



Transportation Integrated Enterprise Solution

Esri User Conference 2014

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# Topics

- Background
- ETL & Data Warehouse
- ArcGIS Map Services
- DC ArcGIS Online
- ArcGIS Online Applications
- Custom TIES Templates



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# Background

- TIES - “Transportation Integrated Enterprise Solution”
- Integrate disparate “stove-piped” business applications from various DDOT Administrations into a common framework for visualization and reporting across the enterprise.
- Dashboard Application provides an interface to access business data through graphic visualizations like charts, maps and tabular views to support decision making.



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# In Nutshell

Special Achievement in GIS Award

Wednesday 3:30 – 5:30 pm, Ballroom 20

- Award Winning
- GIS Centric Solution
- Centered around Linear Referencing
- A framework that consumes Web / Map services
- Pilot project with 7 DDOT systems – extending across enterprise
- Dashboards and “working apps”

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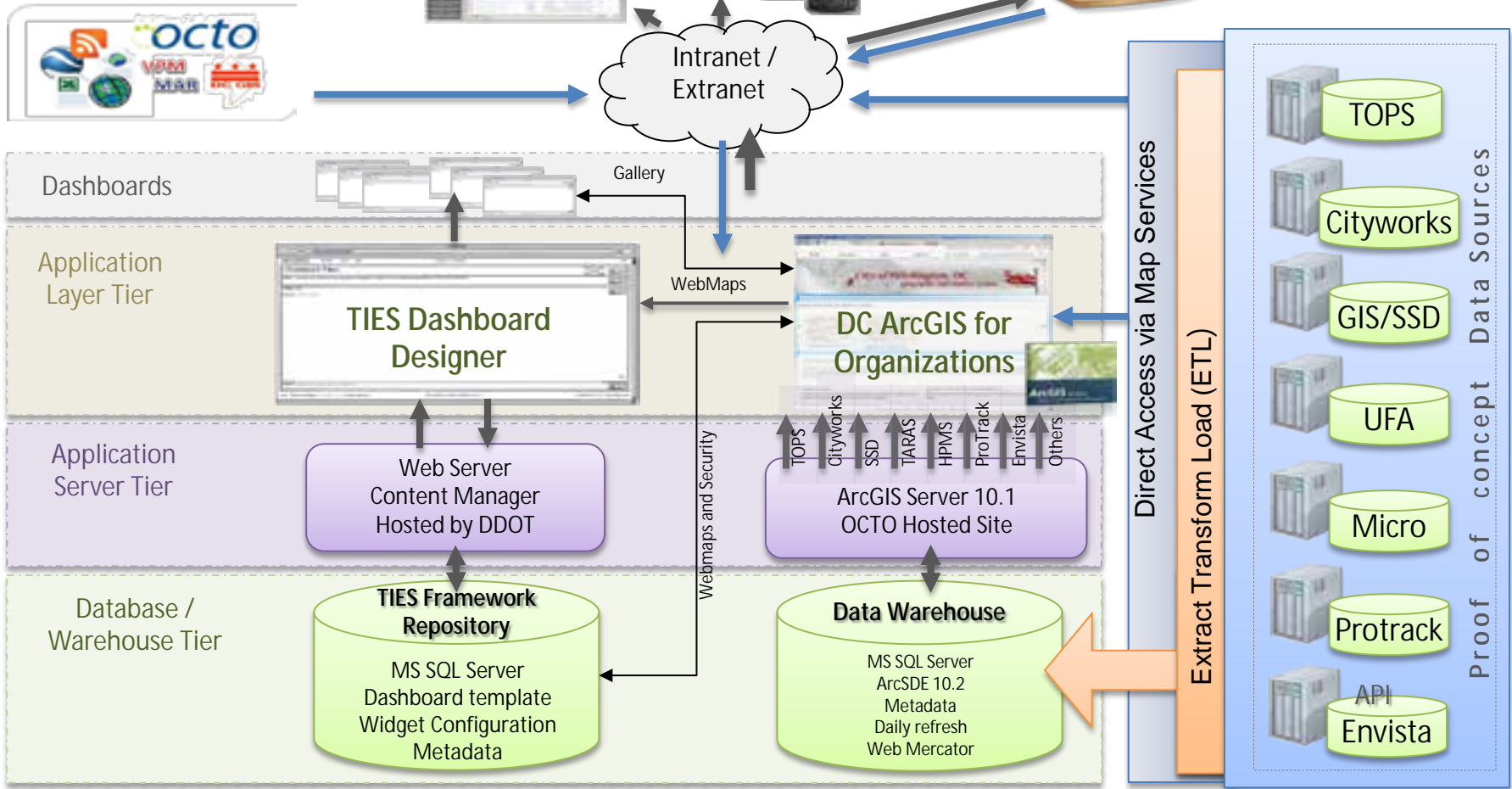


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# High level Architecture



# Extract Transform Load - ETL

- Process of converting data from source to Spatial TIES
  - Subset of data based on needs
  - Apply Spatial component (Street Segment, X,Y, etc.) – coincident Geometry
  - Rename Columns
  - Captured as Geoprocessing Models
  - Data loading automated based on scheduled



# ArcGIS Map Services

- Feature & Map Service per Data Source
- DDOT generates .SD file (Server Definition)
- DDOT provides OCTO with Files
- OCTO creates service
- OCTO maintains and adjusts



