

# Truck Traffic Flow for Highway Capacity Analysis

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# Highway Freight Capacity Analysis

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- Develop a tool to:
  - Assess the capacity deficiencies of the freight transportation system
  - Identify specific needs of the freight transportation system
  - Analyze potential freight-related policies
- Provide information that reflects freight mobility in present and future

# Purpose of Traffic Flow Map

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- Baseline for calibrating network for assignment
- Baseline for comparison

# Data Sources for Traffic Flow Map

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- HPMS – data reported by states
- 48 states contacted
- Data received in electronic and hard copy formats
- Data format and quality varied from state to state

# Freight Analysis Highway Network

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- A subset of NHPN, Version 3.0
  - 245,000 miles (about 54% of NHPN)
- Consists of:
  - National Highway System Network (NHS)
  - National Network (NN)
  - Intermodal facilities and connectors
  - Other selected routes satisfying specified criteria

# Network Development Steps

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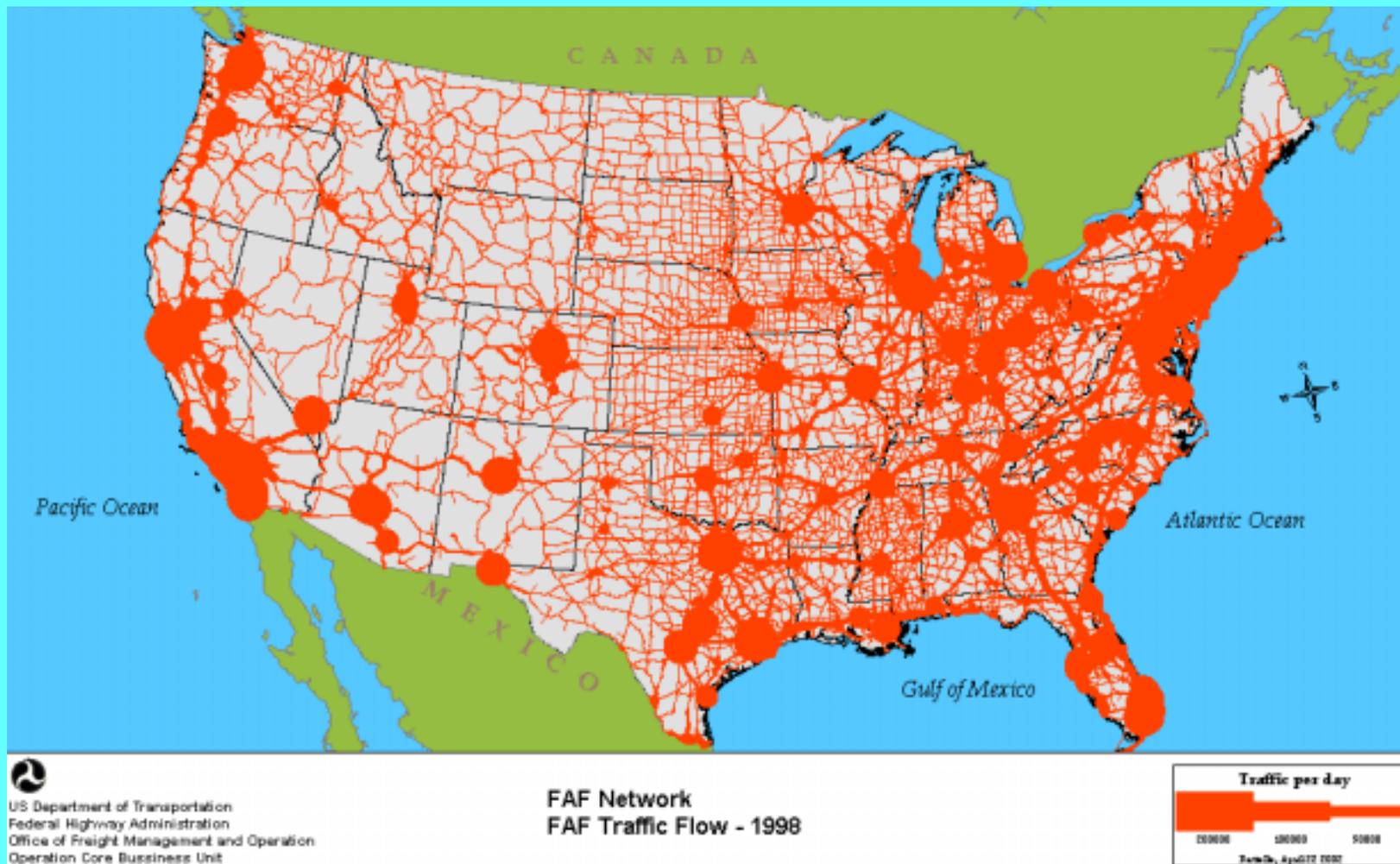
- Ensure logical consistency and network connectivity of all links in network
- Ensure connection between NHPN and HPMS
- Establish county centroid connection
- Identify key intermodal connectors with capacity related attributes

