Introductions/Credits

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  Information Service Director
  Office of Innovation and Technology/Streets Dept.
  City of Philadelphia, PA

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  Senior GIS Analyst
  JMT Technology Group
  Sparks, MD

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  Regional Director
  JMT Technology Group
The Challenge

- Evaluate compliance with ADA regulations
- 150,000+ ADA Ramps and no GIS Features

- Identify and focus on “high priority” ramps
- Meet Reporting requirements (PennDOT)
- Support development of ADA Ramp GIS
Background

- ADA Unit already using Cityworks to track projects
- Work orders associated to intersection nodes
- Desktop version of Cityworks deployed using Citrix
Background – Sample Work Order

- Work package as work order
- Attachments for related documents
- Work orders grouped into projects
- Nodes as GIS entities
- Custom fields for additional info
- Tasks for milestone dates
- Needed Inspections at ramp level
Existing Tools
Target Workflow

Work Order (WO) Generated
- Intersection associated
- Design Reviewed, dates recorded in WO Tasks
- Release for Construction Task
- Ramp GIS Features Created
- Link ramp GIS features to intersections

Ramp Inspections
- Inspections created associated to ramp
- Multiple inspection types supported
- Inspectors assigned
- Ramp attributes Recorded
- Photographs captured
- Inspection data updated real-time

Quality Control
- In-office review of non-compliant attributes
- Completion of Evaluation Inspections

Reporting
- Internal Management Reports
- PennDOT 4401 reports
- Submission to PennDOT
Solution Components

External Access

DMZ

DMZ

Internal

https://....

External Firewall

Customization

Cityworks

Web Adaptor

Internal Firewall

Cityworks

Inspections

Work Orders

GIS Assets

Web Services

MS SQL Server
Role of GIS

- Creation of ramp features
- Attribution via multiple methods
  - Use Cityworks© Editor
  - Generate Ramp ID through SQL database trigger
  - Populate district and municipal attributes through default values in geodatabase schema.
  - Update XY coordinates in Lat/Long (from State Plane) through scheduled python script.
  - Establish link between ramp and existing intersection points.
GIS Setup - ArcCatalog
GIS Services – Cityworks Designer

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<th>Value</th>
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Apply To

Current Domain: HIGHWAYS

Service Associations

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<th>Name</th>
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Application Overview
Solution Access
Work Order Ready for Inspections
ADA Ramp Creation
Ramp Attribution
Updated GIS
New Inspection
Select Asset
Link Ramp to Intersection
Scheduled Python script using `arcpy.da.updatecursor`

- **UpdateCursor** (in_table, field_names, {where_clause}, {spatial_reference}, {explode_to_points}, {sql_clause})

  - Field names – supports tokens for geometry object SHAPE@
  - Where clause - supports limiting number of records returned
  - Spatial Reference – supports designation of a spatial reference other than that of the feature class
Inspect Ramp
Update Cross Streets
Ramp Measurements
Flag Non-Compliant Attributes
Complete Inspection
Inspection QA – Ramp Evaluation
Reporting Requirements
PennDOT - CS 4401 Report

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<td>Surface Stable, Firm, and Slip Resistant</td>
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<td>Elevation Differences &gt; 1/4&quot;</td>
<td>NO (X/16&quot;)</td>
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<td>Grate Openings or Gaps &gt; 1/2&quot;</td>
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<td>Utilities in Path of Travel</td>
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4401 Report – Lat/Long Coordinates
Summary

- Supports desired inspection workflow without paper
- Provides tool to support reporting requirements
- Creates the dataset of ramp GIS features associated to intersections
- Ties inspections to specific ramps in GIS
- Gives us greater understanding of our infrastructure
Q&A

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