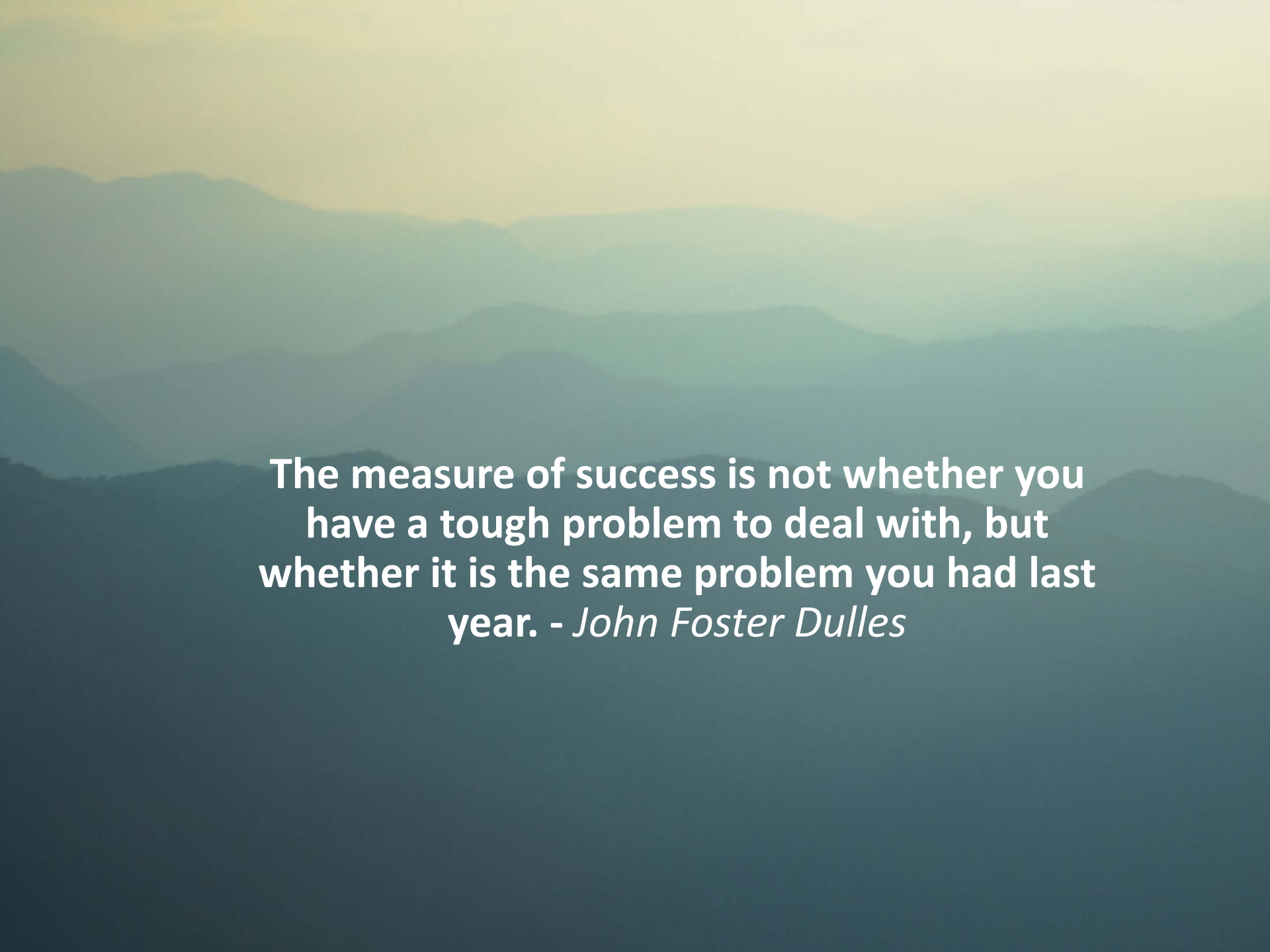




# Climbing the Mountain

Current Deployment Challenges for  
Large Area Dynamic Network Models



**The measure of success is not whether you  
have a tough problem to deal with, but  
whether it is the same problem you had last  
year. - *John Foster Dulles***

