

# FHWA FY 2019 BUDGET

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**FEDERAL HIGHWAY ADMINISTRATION (FHWA)  
FISCAL YEAR 2019 BUDGET**

**BUDGET SUMMARY OVERVIEW**

**FHWA requests \$46.0 billion for fiscal year (FY) 2019.** This request, which reflects the fourth year of the Fixing America's Surface Transportation (FAST) Act, will enable FHWA to further streamline project delivery while investing in projects that improve roadway safety and mobility, repair aging bridges and highways, and promote the efficient movement of freight. Through programs authorized in the FAST Act, FHWA's request **supports the Secretary of Transportation's four key priorities: safety, infrastructure, innovation, and accountability.**

**Safety is FHWA's top priority.** In 2016, 37,461 people died in motor vehicle crashes on our nation's highways. FHWA's Highway Safety Improvement Program will provide \$2.60 billion in FY 2019 to safety projects across the nation. Through a data-driven and performance-based strategic approach, this request will focus on reducing traffic fatalities and serious injuries on all public roads. A primary component of the HSIP is the requirement that each State utilize a Strategic Highway Safety Plan that provides a comprehensive framework for establishing statewide goals and objectives to reduce fatalities and serious injuries.

Meanwhile, the agency's Research, Development and Technology (RD&T) program will conduct rigorous evaluations of new safety technologies and practices, and champion life-saving innovations. Recent successes include the release of a new group of "Proven Safety Countermeasures," which are infrastructure-oriented safety treatments and strategies, chosen based on proven effectiveness and benefits. One example, reduced left turn conflict intersections, has been shown to reduce serious crashes by up to 54 percent.

FHWA will continue to **improve the condition and performance of our national transportation infrastructure** through a variety of programs. The budget requests \$11.88 billion for the Surface Transportation Block Grant Program (STBG), which provides flexible funding that States and localities can use to improve the condition and performance of their roads and bridges through a wide range of eligible projects.

FHWA seeks to improve the condition and performance of the National Highway System (NHS) by requesting \$23.74 billion for the National Highway Performance Program (NHPP). A key component of the NHPP is performance management requirements that focus Federal-aid investments to support progress toward the achievement of performance targets for the NHS. These requirements will hold States accountable for achieving performance targets while continuing to give them the flexibility to make transportation investment decisions.

Investments in freight infrastructure have a profoundly positive effect on the national economy, create jobs, and support economic growth and competitiveness. Our FY 2019 budget requests \$1.34 billion for the National Highway Freight Program to provide funding for States to invest in infrastructure and operational improvements that reduce congestion, improve safety and productivity, and strengthen the contribution of the National Highway Freight Network to the economic competitiveness of the United States.

FHWA is focused on the transportation needs of rural areas. Rural America is home to many of the nation's most critical infrastructure assets, including 444,000 bridges, 3 million miles of roadways, and 30,500 miles of Interstate highways. To this end, several FHWA programs include rural set-asides or other rural components including: \$1.37 billion allocated to areas with population of 5,000 or less; \$777 million set-aside for off-system bridges, which are generally in rural locations; and \$1.3 billion for FHWA's Federal Lands and Tribal programs that fund projects in and around Federal and Tribal lands, many of which are rural in nature.

FHWA is committed to **promoting innovation to address current and emerging transportation issues**. FHWA requests \$60 million for the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) program, which awards grants to States and other entities to deploy technologies with the potential to relieve congestion and improve the quality of life. Other FHWA RD&T programs also support innovation by translating advances in basic science into applications that can benefit the U.S. highway industry, and by supporting industry with the implementation of near and market ready technology through a coordinated set of deployment and training programs. For example:

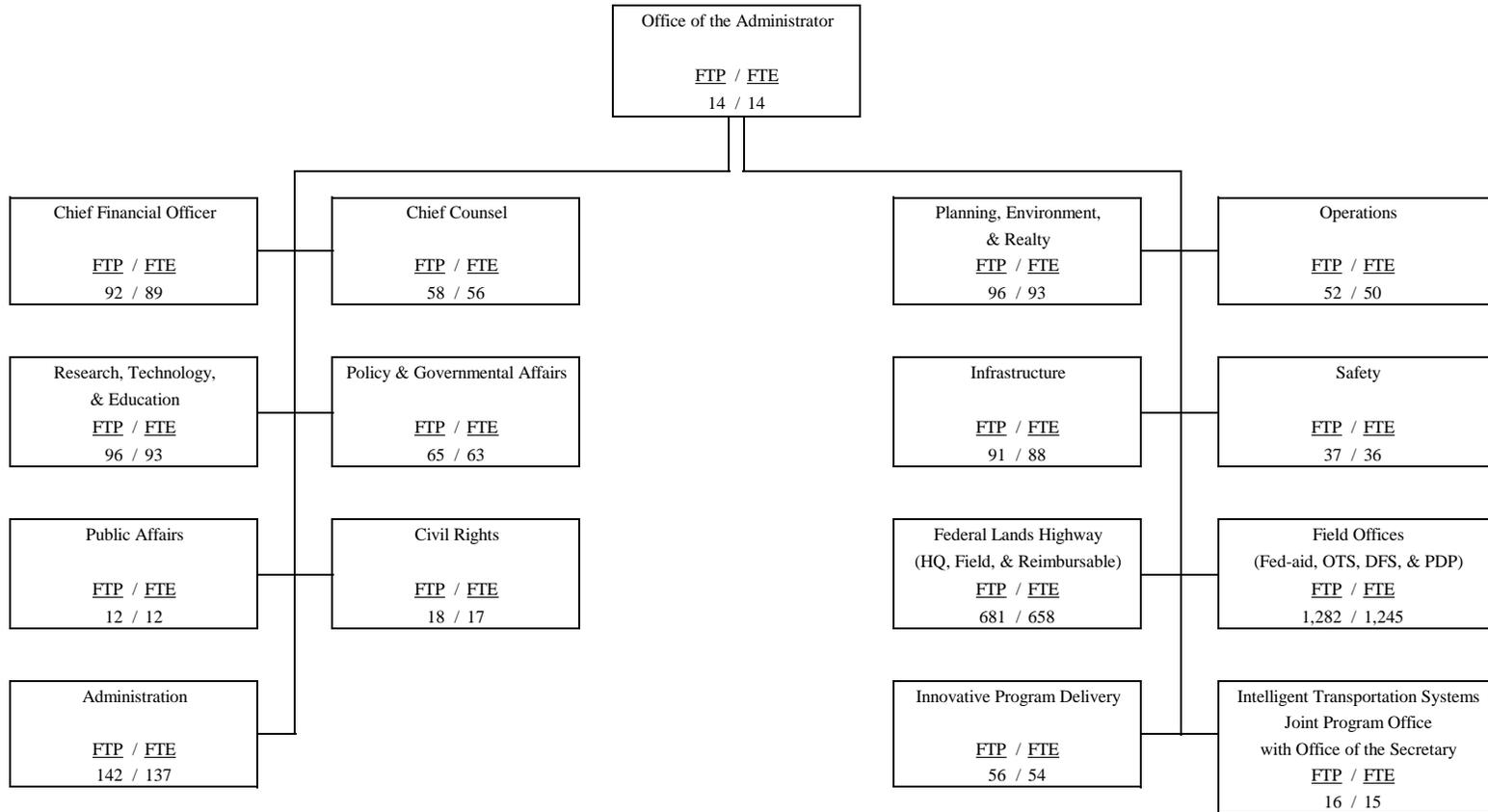
- FHWA, in partnership with the National Highway Traffic Safety Administration, is at the forefront of automated vehicle research. Through the Intelligent Transportation Systems Program, FHWA is playing a significant role in addressing key technological and institutional barriers to ensure the safe, efficient, and equitable integration of automation into the transportation system. A flagship effort is the Connected Vehicle (CV) Pilot Deployment Program which is funding large-scale CV system implementation efforts.
- The Exploratory Advanced Research (EAR) program conducts longer-term, higher-risk research with the potential for dramatic breakthroughs. This program seeks discoveries in basic science and technology and matches them to critical and emerging transportation needs. Recent successes under the EAR program include demonstrating CV technologies in support of systems like GM Super Cruise and Peleton truck platooning.
- The Accelerated Implementation and Deployment of Pavement Technologies program provides public agencies and the transportation community with tools and strategies that save time and money and encourage public sector innovation. Warm Mix Asphalt technologies were advanced under this program and were documented to improve worker safety, decrease air pollution, and require less energy at asphalt plants.

