Transportation Integrated Enterprise Solution

Esri User Conference 2014
Topics

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

• 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”
High level Architecture

Dashboards

Application Layer Tier

TIES Dashboard Designer

Web Server
Content Manager
Hosted by DDOT

ArcGIS Server 10.1
OCTO Hosted Site

Data Warehouse

MS SQL Server
Dashboard template
Widget Configuration
Metadata

Daily refresh
Web Mercator

Webmaps

Gis/SSD
Cityworks
TOPS
UFA
Micro
Protrack
Envista

Extract Transform Load (ETL)

Proof of concept Data Sources

Direct Access via Map Services

Application Server Tier

TIES Framework Repository

MS SQL Server
Dashboard template
Widget Configuration
Metadata

Data Warehouse

MS SQL Server
ArcSDE 10.2
Metadata
Daily refresh
Web Mercator

API

Application Tier

Database / Warehouse Tier

Intranet / Extranet

Proof of concept Data Sources

Direct Access via Map Services

Proof of concept Data Sources

Direct Access via Map Services

Proof of concept Data Sources

Direct Access via Map Services

Proof of concept Data Sources
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
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/Enviata (FeatureServer)
- DDOT/Enviata (MapServer)
- DDOT/GeographyFilter (FeatureServer)
- DDOT/GeographyFilter (MapServer)
- DDOT/Inspections (FeatureServer)
- DDOT/Inspections (MapServer)
- DDOT/MicroPaver (FeatureServer)
- DDOT/MicroPaver (MapServer)
- DDOT/Parking (MapServer)
Cityworks - Rest End Point Example

http://maps.ddot.dc.gov/ddotgis/rest/services/DDOT/Cityworks/FeatureServer
LEVERAGING ARCGIS ONLINE
DC ArcGIS Online

dcgis.maps.arcgis.com

- Esri SaaS Platform
- Cloud Hosted
- ELA Supported
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
DDOT Groups – started with TIES

• TIES is a Group
• Invite Only
TIES Groups

• All TIES Data Sources Registered
• WebMaps For applications
TIES TOPS – Feature Service Example

- Feature Services used in all supported applications
AGOL Map – TIES TOPS Service
AGOL Map – Aggregation Example

• TIES TOPS Construction permits Aggregated by SMD
AGOL Web Application Templates - Basic
AGOL Map embedding

- iFrame code for direct website embedding

```html
<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;extent=-77.0071,38.8917,-76.9961,38.897"
>
</iframe>
```
DC Template
ArcGIS Desktop
Esri Maps for Office - Excel
ArcGIS Explorer
TIES in ArcGIS Pro
TIES in Operations Dashboard
Collector
DDOT Mobile Permit viewer
TIES

JUST THE BEGINNING.....
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Questions?