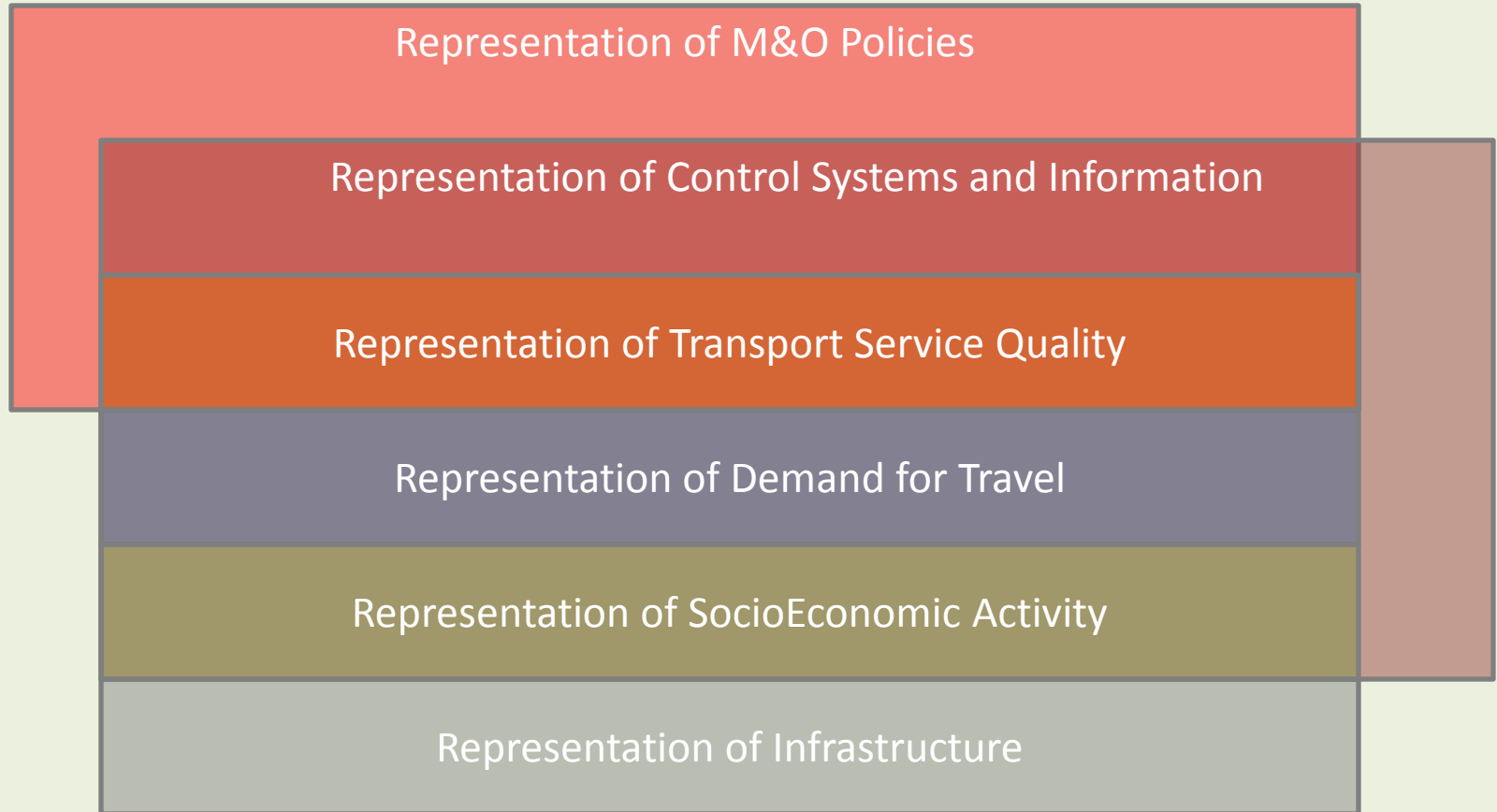
# The distance traveled...