FHWA is continuing to **remain accountable by examining regulations to identify those that should be modified, streamlined or repealed** to reduce costs or eliminate bureaucratic obstacles to efficient project delivery. FHWA recently repealed certain planning regulations pertaining to establishment of metropolitan planning area boundaries and coordination among metropolitan planning organizations.

FHWA will continue to pursue a multi-faceted strategy to accelerate project delivery while also protecting the environment. This includes initiatives, whether legislatively or agency-driven, to encourage interagency collaboration and to significantly shorten project delivery timeframes. Examples include reducing duplication by linking planning and environmental review and exploring new categorical exclusions under the National Environmental Policy Act.

**EXHIBIT I-A**

**FEDERAL HIGHWAY ADMINISTRATION ORGANIZATION CHART  
FY 2018 ESTIMATED FTP BY OFFICE AND ESTIMATED FTE BY OFFICE**



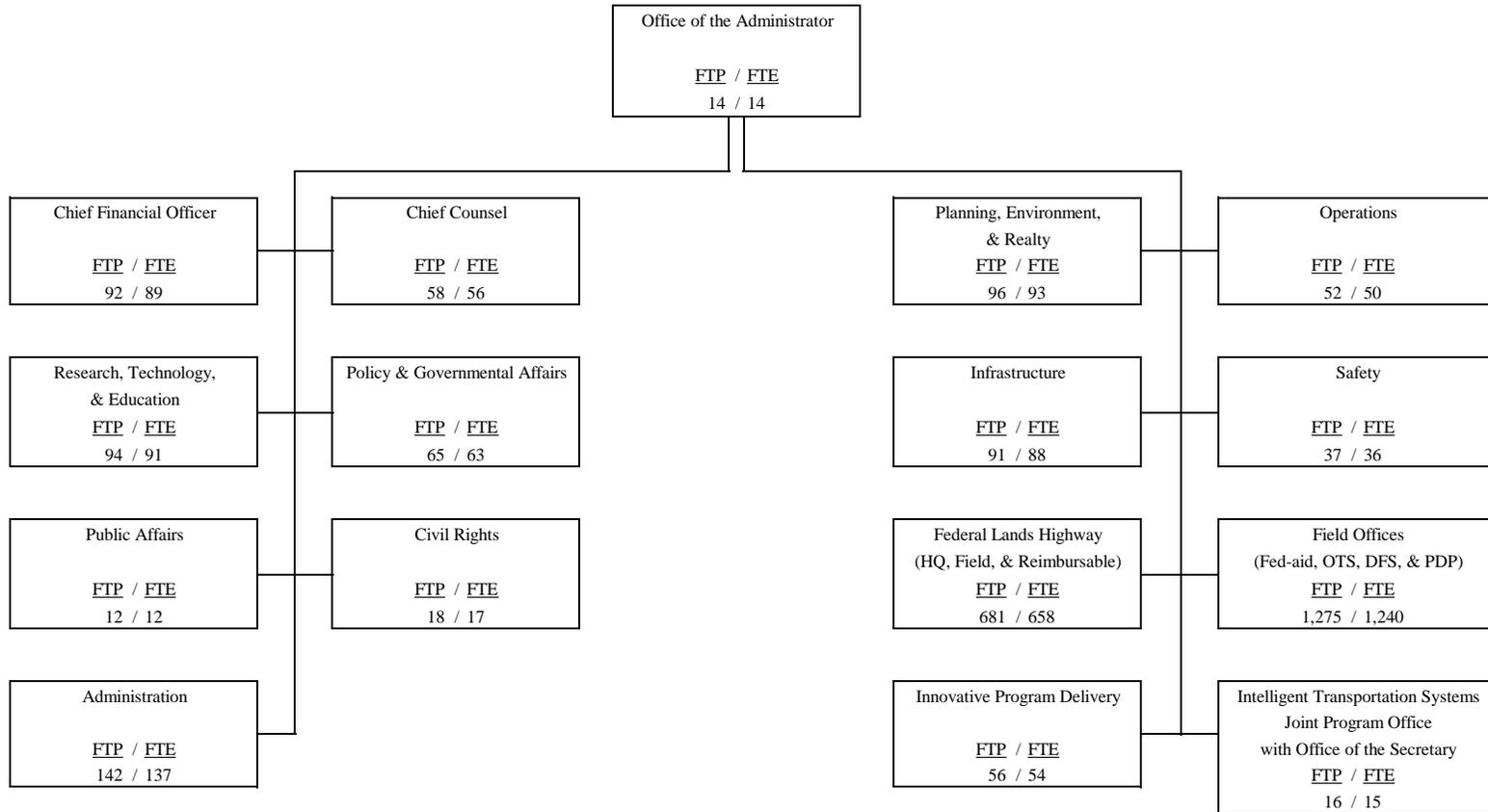
FTP - FULL-TIME PERMANENT POSITIONS	
Direct funded	2,560
Indirect funded	<u>248</u>
<b>Total</b>	<b>2,808</b>

FTE - FULL-TIME EQUIVALENTS	
Direct funded	2,472
Indirect funded	<u>248</u>
<b>Total</b>	<b>2,720</b>

Direct funded FTP presented by office reflects an estimated on-board level at fiscal year end, not total positions including vacancies. This is consistent with Exhibit II-9. Direct funded FTE presented by office reflects an illustrative pro-ration of total FTE. Indirect funded FTP & FTE include Federal Lands Highway reimbursable FTE and allocation FTE from OST.

