Enterprise GIS; Economic Development Data Portal

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Rahall Transportation Institute

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PROJECT BACKGROUND

The West Virginia Development Office (WVDO) and the Office of Coalfield Community Development (OCCD) approached RTI in January 2012 about the potential of establishing an ArcGIS framework through which the entire Department of Commerce could be linked to a centralized geospatial data warehouse (See Appendix for diagram). This framework would integrate legacy data, information, and systems into a robust platform where spatial data could be shared, managed, and consumed by multiple users. Furthermore, this framework would establish a data repository, which is an essential building block in the development of future applications and would eliminate the need to update and disseminate individual datasets, which would reduce data redundancy and investment on storage space.

Enterprise GIS technology can transform the entire workflow of the OCCD and the WVDO by improving access, sharing, consolidating, and standardizing of data. Perhaps the most important benefit of such a transformation is the connection between departmental GIS data "islands" to foster cross-functional collaboration and improve performance throughout the organization.

Furthermore, GIS can be a significant resource in meeting site analysis objectives, as it easily incorporates and facilitates the analysis of spatial information with relation to one another to provide rapid answers on site opportunities and constraints. It is a powerful problem-solving and decision-making tool which provides an ideal solution to the objectives set by both agencies. Enabling access to GIS data provides methods for making a quick determination of land and infrastructure needs in the general area of a mining operation or properties managed by the WVDO. This enhances both the potential and the access to use information regarding economic development opportunities in the State. Such access supports effective decision making, provides a mapping resource, allows both real time and field observations, and provides for instant and rich reporting of demographic information.

PROJECT OBJECTIVE

The WVDO and the OCCD have identified a need for broad access to geospatial data and applications throughout the organization. The agencies shared a need to establish a framework through which they can access, manage, disseminate, and display their data using available client

and mobile connections. The project objectives included the establishment of an ArcGIS for server to deliver advanced GIS (Geographic Information System) capabilities, integration of the spatial data owned by the WVDO and OCCD, hosting and management of related services. The solution developed by RTI enables sharing of data and facilitates access to the server through both ArcGIS desktop and mobile ArcGIS applications. The application is restricted to authorized users through the use of tiered access control mechanism and role based management control.

PROJECT OVERVIEW

Task Summary

Task 1: Design, Implement, Test, and Deploy ArcGIS Server Cluster
Task 2: Identify, obtain, and develop GIS databases
Task 3: Identification, collection and dissemination economic and demographic data
Task 4: iPad Application Configuration and Testing
Task 5: Training

The project was divided into five major tasks. The first task included assessment of the requirements and needs of the system as well as development of the server cluster to host and serve the system and spatial services. This involved analyzing user needs, developing user requirements, developing a detailed functional requirements specification, and identifying the external systems that needed to be integrated. Additionally, a testing environment was created to mimic the production environment for smooth integration. Researchers then analyzed the project goals and determined the functions and operations that required further development.

The second task included the identification, procurement and development of GIS datasets from which a relational spatial database was created to host and share interdepartmental and third party data. Through the development of data feed mechanism and spatial data upload web tools, the research team has achieved the automation of data integration to assure and maintain currency of certain information layers (i.e. WVDO Real Estate, Mining Permit Boundaries).

The third task involved the identification, collection and dissemination of economic and demographic data. These databases were converted to a GIS data format and added to the enterprise spatial data engine. The research team assessed the data to establish its functionality

within the system and customized demographic and economic maps that support effective exploration of scenarios. (See the Appendix for detailed list of data and sample maps).

The project's fourth task involved the iPad configuration, which required the coding of the final mobile service document using the JavaScript Object Notation (JSON) format. Enhancements like search functions were introduced to support user's day-to-day needs and work flow. In essence, this feature allows users to search and highlight properties that meet certain predetermined criteria. Once testing was completed, the research team gathered feedback from stakeholders and end users of the application and implemented the required changes.

During the development of the project a new version of ArcGIS for Server Enterprise was released. A decision was made to upgrade the system to ArcGIS server 10.1 to provide the most current and advanced capabilities to the end user. The new server cluster serves as the official production environment and is currently hosted at an off-site RTI facility and is enhanced with a number of security layers. The research team has decided to encrypt the communication using Secured Sockets Layer (SSL), which is a protocol for encrypting information over the internet to protect sensitive data.

The fifth task included the production of a training manual to provide users with the skills and expertise to navigate the application and learn its design and functionality. The full user manual is appended to this document.

CONCLUSION

The development of a mobile Economic Development Data Portal (EDDP) through an enterprise GIS solution provides the WVDO and the OCCD with important capabilities to interact with spatial and related information and address a variety of departmental needs. This application enables the display, dissemination, querying, management, and sharing of GIS databases and information layers through ESRI's ArcGIS for server solution.

The system is capable of serving a large number of users, and currently supports a user group of data viewers. Users do not need to demonstrate or possess GIS skills as this application simplifies the use and interaction with the data and features. It is accompanied by an appealing and functional user interface that enhances the user experience.

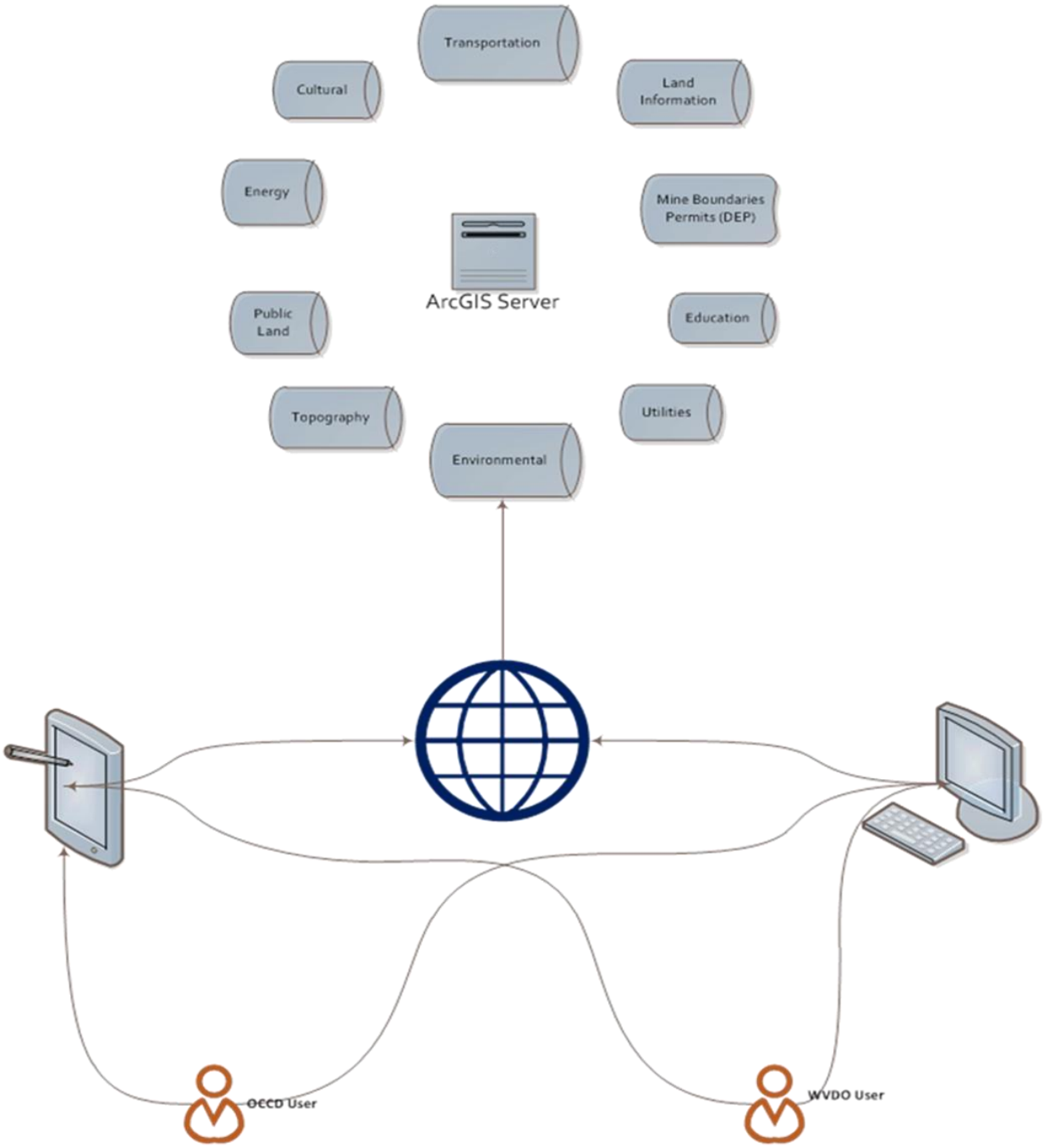
EDDP was created with economic development in mind and organized over 200 information layers (the complete list is provided in the user manual) to support effective decision making and streamline work processes. It facilitates location analysis through a wealth of geospatial information and provides “on-the-fly” field assessment capabilities. Economic and land developers (among others) can now make determinations regarding economic development opportunities in their communities through the assessment of current conditions and future needs. The application provides the necessary platform for visualizing, analysis, modeling, and collaboration.

Future development effort should consider:

1. Service customization based on specific user needs.
2. Integration of other databases and media files (property pictures, floor plans, reports etc.).
3. Enhanced functions like data collection and editing (location attributes, attachment).

Appendix A

Flow Chart Diagram



Demographic Economic and Education Data

The following provides a representative sampling of demographic data items included and/or available for inclusion in the database/site selector tool(s). Much of the data listed below is available both annually and historically, unless where otherwise noted.

Economic

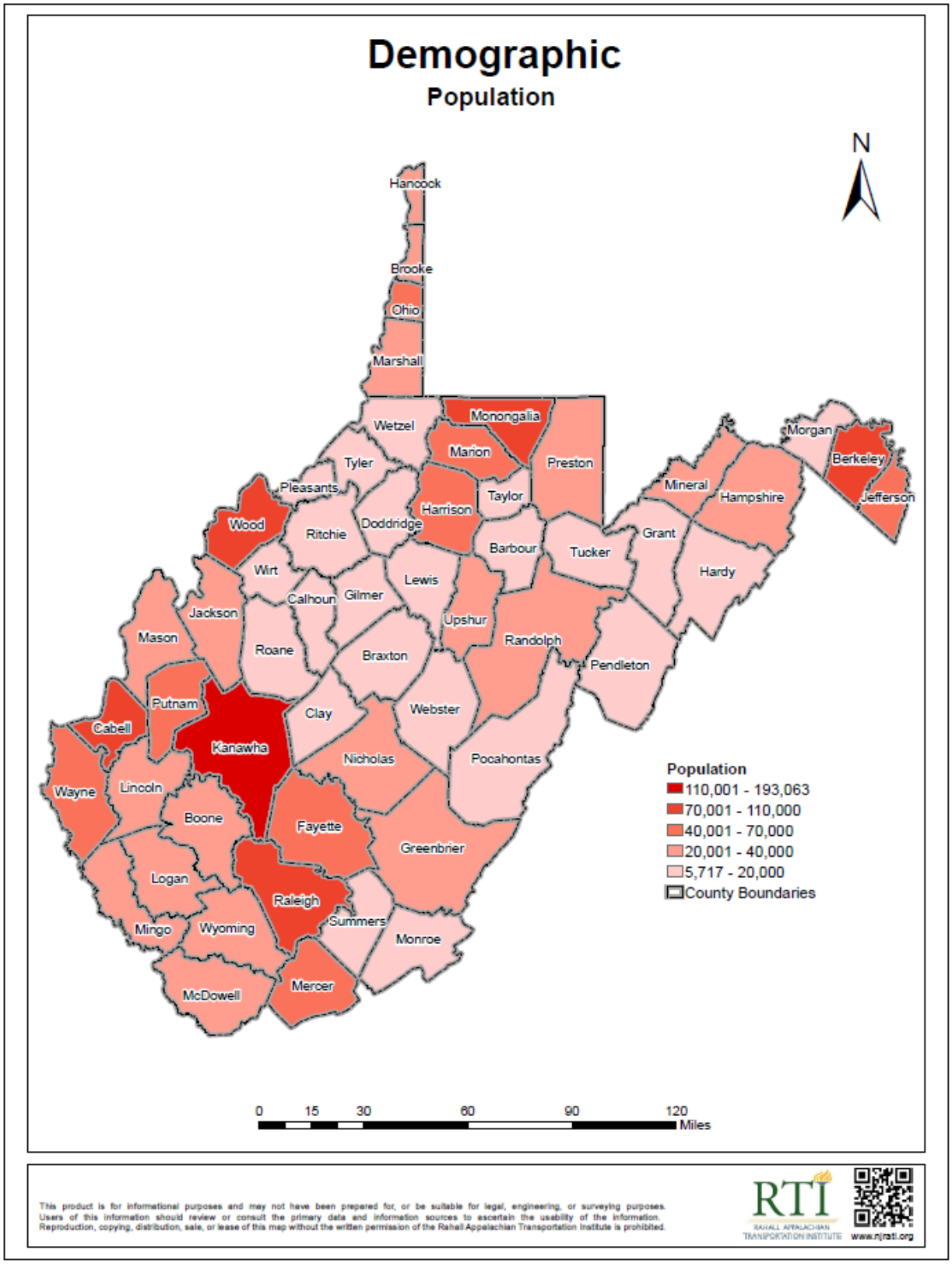
- County Business Patterns
    - Industry Breakdowns
        - Establishments
        - Payroll
        - Employees
        - Establishment Size
- Work Force West Virginia
    - Civilian Labor Force
    - Employment and Wages by Industry
    - Unemployment and Unemployment Rates
- Economic Census (*Every 5 years*)
    - Sales, receipts and/or shipments
    - Non-employer establishments and receipts
- U.S. Census Bureau – Quarterly Workforce Indicators (*Quarterly*)
    - Job Creation
    - Net Job Flows
    - New Hires, Separations and Turnover

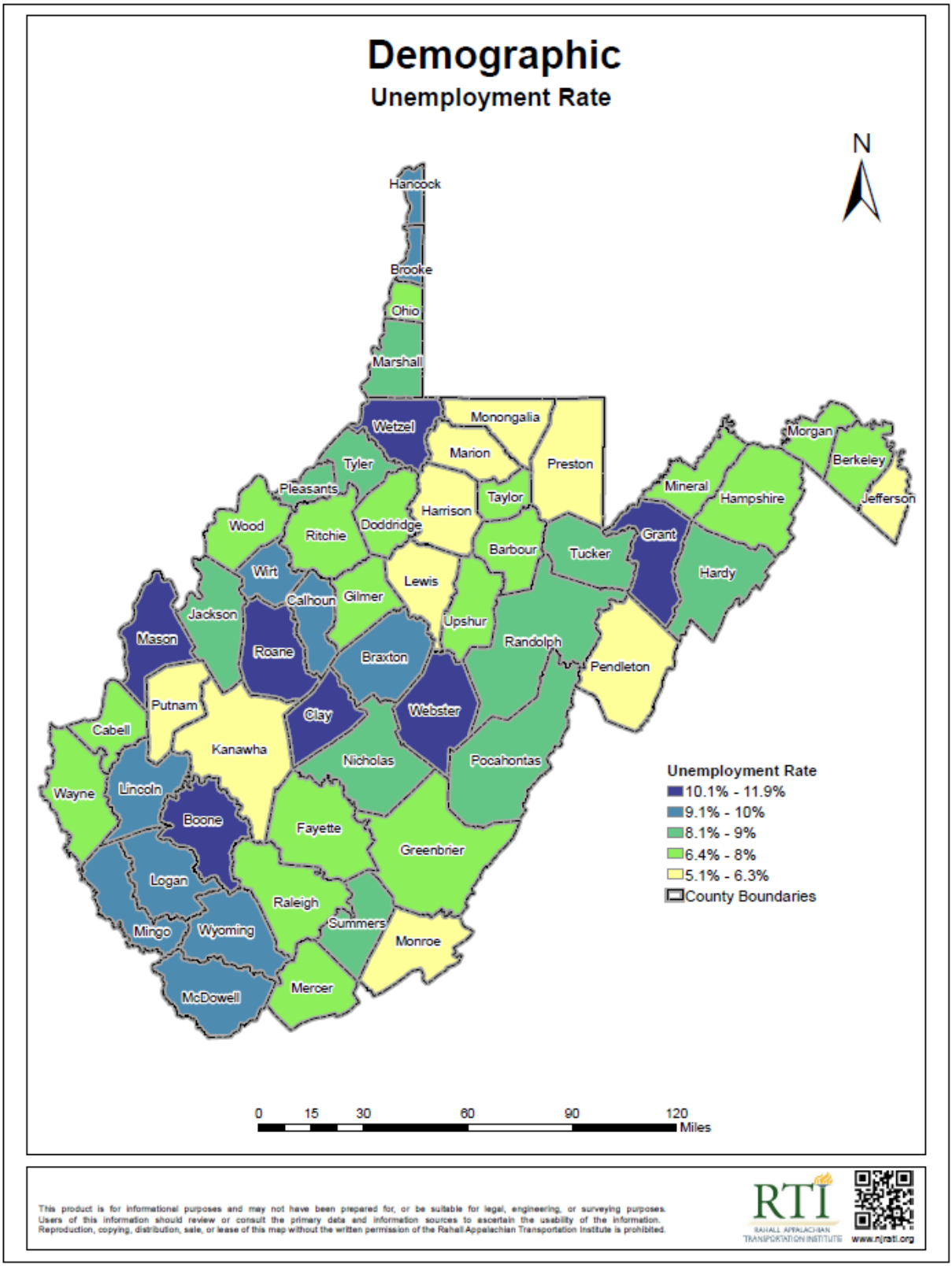
Demographic Variables

- U.S. Bureau of Economic Analysis – Regional Economic Information System
    - Population
    - Personal Income breakdowns
    - Transfer Receipts
    - Farm Employment and Income
- U.S. Census Bureau – Decennial Census and American Community Survey (*Every 10 years and annually with estimate in 1, 3 and 5 year increments*)
    - Population by age, gender, race/ethnicity
    - Work status, poverty, and earnings
    - Educational attainment
    - Journey to work and commuting patterns (location and time)
    - Household type, makeup and income
    - Family type, makeup and income
    - Housing occupancy, tenure value and costs
- Small Area Income and Poverty Estimates
    - Poverty Estimates by Age
- U.S. Internal Revenue Service

    - Migration estimates
        - Inflows and Outflows (returns, exemptions, gross income)
        - Non-migrant populations (returns, exemptions, gross income)
- National Center for Educational Statistics – Common Core of Data
    - School enrollments by gender, grade and race/ethnicity
    - Diploma or equivalent recipients
    - Free/Reduced lunch eligible students
    - School staffing
    - School finance (revenue and expenditure data)
- West Virginia Department of Education
    - Public school performance data
    - Standardized test scores
    - Higher education
        - Enrollments and degree completion by subject, degree