- Growing record of successful DTA deployment experiences at the corridor and project sub- area level
- Many available software packages
  - Capabilities that include person movement and transit simulation
- Computing environments are catching up to the application needs

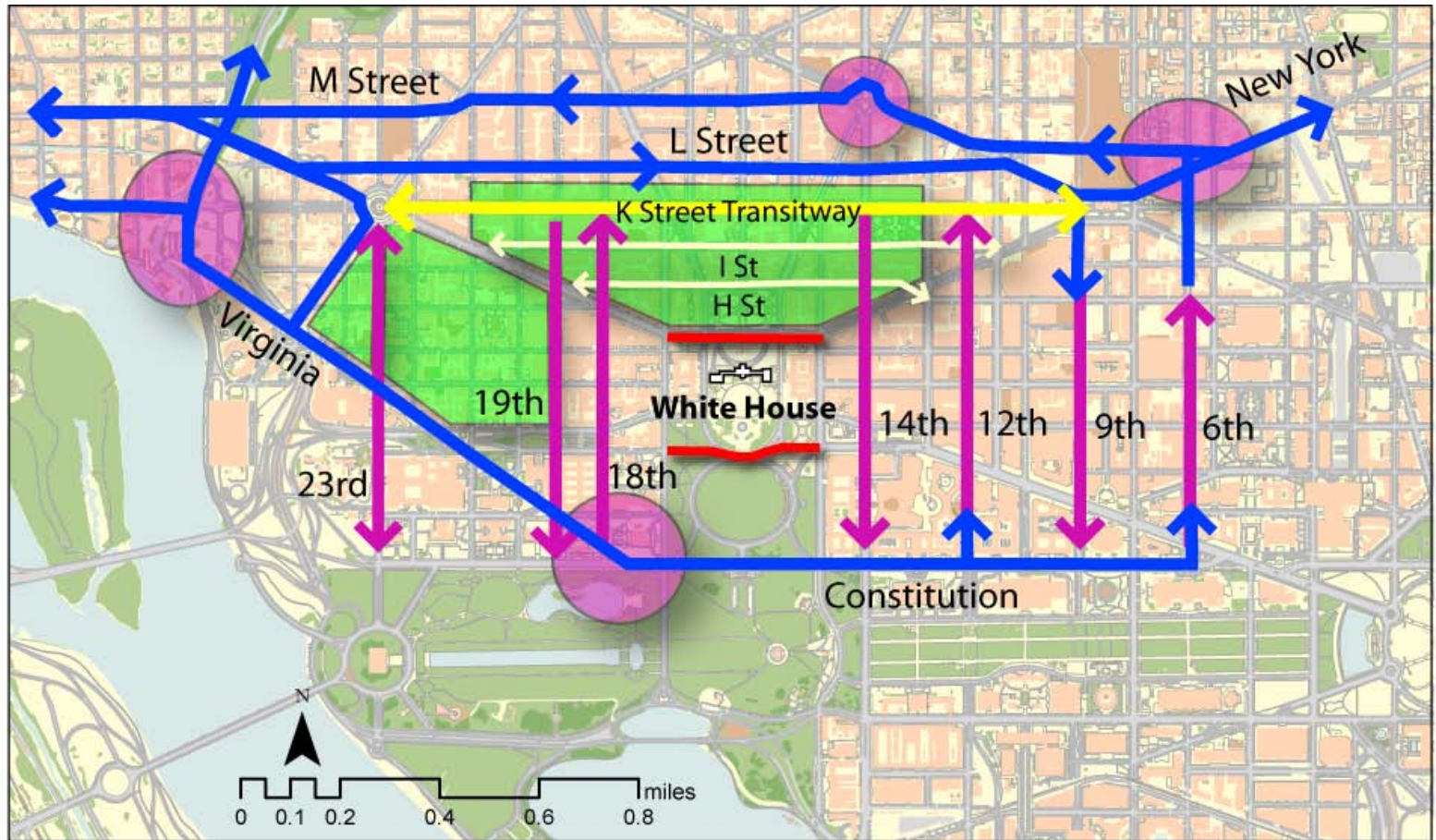
# The route ahead...

- Limited guidelines for forecasting future operational configurations
  - Traffic controls & related policies
  - Advanced M&O, ITS responses
- Data issues increase non-linearly with area
  - Easier for smaller agencies to deploy for their entire region
  - Operational complexities increase according to jurisdiction boundaries and number of operators

