

Tech Session – ArcGIS Knowledge

Leslie Jessen

SynerGIS

*2026 ESRI USER CONFERENCE AUSTRIA
– powered by SynerGIS*

Knowledge Graphs in ArcGIS

A brief introduction

Integration of Graph across ArcGIS



ArcGIS Knowledge Server role &
Graph Data Store



Enterprise
users

- ArcGIS Pro & AllSource
- Knowledge Studio
- ArcGIS web applications
- SDKs (.NET, Python, JavaScript)



File Knowledge Graphs



Individual &
Disconnected
users

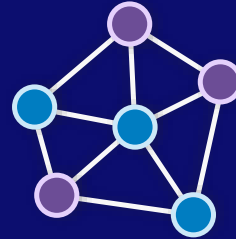
- ArcGIS Pro **3.7+** (Advanced License)
- ArcGIS AllSource **1.6+**

NEW!

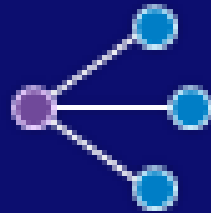


ArcGIS Knowledge

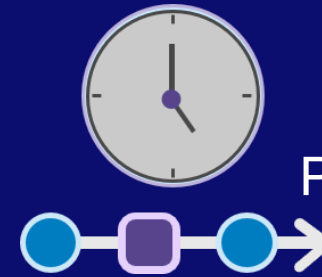
Connected
Data



Advanced
Analysis
at scale



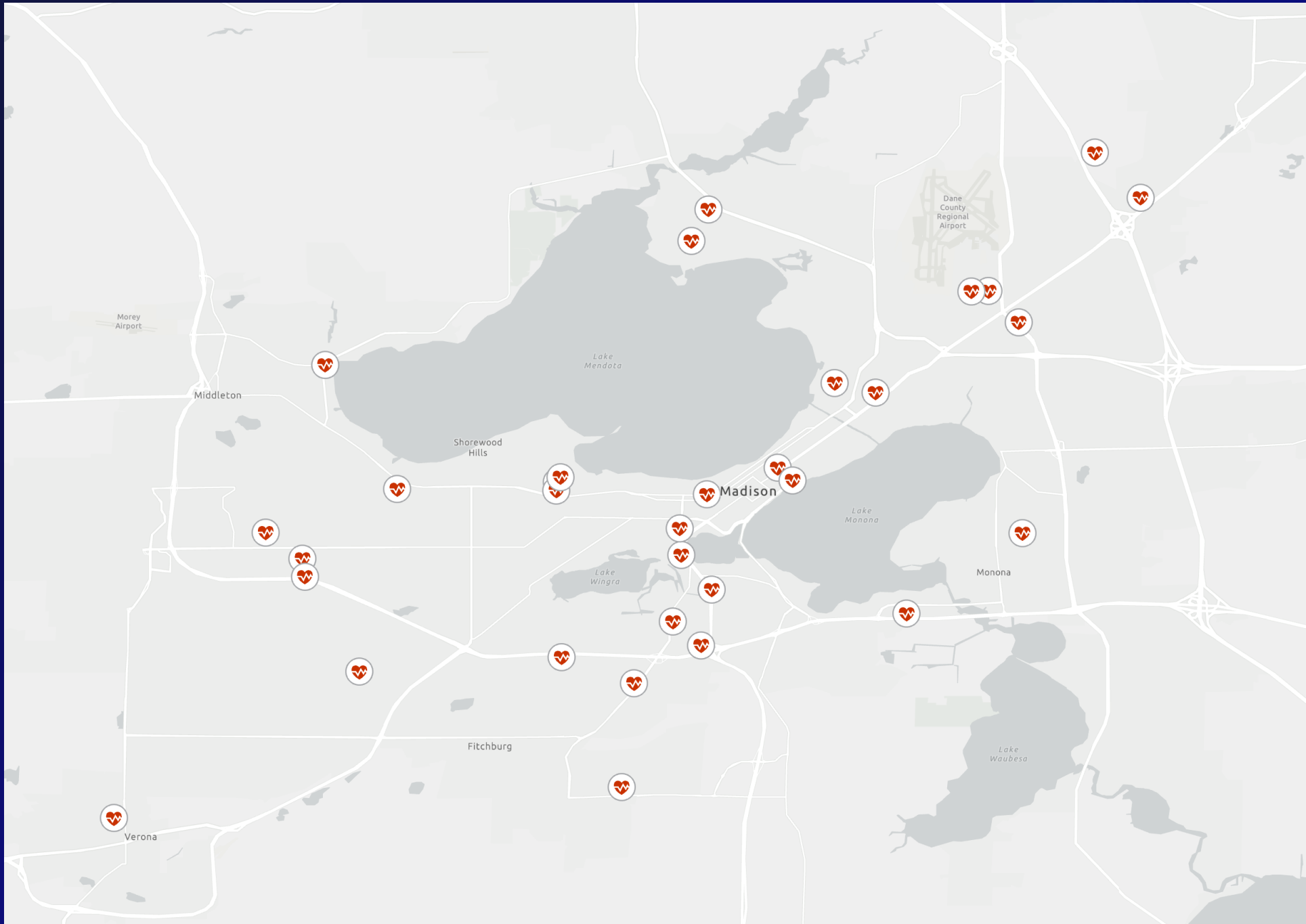
Logical, Spatial
& Temporal
Relationships

