

# VMT Estimates -- Better or Worse? Minnesota's Experience

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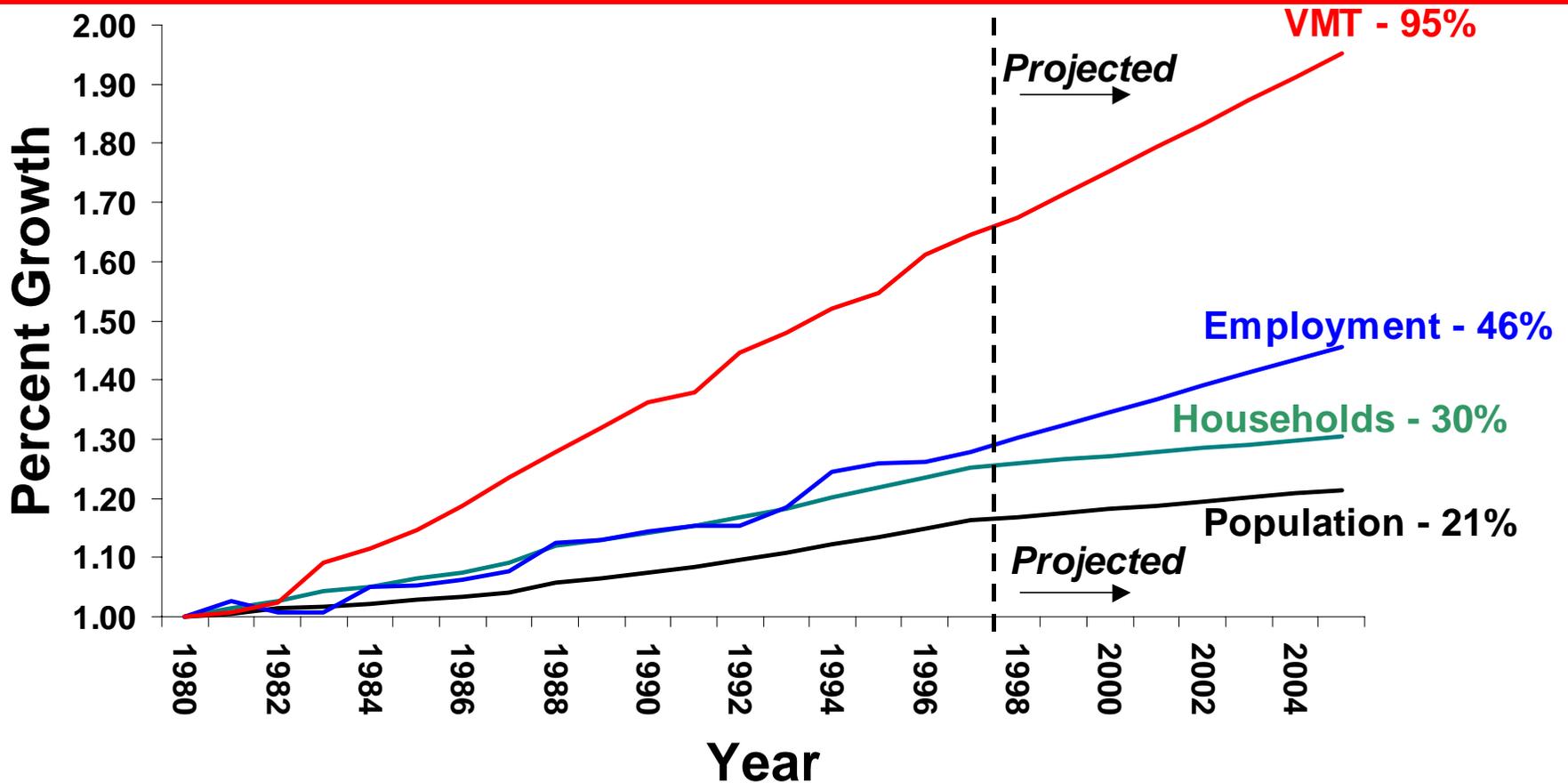
NATMEC

Madison, Wisconsin

August 2000

# Minnesota Trends - 1980 to 2005

(Indexed to 1980 - 1980 = 1)



# Uses for VMT

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- **Federal Funding and Reporting**
- **Systems Studies**
  - Performance monitoring
  - Planning and priority setting
  - Management system analysis
- **Project Studies**
  - Project development and design
  - Environmental analysis & mitigation
- **Corridor Studies**

# VMT Uses Continued

- Determining targeted funds for Minnesota's decentralized Statewide Transportation Improvement Program (STIP) investment process.

