



Bringing HIFLD Transportation Data to Life!

External Presentation

HERE Technologies @ NAPSG INSPIRE 2024

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Presentation team



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Agenda

- 01 Introduction
- 02 Session Objectives
- 03 HIFLD Transportation Layers – What's In It
- 04 Optimized Use of Transportation Layers
- 05 User Feedback Capabilities
- 06 Key Takeaways/Calls to Action
- 07 Q&A/discussion



Objectives

Framing the Presentation Today

Inspirational, Educational, & Collaborative



Transportation Layers

- What's in It?**

Transportation Data Layers Available

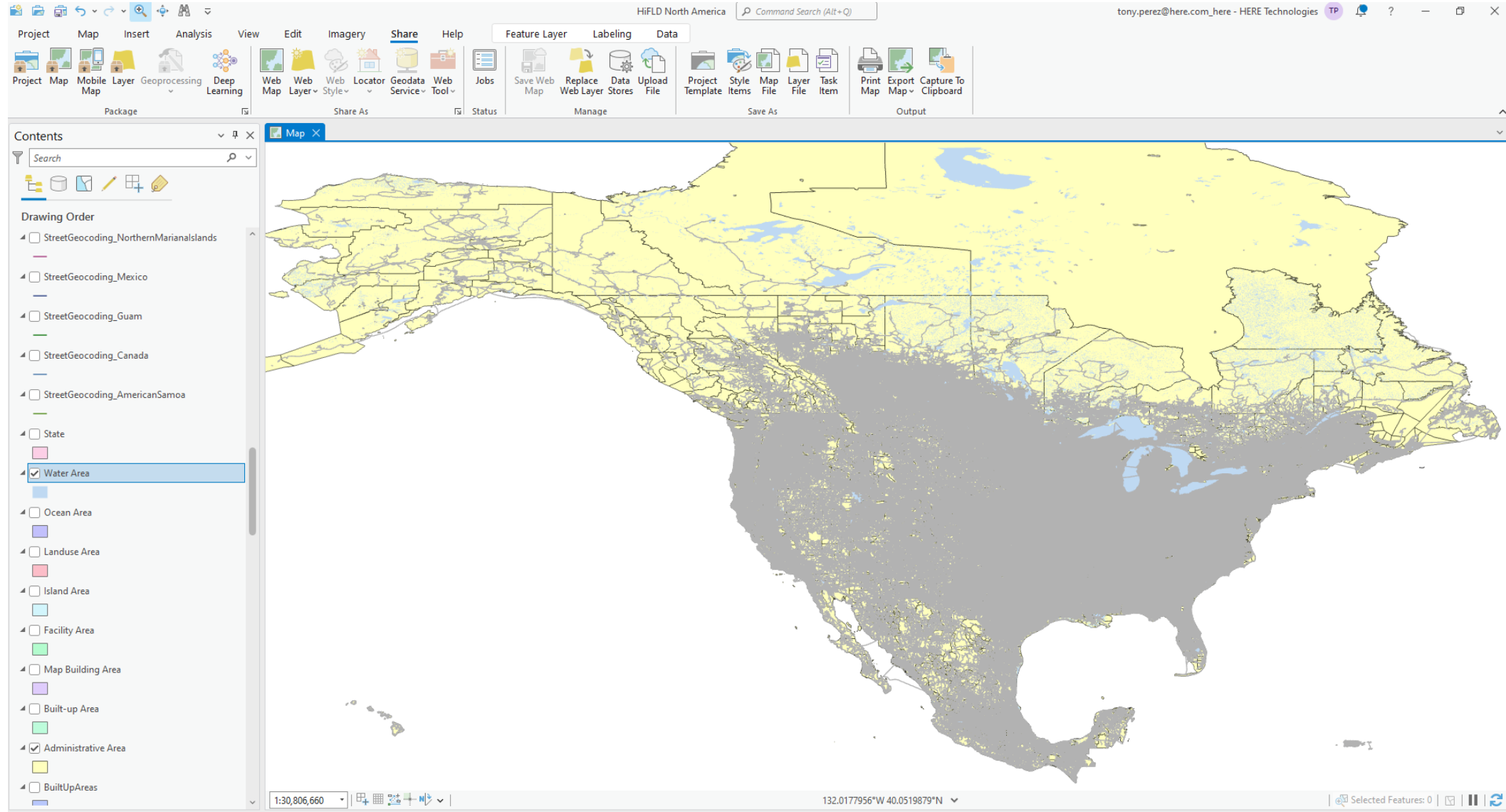
With over 800 attributes available

MapAdminBultupArea	Link	ConditionDateTime	LaneNavStrand	POIContact
MapAdminLink	MapAdminArea	ConditionDirectionTravel	LinkAttribute	POICuisines
MapBuildingArea	DistanceMarkers	ConditionDivider	LinkTMC	POINameTrans
MapFacilityArea	FeaturePoint	ConditionDriverAlert	LinkZone	POINames
MapIslandArea	MetaCountry	ConditionGate	MapAggrComponent	Sign
MapLanduseArea	Metadata	ConditionRDM_PDM	MapAggrFeature	SignText
MapOceanArea	VersionInfo	ConditionSpeed	MapAreaNames	Signposts_Streets
MapRailroadLink	Admin	ConditionText	MapBuildingAreaFeature	Status
MapWaterArea	AdminAttribute	ConditionToll	MapLinkNames	StreetAddress
MapWaterLink	AdminDST	ConditionTransport	MapNameTrans	VehicleAccess
RoutingApplication	AdminNames	FeaturePointGuidanceAsso	MetaPremiumFeature	ZlevelCrossing
Streets	AdminZoneNameTrans	FeaturePointName	MetaPremiumID	Zone
Turns	Census	FeaturePointPreposition	MetaPremiumObject	ZoneNames
Signposts	Chain	FileAttachment	MetaPremiumPackage	
Junctions	CityPOINames	GuidanceAssoDateTime	MetaPremiumRule	
MicroPointAddress	ComplexFeature	GuidanceAssociation	MetaPremiumSuppress	
PointAddress	ComplexFeatureComponent	GuidanceAssociationName	NavStrand	
StreetGeocoding_UnitedStates	Condition	GuidanceObject	POIAssociation	
CityPOI	ConditionAccess	GuidanceObjectAssociation	POIAttribute	
POI	ConditionBlackspot	Lane	POIChains	

