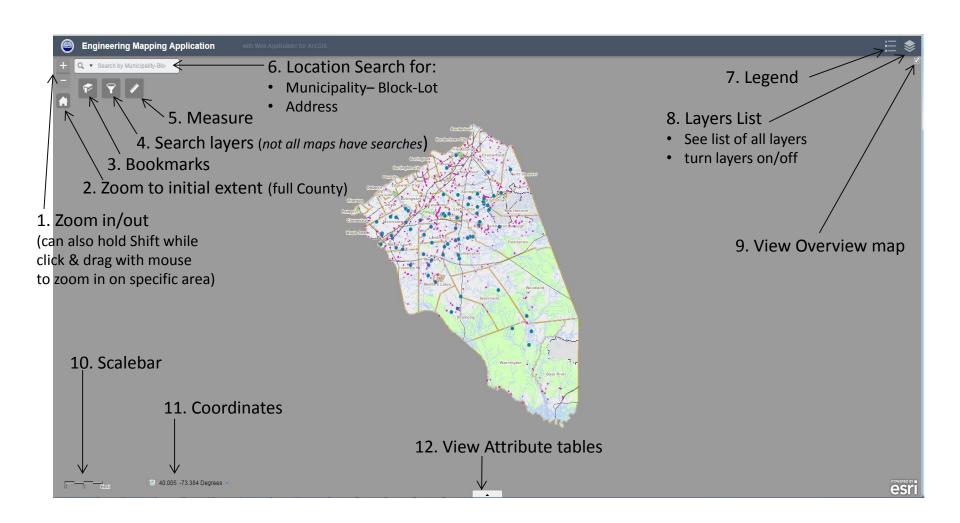
Engineering Department Mapping Application User Guide

for applications designed with the Web App Builder

Burlington County IT Department,
GIS Section

Overview of Functionality



Tools

1. Zoom in/out



- 1. Click the + to Zoom In or click the to Zoom out on the center of the map or use the mouse scroll wheel
- 2. Define an area to zoom in to by holding the shift key and clicking and dragging a box with the mouse
- 3. Move around the map at the current scale by clicking and dragging with the mouse or use the arrow keys on the keyboard

2. Zoom to initial extent (full County)



3. Bookmarks



- 1. Choose from a predefined list including the County extent and individual municipalities
- 2. You can also add additional bookmarks by zooming to your desired location and clicking the + icon next to the text box

4. Search layers



1. Click to see a pre-defined set of query searches specific to the application (see the Search Layers by Query section for more details). *Note that not all maps have this tool or query searches.*

5. Measure



- 1. Click the icon to open the Measurement widget
- 2. Point measurements
 - Click the point measurement icon and click a point on the map. The Measurement widget displays the coordinates for the point in **Degrees** (decimal). You may change the coordinate display format to degrees/minutes/seconds by changing the **Degrees** drop-down to **DMS**.
- 3. Polyline measurements
 - Click the polyline measurement icon and draw a polyline on the map by clicking two or more points. Double-click to finish drawing the polyline. The Measurement widget displays the total length of the polyline, using the defined **Default Length Unit**. To change the length unit, select the applicable unit of measure from the drop-down menu.
- 4. Polygon measurements
 - Click the polygon measurement icon and draw a polygon on the map by clicking three or more points.
 Double-click to finish drawing the polygon. The Measurement widget displays the total area of the polygon, using the defined **Default Area Unit**. To change the area unit, select the applicable unit of measure from the drop-down menu

Tools continued

6. Location Search: 3 options- click the drop down arrow to choose one

Q ▼ Search by Municipality-Blo

- Block and Lot:
 - 1. Enter in format of CountycodeMunicipalcode-block-lot such as

0329-823.01-16

which would be Pemberton Township, block 823.01, lot 16.

Refer to "Municipal Codes" list below.

