



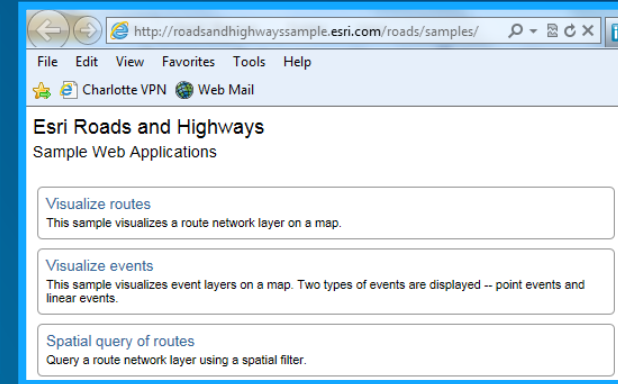
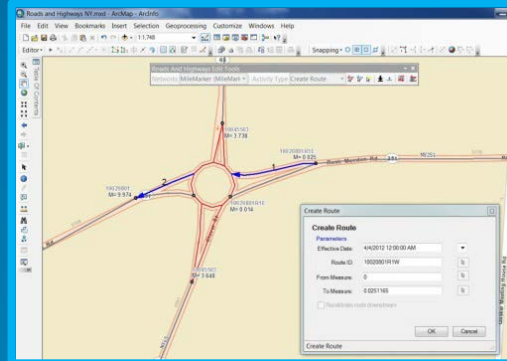
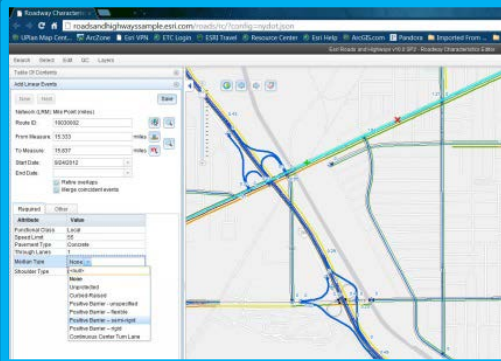
Esri Roads and Highways: An Introduction to Roadway Reporter

Tom Brenneman

Agenda

- **Roads and Highways introduction**
- **Roadway reporter overview**
- **Roadway reporter demonstration**

What is Esri Roads and Highways?



- **Maintenance**
 - Focused route editing tools
 - Web-based Roadway Characteristics Editing solution
 - Address maintenance tools (10.3.1)
- **System Integration**
 - Dynamic integration of enterprise business systems
 - Automated synchronization of business systems with LRS
- **Application framework**
 - LRS web services functionality for collaboration & data quality

A Commercial Off-The-Shelf (COTS) Linear Referencing System (LRS) solution from Esri...

Roadway Characteristics Editor (RCE)

Esri Roads and Highways v10.2.0.336 - Roadway Characteristics Editor

Map Contents

Add Linear Events

Network (LRM): Mile Point (miles)

Route ID: 5518W 0000

From Measure: 0.493 miles

To Measure: 9.497117458112593 miles

Start Date: 7/7/2013

End Date:

Retire overlaps
 Merge coincident events
 Prevent measures not on route

Attribute	Value
Urban Code	85080
Through Lane	4
Speed Limit	45
Ownership	City or Municipal Highway Agency
IRI	352
Functional Class	Principal Arterial - Other
Facility Type	Two-Way Roadway
AADT	28965

Map Contents

- Cal Trans State Routes and Events
 - Urban Code
 - Through Lane
 - Speed Limit
 - Ownership
 - IRI
 - Functional Class
 - all other values
 - Interstate
 - Principal Arterial - Other Freeways or Expressways
 - Principal Arterial - Other
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local
 - Facility Type
 - AACT
 - Radline
 - Mile Point
 - World Street Map
- World Street Map

