

The Greenness of a Path in Traffic II

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Motivation

- What does it mean to be GREEN ?
 - MPG
 - Pollution
 - Health/Safety
- GPS
 - Algorithm
 - It's role

Graph Theory

- Directed graph
- Capacity
- Flow/Cuts

Dramatized Example

- Meet Dave



Dave just purchased a Prius



Dave is very excited



DISPLAY

INFO

CLIMATE

AUDIO



MENU

DEST

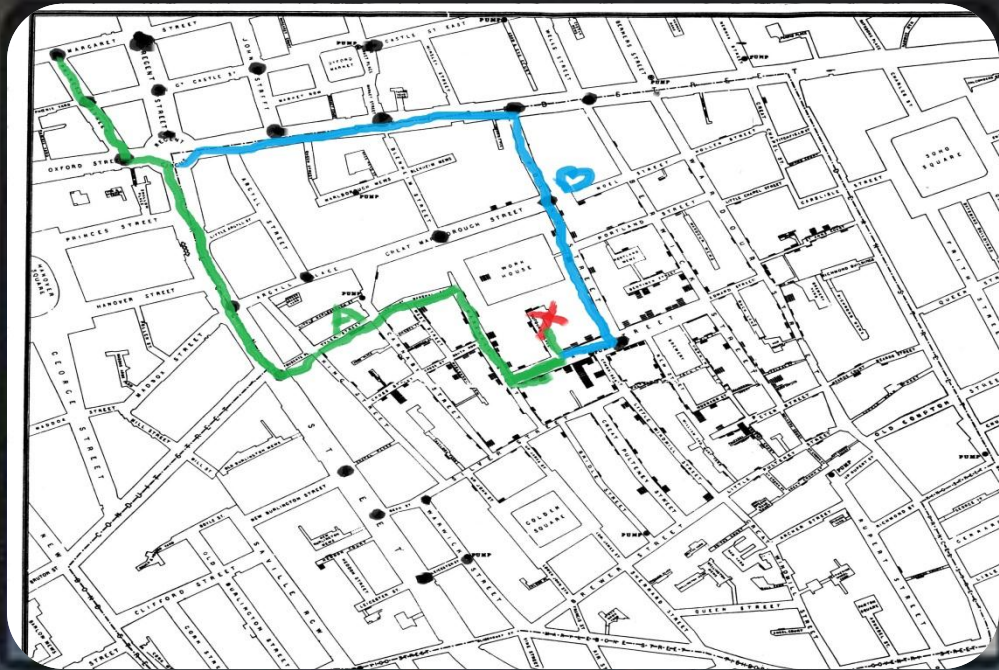
MAP
VOICE

6:15



ODO
TRIP

MPH
MPH



DISPLAY

INFO

CLIMATE

AUDIO

MENU

DEST

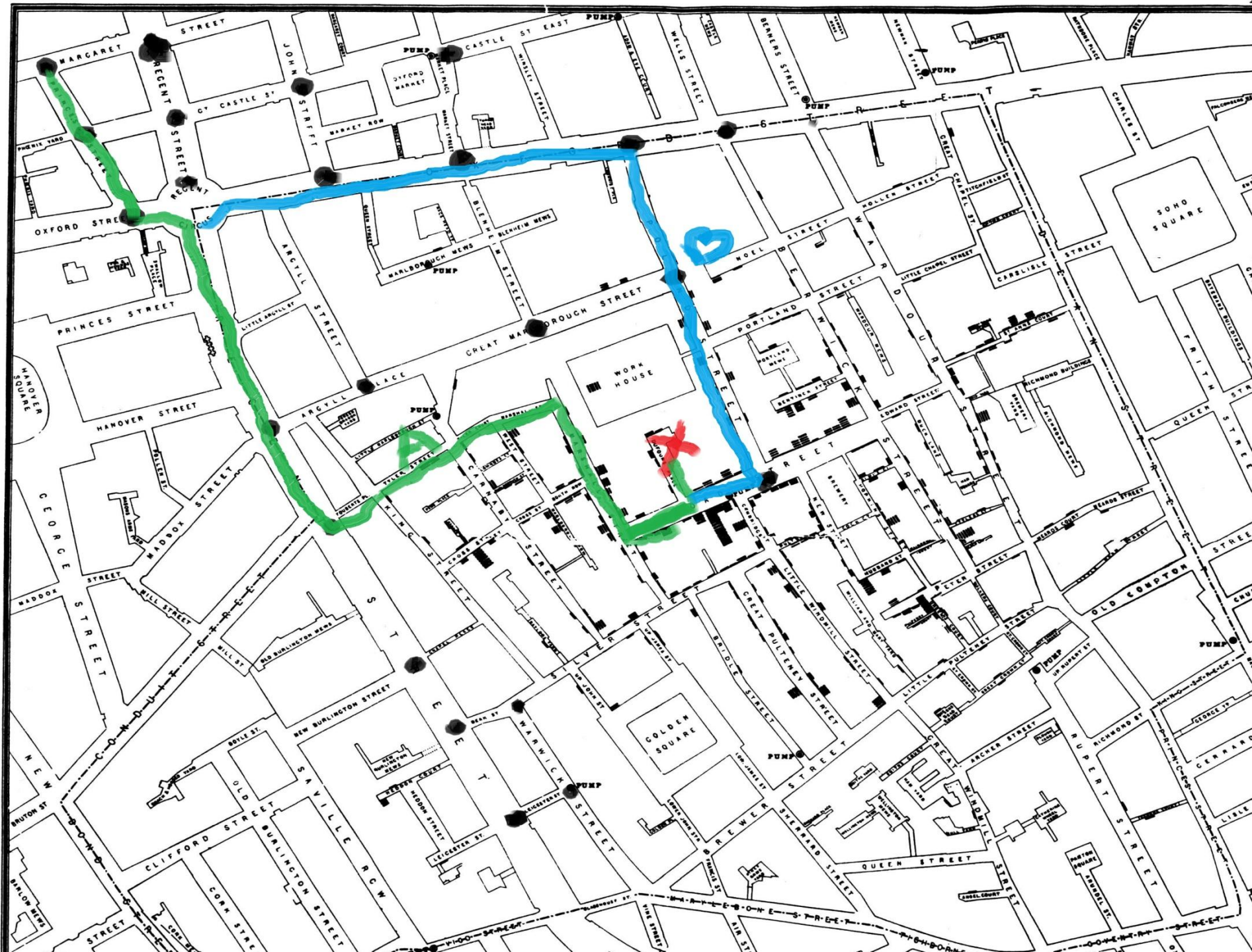
MAP
VOICE

6:15



ODO
TRIP