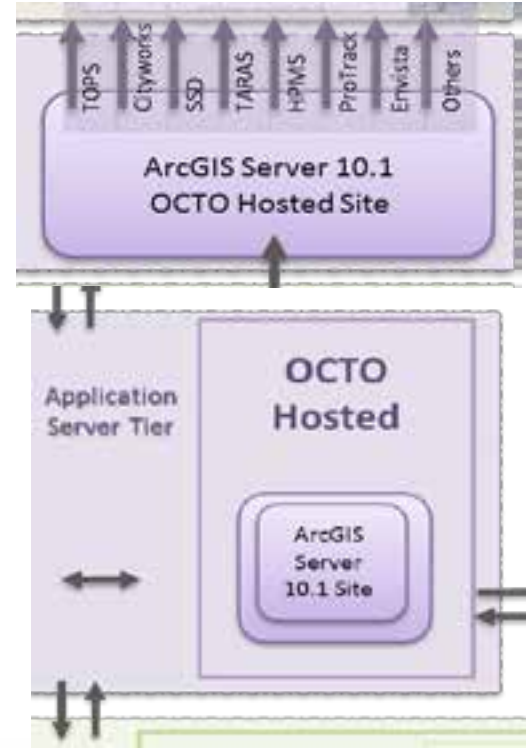
SSD.sd



ProTrack.sd



MicroPaver.sd



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# TIES Rest End Point

<http://maps.ddot.dc.gov/ddotgis/rest/services/DDOT>

- [DDOT/AlleyConditions](#) (MapServer)
- [DDOT/AlleyServiceRequest](#) (FeatureServer)
- [DDOT/AlleyServiceRequest](#) (MapServer)
- [DDOT/Cityworks](#) (FeatureServer)
- [DDOT/Cityworks](#) (MapServer)
- [DDOT/DdotAssets](#) (MapServer)
- [DDOT/Envista](#) (FeatureServer)
- [DDOT/Envista](#) (MapServer)
- [DDOT/GeographyFilter](#) (FeatureServer)
- [DDOT/GeographyFilter](#) (MapServer)
- [DDOT/Inspections](#) (FeatureServer)
- [DDOT/Inspections](#) (MapServer)
- [DDOT/MicroPaver](#) (FeatureServer)
- [DDOT/MicroPaver](#) (MapServer)
- [DDOT/Parking](#) (MapServer)



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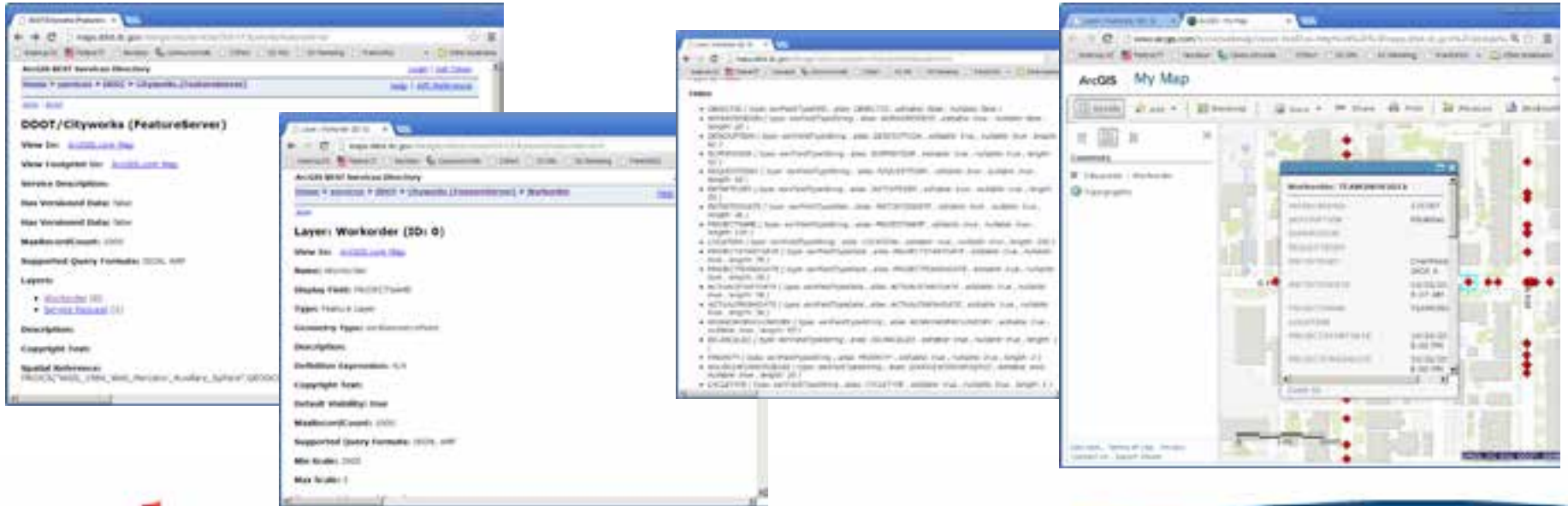


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# Cityworks - Rest End Point Example

<http://maps.ddot.dc.gov/ddotgis/rest/services/DDOT/Cityworks/FeatureServer>



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# LEVERAGING ARCGIS ONLINE



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# DC ArcGIS Online

[dcgis.maps.arcgis.com](http://dcgis.maps.arcgis.com)