# Challenges in Merging Traffic Data with Highway Network

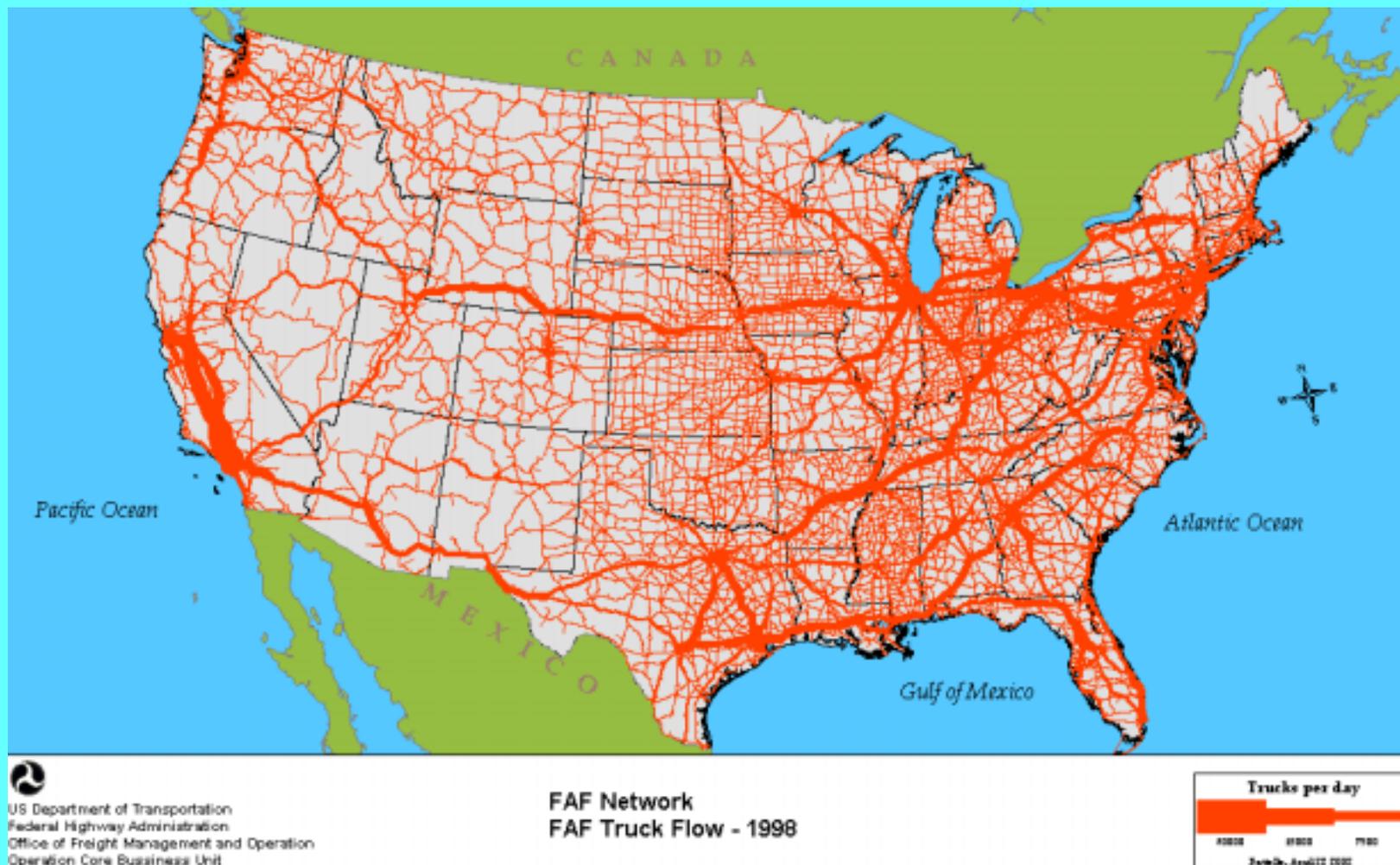
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- Inconsistencies in route naming and numbering
- Variance of number of segments between state data and NHPN links
- Merging HPMS data
- Gaps in traffic data

