

# Carte Figurative des pertes successives en hommes de l'Armée Française dans la Campagne de Russie 1812-1813.

Dressée par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite, Paris, le 20 Novembre 1869.

Les nombres d'hommes présents sont représentés par les largeurs des zones colorées à raison d'un millimètre pour dix mille hommes; ils sont de plus écrits en travers des zones. Le rouge désigne les hommes qui ont été en Russie, le noir ceux qui en sont sortis. Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. M. Chiers, de Léger, de Fezensac, de Chambray et le journal inédit de Jacob, pharmacien de l'Armée depuis le 28 Octobre. Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps du Prince Jérôme et du Maréchal Davout qui avaient été détachés sur Minsk et Mohilow et qui s'étaient joints vers Orscha et Witebsk, avaient toujours marché avec l'armée.

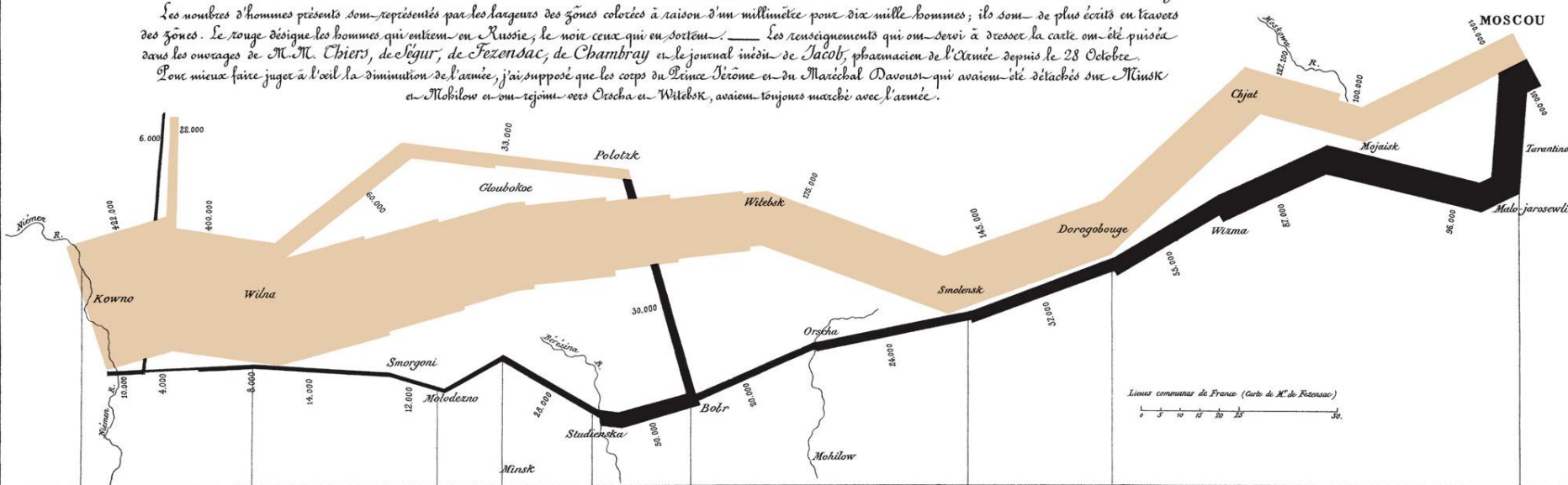
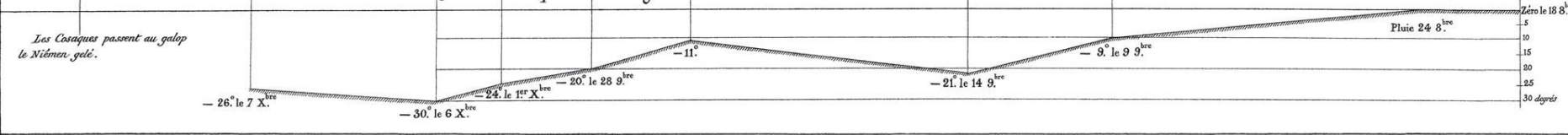
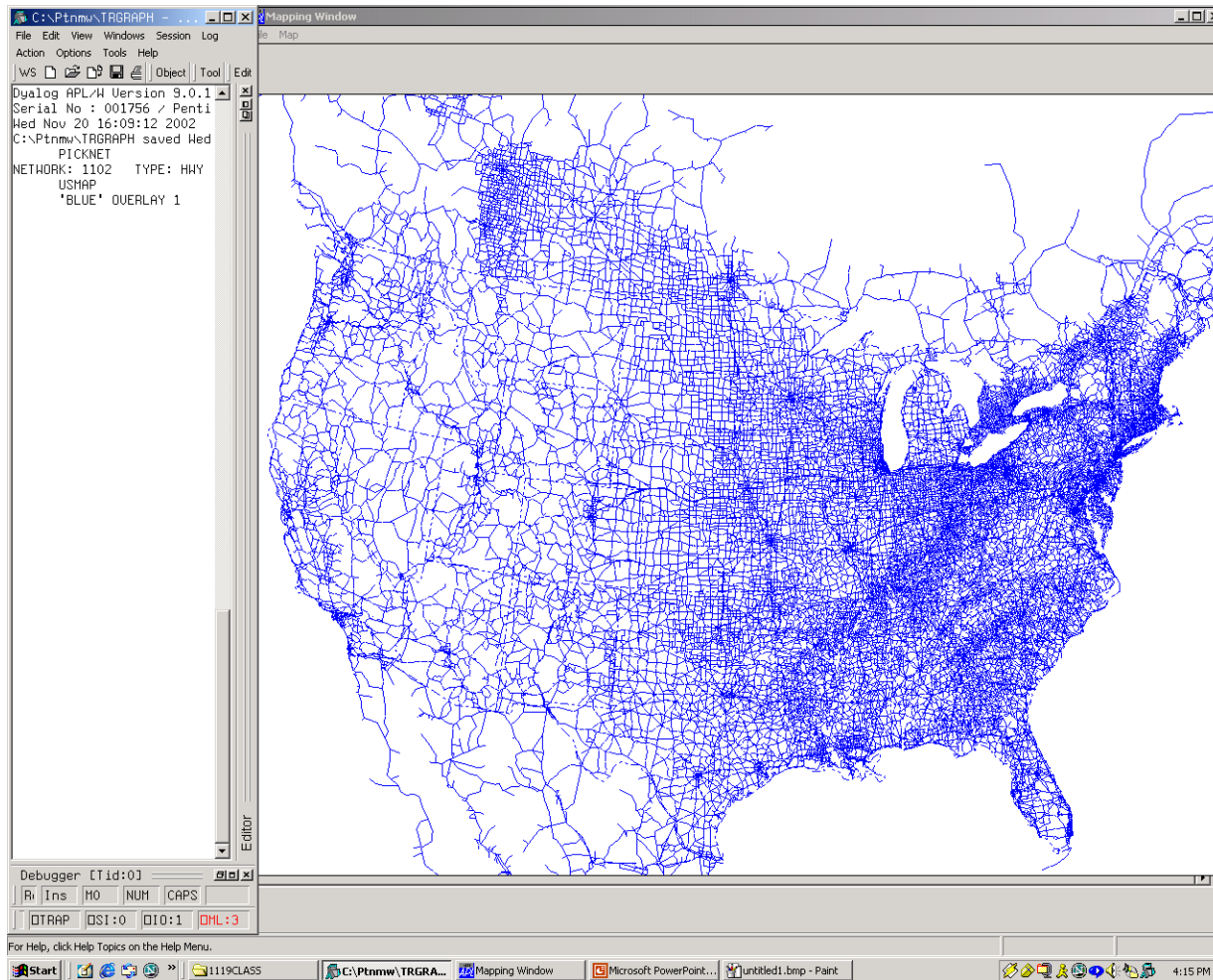


TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.



Auag. par Regnier, 8. Par. 5<sup>de</sup> Marie 52 0<sup>de</sup> à Paris.

