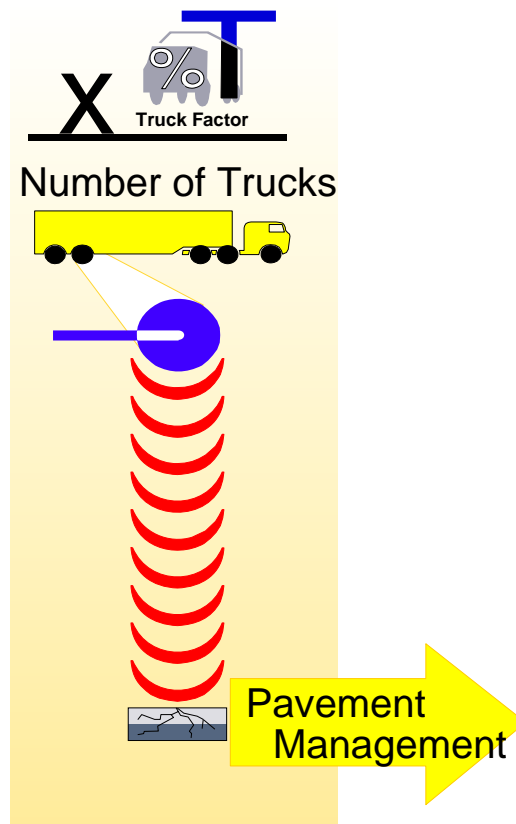




# TRAFFIC DATA FOR PAVEMENT MANAGEMENT

MAY 6-9, 2007



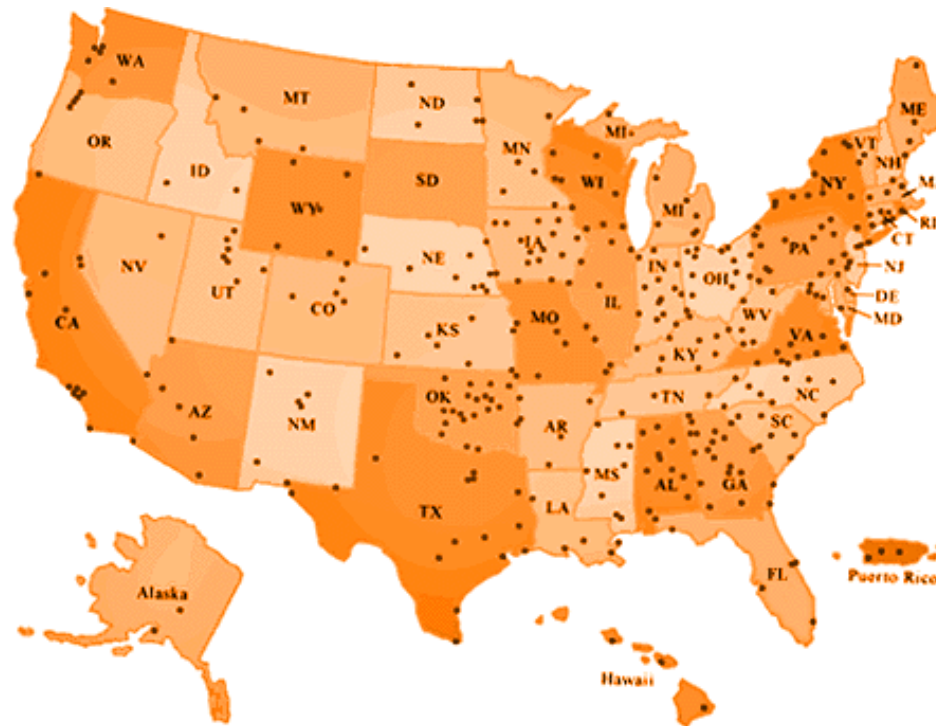


## Traffic Monitoring Regulations





# All States Have Traffic Program





## Users of the Traffic Data





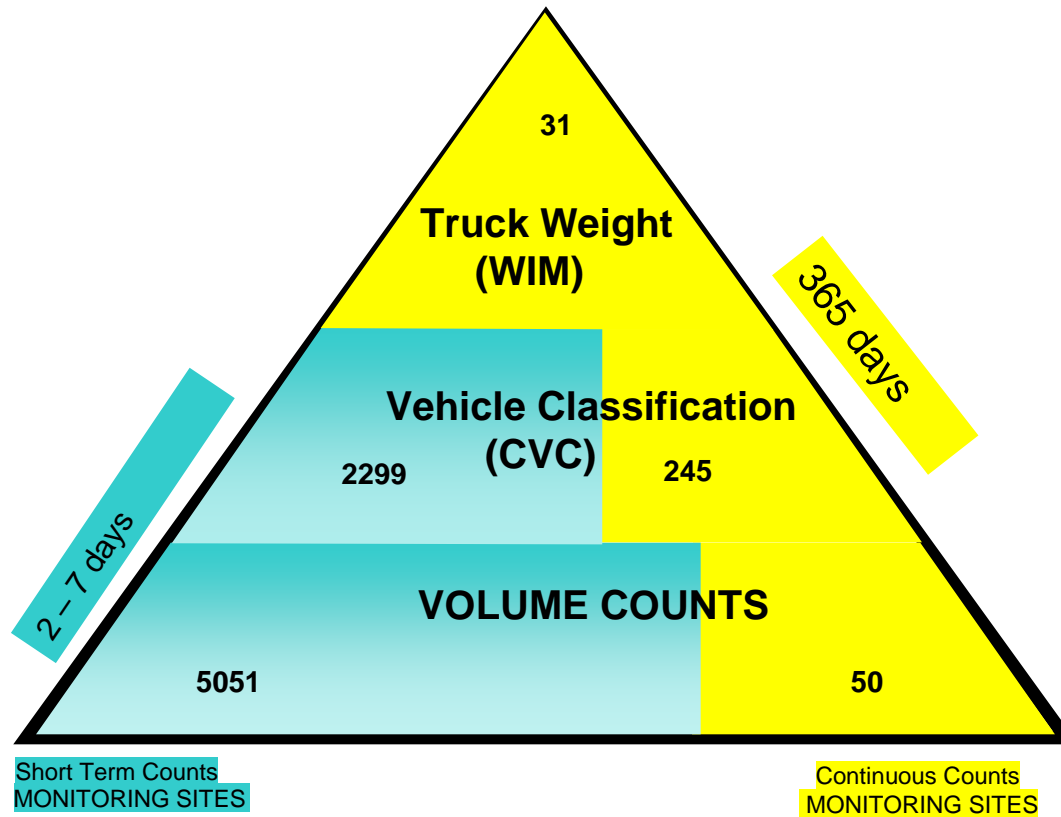
## Data Collection Framework

### TMG Program Main Components

- Permanent continuous counts
- Portable short term counts
- Special need counts

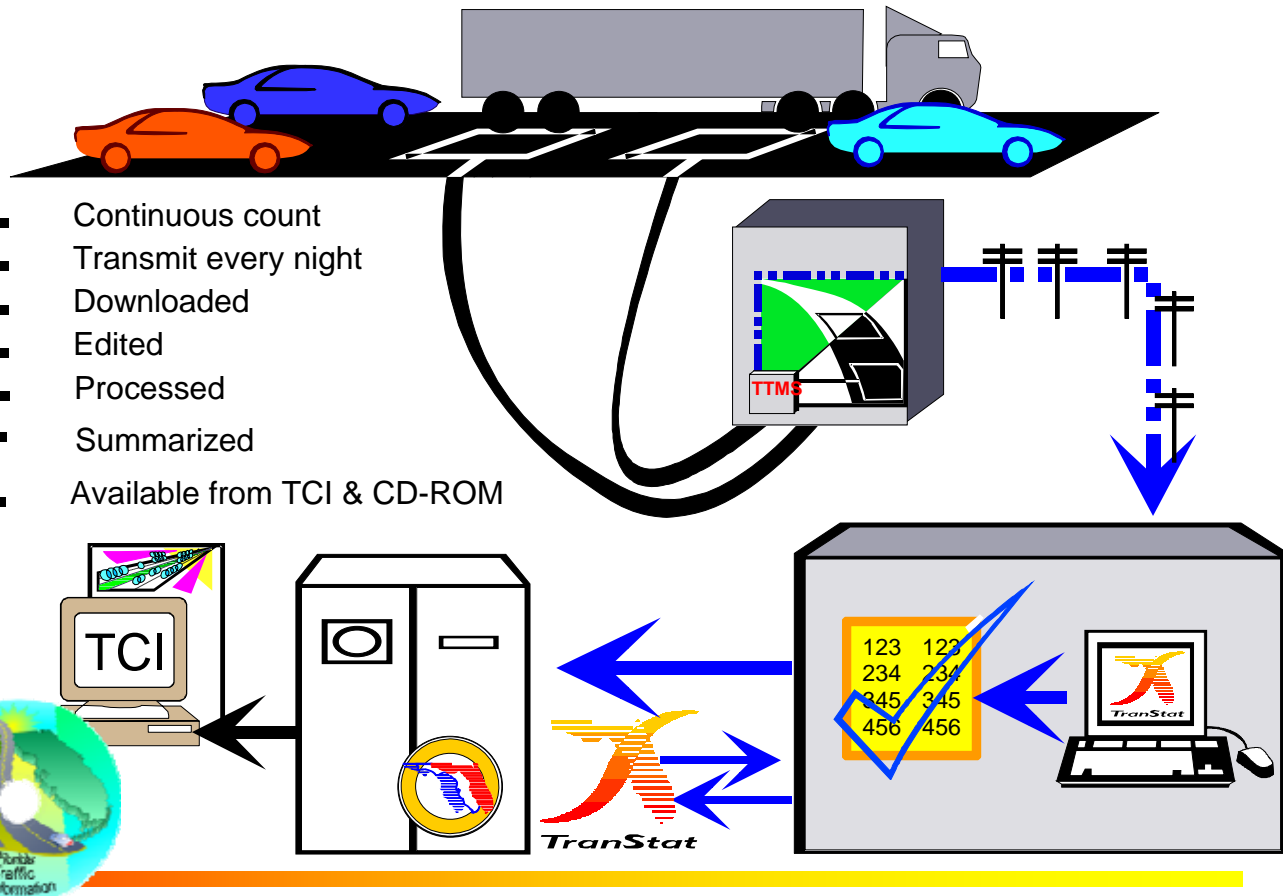


# Traffic Data Types





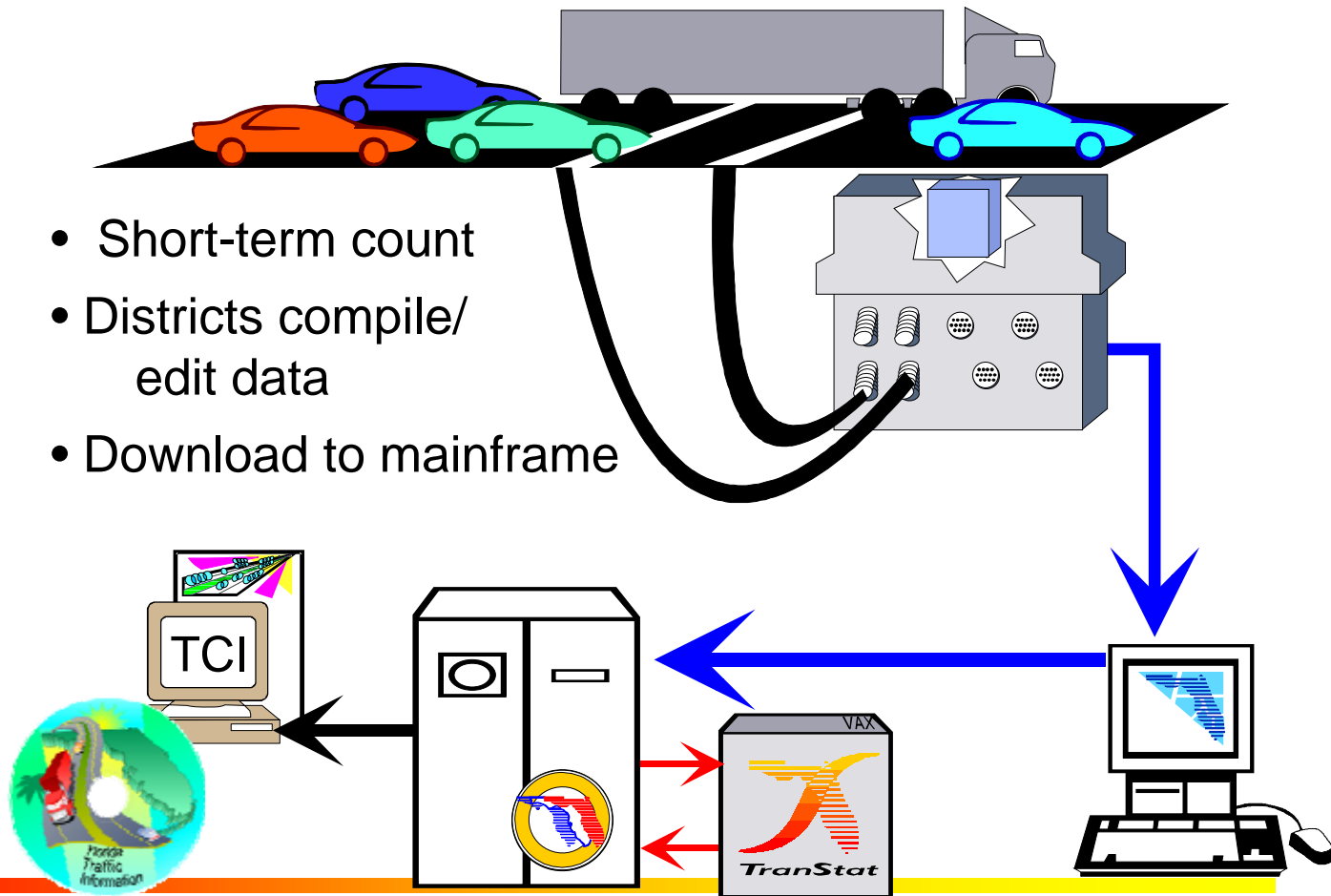