# Simplified Modeling Abstractions



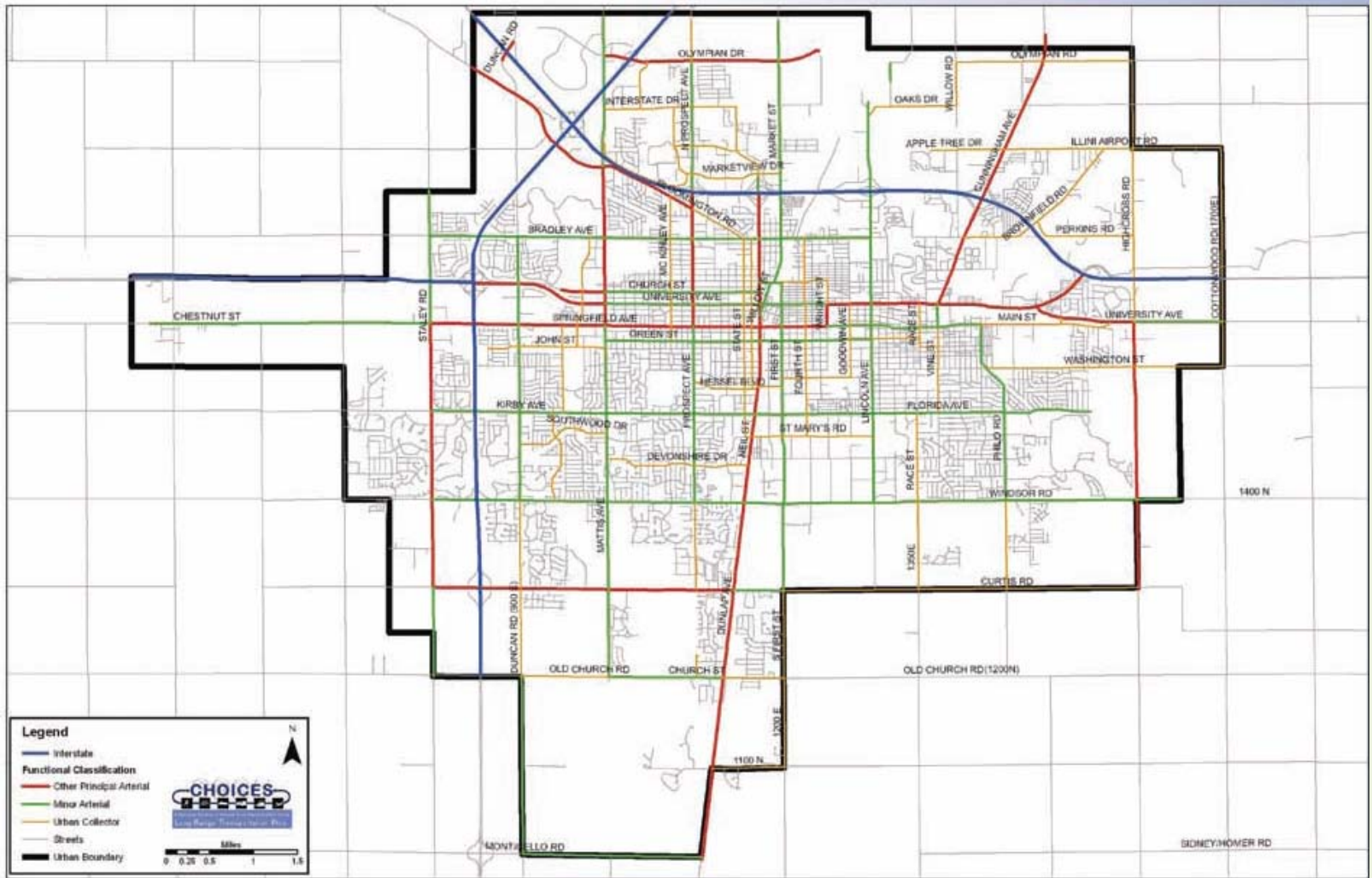
# Future Operational Scenarios



# Current Approaches

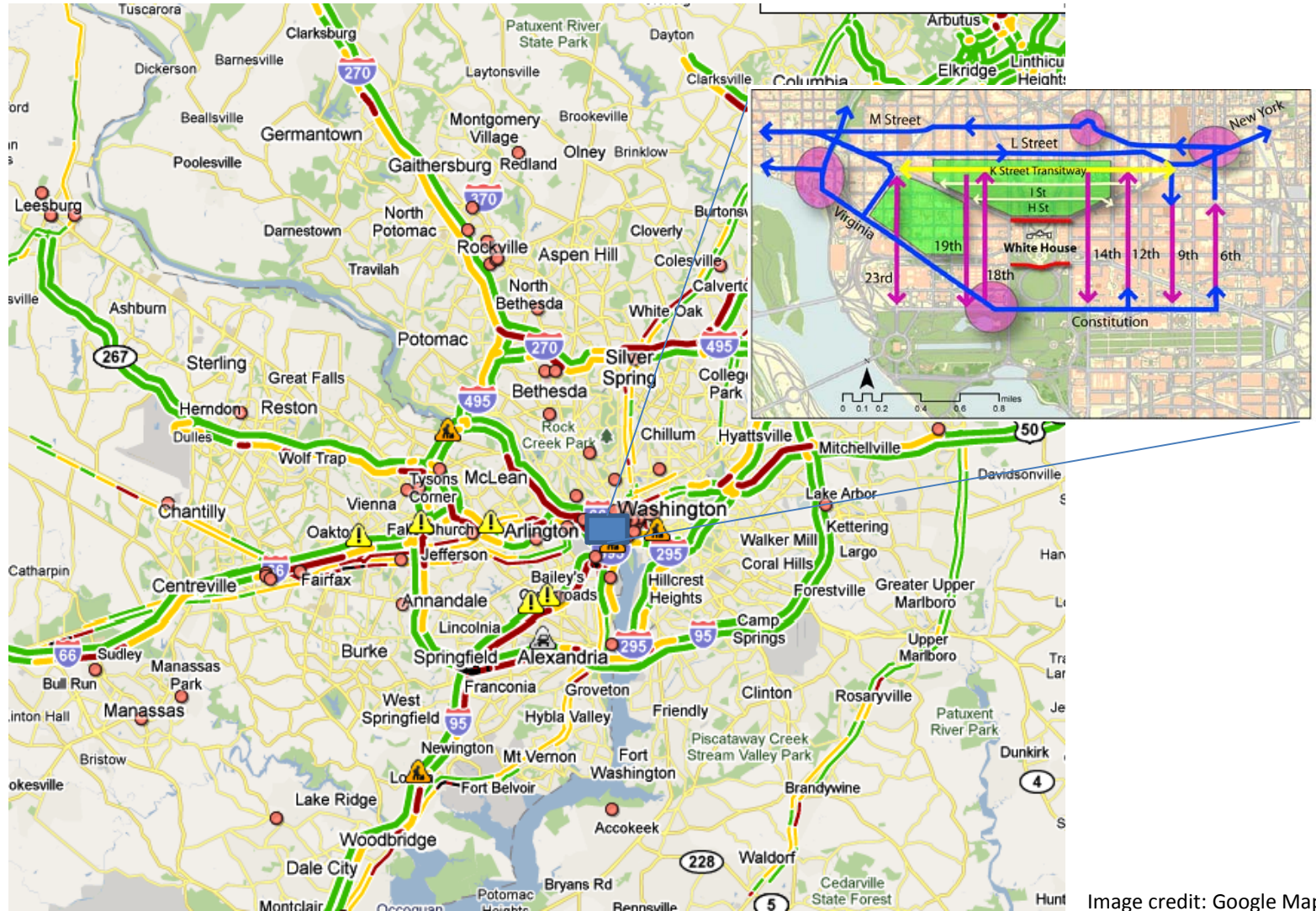
- Iteration between routing, simulation, and optimization tools
  - Develop and maintain data and functional couplings across multiple packages
  - Limited availability of application guidelines
- Multiple criteria optimization problem that potentially includes simulation
  - Some capabilities emerging from research
- Need more research, testing, and deployment evaluation
- Appropriate representation of control and information

# Area Size: CCRPC Study





# Area Size: ~MWCOG Region



# Current Approaches

- Ad-hoc data set development from multiple, variable sources
- Data translation heuristics
  - Anticipate engineering/design
  - Limitation: error rate
- Need to improve data capabilities for managing larger area simulation data sets
- Need to reduce translation error rate
  - Better heuristics, better starting data
- Need to reduce manual interventions
  - Develop tools to aid in translation and correction
- Need to formalize characterization of control and information systems within model support processes

# Boundaries



- Jurisdiction
- Philosophy
- Geography

# Current Approaches

- Data translation heuristics can be used in conjunction with boundaries
  - Manual process
- Generally manual coding and verification is required
  - A nuanced application of data translation and correction tools might work for this

# Summary

- Practical capabilities for using large area transport simulations are growing
- Collectively, we need to improve
  - Models of traffic control configurations and subsequently traveler and other responses
    - Route solution(s) for future scenarios
    - Appropriate representation of M&O, ITS responses
  - Efficiencies in establishing and maintaining large area simulation data sets