Sample of Demographic, Economic, and Education GIS Data




Demographic
Unemployment Rate
N
Hancock
Brooke
Ohio
Marshall
Wetzel
Monongalia
Marion
Preston
Tyler
Pleasants
Taylor
Harrison
Doddridge
Wood
Ritchie
Barbour
Tucker
Wirt
Lewis
Gilmer
Calhoun
Jackson
Upshur
Randolph
Mason
Roane
Braxton
Pendleton
Putnam
Clay
Webster
Cabell
Kanawha
Nicholas
Pocahontas
Wayne
Lincoln
Boone
Fayette
Greenbrier
Logan
Raleigh
Summers
Mingo
Wyoming
Monroe
McDowell
Mercer
Morgan
Berkeley
Jefferson
Mineral
Hampshire
Grant
Hardy
Unemployment Rate
10.1% - 11.9%
9.1% - 10%
8.1% - 9%
6.4% - 8%
5.1% - 6.3%
County Boundaries
0
15
30
60
90
120
Miles
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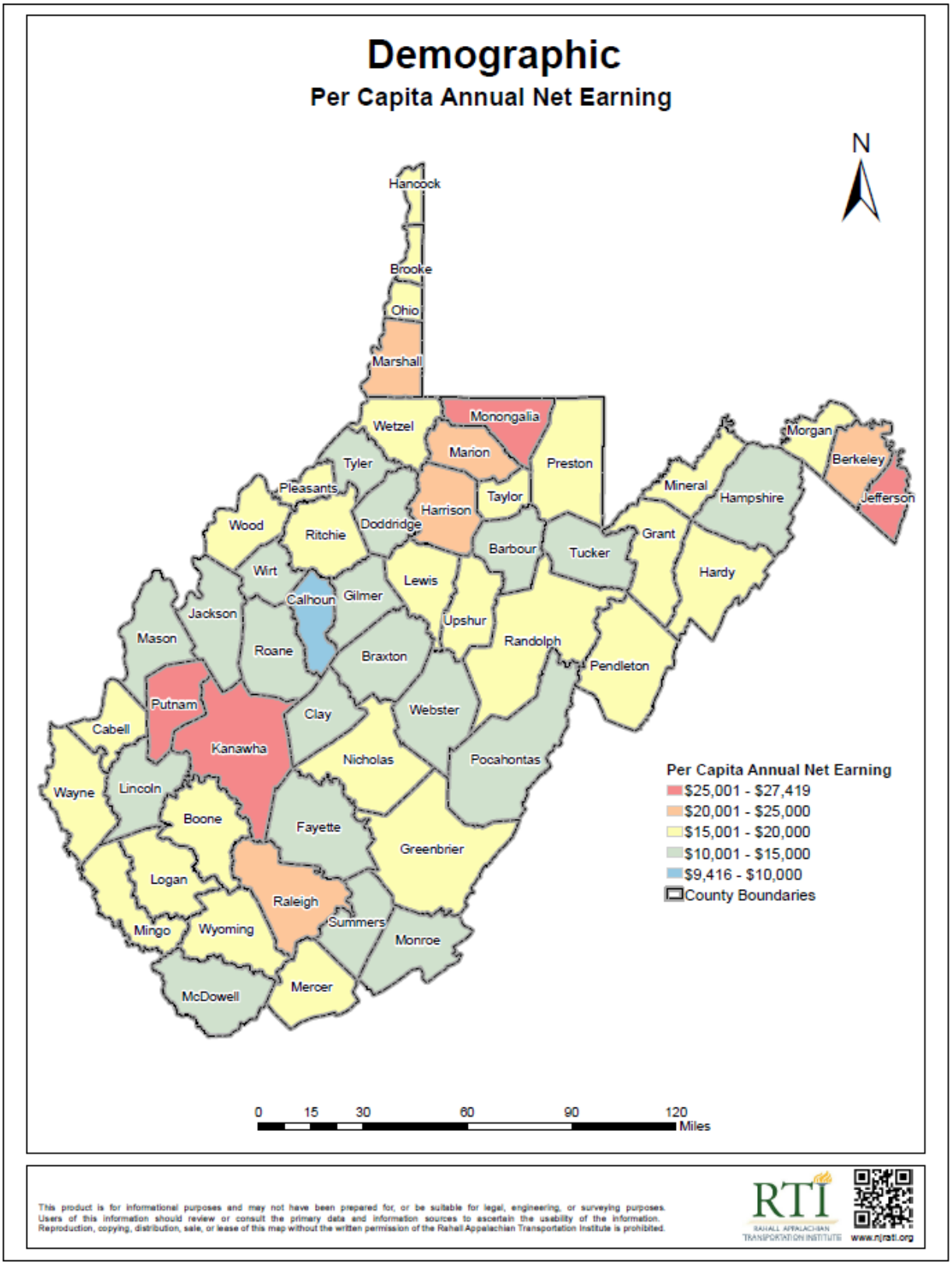
Demographic
Per Capita Annual Net Earning
N
Hancock
Brooke
Ohio
Marshall
Wetzel
Monongalia
Marion
Preston
Tyler
Pleasants
Taylor
Harrison
Wood
Ritchie
Doddridge
Barbour
Tucker
Wirt
Lewis
Gilmer
Calhoun
Jackson
Upshur
Randolph
Mason
Roane
Braxton
Pendleton
Putnam
Clay
Webster
Cabell
Kanawha
Nicholas
Pocahontas
Wayne
Lincoln
Boone
Fayette
Greenbrier
Logan
Raleigh
Summers
Mingo
Wyoming
Monroe
McDowell
Mercer
Morgan
Berkeley
Jefferson
Mineral
Hampshire
Grant
Hardy
Per Capita Annual Net Earning
$25,001 - $27,419
$20,001 - $25,000
$15,001 - $20,000
$10,001 - $15,000
$9,416 - $10,000
County Boundaries
0 15 30 60 90 120
Miles
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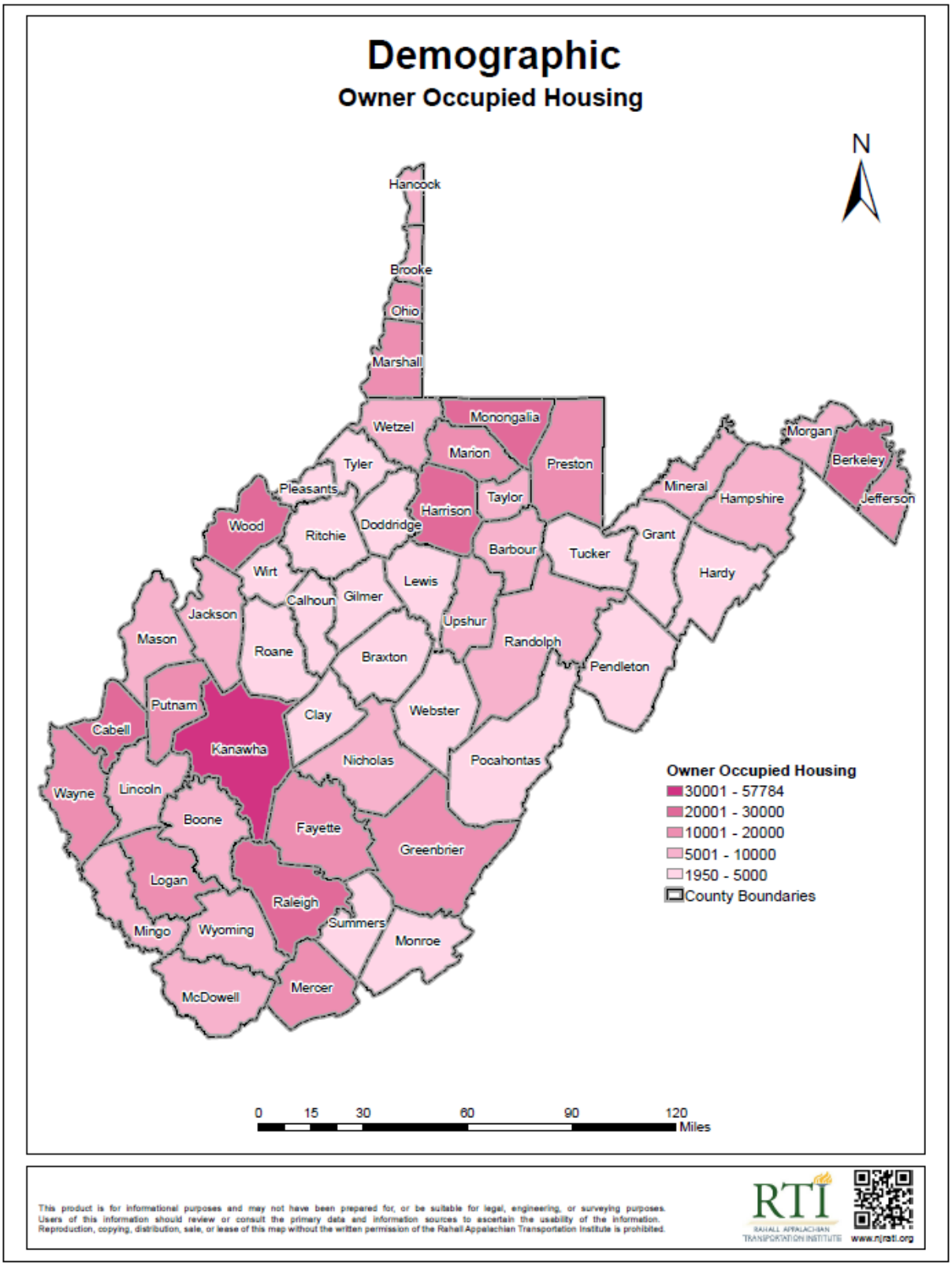
Demographic
Owner Occupied Housing
N
Hancock
Brooke
Ohio
Marshall
Wetzel
Monongalia
Marion
Preston
Tyler
Pleasants
Taylor
Harrison
Wood
Ritchie
Doddridge
Barbour
Tucker
Grant
Mineral
Hampshire
Morgan
Berkeley
Jefferson
Wirt
Lewis
Hardy
Calhoun
Gilmer
Jackson
Upshur
Mason
Roane
Braxton
Randolph
Pendleton
Putnam
Clay
Webster
Cabell
Kanawha
Nicholas
Pocahontas
Wayne
Lincoln
Boone
Fayette
Greenbrier
Logan
Raleigh
Summers
Monroe
Mingo
Wyoming
McDowell
Mercer
Owner Occupied Housing
30001 - 57784
20001 - 30000
10001 - 20000
5001 - 10000
1950 - 5000
County Boundaries
0 15 30 60 90 120
Miles
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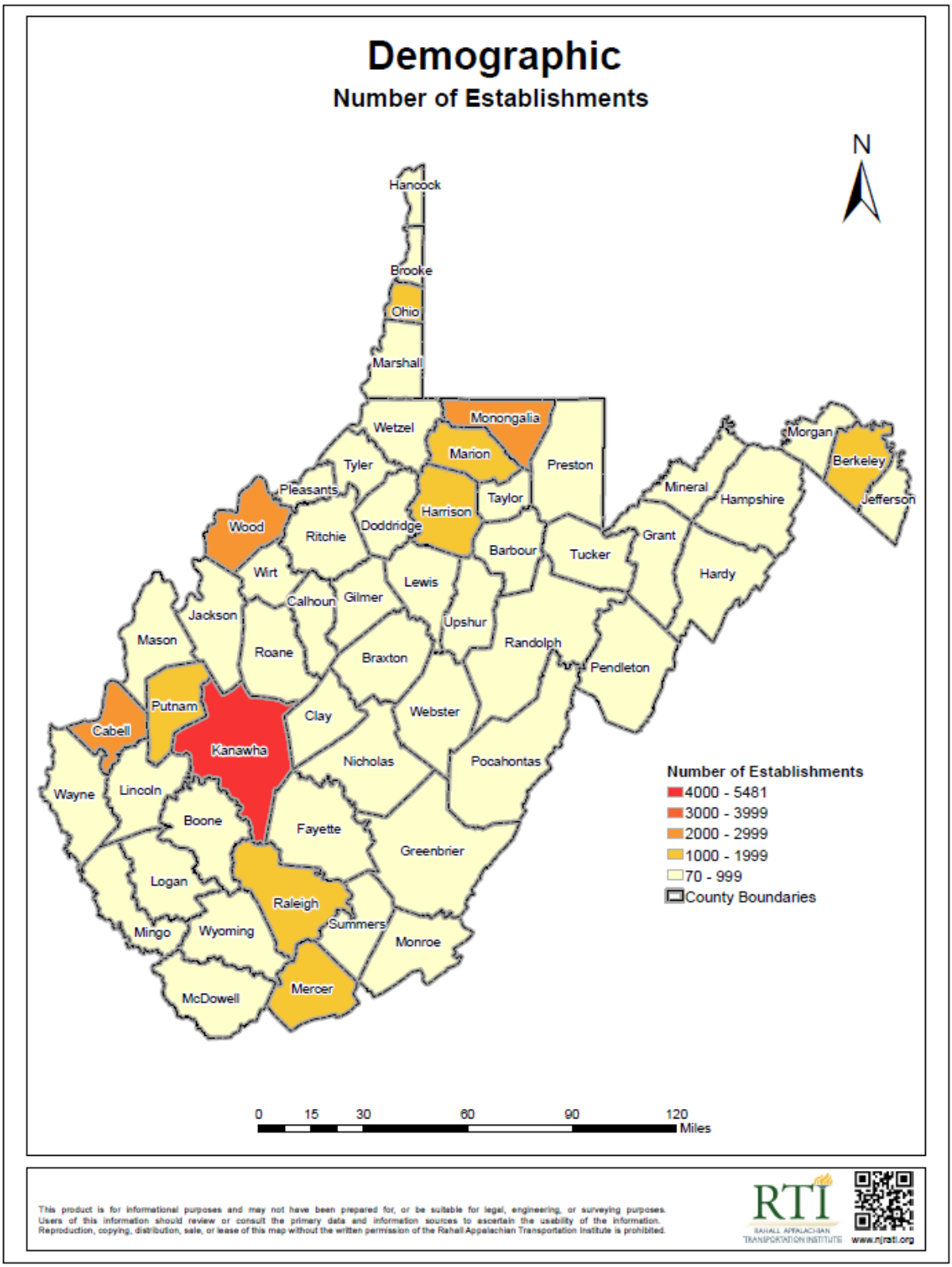
Demographic
Number of Establishments
N
Hancock
Brooke
Ohio
Marshall
Wetzel
Monongalia
Marion
Preston
Tyler
Pleasants
Taylor
Harrison
Wood
Ritchie
Doddridge
Barbour
Tucker
Mineral
Hampshire
Morgan
Berkeley
Jefferson
Grant
Hardy
Wirt
Calhoun
Gilmer
Lewis
Upshur
Randolph
Pendleton
Jackson
Mason
Roane
Braxton
Putnam
Cabell
Kanawha
Clay
Webster
Pocahontas
Nicholas
Wayne
Lincoln
Boone
Fayette
Greenbrier
Logan
Raleigh
Summers
Monroe
Mingo
Wyoming
McDowell
Mercer
Number of Establishments
4000 - 5481
3000 - 3999
2000 - 2999
1000 - 1999
70 - 999
County Boundaries
0 15 30 60 90 120
Miles
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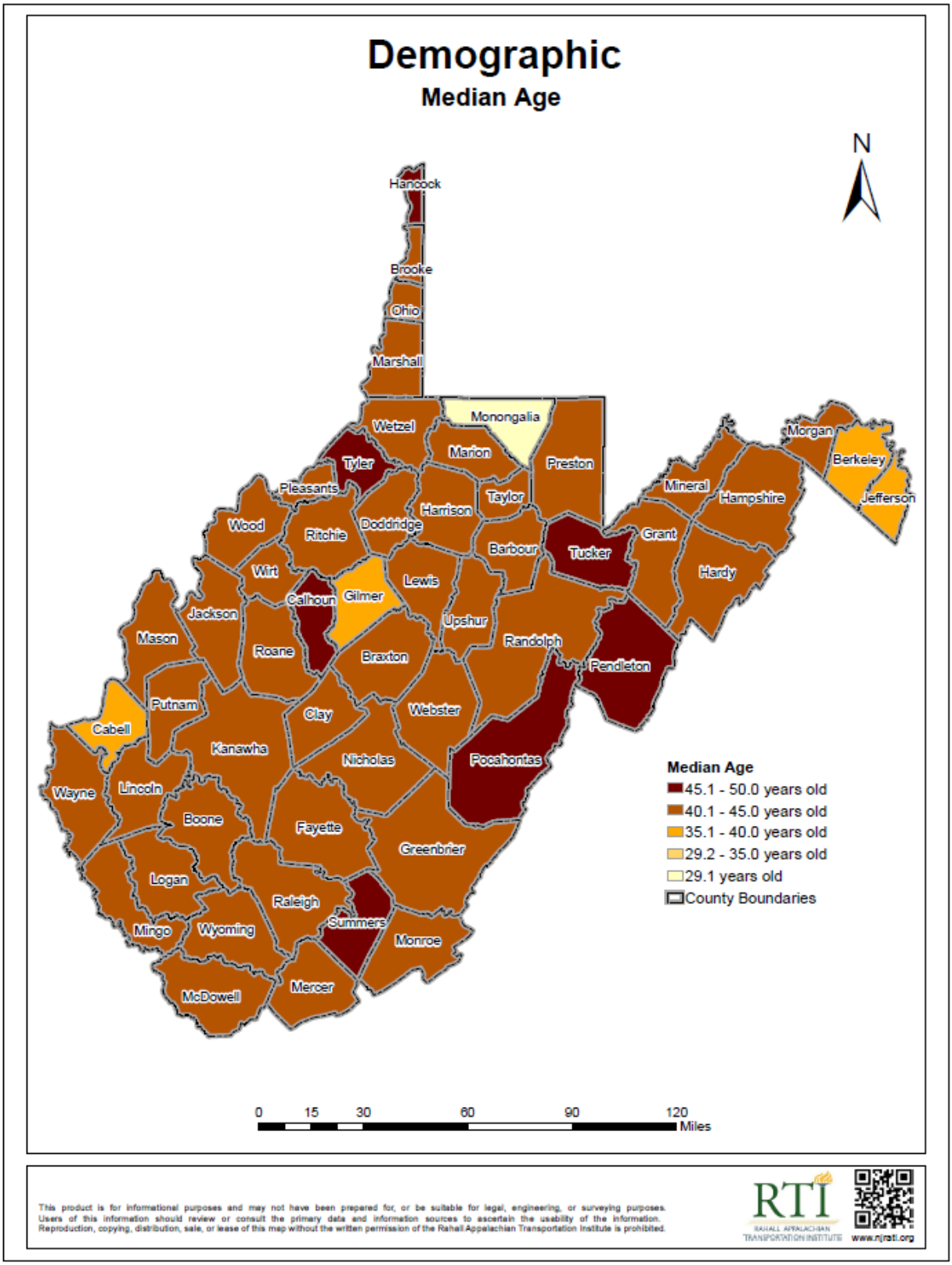
Demographic
Median Age
N
Hancock
Brooke
Ohio
Marshall
Wetzel
Monongalia
Marion
Preston
Morgan
Berkeley
Jefferson
Tyler
Pleasants
Taylor
Mineral
Hampshire
Harrison
Wood
Ritchie
Doddridge
Barbour
Tucker
Grant
Hardy
Wirt
Lewis
Calhoun
Gilmer
Upshur
Randolph
Jackson
Mason
Roane
Braxton
Pendleton
Putnam
Clay
Webster
Cabell
Kanawha
Nicholas
Pocahontas
Wayne
Lincoln
Boone
Fayette
Greenbrier
Logan
Raleigh
Summers
Mingo
Wyoming
Monroe
Mercer
McDowell
Median Age
45.1 - 50.0 years old
40.1 - 45.0 years old
35.1 - 40.0 years old
29.2 - 35.0 years old
29.1 years old
County Boundaries
0 15 30 60 90 120
Miles
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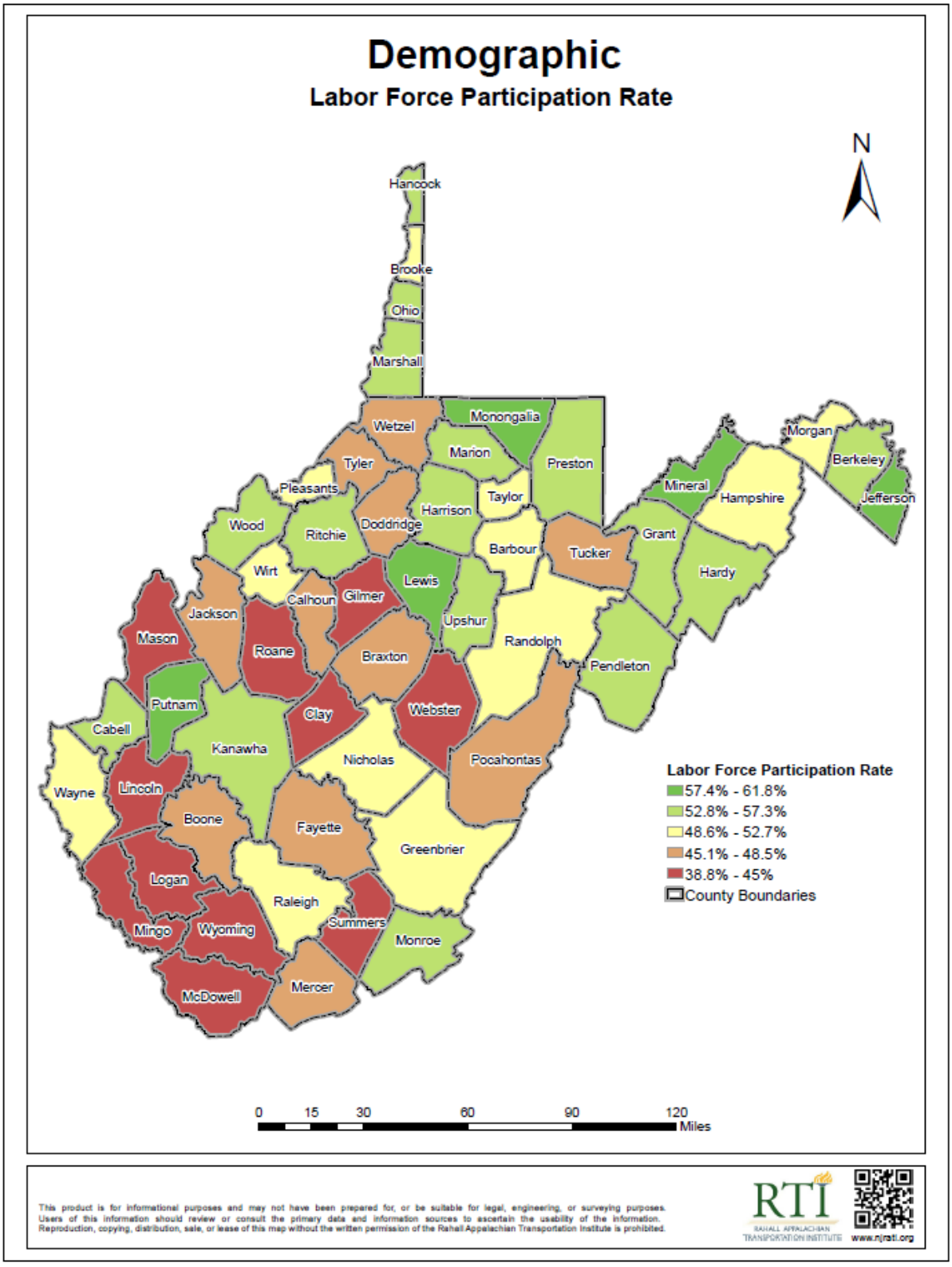
Demographic
Labor Force Participation Rate
N
Hancock
Brooke
Ohio
Marshall
Wetzel
Monongalia
Marion
Preston
Tyler
Pleasants
Taylor
Harrison
Doddridge
Wood
Ritchie
Barbour
Tucker
Wirt
Lewis
Calhoun
Gilmer
Jackson
Upshur
Randolph
Mason
Roane
Braxton
Pendleton
Putnam
Clay
Webster
Cabell
Kanawha
Nicholas
Pocahontas
Wayne
Lincoln
Boone
Fayette
Greenbrier
Logan
Raleigh
Summers
Mingo
Wyoming
Monroe
McDowell
Mercer
Morgan
Berkeley
Mineral
Hampshire
Jefferson
Grant
Hardy
Labor Force Participation Rate
57.4% - 61.8%
52.8% - 57.3%
48.6% - 52.7%
45.1% - 48.5%
38.8% - 45%
County Boundaries
0
15
30
60
90
120
Miles
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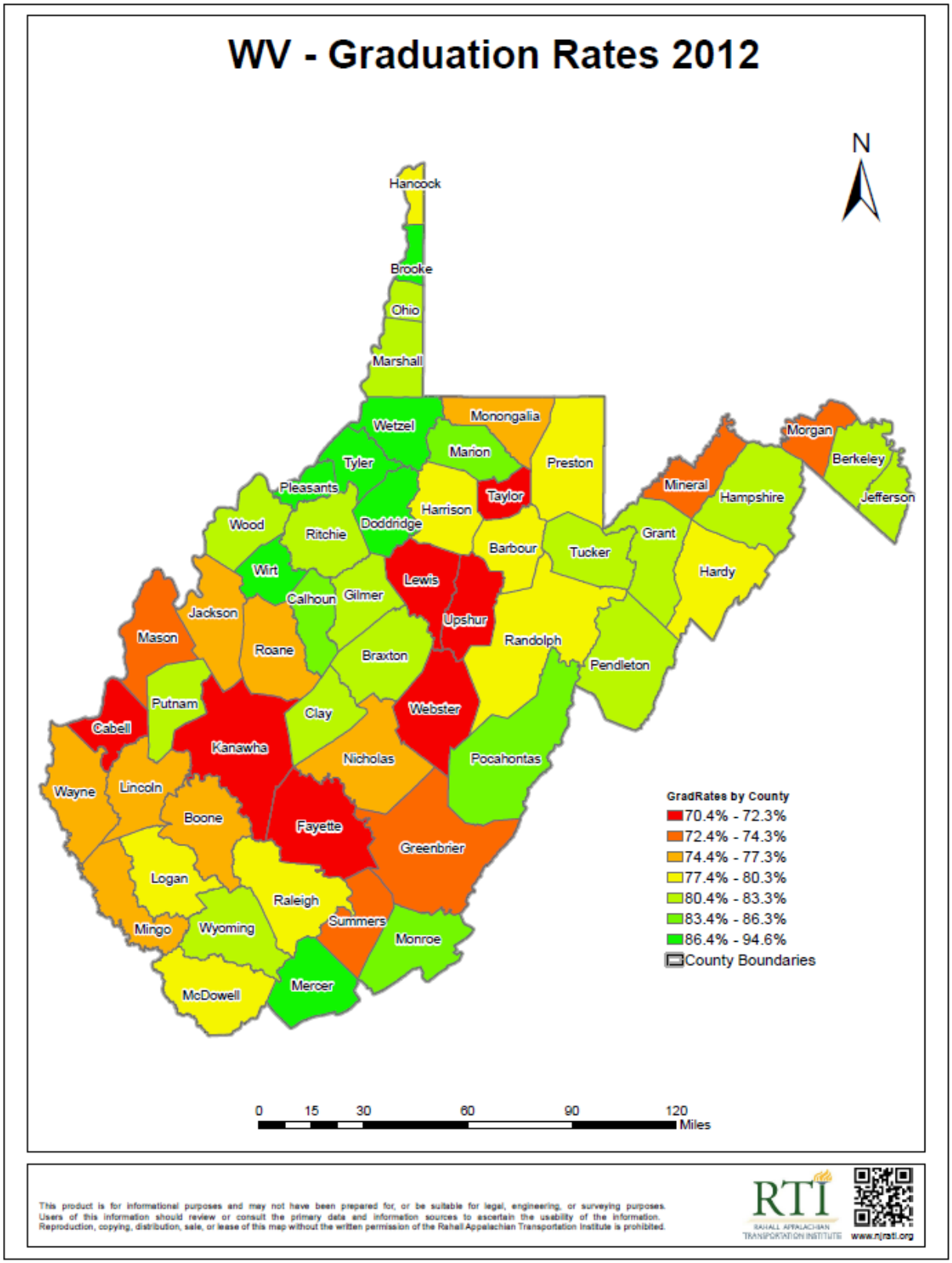
WV - Graduation Rates 2012
N
Hancock
Brooke
Ohio
Marshall
Wetzel
Monongalia
Marion
Preston
Morgan
Berkeley
Jefferson
Tyler
Pleasants
Taylor
Mineral
Hampshire
Harrison
Wood
Ritchie
Doddridge
Barbour
Tucker
Grant
Hardy
Wirt
Lewis
Calhoun
Gilmer
Upshur
Jackson
Mason
Roane
Braxton
Randolph
Pendleton
Putnam
Clay
Webster
Cabell
Kanawha
Nicholas
Pocahontas
Wayne
Lincoln
Boone
Fayette
Greenbrier
Logan
Raleigh
Summers
Mingo
Wyoming
Monroe
Mercer
McDowell
GradRates by County
70.4% - 72.3%
72.4% - 74.3%
74.4% - 77.3%
77.4% - 80.3%
80.4% - 83.3%
83.4% - 86.3%
86.4% - 94.6%
County Boundaries
0
15
30
60
90
120
Miles
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Enterprise GIS Economic Development Data Portal

