

Routing With Travel Modes:

Create Routes Specific to Your Vehicle Types

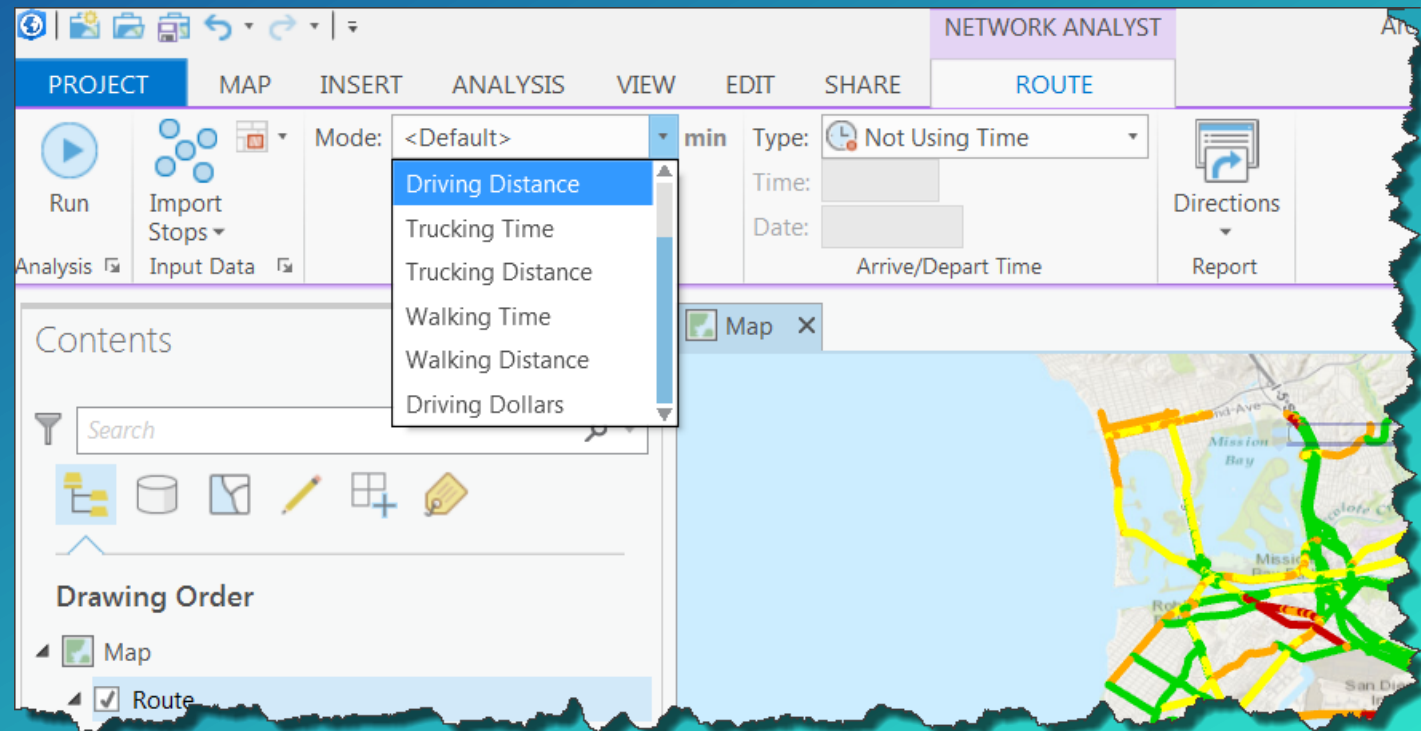
Heather Moe
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Agenda

- What is a Travel Mode?
- Demos
- Summary & Resources

What is a Travel Mode?

- Models a specific vehicle type or mode of travel
- Define specific routing behavior and model “rules of the road”
- Admin configures once
- Users access everywhere
- Why?
 - Consistency and standards
 - Ease of use
 - Immediate access
 - Reduce chance of error