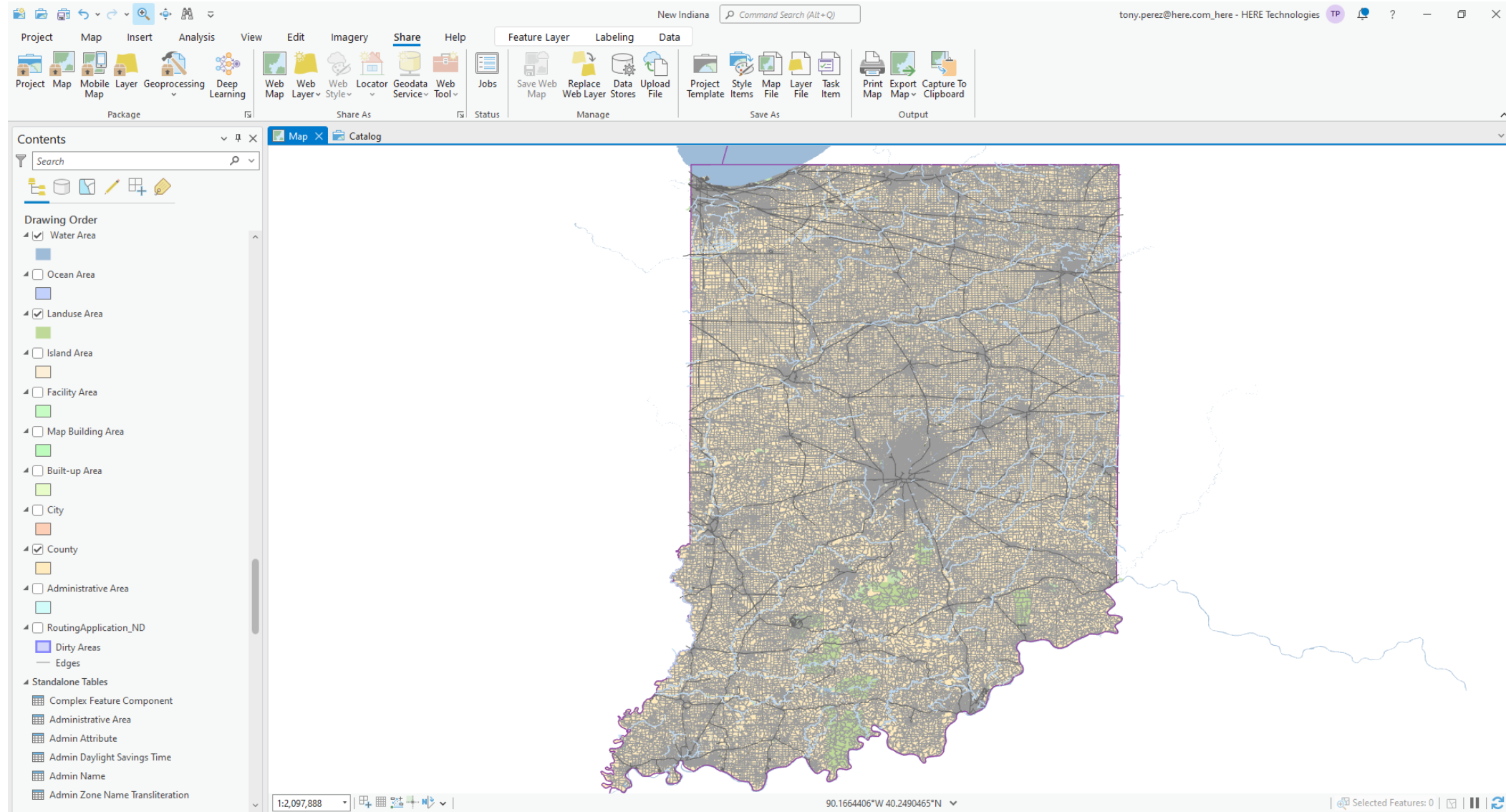


Available for All of North America