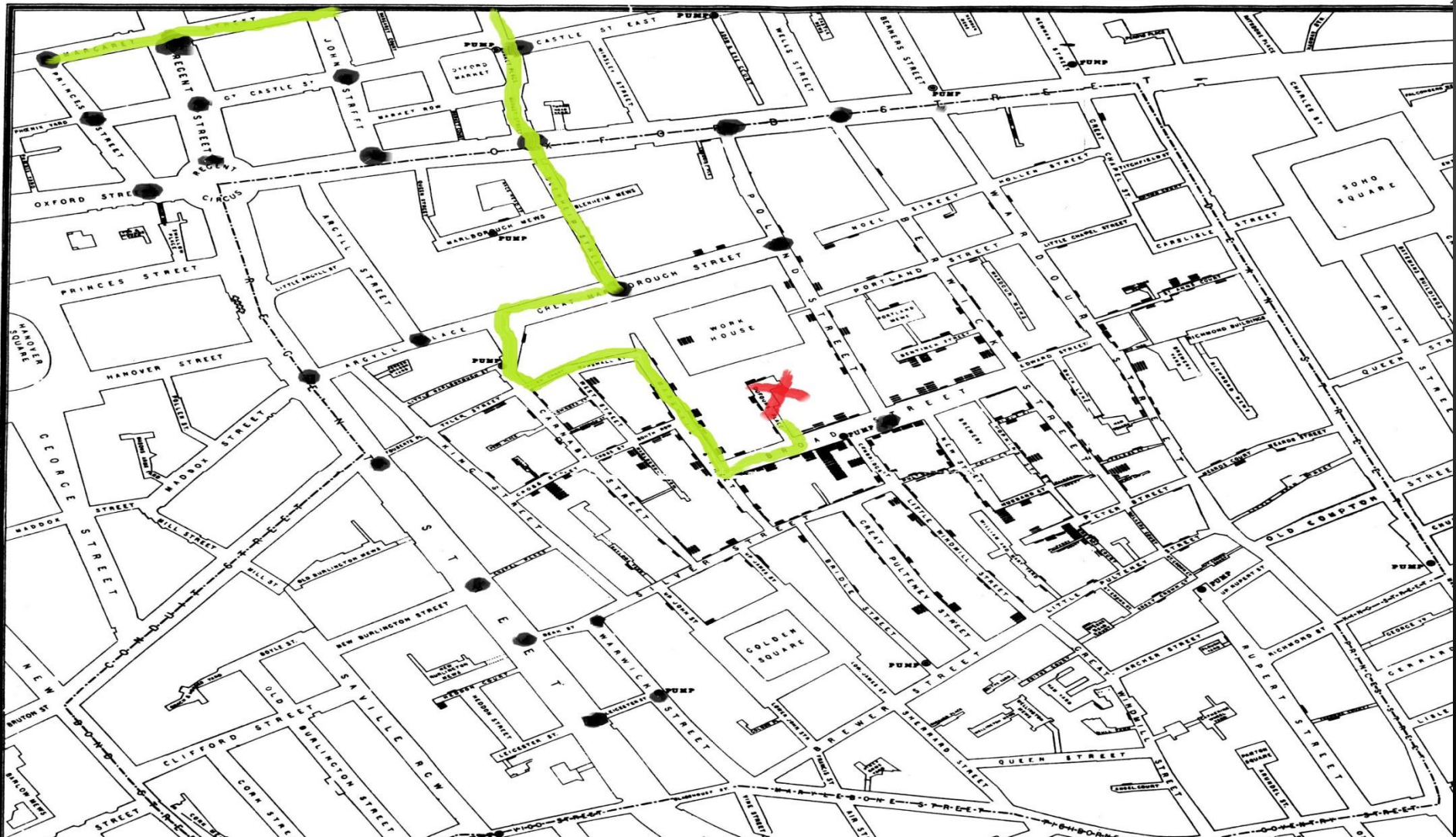
MPH
MPH



Weights

- Distance
- ETA
- Ease of travel

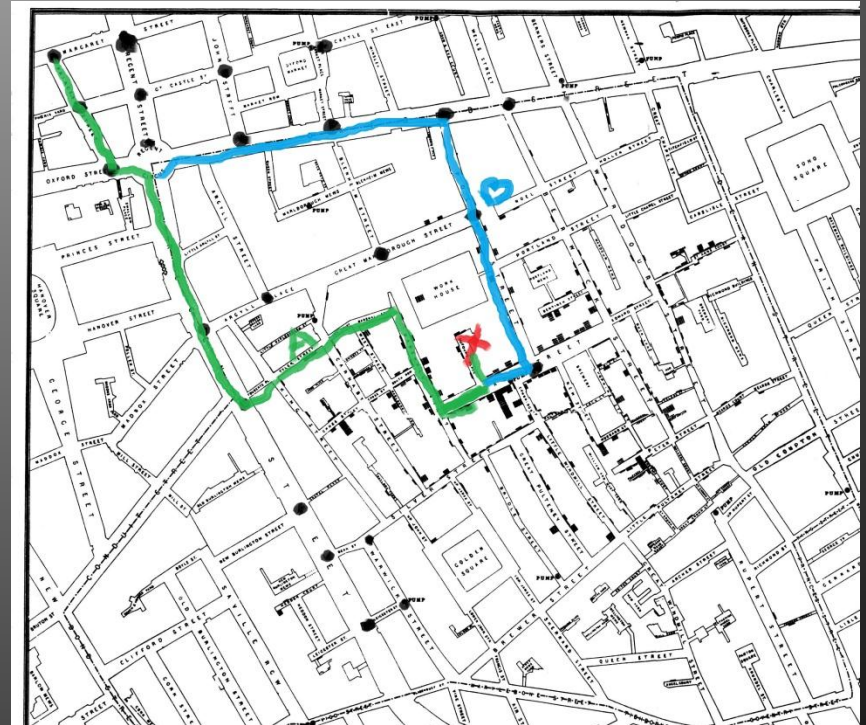
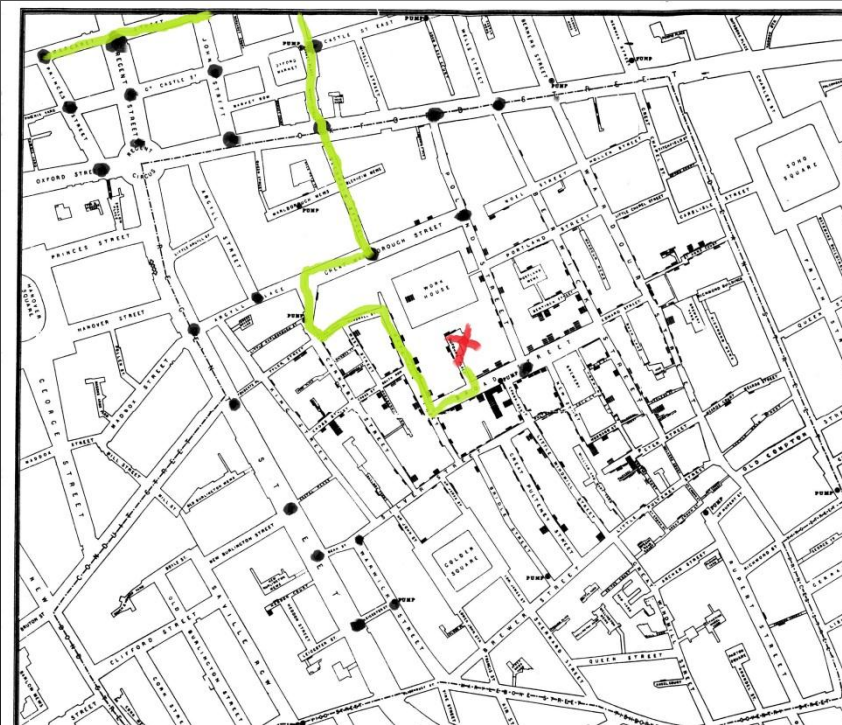
Greenest Morning Route