- Esri SaaS Platform
- Cloud Hosted
- ELA Supported



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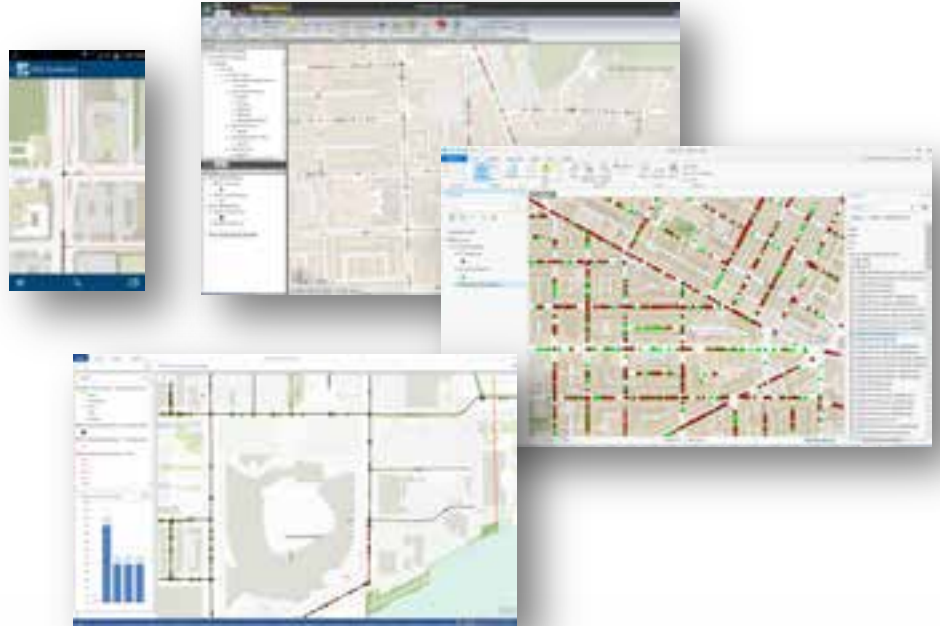
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# ArcGIS Online Applications

- ArcGIS.com Map
- Web Application Templates
- Map Embedding
- ArcGIS Explorer
- ArcGIS Desktop
- Esri Maps for Office
- Operations Dashboard
- ArcGIS Collector
- ArcGIS Web App Builder
- ArcGIS Pro
- ..... More to come



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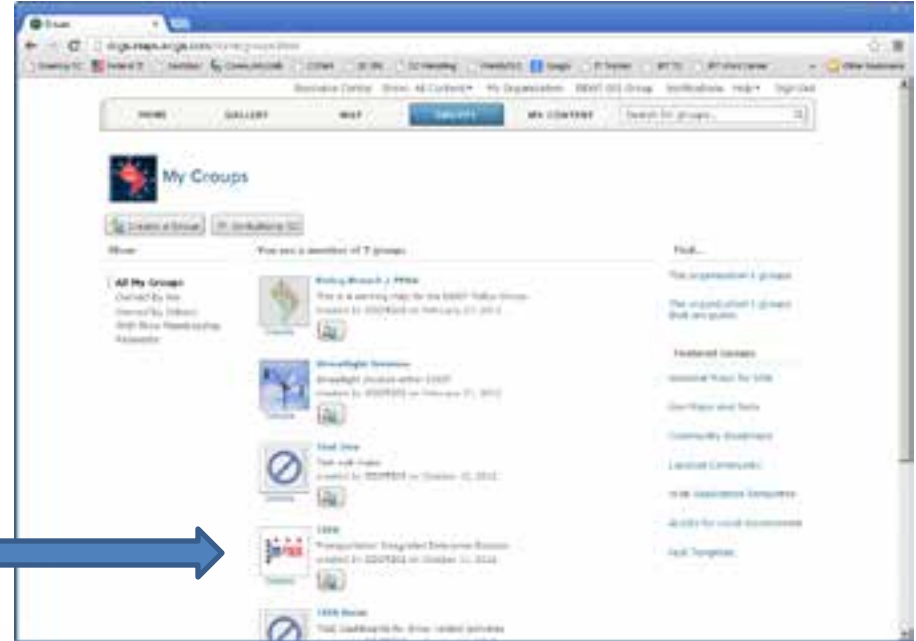
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# DDOT Groups – started with TIES

- TIES is a Group
- Invite Only



# TIES Groups

- All TIES Data Sources Registered
- WebMaps For applications

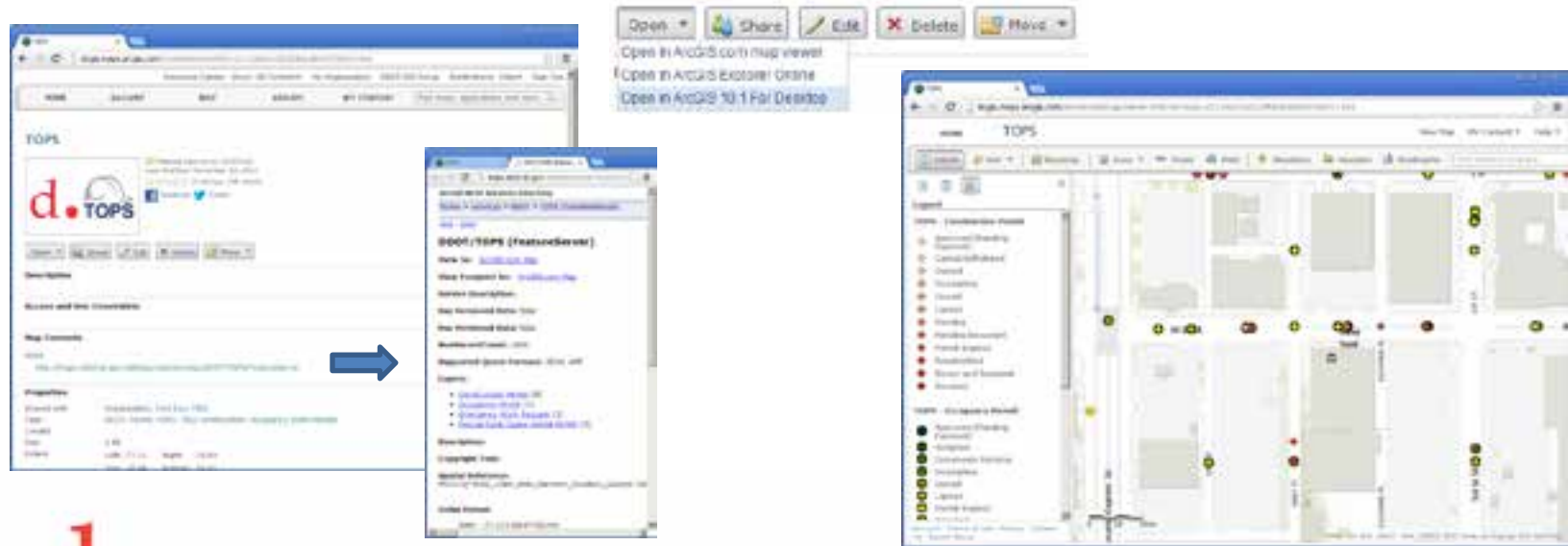


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# TIES TOPS – Feature Service Example