User Manual

-Participating Agency-

Office of Coalfield Community Development
West Virginia Development Office

4/30/2013

Nick J Rahall, Appalachian Transportation Institute

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    - Deleting GIS Connections
    - Selecting Maps
    - Loading Maps Properly
    - Refreshing Maps
6. Basics
    - Navigate Maps
    - Zoom In / Out
    - View Detail Information of Map Objects
7. Layers
    - Overview Window
    - Scale Dependency
8. Tools
    - GPS (Global Positioning System)
    - Measure Distance
    - Measure Area
    - Base Map
    - Bookmarks
    - Find Location
9. Contact Information

Appendix
    - EDDP Map
    - EDDP Demographics Map

1. General Information

The Enterprise GIS –Economic Development Data Portal (EDDP) allows users to explore the maps of West Virginia which consists of various Geographic Information System (GIS) data. This application is specifically modified for ArcGIS* for iPad and the user simply searches or determines the location of interest. Information collected from this application can be applied in regional economic development studies in West Virginia.

The objectives of this manual are

- to navigate users to how to login to EDDP application using ArcGIS
- to familiarize users with the interface and tools by managing GIS related data.

*ArcGIS requires iOS 4.3 or later.

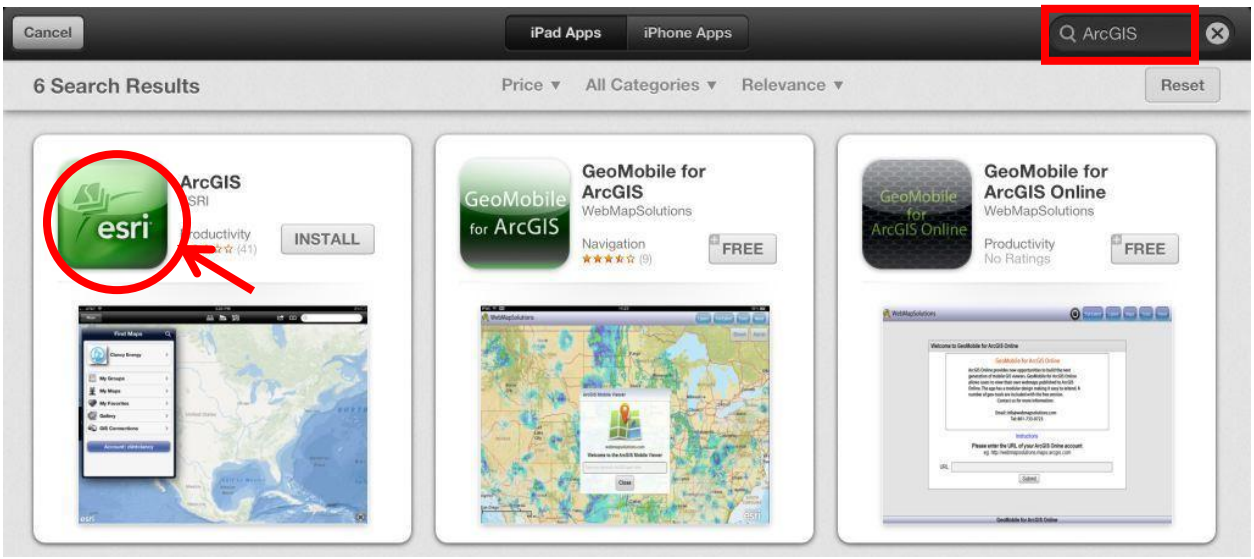
2. Features

- Presents customized map views for a mobile devise such as an iPad
- Provides comfortable map navigations with specific map scale for each layer
- Searches available properties for developments
- Displays and provides:
  - -Nine individual map views as Basemaps
  - -Access to the detail information by one tap on the map
  - -Physical geographic data such as elevation and hydrology
  - -Statewide demographic and economic data by county
  - -Transportation data
  - -Public facilities data such as hospitals, schools and police stations
  - -Utilities data
  - -Restricted area information including public lands, environmental and historic resources
  - -Available and possible natural resource data
  - -Various boundaries by states, counties, cities, and planning regions

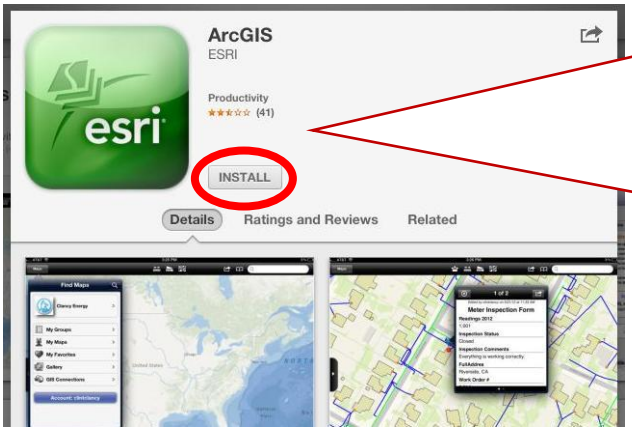
3. Managing App

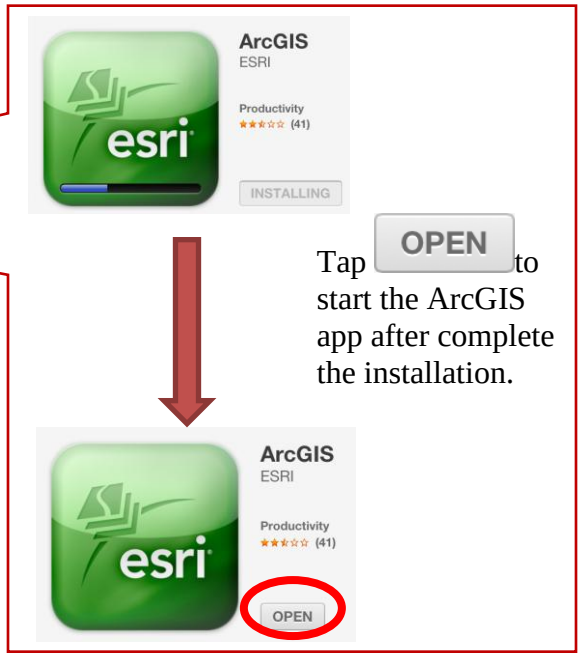
- **Downloading App**

Go to App Store and search "*ArcGIS*", and tap ArcGIS by ESRI to select from search results.



Tap INSTALL to start the installation.





Tap OPEN to start the ArcGIS app after complete the installation.

- **Deleting App**

Touch and hold esri icon on the Home screen until the icon starts to jiggle, then tap x located on the top left of the icon.

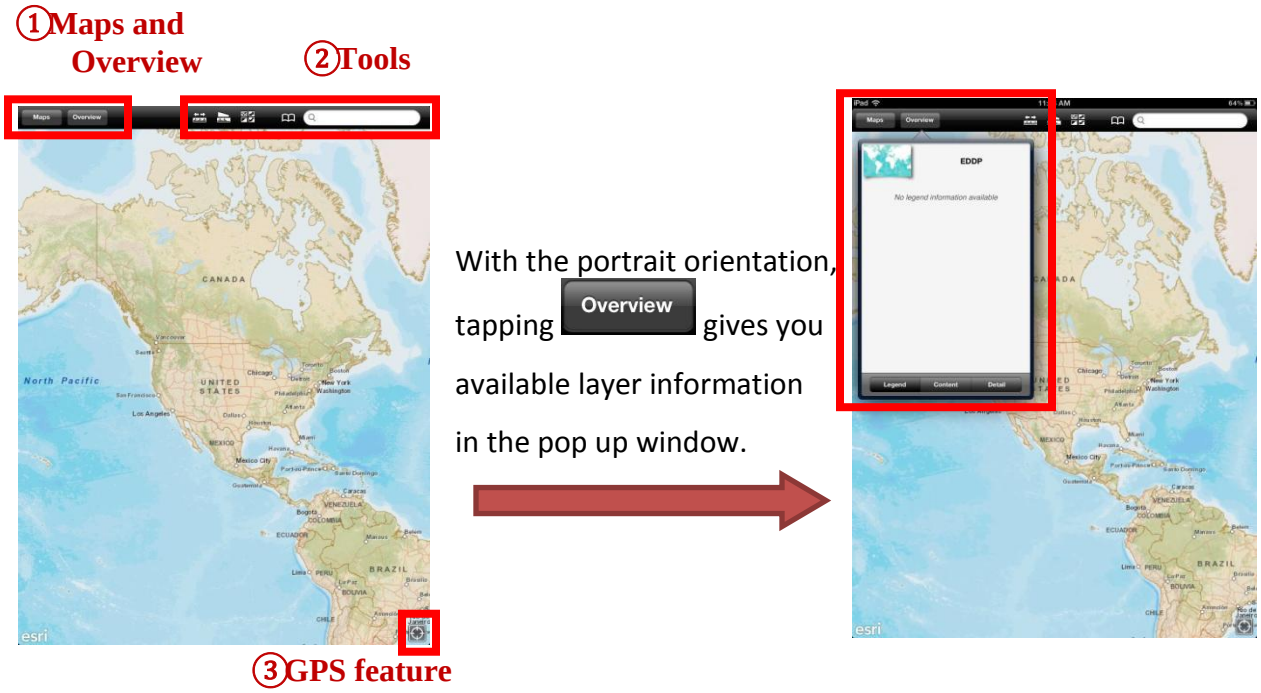
When you finish, press the Home button .

4. Layouts

Tap the ArcGIS icon on the Home screen to start the app.