# Total Traffic Flow on FAF Network - 1998



# Truck Traffic Flow on FAF Network -1998



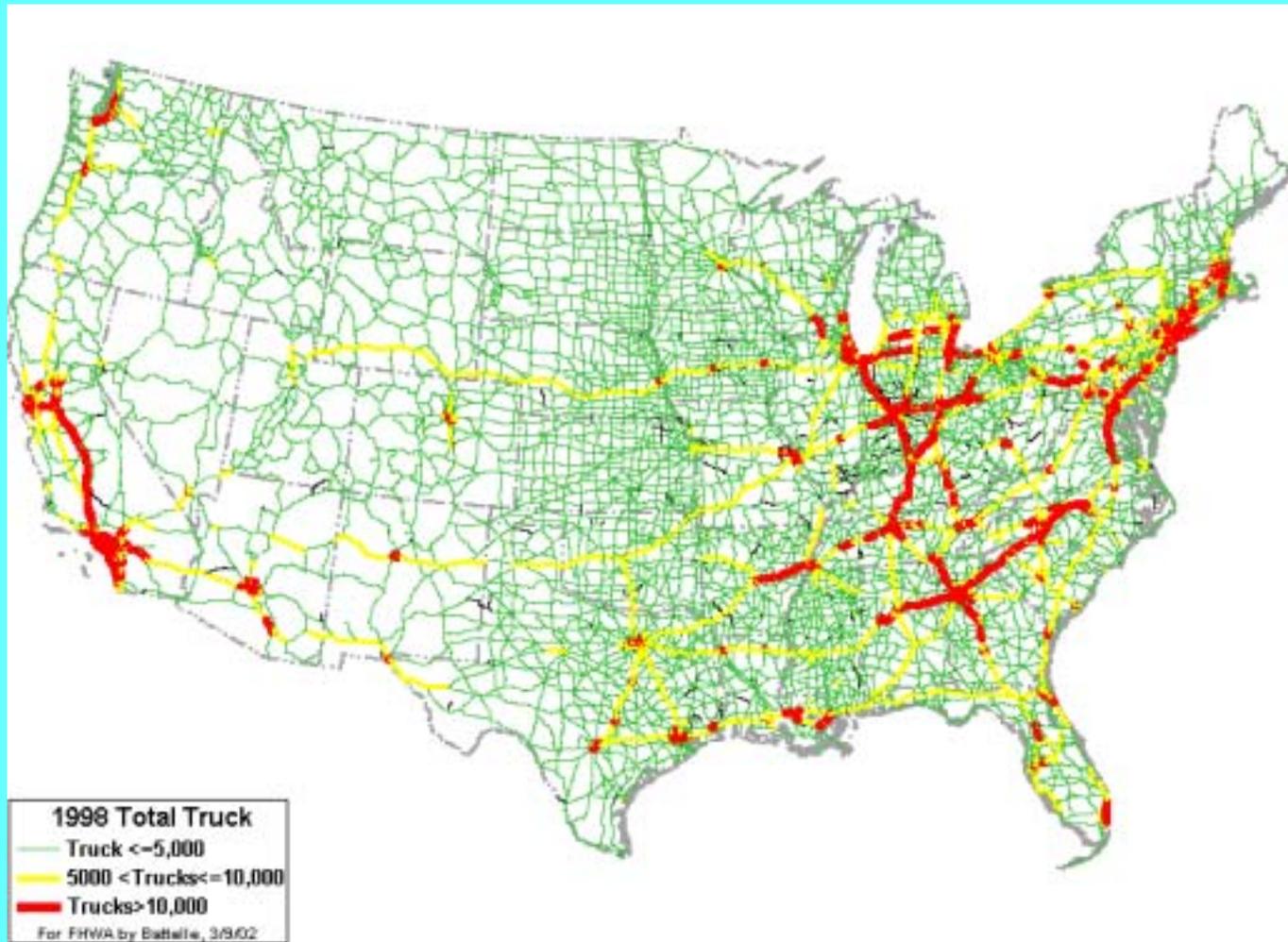
# Potential Uses of Traffic Flow Maps

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- Compare truck and traffic volume by highway functional class
- Examine spatial distribution of trucks on state, regional, and national levels