Examples



Permit Routing

- Height
- Weight
- Turn radius



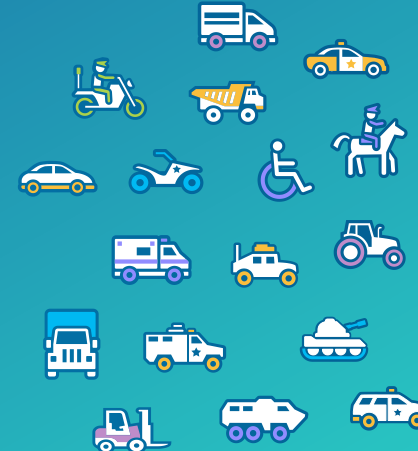
Biking

- Pedestrian segments
- No staircases
- No freeways



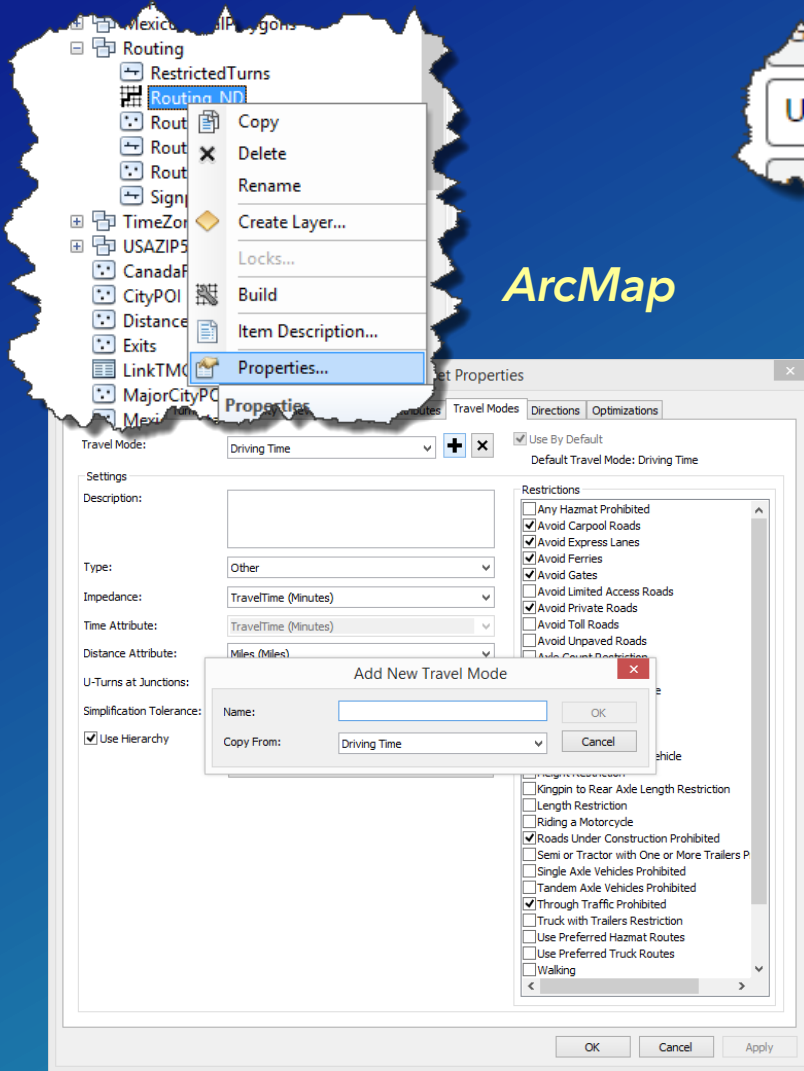
Emergency Vehicle

- U-Turn
- Access Roads



- Other...
- 4-Wheel drive
- Avoid toll roads
- Ferry
- Walking

Create in ArcGIS Online, ArcGIS Enterprise, ArcGIS Pro, or ArcMap



ArcMap

Utility Services

ArcGIS Online
&
ArcGIS Enterprise

Directions and Routing

Route Service

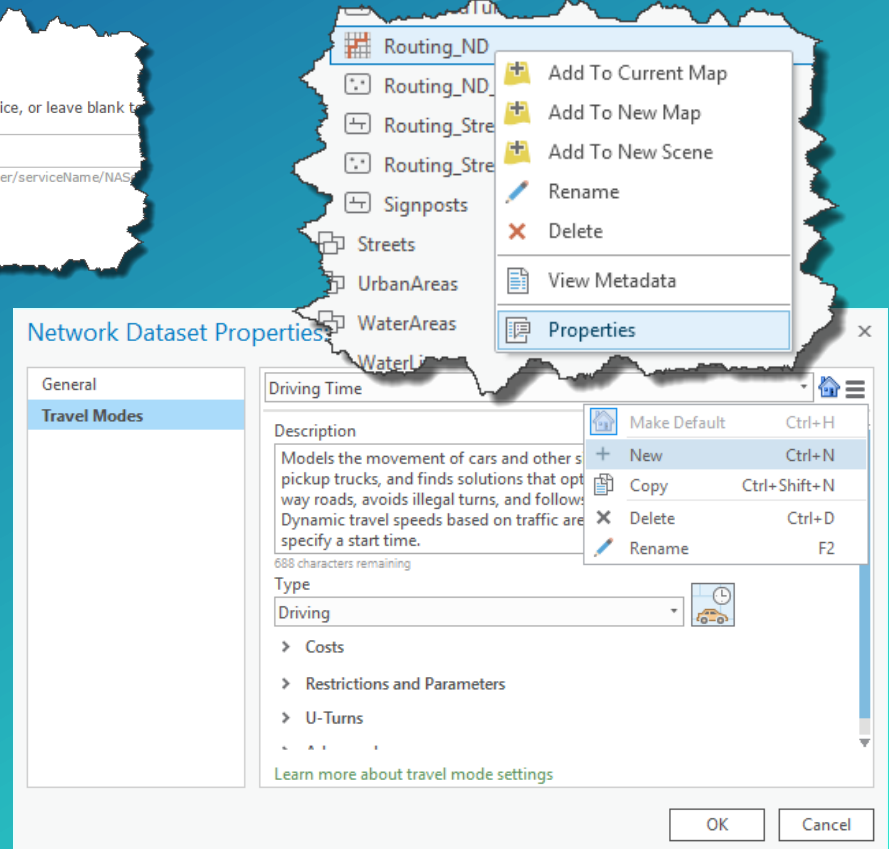
Configure your route service. Enter the URL of your route service, or leave blank to use the default.