Esri Roads and Highways v10.2.0.195 - Roadway Characteristics Editor

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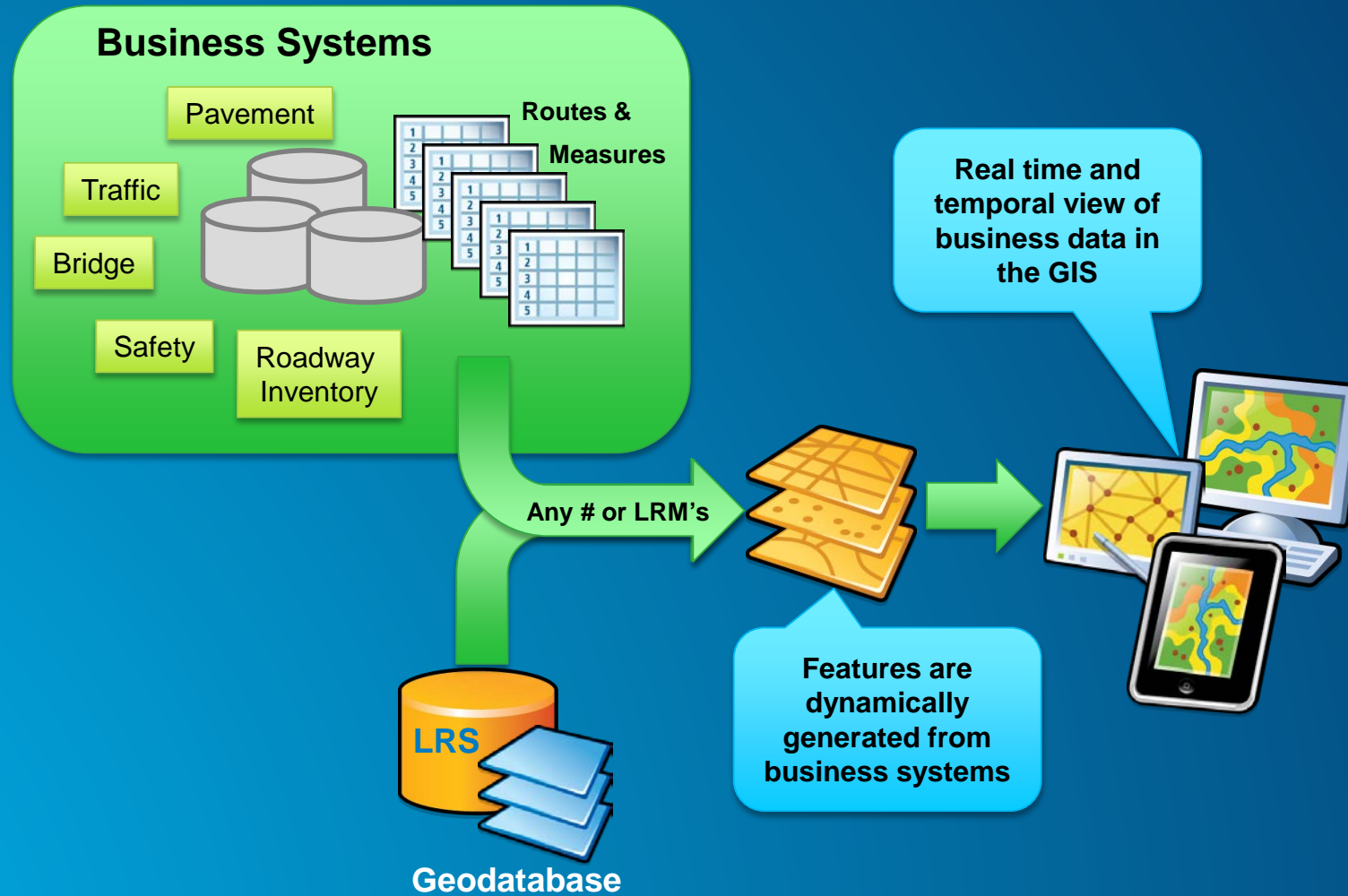
Esri Roads and Highways v10.2.0.270 - Roadway Characteristics Editor