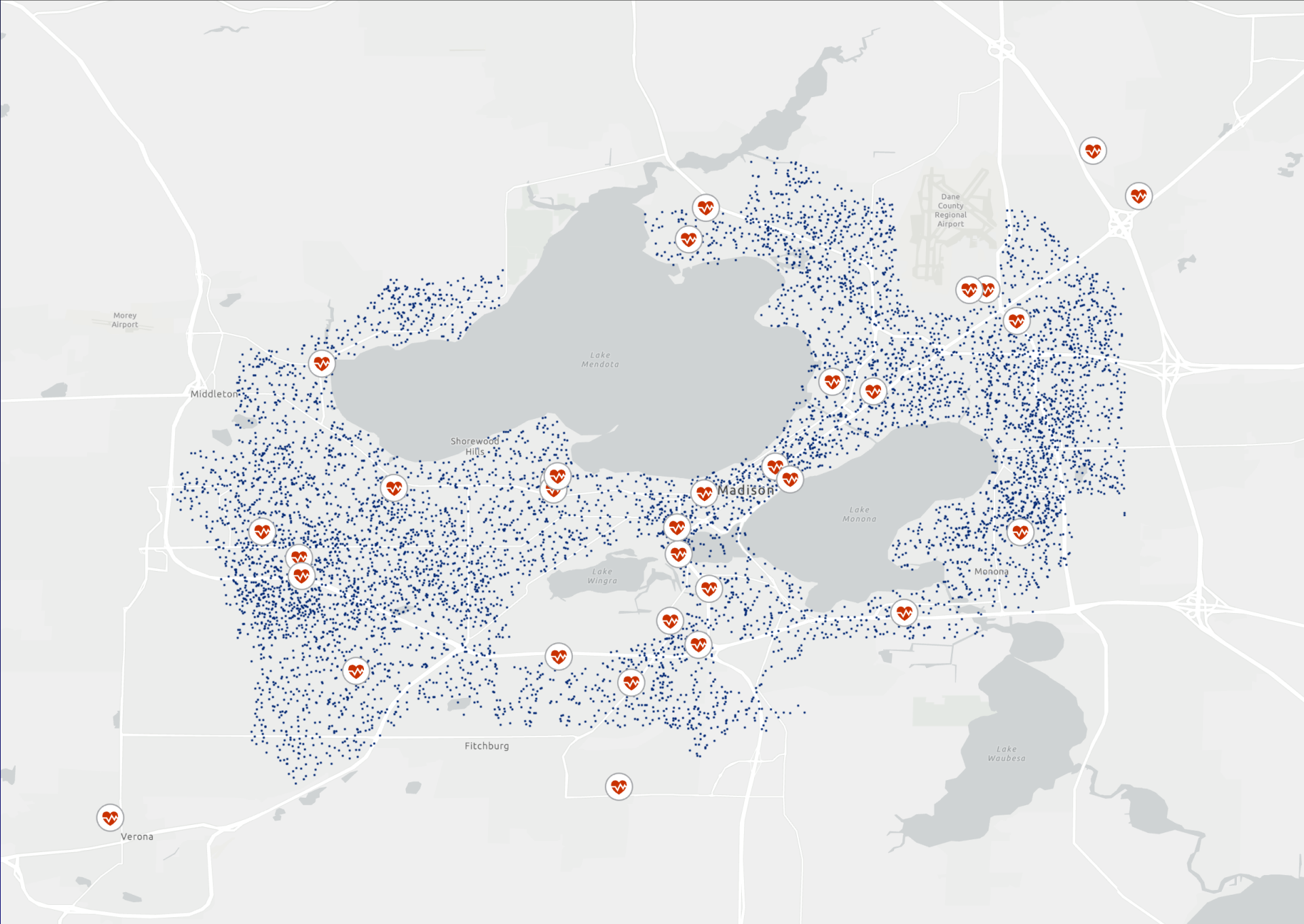


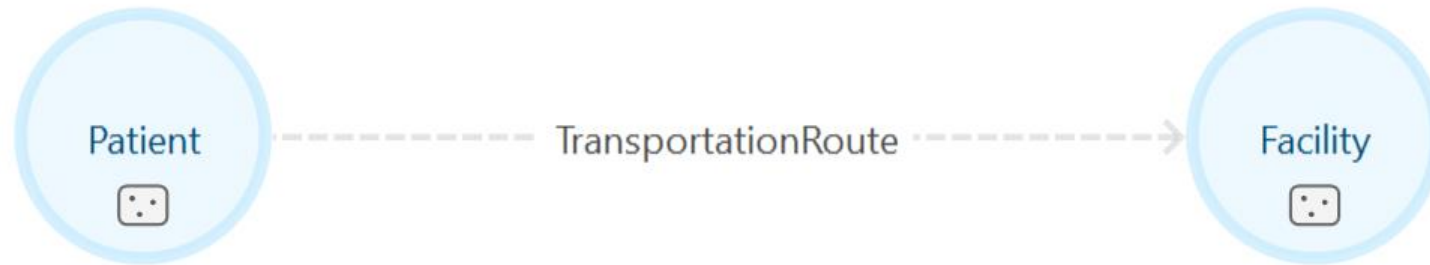
Query
Performance

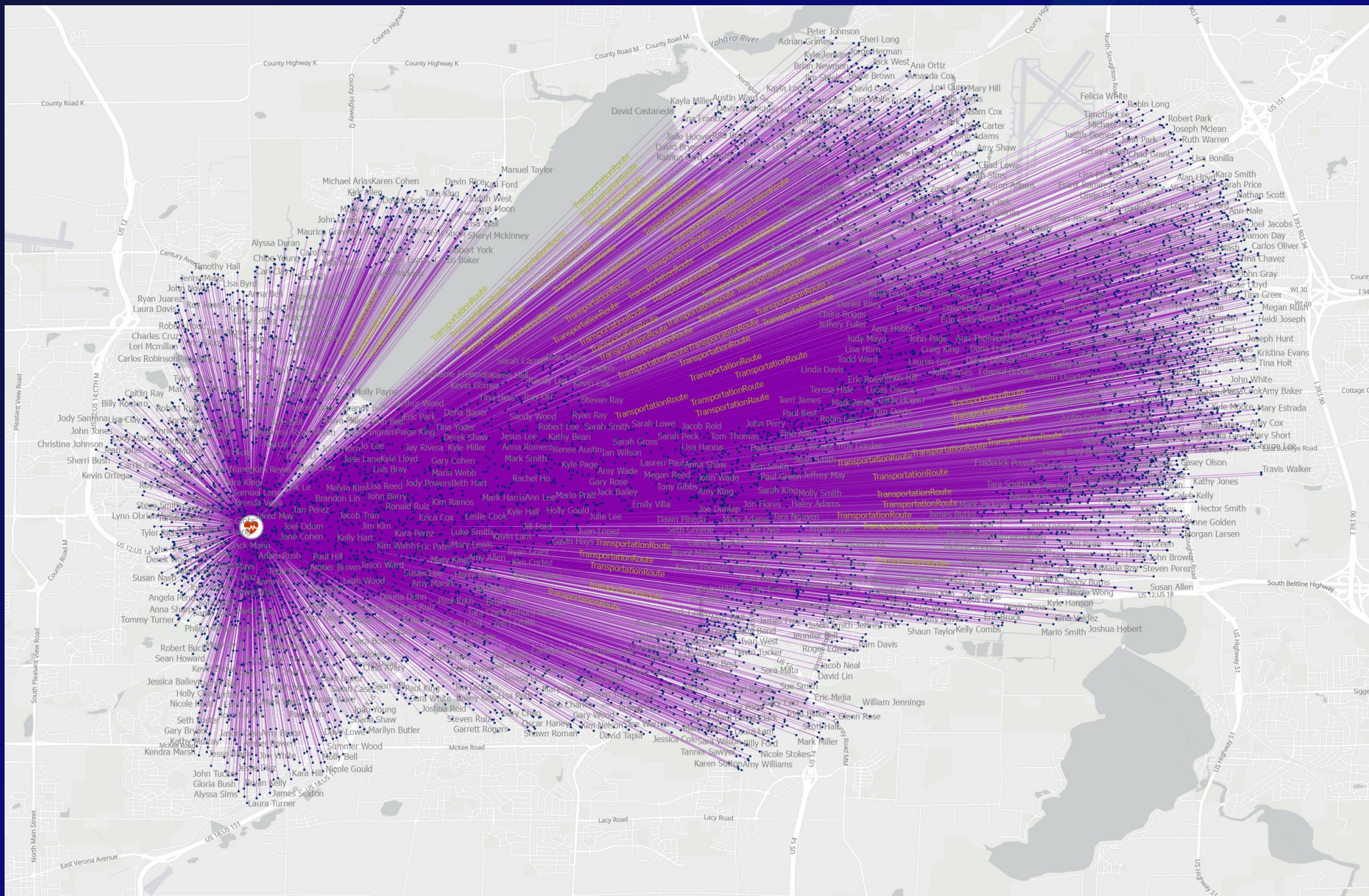
Nonspatial &
Spatial types

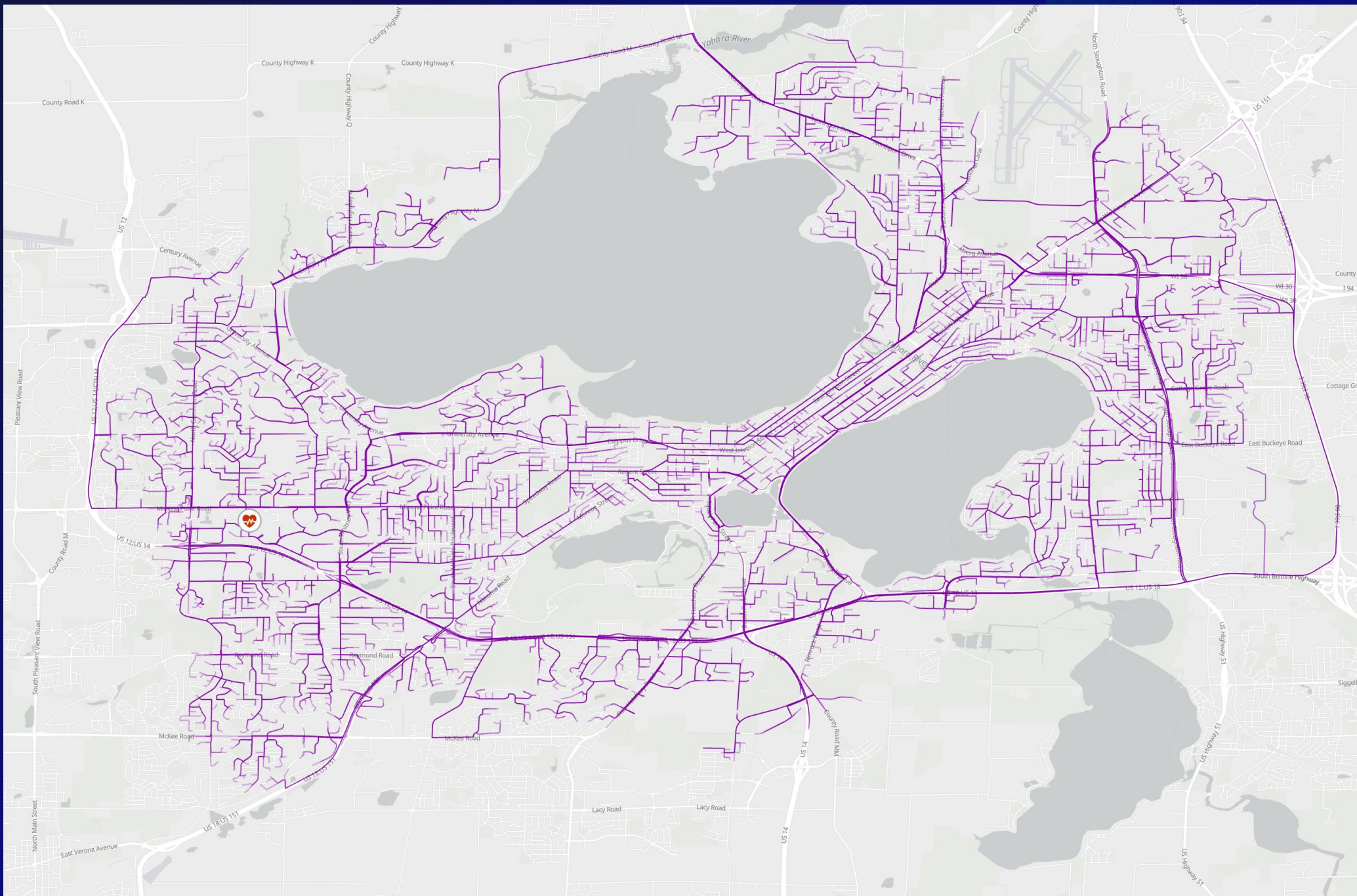


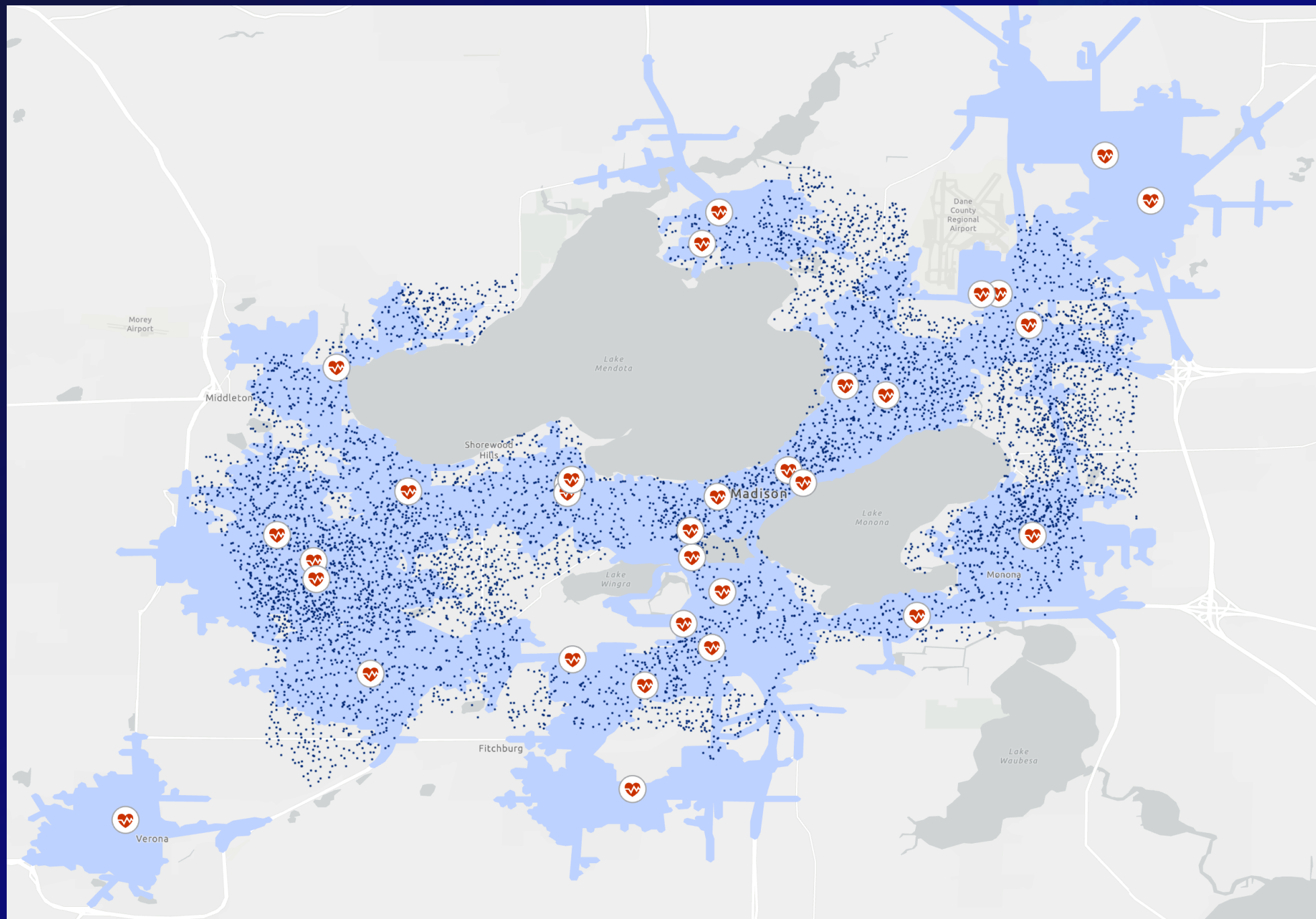


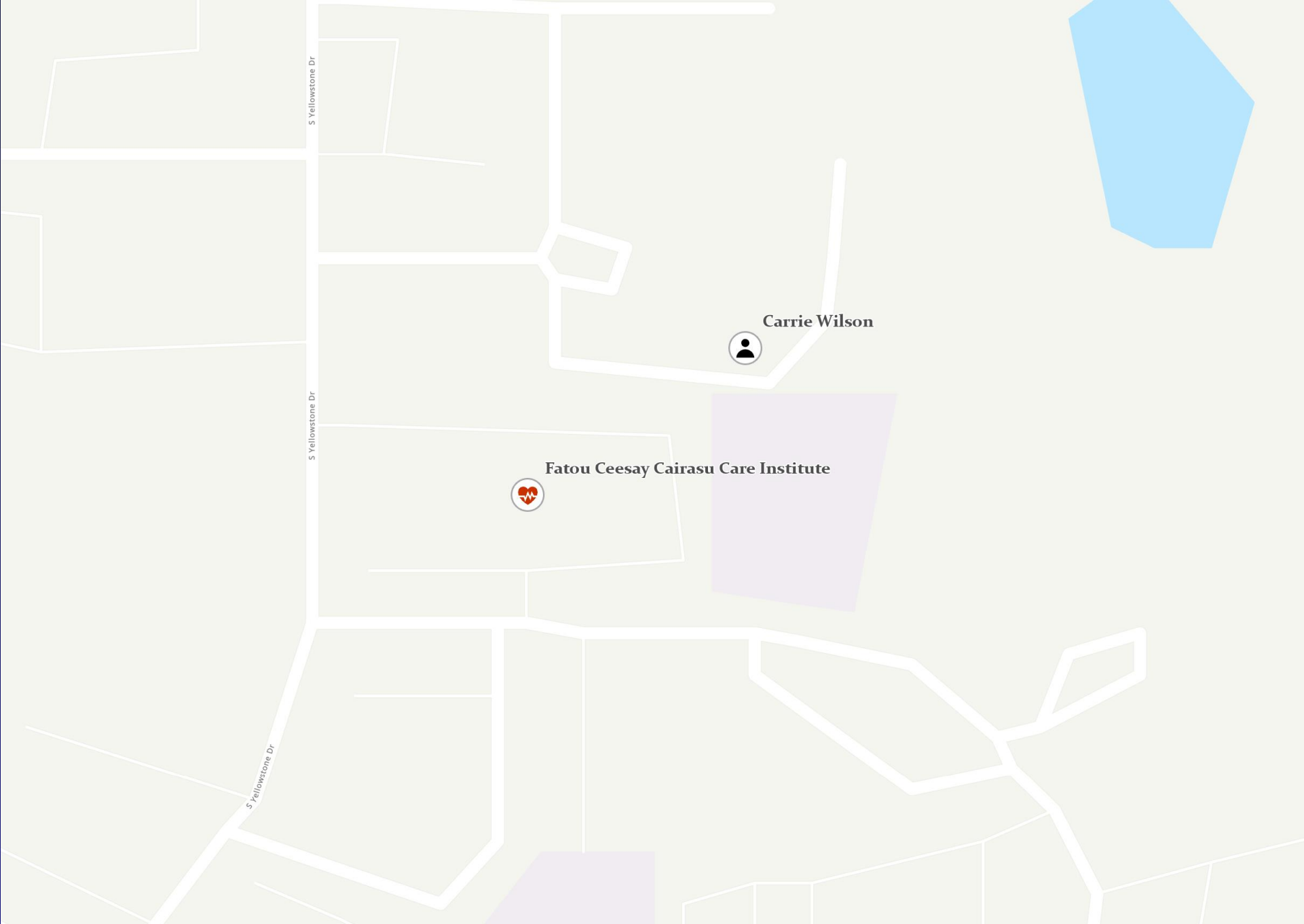


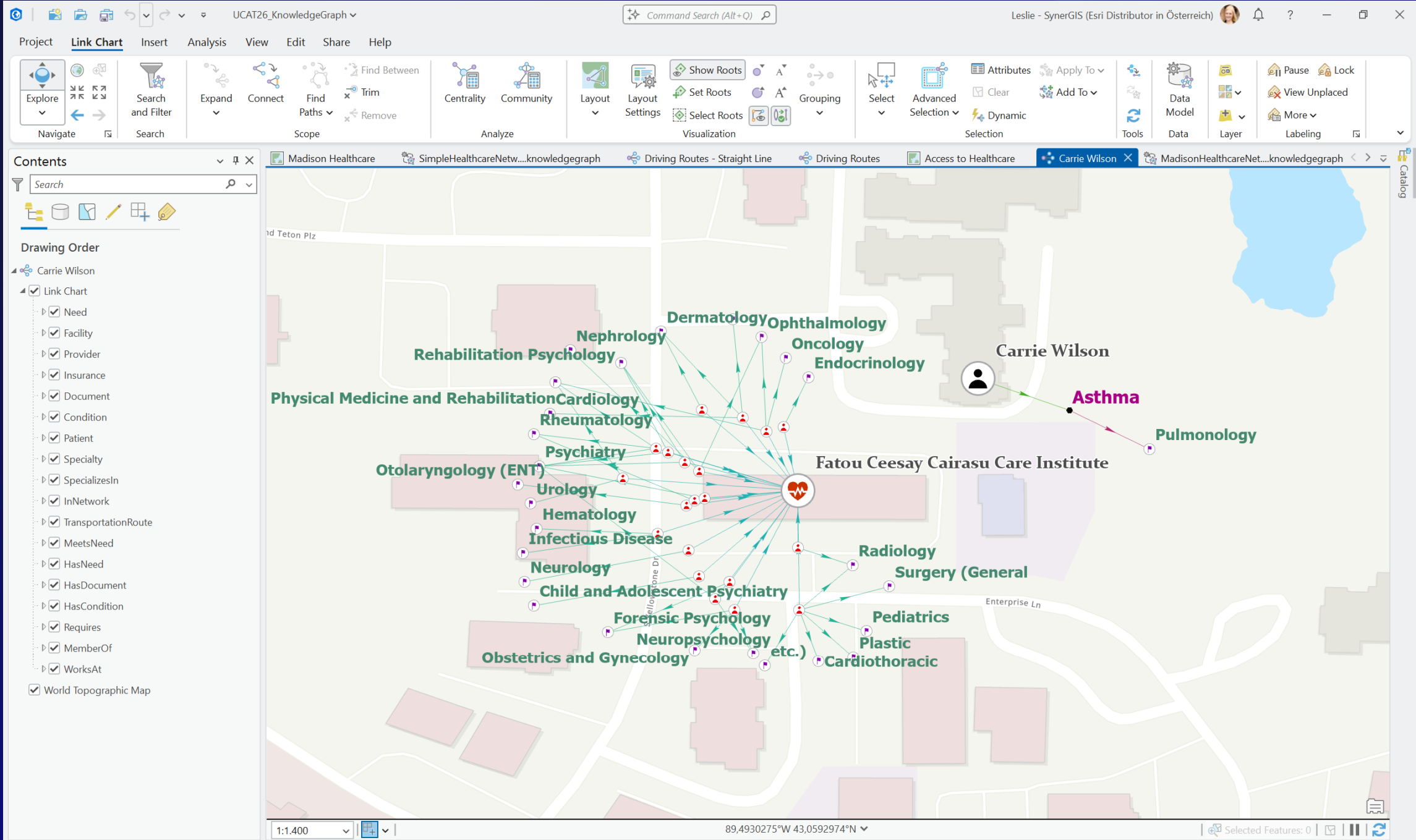


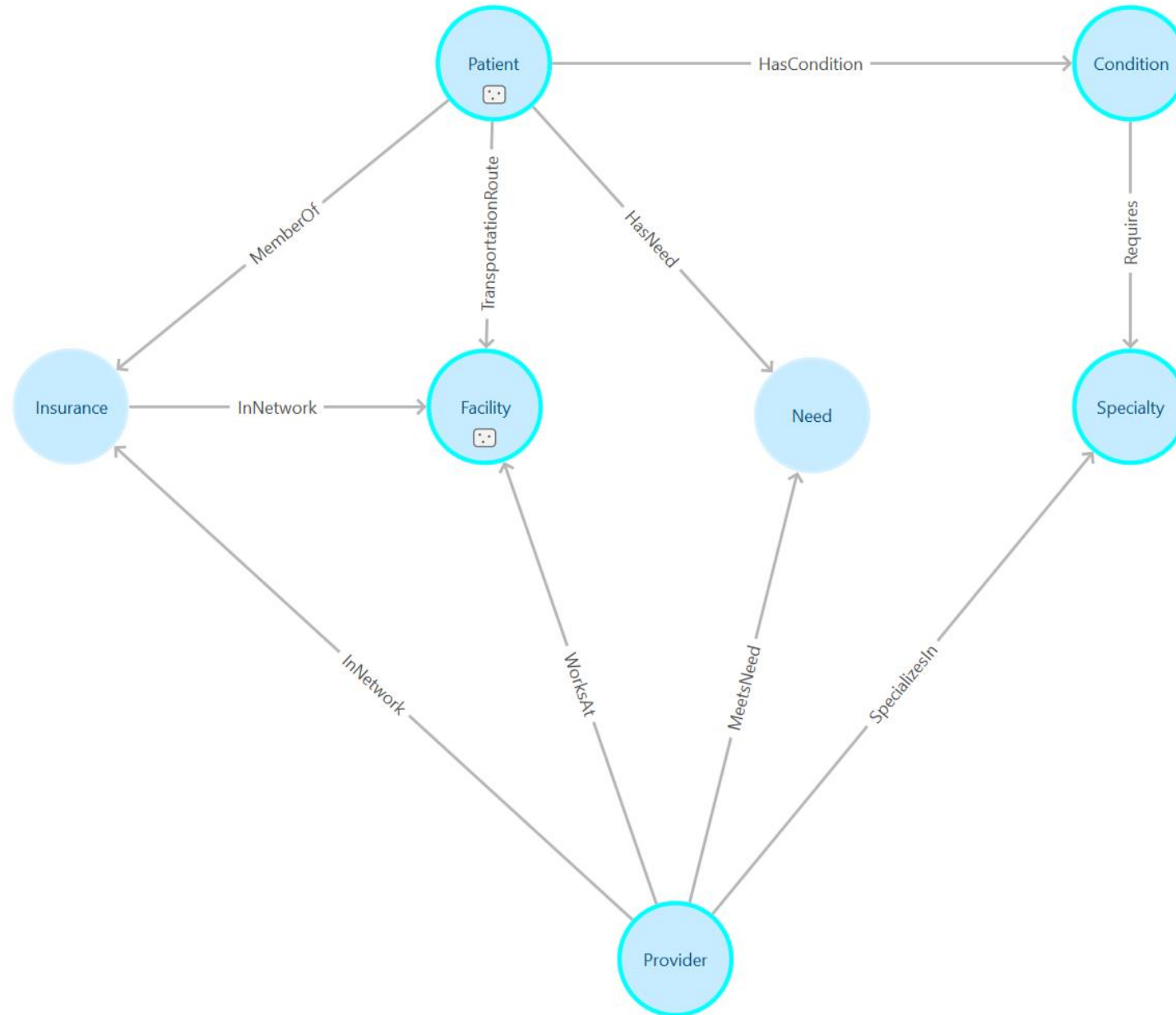












Project

Investigation

Insert

Analysis

View

Share

Help

New