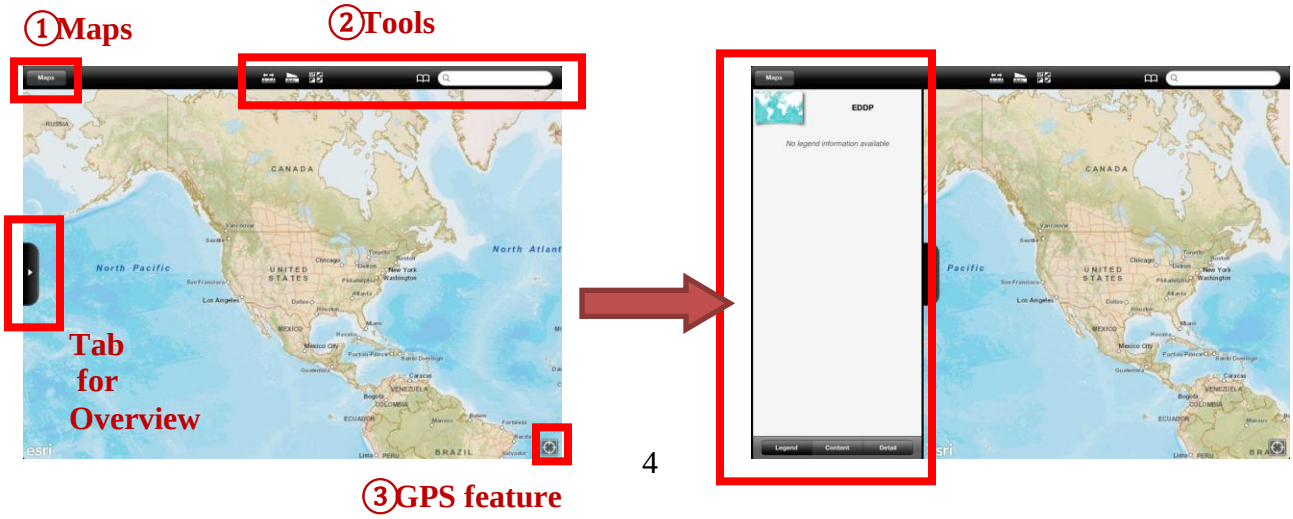
ArcGIS provides two layouts with orientations switching between portrait and landscape. The only difference is the way of displaying Overview window.

- **Portrait View**



- **Landscape View**

With the landscape orientation, tap the tab on the left and Overview windows appears.

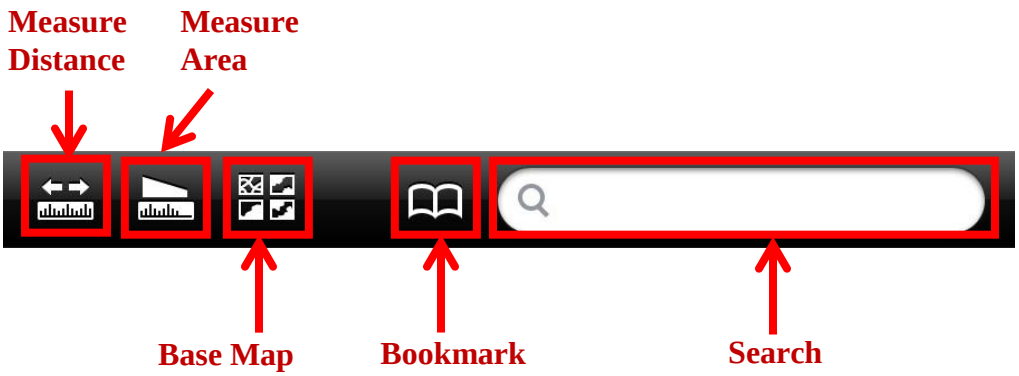


① Maps and Overview

Tapping Maps will open **Maps** window, which lists and manages your maps.

Tapping Overview and display **Overview** windows.
You can see layers and symbologies information in this window.

② Tools



③ GPS feature

By tapping the GPS feature, your current location will be displayed on the map.

***Note*:** Please refer to **Maps** on page 6, **Layers** on page 13 and **Tools** on page 15 in this manual for detailed instructions.

5. Maps

Before you are able to start exploring the maps, a GIS Connection needs to be created. It is the connection to the server which contains map data.

- **Creating GIS Connections**

Tap

upper left corner and **Find Maps** window will appears.

Select GIS Connections.

Tap to add new map connections.

GIS Connections window will appear with keyboards.

Enter the server address for GIS connection https://maps.njrati.net/arcgis/mobile and tap

.

The window will appear and ask your credentials for the GIS connection.

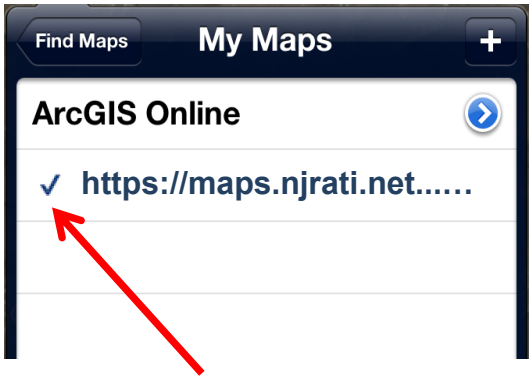
Enter your Username and Password and tap

to connect to your map.

After the credentials are accepted, the GIS Connection is created and your server address appears in **Find Maps** window.

The server address (http://maps.njrati.net:6080/arcgis/mobile) should be appeared.

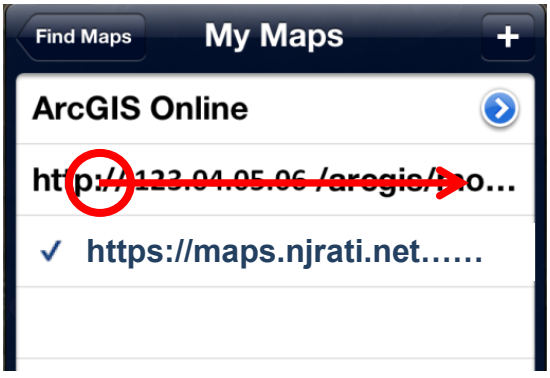
By tapping **GIS Connections**, you can check your new connection just established in **My Maps** window.



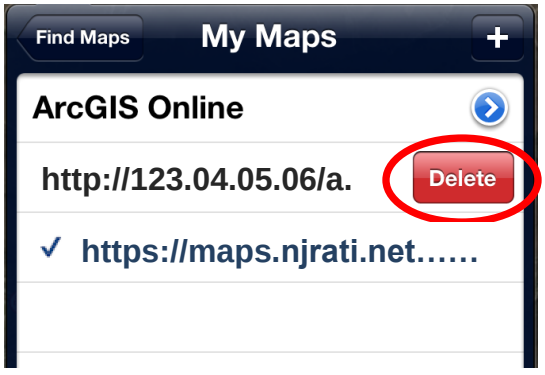
The check mark appears left of current connections.

- **Deleting GIS Connections**

In **My Maps** window, swipe your finger left to right (or right to left) on the GIS Connection which you would like to delete.



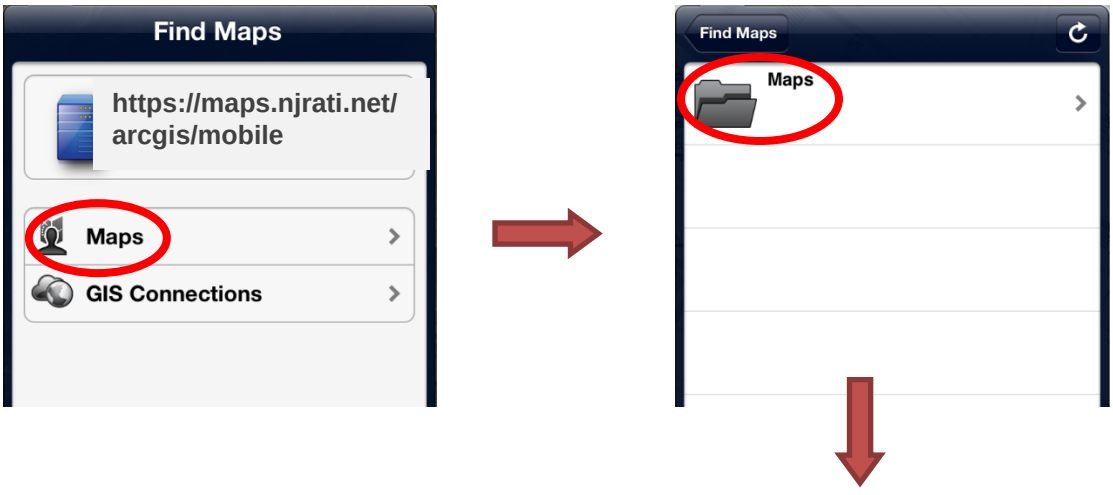
Delete will appears right hand of the connection and tap it to delete.



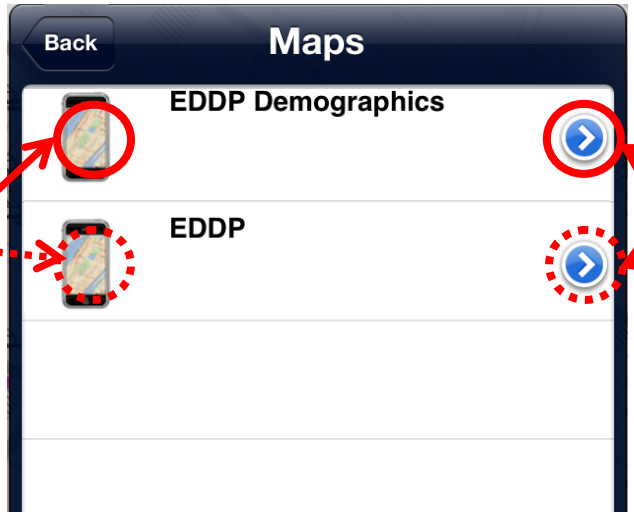
Note: Please notice that current GIS connection cannot be deleted. The GIS connections without the check mark on the list are available for delete options.

- **Selecting Maps**

In **Find Maps** window, tap **Maps** to open Maps folder.



In **Maps** folder, available maps are listed up.
There are two maps available.
Tap the map icon to select the map.



Tap to see the detail information for each map.

Both maps contain available business properties data from WV Development Office.

EDDP Demographics map contains demographic data such as population and unemployment rate in WV. These data are statewide and symbolized by county.

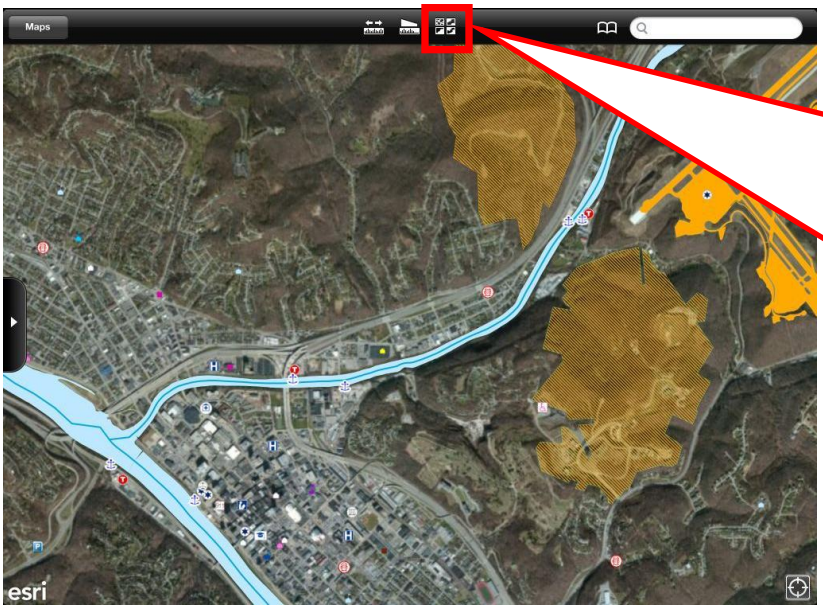
EDDP map consists from variety of geographic, economic and resource data in WV.

Please explore both maps and select a suitable map for your development analysis.

• Loading Maps Properly

Since both **EDDP** and **EDDP Demographics** maps contain a lot of information, you need to load the map properly to see all available data.

After created the GIS Connection, check the color of the Basemap mark whenever start the EDDP application or open new map.

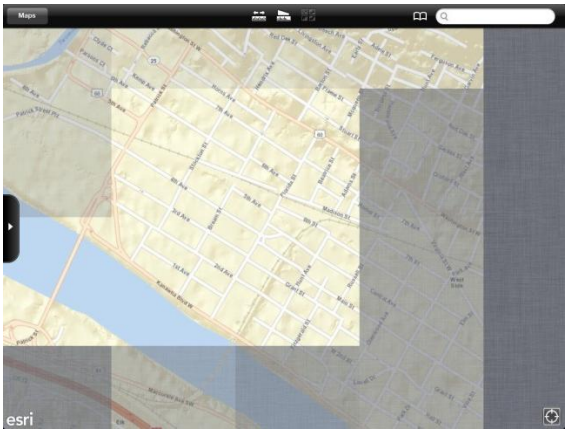


When the mark is white, the data load is completed. The map is ready to explore.

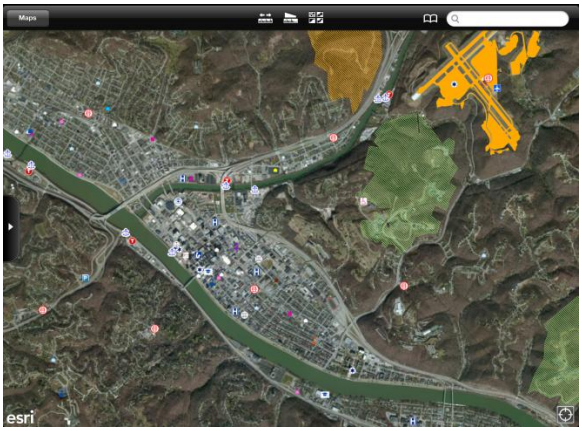
When the mark is grey,

If the map is manipulated while the data are loading, the map shows only layers finished loading at the moment and you may miss map information.

These two images show two examples of failing data loads.



The map view with uncompleted basemap



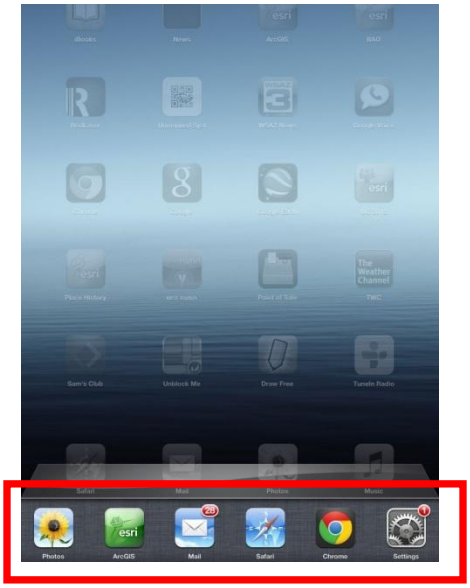
The map view missing Rivers layers

To enable to display all contents of the map, please make sure that the data load is completed properly, or refresh and load the map again. (Please refer next page for refreshing maps.)

- **Refreshing Maps**

If you are not viewing Home screen, press Home button and back to Home screen.

Double-click the home button to reveal the Multitasking bar.



Touch and hold ArcGIS icon until the icon starts to jiggle in the Multitasking bar.
The edit mode starts and all icons in the Multitasking bar jiggle with the red badge with the minus sign.

Tap the minus sign to end or quit the ArcGIS app.

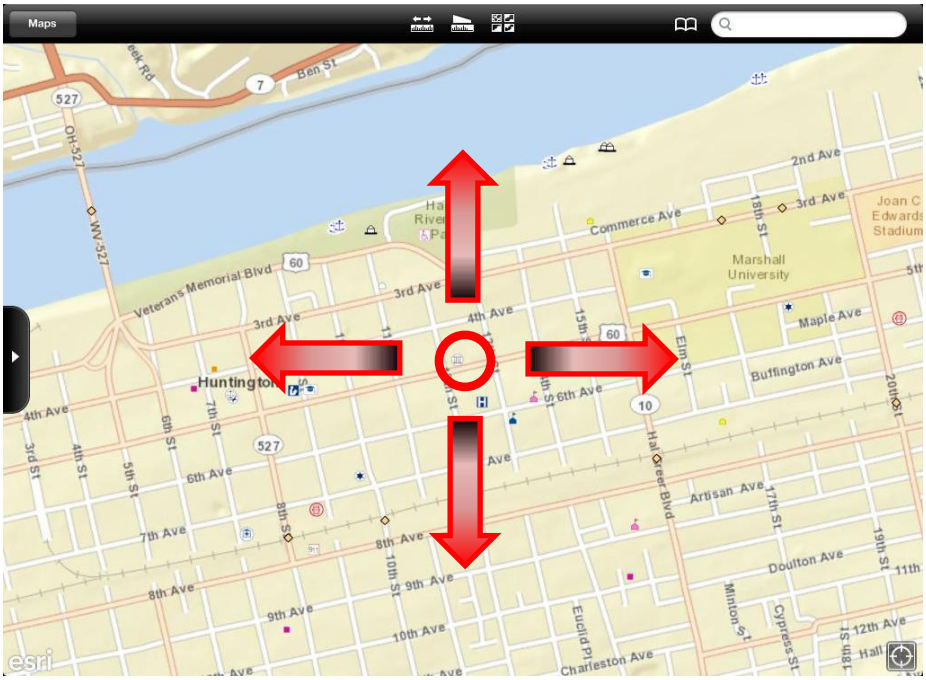
After the ArcGIS icon was cleared in the Multitasking bar, press Home button to finish the edit mode.

Back to Home screen and start the ArcGIS app.

Open the map and follow the steps for **Selecting Maps** (page 8) and **Loading Maps Properly** (page 9).

6. Basics

- **Navigate Maps**



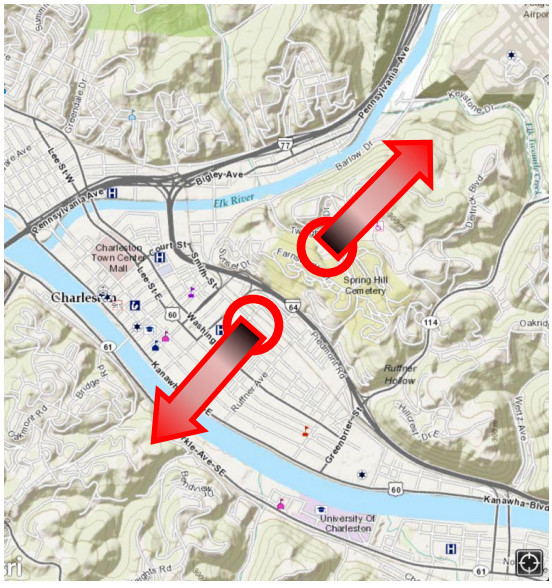
To move the map up or down, left or right, drag the screen with your finger.

Repeat if you wish to move the map farther.

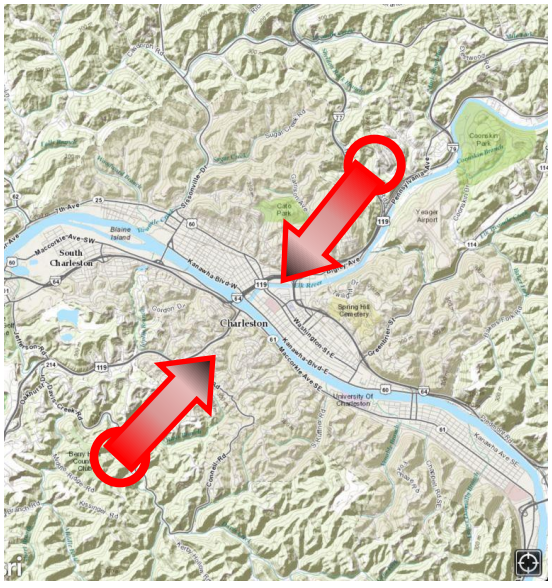
- **Zoom In / Out**

You can zoom in to enlarge or zoom out to reduce the map image on the screen.

