

Traffic Monitoring Objective, Approaches, and Funding Opportunities Under FAST Act

Tianjia Tang

Chief, Travel Monitoring and Surveys Division

Office of Highway Policy Information, FHWA

1200 New Jersey Avenue, SE

Washington, DC 20590

Tianjia.Tang@DOT.GOV

202-366-2236



Outline

- Traffic Monitoring Objective
- Traffic Monitoring Approaches
- Funding Opportunities

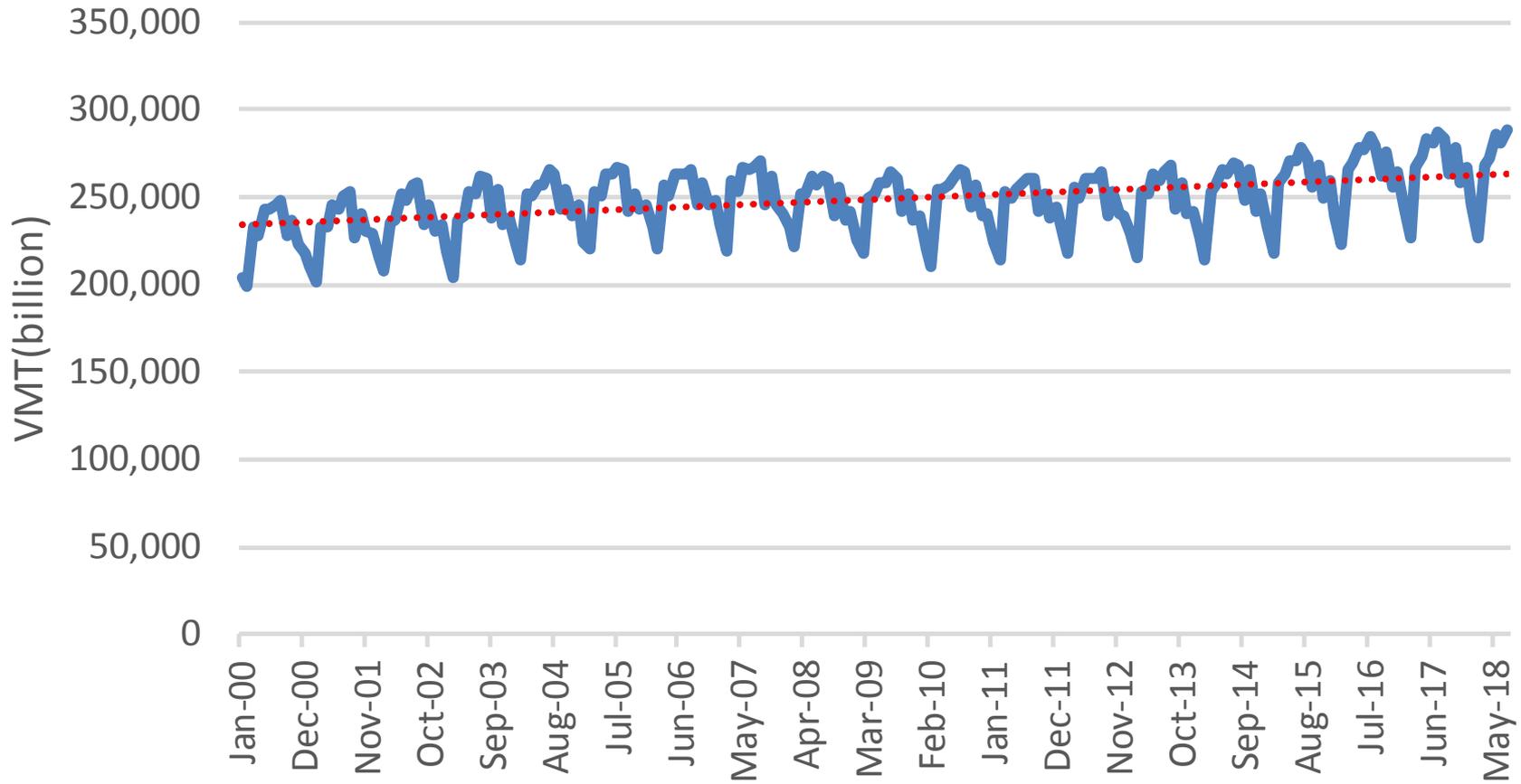


Traffic Monitoring Objective

Providing data to enable informed highway decision making



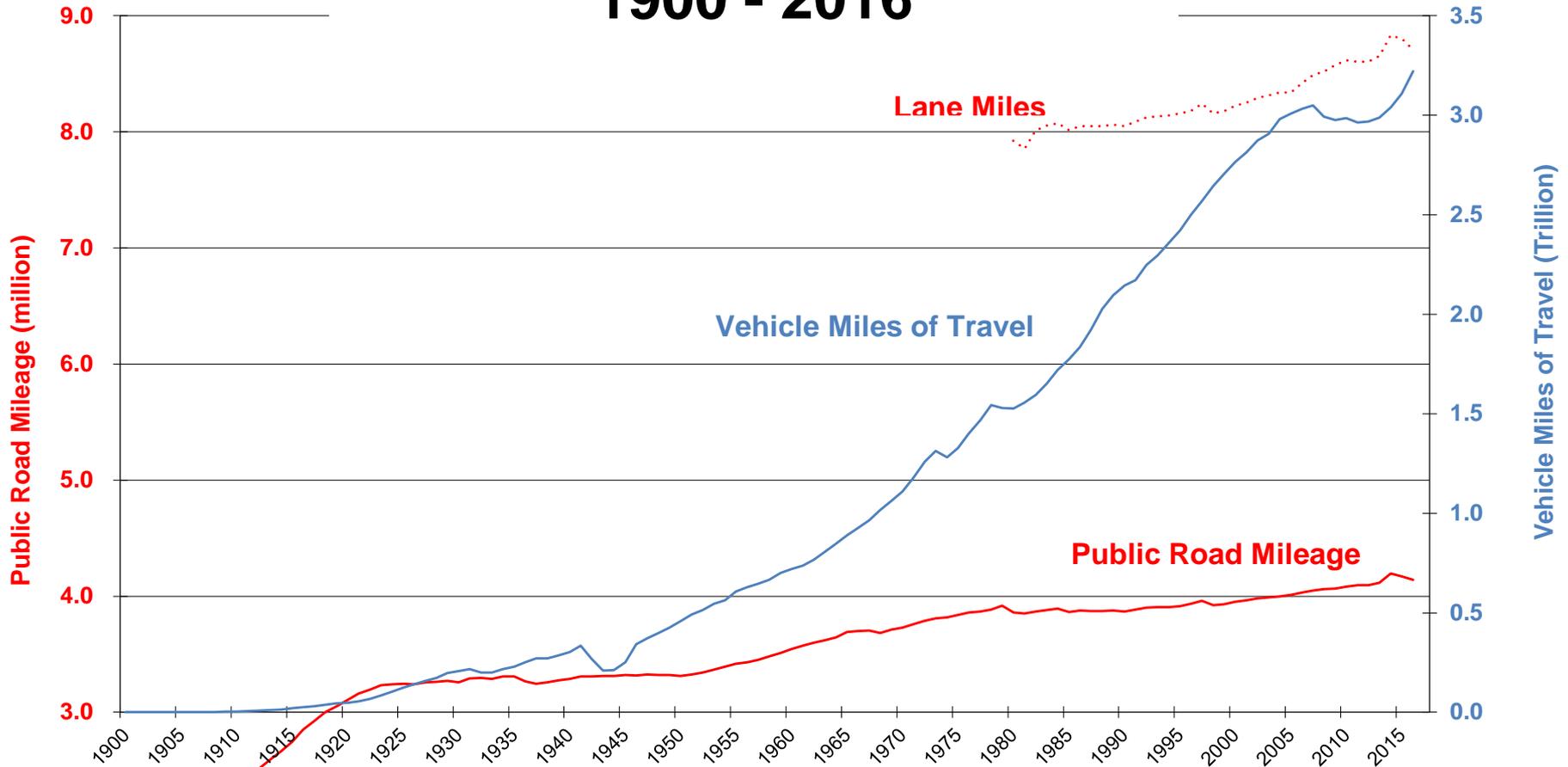
Monthly VMT



Data Source: FHWA TMAS



Public Road Mileage and VMT 1900 - 2016