- 2. This searches against data downloaded from the NJ Tax Board and will find the associated property boundary.
- County Parcel Address:
 - 1. Enter an address and choose from the list of possible addresses.
 - 2. Note that this tries to find a match in data downloaded from the NJ Tax Board and tries to match the spelling /abbreviations used when the assessor entered the address.
 - 3. Successful searches will show the property boundary
- 3. Esri World Geocoder:
 - 1. Enter an address, city and state. This will find a location along the roadway.
 - 2. In general the location may not be as good as the County Parcel Address Search option but may have a higher success rate of finding a location for difficult addresses

Municipal Codes

(County code is 03)

BASS RIVER TWP	01	FLORENCE TWP	15	PEMBERTON TWP	29
BEVERLY CITY	02	HAINESPORT TWP	16	RIVERSIDE TWP	30
BORDENTOWN CITY	03	LUMBERTON TWP	17	RIVERTON BORO	31
BORDENTOWN TWP	04	MANSFIELD TWP	18	SHAMONG TWP	32
BURLINGTON CITY	05	MAPLE SHADE TWP	19	SOUTHAMPTON TWP	33
BURLINGTON TWP	06	MEDFORD TWP	20	SPRINGFIELD TWP	34
CHESTERFIELD TWP	07	MEDFORD LAKES BORO	21	TABERNACLE TWP	35
CINNAMINSON TWP	80	MOORESTOWN TWP	22	WASHINGTON TWP	36
DELANCO TWP	09	MOUNT HOLLY TWP	23	WESTAMPTON TWP	37
DELRAN TWP	10	MOUNT LAUREL TWP	24	WILLINGBORO TWP	38
EASTAMPTON TWP	11	NEW HANOVER TWP	25	WOODLAND TWP	39
EDGEWATER PARK TWP	12	NORTH HANOVER TWP	26	WRIGHTSTOWN BORO	40
EVESHAM TWP	13	PALMYRA BORO	27		
FIELDSBORO BORO	14	PEMBERTON BORO	28		

Tools continued

7. Legend





- 2. Clicking the 📉 arrows, will minimize the Legend window, clicking the 😺 arrows will display it again.
- 3. The Legend window displays only the layers that are actually drawn. To see optional layers to draw or turn off drawn layers, you need to use the Layers List widget
- 4. Descriptions of layers included in the application can be found in the Application Layers section.

8. Layers List

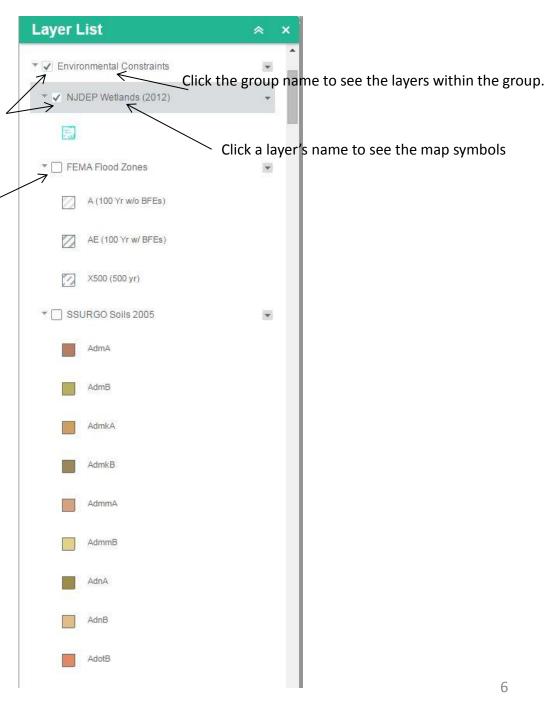


- 7. Clicking the Layer List widget displays a list of available layers
- 3. Draw a layer by clicking the box next to the name/ stop a layer from being drawn by click the checked box
- 9. Click a layer's name to expand groups of layers or see the map symbols for the layer
- 10. Note that the group's name will need to be drawn in addition to the layer within the group in order to display the layer
- 11. Descriptions of layers included in the application can be found in the Application Layers section of this document
- 12. Clicking the down arrow on the right side of a layer displays the layer menu, which will include some or all of the following functions depending on the application:
 - Zoom to—Sets the map extent to the extent of the layer.
 - Transparency--Sets the transparence for the layer.
 - Enable Pop-up / Remove Pop-up Enables or disables Pop-up for the feature layer. If a feature layer does not have pop-up configured in the map, clicking **Enable Pop-up** shows all field values from the feature layer.
 - Move up—Moves the layer one level up.
 - Move down—Moves the layer one level down.
 - Open attribute table—Opens the attribute table for the feature layer.
 - Description / Show Item Details—Opens the service description or the item details page for the service or the item associated with the layer, if available.

