KEY CONCEPTS

Network Analyst is amendable to many different problems and processes, but it is on the user to think through the problem, and possibly re-tool the analysis to get the answer they are searching for.

Although the inputs are not fairly intuitive from the start, they are easy to grasp and implement.

No map is perfection, and no analysis tells the entire story. The tools are great for data exploration and finding quick solutions but need to view with healthy skepticism in order to drive the best decisions for an operation.

BEFORE THE ANALYIS

Dijkstra's Algorithm is a brute-force, greedy model, meaning it evaluates all possible solutions, for the least-cost path.

Tabu-Search Heuristic improves the algorithm but creating reasoned sequencing and restricting access to nodes if they do not fall within a logical order.

Traveling Salesman Problem (TSP) or **Vehicle Routing Problem (VRP)** is a combinatorial problem, rooted in the OD-Cost Matrix tools of Network Analyst. Relies on similiar heuristics, making it an approx.imation.

PREPARATION

Some precooking of the network dataset helps with future analysis and to reduce the dimensionality of the attribute table.

Network Dataset is based on City of Mesa's Fire & Medical Street Network layer.

Build pretty vanilla ESRI wizard, I usually accept the defaults.The screen that requires most attention is when specifying the network attributes. Currently, I use two methods to define and evaluate these variables:

FIELD - pre-calculated in python script

SCRIPT - Uses logic to calculate on attributes within the network to produce the evaluator

Notes / Doodles / Graphs