# Variation in Total Truck Flow - 1998

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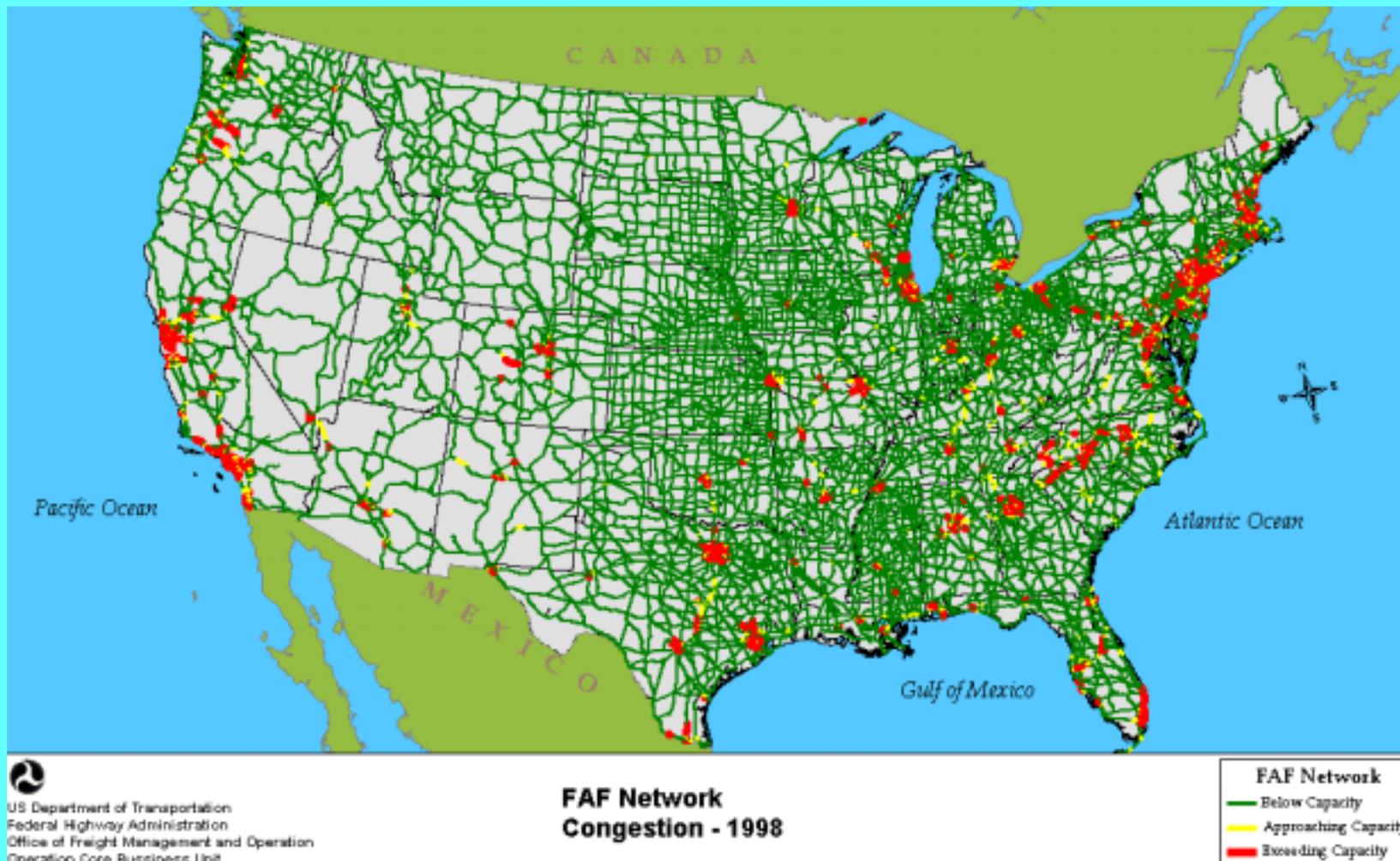