**EXHIBIT I-B**

**FEDERAL HIGHWAY ADMINISTRATION ORGANIZATION CHART  
FY 2019 ESTIMATED FTP BY OFFICE AND ESTIMATED FTE BY OFFICE**



FTP - FULL-TIME PERMANENT POSITIONS	
Direct funded	2,551
Indirect funded	<u>248</u>
<b>Total</b>	<b>2,799</b>

FTE - FULL-TIME EQUIVALENTS	
Direct funded	2,465
Indirect funded	<u>248</u>
<b>Total</b>	<b>2,713</b>

Direct funded FTP presented by office reflects an estimated on-board level at fiscal year end, not total positions including vacancies. This is consistent with Exhibit II-9. Direct funded FTE presented by office reflects an illustrative pro-ration of total FTE. Indirect funded FTP & FTE include Federal Lands Highway reimbursable FTE and allocation FTE from OST.

**EXHIBIT II-1**  
**FY 2019 COMPARATIVE STATEMENT OF NEW BUDGET AUTHORITY**  
**FEDERAL HIGHWAY ADMINISTRATION**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>FY 2017 ACTUAL</u>	<u>FY 2018 ANNUALIZED CR</u>	<u>FY 2019 REQUEST</u>
[Administrative Expenses (Contract Authority, subject to limitation)] <sup>1/</sup>	[435,795]	[442,692]	[449,692]
Federal-aid Highways			
Contract Authority (subject to limitation)	43,266,100	44,234,212	45,268,596
Exempt Contract Authority	739,000	739,000	739,000
Subtotal, Federal-aid Highways	44,005,100	44,973,212	46,007,596
Flex Transfers to/from FTA	- 1,435,956	- 1,300,000	- 1,300,000
Transfer to NHTSA <sup>2/</sup>	- 101,241	- 99,262	-----
Sequestered Exempt Contract Authority	- 50,991 <sup>3/</sup>	- 48,774 <sup>4/</sup>	-----
Rescission of Unobligated Balances of Apportioned Contract Authority	- 857,000 <sup>5/</sup>	- 857,000 <sup>6/</sup>	-----
Total, Federal-aid Highways	41,559,912	42,668,176	44,707,596
Miscellaneous Trust Funds (TF)	78,138	20,000	20,000
Miscellaneous Appropriations (TIFIA Upward Reestimate GF)	2,187	250,737	-----
TIFIA General Fund Program Account Upward Reestimate (GF)	3,440	2,836	-----
Highway Infrastructure Investment, Recovery Act (TIFIA upward reestimate GF)	-----	110,626	-----
Emergency Relief (GF)	1,532,017 <sup>7/</sup>	-----	-----
Cash Management Improvement Act (CMIA) Interest Payments	1,812	-----	-----
Cancellation - Appalachian Development Highway System	-----	-----	- 45,954
Cancellation - Miscellaneous Appropriations	-----	-----	- 111,718
Cancellation - Miscellaneous Highway Trust Funds	-----	-----	- 59,278
<b>TOTALS</b>	<b>43,177,506</b>	<b>43,052,375</b>	<b>44,510,646</b>
[ ] Non-add			

1/ FY 2017 and FY 2018 include FHWA General Operating Expenses (GOE) and transfers to the Appalachian Regional Commission (ARC) for administrative activities associated with the Appalachian development highway system. FY 2019 includes FHWA GOE only. All fiscal years do not include amounts for other non-administrative programs authorized under Administrative Expenses.

2/ FHWA anticipates transfers to NHTSA in FY 2019 in an amount to be determined based on State penalty information.

3/ Reflects sequestration of 6.9 percent of contract authority exempt from obligation limitation per Sequestration Order dated February 9, 2016.

4/ Reflects sequestration of 6.6 percent of contract authority exempt from obligation limitation per Sequestration Order dated May 23, 2017.

5/ Public Law 115-31 rescinded \$857 million from the available unobligated balances of apportioned contract authority.

6/ The \$857 million rescission in Public Law 115-31 is carried forward under an annualized CR in FY 2018.

7/ Public Law 114-254 provided \$1,004 million for the Emergency Relief Program. Public Law 115-31 provided \$528 million for the Emergency Relief Program. Both amounts are available until expended.

**EXHIBIT II-2**  
**FY 2019 TOTAL BUDGETARY RESOURCES BY APPROPRIATION ACCOUNT**  
**FEDERAL HIGHWAY ADMINISTRATION**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>FY 2017 ACTUAL</u>	<u>FY 2018 ANNUALIZED CR</u>	<u>FY 2019 REQUEST</u>
[Limitation on Administrative Expenses] <sup>1/</sup>	[435,795]	[432,836]	[449,692]
Federal-aid Highways			
(Liquidation of contract authorization)	(44,005,100)	(43,706,261) <sup>2/</sup>	(46,007,596)
(Limitation on obligations)	(43,266,100)	(42,972,280) <sup>2/</sup>	(45,268,596)
Exempt Contract Authority	739,000 <sup>3/</sup>	739,000 <sup>4/</sup>	739,000
Subtotal, Federal-aid Obligation Limitation & Exempt CA	44,005,100	43,711,280	46,007,596
Flex Transfers to/from FTA	-1,435,956	-1,300,000	-1,300,000
Transfer to NHTSA <sup>5/</sup>	-101,241	-99,262	-----
Total, Federal-aid Obligation Limitation & Exempt CA	42,467,903	42,312,018	44,707,596
Emergency Relief (GF)	1,532,017 <sup>6/</sup>	-----	-----
<b>Total, Federal Highway Administration</b>			
(Limitation on obligations)	(41,728,903)	(41,573,018)	(43,968,596)
Exempt Contract Authority	739,000	739,000	739,000
Disaster Relief Funds (GF)	1,532,017	-----	-----
<b>Total Budgetary Resources, FHWA</b>	<b>43,999,920</b>	<b>42,312,018</b>	<b>44,707,596</b>

[ ] Non-add

1/ FY 2017 and FY 2018 include FHWA General Operating Expenses (GOE) and transfers to the Appalachian Regional Commission (ARC) for administrative activities associated with the Appalachian development highway system. FY 2019 includes FHWA GOE only. All fiscal years do not include amounts for other non-administrative programs authorized under Administrative Expenses.

2/ Reflects across-the-board reduction of 0.6791% (sec. 101(b) of PL 115-56).

3/ FY 2017 exempt contract authority does not reflect sequestration of 6.9 percent of contract authority exempt from obligation limitation per Sequestration Order dated February 9, 2016.

4/ FY 2018 exempt contract authority does not reflect sequestration of 6.6 percent of contract authority exempt from obligation limitation per Sequestration Order dated May 23, 2017.

5/ FHWA anticipates transfers to NHTSA in FY 2019 in an amount to be determined based on State penalty information.

6/ Public Law 114-254 provided \$1,004 million for the Emergency Relief Program. Public Law 115-31 provided \$528 million for the Emergency Relief Program. Both amounts are available until expended.