Imp. Lith. Regnier et Desre-des.



NationWideNetwork: [Links](#), [Nodes](#), [Readme](#)  
[NationwideSynthesizedPersonTrips](#)

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File Edit View Windows Session Log  
 Action Options Tools Help

WS [Icons] Object Tool Edit

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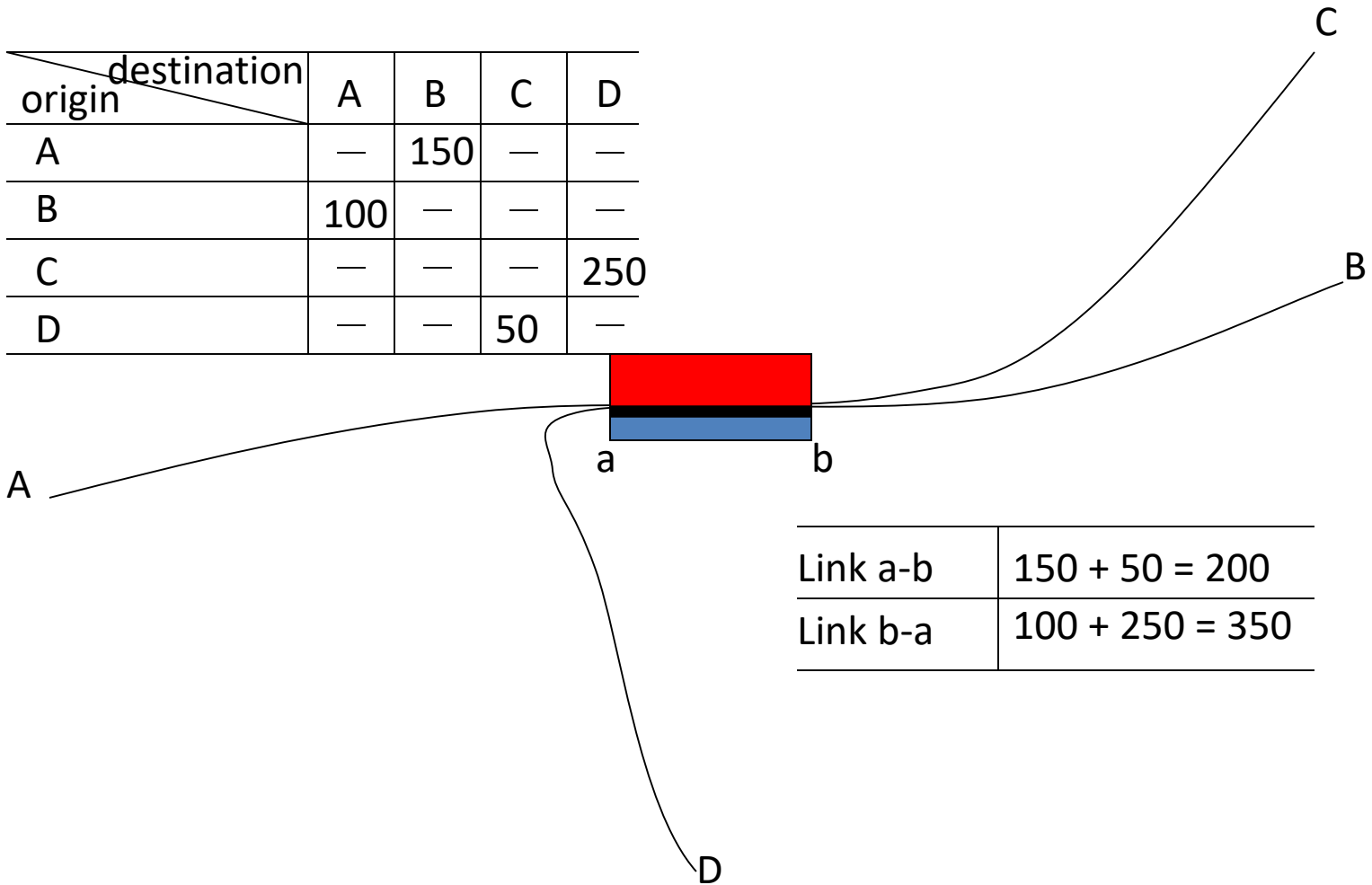
OTRAP OSI:3 OIO:1 OHL:3