# Potential Uses of Traffic Flow Maps (cont'd.)

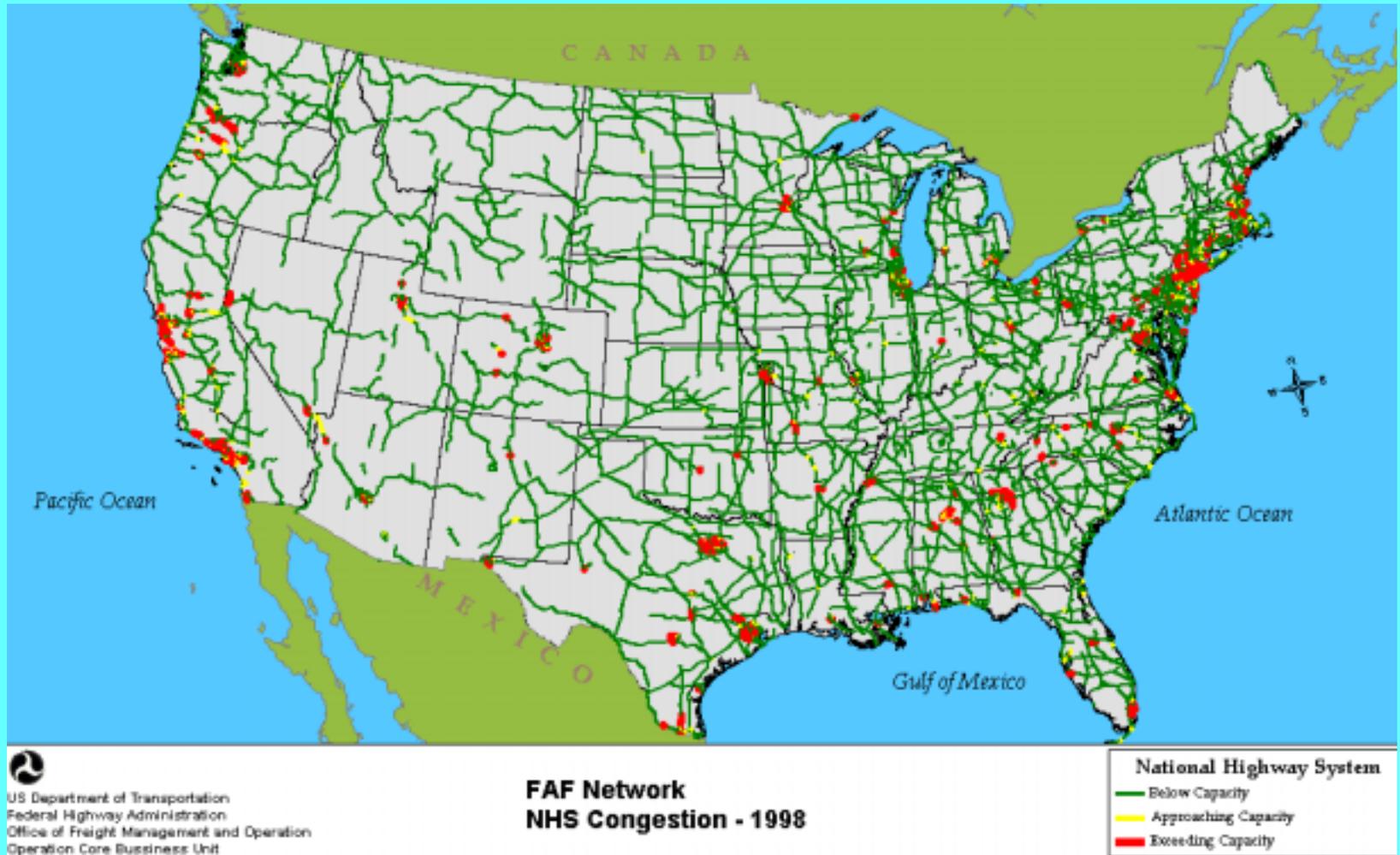
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- Examine highway congestion
  - By functional class
  - By local area