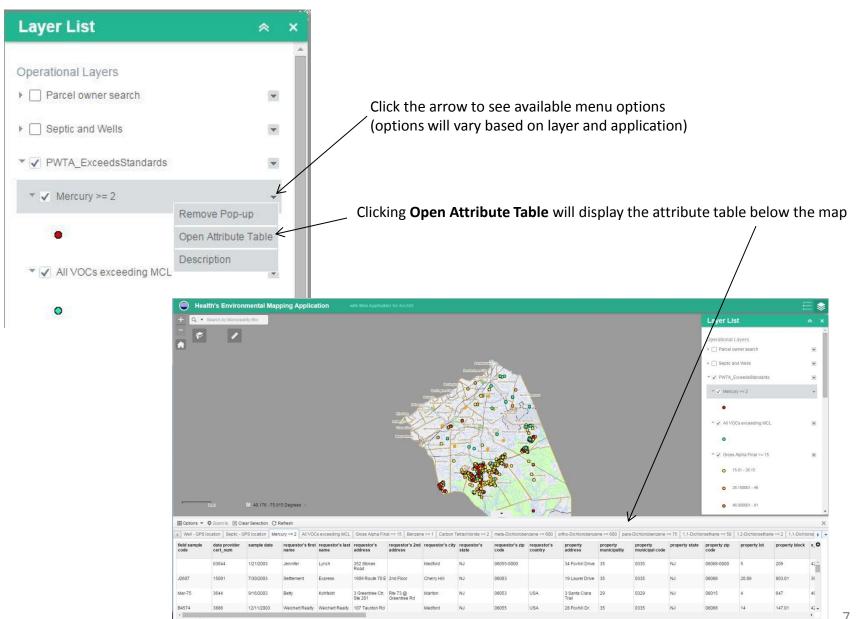
Layers List continued

In order for a layer in the group to draw (such as the wetlands) the group name must also be checked

Toggle a layer to draw/stop drawing by clicking the box next to it's name



Layers List continued; menu



Tools continued

9. Overview map



- 2. The Overview map displays the current extent of the map within the context of a larger area. It updates when the map extent changes.
- 3. The current extent is represented by a gray rectangle. Drag the gray rectangle to change the extent of the map being displayed in the main window.
- 4. When expanded, click the maximize icon 🕍 to temporarily maximized the overview map.
- 5. Exit the Overview window by clicking the 🔯 arrow, to minimize it or, when maximized, click the Maximize icon 💥 again or drag the grey rectangle to another location and release.

10. Scalebar

1. The Scalebar appears in the lower left corner of the map and updates as the map scale changes

11. Coordinates

- ₺ 39.773 -75.897 Degrees ▲
- 1. By default the coordinates are shown in Decimal Degrees and will change as the cursor moves over the map
- 2. You can obtain the coordinates for a specific location by clicking land then clicking the map. You can copy the resulting coordinate display to paste into another program or document.
- 3. Optionally, you can click the up arrow to choose to capture coordinates for a specified location in NAD 1983 New Jersey Stateplane Feet.
- 4. To resume coordinates changing as the cursor moves, either click the arrow and click WGS84 Web Mercator

12. Attribute tables

- 7. Click the attribute table widget to display attributes for layers in the application (note, not all layers will have a table available)
- 8. Draw a layer by clicking the box next to the name/ stop a layer from being drawn by click the checked box
- 9. Click a layer's name to expand groups of layers or see the map symbols for the layer

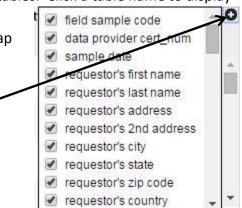
Tools continued

12. Attribute tables

- 1. Click the attribute table widget to toggle showing/hiding attributes tables for layers in the application (note, not all layers will have a table available)
- 2. An attribute table for a specific layer can be opened by clicking the arrow to the right of the layer's name in the Layers List