Slide 13 of 18 Default Design

Start 1119CLASS C:\Ptnmw\TRGRAPH - ... Mapping Window Microsoft PowerPoint - [O... 4:26 PM

# Visual Display of Traffic Volume

origin \ destination	A	B	C	D
A	—	150	—	—
B	100	—	—	—
C	—	—	—	250
D	—	—	50	—



Link a-b	$150 + 50 = 200$
Link b-a	$100 + 250 = 350$

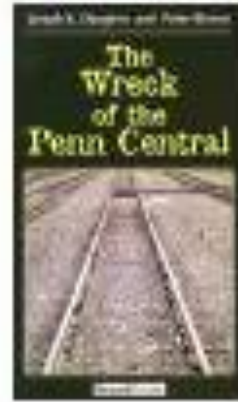
# Flow Map Examples

Simply Files:

	CMD1		CMD2	
Link #	Vol A->B	Vol B->A	Vol A->B	Vol B->A
236.0	324.5	56.7	5,634.2	734.6
243.0	546.4	902.1	1,456.0	45.6

# Corporate Upheavals

- Merger of Pennsylvania RR and NY Central RR Feb 1, 1968
- Survived for only one year, bankrupt in 1969
- by 1975:
  - 7 bankrupt RRs in NE, (PC, Reading, LV, New Haven, Boston & Main, Central of NJ, Grand Trunk)
- In summer of 1975, geocoded 1<sup>st</sup> digital map database of the Northeast RRs as part of a Congressional Study on “The Final System Plan”
  - “... More downside risk than upside potential...”
  - “... cost \$7B not \$1B...”
  - “...no other reasonable alternative than to create ConRail...”
- Spent the next 25 years rationalizing the freight RRs system (unwinding the system from potential government ownership)
  - Privatization and eventual private sale of Conrail



# To help the Freight RR Industry

- We built PTNM/GIS
  - Princeton Transportation Network Model & Graphical Information System

## Tektronix 4013 Monochrome Graphics Terminal to IBM 370 Mainframe





# To help the Freight RR Industry

- We built PTNM/GIS
  - Princeton Transportation Network Model & Graphical Information System
- We realized that a major competitor to RRs were trucks
  - So we built a digital map data base of the North American highway system and extended it across the world.

## Tektronix 4015 Dual headed Mono Graphics Terminal to IBM 4300 Mainframe



# Tektronix 4025 Color Graphics Terminal to IBM 4300 Mainframe



# To help the Freight RR Industry

- We built PTNM/GIS
  - Princeton Transportation Network Model & Graphical Information System
- We realized that a major competitor to RRs were trucks
  - So we built a digital map data base of the North American highway system and extended it across the world.
- Motor carrier deregulation required/deserved a rating system that was based on actual routes & real miles not government tariff routes & imaginary “HouseHoldMoversGuide” miles
  - so PC\*Miler was born