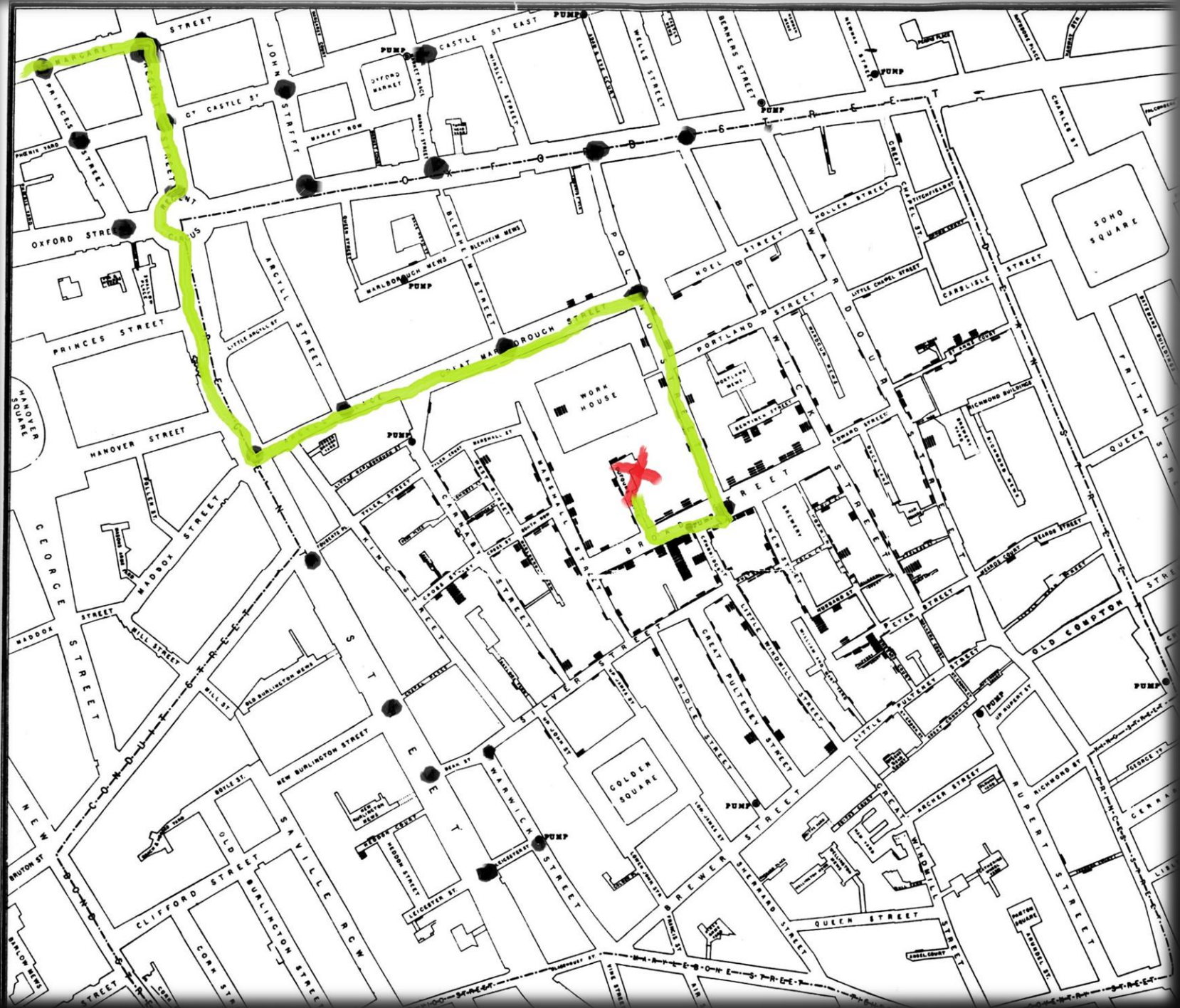


Comparison

Greenest Route
Morning/Afternoon Commute

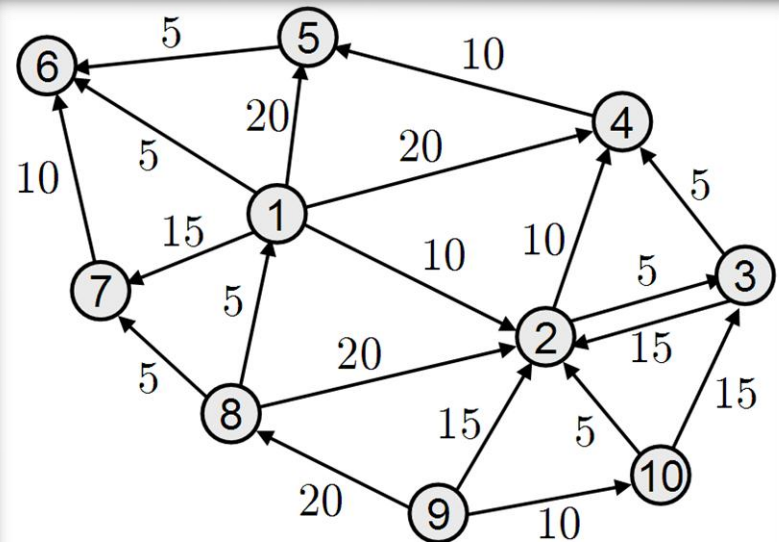
Google Suggested Route





Weights

- Posted MPH
- Lane Capacity
- Stops/interruptions/bends & turns
- Estimated Idle Time
- Season
- Time of day
- Uphill ? Downhill?