Esri Default

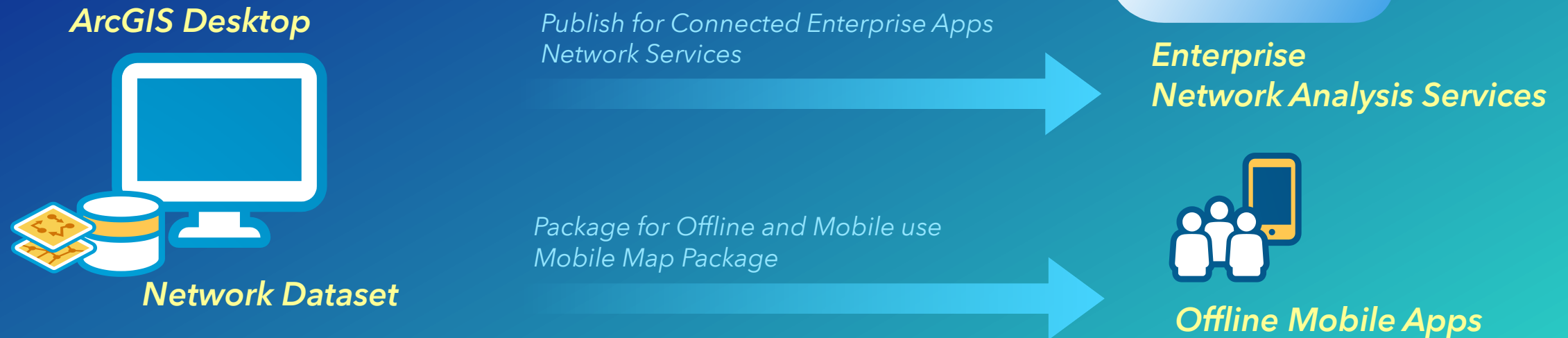
Example: <https://webadaptor.domain.com/arcgis/rest/services/folder/serviceName/NAS>

CONFIGURE TRAVEL MODES

ArcGIS Pro



Consistency Across the Org



1. Configure Mode(s)

2. Publish or Package

3. Use

Demo

1. Using Default Travel Modes
2. Creating Custom Travel Modes with ArcGIS Online & Enterprise
3. Creating Custom Travel Modes with Local Data

Modeling a Travel Mode

1. **Costs** (impedance), distance, and time attributes
 - ...
2. **Restriction** attributes and parameters
 - ...
3. **U-Turn** Policy
 - ...
4. **Hierarchy** on/off
 - ...
5. **Simplification** tolerance
 - ...

Restriction Attributes

<ul style="list-style-type: none">• Hard restriction<ul style="list-style-type: none">- completely prohibits travel	<ul style="list-style-type: none">• Example 1: "Avoid Ferries"<ul style="list-style-type: none">- Restriction Usage: Prohibited- All ferry segments will be completely prohibited.• Note: some restrictions like "Driving a Bus" should always be hard
<ul style="list-style-type: none">• Soft restriction<ul style="list-style-type: none">- avoids or prefers travel	<ul style="list-style-type: none">• Example 2: "Avoid Toll Roads"<ul style="list-style-type: none">- Restriction Usage: Avoid High- All toll roads segments will have a larger impedance applied. Result is that it's more "costly" to travel on them.• Example 3: "Use Preferred Hazmat Routes"<ul style="list-style-type: none">- Restriction Usage: Prefer High- All hazmat segments will have a smaller impedance applied. Result is that it's less "costly" to travel on them.
<ul style="list-style-type: none">• Parameterized restriction<ul style="list-style-type: none">- has numeric value defined	<ul style="list-style-type: none">• Example 4: "Axel Count Restriction"<ul style="list-style-type: none">- Restriction Usage: Prohibited- Number of Axels: 8- Any street segment restricting vehicles with 8 or more axels will not be traveled on.