MEASURE		FACTOR	WEIGHT
System Size 40%		Bridge Area	10%
		Lane Miles	25%
		Buses	5%
Usage 60%	Present	VMT	25%
		HCVMT	5%
	Future	Future Population	30%

# VMT Uses Continued

- **County state-aid funds apportioned on:**
  - Auto registration = 10 percent
  - Mileage = 30 percent
  - **Money needs = 50 percent**
  - Equalization factor = 10 percent
- **City state-aid funds apportioned on:**
  - Population = 50 percent
  - **Money needs = 50 percent**

(Money needs represent estimated costs to achieve design standards. Standards in turn are correlated to VMT)

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- .... **Given all that is riding on VMT estimates, are they getting better or worse?**

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- **More importantly..... How can we judge their accuracy?**

# Mn/DOT's Traffic Monitoring Program

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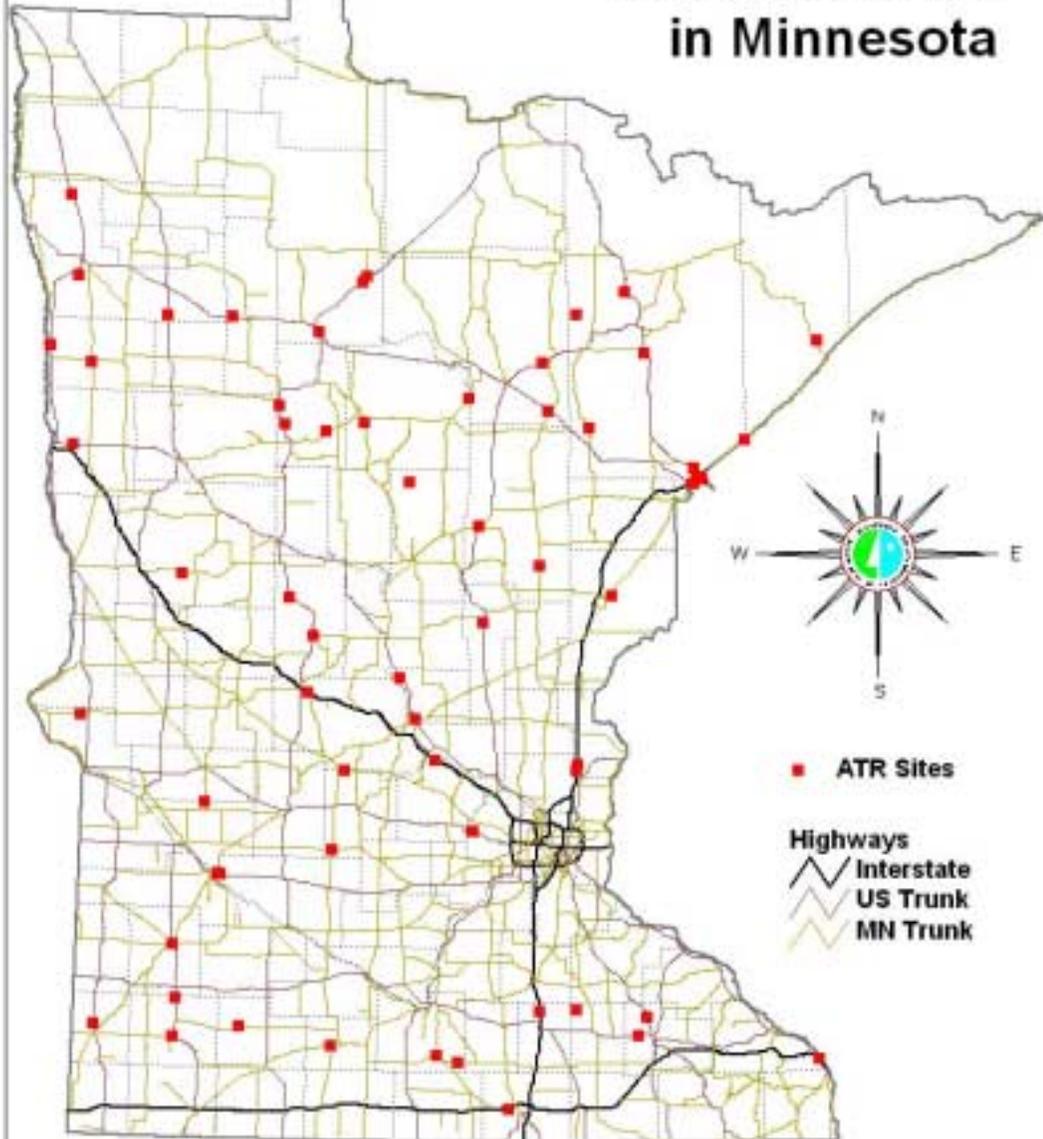
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- **Traffic Volumes**
- **Vehicle Classifications**
- **Vehicle Loads - Weight**
- **Vehicle Speeds**