Spread two fingers apart to zoom in or double-tap (tap twice quickly).

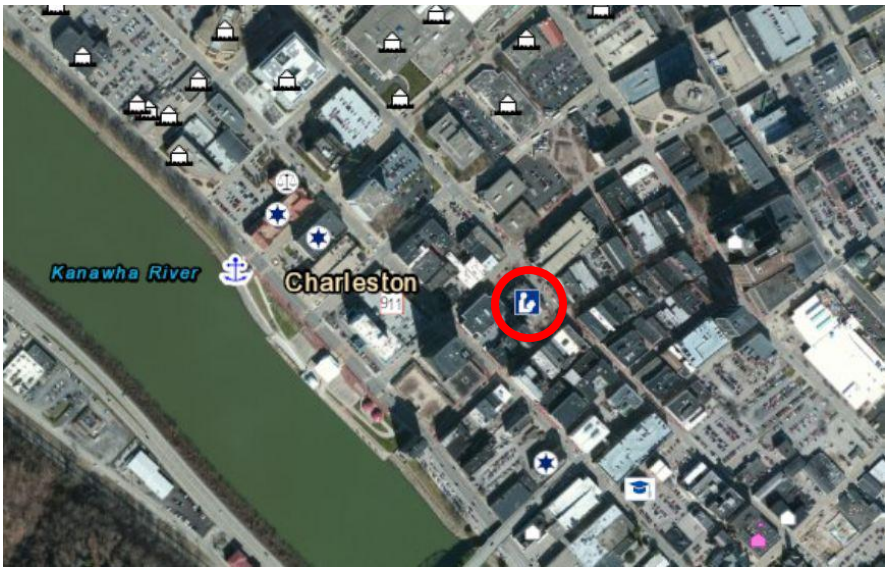


Pinch two fingers together to zoom out or tap once with two fingers.



- **View Detail information of Map Objects**

Zoom in enough to see a desired object on the map, and tap it to select.



The objects will be marked in red with and the info window opens beside the map objects.

Tapping the web address will navigate you directly to the website, if website information is available.

To close the info window, tap .

By tapping , you can save the location as **Bookmarks**. Please refer to page 20 in this manual for detailed instructions.

7. Layers

A layer is a reference to a data source that defines how the data should be symbolized on a map. The **Overview Window** displays layers' information and you can manage the available layers in EDDP application. Proper understanding of the layer information is valuable and essential to explore maps and search desirable properties.

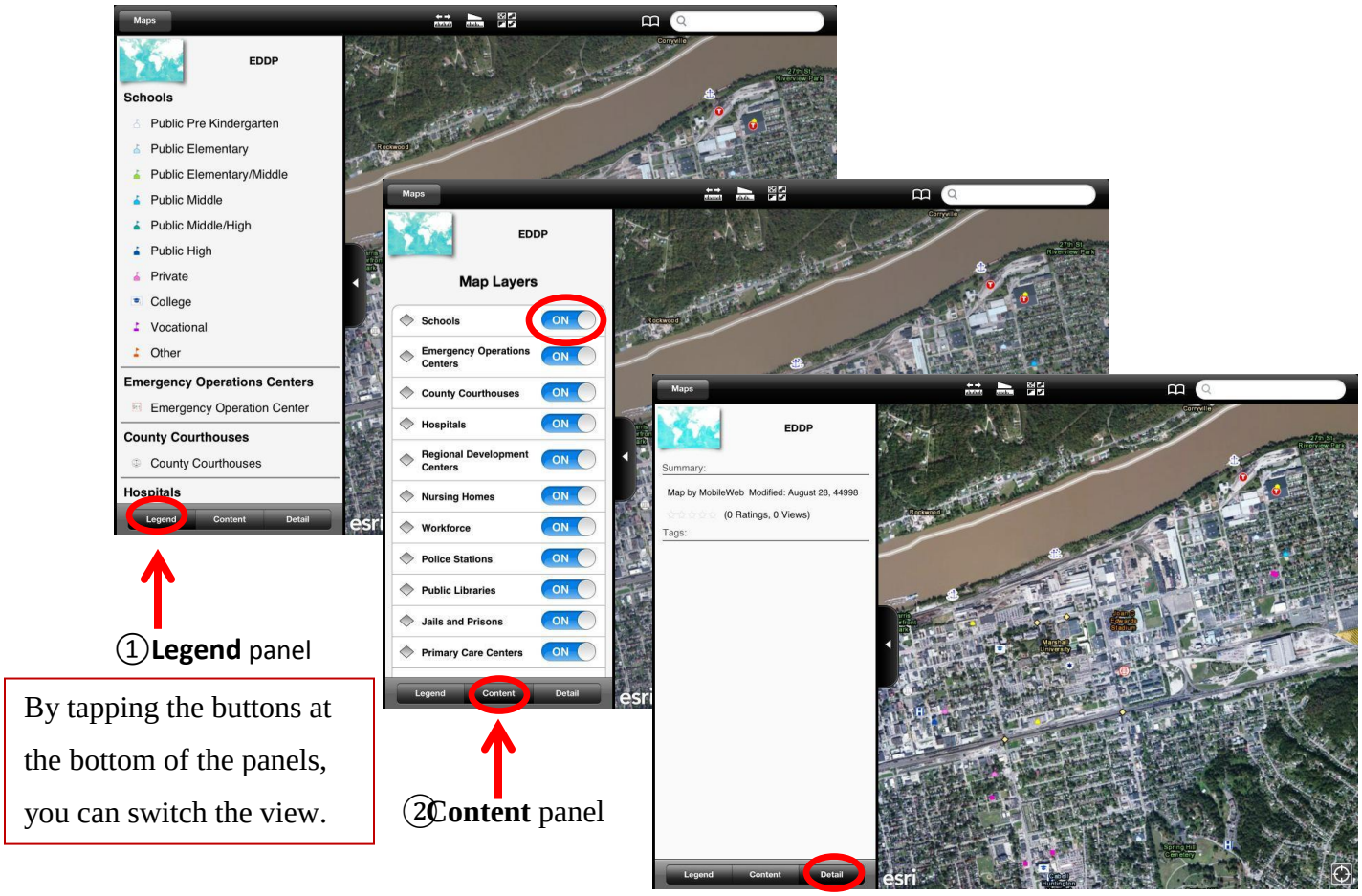
- ### Overview Window

Overview Window consists of three panels and each panel displays different information about layers and maps.

①**Legend** panel shows the symbologies of layers which are turned on in Content panel in the current map scale.

②**Content** panel shows the list of available layers in EDDP. You can organize the map view and symbologies of the Legend panel by turning ON and OFF.

③**Detail** panels show the detail of the map.



①**Legend** panel

By tapping the buttons at the bottom of the panels, you can switch the view.

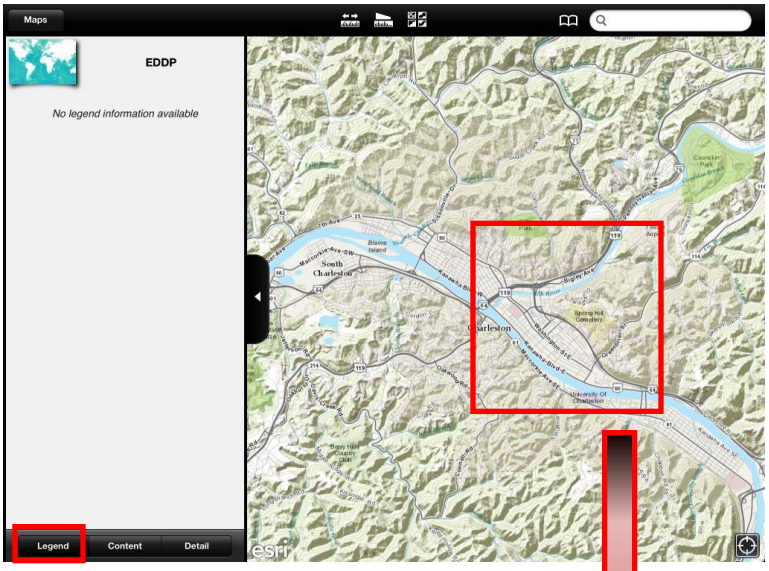
②**Content** panel

③**Detail** panel

- ## Scale Dependency

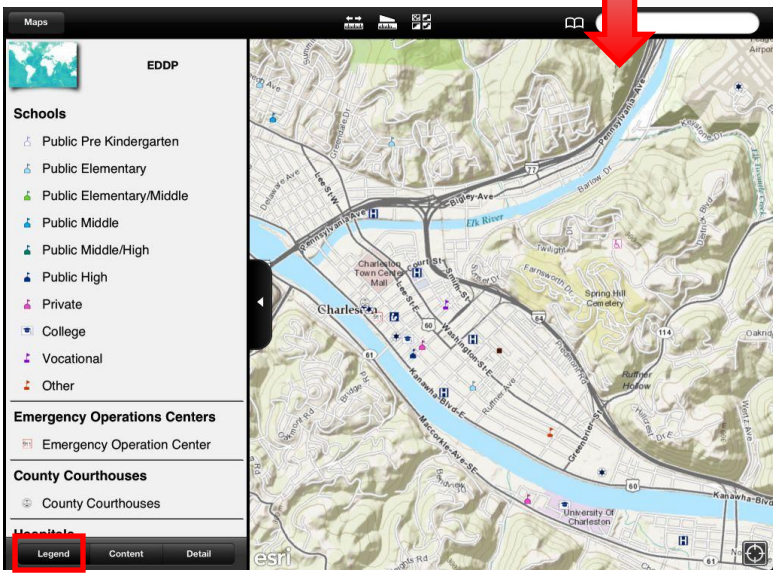
To improve the appearance and usefulness of a map, each layer is added Scale Dependencies. The Scale Dependency enables to customize the map view which controls the scale at which a layer displays.

In EDDP, Scale Dependencies are set for each layer for comfortable map view by removing clutter. Thus, some layers will not appear in the Legend when the map is zoomed out beyond the specified scale range (shown next to each layer name, if the Scale Dependency is set) even you turn on the layers.



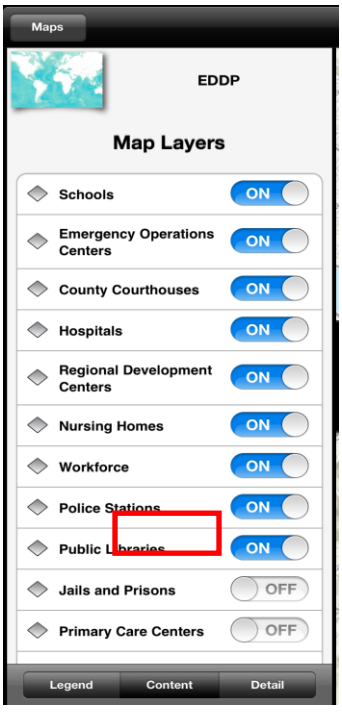
Map View A: Legend panel shows no symbologies because the map scale is not zoomed enough

Zoom In



Map View B: Legend panel shows layer's symbologies which appear in the map after zoom in

Note: Even **Map View A** and **Map View B** have Legend panels which include different number of symbologies, Content panels of both Map Views display same layer contents shown below.

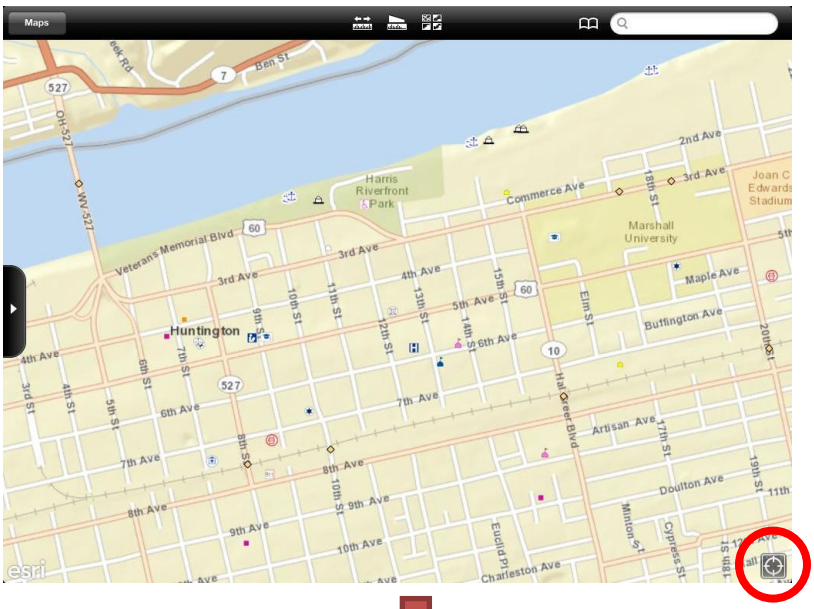


Content panel simply lists which layers are available and is not affected by scale

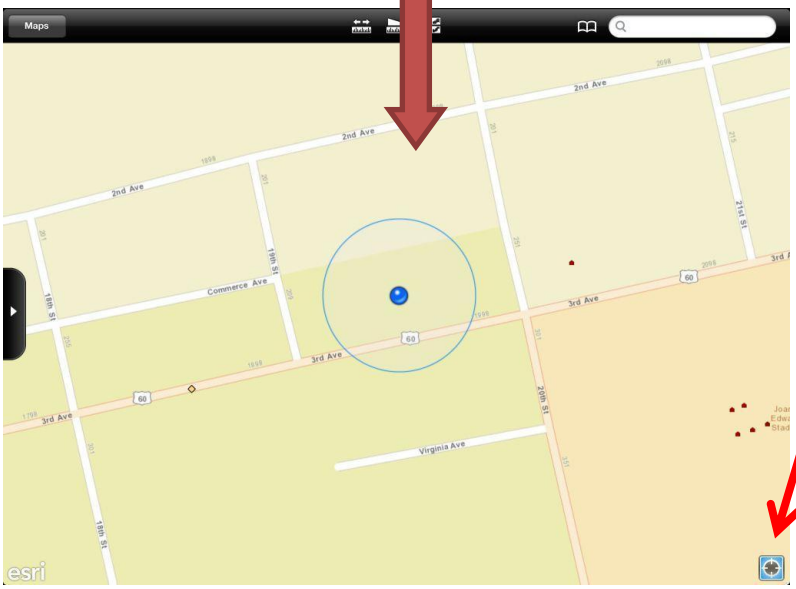
8. Tools

- **GPS (Global Positioning System)**

The GPS feature shows your current location.



Tap in the lower right corner, and your current location will be displayed on the maps.



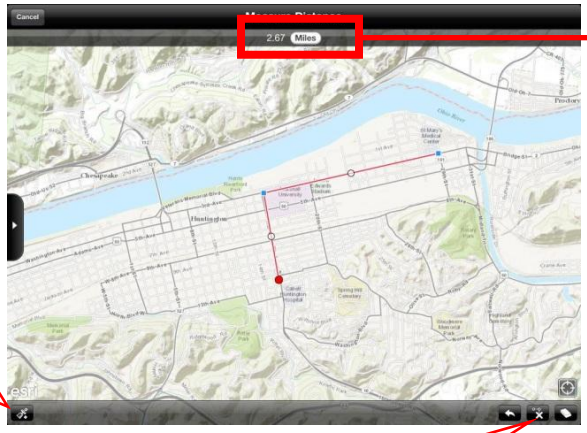
When the GPS feature is turned on, the icon color changes to Light blue

Tap again to turn the GPS feature off.

- **Measure Distance**

Measure Distance tool lets you measure the point-to-point distance anywhere tapped on the map. You can draw a line and get its length in different units.

Tap and start a Measure Distance session.



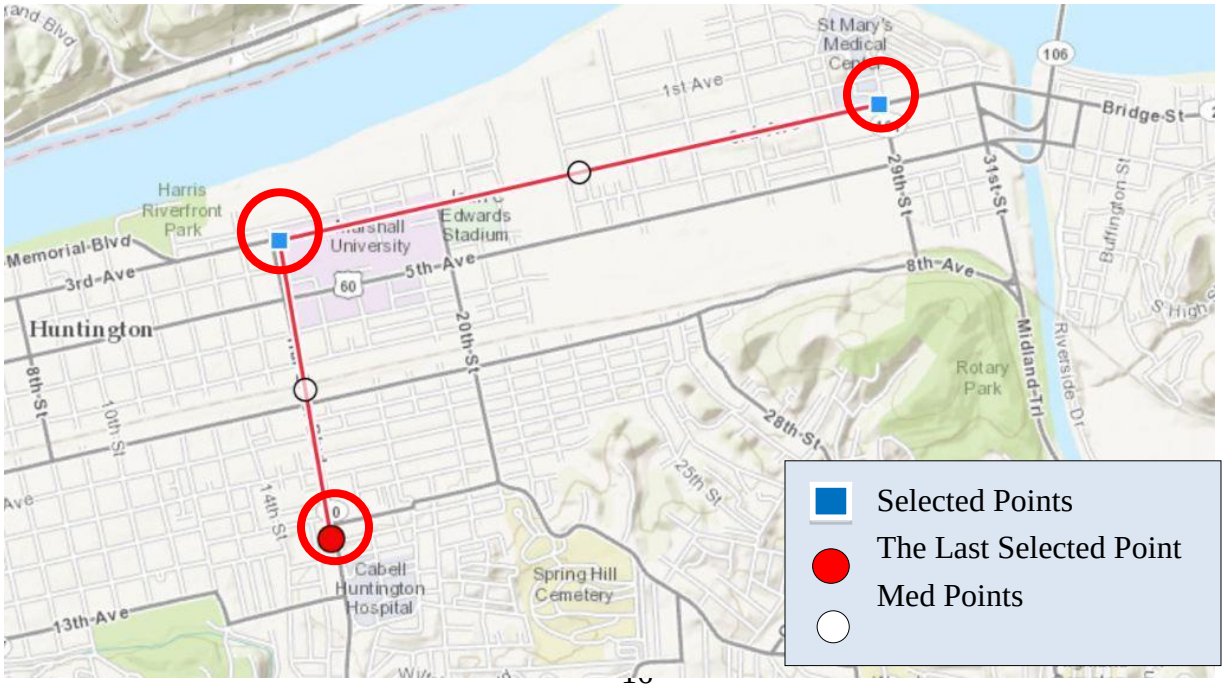
A measured distance will be displayed with your choice of unit.

Tap and select the unit you prefer.

Add GPS point

Editing Tools

Tap anywhere in the map to select the first point, and repeat until finish drawing lines.



By tapping , you can turn GPS on and add your current location while drawing. You can also start or finish your drawing with the GPS point.

Drawing lines using current GPS location as the first point for measuring their

While working in Measure Distance session, these editing tools are available.