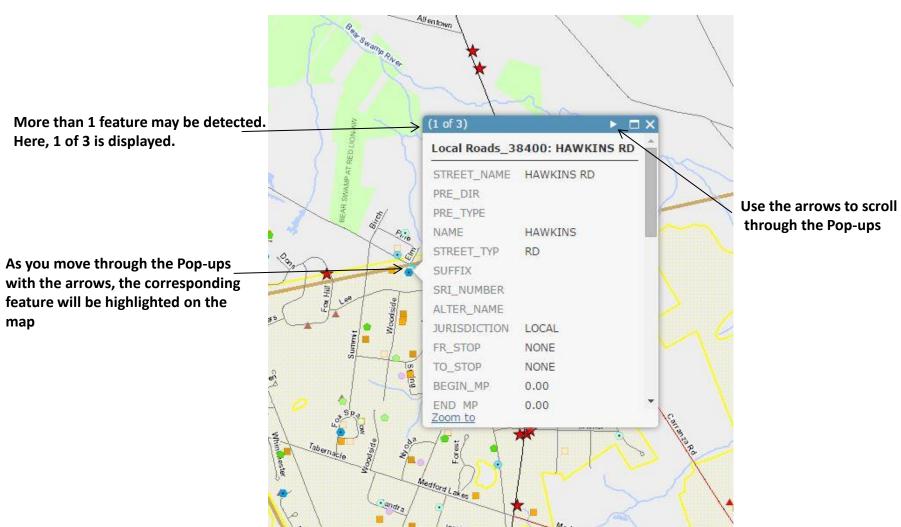


- 3. In the Attribute Table window, scroll left/right and use arrow keys to see available tables. Click a table name to display it
- 4. Select a record by clicking it the corresponding feature will be selected on the map
- 5. Clear your selections by clicking the **Clear Selection** button
- 6. Click the **Zoom to** button to zoom to the selected features
- 7. Click a field name to sort the table by that field
- Show/hide fields by clicking + on right side of Attribute Table window
- 9. Number of selected records is shown at lower left of table
- 10. Click Options menu to see list of options including
 - Show selected records
 - Show related records (if the table has related data)
 - Filter by map extent will display only the selected records that are in the current map extent
 - · Show/Hide columns
 - Export to CSV will export the selected attributes to a .CSV file. If no records are selected, will export entire table up to the maximum number of records allowed by the application.



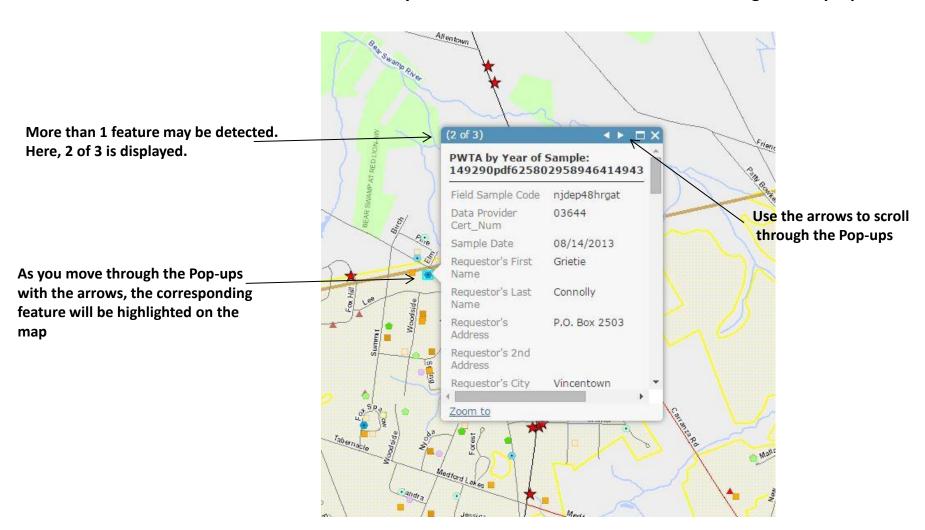
Pop-ups

Clicking most features on the map will cause a pop-up window to appear containing attributes about the features in that area. More than 1 feature may be detected. Use the arrows to scroll through the Pop-ups



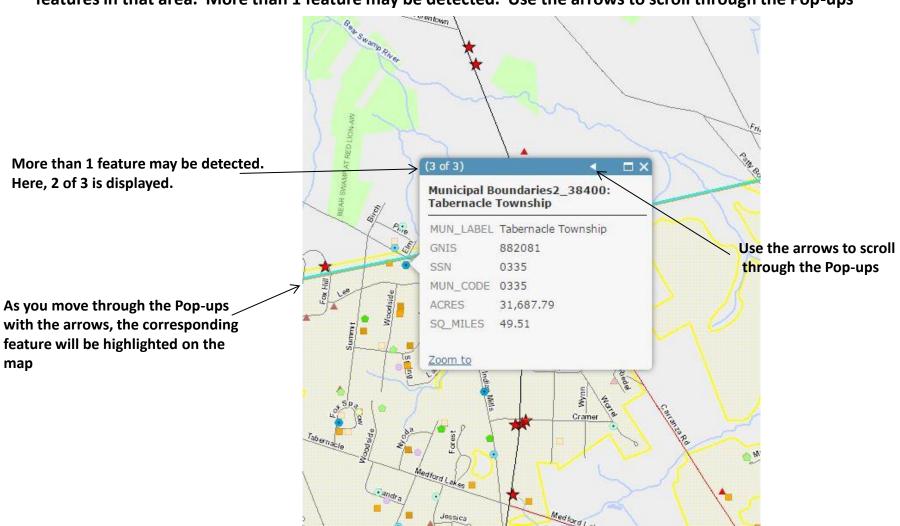
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Engineering Mapping Application Layers List:

http://bit.ly/1ef0du9

- Weight-restricted bridges mapped using GPS (+/- 3 ft). Is a subset of bridges which shows only those with weight restrictions
- Bridges Locations of bridges maintained by Engineering; mapped using GPS (+/- 3 ft).
- Culverts- Locations of culverts maintained by Engineering; mapped using GPS (+/- 3 ft).
- Crossdrains Locations of crossdrains maintained by Engineering; mapped using GPS (+/- 3 ft).
- Outfall Locations of County maintained outfalls; mapped using GPS (+/- 3 ft).
- Manholes Locations of County maintained manholes; mapped using GPS (+/- 3 ft).
- Inlets Locations of County maintained inlets; mapped using GPS (+/- 3 ft).
- Stormflow Lines County-maintained flow patterns connecting inlets, manholes, outfalls. Created by heads-up digitizing.
- Municipal Stormwater Group layer
 - Municipal Inlets Municipal-maintained stormwater inlets collected by various townships
 - Municipal Outfalls Municipal-maintained stormwater inlets collected by various townships
- Engineering Signs Group Group containing layers showing various subsets of locations of signs maintained by the Engineering Traffic Section. All Mapped using Hstar and ProXH with locations <1ft
 - Speed Advisory Sign
 - Mile Marker
 - Signs Engineering Grade
 - Signs all signs
- Accidents from 2010-2014 accidents reported on County routes from statewide crash reports which were submitted to NJ DOT.

Note – Group layers must be checked to draw in order to draw sub-groups or layers



Engineering Mapping Application Layers List:

http://bit.ly/1ef0du9

- Guide Rail Final Delivery Group containing Existing & Warranted data from the 2012 TWT Guide Rail Inventory
 - Existing Guide Rail Display Options Group containing Layers representing Existing Guide Rail by different attributes
 - Existing Guide Rail shows locations of all Existing Guide Rail in inventory
 - FHWA Non-Compliant Guide Rail Segment Priority (no data, compliant, minor damage, damaged but functional, non-functional)
 - Non-FHWA Guide Rail Segment Evaluation (no data, low priority, medium priority, high priority)
 - Guide Rail Compliance (no data, compliant, non-compliant)
 - Leading End Condition (no data, Acceptable, Not acceptable)
 - Leading End Grading (no data, Acceptable, Not acceptable)
 - Trailing End Condition (no data, Acceptable, Not acceptable)
 - Trailing End Grading (no data, Acceptable, Not acceptable)
 - Post Spacing at Obstruction, Typical (no data, Acceptable, Not acceptable)
 - Grading in Vicinity of GR (no data, Acceptable, Not acceptable)
 - Rail Element Condition (no data, Intact, Separated, Torn)
 - **Guide Rail Alignment** (no data, Aligned, <6" Out of Alignment, 6"-12" Out of Alignment, >12" Out of Alignment)
 - 2012 ADT (AASHTO design guide) (<1,000, 1,001-5,000, 5,001-10,000, >10,000)
 - Warranted Guide Rail Group containing Warranted Guide Rail layers
 - Warranted Guide Rail Locations location where TWT determined Guide Rail was warranted
 - Warranting Obstruction Type locations where TWT determined Guide Rail was warranted shown by the obstruction type requiring Guide Rail
 - Conceptual Design for Warranted Guide Rail Group of layers containing conceptual designs prepared by TWT
 - Warranted Guide Rail Design TWT's conceptual designs
 - Annotation for Guide Rail Design labeling
- Note Group layers must be checked to draw in order to draw sub-groups or layers