# Mn/DOT's Traffic Monitoring Program

- **140 permanent traffic data collection sites (ATRs)**
  - Used to report and create seasonal and day of week adjustment factors.
- **8,000 short term (48-hour) annual counts**
  - Evaluated, correlated and mapped to 31,000 uniform traffic segments over 2 and 4 year cycles.
- **“Official” AADTs**
  - Produced for Trunk Highways on a 2- year cycle.
  - Produced for state aid routes generally on a 2-year cycle in the Minneapolis - St. Paul metro area and a 4-year cycle in Greater Minnesota.

# Automatic Traffic Recorder Sites in Minnesota



Map Prepared By: Office of Management Data Services  
Map Prepared on: August 16th, 2000

# Process Improvements

- **Uniform traffic segments**
  - ❖ 31,000 defined uniform traffic segments
  - ❖ Identified for all trunk highways and state aid routes.
  - ❖ Complete system coverage – no sample counts
  - ❖ Correlated by sequence number to spatial references used on the base map and in other Mn/DOT legacy systems.
- **Provide the basis for reporting “official” AADTs throughout the state.**

# Continuing Process Improvements

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- **Traffic Counts Data Base**

- ❖ Automatic system for entering short term count information.
- ❖ Provides historical trend data.
- ❖ Flags anomalies and recount needs.
- ❖ Provides for field personnel to add information on significant land use or other factors influencing travel on the segment.

# Continuing Process Improvements

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- **Increased use of permanent traffic detection equipment**
  - ❖ Selected routes
  - ❖ Install when pavement replacement projects are scheduled.
  - ❖ Provide “as needed” data
  - ❖ Provide vehicle length, axle count and speed data
  - ❖ Reduce field personnel demands

# Continuing Challenges

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- ✓ **ATR locations and cluster groupings**
- ✓ **Seasonal and weekend traffic variations**
- ✓ **Expanding data needs beyond VMT**
- ✓ **Traffic Counting adjustments**
- ✓ **Data access, availability and integration**



**... and by the way how do passenger trips  
on all the modes affect VMT growth?**

# Plan to Meet Challenges

## 1 **ATR Study**

- ◆ Too many or too few?
- ◆ Existing or different locations?
- ◆ New or different cluster groupings?

## 2 **Vehicle Classification Studies**

- ◆ Expanded local road involvement
- ◆ Identify opportunities to install data collection capability on trunk highways during construction

## 3 **Analysis of Traffic Count Program**

- ◆ Cycle timing and scheduling
- ◆ Metro and Greater Minnesota locations

# Plan Continued

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## 4 Information Technology Projects

- ◆ Continuing work on management systems integration.
- ◆ Scoping study to promote more shareable, accessible and standard applications.
- ◆ WEB project to share draft and final traffic maps with county and city partners.
- ◆ Electronic interface with ITS traffic data collection equipment in the Minneapolis-St. Paul metropolitan area.