MODELS

Origin-Destination

Finds the *least-cost* path from a set of Origins to a series of Destinations
Does not return true path, but accumulates based upon true path
Allows for Barrier Costs

General Example
Where is the closest urgent care?

Our Usage
Where does it make the most financial sense to send disposal materials, given a range of differentiating disposal costs? (Cost Accumulation)

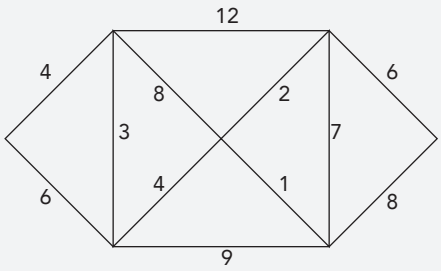
Vehicle Routing Problem (VRP)

Determines sequence of servicing orders given a set of constraints
Allows for a fleet of vehicles / routes to be evaluated together
Provides ability to added variables, including breaks, renewal locations, and start/stop locations

General Example
What is the best route for a furniture company to deliver their orders?

Our Usage
How can we best collect food waste materials for a new program within the department? And, given the best routes, what is the expected costs of offering such a program?

Brain Teaser



Resources

Dene L. O'Connor 's Thesis on Network Analyst
https://inspire.redlands.edu/cgi/viewcontent.cgi?article=1203&context=gis_gradproj

ArcGIS Desktop Network Analyst Tutorials and Guide
https://desktop.arcgis.com/en/arcmap/latest/extensions/network-analyst/about-the-network-analyst-tutorial-exercises.htm
https://desktop.arcgis.com/en/arcmap/latest/extensions/network-analyst/what-is-network-analyst-.htm

YouTube Tutorials - Djikstra's Algorithm
https://www.youtube.com/watch?v=GazC3A4OQTE
https://www.youtube.com/watch?v=XB4MIexjvY0

Problem Solving
https://fs.blog/2013/05/understanding-and-diagnosing-problems/
https://hbr.org/2017/06/how-you-define-the-problem-determines-whether-you-solve-it