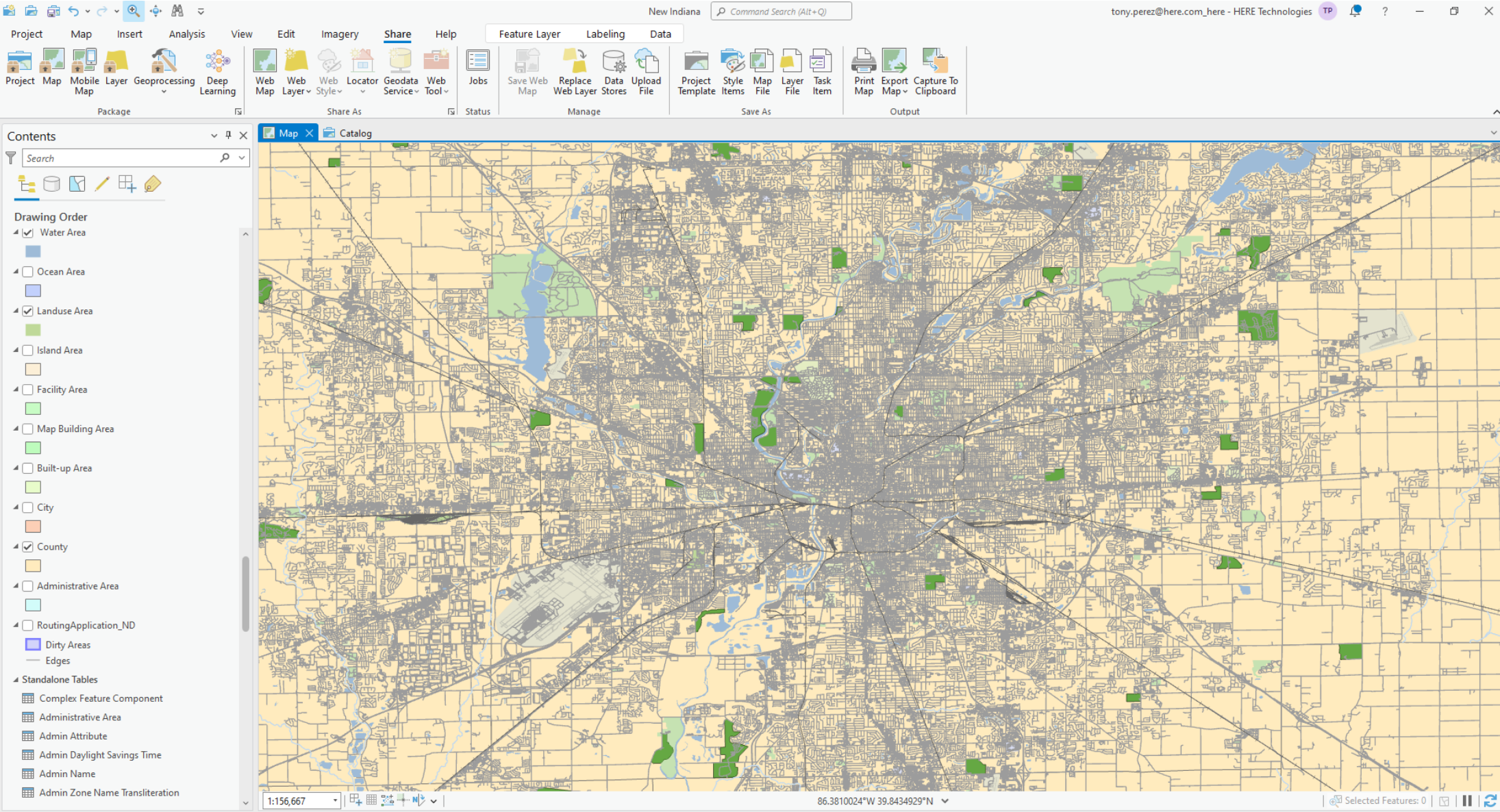
And over 190 other Countries!