**EXHIBIT II-3**  
**FY2019 BUDGET REQUEST BY DOT STRATEGIC AND ORGANIZATIONAL GOALS**  
**Appropriations, Obligation Limitation, and Exempt Obligations**  
**FEDERAL HIGHWAY ADMINISTRATION**  
**(\$000)**

	Safety	Infrastructure	Innovation	Accountability	Total
<b>FEDERAL-AID HIGHWAYS</b>	<b>8,820,423</b>	<b>30,821,363</b>	<b>5,334,025</b>	<b>1,031,785</b>	<b>46,007,596</b>
Highway Safety Improvement Program	2,603,054	-	-	-	2,603,054
National Highway Performance Program	3,561,208	17,806,042	2,374,139	-	23,741,389
Surface Transportation Block Grant Program	1,781,450	8,907,247	1,187,633	-	11,876,330
Congestion Mitigation & Air Quality Improvement Program	489,843	734,765	734,765	489,843	2,449,216
National Highway Freight Program	66,928	870,060	401,566	-	1,338,554
Metropolitan Transportation Planning	87,590	192,699	70,072	-	350,361
Nationally Significant Freight and Highway Projects (INFRA)	47,500	617,500	285,000	-	950,000
Federal Lands and Tribal Transportation Programs	56,250	956,250	56,250	56,250	1,125,000
Research, Technology, and Education Program	67,200	134,400	184,800	33,600	420,000
Construction of Ferry Boats and Ferry Terminal Facilities	4,000	72,000	4,000	-	80,000
Disadvantaged Business Enterprise	-	10,000	-	-	10,000
Emergency Relief	5,000	90,000	5,000	-	100,000
Highway Use Tax Evasion Projects	400	400	800	2,400	4,000
On-the-Job Training	-	-	10,000	-	10,000
Territorial and Puerto Rico Highway Program	50,000	130,000	20,000	-	200,000
Transportation Infrastructure Finance and Innovation Act (TIFIA) Program	-	300,000	-	-	300,000
Administrative Expenses	-	-	-	449,692	449,692
<b>TOTAL</b>	<b>8,820,423</b>	<b>30,821,363</b>	<b>5,334,025</b>	<b>1,031,785</b>	<b>46,007,596</b>

**EXHIBIT II-4**  
**FY 2019 BUDGET AUTHORITY**  
**FEDERAL HIGHWAY ADMINISTRATION**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>M / D</u>	<u>FY 2017 ACTUAL</u>	<u>FY 2018 ANNUALIZED CR</u>	<u>FY 2019 REQUEST</u>
Federal-aid Highways				
Contract Authority (subject to limitation)	Mand.	43,266,100	44,234,212	45,268,596
Exempt Contract Authority	Mand.	739,000	739,000	739,000
Subtotal for Federal-aid Highways (TF)		44,005,100	44,973,212	46,007,596
Flex Transfers to/from FTA	Mand.	- 1,435,956	- 1,300,000	- 1,300,000
Transfer to NHTSA <sup>1/</sup>	Mand.	- 101,241	- 99,262	-----
Sequestered Exempt Contract Authority	Mand.	- 50,991 <sup>2/</sup>	- 48,774 <sup>3/</sup>	-----
Rescission of Unobligated Balances of Apportioned Contract Authority	Mand.	- 857,000 <sup>4/</sup>	-----	-----
Rescission of Unobligated Balances of Apportioned Contract Authority	Discr.	-----	- 857,000 <sup>5/</sup>	-----
Total, Federal-aid Highways		41,559,912	42,668,176	44,707,596
Miscellaneous Trust Funds (TF)	Mand.	78,138	20,000	20,000
Miscellaneous Appropriations (TIFIA Upward Reestimate GF)	Mand.	2,187	250,737	-----
TIFIA General Fund Program Account Upward Reestimate (GF)	Mand.	3,440	2,836	-----
Highway Infrastructure Investment, Recovery Act (TIFIA upward reestimate GF)	Mand.	-----	110,626	-----
Emergency Relief (GF)	Discr.	1,532,017 <sup>6/</sup>	-----	-----
Cash Management Improvement Act (CMIA) Interest Payments	Mand.	1,812	-----	-----
Cancellation - Appalachian Development Highway System	Discr.	-----	-----	- 45,954
Cancellation - Miscellaneous Appropriations	Discr.	-----	-----	- 111,718
Cancellation - Miscellaneous Highway Trust Funds	Discr.	-----	-----	- 59,278
<b>TOTALS</b>		<b>43,177,506</b>	<b>43,052,375</b>	<b>44,510,646</b>
[Discretionary]		1,532,017	- 857,000	- 216,950
[Mandatory]		41,645,489	43,909,375	44,727,596
<b>PROPRIETARY AND OTHER GOVERNMENTAL RECEIPTS</b>				
Adv from State Coop Agencies, Other Fed Agencies, and Foreign Gov	Mand.	77,907	54,000	54,000
Adv for Hwy Research Prog, Misc Trust	Mand.	231	-----	-----
Earnings on Investments, Highway Trust Fund	Mand.	385,012	350,000	175,000
TIFIA Downward Reestimates	Mand.	127,224	726,028	-----
TIFIA Negative Subsidies	Mand.	20,809	-----	-----
Cash Management Improvement Act (CMIA) Interest Payments	Mand.	1,812	-----	-----
Transfer from the Leaking Underground Storage Tank Trust Fund	Mand.	93,100 <sup>7/</sup>	93,400 <sup>8/</sup>	-----
<b>TOTAL</b>		<b>706,095</b>	<b>1,223,428</b>	<b>229,000</b>

1/ FHWA anticipates transfers to NHTSA in FY 2019 in an amount to be determined based on State penalty information.

2/ Reflects sequestration of 6.9 percent of contract authority exempt from obligation limitation per Sequestration Order dated February 9, 2016.

3/ Reflects sequestration of 6.6 percent of contract authority exempt from obligation limitation per Sequestration Order dated May 23, 2017.

4/ Public Law 115-31 rescinded \$857 million from the available unobligated balances of apportioned contract authority.

5/ The \$857 million rescission in Public Law 115-31 is carried forward under an annualized CR in FY 2018 and is coded as discretionary to mirror the CHIMP classification in FY 2017.

6/ Public Law 114-254 provided \$1,004 million for the Emergency Relief Program. Public Law 115-31 provided \$528 million for the Emergency Relief Program. Both amounts are available until expended.