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Engineering Mapping Application Layers List:

http://bit.ly/1ef0du9

- Road Easements shows jurisdictional responsibility for road intersections between County/State and County/Municipal
- Abandoned Rail locations of abandoned rail lines
- Highway Overlay Overlay is displayed by the year in which it was or is to be completed. Data covers years 2011-2015.
- Highway Sections boundaries for Burlington County Highway sections
- Pinelands Region Pinelands boundary
- Basemap Layers Group contains numerous layers from basemap. Can all be turned on/off by turning group on/off. Useful for displaying roads, streams, parcels over soils layers. Expand to see individual layers and sub-groups of layers
- Environmental constraints Group contains individual layers for wetlands, floodplains and soils. Expand to see individual layers
 - NJDEP Wetlands (2012)
 - FEMA Flood Zones
 - SSURGO Soils 2005
- NJ 2013 Natural Color aerial imagery from NAIP (National Agriculture Imagery Program), 1 meter resolution, leaf on
- NJ 2012 Infrared— aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 2007 Natural Color aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 2007 Infrared— aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 2006 Natural Color aerial imagery from NAIP (National Agriculture Imagery Program), 1 meter resolution, leaf on
- NJ 2002 Infrared— aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 1995 Infrared— aerial from NJ OGIS, 1 meter resolution, leaf off
- NJ 1930 Black White black and white aerials from 1930s, low resolution, leaf on
- NJ Historical Maps circa 1900s
- NJ Color Topo 24K
- NJ Topo 24K
- NJ Topo 100K
- Note Group layers must be checked to draw in order to draw sub-groups or layers



Engineering Traffic Mapping Application Layers List

http://bit.ly/1KiRnKh

- Engineering Traffic Group— group containing layers prepared for Engineering's Traffic Section
 - Signs Engineering Grade locations of signs maintained by the Engineering Traffic Section which are Engineering
 Grade material. All Mapped using Hstar and ProXH with locations <1ft
 - Signs locations of signs maintained by the Engineering Traffic Section. All Mapped using Hstar and ProXH with locations <1ft
 - DMS Boards locations of County's DMS boards
 - School Flasher location of school flashers on County roads
 - Pedestrian Walkway location of pedestrian walkways on County roads
 - Blinker locations of County-maintained blinking lights
 - Traffic Signals Existing locations of existing traffic signals
 - Traffic Signals in Progress locations of traffic signals that are in progress
 - Fiber Optic Markers locations of fiber marker 'match sticks' indicating the location of installed underground fiber optic cabling
 - Fiber Conduit Completed- location of installed fiber optic cabling
- County Facilities Group group containing county building an property layers
 - Main County Offices locations of County offices. Includes pictures of buildings
 - County Properties property boundaries of County-owned land shown by type (Multipurpose, Active Recreation,
 County Office, Court Space, Farm, Garage, Open Space, Parkl (Passive Recreation)). Displays as a colored polygon at
 small scales and as an outline at large scales
- Accidents from 2010-2014 accidents reported on County routes from statewide crash reports which were submitted to NJ DOT.
- Highway Sections boundaries for Burlington County Highway sections
- Note Group layers must be checked to draw in order to draw sub-groups or layers



Engineering Traffic Mapping Application Layers List, cont.

http://bit.ly/1KiRnKh

- NJ 2013 Natural Color aerial imagery from NAIP (National Agriculture Imagery Program), 1 meter resolution, leaf on
- NJ 2012 Natural Color aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 2012 Infrared aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 2007 Natural Color aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 2007 Infrared— aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 2006 Natural Color aerial imagery from NAIP (National Agriculture Imagery Program), 1 meter resolution, leaf on
- NJ 2002 Infrared— aerial from NJ OGIS, 1 foot resolution, leaf off
- NJ 1995 Infrared— aerial from NJ OGIS, 1 meter resolution, leaf off
- NJ 1930 Black White black and white aerials from 1930s, low resolution, leaf on
- NJ Historical Maps circa 1900s
- NJ Color Topo 24K
- NJ Topo 24K
- NJ Topo 100K