Map Contents

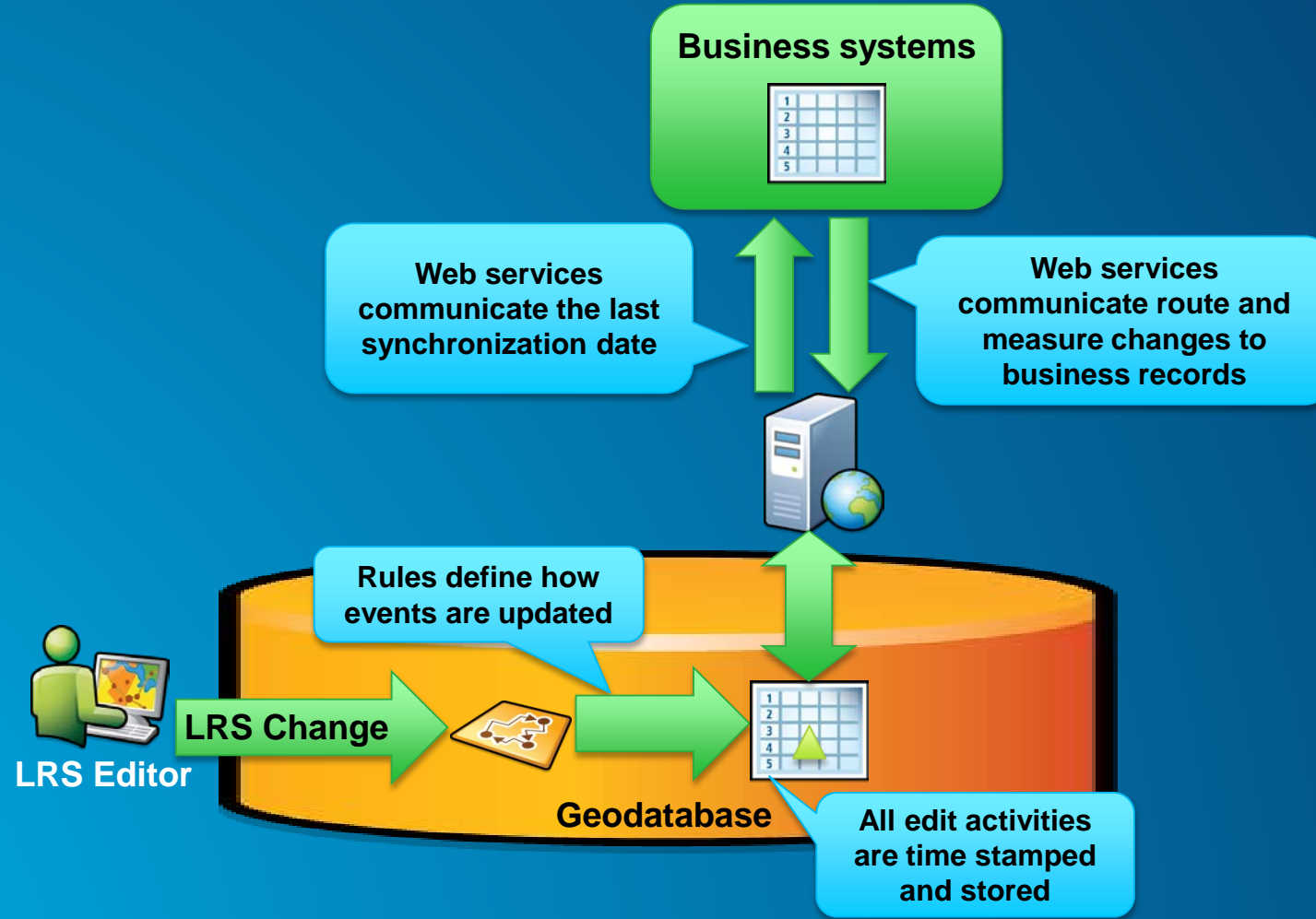
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Attribute	Value
EffectiveDate	7/1/2013
ActivityType	Create Route
Left From Address	0
Left to Address	150
Right From Address	1
Right to Address	151
Full Route Name	Whitney Road
Federal Route	
Federal Route Type	

Dynamic integration of enterprise business systems



Automated sync of business systems with LRS



Robust set of web services for a variety of LRS functions

Improve data integrity & usability

Drag and Drop Route Measure Locations

Drag and drop a csv file with route measure information from windows explorer to the map. You can download a sample csv file from here: [Inspector notes](#)

X	Y	Status	Route
-7954630.824	5135186.5781	esriLocatingOK	12210
-7963916.146	5134089.1021	esriLocatingOK	49945
-7949888.260	5129786.7651	esriLocatingOK	61400
-7948405.852	5133349.2691	esriLocatingOK	6600
-7951417.921	5132683.9851	esriLocatingOK	12290
-7949733.316	5130678.0741	esriLocatingOK	4000
-7951284.535	5135091.0411	esriLocatingOK	58500
-7948242.586	5134776.0931	esriLocatingOK	76500
-7963618.181	5130662.7781	esriLocatingOK	24600
-7955168.908	5132555.9071	esriLocatingOK	11400
-7966245.720	5129560.2721	esriLocatingOK	500
-7951261.616	5134092.8561	esriLocatingOK	17400