- Feature Services used in all supported applications



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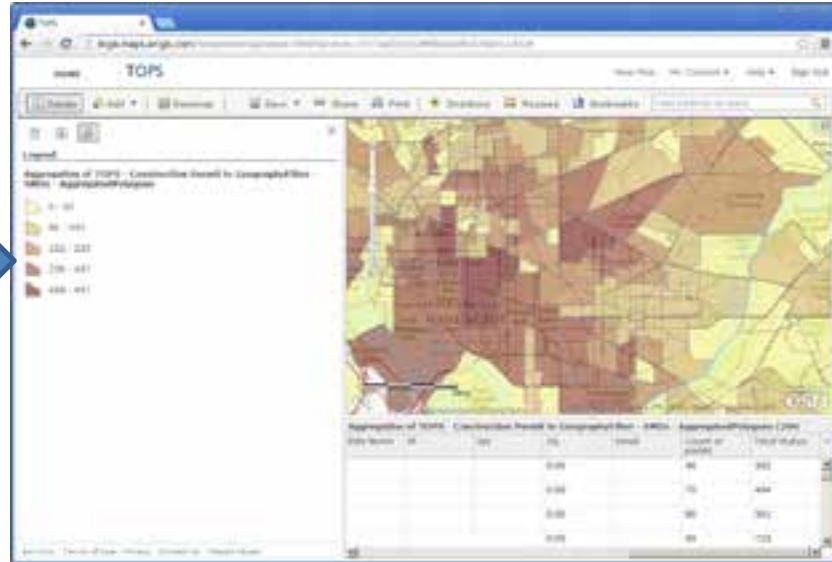




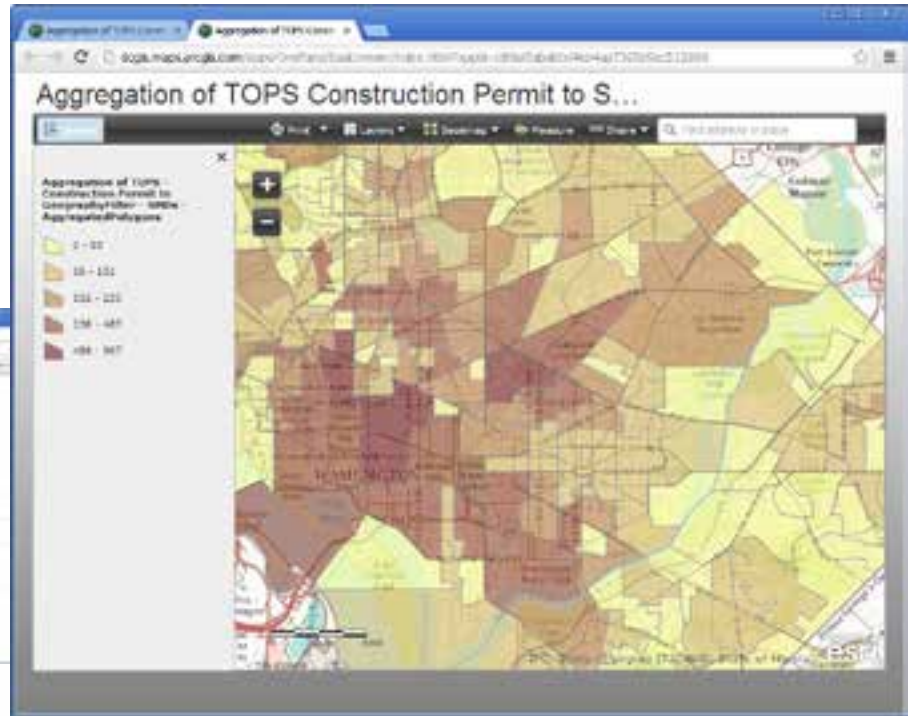


# AGOL Map – Aggregation Example

- TIES TOPS Construction permits Aggregated by SMD



# AGOL Web Application Templates - Basic



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# AGOL Map embedding

- iFrame code for direct website embedding

```
<iframe  
width="500"  
height="400"  
frameborder="0"  
scrolling="no"  
marginheight="0"  
marginwidth="0"
```

```
src="http://dcgis.maps.arcgis.com/home/webmap/embedViewer  
.html?webmap=8bde79991229457b9777d29596c42471&amp;e  
xtent=-77.0071,38.8917,-76.9961,38.897">
```

```
</iframe>
```



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# DC Template

The screenshot shows a web browser displaying a map of Washington, DC. The page title is "Aggregation of TOPS Construction Permit to SMDs". The header includes the logo for "THE DISTRICT OF COLUMBIA" with the tagline "One City, One Future". The map is color-coded by permit count, with a legend on the left side. The legend categories are: 0-50 (lightest yellow), 50-100, 100-200, 200-400, and 400-900 (darkest brown). The map shows a high concentration of permits in the central urban area, particularly around the downtown core. The browser address bar shows a URL from map2.dgs.dc.gov. At the bottom of the page, there is a navigation bar with links for "All Online", "Media", "Online Services", "Agency Directory", "DC GOV", and "Come Meeting".