**EXHIBIT II-5  
FY 2019 OUTLAYS  
FEDERAL HIGHWAY ADMINISTRATION  
(\$000)**

<b>ACCOUNT NAME</b>	<b>FY 2017 ACTUAL</b>	<b>FY 2018 ANNUALIZED CR</b>	<b>FY 2019 REQUEST</b>
Federal-aid Highways (TF)	43,584,532	43,669,922	44,901,816
Subject to Obligation Limitation	42,779,878	42,931,555	44,126,269
Exempt Contract Authority	771,733	719,610	754,098
Emergency Relief Supplementals	32,920	18,757	21,449
Miscellaneous Highway Trust Funds (TF)	11,114	11,500	6,938
Miscellaneous Trust Funds (TF)	18,831	34,048	35,700
Right of Way Revolving Fund (TF)	-----	4,279	-----
Emergency Relief Program (GF)	514,744	611,989	496,998
Appalachian Development Highway System (GF)	1,264	4,187	4,220
Miscellaneous Appropriations (GF)	26,210	31,230	21,829
Miscellaneous Appropriations (TIFIA upward reestimate GF)	2,187	250,737	-----
Highway Infrastructure Investment, Recovery Act (TIFIA upward reestimate GF)	-----	110,626	-----
Highway Infrastructure Program (GF)	2,961	-----	-----
TIFIA General Fund Program Account Upward Reestimate (GF)	3,440	2,836	-----
Cash Management Improvement Act (CMIA) Interest Payments	1,812	-----	-----
<b>TOTALS</b>	<b><u>44,167,095</u></b>	<b><u>44,731,353</u></b>	<b><u>45,467,501</u></b>
[Mandatory]	798,003	1,011,510	789,798
[Discretionary]	43,369,092	43,719,843	44,677,703

**EXHIBIT II-6**  
**SUMMARY OF REQUESTED FUNDING CHANGES FROM BASE**  
**FEDERAL HIGHWAY ADMINISTRATION**  
**Appropriations, Obligation Limitations, and Exempt Obligations**

**ADMINISTRATIVE EXPENSES**  
**(\$000)**

**Baseline Changes**

	FY 2017 Actual	FY 2018 Annualized CR	Annualization of 2018 Pay Raises	Annualization of 2018 FTE	2019 Pay Raises	One More Compensable Days (261 days)	GSA Rent	WCF Increase/ Decrease	Inflation/ Deflation	FY 2019 Baseline Estimate	Program Increases/ Decreases	FY 2019 Request
<b>PERSONNEL RESOURCES (FTE)</b>												
Direct FTE	2,075	2,070								2,070		2,070
<b>FINANCIAL RESOURCES</b>												
Salaries and Benefits	\$308,272	\$314,208	\$1,492			\$1,214				\$316,914		\$316,914
Travel	\$7,655	\$7,655							\$77	\$7,732		\$7,732
Transportation	\$723	\$723							\$7	\$730		\$730
GSA Rent	\$27,486	\$27,670					\$290			\$27,960		\$27,960
Rent, Communications & Utilities	\$6,491	\$6,491							\$65	\$6,556		\$6,556
Printing	\$612	\$612							\$6	\$618		\$618
Other Services:												
-WCF	\$29,758	\$30,463						\$436		\$30,899		\$30,899
-Other	\$40,349	\$35,146							\$351	\$35,497	\$14,227	\$49,724
Supplies	\$1,066	\$1,066							\$11	\$1,077		\$1,077
Equipment	\$5,576	\$5,576							\$56	\$5,632	\$1,850	\$7,482
Appalachian Regional Commission (ARC)	\$1,923	\$3,226								\$3,226	(\$3,226)	\$0
<b>Subtotal, Limitation on Administrative Expenses (LAE)</b>	<b>\$429,911</b>	<b>\$432,836</b>	<b>\$1,492</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,214</b>	<b>\$290</b>	<b>\$436</b>	<b>\$573</b>	<b>\$436,841</b>	<b>\$12,851</b>	<b>\$449,692</b>
OJT Support Services	\$10,000	\$10,000								\$10,000		\$10,000
Disadvantaged Business Enterprise	\$10,000	\$10,000								\$10,000		\$10,000
Highway Use Tax Evasion	\$4,000	\$4,000								\$4,000		\$4,000
<b>GRAND TOTAL, Obligation Limitation</b>	<b>\$453,911</b>	<b>\$456,836</b>	<b>\$1,492</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,214</b>	<b>\$290</b>	<b>\$436</b>	<b>\$573</b>	<b>\$460,841</b>	<b>\$12,851</b>	<b>\$473,692</b>

**EXHIBIT II-7**  
**WORKING CAPITAL FUND**  
**FEDERAL HIGHWAY ADMINISTRATION**  
**(\$000)**

	<u>FY 2017 ACTUAL</u>	<u>FY 2018 ANNUALIZED CR</u>	<u>FY 2019 REQUEST</u>
<b>DIRECT:</b>			
Federal-aid Highways			
Limitation on Administrative Expenses	29,758	30,463	30,899
Federal Lands Highways (Direct Construction)	1,400	1,400	1,400
<b>TOTAL</b>	<b>31,158</b>	<b>31,863</b>	<b>32,299</b>

**EXHIBIT II-8  
FEDERAL HIGHWAY ADMINISTRATION  
RESOURCE SUMMARY -- PERSONNEL  
TOTAL FULL-TIME EQUIVALENTS**

	<u>FY 2017 ACTUAL</u>	<u>FY 2018 ANNUALIZED CR</u>	<u>FY 2019 REQUEST</u>
<b><u>DIRECT FUND, BY APPROPRIATION</u></b>			
Federal-aid Highways -- General Operating Expenses (GOE) and Direct Program Funded <sup>1/</sup>	2,443	2,463	2,456
Miscellaneous Trust Funds	9	9	9
<b>SUBTOTAL, DIRECT FUNDED</b>	<u>2,452</u>	<u>2,472</u>	<u>2,465</u>
<b><u>REIMBURSEMENT/ ALLOCATIONS/OTHERS</u></b>			
Reimbursable Authority -- Federal-aid Highways	245	245	245
Allocation From OST, TIGER grants	3	3	3
<b>SUBTOTAL, REIMBURSEMENTS/ALLOCATIONS/OTHER</b>	<u>248</u>	<u>248</u>	<u>248</u>
<b>TOTAL FTE</b>	<u><u>2,700</u></u>	<u><u>2,720</u></u>	<u><u>2,713</u></u>

1/ FY 2017 and FY 2018 include 18 full-time equivalents (FTE) and FY 2019 includes 20 FTE for the TIFIA Program. FY 2017 includes 10 FTE for the SHRP2 Program. This level is reduced to 2 FTE in FY 2018 and zero FTE in FY 2019 with the FTE absorbed into existing GOE levels. FY 2017 and FY 2018 include 7 FTE for the Appalachia Regional Commission. These FTE are reduced to zero in FY 2019 with the FTE absorbed into existing GOE levels.

**EXHIBIT II-9  
FEDERAL HIGHWAY ADMINISTRATION  
RESOURCE SUMMARY - STAFFING  
FULL-TIME PERMANENT POSITIONS**

	<u>FY 2017 ACTUAL</u>	<u>FY 2018 ANNUALIZED CR</u>	<u>FY 2019 REQUEST</u>
<b><u>DIRECT FUND, BY APPROPRIATION</u></b>			
Federal-aid Highways -- General Operating Expenses and Direct Program Funded <sup>1/</sup>	2,475	2,551	2,542
Miscellaneous Trust Funds	9	9	9
<b>SUBTOTAL, DIRECT FUNDED</b>	<u>2,484</u>	<u>2,560</u>	<u>2,551</u>
<b><u>REIMBURSEMENT/ ALLOCATIONS/OTHERS</u></b>			
Reimbursable Authority -- Federal-aid Highways	245	245	245
Allocation From OST, TIGER grants	3	3	3
<b>SUBTOTAL, REIMBURSEMENT/ALLOCATION/OTHERS</b>	<u>248</u>	<u>248</u>	<u>248</u>
<b>TOTAL POSITIONS</b>	<u><u>2,732</u></u>	<u><u>2,808</u></u>	<u><u>2,799</u></u>

1/ FY 2017 includes 18 full-time permanent positions (FTP) for the TIFIA Program. FY 2018 and FY 2019 include 21 FTP for the TIFIA Program. FY 2017 includes 5 FTP for the SHRP2 Program. This level is reduced to 2 FTP in FY 2018 and zero FTP in FY 2019 with the FTP absorbed into existing GOE levels. FY 2017 includes 6 FTP and FY 2018 includes 7 FTP for the Appalachia Regional Commission. These FTP are reduced to zero in FY 2019 with the FTP absorbed into existing GOE levels.