Undo your drawing

Delete last point

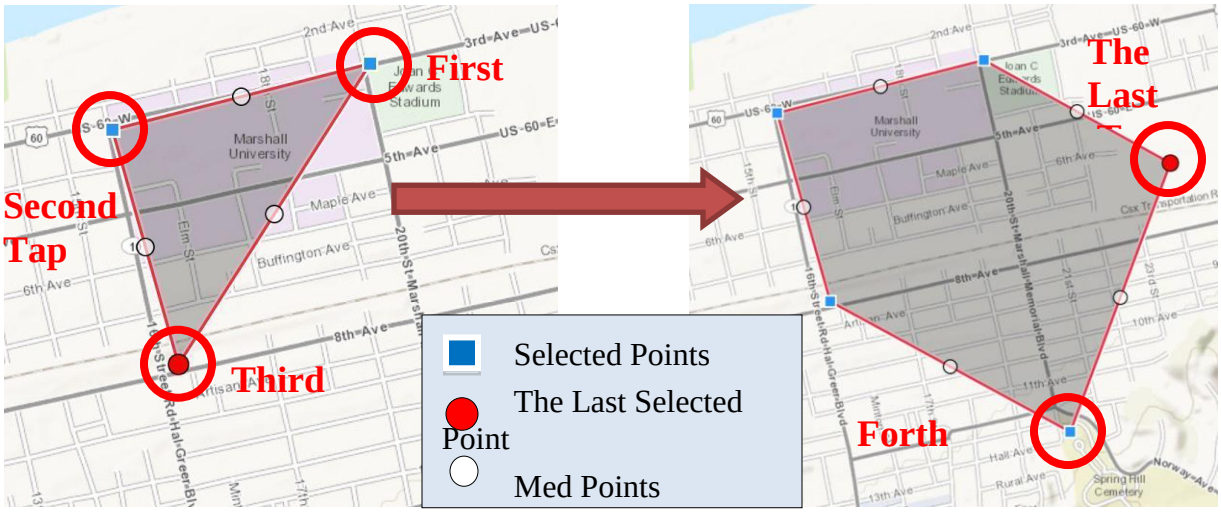
Erase your drawing

- **Measure Area**

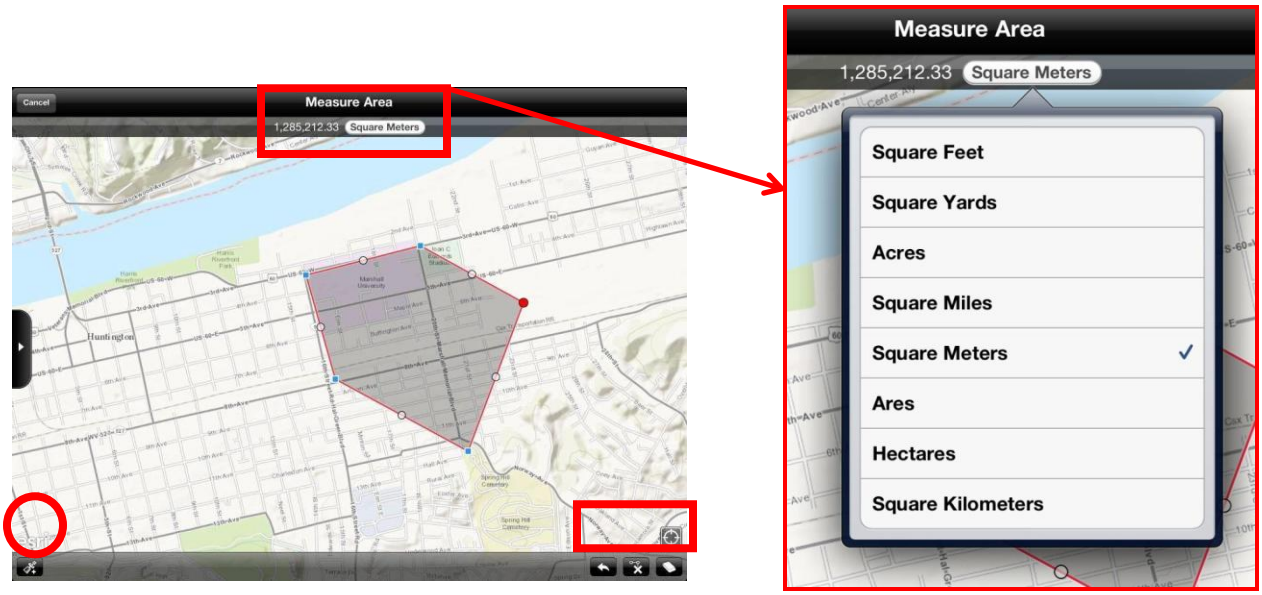
Measure Area tool lets you draw polygons on the map to measure areas. You can draw a polygon by tapping on the map to select angles or sides of the polygon. You can also get its area in different units.

Tap and start a Measure Area session.

By tapping anywhere on the map, you can add the angles or sides of the polygon.



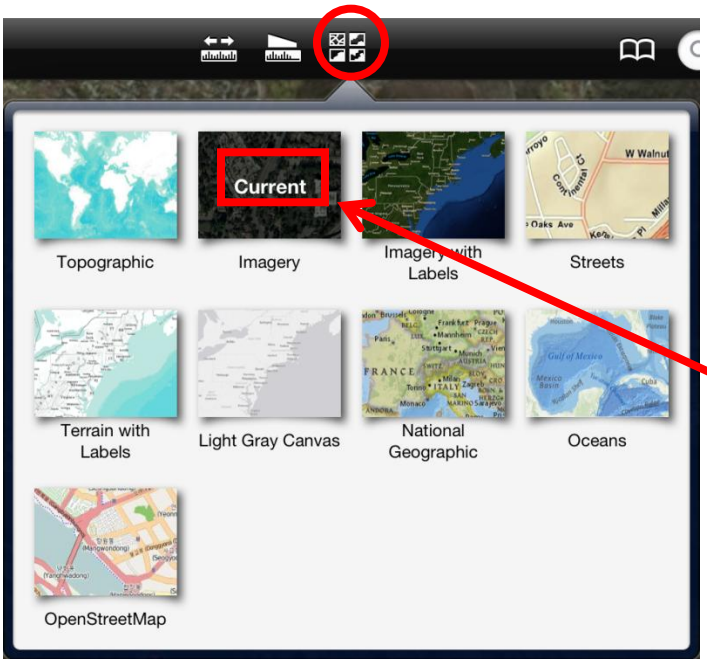
Same as **Measure Distance**, different units and tools are available.



Add Editing Tools

- **Basemap**

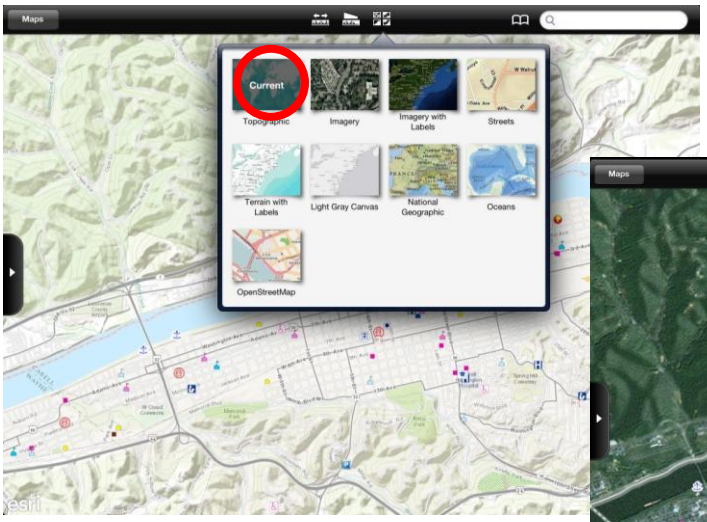
Basemap tool gives you options to change the background of the map.



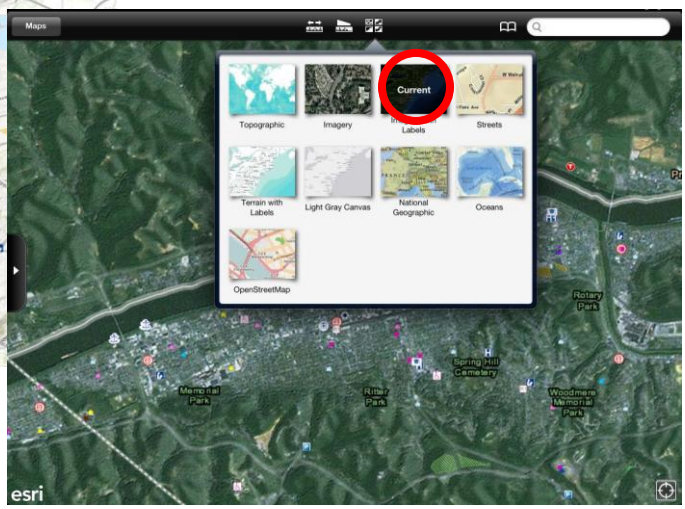
By tapping ,
nine individual map views will appear in the expanded area.

"Current" will be display on the selected map.

Tap a desired view to select, and the background of the layer will be changed.



Map View with Topographic Basemap



Map View Changed to Imagery with Labels Basemap

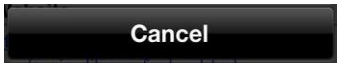
- **Bookmarks**

With Bookmarks, you can save shortcuts to your favorite objects on the map and navigate to them.

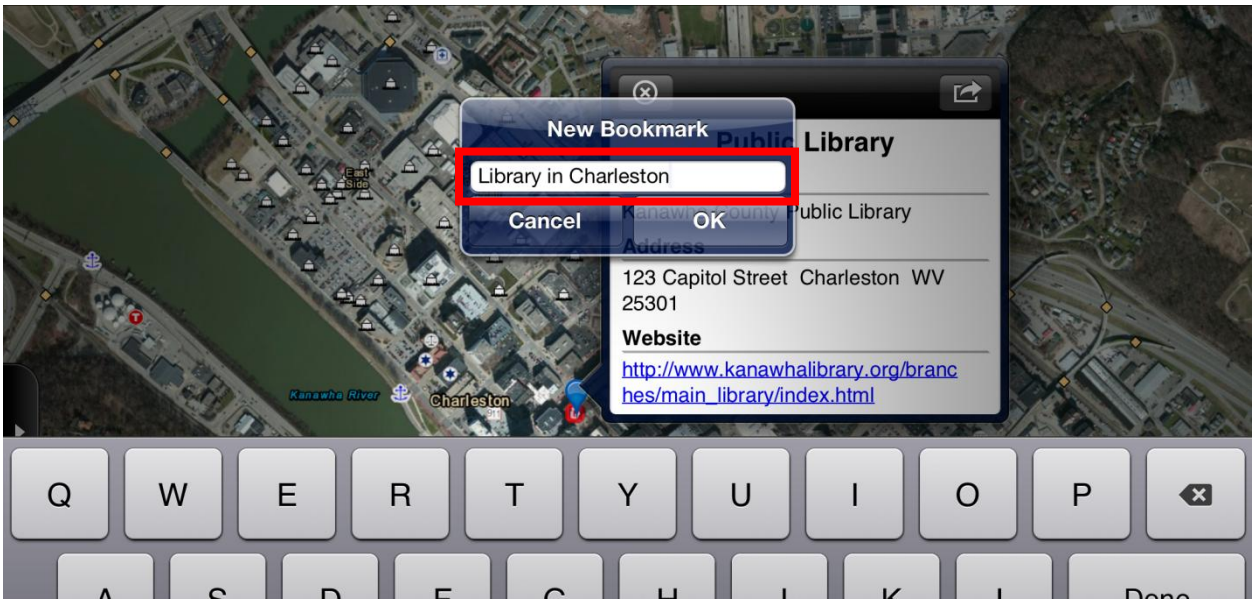
Tap a map object to open the info window.

Tap

Tap to continue.

Tap  to quit

By tapping , a New Bookmark window will appear with keyboards. Here you can name your new bookmarks.

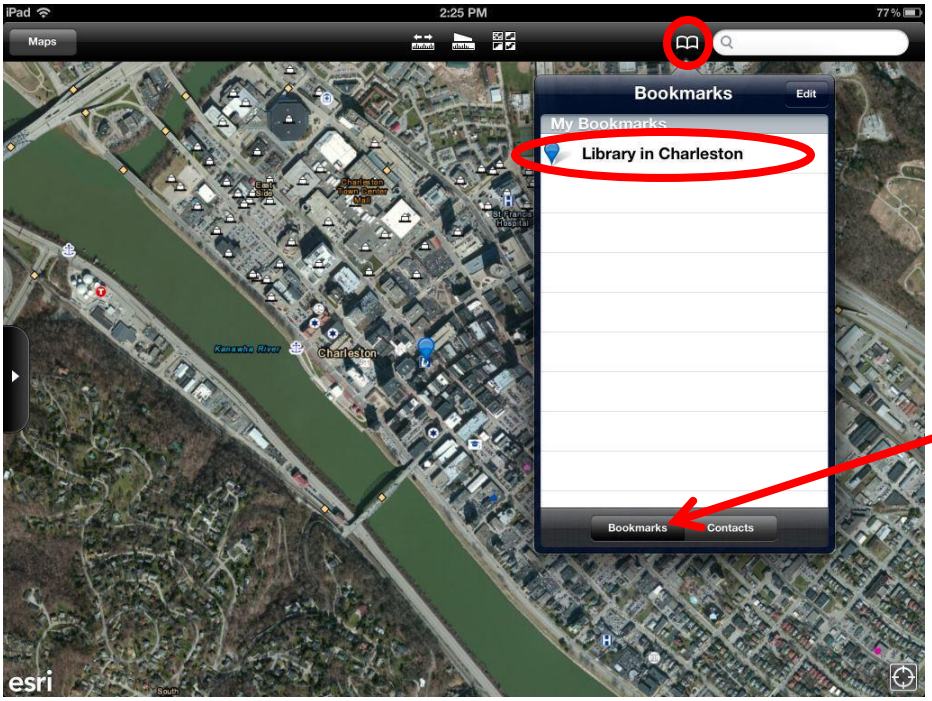


Type your new bookmark name, and tap to add it.

Tap to quit adding the new bookmark.

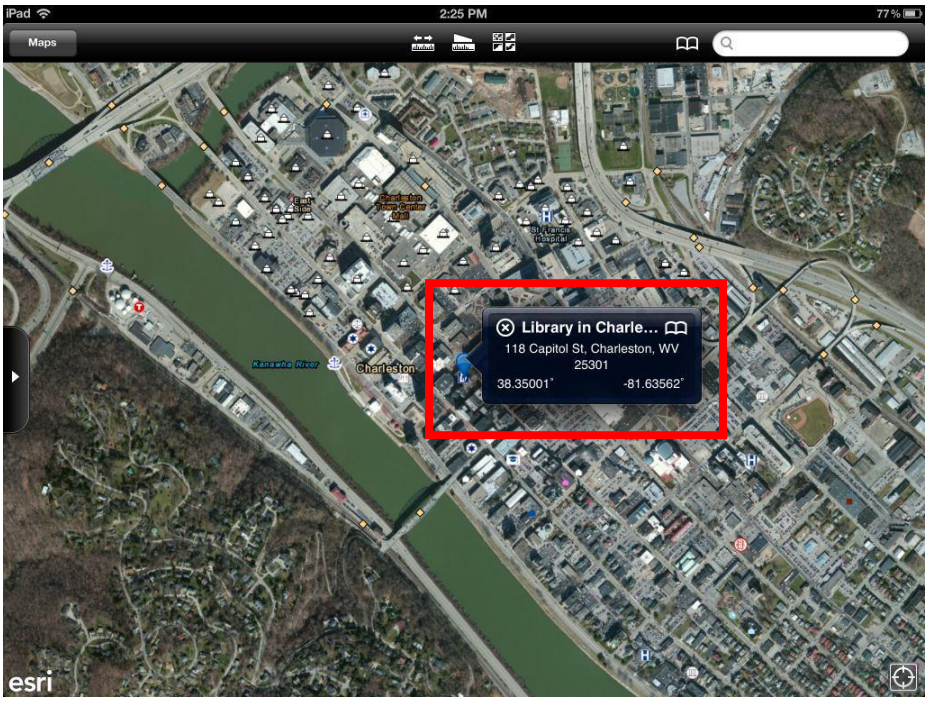
You can check your new bookmark by tapping next to Search bar.

The list of My Bookmarks will be displayed.



Please make sure the Bookmarks tab is selected to see My Bookmarks.

By tapping one of listed bookmarks, your saved objects will be located with on the map screen. The small info window opens and shows the name of the Bookmarks and location.

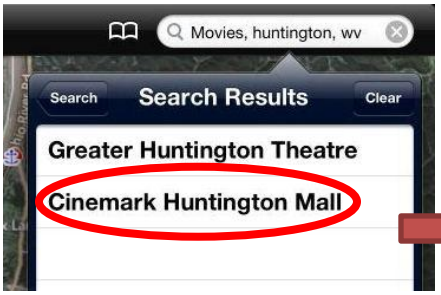


- **Find Locations**

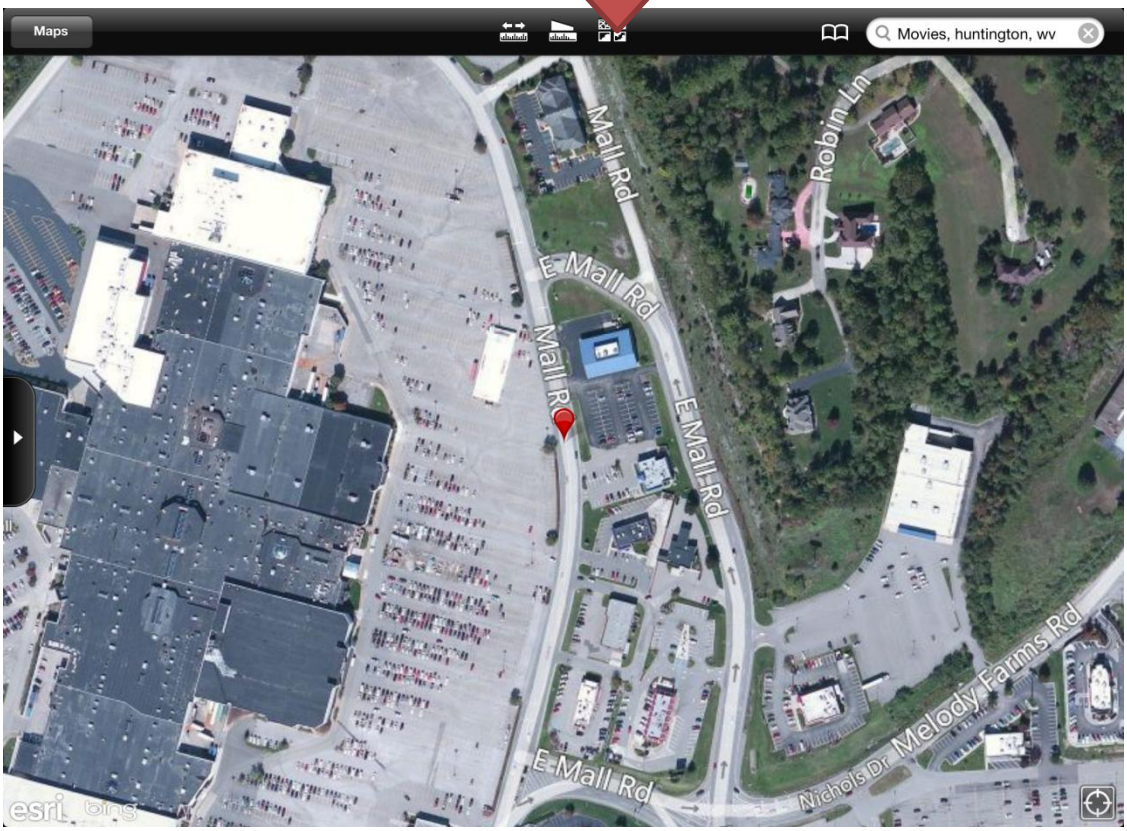
General Search

Tap the search field, and type an address or other information in the search field.