# Continuous Traffic Monitoring Site



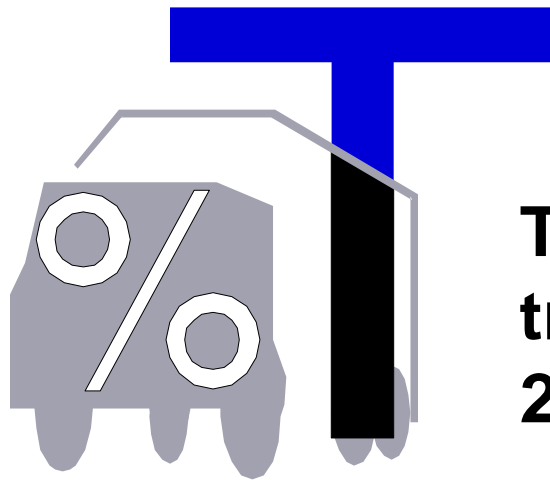


## Portable Short Term Counts

- Short-term count
- Districts compile/edit data
- Download to mainframe







**The percentage of  
truck traffic for  
24 hours (one day)**



# What is T?

		CLASS. GROUP
		1
		2
		3
Medium Trucks	$T_{24}$	4
	24T	5
	$24T+B =$	6
		7
	Heavy Trucks	8
		9
		10
	Large Trucks	11
		12
		13 Any 7 or more axle



# Annual Vehicle Classification Report

Annual Vehicle Classification Report  
Count Year 2000

County: 10 - HILLSBOROUGH

Site: Co Sec Sub: MilePost: AADT Description:  
0321 10290000 1.29 55,952 SR-582 (FOWLER AVE.) 1450 FEET EAST OF 15TH STREET

Func. Class: 14 - Urban Other Principal Arterial

Survey Type:	T	TELEMETRY	Duration(In Days):	329	Annual Average Daily Volume	Percentage
Class 01	MOTORCYCLES			6	0	
Class 02	CARS			50,245	90	
Class 03	PICK-UPS AND VANS			4,762	9	
Class 04	BUSES			134	0	
Class 05	2-AXLE, SINGLE UNIT TRUCKS			470	1	
Class 06	3-AXLE, SINGLE UNIT TRUCKS			84	0	
Class 07	4-AXLE, SINGLE UNIT TRUCKS			11	0	
Class 08	2-AXL TRCTR W/ 1 OR 2-AXL TRLR, 3-AXL TRCTR W/ 1-A			129	0	
Class 09	3-AXLE TRACTOR W/ 2-AXLE TRLR			112	0	
Class 10	3-AXLE TRACTOR W/ 3-AXLE TRLR			0	0	