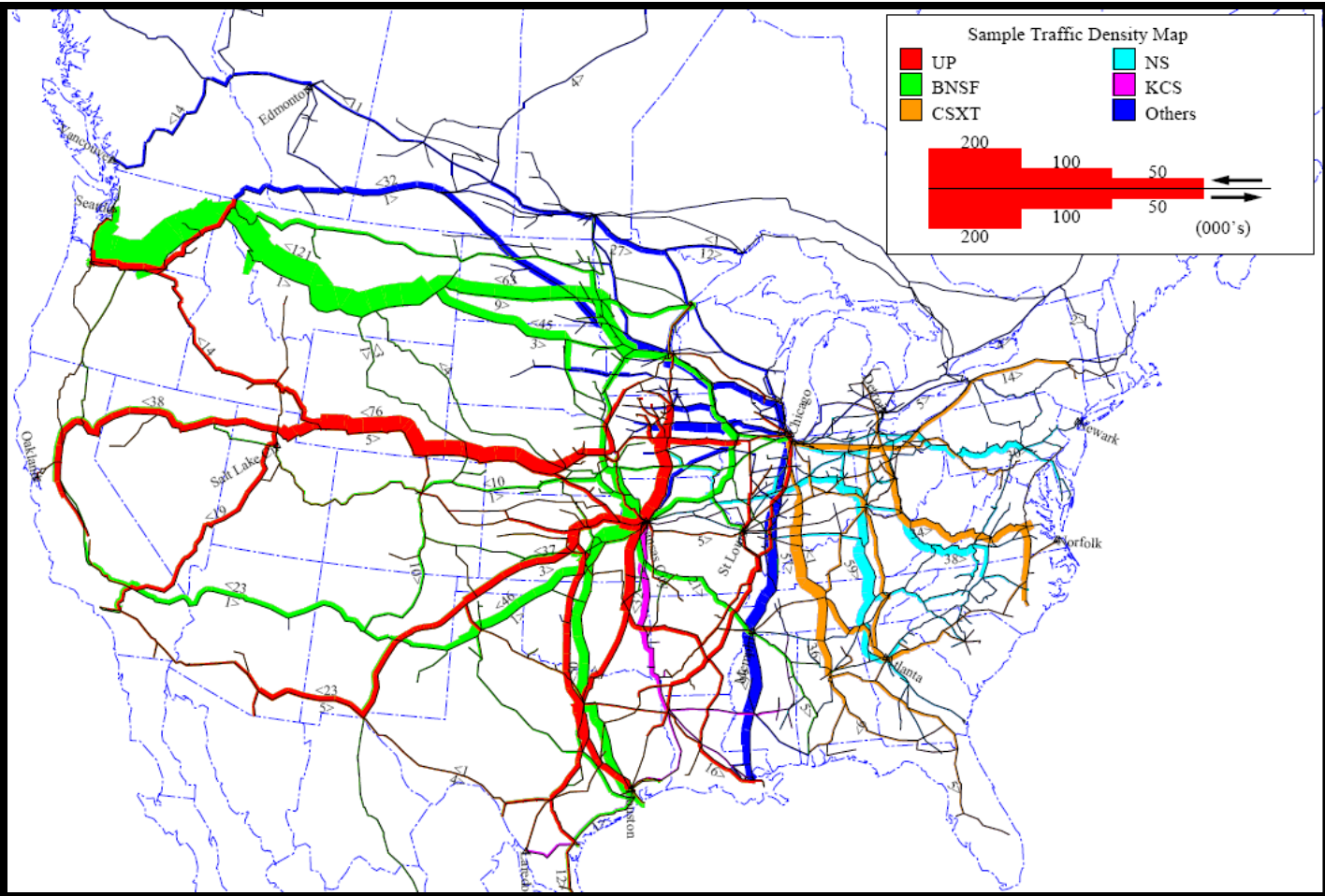
## IBM PC-AT w 19" Tektronix Color Monitor





