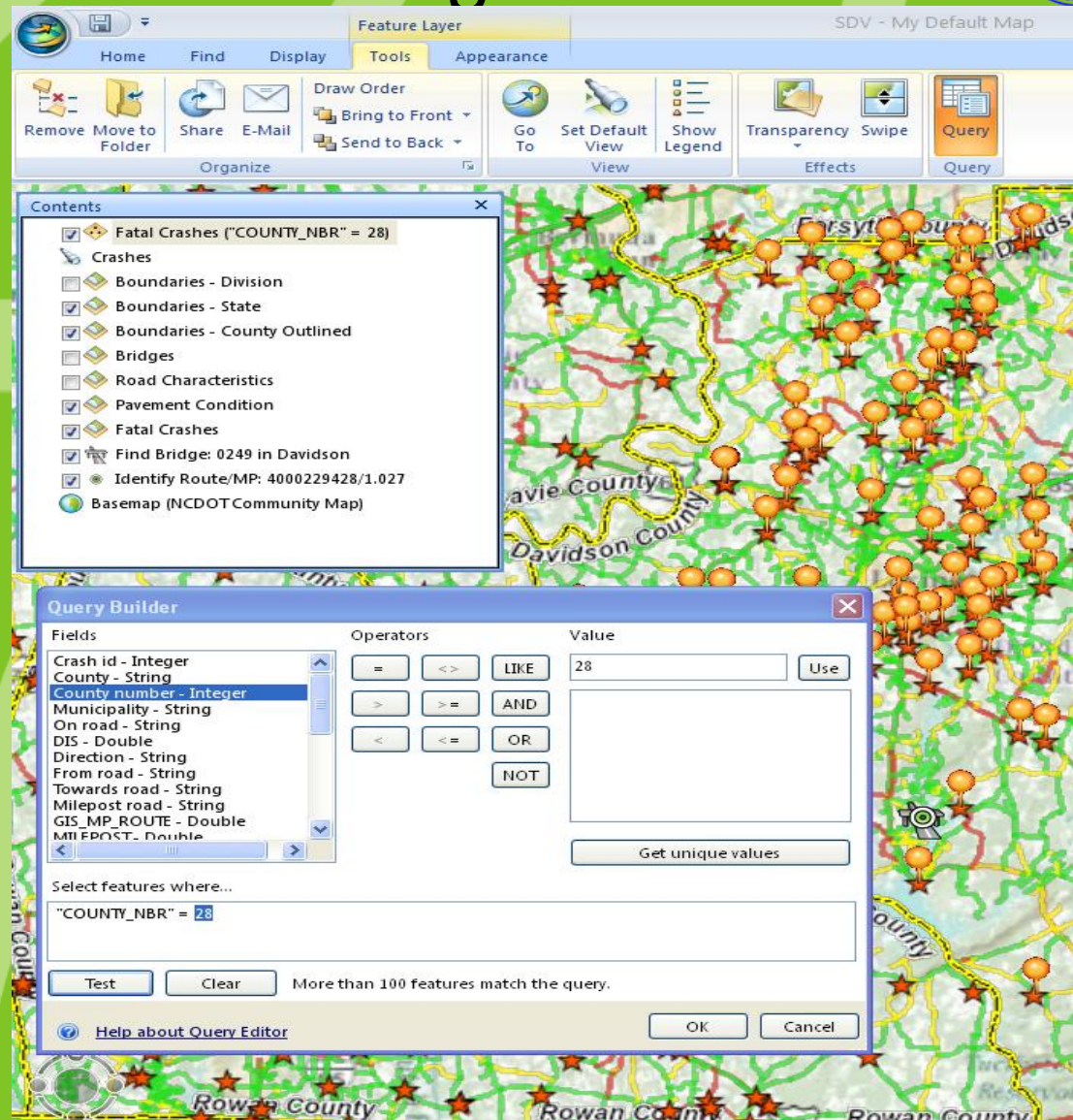
Perform more analysis

1. Click on Fatal Crashes
2. Click on Pavement Condition
3. Select View in Navigation Group
4. Save View as Crashes

# SDV Training

Perform more analysis

1. Click on Fatal Crashes
2. Click Query in Tools tab
3. Write statement
4. Test and say OK

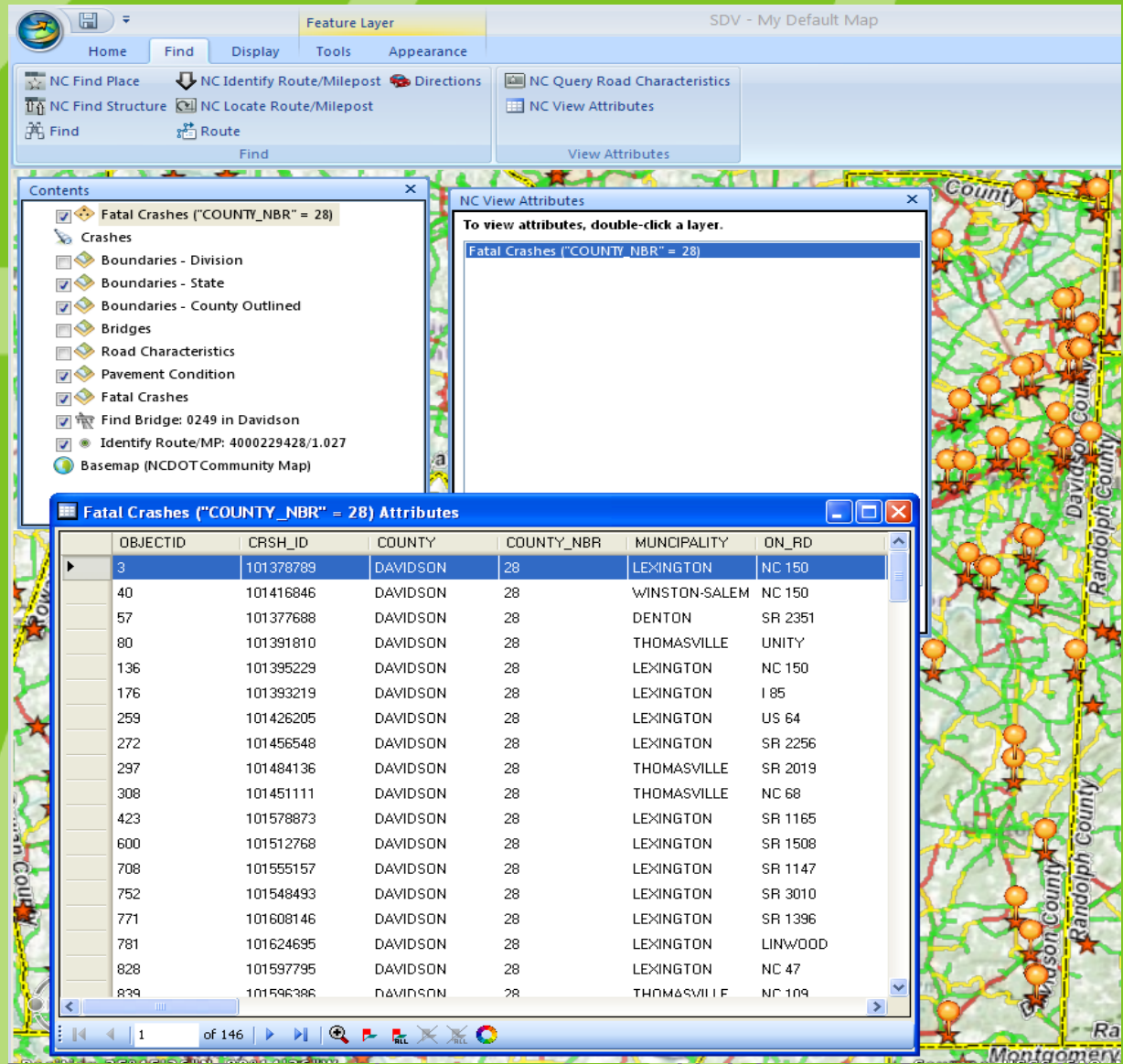


The screenshot shows the SDV software interface. The 'Contents' panel on the left lists several layers, with 'Fatal Crashes ("COUNTY\_NBR" = 28)' selected. The 'Query Builder' dialog is open, showing a list of fields on the left, including 'County number - Integer'. The 'Operators' section shows the '=' operator selected. The 'Value' field contains '28'. The 'Test' button is highlighted, and a message at the bottom indicates 'More than 100 features match the query.' The background map shows a network of roads with orange markers representing fatal crashes in Davidson County.

# SDV Training

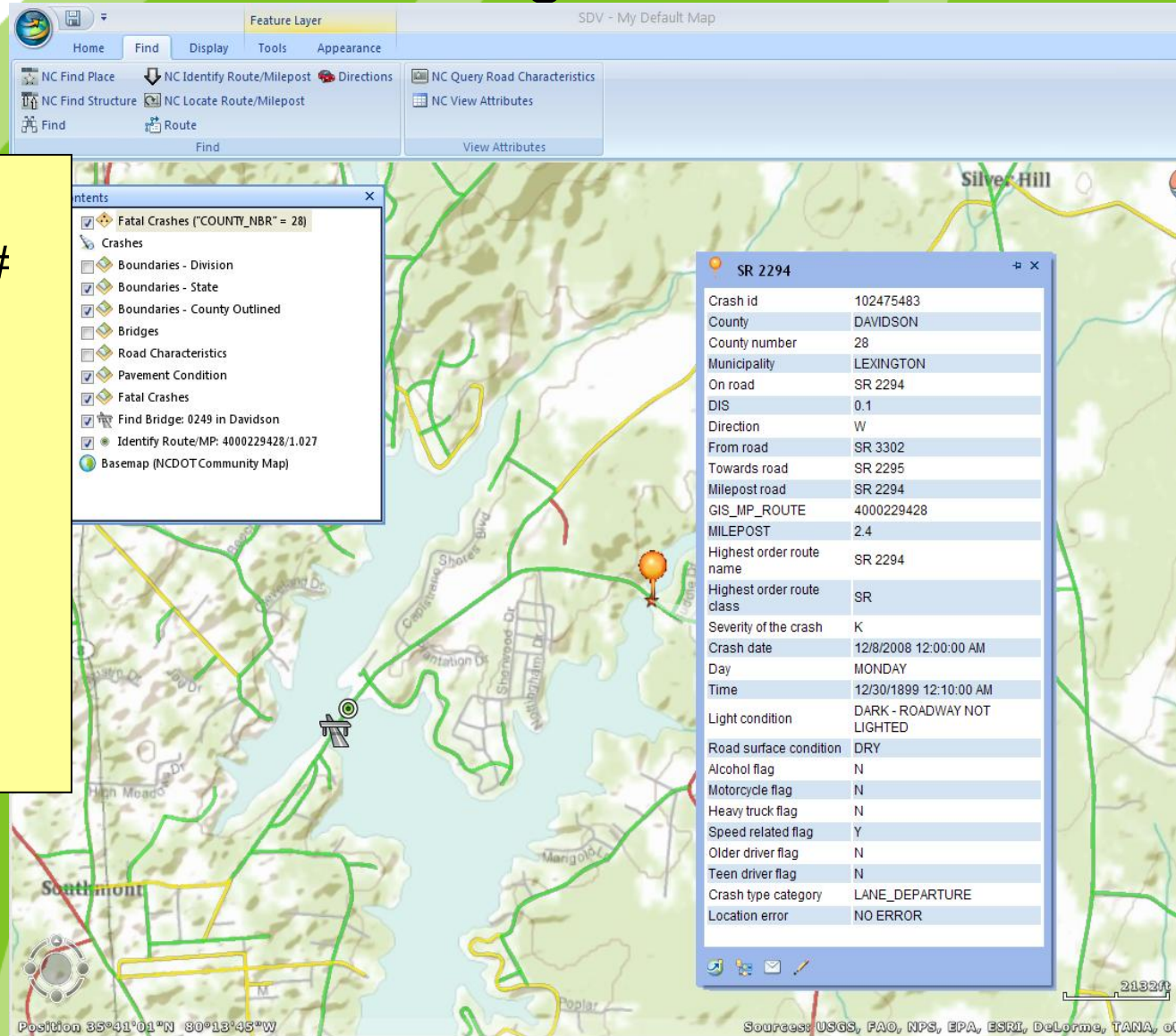
## Review Attributes

1. Click Find tab
2. Double-click the results from the query
3. Attributes table becomes available
4. Have any fatal crashes occurred on SR-2294?



The screenshot shows the SDV interface with the 'Find' tab active. The 'Contents' pane shows a list of layers, with 'Fatal Crashes ("COUNTY\_NBR" = 28)' selected. The 'NC View Attributes' pane shows a table of attributes for the selected layer. The 'Fatal Crashes ("COUNTY\_NBR" = 28) Attributes' table is displayed below.