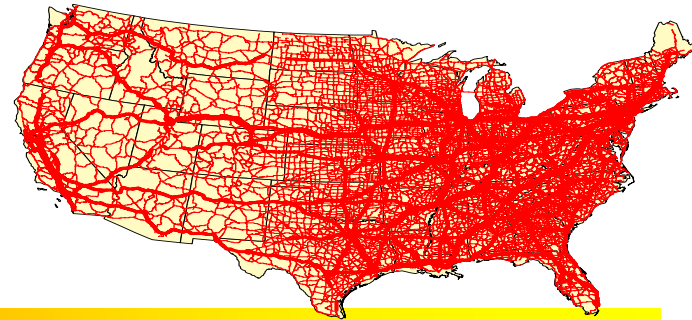


Summary Daily Statistics						
Daily			Design Hour			
24T&B	=	1.68	DHT	=	0.84	
24T	=	1.44				
24H	=	0.60	DH3	=	0.30	
24M	=	1.08	DH2	=	0.54	
					55,952	100



## Why Weigh?

- Pavement Design / Maintenance
- Bridge Design / Loading
- Enforcement
- Research
- Taxation & Administration
- Freight Movement

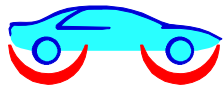




ESAL

# Equivalent Single Axle Load

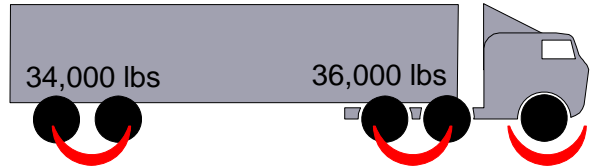
4,000 lbs



.0002   .0002

.0004

80,000 lbs



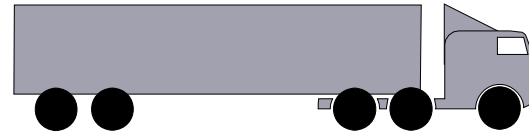
1.09   1.38   .09

2.56



# ESAL

## Equivalent Single Axle Load

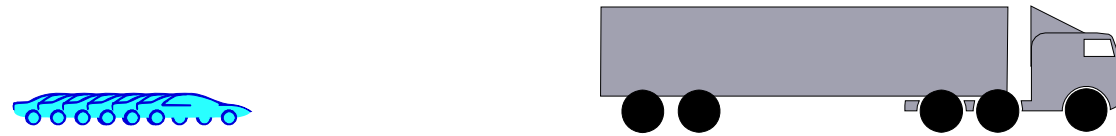


**20 cars = 1 truck = 80,000 lbs**

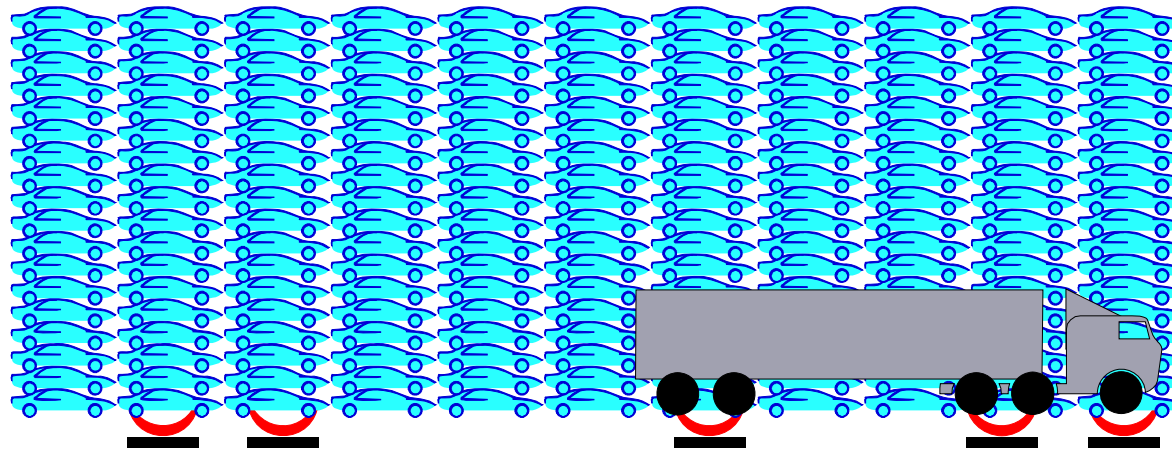


# ESAL

## Equivalent Single Axle Load



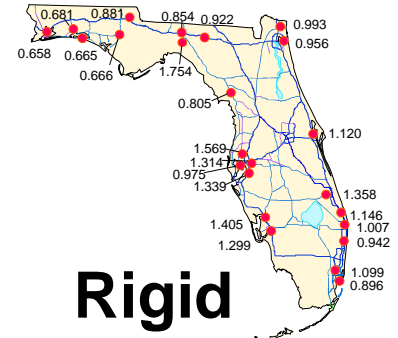
**20 cars = 1 truck = 80,000 lbs**



**6,400 cars = 1 truck = 2.56 ESALs**  
(FHWA estimates 9600:1)



# 1999 18KIP Equivalency Factors



## Freeways

	Flexible Pavement	Rigid Pavement
RURAL	1.05	1.60
URBAN	0.90	1.27

## Arterials & Collectors

RURAL	0.96	1.35
URBAN	0.89	1.22