**THE DISTRICT OF COLUMBIA**  
"One City, One Future"

## Aggregation of TOPS Construction Permit to SMDs

Legend

- Aggregation of TOPS - Construction Permit to SMDs - AggregatedPolygons
- 0 - 50
- 50 - 100
- 100 - 200
- 200 - 400
- 400 - 900

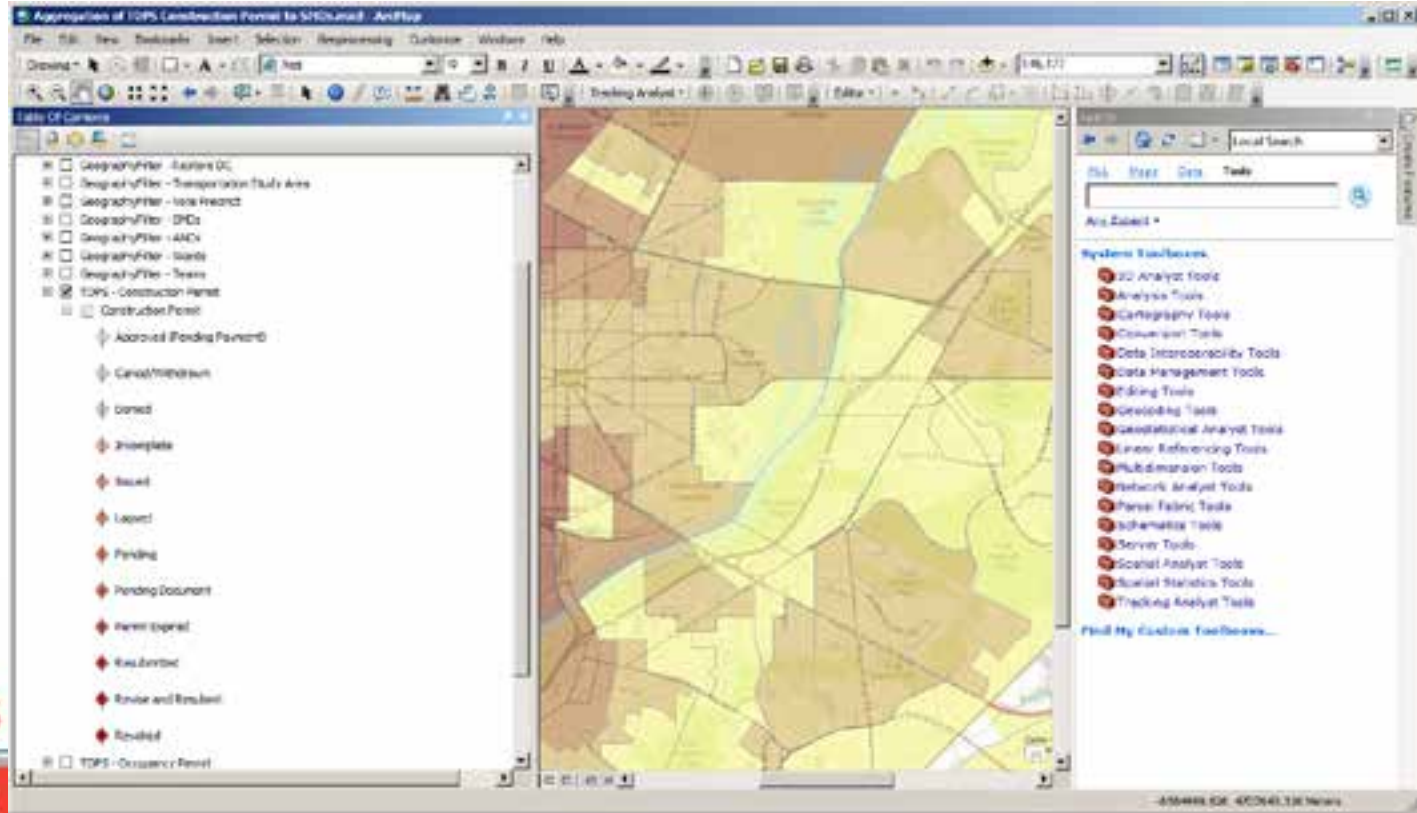
Navigation: Home, Layers, Full Screen, Measure, Share, Search: Enter address or place name

Footer: All rights reserved. | All State of Maryland IT & SMDs, Office of Information Technology, Annapolis, MD, 21401

Navigation: All Online | Media | Online Services | Agency Directory | DC GOV | Come Meeting