OBJECTID	CRSH_ID	COUNTY	COUNTY_NBR	MUNICIPALITY	ON_RD
3	101378789	DAVIDSON	28	LEXINGTON	NC 150
40	101416846	DAVIDSON	28	WINSTON-SALEM	NC 150
57	101377688	DAVIDSON	28	DENTON	SR 2351
80	101391810	DAVIDSON	28	THOMASVILLE	UNITY
136	101395229	DAVIDSON	28	LEXINGTON	NC 150
176	101393219	DAVIDSON	28	LEXINGTON	I 85
259	101426205	DAVIDSON	28	LEXINGTON	US 64
272	101456548	DAVIDSON	28	LEXINGTON	SR 2256
297	101484136	DAVIDSON	28	THOMASVILLE	SR 2019
308	101451111	DAVIDSON	28	THOMASVILLE	NC 68
423	101578873	DAVIDSON	28	LEXINGTON	SR 1165
600	101512768	DAVIDSON	28	LEXINGTON	SR 1508
708	101555157	DAVIDSON	28	LEXINGTON	SR 1147
752	101548493	DAVIDSON	28	LEXINGTON	SR 3010
771	101608146	DAVIDSON	28	LEXINGTON	SR 1396
781	101624695	DAVIDSON	28	LEXINGTON	LINWOOD
828	101597795	DAVIDSON	28	LEXINGTON	NC 47
839	101596386	DAVIDSON	28	THOMASVILLE	NC 109



**Layers:**

- Fatal Crashes ("COUNTY\_NBR" = 28)
- Crashes
- Boundaries - Division
- Boundaries - State
- Boundaries - County Outlined
- Bridges
- Road Characteristics
- Pavement Condition
- Fatal Crashes
- Find Bridge: 0249 in Davidson
- Identify Route/MP: 4000229428/1.027
- Basemap (NCDOT Community Map)

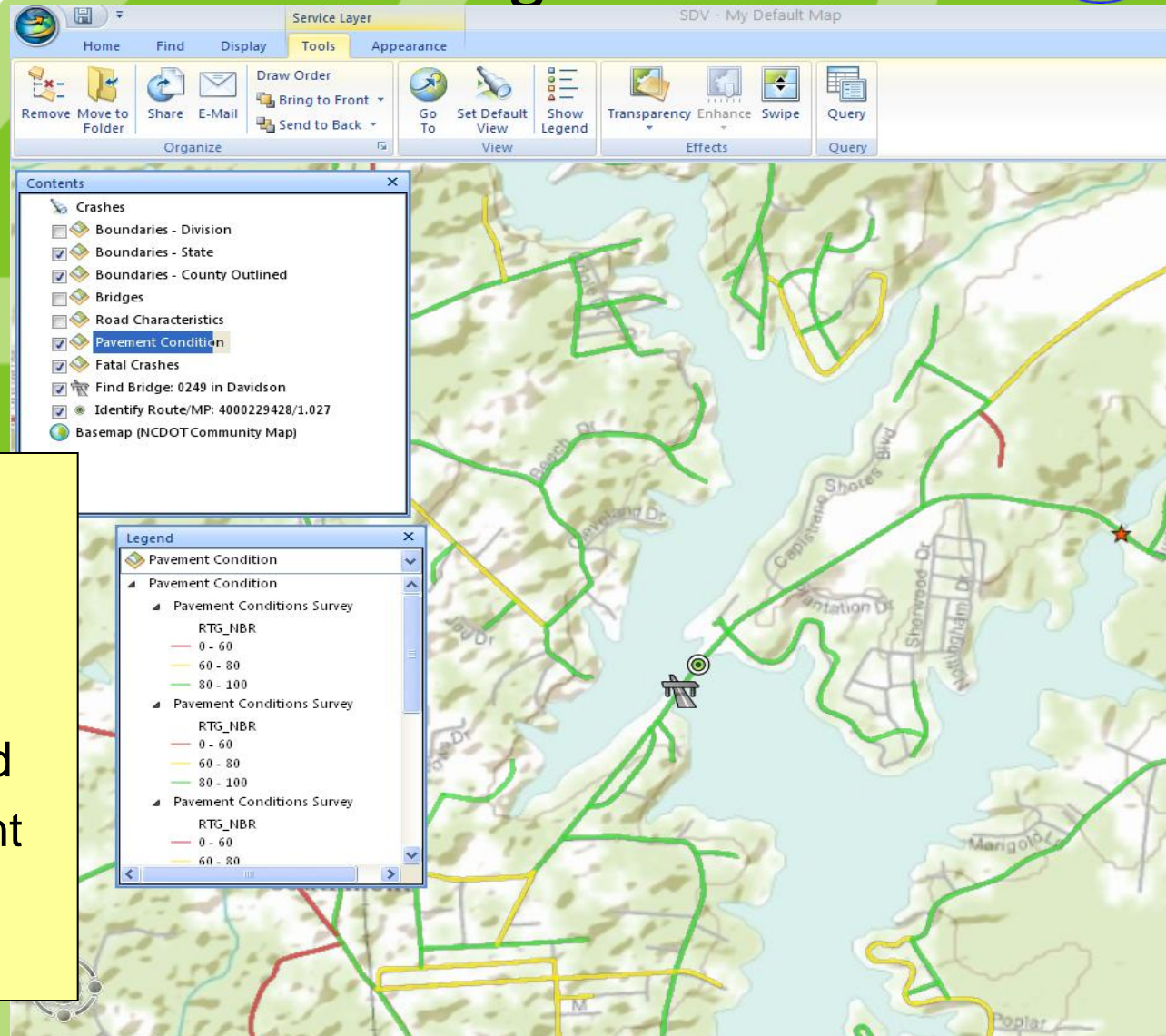
**Attributes Table for SR 2294:**

Crash id	102475483
County	DAVIDSON
County number	28
Municipality	LEXINGTON
On road	SR 2294
DIS	0.1
Direction	W
From road	SR 3302
Towards road	SR 2295
Milepost road	SR 2294
GIS_MP_ROUTE	4000229428
MILEPOST	2.4
Highest order route name	SR 2294
Highest order route class	SR
Severity of the crash	K
Crash date	12/8/2008 12:00:00 AM
Day	MONDAY
Time	12/30/1899 12:10:00 AM
Light condition	DARK - ROADWAY NOT LIGHTED
Road surface condition	DRY
Alcohol flag	N
Motorcycle flag	N
Heavy truck flag	N
Speed related flag	Y
Older driver flag	N
Teen driver flag	N
Crash type category	LANE_DEPARTURE
Location error	NO ERROR

1. Zoom in to bridge # 249
2. Double-click the closest fatal accident symbol
3. Attributes table becomes available
4. Was this a teen driver?



# SDV Training



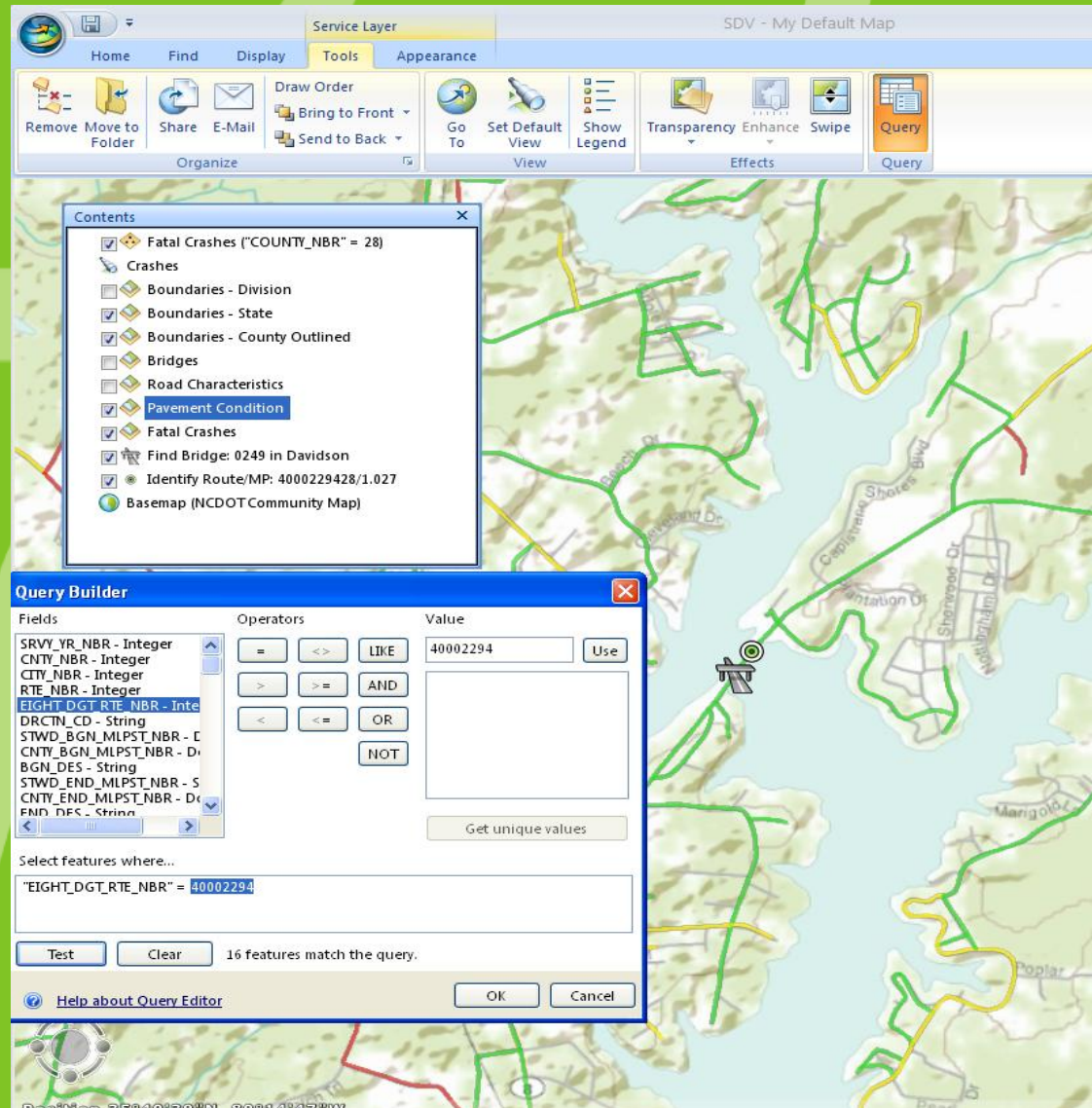
Perform more analysis

1. Click on Pavement Condition
2. Click Tools Tab
3. Select Show Legend
4. Determine Pavement Condition

# SDV Training

Perform more analysis

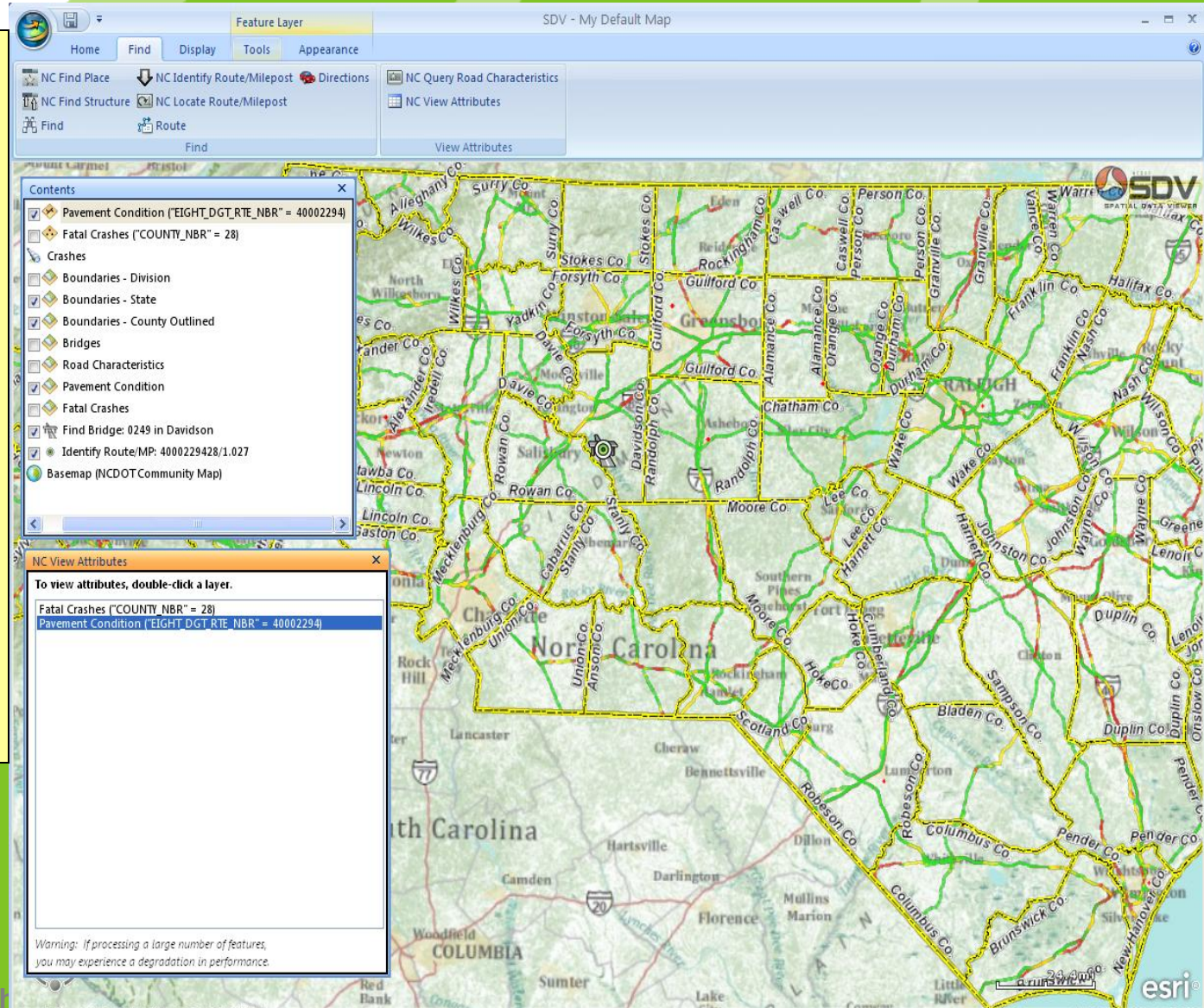
1. Click on Pavement Condition
2. Click Tools Tab
3. Query
4. Use the EIGHT\_DGT\_RTE\_NMR to write SQL (hint – the number is already in Contents Window)
5. Click Use,
6. Click Test
7. Click OK



The screenshot shows the SDV - My Default Map interface. The 'Contents' window is open, listing layers such as 'Fatal Crashes ("COUNTY\_NBR" = 28)', 'Crashes', 'Boundaries - Division', 'Boundaries - State', 'Boundaries - County Outlined', 'Bridges', 'Road Characteristics', 'Pavement Condition', 'Fatal Crashes', 'Find Bridge: 0249 in Davidson', and 'Identify Route/MP: 4000229428/1,027'. The 'Pavement Condition' layer is highlighted. The 'Query Builder' window is also open, showing a list of fields on the left, including 'EIGHT\_DGT\_RTE\_NMR - Integer'. The 'Operators' section shows the '=' operator selected. The 'Value' field contains '40002294'. The 'Select features where...' field contains the query: '"EIGHT\_DGT\_RTE\_NMR" = 40002294'. The 'Test' button is highlighted, and the status bar indicates '16 features match the query.' The 'OK' button is also visible.