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**FEDERAL HIGHWAY ADMINISTRATION  
HISTORICAL FUNDING LEVELS (2009-2018)  
(\$000)**

	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018 Annualized CR</b>
<b>Federal-Aid Highways</b>										
<b>Obligation Limitation</b>	\$40,700,000 <sup>1/</sup>	\$41,107,000	\$41,107,000	\$39,143,583	\$39,699,000 <sup>2/</sup>	\$40,256,000	\$40,256,000	\$42,361,000	\$43,266,100	\$42,972,280 <sup>3/</sup>
<b>Contract Authority Exempt from Obligation Limitation</b>	\$739,000	\$739,000	\$739,000	\$739,000	\$739,000 <sup>4/</sup>	\$739,000 <sup>5/</sup>	\$739,000 <sup>6/</sup>	\$739,000 <sup>7/</sup>	\$739,000 <sup>8/</sup>	\$739,000 <sup>9/</sup>
<b>Liquidation of Contract Authority</b>	\$41,439,000	\$41,846,000	\$41,846,000	\$39,882,583	\$39,699,000	\$40,995,000	\$40,995,000	\$43,100,000	\$44,005,100	\$43,706,261
Limitation on Admin Expenses - FHWA GOE [non-add]	390,000	413,533	413,533	412,000	416,126	416,100	415,000 <sup>10/</sup>	429,000	435,795	432,836 <sup>3/</sup>
<b>Payment to the Highway Account of the Highway Trust Fund</b>	\$7,000,000	\$14,700,000			\$6,200,000 <sup>4/</sup>	\$22,365,000 <sup>5/</sup>	\$6,068,000	\$51,900,000		
<b>Transfer from the Leaking Underground Storage Tank Trust Fund to the Highway Account of the Highway Trust Fund</b>				\$2,400,000		\$1,000,000		\$100,000	\$100,000 <sup>8/</sup>	\$100,000 <sup>9/</sup>
<b>Supplemental Emergency Relief Funds (GF)</b>				\$1,662,000	\$2,022,000 <sup>4/</sup>				\$1,532,017	
<b>Appalachian Development Highway System (GF)</b>	\$9,500									
<b>Miscellaneous Appropriations</b>	\$167,563	\$291,429								
<b>Highway Infrastructure Programs (GF)</b>		\$650,000								
<b>Highway Infrastructure Investment, Recovery Act (GF)</b>	\$27,500,000									

1/ Does not reflect the following rescissions of new authority in FY 2009: \$1.162 billion from the \$3.15 billion FY 2009 appropriated rescission and \$5.3 billion from the \$8.7 billion FY 2009 SAFETEA-LU rescission.

2/ Does not reflect P.L. 113-6 rescission of 0.2 percent of contract authority subject to limitation and obligation limitation.

3/ FY 2018 obligation limitation and limitation on administrative expenses estimated based on an annualized rate for the continuing resolution (PL 115-56 as amended).

4/ Does not reflect sequestration of 5.1 percent of contract authority exempt from obligation limitation and payment to the Highway Trust Fund, and 5.0 percent of supplemental emergency relief funds per Sequestration Order dated March 1, 2013.

5/ Does not reflect sequestration of 7.2 percent of contract authority exempt from obligation limitation and \$10.4 billion portion of the payment to the Highway Trust Fund per Sequestration Order dated April 10, 2013.

6/ Does not reflect sequestration of 7.3 percent of contract authority exempt from obligation limitation per Sequestration Order dated March 10, 2014.

7/ Does not reflect sequestration of 6.8 percent of contract authority exempt from obligation limitation per Sequestration Order dated February 2, 2015.

8/ Does not reflect sequestration of 6.9 percent of contract authority exempt from obligation limitation per Sequestration Order dated February 9, 2016.

9/ Does not reflect sequestration of 6.6 percent of contract authority exempt from obligation limitation per Sequestration Order dated May 23, 2017.

10/ FY 2015 annual appropriations (PL 113-235) provided an obligation limitation of \$429.3 million for GOE and ARC. The Surface Transportation and Veterans Health Care Choice Improvement Act of 2015 (PL 114-41) provided contract authority of only \$415 million.

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**FEDERAL HIGHWAY ADMINISTRATION**  
**FEDERAL-AID HIGHWAY PROGRAM AUTHORIZATIONS OF CONTRACT AUTHORITY UNDER THE FIXING AMERICA'S SURFACE TRANSPORTATION (FAST) ACT (PUBLIC LAW 114-94)**