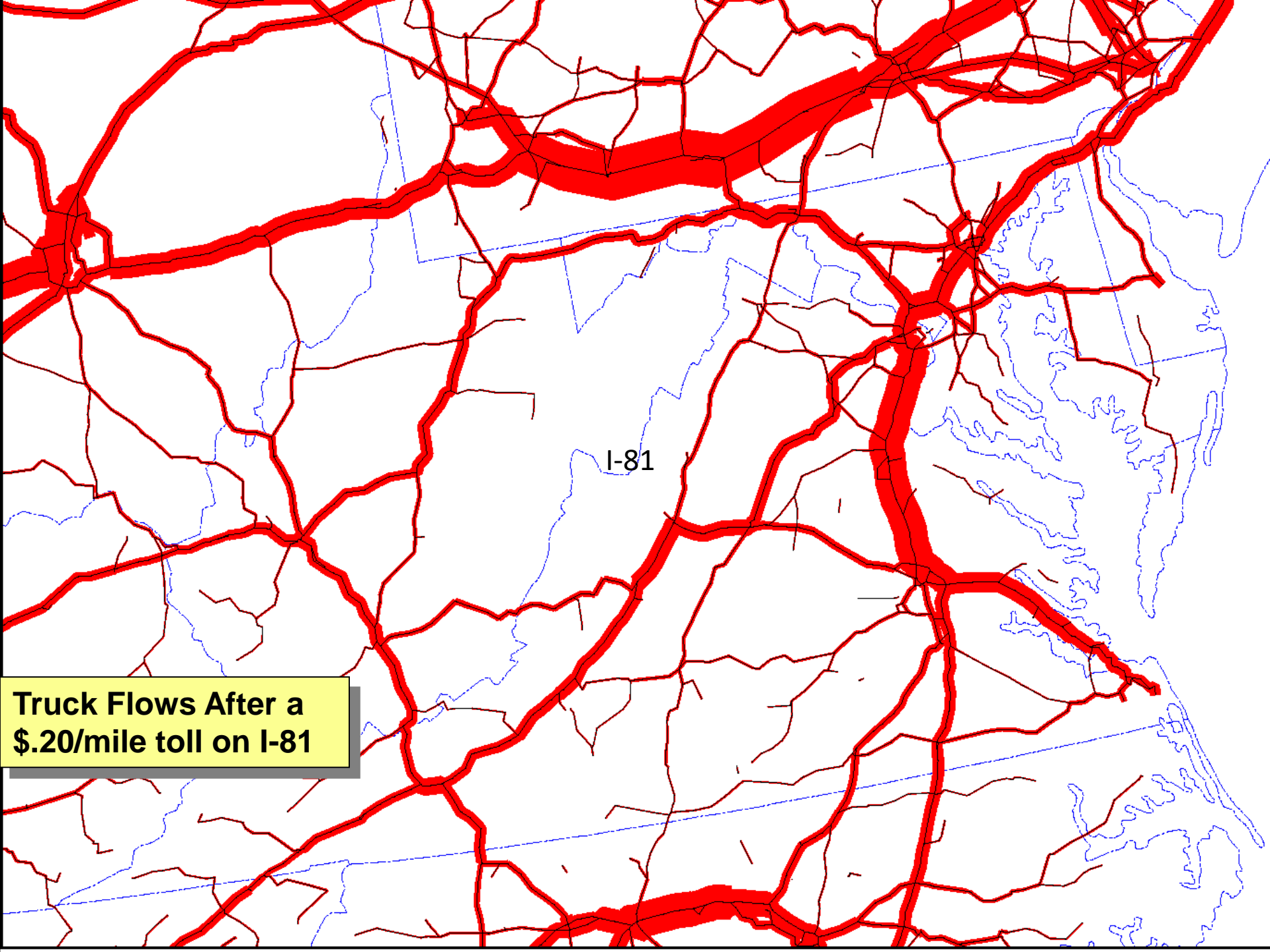
# As Computer Power & Memory Grew

- About 15 years ago we started looking at Door-to-Door routing
  - Launched RoadTrips Door-to-Door in 1997
- Added GPS
  - launched Laptop version of CoPilot in Aug 1998
- Ported CoPilot to Casio's Cassiopeia
  - launched 1<sup>st</sup> PDA version of turn-by-turn navigation in 2000
- Ported CoPilot to Msft Mobile
  - launched 1<sup>st</sup> Copilot|Live focuses of communications in 2003
- Ported CoPilot to iPhone and Android
  - in the process of launching CoPilot on those platforms
- **Our Future view continues to be committed to limiting the exposure and capturing the value of a dynamic transportation environment we call:**