## Map Zooms out – Why?

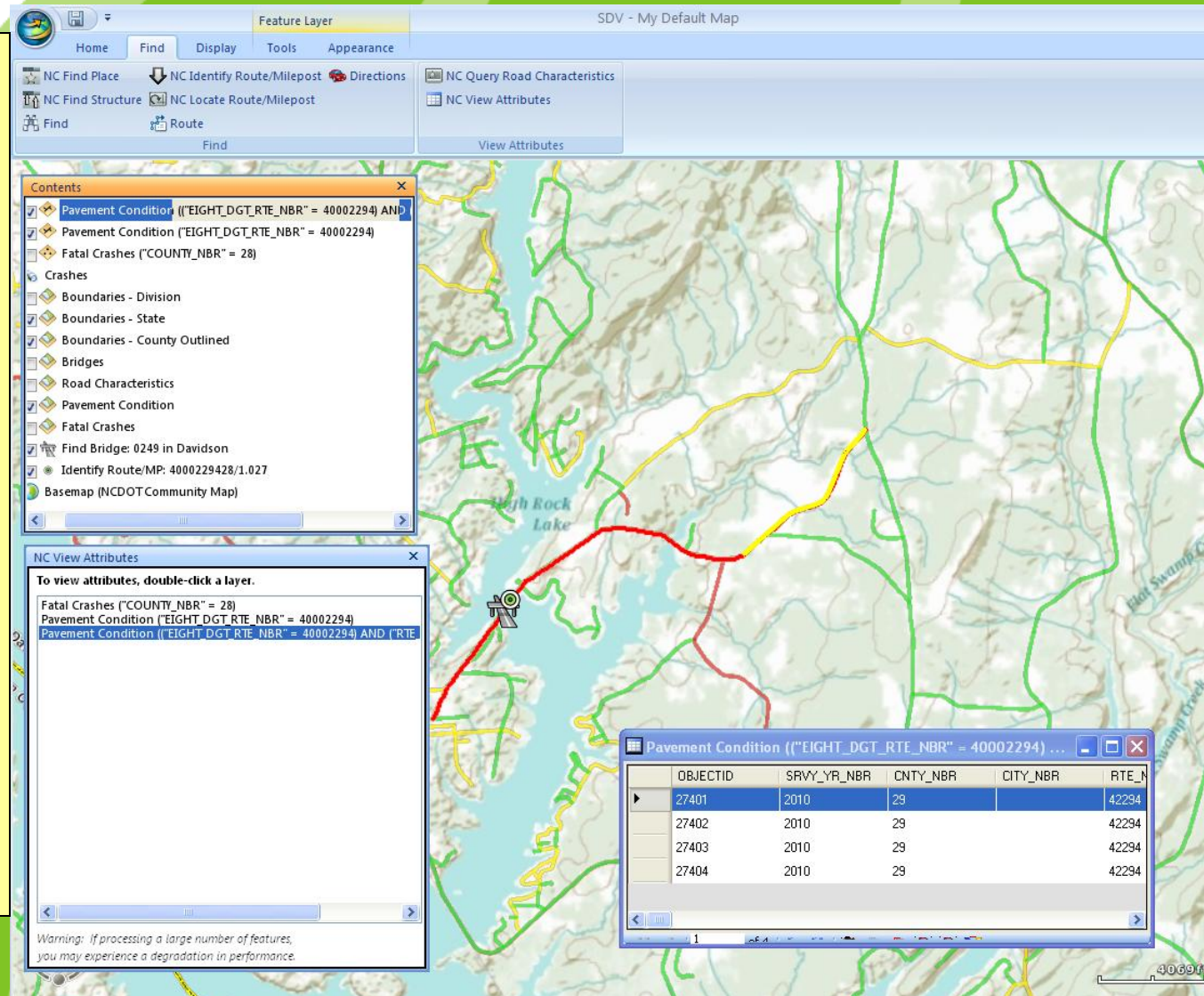
1. Click on Find
2. Click NC View Attributes
3. Double-Click Pavement Condition
4. Notice the CNTY\_NBR field



The screenshot shows the SDV (Spatial Data Viewer) interface. The main window displays a map of North Carolina with various layers overlaid. The 'Contents' panel on the left lists several layers, including 'Pavement Condition', 'Fatal Crashes', 'Boundaries - Division', 'Boundaries - State', 'Boundaries - County Outlined', 'Bridges', 'Road Characteristics', and 'Basemap'. The 'NC View Attributes' panel is open, showing a list of attributes for the selected layer, with 'CNTY\_NBR' highlighted. The 'Find' toolbar is visible at the top, and the 'NC View Attributes' toolbar is also present. The map shows county boundaries and various road types, with a zoomed-out view of the state.

Query the query

1. Click on Pavement condition results
2. Find Tab, Query
3. Use RTE\_ID and string
4. Use & Test
5. Click Find
6. Double-click NC View Attributes
7. Examine results- Symbology & data

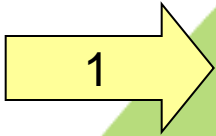


The screenshot shows the SDV software interface with a map of North Carolina. The 'Contents' window on the left lists several layers, including 'Pavement Condition' with a query string: `(("EIGHT_DGT_RTE_NBR" = 40002294) AND ("RTE_ID" = 40002294))`. The 'NC View Attributes' window is open, showing a table of results for the selected layer. The table has the following data:

OBJECTID	SRVY_YR_NBR	CNTY_NBR	CITY_NBR	RTE_NBR
27401	2010	29		42294
27402	2010	29		42294
27403	2010	29		42294
27404	2010	29		42294

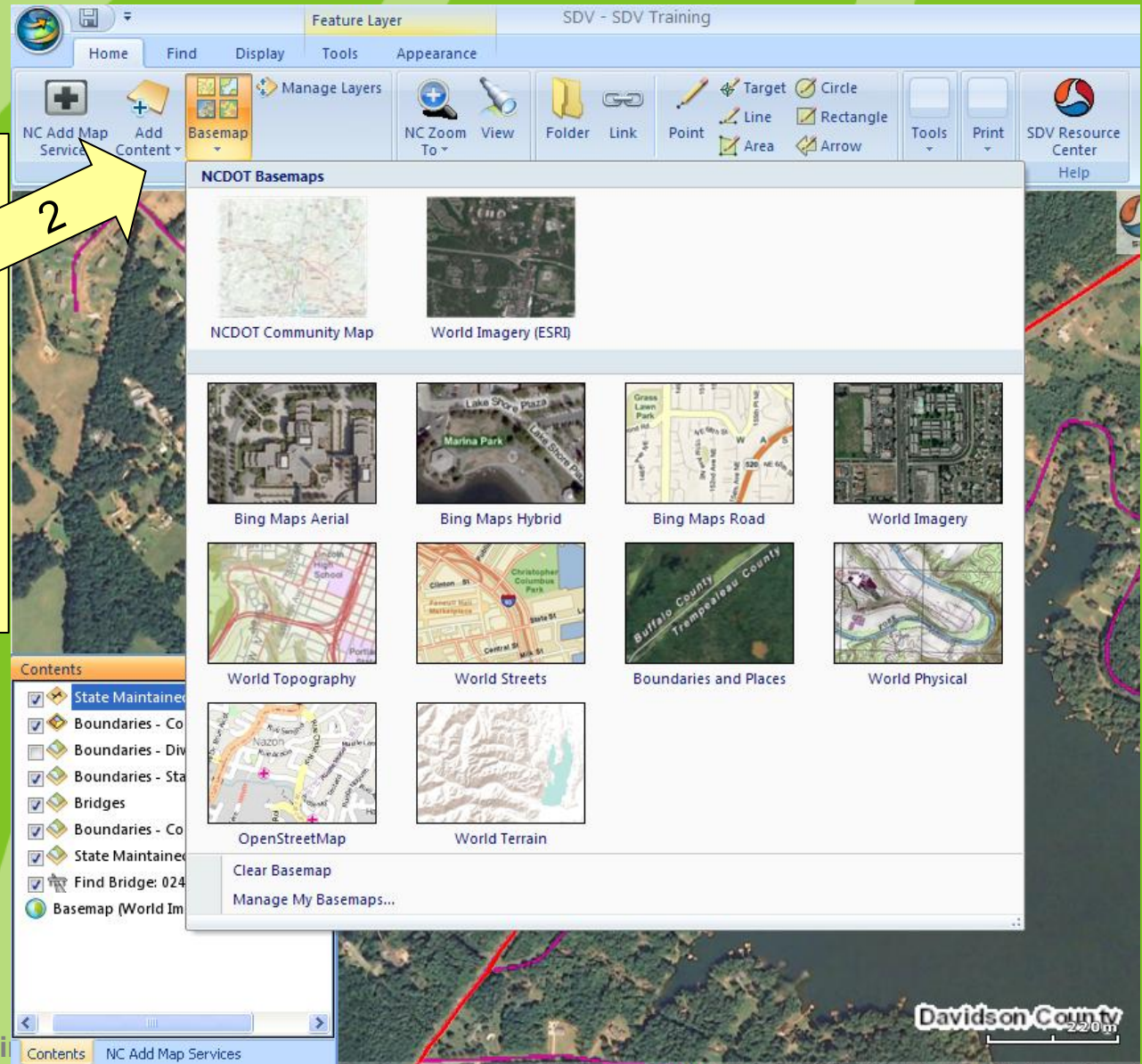
A warning message at the bottom of the 'NC View Attributes' window reads: "Warning: If processing a large number of features, you may experience a degradation in performance."