- Intersection (“3rd Ave & Hal Greer Blvd, Huntington, WV”)
- Area (“Ritter Park”)
- Landmark (“Marshall University”)
- Zip code



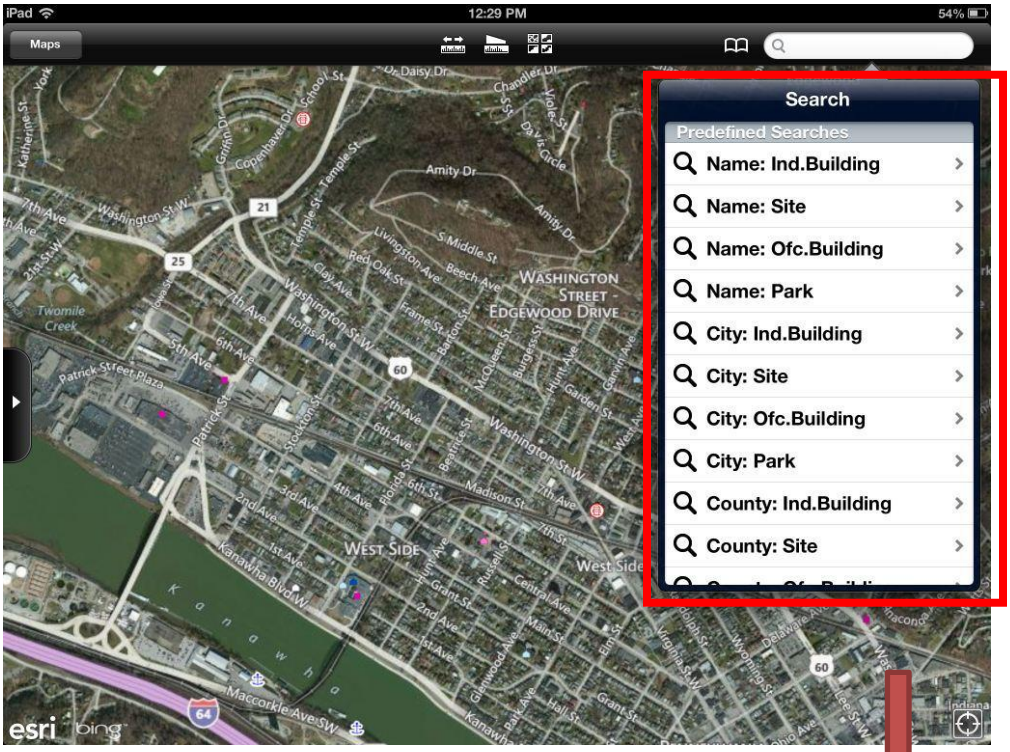
Or, tap one of the suggestions in the list below the search field and map will zoom into the selected result.

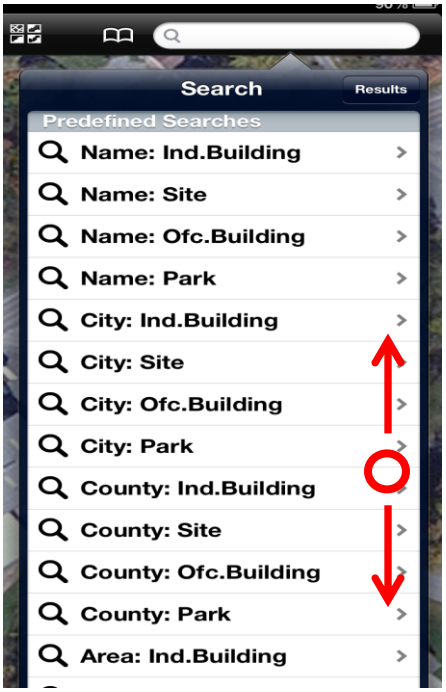


Predefined Search

Predefined Search finds locations by searching specific layer. By tapping the search field, a list of available Predefined Searches will appears.

Please make sure the target layer is turn on before starting the predefined search.





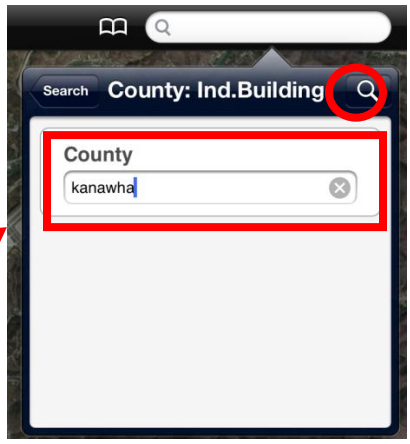
You can select one predefined search by tapping from the lists.

Note: All available Predefined Searches are listed on page 25.

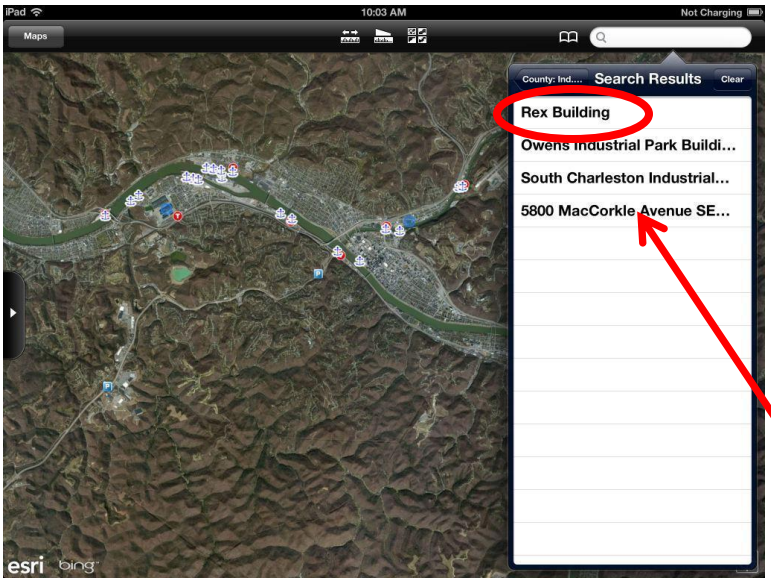
To see all lists of Predefined Searches, you may drag up or down in the Search window.

After selecting desired Predefined Search, enter the text in the predefined search field.

Be sure to type in the predefined search field, not the search f



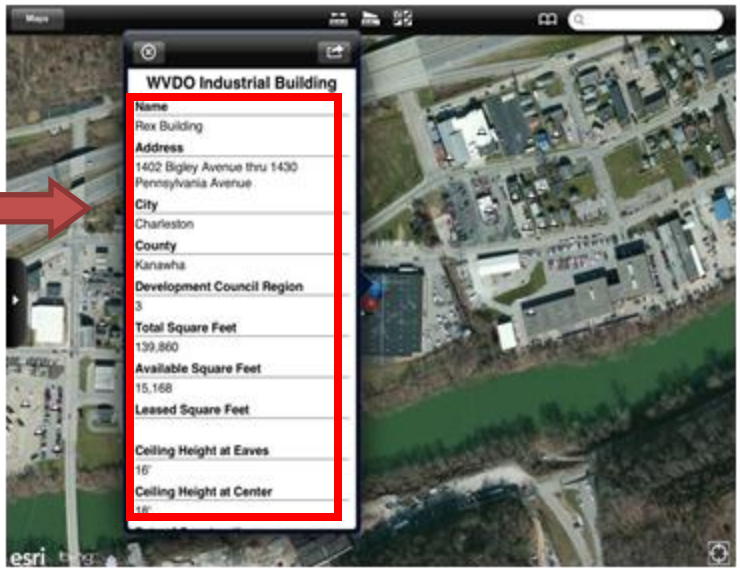
Tapping the search mark on the right corner or search button on keyboards, search results will be shown.



When the search results are listed in the predefined search window, the map view also zooms in to the area where results located.

These results will be highlighted with blue circle.

Tap the one of the results to zoom in and get the detail information.



After the map navigated to the searched result, detail information is available by tapping it. The color of highlight will change from blue to red

Available Predefined Searches

Predefined Search Name	Find Location from	Search by	Example
Name: Ind.Building	WVDO Industrial Building	Building name	"mountain" "mall"
Name: Site	WVDO Sites	Site name	
Name: Ofc.Buiding	WVDO Office Building	Building name	
Name: Park	WVDO Industrial/Business Park	Park name	
City: Ind.Building	WVDO Industrial Buildings	City name	"Charleston" "Huntington"
City: Site	WVDO Sites	City name	
City: Ofc.Building	WVDO Office Building	City name	
City: Park	WVDO Industrial/Business Park	City name	
County: Ind.Building	WVDO Industrial Buildings	County name	"Kanawha" "Cabell"
County: Site	WVDO Sites	County name	
County: Ofc.Building	WVDO Office Building	County name	
County: Park	WVDO Industrial/Business Park	County name	
Area: Ind.Building	WVDO Industrial Buildings	Minimum available acreage	Numeric character "20.5" "500"
Area: Site	WVDO Sites	Minimum available acreage	
Area: Ofc. Building	WVDO Office Building	Minimum available acreage	
Area: Park	WVDO Industrial/Business Park	Minimum available acreage	
Floodplain: Ind.Building	WVDO Industrial Buildings	Hazard status	"Yes" or "No"
Floodplain: Site	WVDO Sites	Hazard status	
Floodplain: Ofc.Building	WVDO Office Building	Hazard status	
Floodplain: Park	WVDO Industrial/Business Park	Hazard status	
County : Mine Permit Boundary	Energy: Mine Permit Boundary	County name	"Kanawha" "Mingo"
Permit ID : Mine Permit Boundary	Energy: Mine Permit Boundary	Permit ID	"A012345"

9. Contact Information

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Appendix (Layer Descriptions)

- **EDDP Map**

County Boundary

Layer Name	Description	Source	Created
County Boundary	West Virginia County Boundaries.	U.S. Geological Survey WV Department of Environmental Protection WV GIS Technical Center	2002 (updated 2005)

Planning Region

Layer Name	Description	Source	Created
Planning Region	Boundaries of the eleven Regional Planning and Development Councils throughout the state of West Virginia.	WV Development Office WV GIS Technical Center	1971

Populated Area

Layer Name	Description	Source	Created
Area with population over 2500	Cities with a population greater than 2,500 located in West Virginia.	U.S. Census Bureau WV GIS Technical Center	2011
Major City and Town	Data of the location for all populated places in West Virginia.	U.S. Census Bureau WV GIS Technical Center	2011

Education

Layer Name	Description	Source	Created
Schools	Complete data of 1092 PK - 12 grade schools in West Virginia, as well as higher education facilities divided by school type.	WV Army National Guard WV Department of Education WV GIS Technical Center	2010

General

Layer Name	Description	Source	Created
Emergency Operations Centers	Data contains point records for locations of Emergency Operations Center offices.	TechniGraphics, Inc WV Division of Homeland Security and Emergency Management WV GIS Technical Center	2007 (updated 2011)
County Courthouses	Federal and County Courthouses in West Virginia.	WV Courthouse Facility Improvement Authority WV Division of Homeland Security and Emergency Management WV GIS Technical Center	2002
Hospitals	Data represents hospitals and medical centers.	WV Health Care Authority WV Division of Homeland Security and Emergency Management WV GIS Technical Center	2008
Regional Development Centers	All locations of the Regional Development Centers in West Virginia.	WV Regional Planning and development Council WV Division of Homeland Security and Emergency Management WV GIS Technical Center	2012
Nursing Homes	Data contains point features for nursing homes within West Virginia.	WV Health Care Authority WV Division of Homeland Security and Emergency Management WV GIS Technical Center	2010 (updated 2012)
Workforce	All locations of the Workforce in West Virginia.	WV Workforce WV Division of Homeland Security and Emergency Management WV GIS Technical Center	(updated 2012)
Police Stations	Any location where sworn officers of a law enforcement agency are regularly based or stationed.	TechniGraphics, Inc WV Division of Homeland Security and Emergency Management WV GIS Technical Center	2009
Public Libraries	WV public libraries all over the state.	WV Library Commission WV Division of Homeland Security	2002

		and Emergency Management WV GIS Technical Center	
Jails and Prisons	All locations of Correctional Institutions in West Virginia.	TechniGraphics, Inc WV Division of Homeland Security and Emergency Management WV GIS Technical Center	Updated 2011
Primary Care Centers	All locations of Primary Care centers in West Virginia.	WV Division of Primary Care WV Association of Free Clinics WV School Based Health Assembly WV Primary Care Association WV Division of Homeland Security and Emergency Management WV GIS Technical Center	2012
County Health Department	Data contains locations of the county health departments in West Virginia.	WV Division of Health and Human Resources WV Division of Homeland Security and Emergency Management WV GIS Technical Center	2009
Fire Stations	Any locations of fire fighters are stationed at or based out of, or where equipment that such personnel use in carrying out their jobs is stores for ready use in West Virginia.	TechniGraphics, Inc WV Division of Homeland Security and emergency Management WV GIS Technical Center	2005 (updated 2012)
Man Made Structures	All data of Man Made Structures in West Virginia.	WV SAMB WV GIS Technical Center	2003

Hazard

Layer Name	Description	Source	Created
Floodplain Structures at Risk	Over 80,000 points representing structures in floodplain areas in West Virginia.	U.S. Army Corps of Engineers	2003
Floodplain Area	Statewide 100-year floodplain polygon data. This data set was developed primarily for use in the web-based West Virginia Flood Tool.	FEMA	2012

Preservation

Layer Name	Description	Source	Created
State Historic Architectures	All locations of historic structures which listed by WV State Historic Preservation Office in West Virginia.	WV State Historic Preservation Office	(Updated 2012)
National Register of Historic Places	All locations of the National Register of Historic Places, which is the official list of the Nation's historic places worthy of preservation.	WV State Historic Preservation Office	(Updated 2012)
State Historic Architectures (Area)	All locations of historic structures and areas which listed by WV State Historic Preservation Office in West Virginia.	WV State Historic Preservation Office	(Updated 2012)
National Register of Historic Places (Area)	All locations of the National Register of Historic Places, which is the official list of the Nation's historic places worthy of preservation.	WV State Historic Preservation Office	(Updated 2012)

WVDO Available Sites

Layer Name	Description	Source	
WVDO Industrial Buildings	Locations of available Industrial buildings in West Virginia. Data is a part of Real Estate Database from WV Development Office.	WV Development Office WV GIS Technical Center	2008
WVDO Sites	Locations of available sites in West Virginia. Data is a part of Real Estate Database from WV Development Office.	WV Development Office WV GIS Technical Center	2008
WVDO Office	Locations of available office spaces in West Virginia. Data is a part of Real Estate Database from WV Development Office.	WV Development Office WV GIS Technical Center	2008
WVDO Industrial / Business Parks	Locations of available Industrial/ business parks in West Virginia. Data is a part of Real Estate Database from WV Development Office.	WV Development Office WV GIS Technical Center	2008

Transportation

Layer Name	Description	Source	Created
Airports	Public aircraft landing facilities in West Virginia.	U.S. Department of Transportation WV GIS Technical Center	1998
Ports	This is a list of ports in West Virginia, grouped by type and sorted by location.	WV Division of Highway	2003
Park and Ride	Data on Park-and-ride facilities (Park-and-ride (or incentive parking) in West Virginia.	WV Division of Highway	(updated 2012)
Intermodal Terminal	A point data of major highway-rail intermodal freight facilities in West Virginia.	U. S. Department of Transportation U.S. Army Corps of Engineers	1997
Bridges	All bridges in West Virginia greater than twenty feet in length and maintained by the WV Department of Transportation.	WV Department of Transportation	2008
King Coal Highway	Preferred Alternative (PA) of proposed King Coal Highway.	Michael Baker, Inc. WV department of Highways	1999
Coalfields Expressway	Proposed 1000-foot corridor (Coalfields Expressway) determined by the EIS. The actual centerline has yet to be determined.	Michael Baker, Inc. WV department of Highways	2002
Shawnee Highway	Proposed 1000-foot corridor (Shawnee Highway) determined by the EIS. The actual centerline has yet to be determined.	Michael Baker, Inc. WV department of Highways	2002
Southern Kentucky Corridor	Proposed highway (Southern Kentucky Corridor (I-66)).	Rahall Transportation Institute	2012
Interstate	Data of U.S. Interstates which is a subset of the National Highway Planning Network.	WV Department of Transportation	2012
US Road	Data of U.S. Highway Routes which is a subset of the National Highway	WV Department of	2012

	Planning Network.	Transportation	
State Road	Data of West Virginia State Highways.	WV Department of Transportation	2012
County Road	Data of County roads in West Virginia.	WV Department of Transportation	2012
State Park Forest Road	Data of State Park Roads and Forest Roads in West Virginia.	WV Department of Transportation	2012
Railroad	Data on railroads (Rail transport is a means of conveyance of passengers and goods by way of wheeled vehicles running on rail tracks) in West Virginia.	Rahall Transportation Institute	2012
Navigable Waterway	The navigable waterway datasets were produced by a contractor (James W. Sewall Company) for the Statewide Addressing and Mapping Board in 2006.	Statewide Addressing and Mapping Board	2006
Airport Facility	Data consists of airport runways and structure footprints.	WV Division of Homeland Security and emergency Management	2008

Hydrology

Layer Name	Description	Source	Created
Lakes	Data of major water bodies (lakes) intended for use in making statewide cartographic maps.	U.S. Geological Survey WV GIS Technical Center	2002
Rivers	Data of major water bodies (rivers) intended for use in making statewide cartographic maps.	U.S. Geological Survey WV GIS Technical Center	2002
Streams	Data of major water bodies (streams) intended for use in making statewide cartographic maps.	U.S. Geological Survey WV GIS Technical Center	2002
National Wetlands Inventory	National Wetlands Inventory digital data files are records of wetlands location and classification as defined by the U.S. Fish and Wildlife Service in west Virginia.	U.S. Fish and Wildlife Service	1996

Elevation

Layer Name	Description	Source	Created
Barbour	Elevation layer in Barbour county, West Virginia.	Rahall Transportation Institute	2012
Berkeley	Elevation layer in Berkeley county, West Virginia.	Rahall Transportation Institute	2012
Boone	Elevation layer in Boone county, West Virginia.	Rahall Transportation Institute	2012
Braxton	Elevation layer in Braxton county, West Virginia.	Rahall Transportation Institute	2012
Brooke	Elevation layer in Brooke county, West Virginia.	Rahall Transportation Institute	2012
Cabell	Elevation layer in Cabell county, West Virginia.	Rahall Transportation Institute	2012
Calhoun	Elevation layer in Calhoun county, West Virginia.	Rahall Transportation Institute	2012
Clay	Elevation layer in Clay county, West Virginia.	Rahall Transportation Institute	2012
Doddridge	Elevation layer in Doddridge county, West Virginia.	Rahall Transportation Institute	2012
Fayette	Elevation layer in Fayette county, West Virginia.	Rahall Transportation Institute	2012
Gilmer	Elevation layer in Gilmer county, West Virginia.	Rahall Transportation Institute	2012
Grant	Elevation layer in Grant county, West Virginia.	Rahall Transportation Institute	2012
Greenbrier	Elevation layer in Greenbrier county, West Virginia.	Rahall Transportation Institute	2012
Hampshire	Elevation layer in Hampshire county, West Virginia.	Rahall Transportation Institute	2012
Hancock	Elevation layer in Hancock county, West Virginia.	Rahall Transportation Institute	2012
Hardy	Elevation layer in Hardy county, West Virginia.	Rahall Transportation Institute	2012
Harrison	Elevation layer in Harrison county, West Virginia.	Rahall Transportation Institute	2012
Jackson	Elevation layer in Jackson county, West Virginia.	Rahall Transportation Institute	2012
Jefferson	Elevation layer in Jefferson county, West Virginia.	Rahall Transportation Institute	2012