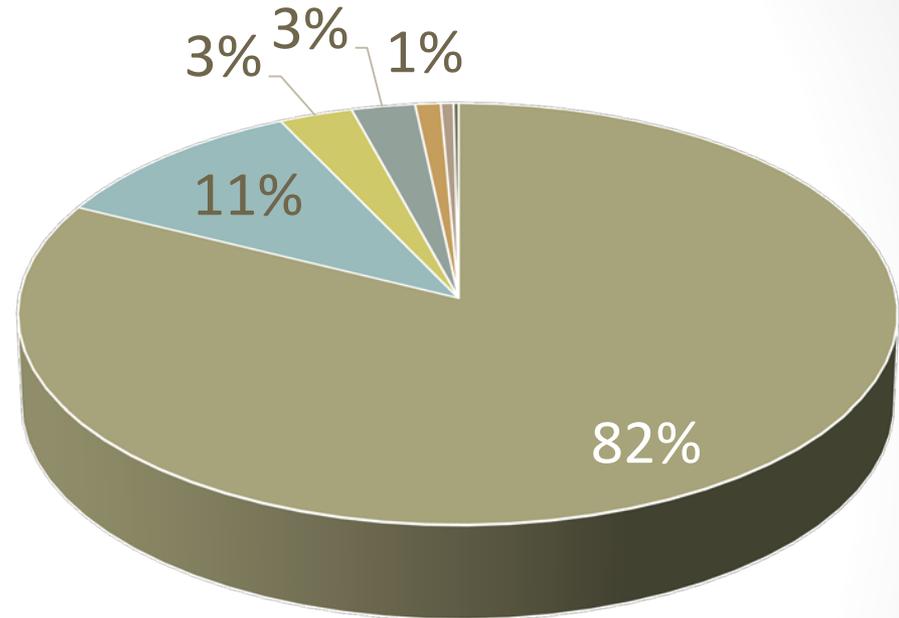
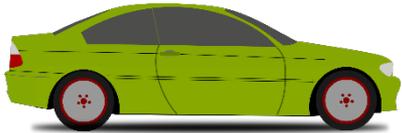


Data Source: FHWA HPMS



Modal Share

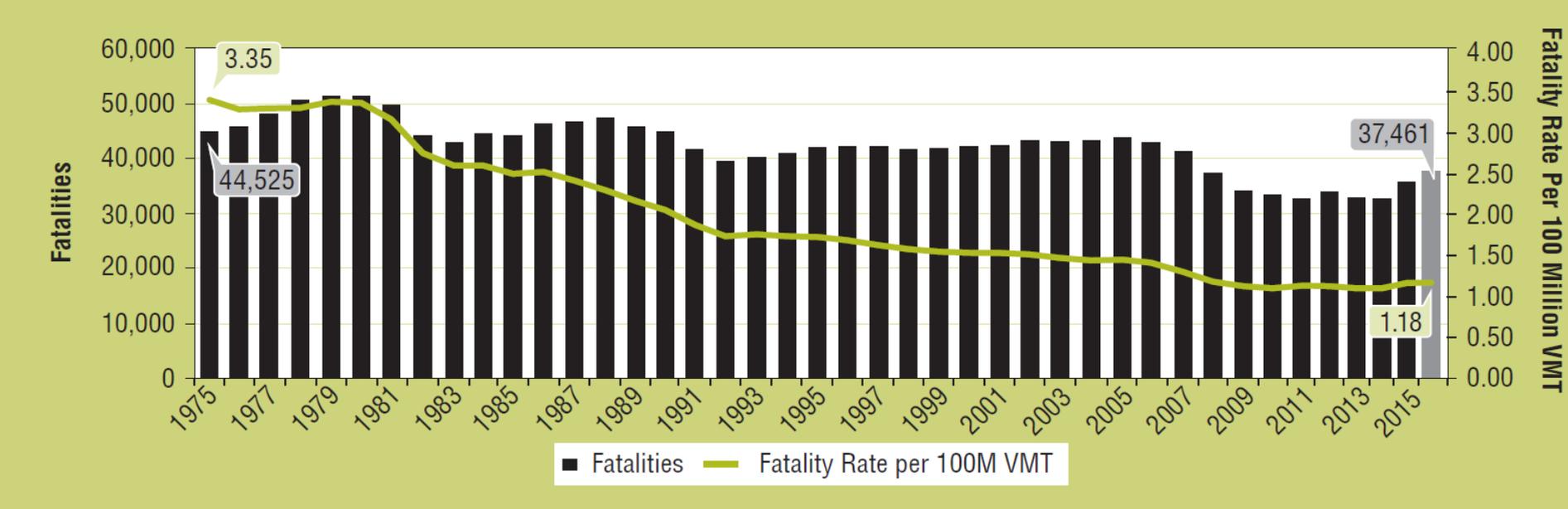
A Total Of Over 371 Billion Trips



- POV
- Walk
- Others
- Transit
- Bicycle
- Taxi / Limo (including Uber / Lyft)
- Rental car (including Zipcar / Car2Go)