# SDV Training



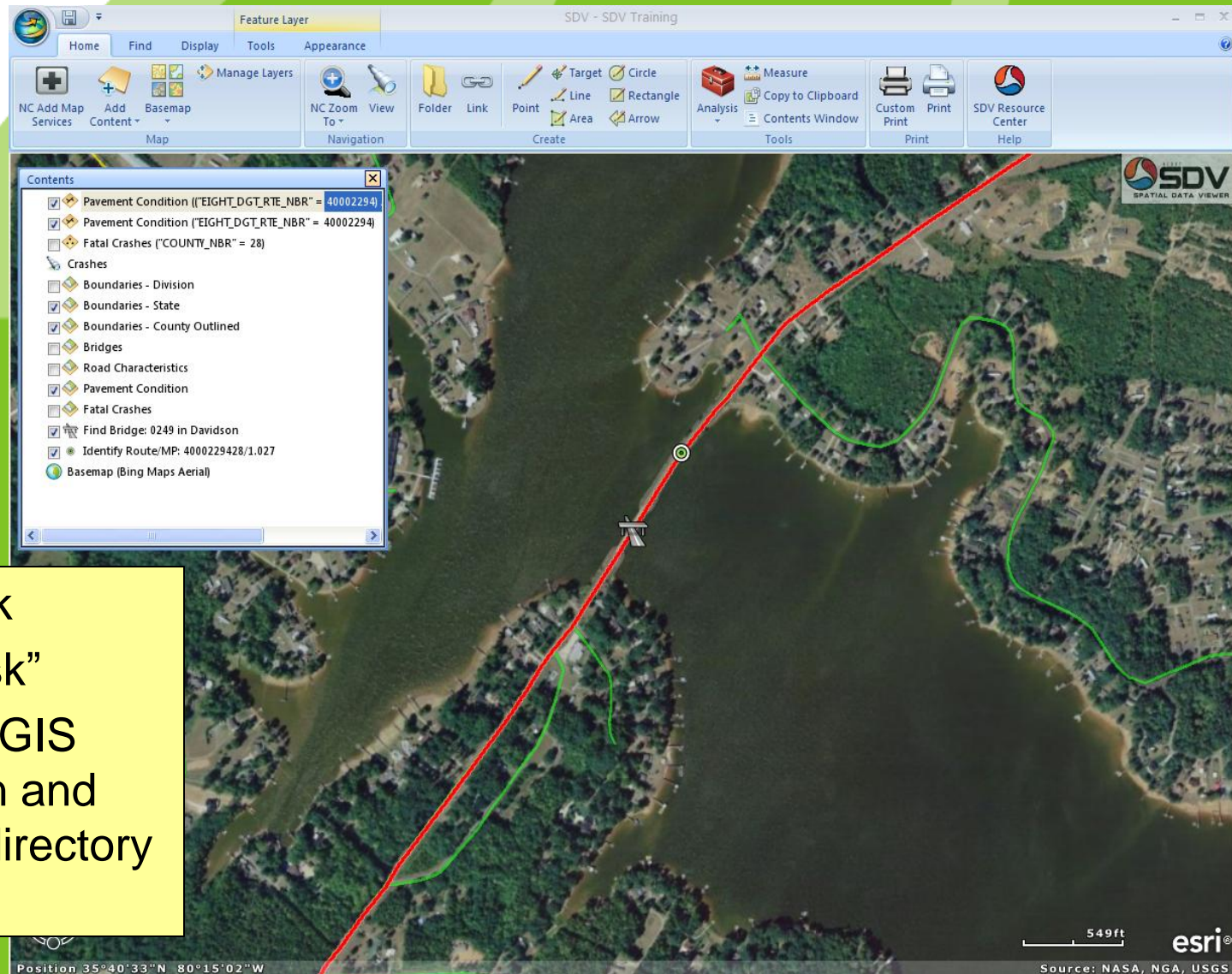
Change Basemap

1. Click Home tab
2. Click Basemap button
3. Click ESRI World Imagery

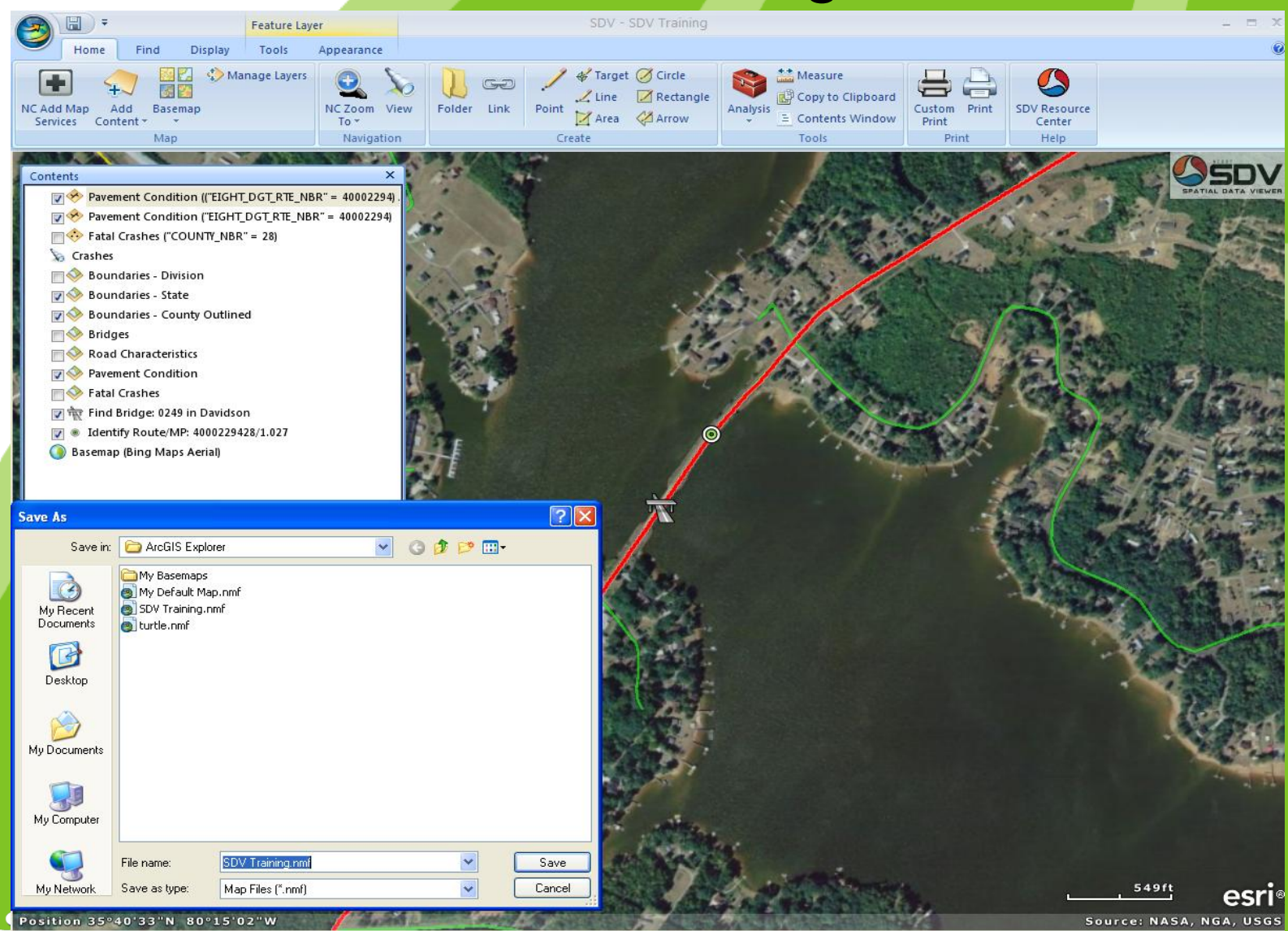
The screenshot shows the SDV software interface with the 'Basemap' menu open. The 'Home' tab is selected in the top menu bar. The 'Basemap' button in the toolbar is highlighted. The 'NCDOT Basemaps' menu is displayed, showing various map styles including 'NCDOT Community Map', 'World Imagery (ESRI)', 'Bing Maps Aerial', 'Bing Maps Hybrid', 'Bing Maps Road', 'World Imagery', 'World Topography', 'World Streets', 'Boundaries and Places', 'World Physical', 'OpenStreetMap', and 'World Terrain'. The 'World Imagery (ESRI)' option is selected. The background map shows a landscape with a red line and a pink line. The 'Contents' panel on the left shows a list of layers, including 'State Maintained', 'Boundaries - Co', 'Boundaries - Div', 'Boundaries - Sta', 'Bridges', 'Boundaries - Co', 'State Maintained', 'Find Bridge: 024', and 'Basemap (World Im'. The 'Davidson County' logo is visible in the bottom right corner of the map area.

# SDV Training

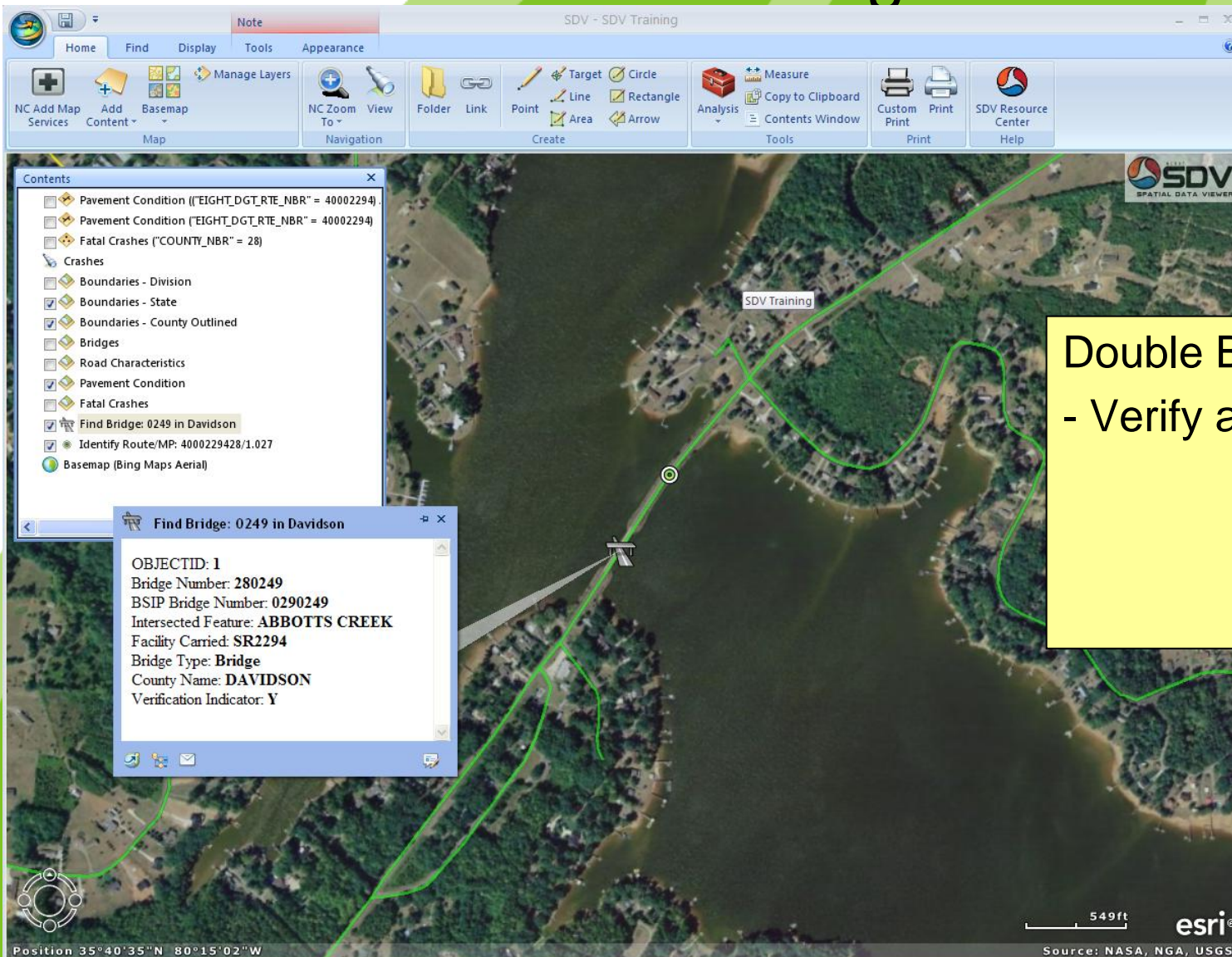


**Save Your Work**  
 1. Click on “disk”  
 2. Click on ArcGIS Explorer icon and navigate to directory

# SDV Training



The screenshot shows the SDV Training application window. The title bar reads "SDV - SDV Training". The interface includes a menu bar with "Home", "Find", "Display", "Tools", and "Appearance". Below the menu is a toolbar with various icons for map management, navigation, and analysis. A "Contents" window is open on the left, listing layers such as "Pavement Condition", "Fatal Crashes", "Boundaries - State", and "Basemap (Bing Maps Aerial)". A "Save As" dialog box is open in the foreground, showing the file path "ArcGIS Explorer" and a list of files including "SDV Training.nmf". The main map area displays an aerial view with a red line and a green line overlaid. A scale bar at the bottom right indicates 549ft. The Esri logo is visible in the bottom right corner of the map area.



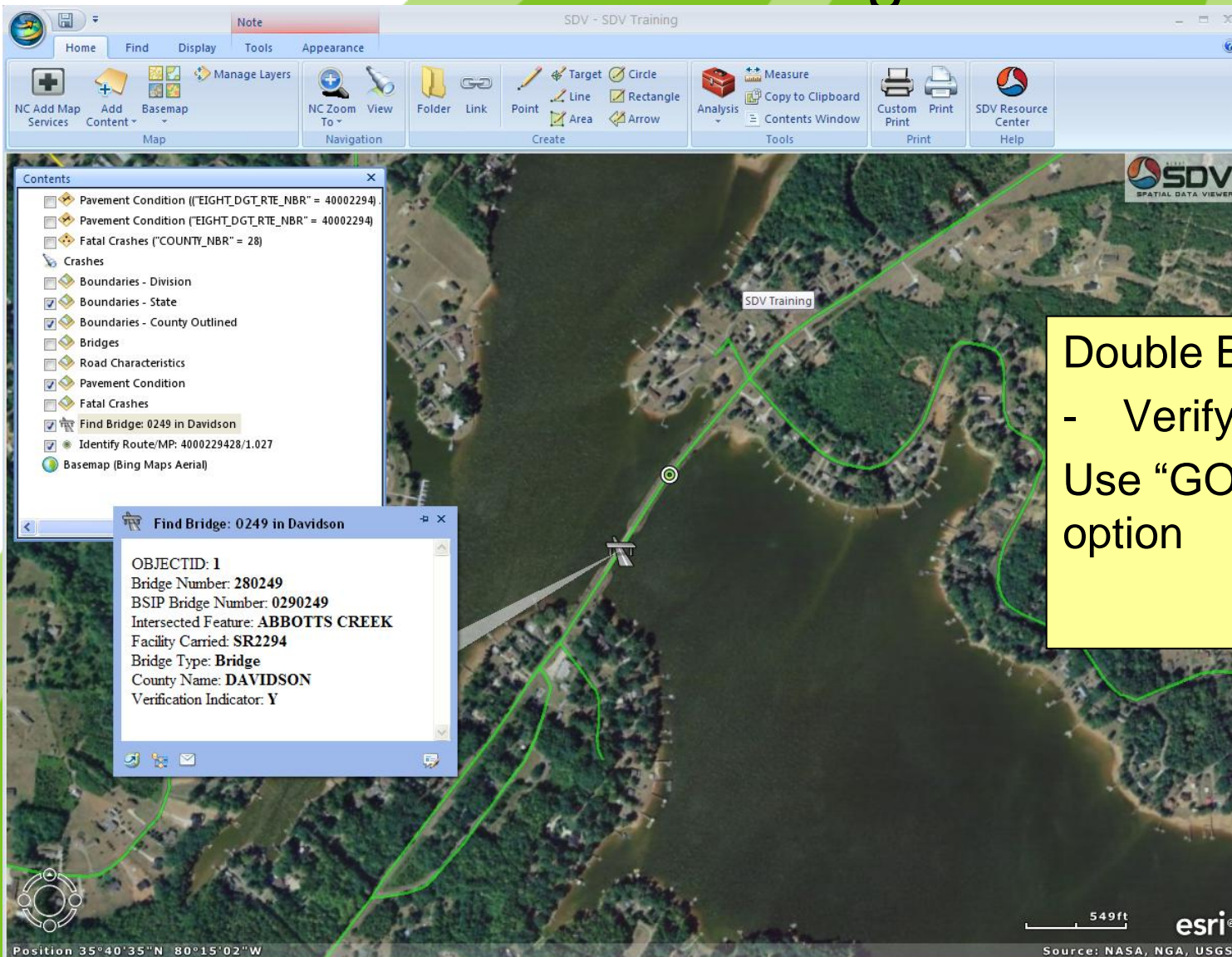
The screenshot shows the SDV Spatial Data Viewer interface. The main map displays an aerial view with a bridge over a creek. A 'Find Bridge: 0249 in Davidson' window is open, showing the following attributes:

- OBJECTID: 1
- Bridge Number: 280249
- BSIP Bridge Number: 0290249
- Intersected Feature: ABBOTTS CREEK
- Facility Carried: SR2294
- Bridge Type: Bridge
- County Name: DAVIDSON
- Verification Indicator: Y

The 'Contents' window on the left lists various layers, including 'Find Bridge: 0249 in Davidson' which is currently selected. The interface includes a toolbar with tools like 'NC Add Map Services', 'Add Content', 'Manage Layers', 'NC Zoom To', 'View', 'Folder', 'Link', 'Point', 'Line', 'Area', 'Target', 'Circle', 'Rectangle', 'Arrow', 'Measure', 'Copy to Clipboard', 'Contents Window', 'Custom Print', 'Print', and 'SDV Resource Center Help'. The bottom of the window shows the position '35°40'35"N 80°15'02"W', a scale bar for 549ft, the Esri logo, and the source 'Source: NASA, NGA, USGS'.