RouteID	Measure	Notes
1	122100	0.1165 Sing needs replacing
2	499450	0.2798 Graffiti
3	6400	34.3806 Damaged sign
4	6600	0.6223 Light needs replacing
5	122900	0.5993 Damaged sign
6	4000	29.97326 Sing needs replacing
7	58500	1.376644 Light needs replacing
8	75500	0.609677 Graffiti
9	24600	4.186686 Damaged guard rail
10	11400	21.8769 Damaged guard rail
11	500	6.706772 Graffiti
12	17400	0.414715 Light needs replacing

InspectorNotes.xlsx

RouteID: 58500
Measure: 1.376644137
Notes: Light needs replacing
Longitude: 7951284.53577244
Latitude: 5135091.041379033

Translate Measures

Route Location
Unit of Measure: esriMiles
Status: OK
Location
Route ID: 10023605
Measure: 1.3241

From Network: Named Route
To Network: Mile Marker
Route ID: IN278
Measure: 30
[Translate]

Result
MeasureToGeometry Status: OK
Geometry: {"x": -8226543.328858199, "y": 4984549.129375781}
GeometryToMeasure Status: OK
Route ID: 10023605

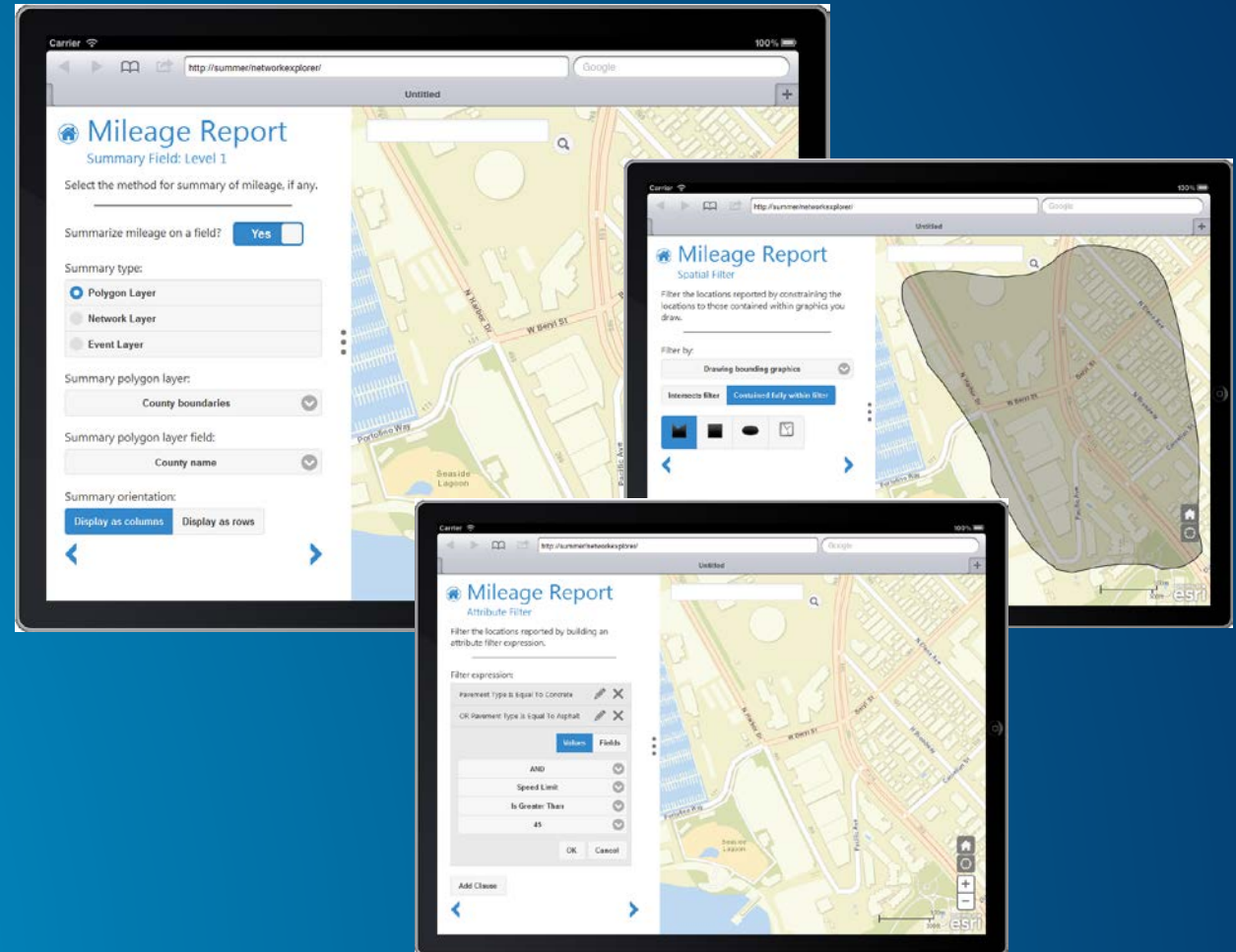
Esri Roads and Highways
Sample Web Applications