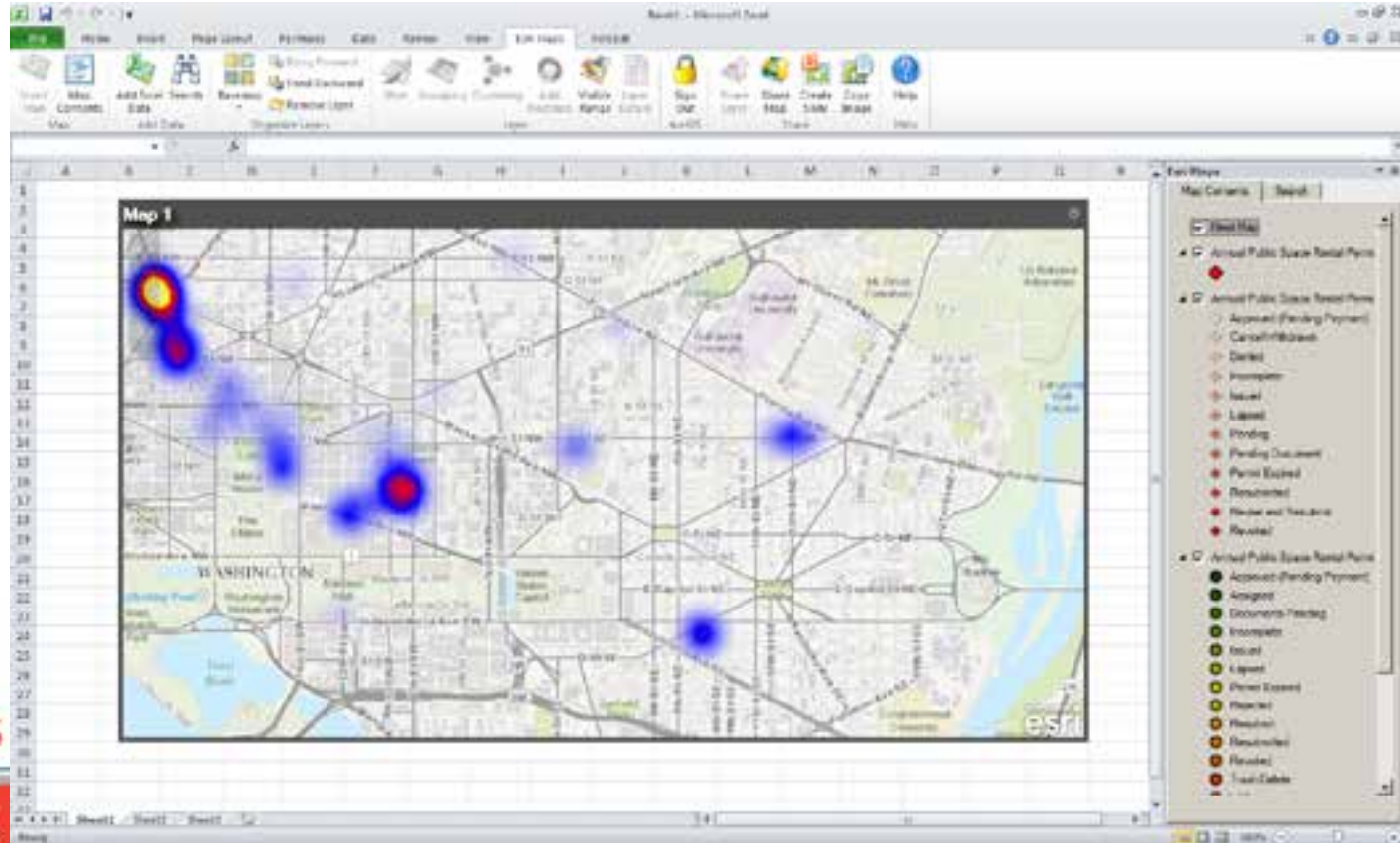
# ArcGIS Desktop



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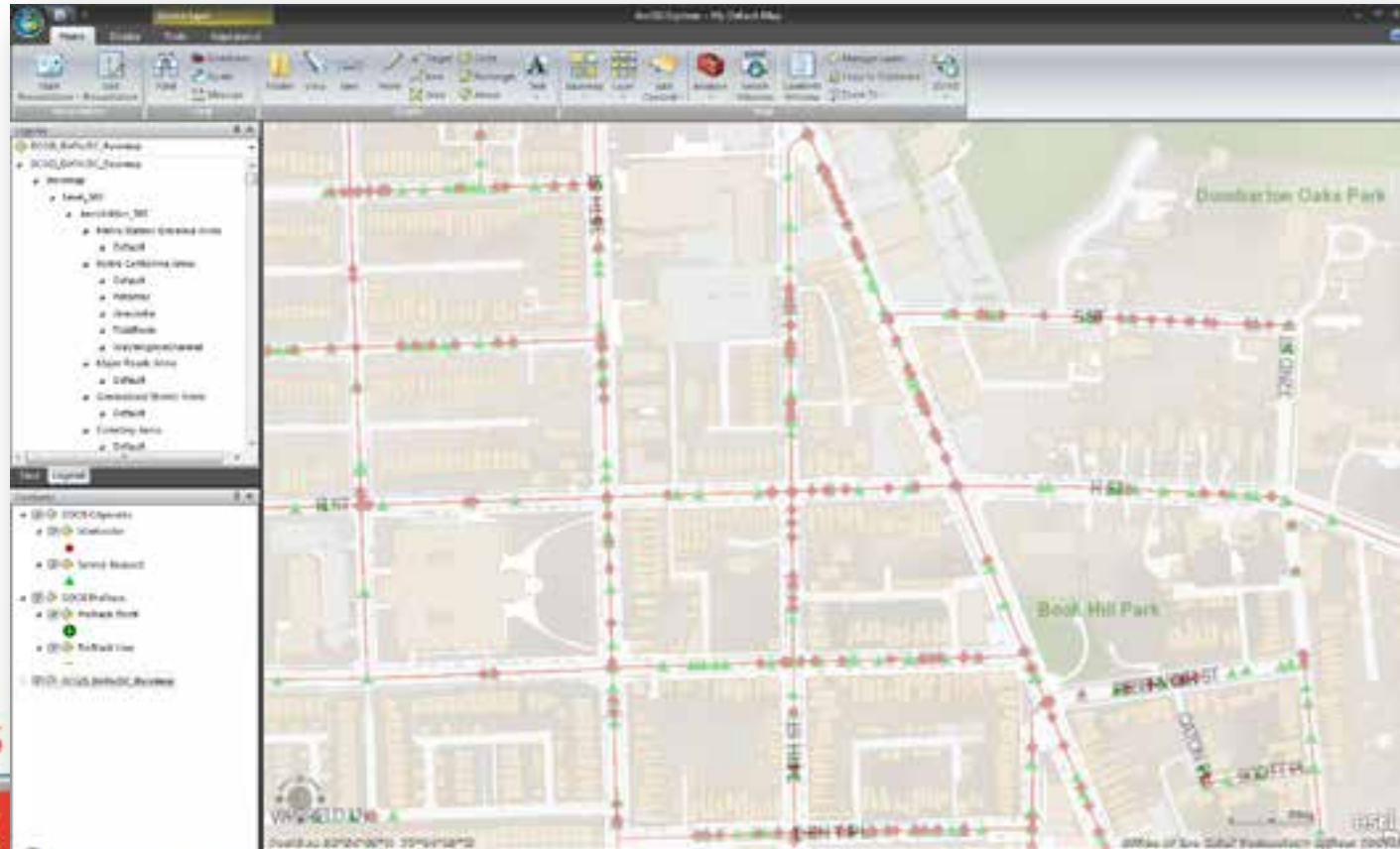
# Esri Maps for Office - Excel