Program	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Total FY 2016-2020
<b>Apportioned Programs</b>	<b>39,727,500,000</b>	<b>40,547,805,000</b>	<b>41,424,020,075</b>	<b>42,358,903,696</b>	<b>43,373,294,311</b>	<b>207,431,523,082</b>
Highway Safety Improvement Program <sup>1/</sup>	2,454,094,512	2,508,792,347	2,556,434,401	2,603,054,152	2,655,923,445	12,778,298,857
National Highway Performance Program <sup>2/</sup>	22,332,260,060	22,830,010,326	23,263,553,053	23,741,388,895	24,235,621,114	116,402,833,448
Surface Transportation Block Grant Program <sup>3/</sup>	11,162,564,768	11,425,377,855	11,668,517,528	11,876,329,314	12,136,990,131	58,269,779,596
Congestion Mitigation & Air Quality Improvement Program	2,309,059,935	2,357,349,730	2,402,948,048	2,449,216,207	2,498,960,969	12,017,534,889
National Highway Freight Program	1,140,250,003	1,090,683,553	1,189,833,898	1,338,554,353	1,487,282,615	6,246,604,422
Metropolitan Transportation Planning	329,270,722	335,591,189	342,733,147	350,360,775	358,516,037	1,716,471,870
<b>Nationally Significant Freight and Highway Projects</b>	<b>800,000,000</b>	<b>850,000,000</b>	<b>900,000,000</b>	<b>950,000,000</b>	<b>1,000,000,000</b>	<b>4,500,000,000</b>
<b>Federal Lands and Tribal Transportation Programs</b>	<b>1,050,000,000</b>	<b>1,075,000,000</b>	<b>1,100,000,000</b>	<b>1,125,000,000</b>	<b>1,150,000,000</b>	<b>5,500,000,000</b>
Federal Lands Transportation Program	335,000,000	345,000,000	355,000,000	365,000,000	375,000,000	1,775,000,000
Federal Lands Access Program	250,000,000	255,000,000	260,000,000	265,000,000	270,000,000	1,300,000,000
Tribal Transportation Program	465,000,000	475,000,000	485,000,000	495,000,000	505,000,000	2,425,000,000
<b>Research, Technology, and Education Program</b>	<b>414,500,000</b>	<b>417,500,000</b>	<b>417,500,000</b>	<b>420,000,000</b>	<b>420,000,000</b>	<b>2,089,500,000</b>
Highway Research and Development Program	125,000,000	125,000,000	125,000,000	125,000,000	125,000,000	625,000,000
Technology and Innovation Deployment Program	67,000,000	67,500,000	67,500,000	67,500,000	67,500,000	337,000,000
Training and Education	24,000,000	24,000,000	24,000,000	24,000,000	24,000,000	120,000,000
Intelligent Transportation Systems Program	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	500,000,000
University Transportation Centers	72,500,000	75,000,000	75,000,000	77,500,000	77,500,000	377,500,000
Bureau of Transportation Statistics	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	130,000,000
<b>Federal Allocation Programs</b>	<b>404,000,000</b>	<b>404,000,000</b>	<b>404,000,000</b>	<b>404,000,000</b>	<b>404,000,000</b>	<b>2,020,000,000</b>
Construction of Ferry Boats and Ferry Terminal Facilities	80,000,000	80,000,000	80,000,000	80,000,000	80,000,000	400,000,000
Disadvantaged Business Enterprise	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	50,000,000
Emergency Relief <sup>2/</sup>	100,000,000	100,000,000	100,000,000	100,000,000	100,000,000	500,000,000
Highway Use Tax Evasion Projects	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	20,000,000
On-the-Job Training	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	50,000,000
Territorial and Puerto Rico Highway Program	200,000,000	200,000,000	200,000,000	200,000,000	200,000,000	1,000,000,000
<b>TIFIA Program</b>	<b>275,000,000</b>	<b>275,000,000</b>	<b>285,000,000</b>	<b>300,000,000</b>	<b>300,000,000</b>	<b>1,435,000,000</b>
<b>Administrative Expenses <sup>4/</sup></b>	<b>429,000,000</b>	<b>435,795,000</b>	<b>442,691,925</b>	<b>449,692,304</b>	<b>456,797,689</b>	<b>2,213,976,918</b>
<b>TOTAL, FHWA</b>	<b>43,100,000,000</b>	<b>44,005,100,000</b>	<b>44,973,212,000</b>	<b>46,007,596,000</b>	<b>47,104,092,000</b>	<b>225,190,000,000</b>
<b>CA Subject to Obligation Limitation</b>	<b>42,361,000,000</b>	<b>43,266,100,000</b>	<b>44,234,212,000</b>	<b>45,268,596,000</b>	<b>46,365,092,000</b>	<b>221,495,000,000</b>
<b>CA Exempt from Obligation Limitation</b>	<b>739,000,000</b>	<b>739,000,000</b>	<b>739,000,000</b>	<b>739,000,000</b>	<b>739,000,000</b>	<b>3,695,000,000</b>

1/ Amounts for the Highway Safety Improvement Program include set aside for Railway-Highway Crossings Program (\$225.0 million in FY 2016 and increasing by \$5.0 million each year through FY 2020) and \$3.5 million set aside each fiscal year for allocated funding to carry out certain safety-related activities.

2/ Amounts exempt from Obligation Limitation include \$100,000,000 for Emergency Relief and \$639,000,000 of the National Highway Performance Program apportionments. FY 2016 amounts do not reflect sequestration of 6.8 percent per Sequestration Order dated February 2, 2015. FY 2017 amounts do not reflect sequestration of 6.9 percent per Sequestration Order dated February 9, 2016. FY 2018 amounts do not reflect sequestration of 6.6 percent per Sequestration Order dated May 23, 2017.

3/ Amounts for Surface Transportation Block Grant Program include set aside for Transportation Alternatives equal to \$835.0 million in FY 2016 and FY 2017 and \$850.0 million in FY 2018 through FY 2020.

4/ Includes FHWA General Operating Expenses (GOE) and transfers to the Appalachian Regional Commission (ARC) for administrative activities associated with the Appalachian development highway system.

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*FEDERAL-AID HIGHWAYS*

*LIMITATION ON ADMINISTRATIVE EXPENSES*

*(HIGHWAY TRUST FUND)*

*Not to exceed \$449,692,304, together with advances and reimbursements received by the Federal Highway Administration, shall be obligated for necessary expenses for administration and operation of the Federal Highway Administration in accordance with section 104(a) of title 23, United States Code.*

*(LIMITATION ON OBLIGATIONS)*

*(HIGHWAY TRUST FUND)*

*Funds available for the implementation or execution of Federal aid highway and highway safety construction programs authorized under titles 23 and 49, United States Code, and the provisions of the Fixing America's Surface Transportation Act shall not exceed total obligations of \$45,268,596,000 for fiscal year 2019: Provided, That the Secretary may collect and spend fees, as authorized by title 23, United States Code, to cover the costs of services of expert firms, including counsel, in the field of municipal and project finance to assist in the underwriting and servicing of Federal credit instruments and all or a portion of the costs to the Federal Government of servicing such credit instruments: Provided further, That such fees are available until expended to pay for such costs: Provided further, That such amounts are in addition to administrative expenses that are also available for such purpose, and are not subject to any obligation limitation or the limitation on administrative expenses under section 608 of title 23, United States Code.*

*(LIQUIDATION OF CONTRACT AUTHORIZATION)*

*(HIGHWAY TRUST FUND)*

*For the payment of obligations incurred in carrying out Federal aid highway and highway safety construction programs authorized under title 23, United States Code, \$46,007,596,000 derived from the Highway Trust Fund (other than the Mass Transit Account), to remain available until expended.*

ADMINISTRATIVE PROVISIONS—FEDERAL HIGHWAY ADMINISTRATION

SEC. 120.

(a) For fiscal year 2019, the Secretary of Transportation shall—

- (1) not distribute from the obligation limitation for Federal aid highways—
  - (A) amounts authorized for administrative expenses and programs by section 104(a) of title 23, United States Code; and
  - (B) amounts authorized for the Bureau of Transportation Statistics;
- (2) not distribute an amount from the obligation limitation for Federal-aid highways that is equal to the unobligated balance of amounts—
  - (A) made available from the Highway Trust Fund (other than the Mass Transit Account) for Federal-aid highway and highway safety construction programs for previous fiscal years the funds for which are allocated by the Secretary (or apportioned by the Secretary under sections 202 or 204 of title 23, United States Code); and
  - (B) for which obligation limitation was provided in a previous fiscal year;
- (3) determine the proportion that—
  - (A) the obligation limitation for Federal-aid highways, less the aggregate of amounts not distributed under paragraphs (1) and (2) of this subsection; bears to
  - (B) the total of the sums authorized to be appropriated for the Federal-aid highway and highway safety construction programs (other than sums authorized to be appropriated for provisions of law described in paragraphs (1) through (11) of subsection (b) and sums authorized to be appropriated for section 119 of title 23, United States Code, equal to the amount referred to in subsection (b)(12) for such fiscal year), less the aggregate of the amounts not distributed under paragraphs (1) and (2) of this subsection;
- (4) distribute the obligation limitation for Federal-aid highways, less the aggregate amounts not distributed under paragraphs (1) and (2), for each of the programs (other than programs to which paragraph (1) applies) that are allocated by the Secretary under the Fixing America's Surface Transportation Act and title 23, United States Code, or apportioned by the Secretary under sections 202 or 204 of that title, by multiplying—
  - (A) the proportion determined under paragraph (3); by
  - (B) the amounts authorized to be appropriated for each such program for such fiscal year; and
- (5) distribute the obligation limitation for Federal-aid highways, less the aggregate amounts not distributed under paragraphs (1) and (2) and the amounts distributed under paragraph (4), for Federal-aid highway and highway safety construction programs that are apportioned by the Secretary under title 23, United States Code (other than the amounts apportioned for the National Highway Performance Program in section 119 of title 23, United States Code, that are exempt from the limitation under subsection (b)(12) and the amounts apportioned under sections 202 and 204 of that title) in the proportion that—