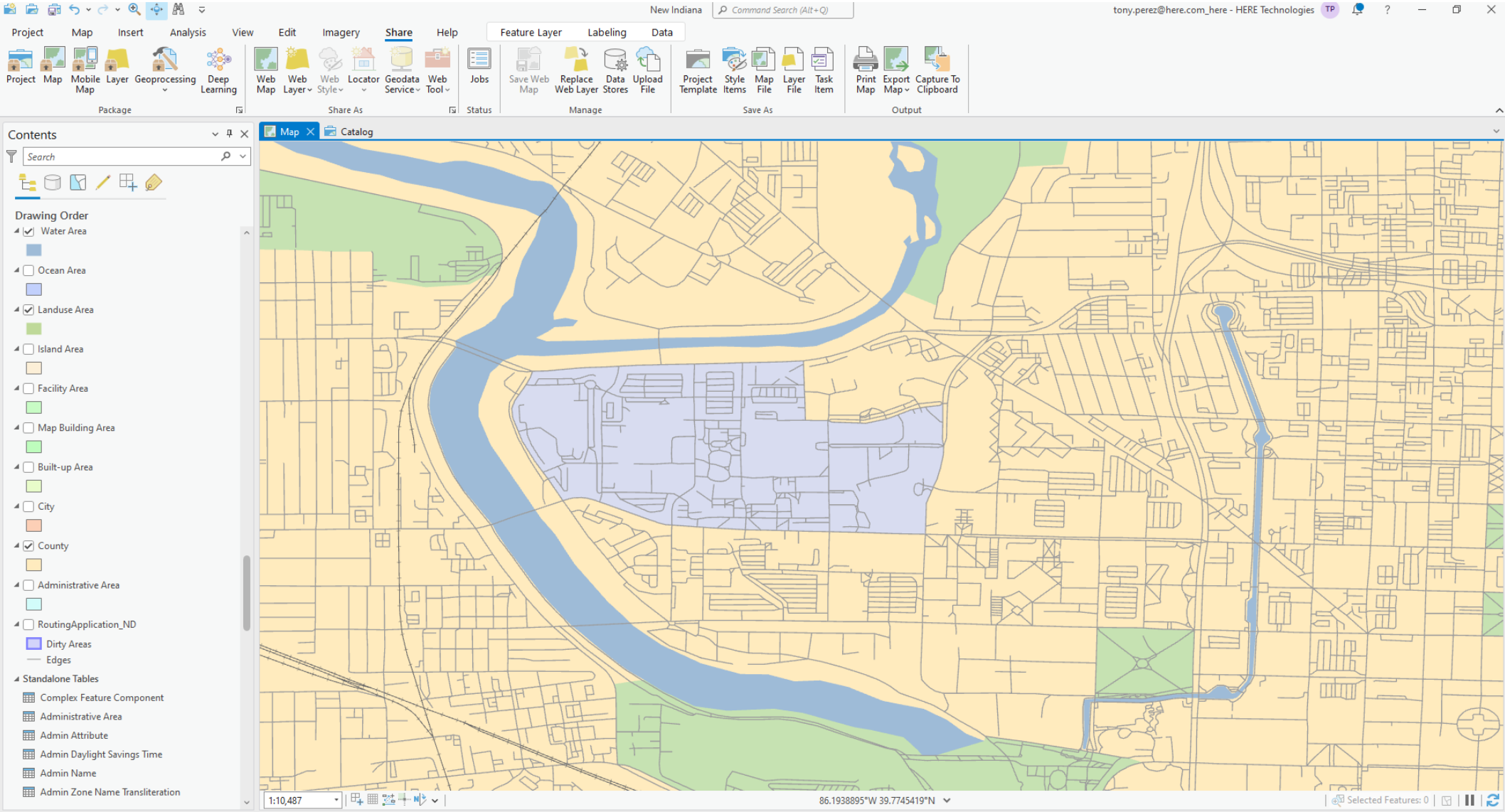
Let's Focus on Indiana



Indianapolis



IUPUI area



Streets Attribute Table

Pop-up

Street (1)

English

Street - English

ESRI Object ID	271174
From Reference Node ID	1201389757
To Reference Node ID	1201390417
Street Name Language Code	English
Street Name	W Michigan St
Street Name Prefix	West
Street Type Before	
Street Name Base	Michigan
Street Type After	St
Street Name Suffix	
Direction On Sign	
Meters	101
Speed Category	31-50 KPH / 21-30 MPH
Functional Class	LEVEL 4
Direction Of Travel	FROM REFERENCE NODE
Controlled Access	No
Ferry Type	Not a Ferry
Ramp?	No
Roundabout?	No
Paved?	Yes
Public Access?	Yes
Tollway?	No
Time Zone	-050
Daylight Saving Time Exist	Yes
Time Zone ID	<Null>
Restrict Cars?	No
Restrict Buses?	No
Restrict Taxis?	No
Restrict Pedestrians?	No
Restrict Deliveries?	No
Restrict Trucks?	No

1 of 1

86.1706350°W 39.7744400°N

Pop-up

Street (1)

<empty>

Street - <empty>

Street Name Suffix	
Direction On Sign	
Meters	30
Speed Category	< 11 KPH / < 6 MPH
Functional Class	LEVEL 5
Direction Of Travel	BOTH DIRECTIONS
Controlled Access	No
Ferry Type	Not a Ferry
Ramp?	No
Roundabout?	No
Paved?	Yes
Public Access?	Yes
Tollway?	No
Time Zone	-050
Daylight Saving Time Exist	Yes
Time Zone ID	<Null>
Restrict Cars?	Yes
Restrict Buses?	Yes
Restrict Taxis?	Yes
Restrict Pedestrians?	No
Restrict Deliveries?	Yes
Restrict Trucks?	Yes
Restrict Carpools?	Yes
Restrict Emergency Vehicles?	Yes
Restrict Through Traffic?	Yes
Restrict Motorcycles?	Yes
Link ID	1119168412
ISO Country Code	UNITED STATES
Carpool Road?	No
Express Lane?	No
Shape_Length	0.00036

1 of 1