- Visualize routes**
This sample visualizes a route network layer on a map.
- Visualize events**
This sample visualizes event layers on a map. Two types of events are displayed -- point events and line events.
- Spatial query of routes**
Query a route network layer using a spatial filter.
- Spatial query of events**
Query an event layer using a spatial filter.
- Attribute query of routes**
Query a route network layer using an attribute filter (where clause).
- Attribute query of events**
Query an event layer using an attribute filter (where clause).
- Convert geometry to measure**
Convert a geographic location into a route measure value.
- Convert measure to geometry**
Convert route measure values into geographic points and lines.
- Translate network measures**
Translate measure values between two networks with different units of measure.
- Drag-drop a CSV file of geographic locations**
Drag-and-drop a CSV file to convert geographic locations into route measures.
- Drag-drop a CSV file of route measures**
Drag-and-drop a CSV file to convert route measures into geographic locations.
- Event editing**
Add new event records to an event layer.

Reporting

Roadway Reporter

- **Report types**
 - Mileage summary reports
 - Road locations & segments
 - Mile log
- **Filter and combine event layers**
- **Web based for PC or tablet**
 - Opens data to decision makers
- **Produces**
 - Tabular reports, maps, data products
 - PDF, CSV, File Geodatabase



Reporting

Roadway Reporter

- **Leverages Web Services**
 - Road and Highways for Server required
- **Integrated with ArcGIS for Organizations and ArcGIS Portal**
 - Provides user and sharing model
 - Per user licensing
 - Stores report configurations
- **Uses Overlay Route Events**
 - New tool for Roads and Highways

Mileage Report
Mileage Fields - Add Field

Select the layer you would like to report a count on.

Mileage layer:
Through Lane

Column header:
Lane Miles

Use a formula? Yes

Fields: Length, From Measure, To Measure, Event ID, Through Lane
Functions: Abs(), Atn(), Cos(), Exp(), Fix()

Formula:
[Through_Lane] * {Mileage}

Mileage Report
Mileage Fields - Attribute Filter

Filter the locations reported by building an attribute filter expression.

Filter expression:

AND Through Lane is greater than
AND Through Lane is less than 5

Values Fields

OR
Through Lane
is equal to
7

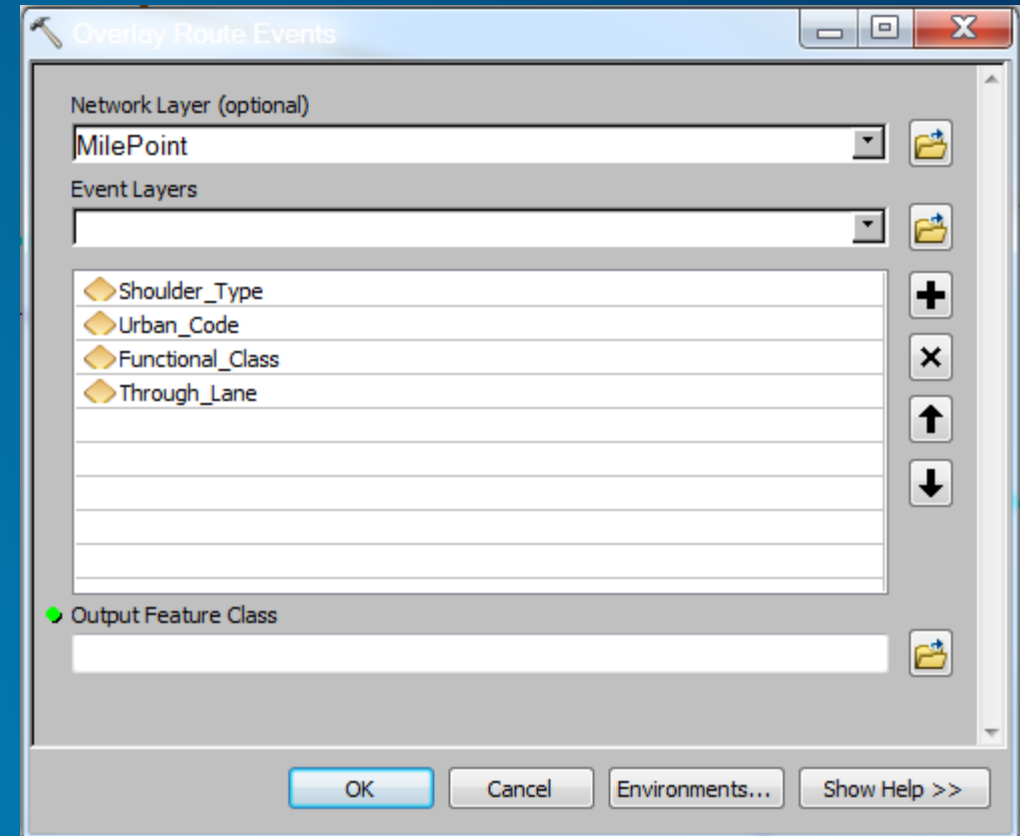
OK Cancel

Add Clause Show SQL

Reporting

Overlay Route Events

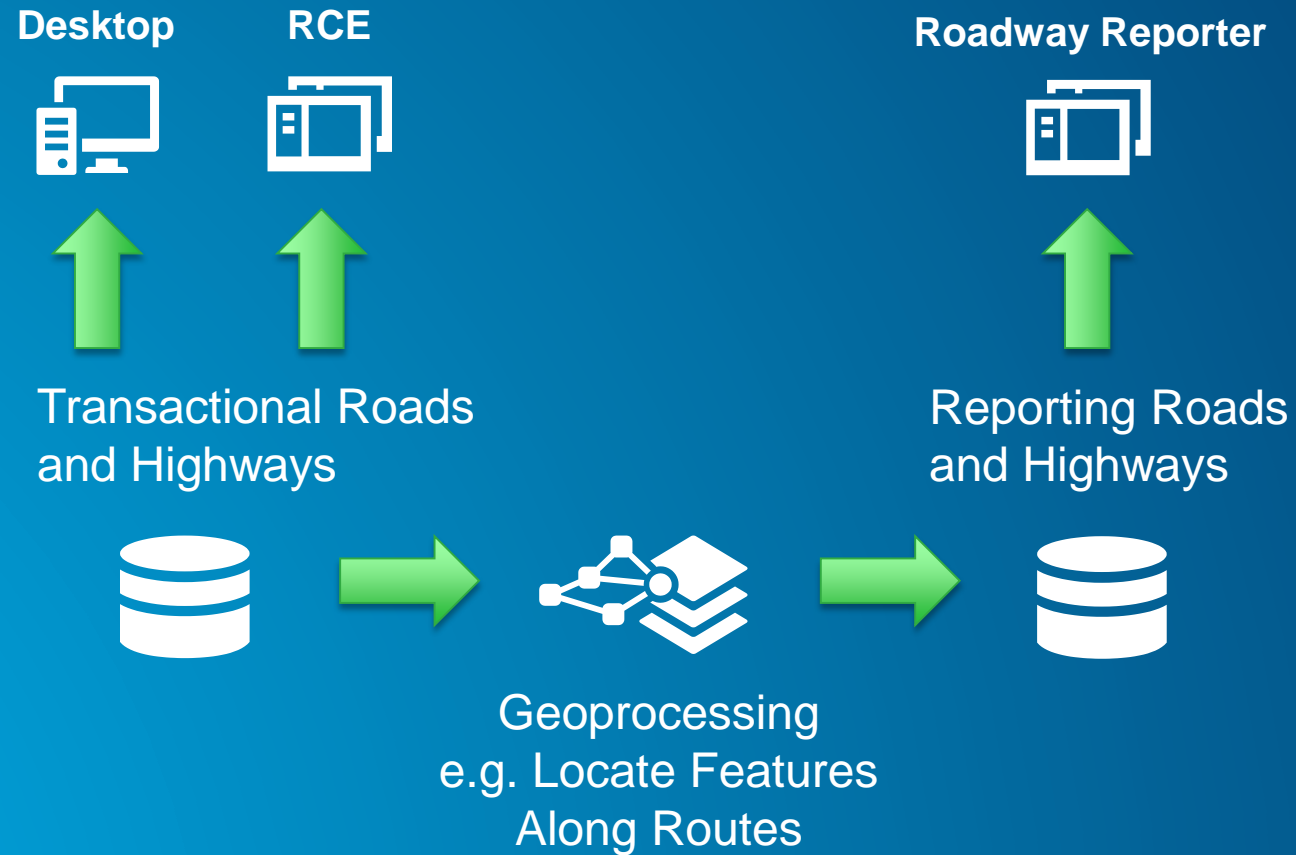
- **Supports ...**
 - Event feature classes
 - Dynamically segmenting multiple event layers
 - Event LRM measure translation
- **Can produce publication dataset for Roadway Reporter**
 - Faster reporting
 - Optional, not required
- **Can produce dataset for other reporting tools**