Summary

- **Travel Modes** allow you to configure network analysis setting once, and then access those stored settings quickly.
- Why? **Consistency**. Immediate **access**. Reduce **chance of error**.
- **Configure** with ArcGIS Online
- Configure with **your own data**. ArcGIS Pro, ArcMap, or ArcGIS Enterprise
- **Share** with your org (network services and map packages).

Resources

- ArcGIS Pro: <http://pro.arcgis.com/en/pro-app/help/analysis/networks/travel-modes.htm>
- ArcMap: <http://doc.arcgis.com/en/arcgis-online/reference/travel-modes.htm>
- ArcGIS Online: <http://doc.arcgis.com/en/arcgis-online/reference/travel-modes.htm>
- Community: <https://geonet.esri.com/community/gis/analysis/network-analyst>
- Heather: hmoe@esri.com
- Scott: ssandusky@esri.com

Network Analyst Presentations

Tuesday July 11

8A	
9A	Network Analyst: An Introduction
	Using Streetmap Premium
	Fleet Routing with the VRP Solver
10A	Network Analyst: Creating Network Datasets
11A	
12P	Sharing Routes for Field Use
1P	
	Using GTFS Public Transit Data in ArcGIS
2P	
3P	
4P	
	Network Analysis Services in ArcGIS Enterprise
5P	

Wednesday July 12

8A	
9A	
10A	Network Analyst: Automating Workflows with Geoprocessing
	Navigator for ArcGIS: An Introduction
11A	
12P	
1P	ArcGIS Online: Routing and Network Analysis
2P	
	Routing with Travel Modes- Create Routes Specific to Your Vehicle Types
3P	
	Network Analysis using Python
4P	Sharing Routes for Field Use
5P	Building Routing Applications with ArcGIS Online

Thursday July 13

8A	
9A	Network Analyst: Creating Network Datasets
10A	Building Routing Applications with ArcGIS Online
	Network Analyst: An Introduction
	Navigator for ArcGIS: An Introduction
11A	
12P	
1P	
	Navigator for ArcGIS: Creating Custom Navigation Maps
2P	
3P	Network Analyst: Automating Workflows with Geoprocessing
4P	
5P	

Room 05 A
Room 07 A
Room 15 B
Room 30 E
Room 31 B
Room 32 A
Room 33 A

Ballroom 06 B
Ballroom 20 D

Demo Theater 06
Demo Theater 07
Demo Theater 10

Tech Theater 17
Tech Theater 19

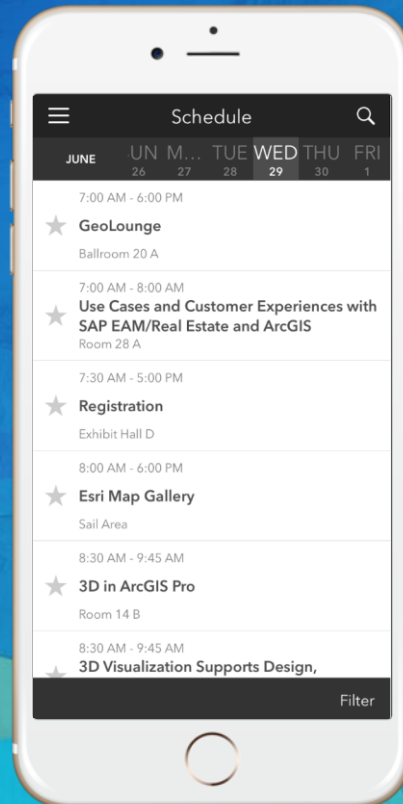
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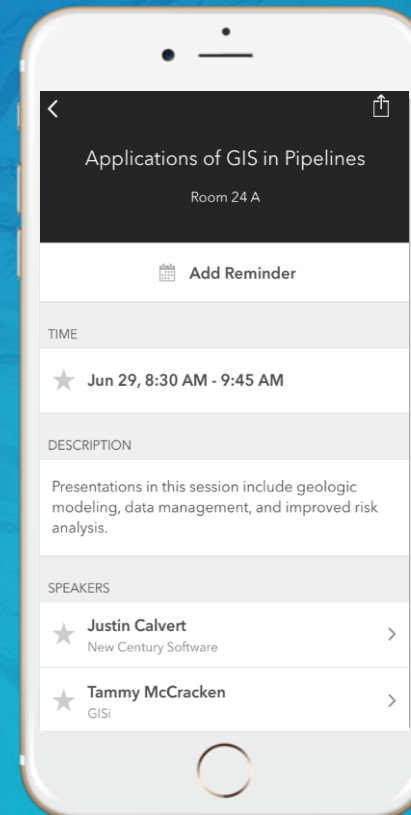
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