86.1815600°W 39.7763650°N

Condition Attribute Table

Condition Text X Condition Restricted...ving Manoeuvres Link Turn Street Signpost						
Field: Add Calculate		Selection: Select By Attributes Zoom To		Switch Clear Delete Copy		Rows: Insert v
ESRI Object ID *	Condition ID *	Text ID	Sequence Number	Language Code	Text	
123	123	1640049692	17	1	ENGLISH	3MI
124	124	1590328754	18	1	ENGLISH	3MI
125	125	1663378220	19	1	ENGLISH	7-9AM,3-5PM MONDAY TO FRIDAY
126	126	1663378221	20	1	ENGLISH	7-9AM,3-5PM MONDAY TO FRIDAY
127	127	1663378222	21	1	ENGLISH	7-9AM,3-5PM MONDAY TO FRIDAY
128	128	1663378223	22	1	ENGLISH	7-9AM,3-5PM MONDAY TO FRIDAY
129	129	1548044273	23	1	ENGLISH	NEXT 2 MILES
130	130	1590459921	24	1	ENGLISH	19MI
131	131	1640055128	25	1	ENGLISH	2MI
132	132	1645919022	26	1	ENGLISH	13MI
133	133	1663377283	27	1	ENGLISH	MON-FRI,6.00-9.00,15.00-18.00
134	134	1622312006	28	1	ENGLISH	5MI
135	135	1548044407	29	1	ENGLISH	2MI
136	136	1590369180	30	1	ENGLISH	NEXT 2 MILES
137	137	1612010594	31	1	ENGLISH	0.5 MILES
138	138	1646150813	32	1	ENGLISH	9MI
139	139	1663318005	33	1	ENGLISH	MON-FRI 4PM-7PM SAT & SUN 11AM-7PM
140	140	1590331950	34	1	ENGLISH	3MI
141	141	1612049786	35	1	ENGLISH	2MI
142	142	1644699207	36	1	ENGLISH	12MI
143	143	1548053501	37	1	ENGLISH	3MI
144	144	1678587008	38	1	ENGLISH	7AM-8AM,3PM-4PM
145	145	1678587011	39	1	ENGLISH	7AM-8AM,3PM-4PM
146	146	1619887559	40	1	ENGLISH	2 MILE
147	147	1652473968	41	1	ENGLISH	2 MILES
148	148	1644585184	42	1	ENGLISH	9MI
149	149	1612017914	43	1	ENGLISH	2MI
150	150	1644585370	44	1	ENGLISH	2MI
151	151	1633830800	45	1	ENGLISH	6 MI
152	152	1590298319	46	1	ENGLISH	2MI