▼

Types

New

▼

Entities

Delete

Search and Filter

Search

Save

Manage Edits

Discard

Select All

Selection

Clear

Create Link Chart Using Template

▼

Add To

▼

Apply To

▼

Merge

Tools

Filtered Find Paths

Synchronize Data Model

Refresh Data Model

Data Model

Data

Load Table

Display Columns

Display

Show domain descriptions

Save Default Properties

Manage

Manage Default Properties

Contents

▼

🔍

Search

🔍

↺

📄

By Type

Healthcare Network

MadisonHealthcareNetwork

Entity Types

Need

Facility

Provider

Insurance

Condition

Patient

Specialty

Relationship Types

SpecializesIn

InNetwork

TransportationRoute

MeetsNeed

HasNeed

HasCondition

MemberOf

Requires

WorksAt

Collections

Queries

Average Drive Times

SpecializesIn_MeetsNeed

Search

Query

🔍

Press CTRL + F to activate search

🔍

▶

☰

Display Name	Type	Dataset
Cardiothoracic	Specialty Entity	
Plastic	Specialty Entity	
etc.)	Specialty Entity	
Addiction Psychiatry	Specialty Entity	
Anesthesiology	Specialty Entity	
Cardiology	Specialty Entity	
Child and Adolescent Psychiatry	Specialty Entity	
Clinical Psychology	Specialty Entity	
Community Mental Health	Specialty Entity	
Counseling Psychology	Specialty Entity	
Dermatology	Specialty Entity	
Endocrinology	Specialty Entity	
Forensic Psychology	Specialty Entity	
Gastroenterology	Specialty Entity	
Geriatric Psychiatry	Specialty Entity	
Hematology	Specialty Entity	
Infectious Disease	Specialty Entity	
Nephrology	Specialty Entity	
Neurology	Specialty Entity	
Neuropsychology	Specialty Entity	
Obstetrics and Gynecology	Specialty Entity	
Oncology	Specialty Entity	
Ophthalmology	Specialty Entity	
Orthopedics	Specialty Entity	
Otolaryngology (ENT)	Specialty Entity	
Pediatrics	Specialty Entity	
Physical Medicine and Rehabilitation	Specialty Entity	
Psychiatry	Specialty Entity	
Pulmonology	Specialty Entity	
Radiology	Specialty Entity	
Rehabilitation Psychology	Specialty Entity	
Rheumatology	Specialty Entity	
Surgery (General	Specialty Entity	
Surgery (General, Cardiothoracic, Plastic, etc.)	Specialty Entity	
Urology	Specialty Entity	

Pulmonology

Specialty

Overview

Properties

Relationships

Documents

+ Add

✕ Delete

🗑 Clear

⚙ Configure

Names	Type	Values
globalid	ID	{C0F3758A-0460-424F-90FD-AE0F578A96B2}
objectid	ID	26
Name	ABC	Pulmonology