Fatalities and Fatality Rate per 100 Million VMT, by Year, 1975–2016



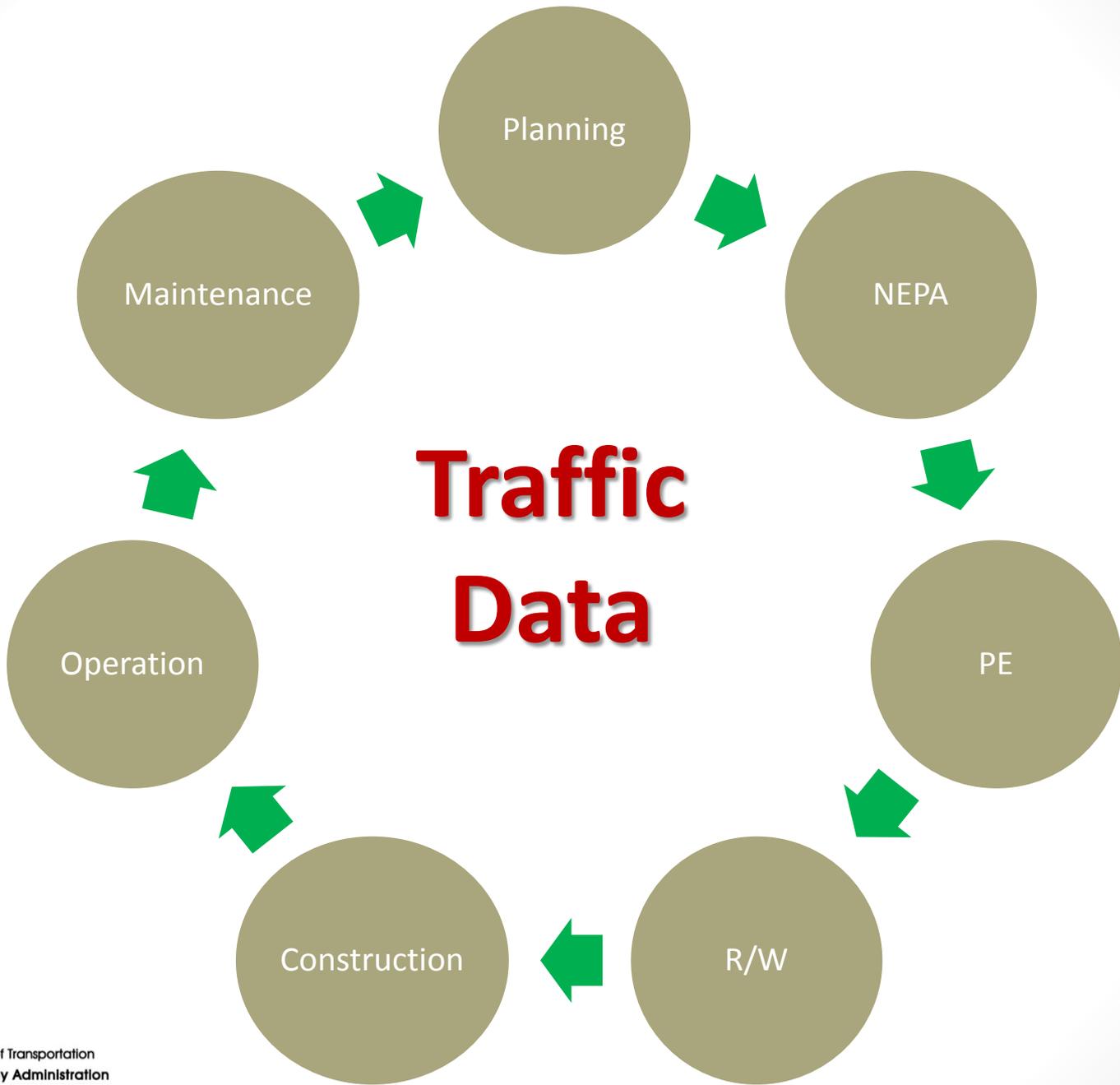
Sources: FARS 1975–2015 Final File, 2016 ARF; Vehicle Miles Traveled (VMT): FHWA.