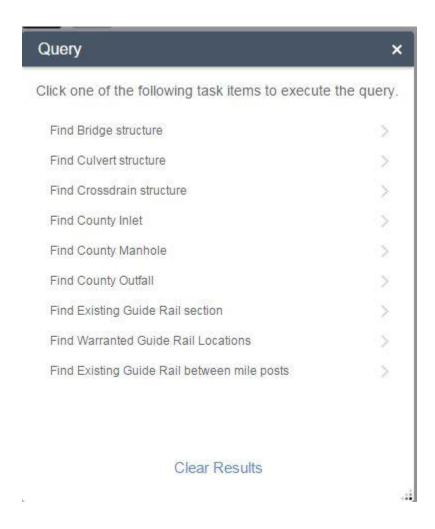


http://bit.ly/1ef0du9

- The Engineering Mapping Application contains multiple layer search/query options:
 - Find Bridge Structure
 - Find Culvert Structure
 - Find Crossdrain Structure
 - Find County Inlet
 - Find County Manhole
 - Find County Outfall
 - Find Existing Guide Rail Section
 - Find Warranted Guide Rail Locations
 - Find Existing Guide Rail between mile posts
- Each search has 2 additional options
 - Use spatial filter to limit features checking this option will apply the search to only features that are within the
 current map extent
 - Add result as operational layer- checking this option will add the selected features to the Layers List.
 - Clicking the down arrow on the right side of a layer displays the layer menu, which will include some or all of the following functions depending on the application/Layer:
 - Zoom to—Sets the map extent to the extent of the layer.
 - Transparency--Sets the transparence for the layer.
 - Enable Pop-up / Remove Pop-up Enables or disables Pop-up for the feature layer. If a feature layer does not have pop-up configured in the map, clicking **Enable Pop-up** shows all field values from the feature layer.
 - Move up—Moves the layer one level up.
 - Move down—Moves the layer one level down.
 - Open attribute table—Opens the attribute table for the feature layer.
 - Description / Show Item Details—Opens the service description or the item details page for the service or the item associated with the layer, if available.



http://bit.ly/1ef0du9



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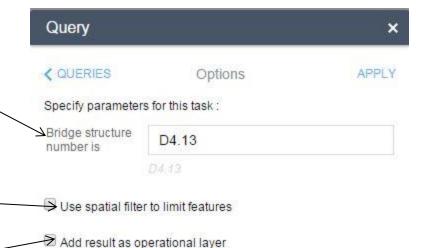
http://bit.ly/1ef0du9

Example of Searching for a bridge, culvert or crossdrain

These searches allows the user to search for a bridge, culvert or crossdrain by the Structure Number:

- Choose appropriate query for the type of structure you want to search for (bridge, culvert or crossdrain)
- Enter the structure number in the box
- Check any of the options you'd like to use
- Click Apply

within the current map extent



Checking this option will add the selected features to the Layers List. The attribute table could then be opened for viewing and optionally

Checking this option will apply the search to only features that are

exported as a .CSV file which can be opened in Excel.

Clear Results

the "Clear Results" button clicked.



http://bit.ly/1ef0du9

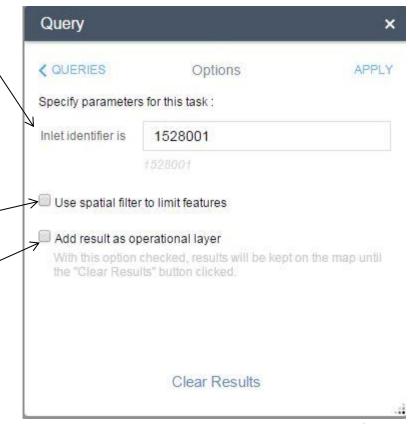
Example of Searching for a stormwater structure

These searches allows the user to search for a County stormwater infrastructure items by their identifier:

- Choose appropriate query for the type of structure you want to search for (inlet, manhole, outfall)
- Enter the identifier in the box
 - manholes have the same identifier as the inlet to which they are connected but with an m at the end (ex. 1530174m)
 - outfalls have the same identifier as the inlet to which they are connected but with an o at the end (ex. 15301740)
- Check any of the options you'd like to use
- Click Apply

Checking this option will apply the search to only features that are within the current map extent

Checking this option will add the selected features to the Layers List. The attribute table could then be opened for viewing and optionally exported as a .CSV file which can be opened in Excel.





http://bit.ly/1ef0du9

Example of Searching for an Existing Guide Rail Section or Warranted Guide Rail Location

These searches allows the user to search for Existing or Warranted Guide Rail locations GR ID:

exported as a .CSV file which can be opened in Excel.