Add to

Create Link Chart Using Template

Delete

New Link Chart

New Map

New Global Scene

New Local Scene

Carrie Wilson

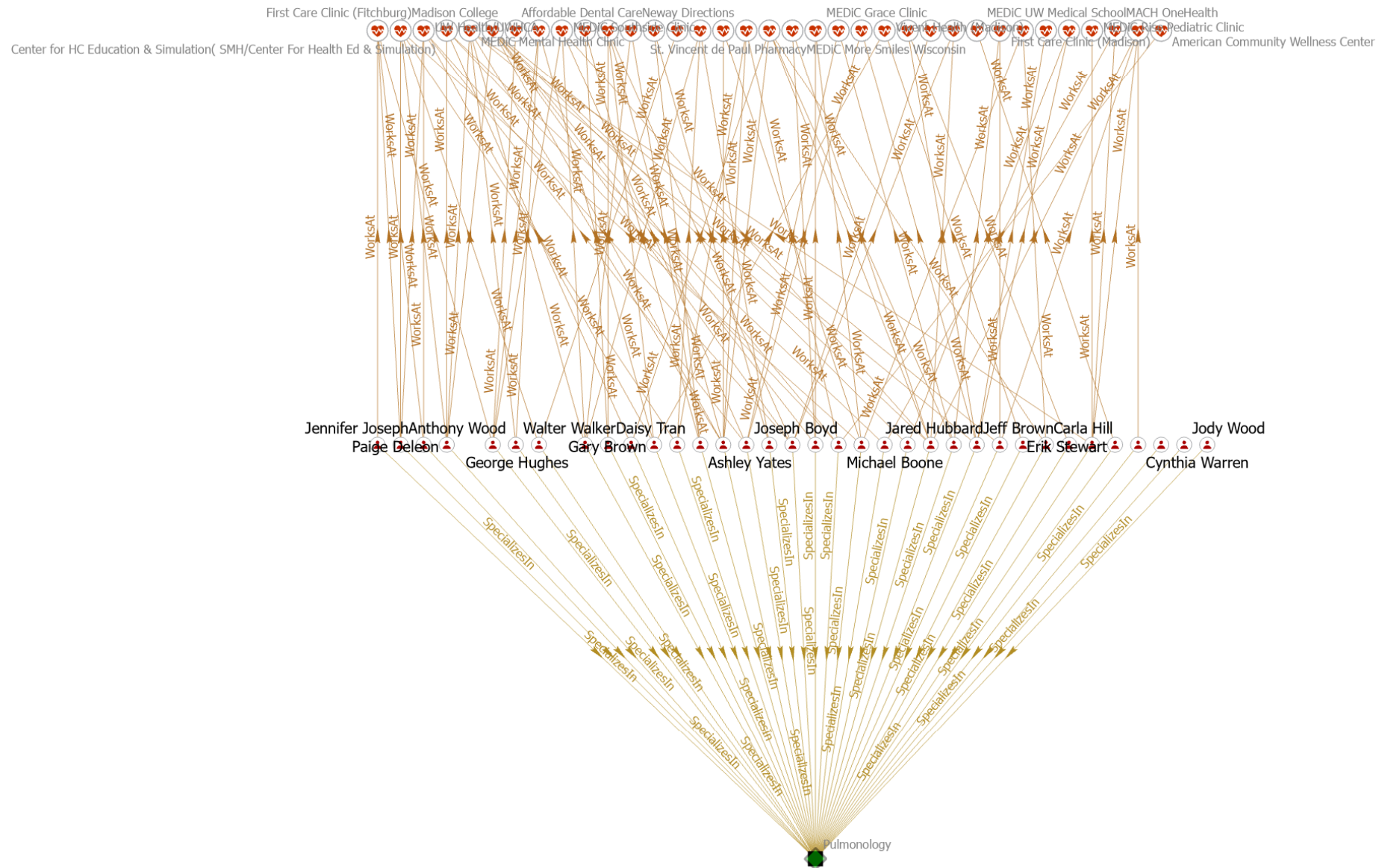
Driving Routes

Driving Routes - Straight Line

Access to Healthcare

Average Drive Time

Madison Healthcare



Driving Routes - Straight Line

Driving Routes

Access to Healthcare

Carrie Wilson

MadisonHealthcareNet....knowledgegraph

Healthcare Network

Average Drive Time

Carrie - Public Transit Time

Pulmonology

Link Chart

SearchQueryCarrie Wilson

Display Name	Type	Dataset
Carrie Wilson Gender, Name, Type, contentType, fileExtension, globalid, keywords, metadata, name, text, title, url	Patient	Entity

Carrie Wilson
Patient

OverviewPropertiesRelationshipsDocuments

+ Add- Delete

Relationship	Direction	Entity Types	Entity
HasCondition	→	Condition	Asthma
HasNeed	→	Need	Interpretation services
HasNeed	→	Need	German
MemberOf	→	Insurance	Kaiser Permanente
TransportationRoute	→	Facility	American Family Children's Hospital
TransportationRoute	→	Facility	Sun Prairie East High School (Madison College)
TransportationRoute	→	Facility	UW Health/UWHCA
TransportationRoute	→	Facility	WILLIAM S MIDDLETON MEMORIAL VETERANS HOSPITAL
TransportationRoute	→	Facility	St. Vincent de Paul Pharmacy
TransportationRoute	→	Facility	MEDiC More Smiles Wisconsin
TransportationRoute	→	Facility	MEDiC Southside Clinic
TransportationRoute	→	Facility	Central Wisconsin Center (DHS-CWC)
TransportationRoute	→	Facility	Madison College Goodman South Campus
TransportationRoute	→	Facility	American Community Wellness Center
TransportationRoute	→	Facility	Mendota Mental Health Institute (DHS-MMHI)
TransportationRoute	→	Facility	Herzing University (Quality CNA Training)
TransportationRoute	→	Facility	MEDiC UW Medical School

Search Query

Using expanded query window



Query: Specializ...



Save as ...

```
// return providers who meet specific criteria
MATCH (p:Provider) - [:MeetsNeed] -> (n:Need{Name:'German'})
MATCH (p:Provider) - [:SpecializesIn] -> (s:Specialty{Name:'Pulmonology'})
MATCH (p:Provider) - [:InNetwork] -> (i:Insurance{Name:'Kaiser Permanente'})

RETURN p
```

Refresh // return providers who meet specific criteria MATCH (p:Provider) - [:MeetsNeed] -> (n:Need{Name:'German'}) MATCH (p:Provider) - [:SpecializesIn] -> (s:Specialty{Name:'Pulmonology'}) MATCH (p:Provider) - [:InNetwork] -> (i:Insurance{Name:'Kaiser Permanente'}) RETURN p

Apply

Clear

Display Name	Type	Dataset
☐ Anthony Wood	Provider	Entity
☐ Samantha Parrish	Provider	Entity
☐ Ashley Schultz	Provider	Entity

- Add to

Create Link Chart Using Template

Delete
- New Link Chart

New Map

New Global Scene

New Local Scene

Carrie - Public Transit Time

Carrie Wilson

Driving Routes

Driving Routes - Straight Line

Pulmonology

Access to Healthcare

Madison Healthcare

(Different Values)

(Different Values)
Provider

Overview Properties Relationships Documents

+ Add - Delete

Relationship	Direction	Entity Types	Entity
InNetwork	→	Insurance	Different values of Insurance
InNetwork	→	Insurance	Kaiser Permanente
InNetwork	→	Insurance	Different values of Insurance
InNetwork	→	Insurance	Blue Cross Blue Shield
MeetsNeed	→	Need	Different values of Need
MeetsNeed	→	Need	German
SpecializesIn	→	Specialty	Different values of Specialty
SpecializesIn	→	Specialty	Pulmonology
WorksAt	→	Facility	Different values of Facility
WorksAt	→	Facility	Different values of Facility
(Different Relationships)			