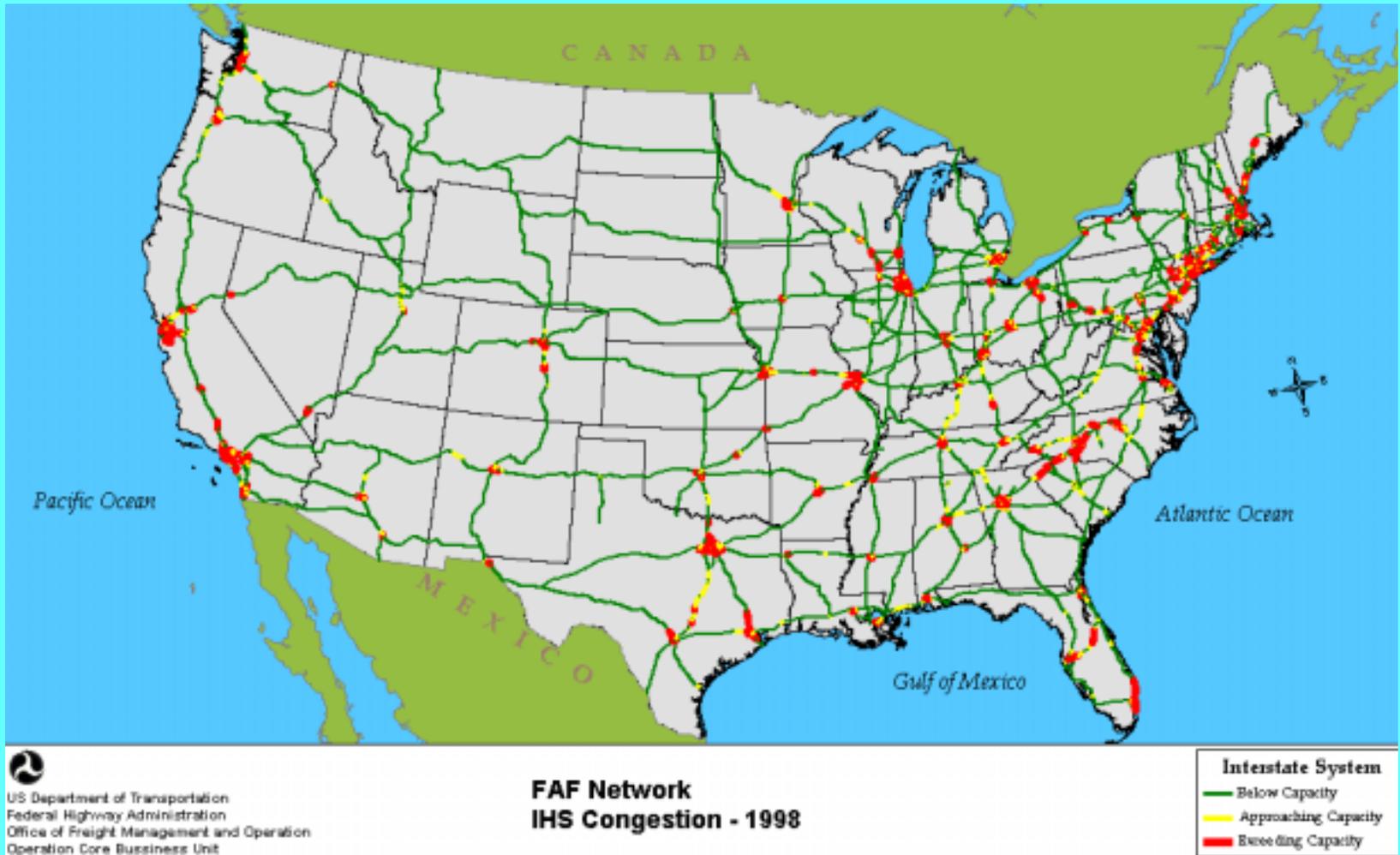
# Freight Analysis Highway Network