Sharing reports

- **Share report configurations through ArcGIS Online groups**
- **Modify shared reports and share with others**
- **Report outputs**
 - **Share as files**
 - **Use CSVs in Esri Maps for office**

Creating a publication data model from reporting



DEMO



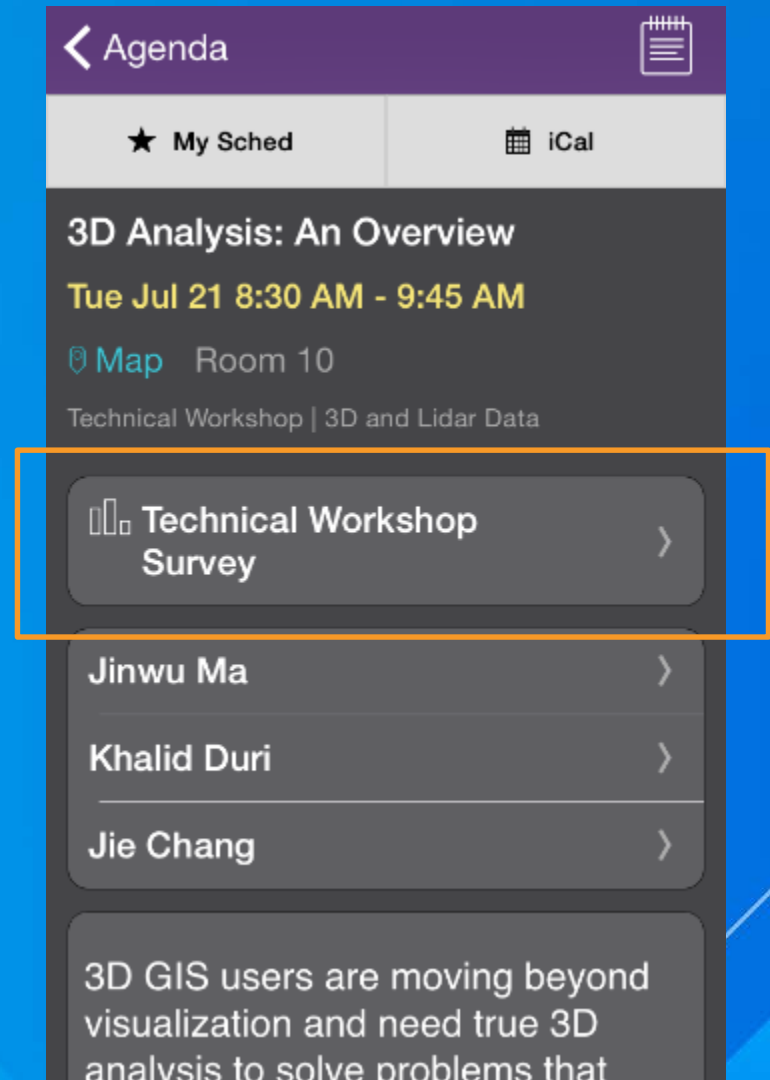
Resources

- <http://desktop.arcgis.com/en/documentation/>
- Tom Brenneman – tbrenneman@esri.com
- Search “Roads and Highways” in the agenda

Questions

Thank you...

- Please fill out the session survey in your mobile app
- Select “Esri Roads and Highways: An Introduction to Roadway Reporter” in the Mobile App
 - Use the Search Feature to quickly find this title
- Click “Technical Workshop Survey”
- Answer a few short questions and enter any comments





Understanding our world.