ArcGIS for Transportation

A product for Esri’s transportation customers

- A series of useful maps and apps focused on transportation
  - Organized into modules
  - Extensible, configurable
  - A foundation for Partner solutions

- Participation in the online community
  - Best Practices / Implementation Support

- Esri Services and Partner offerings
  - Help implement, sustain and enhance

- One ArcGIS product for transportation
  - Initially focused on DOTs
  - Freely available for individual customer and ELA engagements
Transportation Community

An online community where Transportation users and partners can collaborate

www.resources.arcgis.com/content/local-government
Our Mission

*Help you increase the value of GIS in your organization*

- **Make it easier to deploy ArcGIS**
  - Deliver applications quickly throughout your organization
  - Stay current with future releases / avoid legacy technology
  - Create a platform of geospatial data that can be leveraged by many

- **Address common constraints in the transportation industry**
  - Size and skills of staff
  - Budget and time available to implement

- **Empower the community to contribute**
  - Users
  - Partners
Our Focus

Transportation Maps and Apps

- **Maps and Layers**
  - Sustainable, high-quality maps for web, mobile, and desktop apps
  - Authored from state government information model
  - Leveraging the Community Maps Basemap Portfolio

- **Configurable Apps**
  - Pattern for modern web, mobile, and desktop apps and workflows

- **GDB Schema(s) and Sample Dataset**
  - Roads and Highways is the LRS for transportation
  - Result: Transportation Information Model(s)

- **Transportation Resource Center**
  - Relevant implementation advice and best practices
Traditional solution approach

Changing the way you deploy GIS

Your project…

DIY

3rd Party Apps

Consulting

…traditional GIS approaches no longer viable….slow, risky and expensive
ArcGIS for … solution approach

*Changing the way you deploy GIS*

...reducing time, risk and cost so GIS is easier to deploy and maintain
Organizational needs

- System integration
- User specific requirements
- Who satisfies these requirements?
  - Business Partners
  - Esri Professional Services
  - Internal development staff
Implementing ArcGIS for Transportation

- Identify business priorities
- Identify business requirements
- Migrate data to information model
- Publish your Maps
- Configure apps
- Implement organizational needs
Configure vs. Customize

Reduce cost, time and risk

Benefits

- Implement quickly
- Easy to add new features
- Simple to maintain
- Easy to extend

…..your feedback affects future releases
Common DOT Business Patterns

Data Management
- Roadway inventory
- Bridge
- Sign
- Pavement
- ROW Mgt
- ITS Assets
- Linear Referencing

Planning & Analysis
- Condition Scoring
- Capital Planning
- Risk Modeling
- Crash Analysis
- Travel Modeling
- HPMS

Field Mobility
- Asset Inventory
- Inspections
- Work Orders
- Damage Assessment
- Sign Retroreflectivity
- AVL

Operational Awareness
- Performance Mgt
- ERP/Finance
- Workforce Optimization
- Operations Dashboard
- Work Orders

Stakeholder Engagement
- Public Facing Maps
- Customer Requests
- Regulators
- ARRA
- 511

DOT Enterprise

ArcGIS
What is Esri Roads and Highways?

• Provides core LRS maintenance tools
  • Create, extend, realign, overlap, retire, recalibrate, etc.

• Provides tools for communicating highway changes
  • Automates the synchronization with business systems
  • Loosely coupled, not pulled into the LRS

• Integrates business data from across the organization with the LRS
Typical Current State at DOT’s

Multiple Linear Referencing Systems (LRS)

**Challenges**
- Business information remains in silo
- Data not easily accessed by other systems
- Latency in propagation of updates
- Challenging or expensive integration
- GIS not well integrated leading to limited spatial capabilities across enterprise

Many business systems, each with unique LRS

Enterprise GIS
Target State

Unified Linear Referencing ‘Platform’