Weight Evaluation

- Type of road
- Consideration of time (am vs pm)
- Capacity

Left turn evaluation

Estimated Idle time



Model

- Like Dave's example, various commutes and routes can be modeled using this method.
- Routes can be formulated to eliminate redundancies such as weights certain stops.

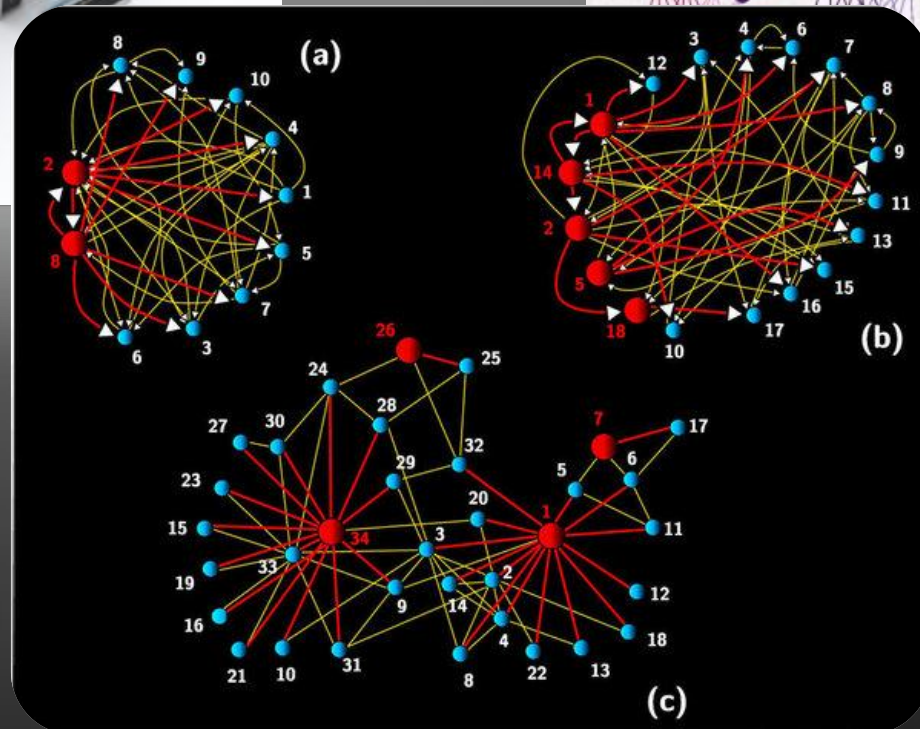
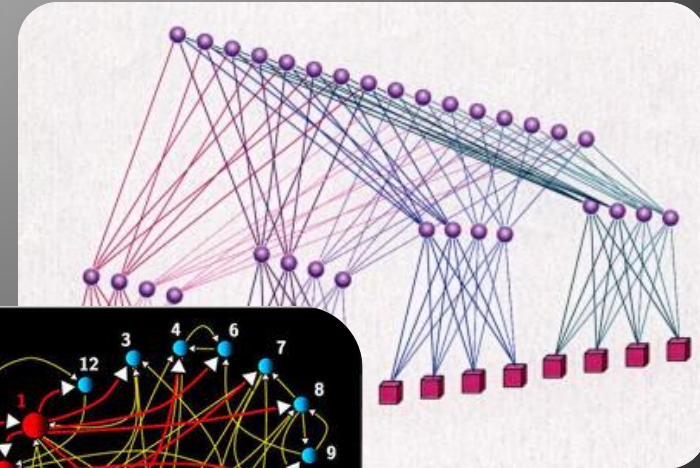
Future Ideas



Individualizing the algorithm

- GPS Randomization
- Weighted Probability
 - optimal flow

Networking



Bus Routes