Source: NHTSA –Traffic Safety Fact at <https://www.nhtsa.gov/press-releases/usdot-releases-2016-fatal-traffic-crash-data>

Vehicle Class	VMT Compound Annual Growth Rates					
	Low Economic Growth Outlook		Baseline Economic Growth Outlook		High Economic Growth Outlook	
	2016 - 2036 (20 Year)	2016 - 2046 (30 Year)	2016 - 2036 (20 Year)	2016 - 2046 (30 Year)	2016 - 2036 (20 Year)	2016 - 2046 (30 Year)
<i>Light-Duty Vehicles</i>	0.90%	0.70%	1.10%	0.80%	1.30%	1.00%
<i>Single-Unit Trucks</i>	1.40%	1.50%	1.80%	1.90%	2.30%	2.40%
<i>Combina-tion Trucks</i>	1.20%	1.20%	1.60%	1.60%	1.90%	1.90%
<i>Total</i>	0.90%	0.80%	1.20%	0.90%	1.30%	1.10%

Source: FHWA VMT Forecasting
https://www.fhwa.dot.gov/policyinformation/tables/vmt/vmt_forecast_sum.cfm





Traffic Data



Federal Surface Transportation Legislation

- ISTEA
- TEA21
- SAFETEA-LU
- MAP21
- FAST Act



Traffic Monitoring Tasks and Approaches



Traffic Monitoring Tasks

Vehicle Dimension

- Volume
- Class
- Weight
- Speed
- Incidents

Location Dimension

- Where – point, line, and area coverages

Time Dimension

- When – time of day, day of week, week of month, and month of year

Environmental Dimension

- Weather – precipitation, visibility, and temperature



Traffic Monitoring Approaches

- Traditional methods
- Probe vehicle based
- Passive data based



Funding



Funding under FAST Act

1. National Highway Performance Program (NHPP)
2. Surface Transportation Block Grant Program (STBG)
3. Highway Safety Improvement Program (HSIP)
4. Congestion Mitigation and Air Quality Improvement Program (CMAQ)
5. Metropolitan Planning
6. The new National Highway Freight Program (NHFP)

The FAST Act authorizes a total amount:

\$39.7 billion – FY 2016

\$40.5 billion – FY 2017

\$41.4 billion – FY 2018

\$42.4 billion – FY 2019

\$43.4 billion - FY 2020



**Estimated
Highway
Apportionments
under the
FAST Act
For years 2016
to 2020**

State	FY 2016 to 2020 Total \$	State	FY 2016 to 2020 Total \$
Alabama	4,018,226,717	Montana	2,173,059,267
Alaska	2,655,669,218	Nebraska	1,530,862,199
Arizona	3,875,131,431	Nevada	1,923,200,513
Arkansas	2,742,138,017	New Hampshire	875,080,579
California	19,439,192,847	New Jersey	5,288,169,142
Colorado	2,832,141,526	New Mexico	1,944,957,936
Connecticut	2,660,154,553	New York	8,890,175,084
Delaware	895,923,120	North Carolina	5,523,811,313
Dist. of Col.	845,080,197	North Dakota	1,314,906,501
Florida	10,034,763,124	Ohio	7,099,315,462
Georgia	6,838,647,044	Oklahoma	3,358,996,681
Hawaii	895,792,024	Oregon	2,647,261,653
Idaho	1,514,865,644	Pennsylvania	8,689,921,394
Illinois	7,530,044,230	Rhode Island	1,158,296,855
Indiana	5,046,616,382	South Carolina	3,546,551,655
Iowa	2,602,929,364	South Dakota	1,493,626,511
Kansas	2,001,465,839	Tennessee	4,475,572,506
Kentucky	3,519,035,684	Texas	18,281,894,933
Louisiana	3,717,243,324	Utah	1,839,102,113
Maine	977,671,541	Vermont	1,074,916,129
Maryland	3,182,761,580	Virginia	5,389,644,819
Massachusetts	3,216,704,034	Washington	3,590,454,371
Michigan	5,576,378,610	West Virginia	2,314,579,394
Minnesota	3,453,638,357	Wisconsin	3,985,112,707
Mississippi	2,561,545,214	Wyoming	1,356,834,636
Missouri	5,013,959,108		