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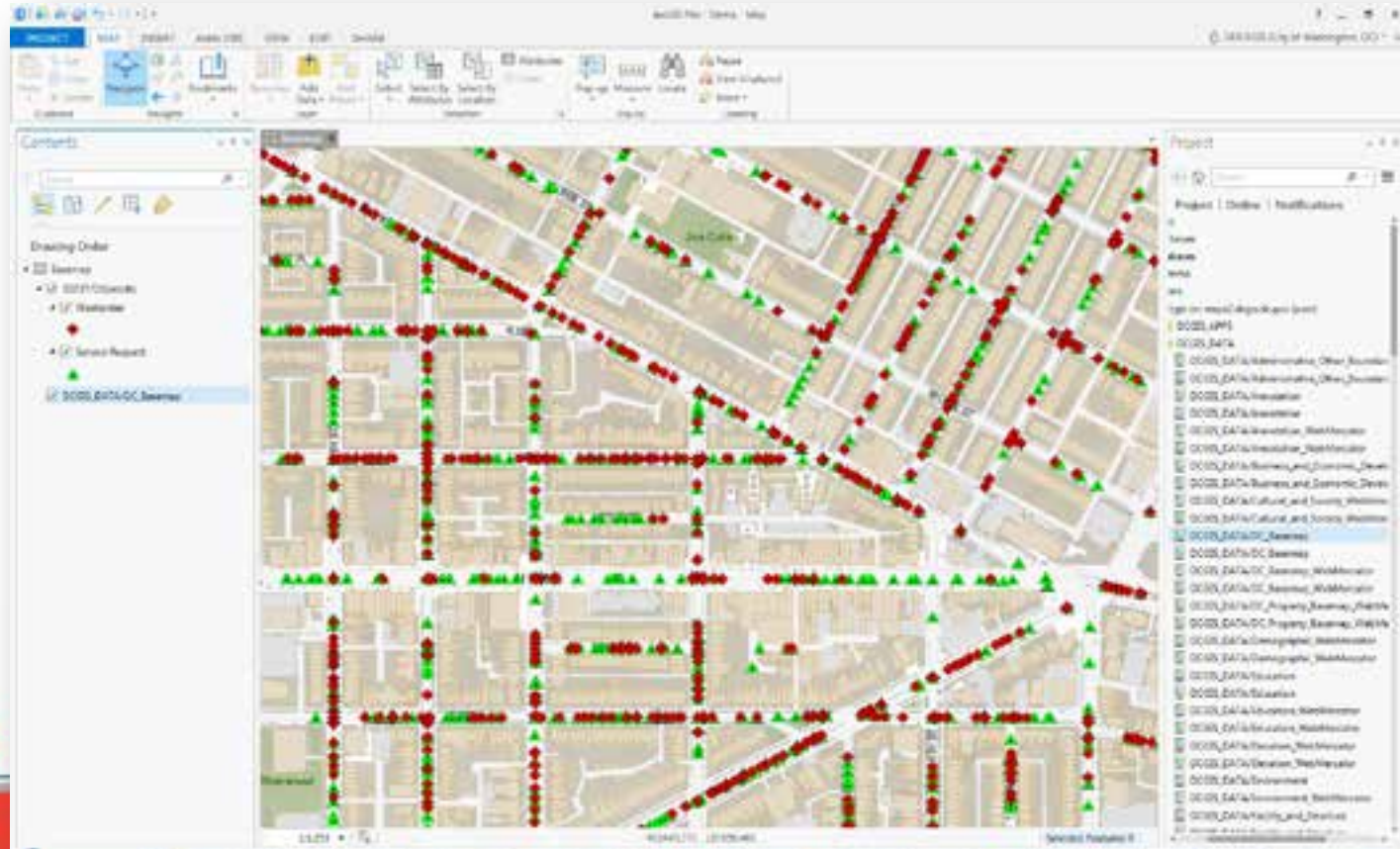
# ArcGIS Explorer