Choose appropriate query for the type of structure you Query × want to search for **Find Existing Guide Rail Section** < QUERIES Options **Find Warranted Guide Rail Location** Specify parameters for this task: **Enter the GR ID in the box** Check any of the options you'd like to use Existing Guide 1312 Rail ID (GR_ID) is **Click Apply** Use spatial filter to limit features Checking this option will apply the search to only features that are within the current map extent Add result as operational layer With this option checked, results will be kept on the map until Checking this option will add the selected features to the Layers List. The attribute table could then be opened for viewing and optionally

Clear Results



http://bit.ly/1ef0du9

Example of Searching for Existing Guide Rail Sections between specified mile posts on a chosen County route

Query × These searches allows the user to search for Existing or Warranted Guide Rail locations GR ID: < QUERIES Options Choose Find Existing Guide Rail between mile posts query Specify parameters for this task: **Enter a County Route number** County Route Enter the starting mile post & ending mile post values 530 Number is Check any of the options you'd like to use **Click Apply** Starting mile post 2 is at least Ending mile post 5 is at most Use spatial filter to limit features Checking this option will apply the search to only features that are within the current map extent Add result as operational layer With this option checked, results will be kept on the map until Checking this option will add the selected features to the Layers List. The attribute table could then be opened for viewing and optionally exported as a .CSV file which can be opened in Excel. Clear Results



Engineering Traffic Mapping Application Layers List, cont.

http://bit.ly/1KiRnKh

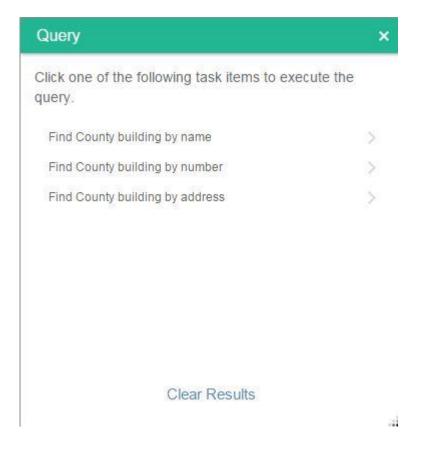
- The Engineering Mapping Application contains multiple layer search/query options:
 - Find County building by name
 - Find County building by number
 - Find County building by address

- Each search has 2 additional options
 - Use spatial filter to limit features checking this option will apply the search to only features that are
 within the current map extent
 - Add result as operational layer- checking this option will add the selected features to the Layers List.
 - Clicking the down arrow on the right side of a layer displays the layer menu, which will include some or all of the following functions depending on the application/Layer:
 - Zoom to—Sets the map extent to the extent of the layer.
 - Transparency--Sets the transparence for the layer.
 - Enable Pop-up / Remove Pop-up Enables or disables Pop-up for the feature layer. If a feature layer does not have pop-up configured in the map, clicking Enable Pop-up shows all field values from the feature layer.
 - Move up—Moves the layer one level up.
 - Move down—Moves the layer one level down.
 - Open attribute table—Opens the attribute table for the feature layer.
 - Description / Show Item Details—Opens the service description or the item details page for the service or the item associated with the layer, if available.



Engineering <u>Traffic</u> Mapping Application Layers List, cont.

http://bit.ly/1KiRnKh





Engineering Traffic Mapping Application Layers List, cont.

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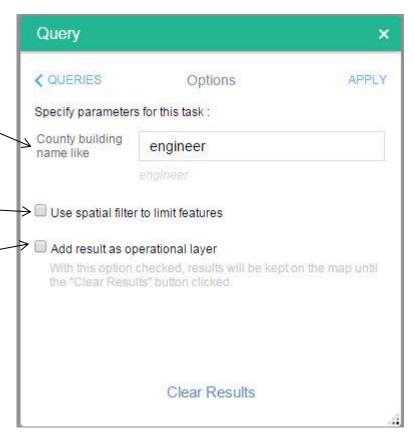
Example of Searching for a County building by name, number or address

These searches allows the user to search for County building by one of 3 options:

- Choose appropriate way you want to search for the building:
 - Name (description)
 - Number (from Fixed Assets)
 - Address
- Enter the appropriate value in the box
- Check any of the options you'd like to use
- Click Apply

Checking this option will apply the search to only features that are within the current map extent

Checking this option will add the selected features to the Layers List. The attribute table could then be opened for viewing and optionally exported as a .CSV file which can be opened in Excel.





Example of Search query result:

- The results of the Search query will be displayed in the search window
- The feature(s) on the map will be highlighted
- The map will center on the selected feature(s)
- If multiple features were found, the list can be scrolled to view the results. Clicking any one will cause the map to center on it.