Kanawha	Elevation layer in Kanawha county, West Virginia.	Rahall Transportation Institute	2012
Lewis	Elevation layer in Lewis county, West Virginia.	Rahall Transportation Institute	2012
Lincoln	Elevation layer in Lincoln county, West Virginia.	Rahall Transportation Institute	2012
Logan	Elevation layer in Logan county, West Virginia.	Rahall Transportation Institute	2012
McDowell	Elevation layer in McDowell county, West Virginia.	Rahall Transportation Institute	2012
Marion	Elevation layer in Marion county, West Virginia.	Rahall Transportation Institute	2012
Marshall	Elevation layer in Marshall county, West Virginia.	Rahall Transportation Institute	2012
Mason	Elevation layer in Mason county, West Virginia.	Rahall Transportation Institute	2012
Mercer	Elevation layer in Mercer county, West Virginia.	Rahall Transportation Institute	2012
Mineral	Elevation layer in Mineral county, West Virginia.	Rahall Transportation Institute	2012
Mingo	Elevation layer in Mingo county, West Virginia.	Rahall Transportation Institute	2012
Monongalia	Elevation layer in Monongalia county, West Virginia.	Rahall Transportation Institute	2012
Monroe	Elevation layer in Monroe county, West Virginia.	Rahall Transportation Institute	2012
Morgan	Elevation layer in Morgan county, West Virginia.	Rahall Transportation Institute	2012
Nicholas	Elevation layer in Nicholas county, West Virginia.	Rahall Transportation Institute	2012
Ohio	Elevation layer in Ohio county, West Virginia.	Rahall Transportation Institute	2012
Pendleton	Elevation layer in Pendleton county, West Virginia.	Rahall Transportation Institute	2012
Pleasants	Elevation layer in Pleasants county, West Virginia.	Rahall Transportation Institute	2012
Pocahontas	Elevation layer in Pocahontas county, West Virginia.	Rahall Transportation Institute	2012
Preston	Elevation layer in Preston county, West Virginia.	Rahall Transportation Institute	2012

Putnam	Elevation layer in Putnam county, West Virginia.	Rahall Transportation Institute	2012
Raleigh	Elevation layer in Raleigh county, West Virginia.	Rahall Transportation Institute	2012
Randolph	Elevation layer in Randolph county, West Virginia.	Rahall Transportation Institute	2012
Ritchie	Elevation layer in Ritchie county, West Virginia.	Rahall Transportation Institute	2012
Roane	Elevation layer in Roane county, West Virginia.	Rahall Transportation Institute	2012
Summers	Elevation layer in Summer county, West Virginia.	Rahall Transportation Institute	2012
Taylor	Elevation layer in Taylor county, West Virginia.	Rahall Transportation Institute	2012
Tucker	Elevation layer in Tucker county, West Virginia.	Rahall Transportation Institute	2012
Tyler	Elevation layer in Tyler county, West Virginia.	Rahall Transportation Institute	2012
Upshur	Elevation layer in Upshur county, West Virginia.	Rahall Transportation Institute	2012
Wayne	Elevation layer in Wayne county, West Virginia.	Rahall Transportation Institute	2012
Webster	Elevation layer in Webster county, West Virginia.	Rahall Transportation Institute	2012
Wetzel	Elevation layer in Wetzel county, West Virginia.	Rahall Transportation Institute	2012
Wirt	Elevation layer in Wirt county, West Virginia.	Rahall Transportation Institute	2012
Wood	Elevation layer in Wood county, West Virginia.	Rahall Transportation Institute	2012
Wyoming	Elevation layer in Wyoming county, West Virginia.	Rahall Transportation Institute	2012

Energy

Layer Name	Description	Source	Created
Completed Marcellus Well	Data contains completed Marcellus Shale wells. A completed Marcellus well has one or more zones in the Marcellus that have been prepared for production--the well may or may not be producing currently.	WV Geological and Economic Survey	2012
Permitted Marcellus Well	Data contains permitted Marcellus Shale wells. A permitted Marcellus well is one with a Marcellus/Devonian Shale or deeper target.	WV Geological and Economic Survey	2012
Cancelled Marcellus Well	Data contains cancelled Marcellus Shale wells. A cancelled well is one in which the permit for the episode was cancelled by the West Virginia Department of Environmental Protection Office of Oil and Gas (WVDEP-OOG).	WV Geological and Economic Survey	2012
Oil Field	Data of oil fields distribution in West Virginia.	WV Geological and Economic Survey	2007
Mine Permit Boundary	The complete listing of the surface and underground mining permit area for West Virginia by WV mine safety office.	WV Department of Environmental Protection	2012
Natural Sources of CO2	This layer includes data of natural sources of atmospheric carbon dioxide for WV.	WV Geological and Economic Survey	2005
Solar Annual Average DNI	This layer describes the solar annual average Direct Normal Irradiance which is the amount of solar radiation received per unit area by a surface that is always held perpendicular (or normal) to the rays that come in a straight line from the direction of the sun at its current position in the sky.	National Renewable Energy Laboratory	2012
Geothermal	Dataset is a qualitative assessment of geothermal potential (Enhanced Geothermal System EGS) for the US based on Leveled Cost of Electricity, with CLASS 1 being most favorable, and CLASS 5 being least favorable.	National Renewable Energy Laboratory	2009
Wind	Data shows an indicator of likely resource strength, with a higher wind power class representing higher wind resource levels.	National Renewable Energy Laboratory	2006

Wood Byproducts

Layer Name	Description	Source	Created
Bark/Chip/Saw Dust Available	Data presents information about the production and use of wood byproducts available during an average production week. Wood byproducts includes sawdust, bark, and chips in West Virginia.	Appalachian Hardwood Center	2011
Bark/Chip/Saw Dust Produced	Data presents information about the production and use of wood byproducts produced during an average production week. Wood byproducts includes sawdust, bark, and chips in West Virginia.	Appalachian Hardwood Center	2011

Environmental

Layer Name	Description	Source	Created
Weather Station	A variety of land-based weather stations in West Virginia.	National Oceanic and Atmospheric Administration	1999
Air pollution NonAttainment Area	Data on the levels of criteria pollutants are measured by a network of air monitors located in West Virginia.	WV Department of Environmental Protection U.S. Environmental Protection Agency	2005 (updated 2012)
Coalfield Region	Data of coal fields distribution of West Virginia.	National Atlas of the United States	1960
Ecoregion	Data on the recurring pattern of ecosystems associated with characteristic combinations of soil and landform in West Virginia.	U.S. Forest Service	2000

Utilities

Layer Name	Description	Source	Created
Compression (Compressor) Station	Data of compressor stations in West Virginia.	WV Geological and Economic Survey	2007
Gas Plant	Data of gas plants in West Virginia.	WV Geological and Economic Survey	2007
Pumping Station	Data of the pumping station facilities in WV.	WV Geological and Economic Survey	2007
Refinery	Data of the refineries which is an industrial process plant where crude oil is	WV Geological and Economic Survey	2007

	processed and refined into more useful products.		
WVGES (Gas) Pipeline	Data of gas pipeline distributions in West Virginia from WV Geological and Economic Survey.	WV Geological and Economic Survey	2007
Oil Pipeline	Data of oil pipelines in West Virginia.	WV Geological and Economic Survey	2007
WVDO Gas Pipeline	Data of gas pipeline in West Virginia from WV Development Office.	WV Development Office	N. A.
Sewer Served Area	Data of the area sewer service available in West Virginia.	WV Infrastructure & Jobs Development Council	N. A.
Water Served Area	Data of the area water service available in West Virginia.	WV Infrastructure & Jobs Development Council	N. A.
Sewer Pipe	Data of sewer pipe distribution in West Virginia.	WV Infrastructure & Jobs Development Council	N. A.
Water Pipe	Data of water pipe distribution in West Virginia.	WV Infrastructure & Jobs Development Council	N. A.
Water Treatment Facility	Data of water treatment facilities in West Virginia.	WV Infrastructure & Jobs Development Council	N. A.
Wastewater Treatment Facility	Data of wastewater treatment facilities in West Virginia.	WV Infrastructure & Jobs Development Council	N. A.
Sewer Treatment Facility	Data of sewer treatment facilities in West Virginia.	WV department of Environmental Protection	2002
Solid Waste Treatment Facility	Data of solid waste treatment facilities in West Virginia.	WV department of Environmental Protection	2002
Power Plant	Point data of power plants in West Virginia.	WV Division of Natural Resources SAMB	2008
Electricity Substation	Point data of Electricity Substations in West Virginia.	WV Division of Natural Resources SAMB	2008
Powerline Distribution	Data of power line distribution in West Virginia.	WV Division of Natural Resources SAMB	2008
Power Plant (Area)	Polygon data of power plants in West Virginia.	WV Division of Natural Resources SAMB	2008
Electricity Sub Station (Area)	Polygon data of electricity substations in West Virginia.	WV Division of Natural	2008

		Resources SAMB	

Broadband

Layer Name	Description	Source	
Number of Providers	Data shows the total number of broadband providers (any technology).	WV Broadband Mapping Program	2012
Wireline Coverage	Data shows the area served by all wireline technologies including xDSL, BPL, copper, fiber and cable networks.	WV Broadband Mapping Program	2012
xDSL BPL Other Copper	Data shows the area served by xDSL, BPL, and copper wireline networks.	WV Broadband Mapping Program	2012
Cableand FTTP Coverage	Data shows the area served by Cable and Fiber To The Home wireline networks.	WV Broadband Mapping Program	2012
Fixed Wireless Coverage	Data shows the area served by Fixed Wireless providers.	WV Broadband Mapping Program	2012
Mobile Wireless Coverage	Data shows the area served by Mobile Wireless providers.	WV Broadband Mapping Program	2012
Max Download Speed (Wireless)	Data shows the maximum advertised download speed offered by wireless provides. Fixed and Mobile wireless service is included and speeds are not typical speeds.	WV Broadband Mapping Program	2012
Max Download Speed Wireline	Data shows the maximum advertised download speed offered by all wireline provides. These speeds are not typical speeds.	WV Broadband Mapping Program	2012
Max Upload Speed (Wireless)	Data shows the maximum advertised upload speed offered by all wireless providers. Fixed and Mobile wireless service is included and speeds are not typical speeds.	WV Broadband Mapping Program	2012
Max Upload Speed Wireline	Data shows the maximum advertised upload speed offered by all wireline providers. These speeds are not typical speeds.	WV Broadband Mapping Program	2012
No Broadband Coverage	Data shows the area where no broadband coverage has been identified at this time.	WV Broadband Mapping Program	2012

Land Utilization Area

Layer Name	Description	Source	Created
Barbour	Land use classification by the distance from the main roads in Barbour county.	Rahall Transportation Institute	2012
Boone	Land use classification by the distance from the main roads in Boone county.	Rahall Transportation Institute	2012
Braxton	Land use classification by the distance from the main roads in Braxton county.	Rahall Transportation Institute	2012
Brooke	Land use classification by the distance from the main roads in Brooke county.	Rahall Transportation Institute	2012
Clay	Land use classification by the distance from the main roads in Clay county.	Rahall Transportation Institute	2012
Fayette	Land use classification by the distance from the main roads in Fayette county.	Rahall Transportation Institute	2012
Grant	Land use classification by the distance from the main roads in Grant county.	Rahall Transportation Institute	2012
Greenbrier	Land use classification by the distance from the main roads in Greenbrier county.	Rahall Transportation Institute	2012
Harrison	Land use classification by the distance from the main roads in Harrison county.	Rahall Transportation Institute	2012
Kanawha	Land use classification by the distance from the main roads in Kanawha county.	Rahall Transportation Institute	2012
Lewis	Land use classification by the distance from the main roads in Lewis county.	Rahall Transportation Institute	2012
Lincoln	Land use classification by the distance from the main roads in Lincoln county.	Rahall Transportation Institute	2012
Logan	Land use classification by the distance from the main roads in Logan county.	Rahall Transportation Institute	2012
Marion	Land use classification by the distance from the main roads in Marion county.	Rahall Transportation Institute	2012
Marshall	Land use classification by the distance from the main roads in Marshall county.	Rahall Transportation Institute	2012
Mason	Land use classification by the distance from the main roads in Mason county.	Rahall Transportation Institute	2012
McDowell	Land use classification by the distance from the main roads in McDowell county.	Rahall Transportation Institute	2012
Mercer	Land use classification by the distance from the main roads in Mercer county.	Rahall Transportation Institute	2012
Mineral	Land use classification by the distance from the main roads in Mineral county.	Rahall Transportation Institute	2012
Mingo	Land use classification by the distance from the main roads in Mingo county.	Rahall Transportation Institute	2012
Monongalia	Land use classification by the distance from the main roads in Monongalia county.	Rahall Transportation Institute	2012

Nicholas	Land use classification by the distance from the main roads in Nicholas county.	Rahall Transportation Institute	2012
Ohio	Land use classification by the distance from the main roads in Ohio county.	Rahall Transportation Institute	2012
Preston	Land use classification by the distance from the main roads in Preston county.	Rahall Transportation Institute	2012
Raleigh	Land use classification by the distance from the main roads in Raleigh county.	Rahall Transportation Institute	2012
Randolph	Land use classification by the distance from the main roads in Randolph county.	Rahall Transportation Institute	2012
Taylor	Land use classification by the distance from the main roads in Taylor county.	Rahall Transportation Institute	2012
Tucker	Land use classification by the distance from the main roads in Tucker county.	Rahall Transportation Institute	2012
Upshur	Land use classification by the distance from the main roads in Upshur county.	Rahall Transportation Institute	2012
Wayne	Land use classification by the distance from the main roads in Wayne county.	Rahall Transportation Institute	2012
Webster	Land use classification by the distance from the main roads in Webster county.	Rahall Transportation Institute	2012
Wyoming	Land use classification by the distance from the main roads in Wyoming county.	Rahall Transportation Institute	2012

Public Land

Layer Name	Description	Source	Created
National Forest	Data of National Forest in West Virginia. National Forest is a classification of federal lands in the United States. Data defines the area of national forests in West Virginia.	U.S. Forest Service	2005
National Park	Data of National Parks in west Virginia. National Park is a park in use for conservation purposes. Often it is a reserve of natural, semi-natural, or developed land that a sovereign state declares or owns.	National Park Service	2003
State Forest	Data of State Forests that are maintained by West Virginia Division of Forestry.	WV Division of Forestry	2004
State Park	Data of West Virginia State Parks that are maintained by the West Virginia Division of Natural Resources.	WV Division of Natural Resources Natural Resource Analysis Center	2000

Wildlife Management Area	Data of Wildlife Management Areas (WMAs) in West Virginia. WMAs are protected areas set aside for the conservation of wildlife and for recreational activities involving wildlife.	WV Division of Natural Resources	2002
Public Lands and Land Stewardship	Data shows the area of public lands and land stewardship in West Virginia.	Natural Resource Analysis Center U.S. Geological Survey	2002

Tax Parcels

Layer Name	Description	Source	Created
Greenbrier	Tax parcels data in Greenbrier County.	WV Development Office	2012
Hampshire	Tax parcels data in Hampshire County.	WV Development Office	2012
Hancock	Tax parcels data in Hancock County.	WV Development Office	2012
Harrison	Tax parcels data in Harrison County.	WV Development Office	2012
Marshall	Tax parcels data in Marshall County.	WV Division of Energy	2012
Morgan	Tax parcels data in Morgan County.	WV Division of Energy	2012
Pleasants	Tax parcels data in Pleasants County.	WV Development Office	2012
Pocahontas	Tax parcels data in Pocahontas County.	WV Division of Energy	2012
Putnam	Tax parcels data in Putnam County.	WV Development Office	2012
Raleigh	Tax parcels data in Raleigh County.	WV Development Office	2012
Wayne	Tax parcels data in Wayne County.	WV Division of Energy	2012
Wirt	Tax parcels data in Wirt County.	WV Development Office	2012
Wood	Tax parcels data in Wood County.	WV Development Office	2012
Wyoming	Tax parcels data in Wyoming County.	WV Development Office	2012

- **EDDP Demographics Map**

NCLB (Education)

No Child Left behind (NCLB) supports standards-based education reform based on the premise that setting high standards and establishing measurable goals can improve individual outcomes in education.

Layer Name	Description	Source	Created
NCLB 2nd Month Enrollment 2010-11	Number of students enrolled in the 2nd month after the registration start date for the year 2010-2011.	Rahall Transportation Institute WV Department of Education	2012
NCLB Graduates 2010-11	Number of students graduated for the year 2010-2011.	WV Department of Education	2012
NCLB Dropout Rate 2010-11	The status dropout rate represents the percentage of 16- through 24-year-olds who are not enrolled in school and have not earned a high school credential for 2010-2011.	WV Department of Education	2012
NCLB Attendance Rate 2010-11	The percentage of total school days that students in a school or district are present in school for 2010-2011.	WV Department of Education	2012
NCLB Graduation Rate 2010-11	The percentage of a cohort that successfully graduated within a specific time interval for 2010-2011.	WV Department of Education	2012

Demographic

Layer Name	Description	Source	Created
Population	Population data by county in West Virginia in 2010.	U.S. Census Bureau	2010
Number of Establishments	Number of establishments by county in West Virginia in 2010. An establishment is a single physical location at which business is conducted and/or services are provided.	U.S. Census Bureau	2010
Median Age	Median age data by county in West Virginia in 2010. This measure divides the age distribution into two equal parts: one-half of the cases falling below the median value and one-half above the value.	U.S. Census Bureau	2010
Percent Over 64	Ratio data of population aged 65 years or older by county in West Virginia in 2010.	U.S. Census Bureau	2010

	Population 65 years of age and over identifies areas where there is a concentration of people of retirement age.		
Percent Under 18	Ratio data of population under 18 years of age by county in West Virginia in 2010. Population under 18 years of age identifies areas where there are concentrations of children.	U.S. Census Bureau	2010
Per Capita Annual Personal Income	Data of per capita income by county in West Virginia in 2010. Per capita income is income per person and derived by dividing the total income of all people 15 years old and over in a geographic area by the total population in that area.	U.S. Bureau of Economic Analysis	2010
Per Capita Annual Net Earnings	Data of per capita net earnings by county in West Virginia in 2010. Net earnings referred to as the net income. It is earnings after deduction of all taxes, social security charges and other obligatory payments.	U.S. Bureau of Economic Analysis	2010
Average Household Size	Data of average household size by county in West Virginia in 2010. Average household size is the household population divided by total households.	U.S. Census Bureau	2010
Owner Occupied Housing	Data of owner occupies housing by county in West Virginia in 2010. A housing unit is owner occupied if the owner or co-owner lives in the unit.	U.S. Census Bureau	2010
Unemployment Rate	Unemployment rate by county in west Virginia in 2010. All civilians 16 years and older were classified as unemployed if they were looking for work during the last 4 weeks, and were available to start a job.	U.S. Census Bureau	2010
Civilian Labor Force	Data of civilian labor force by county in West Virginia in 2010. Civilian labor force is civilian non-institutionalized population, 16 years old and over.	U.S. Census Bureau	2010
Labor Force Participation Rate	Labor force participation rate of working-age people by county in West Virginia in 2010. It is calculated as the number of persons in the labor force as a percentage of the total working-age population. Low labor force participation rates may indicate chronically high unemployment among residents who are no longer looking for work or above-average proportions of children or retirees in the resident population.	U.S. Census Bureau	2010