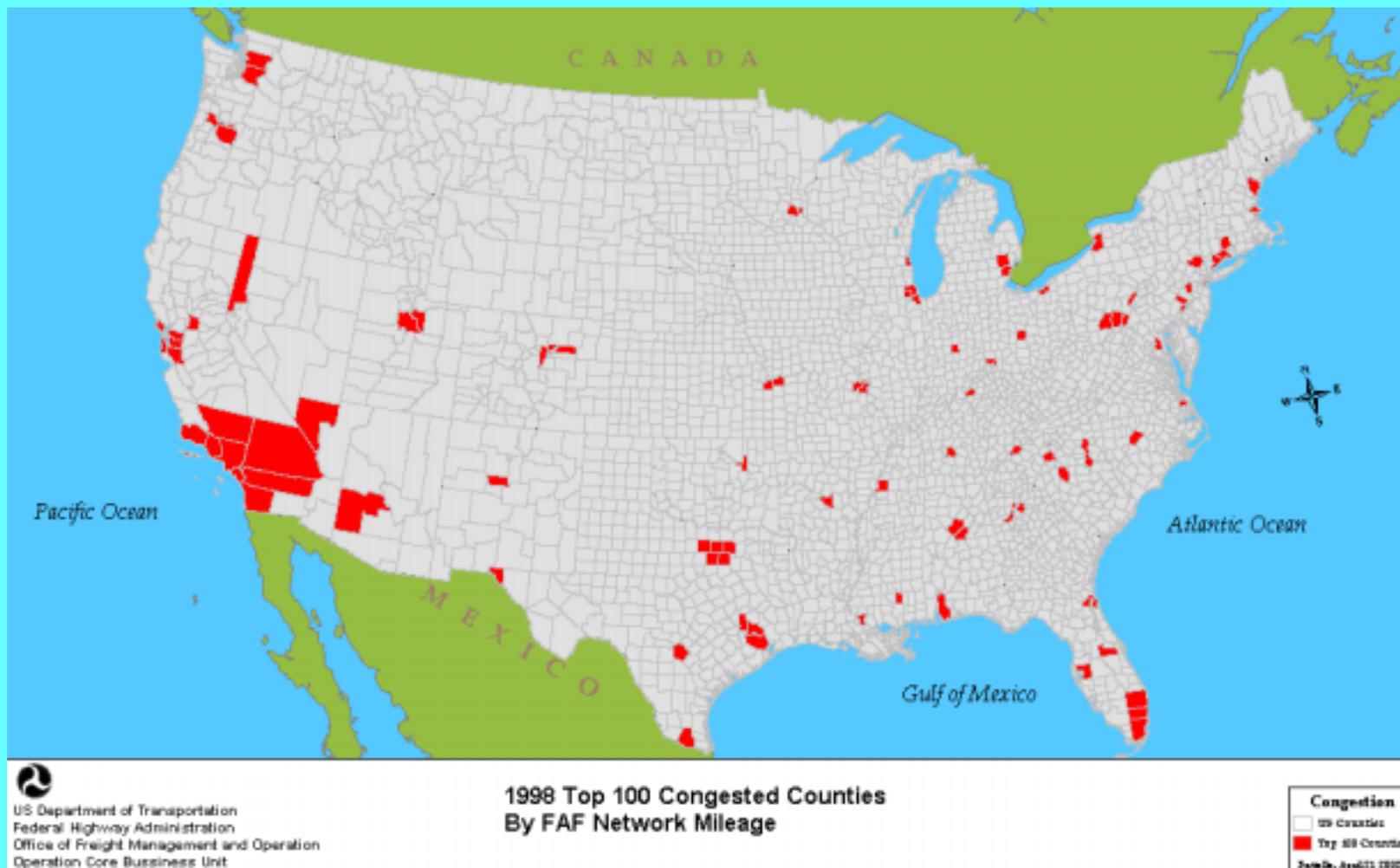
# National Highway System Network (NHS)