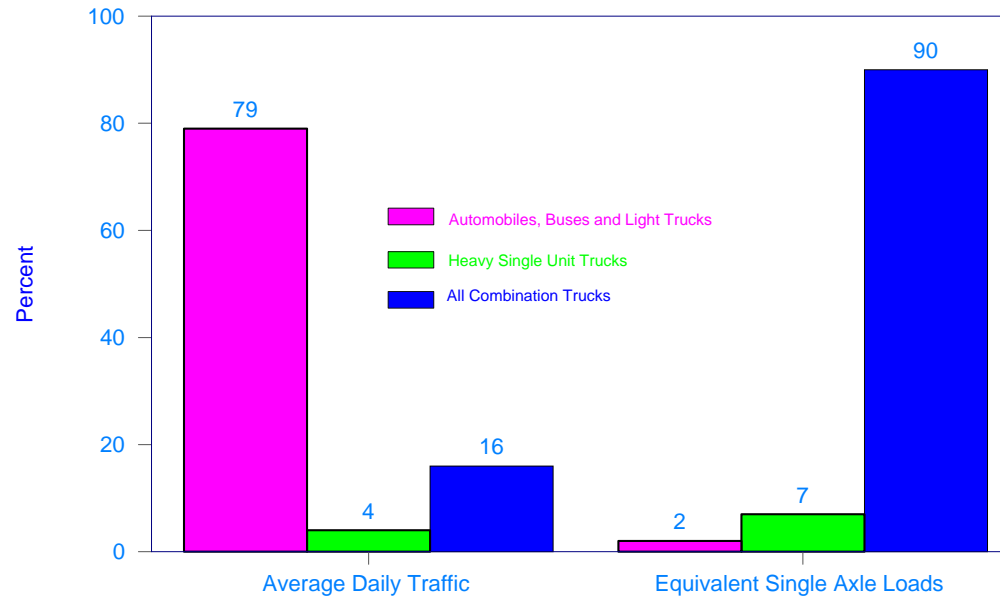




# Products

## Rural Interstate Travel by Vehicle Type

Distribution of Average Daily Traffic Volumes and Equivalent Axle Loads on the Rural Interstate System as a Percent of Total

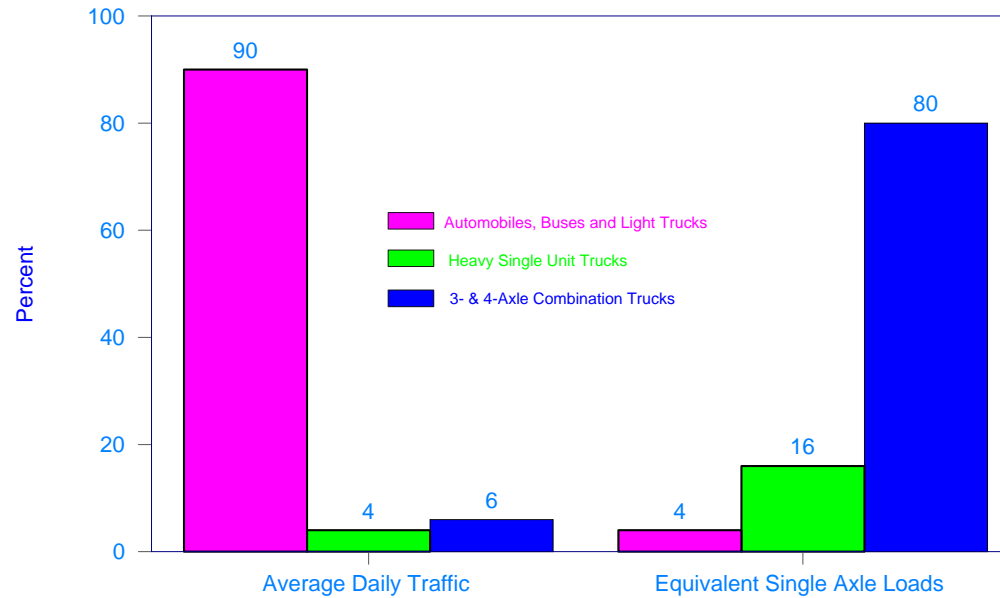


- <sup>1</sup>Equivalent axle loads provide a means of measuring vehicle wear on pavements by relating them to an 80 kilonewton (18,000 pound) single axle load.
- <sup>2</sup>All 2-axle, 4-tire trucks. Includes pickup trucks, panel trucks, vans and other vehicles (such as campers, motor homes, etc.)
- <sup>3</sup>All vehicles on a single frame have either 2 axles and 6 tires or 3 or more axles (including camping and recreational vehicles and motor homes.)



# Products

## Urban Interstate Travel by Vehicle Type Distribution of Average Daily Traffic Volumes and Equivalent Axle Loads on the Rural Interstate System as a Percent of Total



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<sup>3</sup>All vehicles on a single frame have either 2 axles and 6 tires or 3 or more axles (including camping and recreational vehicles and motor homes.)