Double Bridge Icon  
- Verify attributes





The screenshot shows the SDV Spatial Data Viewer interface. The main map displays an aerial view of a bridge crossing a creek. A green line highlights the bridge, and a white circle with a crosshair is positioned on it. The 'Contents' window on the left lists various layers, with 'Find Bridge: 0249 in Davidson' selected. The 'Find Bridge: 0249 in Davidson' window in the foreground displays the following attributes:

OBJECTID:	1
Bridge Number:	280249
BSIP Bridge Number:	0290249
Intersected Feature:	ABBOTTS CREEK
Facility Carried:	SR2294
Bridge Type:	Bridge
County Name:	DAVIDSON
Verification Indicator:	Y

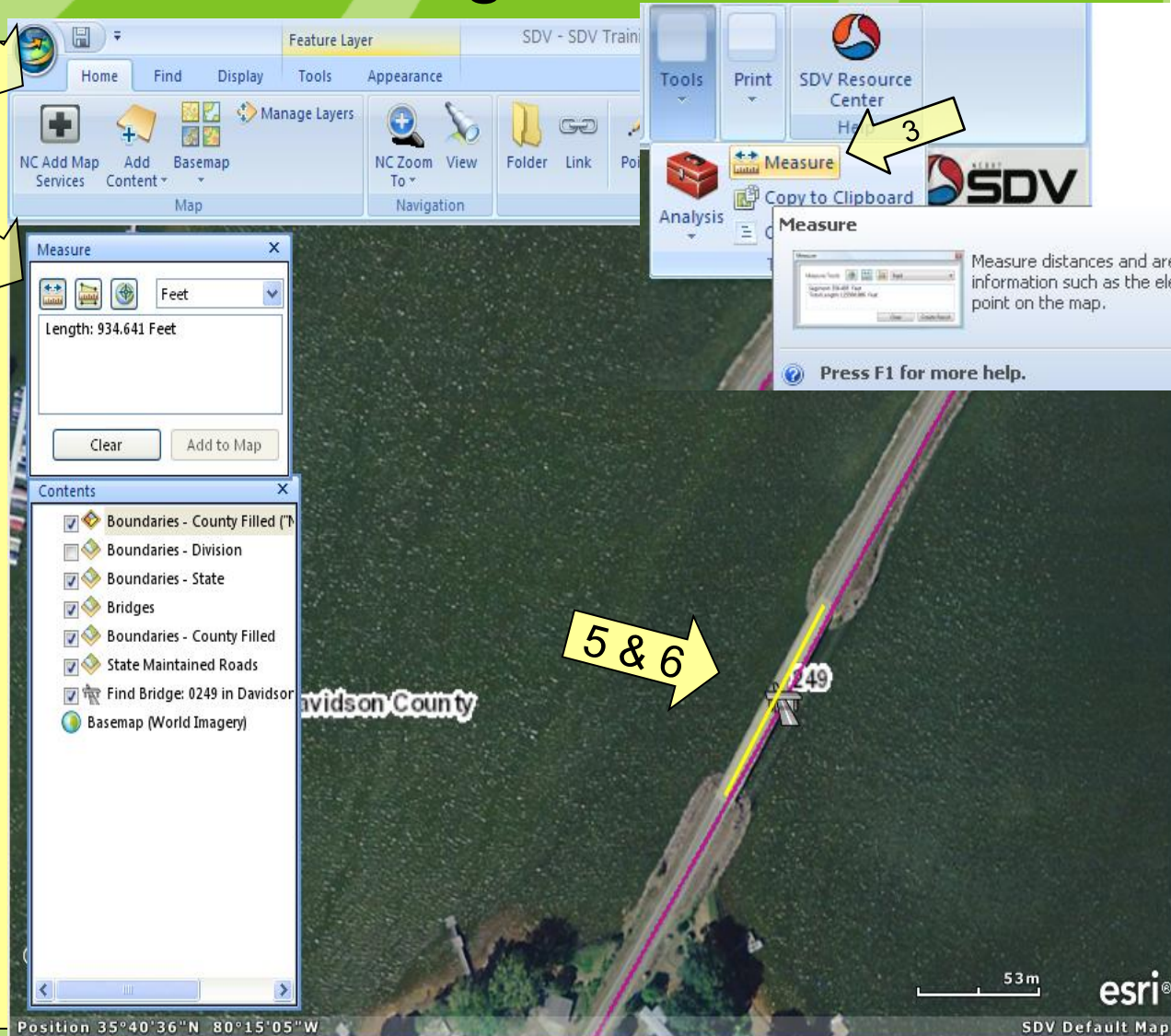
The interface includes a ribbon menu with tabs for Home, Find, Display, Tools, and Appearance. The ribbon contains various tool groups such as Map, Navigation, Create, Tools, and Print. The status bar at the bottom shows the position as 35°40'35"N 80°15'02"W and the source as NASA, NGA, USGS.

Double Bridge Icon  
- Verify attributes  
Use "GO TO"  
option

# SDV Training

## Measure Collapsed Bridge

1. Click Home tab
2. Click Tools
3. Click Measure tool
4. Click the first button for length and the middle button to measure area and select unit of measurement
5. Click, draw line, then double click to finish
6. Measured area gets hi-lighted



SDV - SDV Train

Home Find Display Tools Appearance

NC Add Map Services Add Content Basemap Map

NC Zoom View To Folder Link

Measure

Length: 934,641 Feet

Clear Add to Map

Contents

- Boundaries - County Filled (T)
- Boundaries - Division
- Boundaries - State
- Bridges
- Boundaries - County Filled
- State Maintained Roads
- Find Bridge: 0249 in Davidsor
- Basemap (World Imagery)

Davidson County

249

53m

esri®

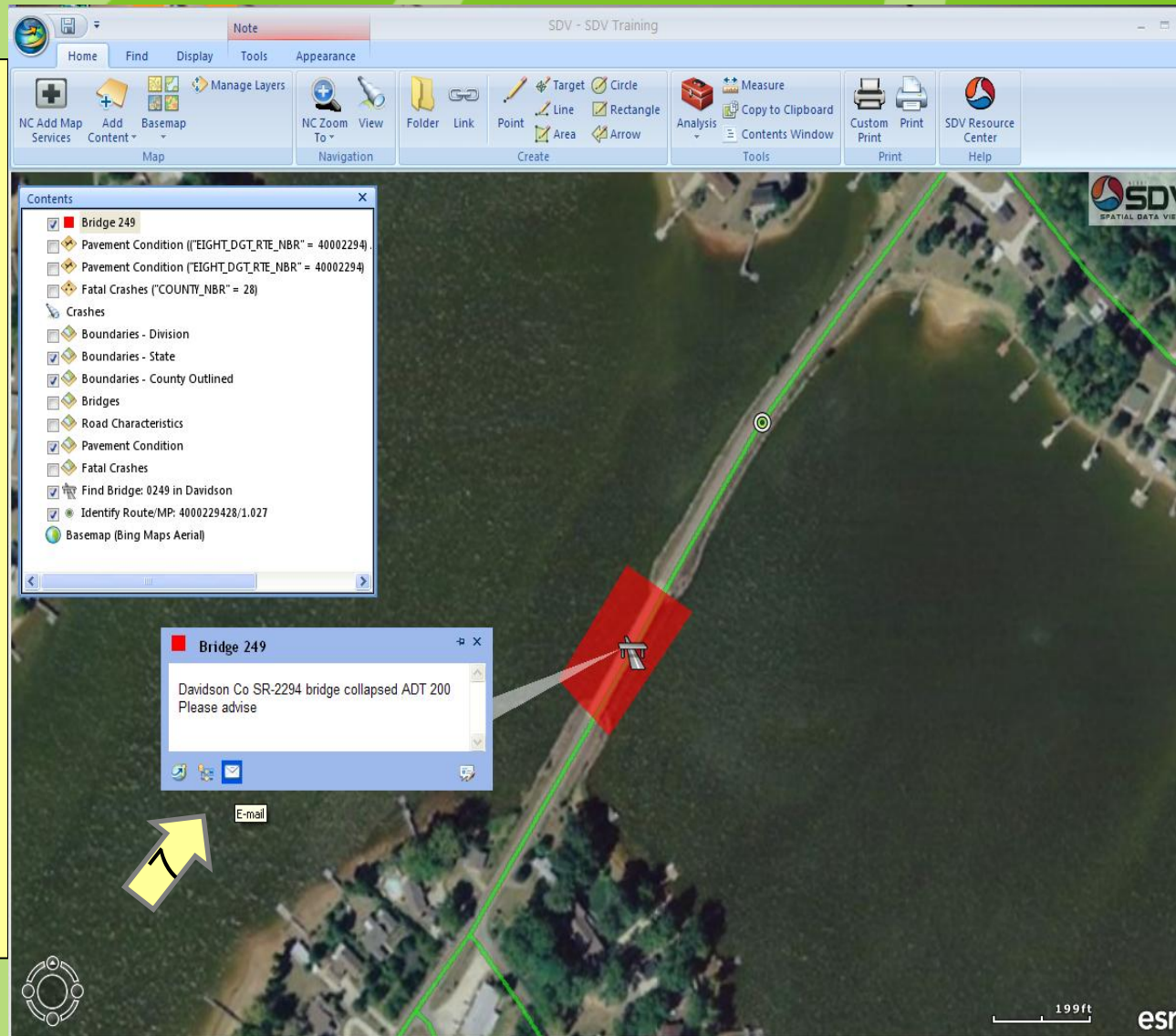
SDV Default Map

Position 35°40'36"N 80°15'05"W

# SDV Training

## Create a Note

1. Click Note tab
2. Click Area under Tools tab
3. Click on the map to outline the area of concern
4. Finish the area by double clicking
5. Add information to the note window
6. OK
7. Click Email

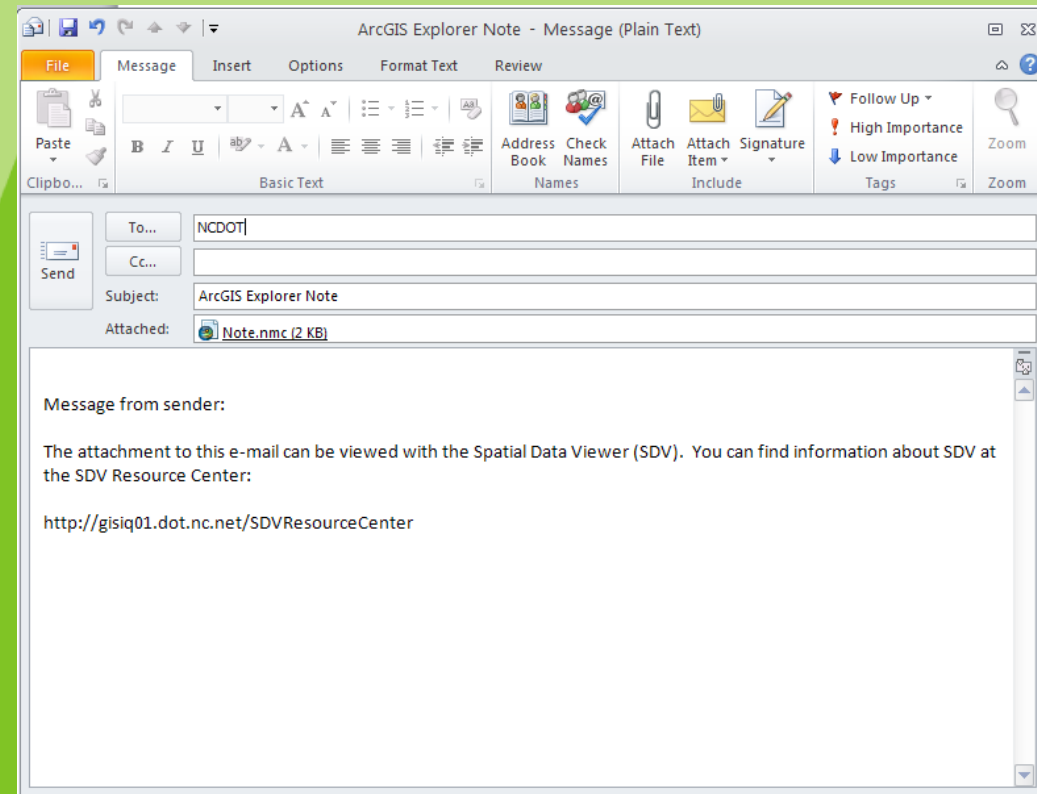
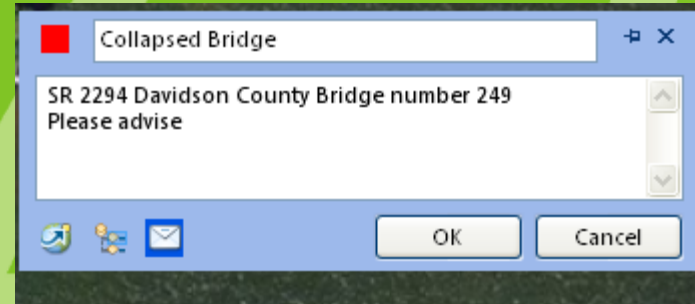