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# TIES in ArcGIS Pro

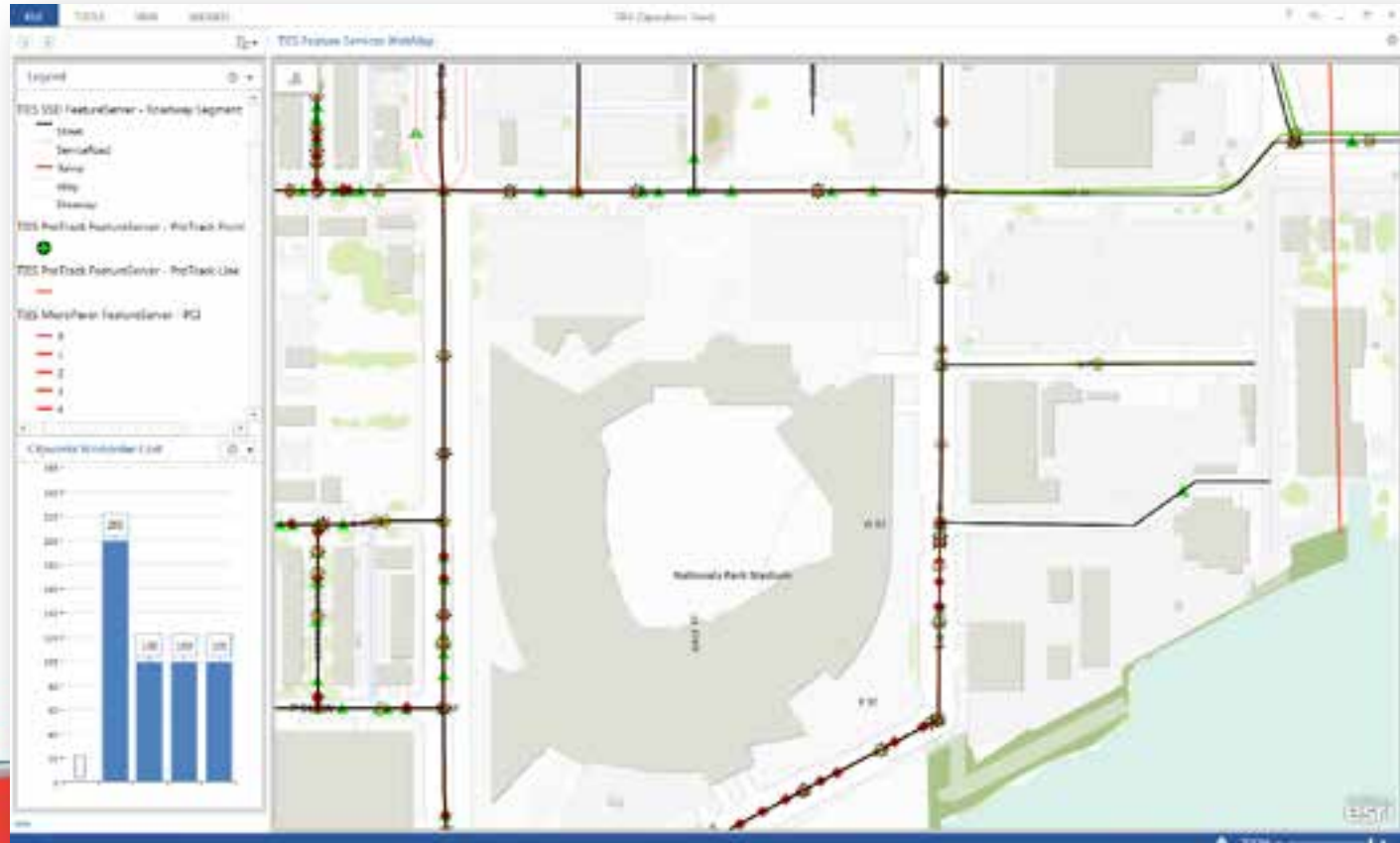


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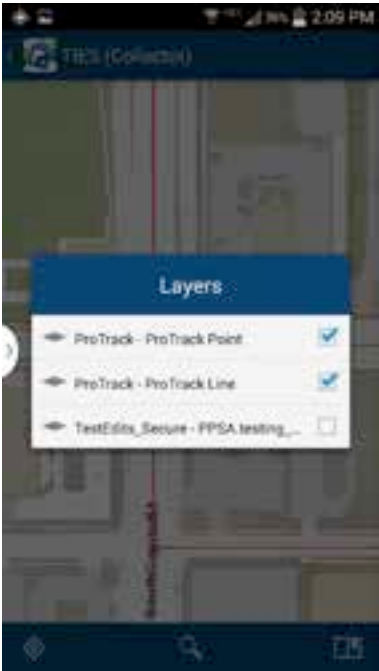
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# TIES in Operations Dashboard



# Collector



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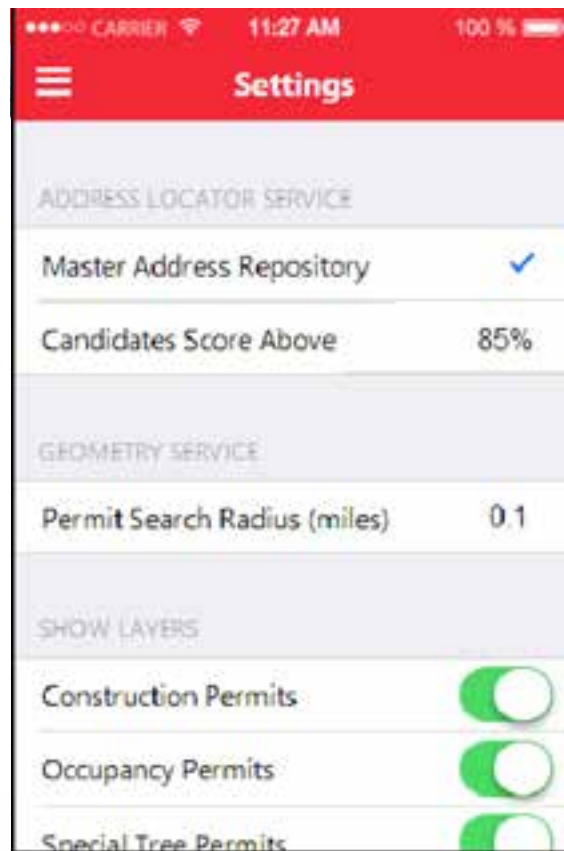
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# DDOT Mobile Permit viewer



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TIES

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Questions?

# Connect with Us

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