Fast Act – State Planning and Research (SP&R) Fund

2% of the 5 out of 6 apportioned program (1,2,3,4, and 6) funding are set asides as SP&R

1. National Highway Performance Program (NHPP)
2. Surface Transportation Block Grant Program (STBG)
3. Highway Safety Improvement Program (HSIP)
4. Congestion Mitigation and Air Quality Improvement Program (CMAQ)
5. Metropolitan Planning
6. The new National Highway Freight Program (NHFP)



Fast Act – State Planning and Research (SP&R) Fund

Surface Transportation Block Grant Program

Fiscal year	2016	2017	2018	2019	2020
Estimated funding (Billion	\$11.16	\$11.42	\$11.67	\$11.88	\$12.14
SP&R Setaside (Million \$)	\$223	\$228	\$233	\$238	\$243



STATE	TOTAL \$	2% STATE PLANNING \$	STATE	TOTAL	2% STATE PLANNING
	STBG PROGRAM	& RESEARCH		STBG PROGRAM	& RESEARCH
	APPORTIONMENT	(SPR) SET-ASIDE		APPORTIONMENT	(SPR) SET-ASIDE
ALABAMA	226,973,529	4,539,471	MONTANA	120,164,502	2,403,290
ALASKA	144,109,567	2,882,191	NEBRASKA	84,600,285	1,692,006
ARIZONA	206,141,917	4,122,838	NEVADA	100,207,991	2,004,160
ARKANSAS	153,678,083	3,073,562	NEW HAMPSHIRE	46,876,078	937,522
CALIFORNIA	968,734,987	19,374,700	NEW JERSEY	270,326,326	5,406,527
COLORADO	149,093,345	2,981,867	NEW MEXICO	108,108,919	2,162,178
CONNECTICUT	138,821,703	2,776,434	NEW YORK	450,919,385	9,018,388
DELAWARE	47,635,116	952,702	NORTH CAROLINA	301,185,169	6,023,703
DIST. OF COL.	45,167,381	903,348	NORTH DAKOTA	72,102,133	1,442,043
FLORIDA	567,481,613	11,349,632	OHIO	377,202,327	7,544,047
GEORGIA	371,403,032	7,428,061	OKLAHOMA	189,084,248	3,781,685
HAWAII	48,017,282	960,346	OREGON	145,612,671	2,912,253
IDAHO	82,953,567	1,659,071	PENNSYLVANIA	465,767,004	9,315,340
ILLINOIS	396,246,088	7,924,922	RHODE ISLAND	63,068,001	1,261,360
INDIANA	275,103,943	5,502,079	SOUTH CAROLINA	199,322,336	3,986,447
IOWA	145,891,426	2,917,829	SOUTH DAKOTA	81,849,354	1,636,987
KANSAS	111,817,776	2,236,356	TENNESSEE	245,312,251	4,906,245
KENTUCKY	197,738,862	3,954,777	TEXAS	996,796,988	19,935,940
LOUISIANA	209,299,570	4,185,991	UTAH	101,117,247	2,022,345
MAINE	52,719,493	1,054,390	VERMONT	57,790,023	1,155,800
MARYLAND	165,471,633	3,309,433	VIRGINIA	291,902,264	5,838,045
MASSACHUSETTS	164,003,973	3,280,079	WASHINGTON	193,704,178	3,874,084
MICHIGAN	296,282,588	5,925,652	WEST VIRGINIA	128,498,198	2,569,964
MINNESOTA	187,991,277	3,759,826	WISCONSIN	219,977,204	4,399,544
MISSISSIPPI	143,612,916	2,872,258	WYOMING	74,571,250	1,491,425
MISSOURI	280,107,769	5,602,155			



Team Up and Get to Know Other People, Units, Divisions, and Offices

1. National Highway Performance Program (NHPP)
2. Surface Transportation Block Grant Program (STBG)
3. Highway Safety Improvement Program (HSIP)
4. Congestion Mitigation and Air Quality Improvement Program (CMAQ)
5. Metropolitan Planning
6. The new National Highway Freight Program (NHFP)



Summary

- Traffic Monitoring Objective
- Traffic Monitoring Approaches
- Funding Opportunities



Thank You!

FHWA 2018 Highway Information Seminar, Arlington, VA