## Importance of Pavement Management

- 8 million lane miles of pavement
- \$\$ per mile per 1" of asphalt



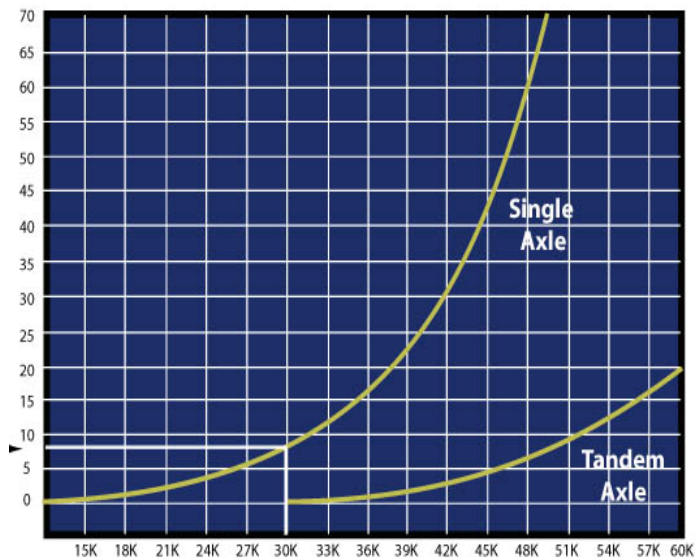
Asphalt



Concrete



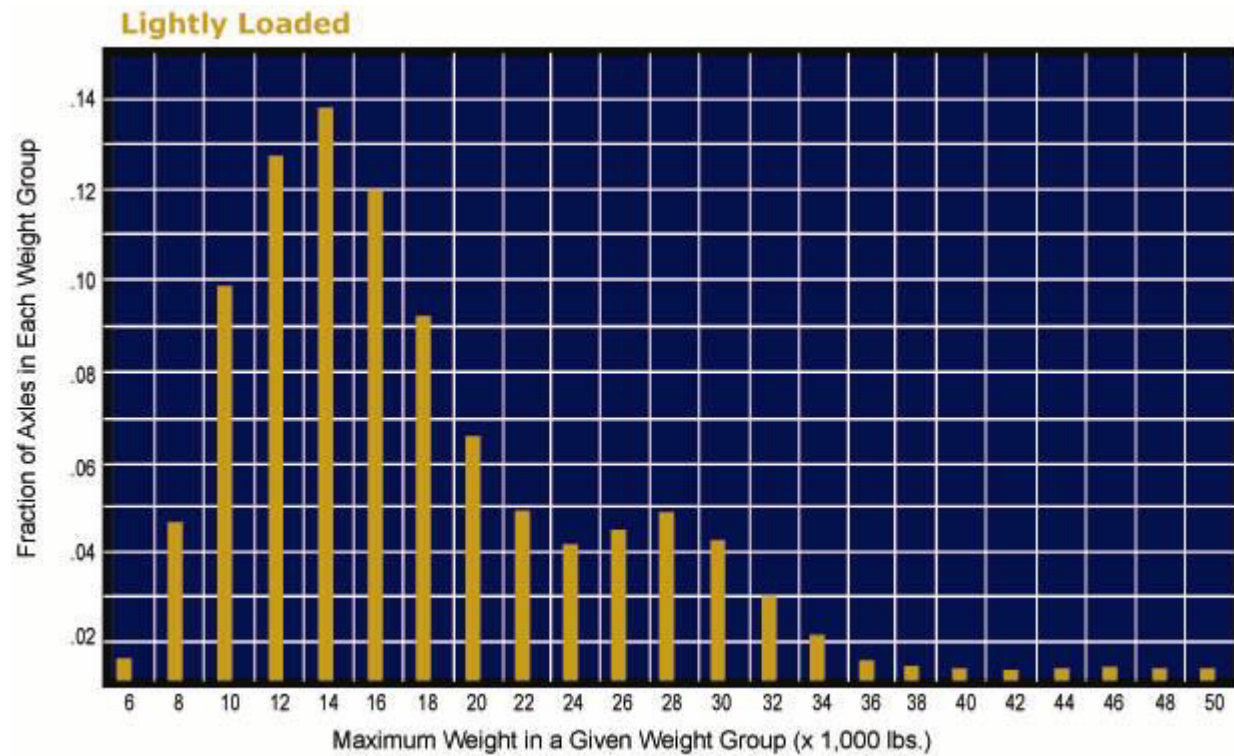
## Proposed Changes to Design Guide



From Today to Tomorrow

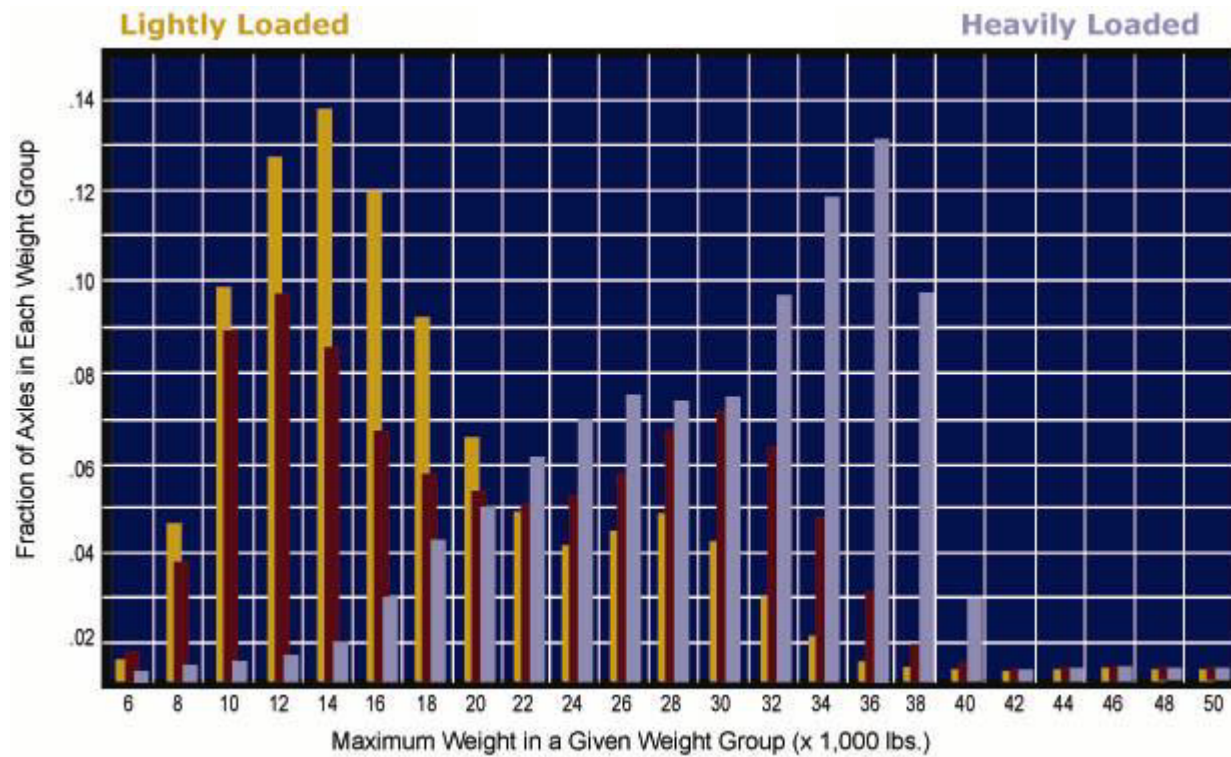


## Types of Load Spectra



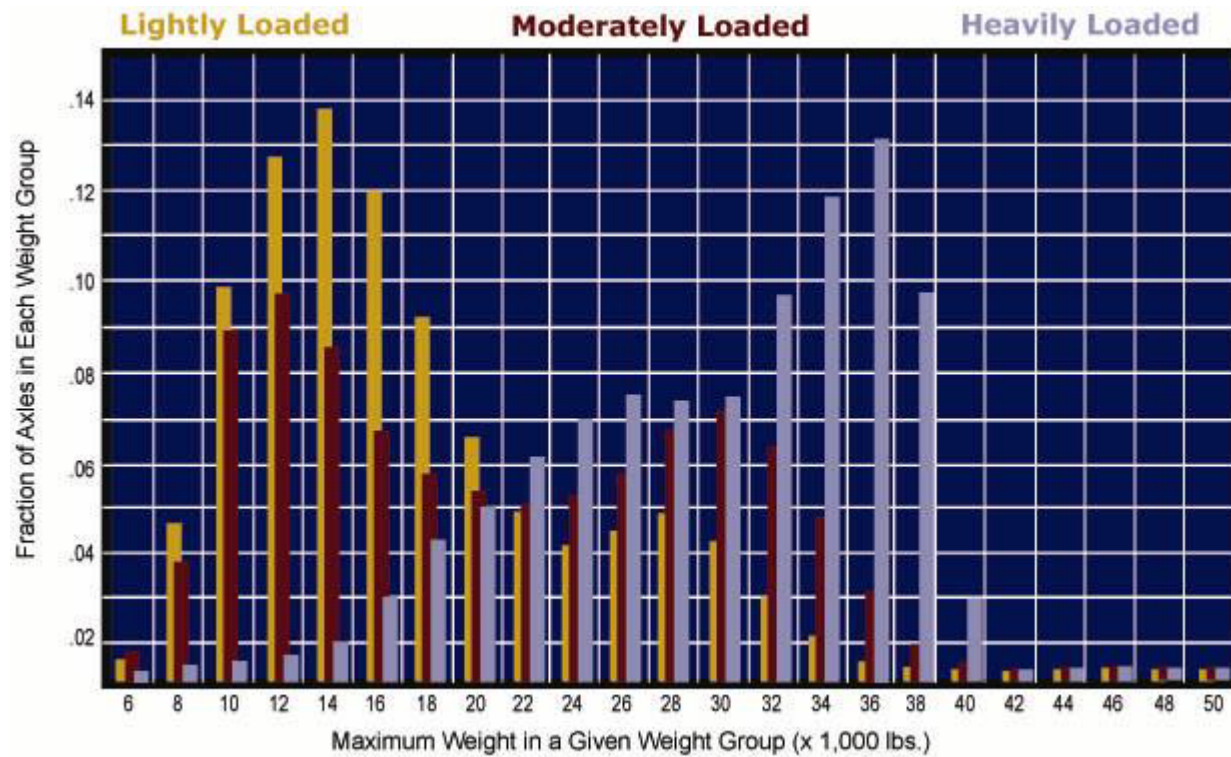


## Types of Load Spectra



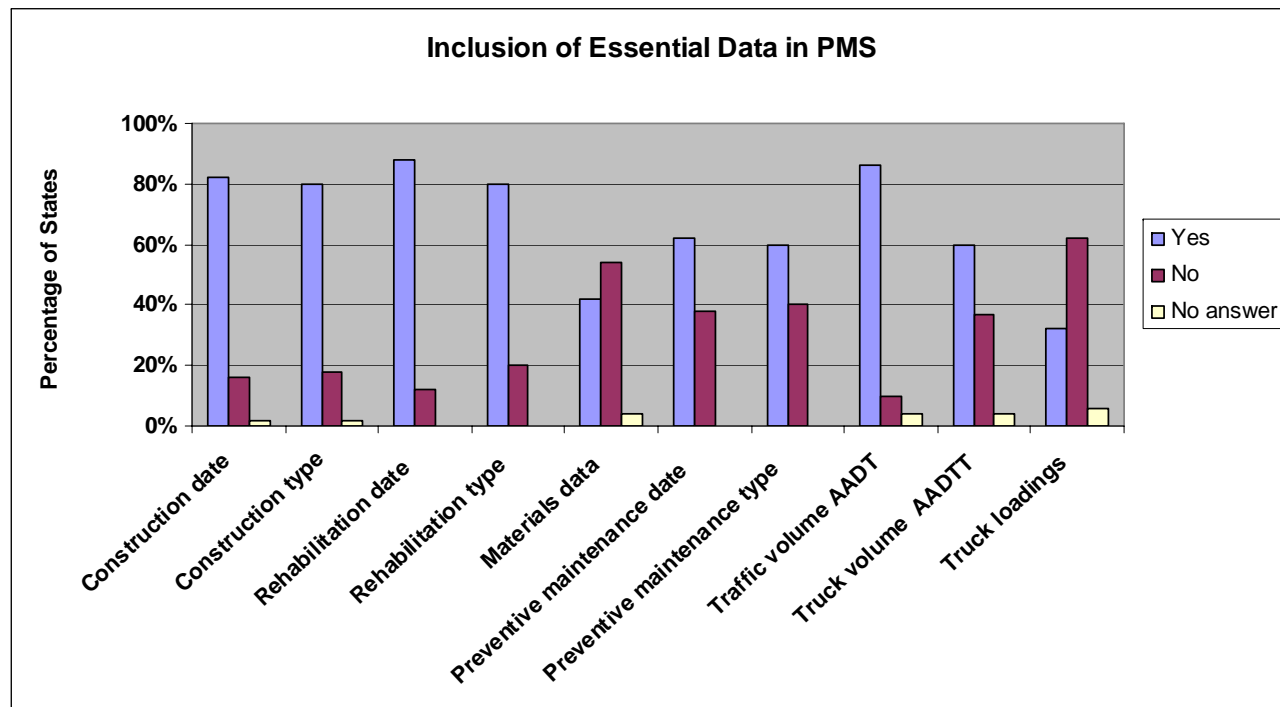


# Types of Load Spectra





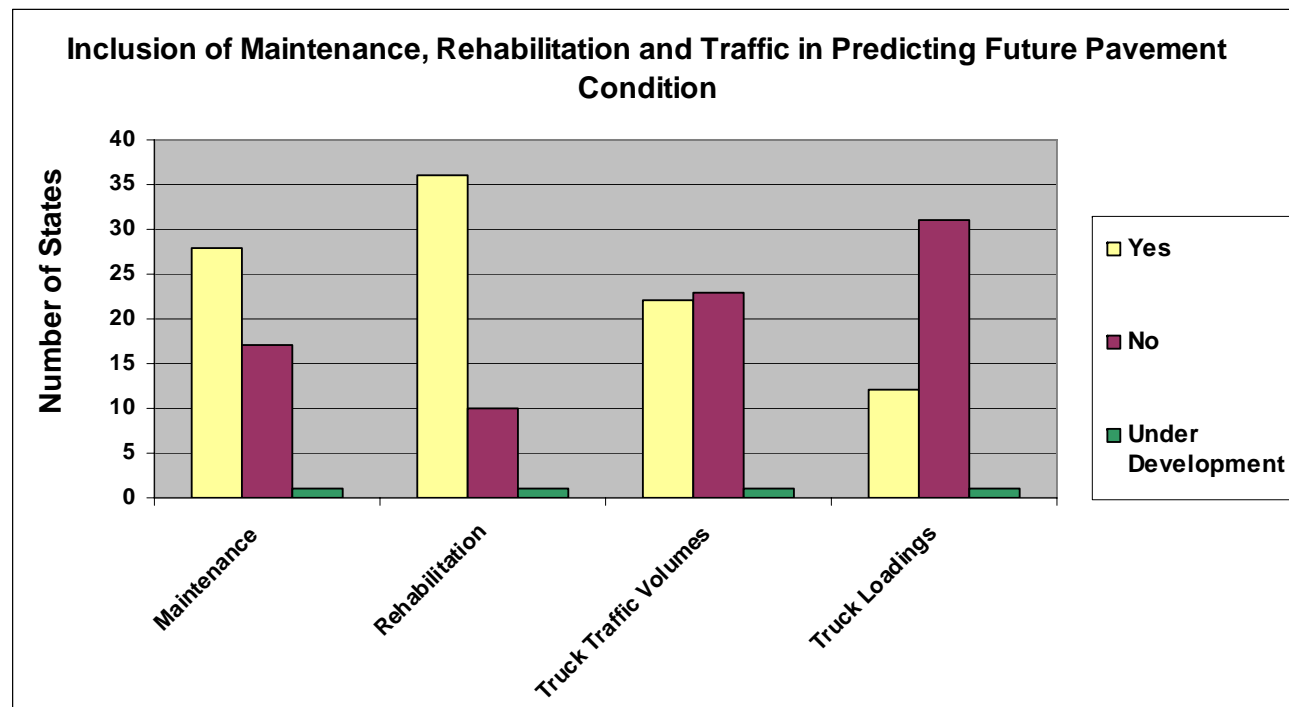
## Current Status, Dec 2006







## Current Status, Dec 2006





## What will it take to enhance PM?

- **Staff integration and communication**
  - Traffic
  - Pavement
  - Materials
  - Pavement Management
  - Construction





## What will it take to enhance PM?



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

### Memorandum

Subject: **ACTION:** Enhanced Vehicle Classification Data Collection Date: February 17, 2005  
Original Signed by  
From: Barna Juhasz In Reply Refer To: HPPI-30  