# SDV Training



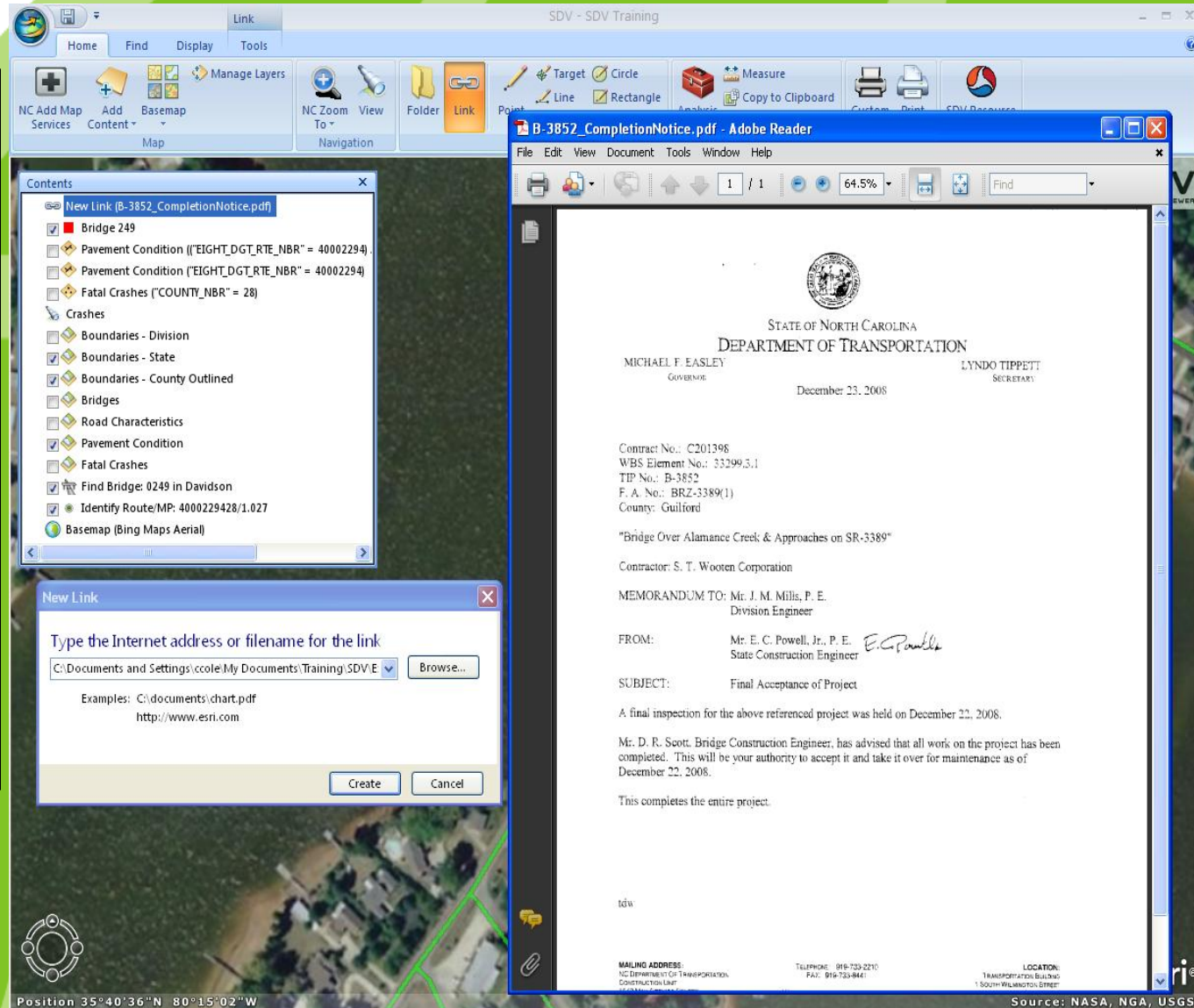
## Sending E-Mail Options

1. Click E-Mail icon on note
2. ArcGIS Explorer button
3. Click Share
  - E-mail Map sends a map package, others will need the same access to the data
  - E-mail View sends a jpg
  - You can also right click the mouse and select Share option



Add a link to documents

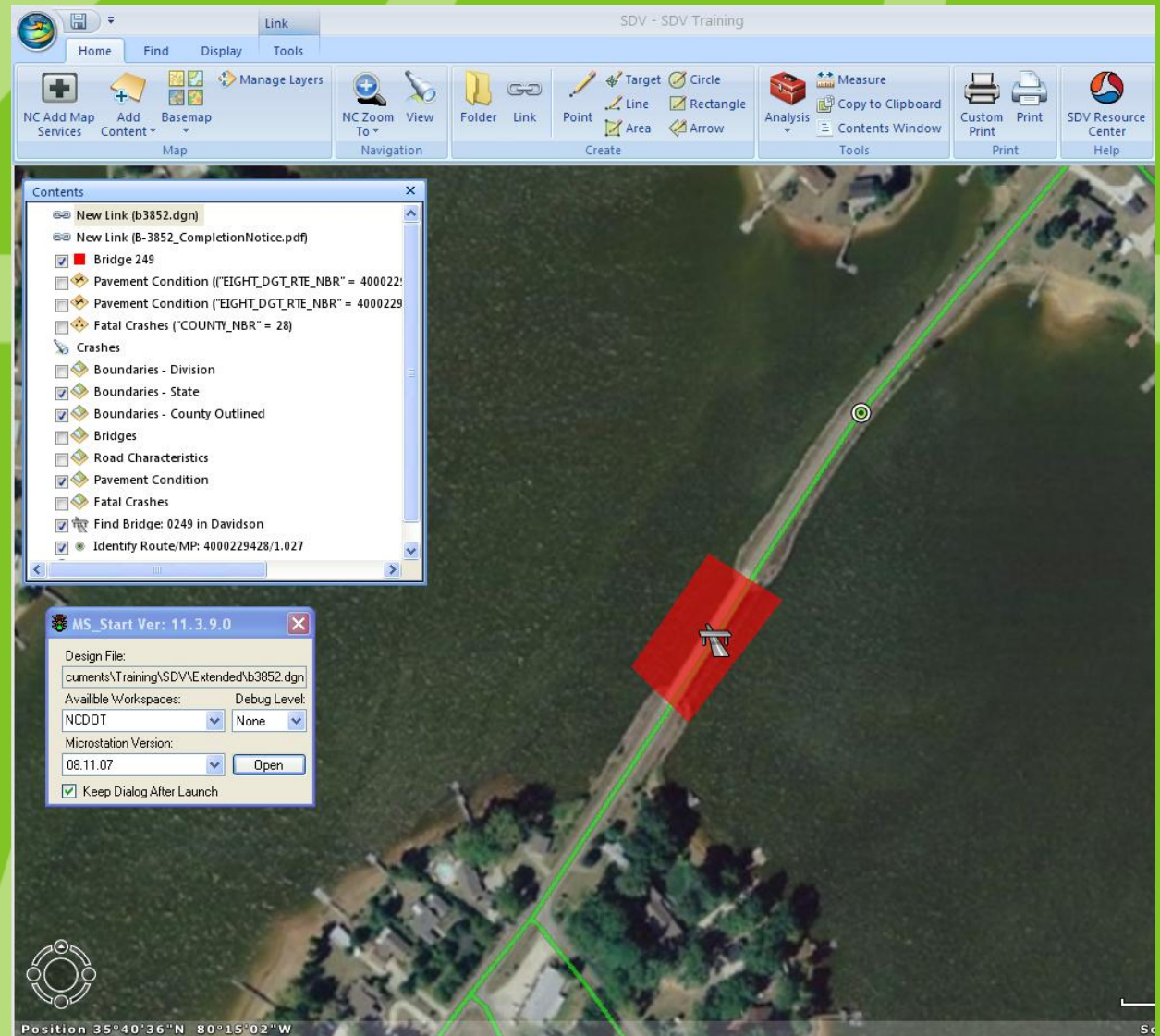
1. Click Link icon
2. Navigate to correct directory
3. Click on the new link in the Contents Window
4. Rename link



The screenshot shows the SDV - SDV Training application window. The toolbar includes a 'Link' icon (represented by a chain link). The 'Contents' window on the left shows a tree view of layers, with a new link 'New Link (B-3852\_CompletionNotice.pdf)' at the top. The 'New Link' dialog box is open, prompting the user to 'Type the Internet address or filename for the link'. The text box contains the file path 'C:\Documents and Settings\coole\My Documents\Training\SDV\E' and a 'Browse...' button. Below the text box are examples: 'C:\documents\chart.pdf' and 'http://www.esri.com'. 'Create' and 'Cancel' buttons are at the bottom of the dialog. In the background, an Adobe Reader window displays a document titled 'B-3852\_CompletionNotice.pdf'. The document is a memorandum from the North Carolina Department of Transportation, dated December 23, 2008, regarding a bridge project. The sender is Mr. E. C. Powell, Jr., P. E., State Construction Engineer, and the recipient is Mr. J. M. Mills, P. E., Division Engineer. The subject is 'Final Acceptance of Project'. The document includes contract details, project description, and a final inspection report.

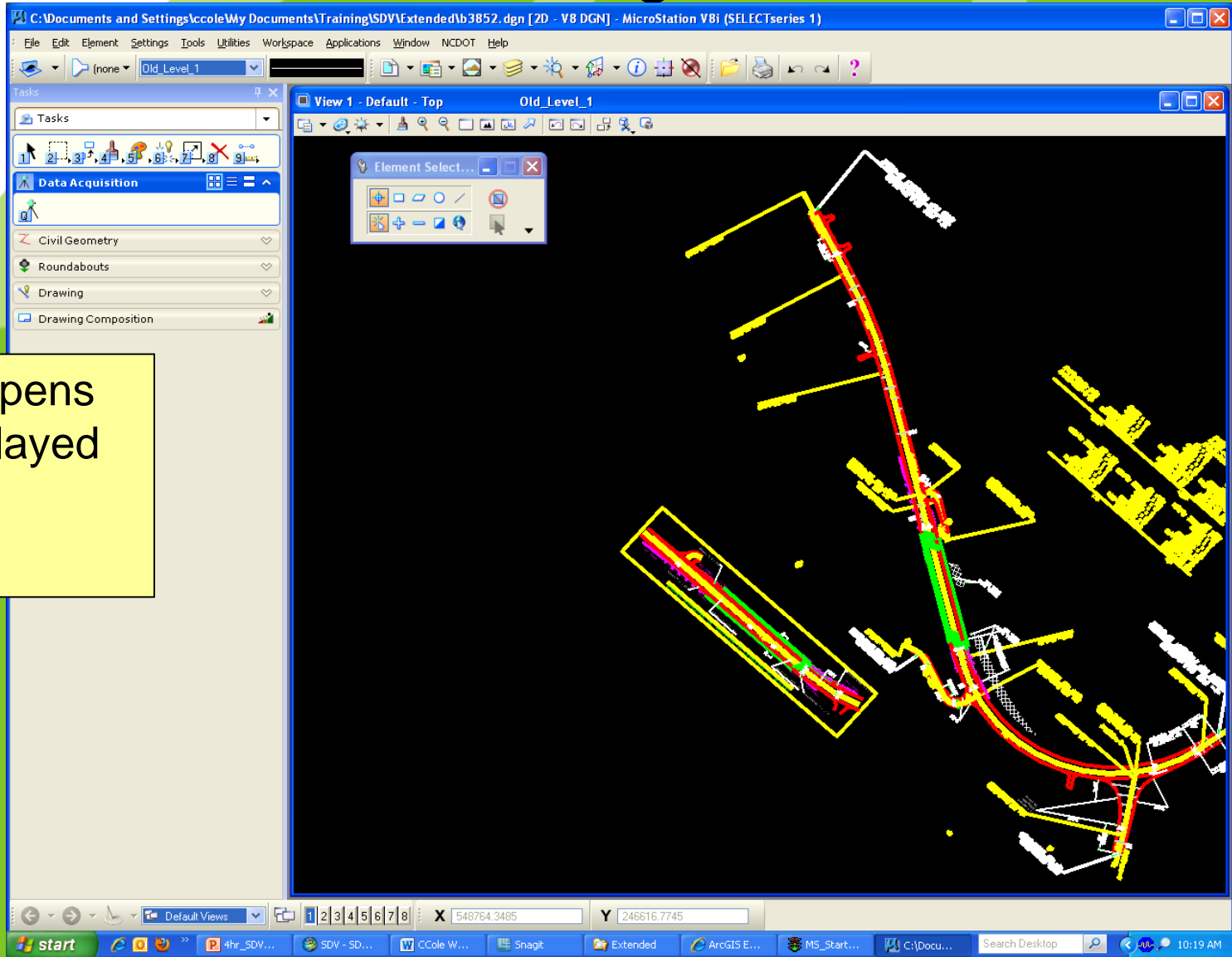
## Add Link to .dgn

1. Click Home Tab
2. Click Link
3. Navigate to directory for .dgn
4. Double-click link to .dgn in Contents Window
5. Open new dialog



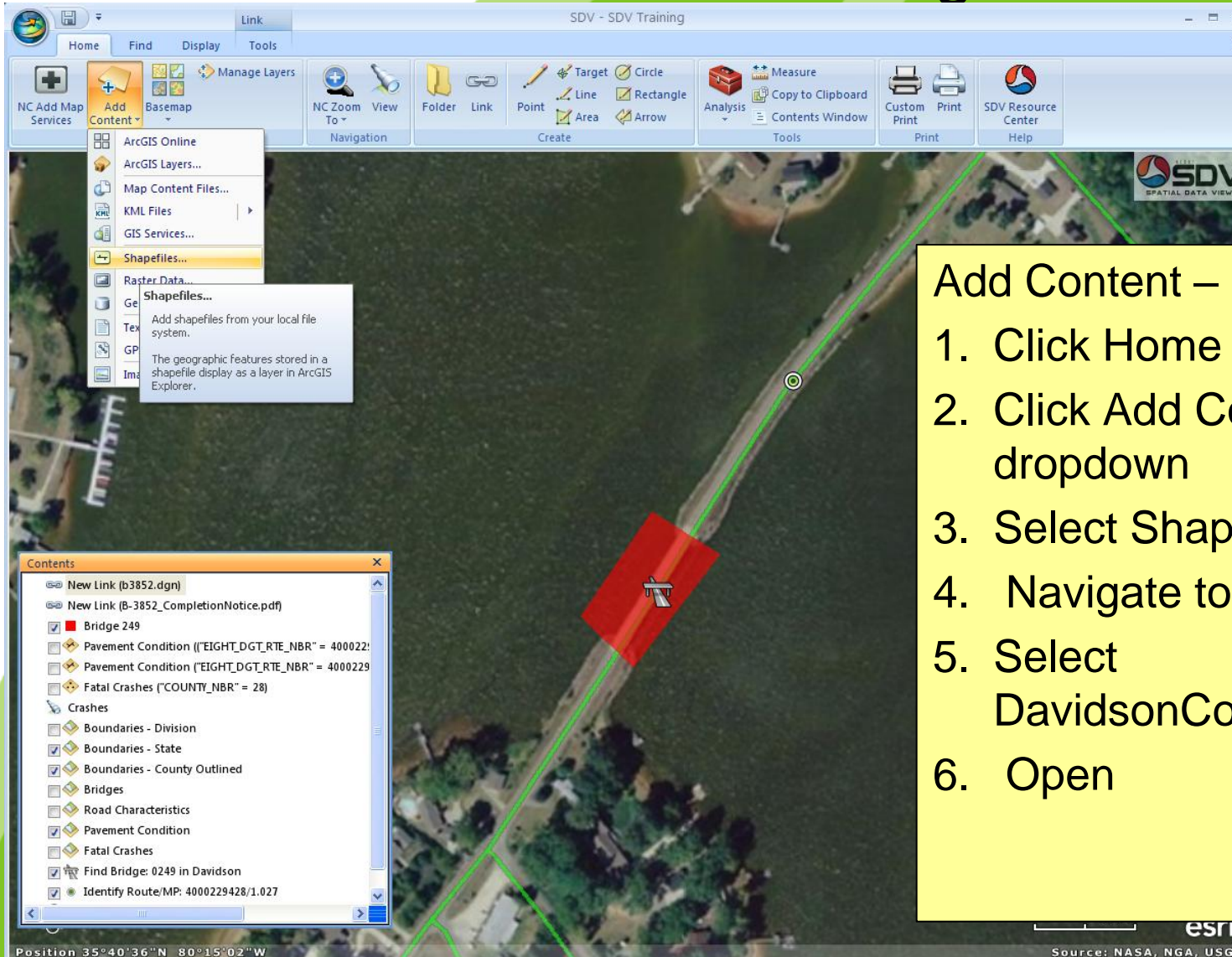
The screenshot shows the SDV - SDV Training application interface. The main window displays a map with a red rectangular area highlighted. The Contents window is open, showing a list of layers including 'New Link (b3852.dgn)', 'New Link (B-3852\_CompletionNotice.pdf)', 'Bridge 249', 'Pavement Condition' (with various filter criteria), 'Fatal Crashes', 'Crashes', 'Boundaries - Division', 'Boundaries - State', 'Boundaries - County Outlined', 'Bridges', 'Road Characteristics', 'Pavement Condition', 'Fatal Crashes', 'Find Bridge: 0249 in Davidson', and 'Identify Route/MP: 4000229428/1.027'. A dialog box titled 'MS\_Start Ver: 11.3.9.0' is open, showing the Design File path: 'cuments\Training\SDV\Extended\b3852.dgn', Available Workspaces: 'NCDOT', Debug Level: 'None', Microstation Version: '08.11.07', and an 'Open' button. The dialog box also has a 'Keep Dialog After Launch' checkbox checked. The status bar at the bottom shows the position: '35°40'36"N 80°15'02"W'.