Link Attribute Table

Condition Text

Condition Restricted...ving Manoeuvres

Link

Turn

Street

Signpost

Field:

Add

Calculate

Selection:

Select By Attributes

Zoom To

Switch

Clear

Delete

Copy

ESRI Object ID

Shape

Link ID

Reference Node ID

Non Reference Node ID

Left Admin Place ID

Right Admin Place ID

Left Postal Code

Right Postal Code

Access ID

Status ID

Bridge?

Tunnel?

Display ID

Functional Class

Controlled Access?

Travel Direction

Boat Ferry

5972

5972

Polyline

708520084

706142774

706142775

21005848

21005848

46034

46034

1023

41

No

No

1

LEVEL 5

No

BOTH DIRECTIONS

No

5973

5973

Polyline

708520085

706142775

706142776

21005848

21005848

46034

46034

1023

41

No

No

1

LEVEL 5

No

BOTH DIRECTIONS

No

5974

5974

Polyline

Condition Text

Condition Restricted...ving Manoeuvres

Link

Turn

Street

Signpost

5975

5975

Polyline

Field:

Add

Calculate

Selection:

Select By Attributes

Zoom To

Switch

Clear

Delete

Copy

5976

5976

Polyline

Multiplicity Digitized?

Divider

Divider Type

Frontage

Paved?

Ramp?

Private?

Tollway?

POI Access?

Intersection Category

Speed Category

Lane Category

Coverage Indicator

Confidence Level Rating

From Reference Number of Lanes

To Reference Number of Lanes

5977

5977

Polyline

5972

No

NO DIVIDER

No

Yes

No

No

No

No

11-30 KPH / 6-20 MPH

ONE LANE

PRIME

<Null>

<Null>

<Null>

5978

5978

Polyline

5973

No

NO DIVIDER

No

Yes

No

No

No

No

11-30 KPH / 6-20 MPH

ONE LANE

PRIME

<Null>

<Null>

<Null>

5979

5979

Polyline

5974

No

NO DIVIDER

No

Yes

No

Yes

No

No

< 11 KPH / < 6 MPH

ONE LANE

PRIME

<Null>

<Null>

<Null>

5980

5980

Polyline

5975

No

NO DIVIDER

No

Yes

No

No

No

No

11-30 KPH / 6-20 MPH

ONE LANE

PRIME

<Null>

<Null>

<Null>

5981

5981

Polyline

5976

No

NO DIVIDER

Field:

Add

Calculate

Selection:

Select By Attributes

Zoom To

Switch

Clear

Delete

Copy

5982

5982

Polyline

5977

No

NO DIVIDER

Physical Number of Lanes

From Reference Speed Limit (kph)

To Reference Speed Limit (kph)

Speed Limit Source

Low Mobility

Public Access?

Time Zone

Length (meters)

Grade Category

Limited Access Road?

