Transforming the I-66 Beltway using GIS

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Project Background

• 22.5 miles of new Express Lanes alongside three regular lanes on I-66 from I-495 to University Boulevard in Gainesville
• New and expanded park and ride lots providing convenient access to the Express Lanes and more than 4,000 new park and ride spaces
• New and improved bus service and transit routes
I-66 Outside the Beltway

• The project is a public-private partnership between the Virginia Department of Transportation, the Virginia Department of Rail and Public Transportation (DRPT), and a private partner, I-66 Express Mobility Partners.

• Aggressive timeline to open I-66 Express Lanes by 2022

• Will change I-66 to HOV-3 and make it consistent with Interstates 95, 395, and 495.
Project Structure
Express Mobility Partners (EMP)

- Construction oversite for EMP owned assets
- Asset management
- Data collection
- Utility Mapping (ITS)

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Excellence Delivered As Promised
Why Inventory Assets Now?

• Take a proactive approach; monitor current condition
• Life cycle attached to a geospatial location
• Foundation of asset inventory
• Transition to future maintenance program
Development of GIS

- Coordination of the Layers through DB Process
- Immediate Needs Vs. Future Needs
ArcGIS Online

- Web GIS - Cloud based mapping with data hosted online. Enables users to be mobile in the field
- Create interactive web maps and web apps
- Share maps with individuals, groups, or organization
- Manage data in web - Simplifies and frees up internal server storage
- Configuration - Admin sets up requirements such as managing people, monitoring activities, and security controls

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Webmap Components

- Open in standard web browser or mobile device
- Contains data, basemap, layers, legend, zoom/navigation tools, and bookmarks
- Customizable maps
- Interactive display of geographic information
- Supplies dashboard web app with asset information

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Collector for ArcGIS

- Mobile app-Free to download
- iOS/Android phone/tablet
- Consumes webmaps from ArcGIS Online
- Field data collection-Update feature attribution in the field
- GPS functional-Find current location or create new feature from location
- Real time updates- Shows current conditions in maps
Project Challenges

- Design – Build Project
- Continuous Development
- Training End Users
- Volume of Data
- Size of the Project
- Data Conversion (CADD, KMZ, DGN)
- Elevation of Layered Assets

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Future Roadmap

- More data automation
- Dashboard for Construction Monitoring
- Vertical Datum
- Continual Training of GIS
- Deliverable of the GIS
Demonstration and Questions