# SDV Training



Microstation opens with .dgn displayed

# SDV Training



- Add Content – External Data**
1. Click Home tab
  2. Click Add Content dropdown
  3. Select Shapefiles
  4. Navigate to directory
  5. Select DavidsonCoRds.shp
  6. Open



# SDV Training

The screenshot shows the SDV Spatial Data Viewer interface. The main map displays an aerial view with a yellow line highlighting a road. Two windows are open:

- Contents Window:** Lists various layers including 'davidsoncords', 'New Link (b3852.dgn)', 'New Link (B-3852\_CompletionNotice.pdf)', 'Bridge 249', 'Pavement Condition', 'Fatal Crashes', 'Crashes', 'Boundaries - Division', 'Boundaries - State', 'Boundaries - County Outlined', 'Bridges', 'Road Characteristics', 'Pavement Condition', 'Fatal Crashes', and 'Find Bridge: 0249 in Davidson'.
- Data Table Window:** Displays attributes for the selected road '8':
 

ObjectID	394462
PREFIX	
PRETYPE	SR
NAME	8
TYPE	
SUFFIX	
FCC	A31
ACC	3
SHIELD	S
HWY_NUM	8
MILES	12.9037

A yellow arrow labeled '3' points to the email icon in the bottom left of the data table window.

Data is added to Contents Window

1. Double-click the major road closest to bridge 249
2. The closest major road is SR-8
3. Create note, send email

# SDV Training

The screenshot displays the SDV (Spatial Data Viewer) interface. The main window shows a map with various layers. A 'Contents' panel on the left lists layers such as '8', 'davidsoncords', 'New Link (b3852.dgn)', 'New Link (B-3852\_CompletionNotice.pdf)', 'Bridge 249', 'Pavement Condition ("EIGHT\_DGT\_RTE\_NBR" = 400022)', 'Fatal Crashes ("COUNTY\_NBR" = 28)', 'Crashes', 'Boundaries - Division', 'Boundaries - State', 'Boundaries - County Outlined', 'Bridges', 'Road Characteristics', 'Pavement Condition', and 'Fatal Crashes'. A 'Properties' window for layer '8' is open, showing the following data:

ObjectID	394462
PREFIX	
PRETYPE	SR
NAME	8
TYPE	
SUFFIX	
FCC	A31
ACC	3
SHIELD	S
HWY_NUM	8
MILES	12.9037

An 'ArcGIS Explorer Note - Message (Plain Text)' window is overlaid on the map. The message content is as follows:

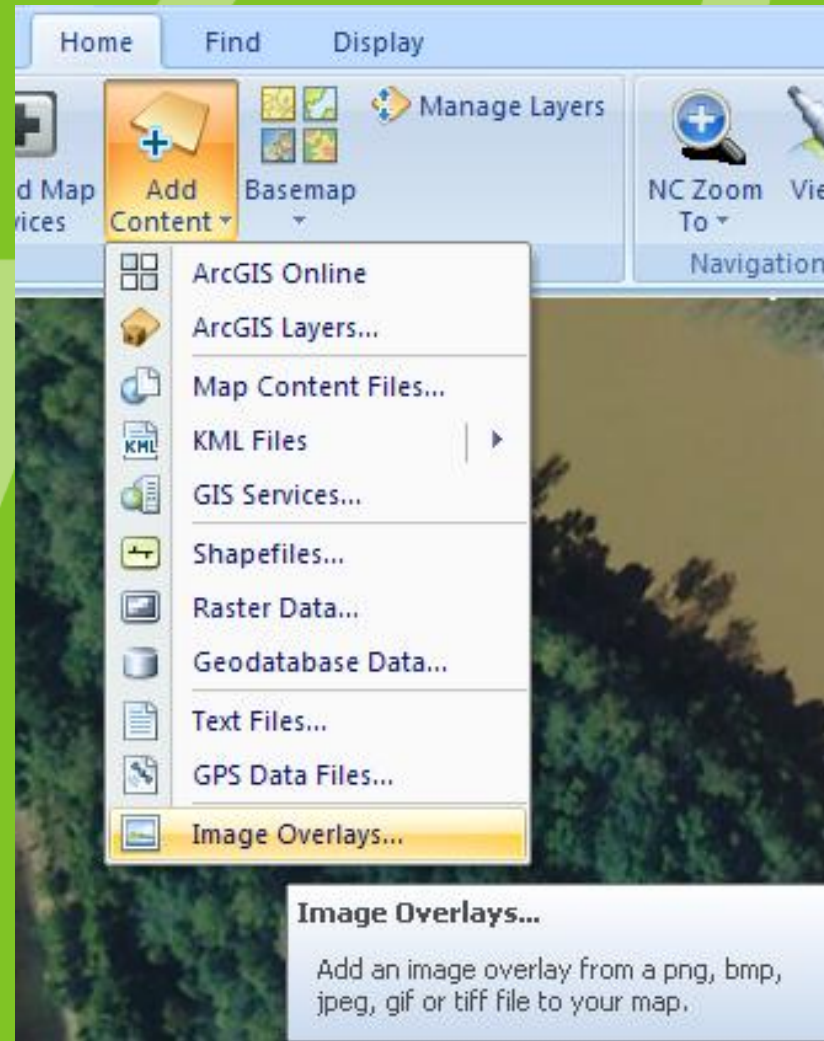
Closest major road is SR8  
 Message from sender:  
 The attachment to this e-mail can be viewed with the Spatial Data Viewer (SDV). You can find information about SDV at the SDV Resource Center:  
<http://gis01.dot.nc.net/SDVResourceCenter>

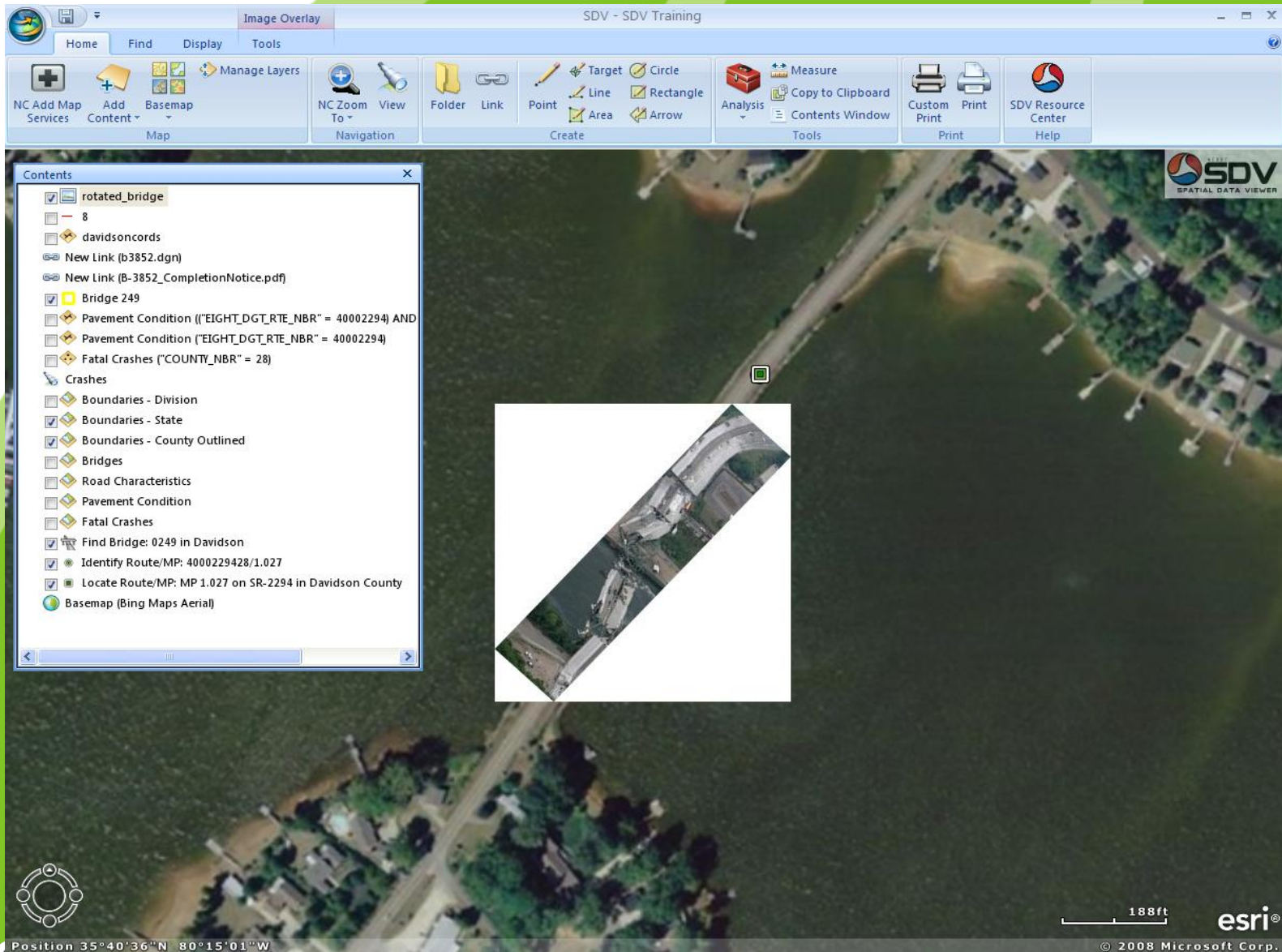
The message window also shows a subject line 'ArcGIS Explorer Note' and an attached file '8.nmc (28 KB)'. The map interface includes a toolbar with various tools like 'Add Map Services', 'Add Content', 'Manage Layers', 'Navigation', 'Folder', 'Link', 'Point', 'Line', 'Area', 'Arrow', 'Circle', 'Rectangle', 'Measure', 'Copy to Clipboard', 'Contents Window', 'Custom Print', 'Print', and 'SDV Resource Center Help'. The status bar at the bottom shows the position '35°40'20"N 80°15'32"W' and a scale of '1197ft'. The Esri logo and 'Source: USGS' are also visible.

# SDV Training

## Add Content – External Data

1. Click Home tab
2. Click Add Content dropdown
3. Select File type and path



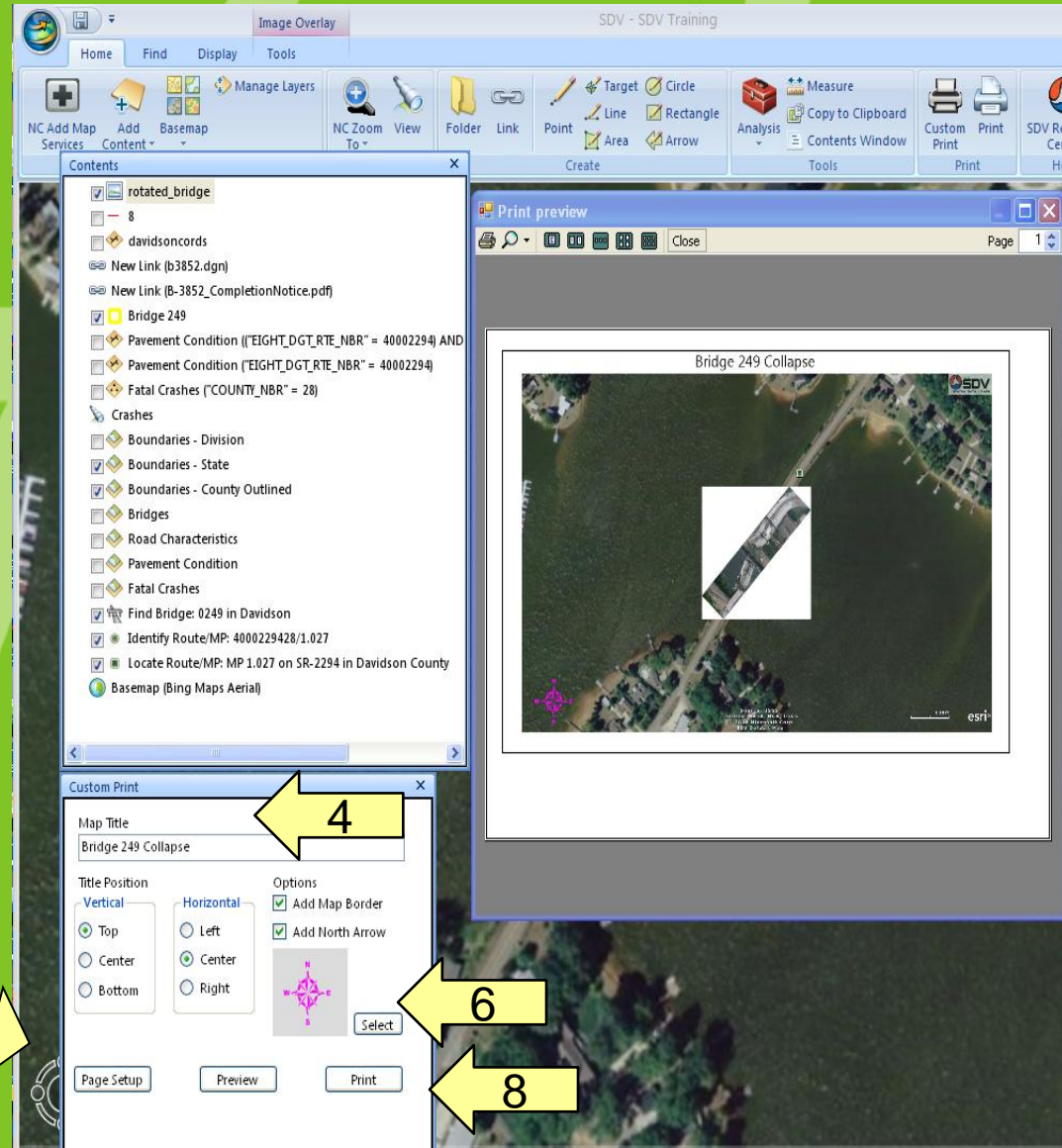
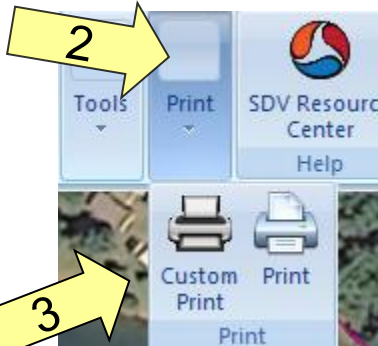