Benefits

- Common, consistent location reference across all business systems
- Bi-directional data flow
- Data can be consumed by different systems
- Integration simplified
- Consolidation of redundant data
- Standards for system design & procurement
- GIS can serve many systems and functions
- Expanded spatial capabilities across enterprise
# Phase 1 Projects (Port existing applications)

<table>
<thead>
<tr>
<th>Application</th>
<th>Business pattern</th>
<th>Audience</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define Roads &amp; Highways data model</td>
<td>Data Management</td>
<td>DOT</td>
<td>Database</td>
</tr>
<tr>
<td><strong>Safety Analysis Web Application</strong></td>
<td>Planning &amp; Analysis</td>
<td>Safety Analysts</td>
<td>Web</td>
</tr>
<tr>
<td><strong>Safety Analysis Tools</strong></td>
<td>Planning &amp; Analysis</td>
<td>Safety Analysts</td>
<td>Desktop</td>
</tr>
<tr>
<td><strong>Safety Dashboard</strong></td>
<td>Operational Awareness</td>
<td>Safety Managers / Executives</td>
<td>Web</td>
</tr>
<tr>
<td>Crash Collector</td>
<td>Field Mobility</td>
<td>Public Safety</td>
<td>Mobile</td>
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## Phase 2 Projects

<table>
<thead>
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<th>Application</th>
<th>Business pattern</th>
<th>Audience</th>
<th>Platform</th>
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</thead>
<tbody>
<tr>
<td>Asset collection mobile device</td>
<td>Field Mobility</td>
<td>DOT field crews</td>
<td>Mobile</td>
</tr>
<tr>
<td>Common operations dashboard for maintenance</td>
<td>Operational Awareness</td>
<td>DOT Executives</td>
<td>Web</td>
</tr>
<tr>
<td>Travel advisory site</td>
<td>Stakeholder Engagement</td>
<td>Public</td>
<td>Web</td>
</tr>
<tr>
<td>Project planning and coordination</td>
<td>Planning &amp; Analysis</td>
<td>DOT managers</td>
<td>Web</td>
</tr>
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## Phase 3 Projects

<table>
<thead>
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<th>Application</th>
<th>Business pattern</th>
<th>Audience</th>
<th>Platform</th>
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<tbody>
<tr>
<td>Travel management system</td>
<td>Operational Awareness</td>
<td>Traffic Management Center Analysts</td>
<td>Web</td>
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<tr>
<td>ROW data management</td>
<td>Data Management</td>
<td>ROW Staff</td>
<td>Desktop</td>
</tr>
<tr>
<td>Centralized property management</td>
<td>Operational Awareness</td>
<td>DOT Staff</td>
<td>Web</td>
</tr>
<tr>
<td>Planning facilitation</td>
<td>Planning &amp; Analysis</td>
<td>Planners across agencies</td>
<td>Web</td>
</tr>
</tbody>
</table>
## Phase 4 Projects

<table>
<thead>
<tr>
<th>Application</th>
<th>Business pattern</th>
<th>Audience</th>
<th>Platform</th>
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</thead>
<tbody>
<tr>
<td>Environmental analysis</td>
<td>Planning &amp; Analysis</td>
<td>Environmental analyst</td>
<td>Desktop</td>
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<tr>
<td>Outdoor Advertising</td>
<td>Field Mobility</td>
<td>ROW Department</td>
<td>Mobile</td>
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<tr>
<td>Sign Inventory</td>
<td>Field Mobility</td>
<td>Maintenance Department</td>
<td>Mobile</td>
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<tr>
<td>Maintenance Activities</td>
<td>Operational Awareness</td>
<td>Maintenance Department Managers</td>
<td>Web</td>
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</table>
Next Steps

• Esri
  - Organize and refine requirements
  - Build applications

• Business partners
  - Partner with Esri to build applications
  - Application implementers
    - Fast track implementation
    - customer specific needs

• Customers
  - Become early adopter
    - Work with Esri to refine requirements
    - Test applications
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Questions

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