# National Network (Interstate Highway System)



# 1998 Top 100 Congested Counties

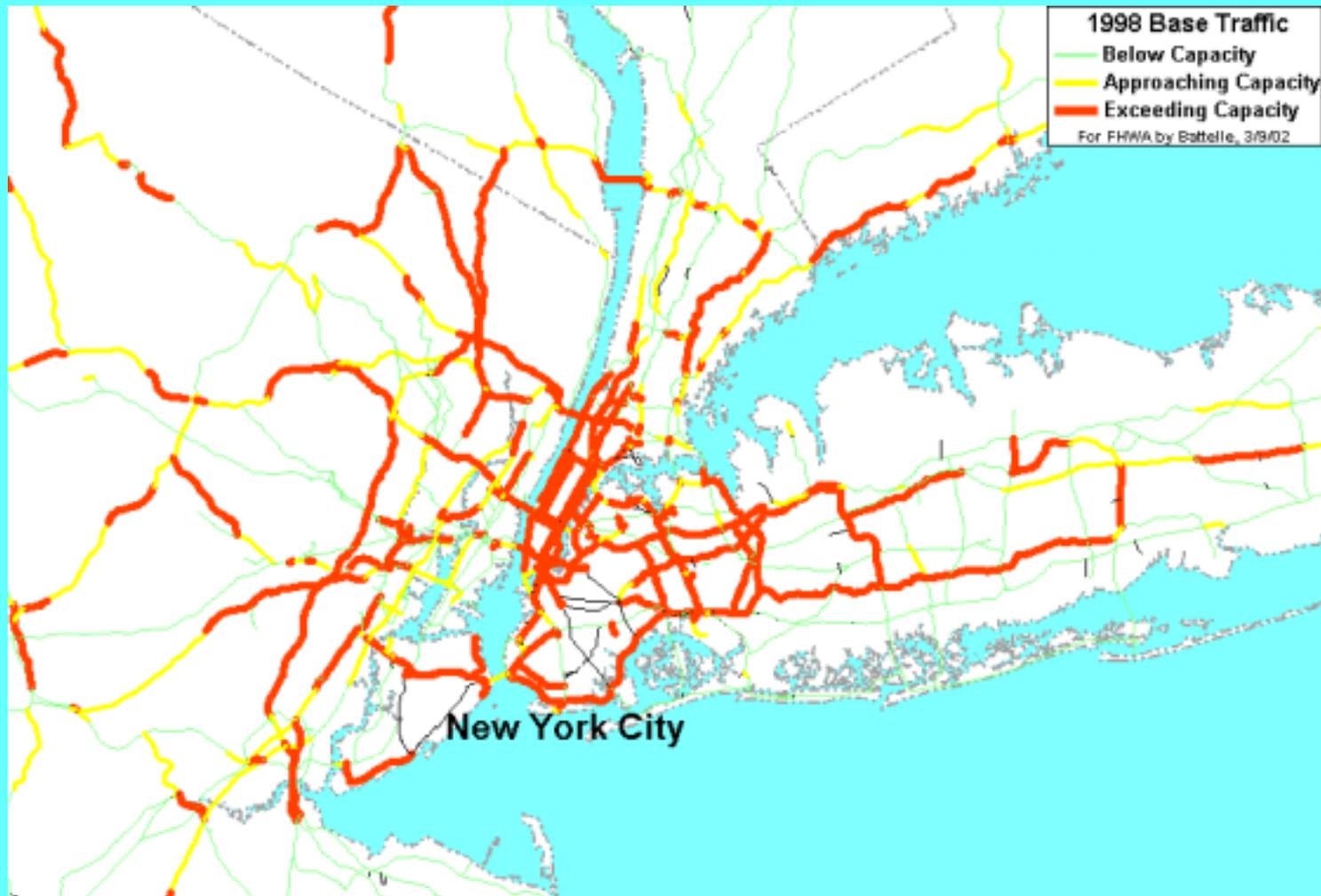


# Traffic Flow for LA Area -1998

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# Traffic Flow for NYC Area - 1998



# Total Truck Flow for Chicago Area - 1998

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# Potential Uses of Traffic Flow Maps (cont'd.)

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- Examine the potential impacts on traffic volumes created by restricting inter-city truck travels on the highway system to a maximum distance
- Examine the implications of discontinuities in the freight highway system

# Effect of Discontinuities - St. Louis bridge closures - before



# Effect of Discontinuities - St. Louis bridge closures - after

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# Conclusions

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- Methodology facilitates merging traffic and other data to highway network
- Traffic flow map has several potential uses
  - reference for planning
  - policy analysis
  - corridor studies
- Useful of visual display of information

# Thank You

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- Questions?
- More information?

# Questions?

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