The screenshot displays the SDV Spatial Data Viewer interface. The main window shows an aerial map with several data layers overlaid. A 'Contents' window is open on the left, listing the following layers:

- rotated\_bridge
- 8
- davidsoncords
- New Link (b3852.dgn)
- New Link (B-3852\_CompletionNotice.pdf)
- Bridge 249
- Pavement Condition ("EIGHT\_DGT\_RTE\_NBR" = 40002294) AND
- Pavement Condition ("EIGHT\_DGT\_RTE\_NBR" = 40002294)
- Fatal Crashes ("COUNTY\_NBR" = 28)
- Crashes
- Boundaries - Division
- Boundaries - State
- Boundaries - County Outlined
- Bridges
- Road Characteristics
- Pavement Condition
- Fatal Crashes
- Find Bridge: 0249 in Davidson
- Identify Route/MP: 4000229428/1.027
- Locate Route/MP: MP 1.027 on SR-2294 in Davidson County
- Basemap (Bing Maps Aerial)

The interface includes a toolbar with various tools such as 'NC Add Map Services', 'Add Content', 'Manage Layers', 'Navigation', 'Folder', 'Link', 'Point', 'Line', 'Area', 'Arrow', 'Measure', 'Copy to Clipboard', 'Contents Window', 'Custom Print', 'Print', and 'SDV Resource Center Help'. A scale bar at the bottom right indicates 188ft. The status bar at the bottom shows the position: 35°40'36"N 80°15'01"W. The Esri logo and copyright information (© 2008 Microsoft Corp.) are also visible.

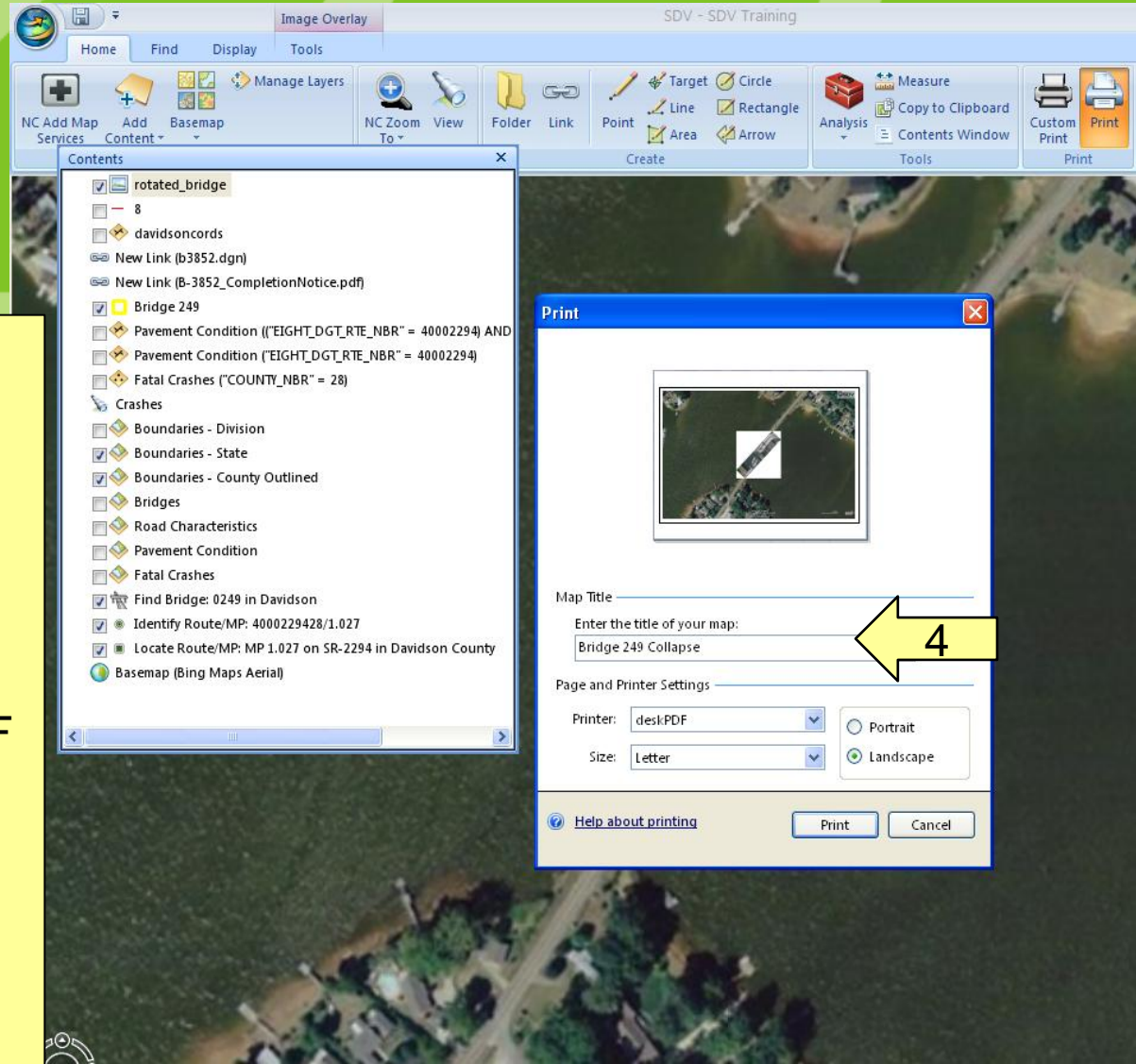
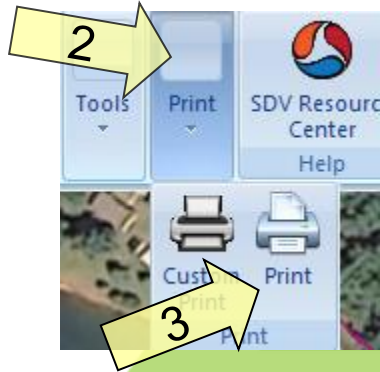
# SDV Training



## Print the Map using Custom Print

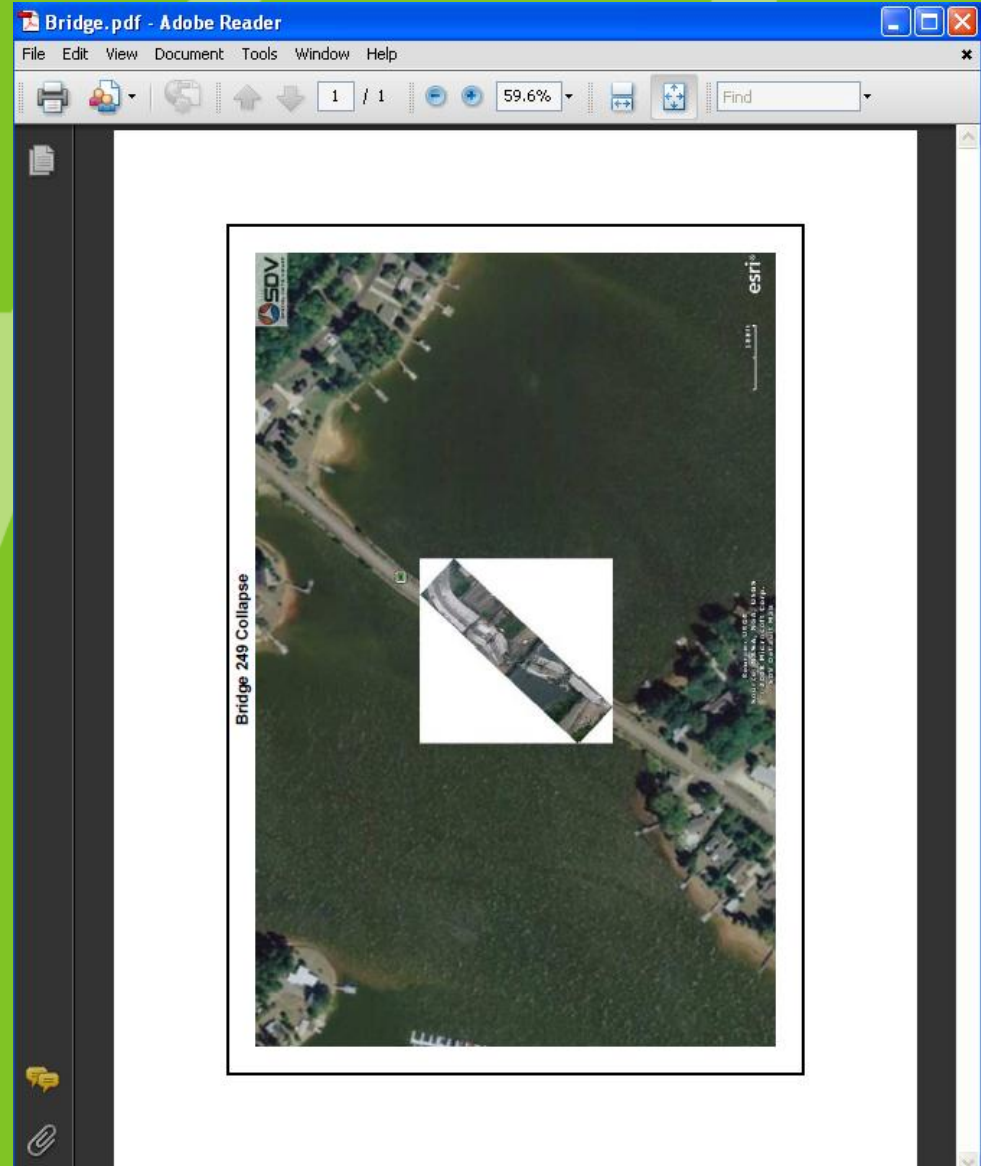
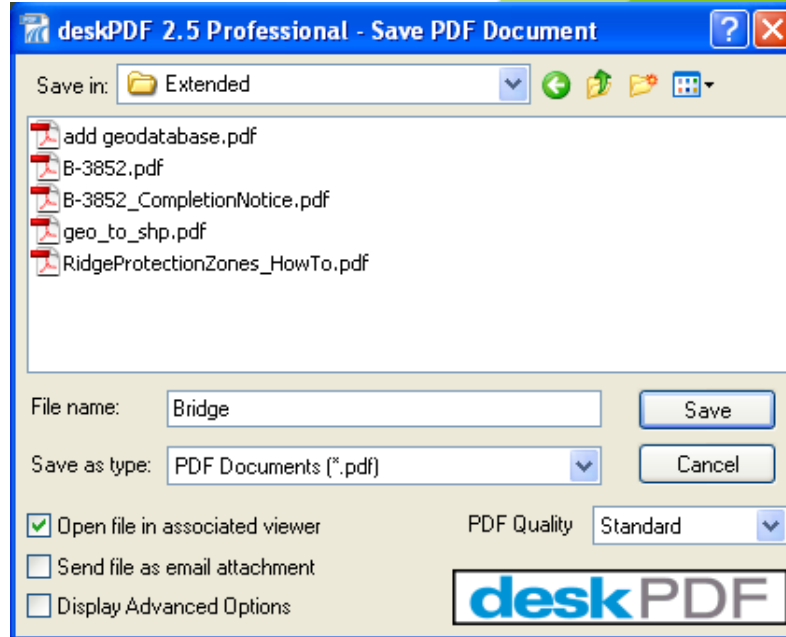
1. Click the Home tab
2. Click Print
3. Click Custom Print
4. Enter Map title
5. Select page options
6. Select North Arrow
7. Choose page settings
8. Click print preview or print

# SDV Training



- Print the Map using Custom Print**
1. Click the Home tab
  2. Click Print
  3. Click Print
  4. Enter Map title
  5. Change printer to deskPDF
  6. Select size
  7. Choose page settings
  8. Click print preview or print

# SDV Training



# SDV Training brought to you by:

NCDOT GIS Unit

<http://www.ncdot.org/it/gis>

And

NCDOT Intranet Portal Page

<https://intranet.dot.state.nc.us/portal/Home/Teams/IT/EngineeringTransSystems/GIS/tabid/57/Default.aspx>



# Thank you!

SDV Resource Center

<http://gisi01.dot.nc/SDVResourceCenter/home.aspx>

To schedule training  
[educationservices@ncdot.gov](mailto:educationservices@ncdot.gov)

To report an incident  
[dothelp@ncdot.gov](mailto:dothelp@ncdot.gov)

To request installation  
[gishelp@ncdot.gov](mailto:gishelp@ncdot.gov)

All other requests  
[gishelp@ncdot.gov](mailto:gishelp@ncdot.gov)

# SDV Training Questions?