Director, Office of Highway Policy Information  
To: Division Administrators

State and local agencies have traditionally monitored traffic volumes on a wide scale but truck movements much less so. However, the need to monitor commercial vehicle traffic and freight movements has increased substantially. States have approximately 5000 permanent traffic volume stations that need to be converted to permanent vehicle classification stations in order to improve commercial vehicle monitoring. Enhanced monitoring will result in significant benefits to the planning process, implementation of the new Pavement Design Guide, and improved data quality of the vehicle classification information reported for FHWA business uses.

In order to promote the expanded monitoring of commercial vehicle traffic and freight movements, it has been decided to permit State Planning and Research (SP&R) and Metropolitan Planning (PL) funds to be used by the States and metropolitan planning organizations without match for the purpose of purchasing and installing permanent automatic vehicle classification equipment in fiscal years 2005, 2006, 2007, and 2008. Any questions concerning this memorandum may be directed to Mr. Ralph Gillmann, HPPI-30, at (202) 366-5042.



## What will it take to enhance PM?

### **State Support Needed**

- **Resources Allocation**
  - **IT for data base mod's**
  - **Staff/consultants to implement traffic data collection program**
- **Approval of training requests**



# Enhancements to Traffic Monitoring Program



1.  
Information  
Sharing



## Enhancements to Traffic Monitoring Program



1.  
Information  
Sharing



2.  
Standardization  
of Reporting



## Enhancements to Traffic Monitoring Program



1.  
Information  
Sharing



2.  
Standardization  
of Reporting



3.  
Collaboration



## Key Themes to Take Away

- Traffic Data is Critical For Pavement Management, include it in PMS.
- Existing TMP & PMS need Enhancement
- FHWA and State Collaboration will be Needed
- Develop Continuous Improvement Plan





ANY QUESTIONS ???