Road Class

Shape_Length

ESRI Object ID

5983

5983

Polyline

5978

No

NO DIVIDER

5972

<Null>

32

32

POSTED

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

81

<Null>

No

<Null>

0.000961

1024

5984

5984

Polyline

5979

No

NO DIVIDER

5973

<Null>

32

32

POSTED

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

76

<Null>

No

<Null>

0.0009

1024

5985

5985

Polyline

5980

No

NO DIVIDER

5974

<Null>

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

66

<Null>

No

<Null>

0.0009

1024

5986

5986

Polyline

5981

No

NO DIVIDER

5975

<Null>

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

83

<Null>

No

<Null>

0.00098

1024

5987

5987

Polyline

5982

No

NO DIVIDER

5976

4

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-060

46

<Null>

No

<Null>

0.00056

1004

5988

5988

Polyline

5983

No

NO DIVIDER

5977

<Null>

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

132

<Null>

No

<Null>

0.001191

1024

5989

5989

Polyline

5984

No

NO DIVIDER

5978

4

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

15

<Null>

No

<Null>

0.00018

1004

5990

5990

Polyline

5985

No

NO DIVIDER

5979

<Null>

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

135

<Null>

No

<Null>

0.001284

1024

5991

5991

Polyline

5986

No

NO DIVIDER

5980

<Null>

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

206

<Null>

No

<Null>

0.00186

1024

5992

5992

Polyline

5987

No

NO DIVIDER

5981

<Null>

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-060

15

<Null>

No

<Null>

0.00018

1000

5993

5993

Polyline

5988

No

NO DIVIDER

5982

<Null>

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-050

106

<Null>

No

<Null>

0.00096

1024

5994

5994

Polyline

5989

No

NO DIVIDER

5983

<Null>

DRIVING CONDITION IS NOT LOW MOBILITY

Yes

-

Optimizing Use of HIFLD Transportation Layers

Bringing Layers More to Life

HIFLD Layers, Other geospatial data, & Esri software to create practical applications



Emergency Routing Simulation using HIFLD layers in Monticello, Indiana

Emergency teams must find an optimal route to nearest hospital when confronted with local road closures

Use Case Scenario

Emergency Routing Simulation



Demonstration Summary

1. Use HiFLD locator to find incident location
2. View road closures from internal dataset
3. Use a geoprocessing tool created from the HiFLD transportation network dataset
4. Select incident location
5. Find nearest hospital
6. Route from incident location to nearest hospital factoring in road closures using "Emergency Vehicle" mode
7. Display route on map

Code from today's demo - <https://github.com/Dan-Yaw/RouteEMS>

User Data Needs

Solutions

Geocoder to Find Incident Location

HiFLD Esri locator files

Roads and Locations of Hospital Facilities

HiFLD Transportation Layers, including Core POIs

Routing Dataset to Support Routing Functionality

Transportation Network Dataset

GIS Platform

ArcGIS Pro w/ Network Analyst extension, optionally
ArcGIS Enterprise w/ Network Analyst extension

User Feedback

4 ► PUBLISH

3 ► PROCESS

2 ▶ EXTRACT

Data from different sources is normalized and extracted into map features e.g. buildings, road signs, etc.



The more varied the sources, the greater chance we have to capture and validate change quickly and correctly

Add. feature: Interactive capture tools for HIFLD community

HIFLD can choose ways for HERE to access its knowledge and datasets to integrate faster and more comprehensively



Automated source gathering

Any gov't agency can provide links from which HERE can pull its data automatically or to arrange submission on demand using HERE APIs



MapCreator

Edit maps HIFLD local knowledge expert



Map feedback API

Report map feedback developer



HERE Customer Portal

Detailed insights on their map feedback collected via Map Creator and Map Feedback API

Value: The integration of any available state, tribal, local, and territorial government agencies' freshest authoritative government map data by HERE shall be delivered as part of each release back to HIFLD users.

Map Creator Demo

Key Takeaways

This presentation supports the HIFLD mission to continually educate, inspire and incite collaboration amongst the public sector GIS community to support public safety.



HERE demonstrated use of transportation layers, other geospatial data, ArcPro, and other GIS software/tooling using hypothetical scenarios to highlight practical use at all levels of government



Using available map editing tools, contribute to updating the transportation layers to ensure you have an authoritative map for your areas of interest.



Calls to Action:

During Q4 inside your primary area of interest, utilize HIFLD transportation layers, your data, and GIS software to build situational awareness in emergency management preparations.

If interested in joining map editing, contact us with a valid government email alias.

Thank you

Time for discussion and Q&A

James.Nenaber@here.com

312-451-8243