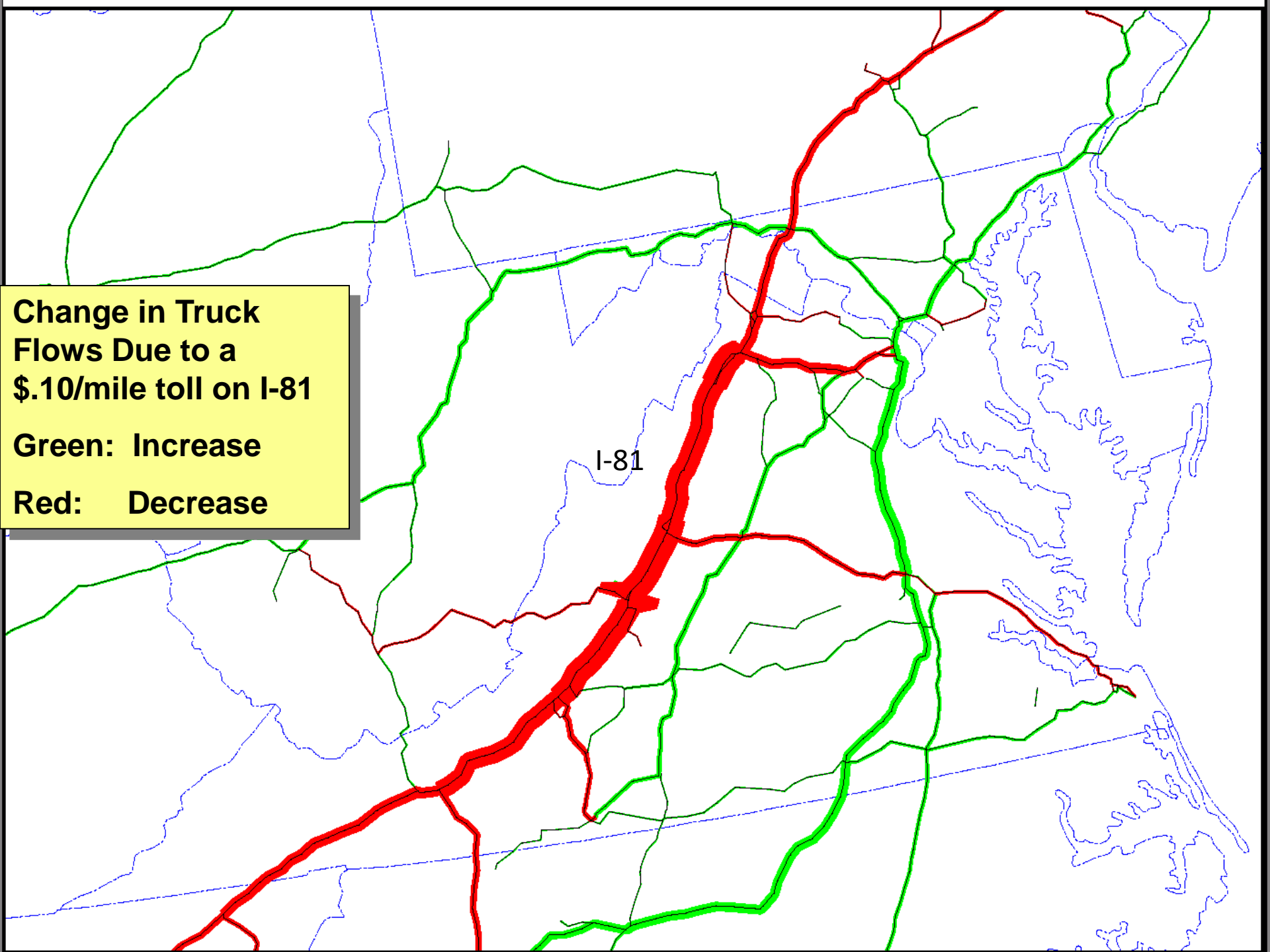
I-81

**Truck Flows After a  
\$.20/mile toll on I-81**

**Change in Truck  
Flows Due to a  
\$.10/mile toll on I-81**

**Green: Increase**

**Red: Decrease**



**Change in Truck  
Flows Due to a  
\$.20/mile toll on I-81**

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