*(A) amounts authorized to be appropriated for the programs that are apportioned under title 23, United States Code, to each State for such fiscal year; bears to*

*(B) the total of the amounts authorized to be appropriated for the programs that are apportioned under title 23, United States Code, to all States for such fiscal year.*

**(b) EXCEPTIONS FROM OBLIGATION LIMITATION.**—*The obligation limitation for Federal-aid highways shall not apply to obligations under or for—*

*(1) section 125 of title 23, United States Code;*

*(2) section 147 of the Surface Transportation Assistance Act of 1978 (23 U.S.C. 144 note; 92 Stat. 2714);*

*(3) section 9 of the Federal-Aid Highway Act of 1981 (95 Stat. 1701);*

*(4) subsections (b) and (j) of section 131 of the Surface Transportation Assistance Act of 1982 (96 Stat. 2119);*

*(5) subsections (b) and (c) of section 149 of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (101 Stat. 198);*

*(6) sections 1103 through 1108 of the Intermodal Surface Transportation Efficiency Act of 1991 (105 Stat. 2027);*

*(7) section 157 of title 23, United States Code (as in effect on June 8, 1998);*

*(8) section 105 of title 23, United States Code (as in effect for fiscal years 1998 through 2004, but only in an amount equal to \$639,000,000 for each of those fiscal years);*

*(9) Federal-aid highway programs for which obligation authority was made available under the Transportation Equity Act for the 21st Century (112 Stat. 107) or subsequent Acts for multiple years or to remain available until expended, but only to the extent that the obligation authority has not lapsed or been used;*

*(10) section 105 of title 23, United States Code (as in effect for fiscal years 2005 through 2012, but only in an amount equal to \$639,000,000 for each of those fiscal years);*

*(11) section 1603 of SAFETEA-LU (23 U.S.C. 118 note; 119 Stat. 1248), to the extent that funds obligated in accordance with that section were not subject to a limitation on obligations at the time at which the funds were initially made available for obligation; and*

*(12) section 119 of title 23, United States Code (but, for each of fiscal years 2013 through 2019, only in an amount equal to \$639,000,000).*

**(c) REDISTRIBUTION OF UNUSED OBLIGATION AUTHORITY.**—*Notwithstanding subsection (a), the Secretary shall, after August 1 of such fiscal year—*

*(1) revise a distribution of the obligation limitation made available under subsection (a) if an amount distributed cannot be obligated during that fiscal year; and*

*(2) redistribute sufficient amounts to those States able to obligate amounts in addition to those previously distributed during that fiscal year, giving priority to those States having large unobligated balances of funds apportioned under sections 144 (as in effect on the day before the date of enactment of Public Law 112–141) and 104 of title 23, United States Code.*

*(d) APPLICABILITY OF OBLIGATION LIMITATIONS TO TRANSPORTATION RESEARCH PROGRAMS.—*

*(1) IN GENERAL.—Except as provided in paragraph (2), the obligation limitation for Federal-aid highways shall apply to contract authority for transportation research programs carried out under—*

*(A) chapter 5 of title 23, United States Code; and*

*(B) title VI of the Fixing America's Surface Transportation Act.*

*(2) EXCEPTION.—Obligation authority made available under paragraph (1) shall—*

*(A) remain available for a period of 4 fiscal years; and*

*(B) be in addition to the amount of any limitation imposed on obligations for Federal-aid highway and highway safety construction programs for future fiscal years.*

*(e) REDISTRIBUTION OF CERTAIN AUTHORIZED FUNDS.—*

*(1) IN GENERAL.—Not later than 30 days after the date of distribution of obligation limitation under subsection (a), the Secretary shall distribute to the States any funds (excluding funds authorized for the program under section 202 of title 23, United States Code) that—*

*(A) are authorized to be appropriated for such fiscal year for Federal-aid highway programs; and*

*(B) the Secretary determines will not be allocated to the States (or will not be apportioned to the States under section 204 of title 23, United States Code), and will not be available for obligation, for such fiscal year because of the imposition of any obligation limitation for such fiscal year.*

*(2) RATIO.—Funds shall be distributed under paragraph (1) in the same proportion as the distribution of obligation authority under subsection (a)(5).*

*(3) AVAILABILITY.—Funds distributed to each State under paragraph (1) shall be available for any purpose described in section 133(b) of title 23, United States Code.*

*SEC. 121. Notwithstanding 31 U.S.C. 3302, funds received by the Bureau of Transportation Statistics from the sale of data products, for necessary expenses incurred pursuant to chapter 63 of title 49, United States Code, may be credited to the Federal-aid highways account for the purpose of reimbursing the Bureau for such expenses: Provided, That such funds shall be subject to the obligation limitation for Federal-aid highway and highway safety construction programs.*

*SEC. 122. Not less than 15 days prior to waiving, under his or her statutory authority, any Buy America requirement for Federal-aid highways projects, the Secretary of Transportation shall make an informal public notice and comment opportunity on the intent to issue such waiver and the reasons therefor: Provided, That the Secretary shall provide an annual report to the House and Senate Committees on Appropriations on any waivers granted under the Buy America requirements.*

*SEC. 123. None of the funds in this Act to the Department of Transportation may be used to provide credit assistance unless not less than 1 day before any application approval to*

*provide credit assistance under sections 603 and 604 of title 23, United States Code, the Secretary of Transportation provides notification in writing to the following committees: the House and Senate Committees on Appropriations; the Committee on Environment and Public Works and the Committee on Banking, Housing and Urban Affairs of the Senate; and the Committee on Transportation and Infrastructure of the House of Representatives: Provided, That such notification shall include, but not be limited to, the name of the project sponsor; a description of the project; whether credit assistance will be provided as a direct loan, loan guarantee, or line of credit; and the amount of credit assistance.*

*SEC. 124. (a) A State or territory, as defined in section 165 of title 23, United States Code, may use for any project eligible under section 133(b) of title 23 or section 165 of title 23 and located within the boundary of the State or territory any earmarked amount, and any associated obligation limitation, provided that the Department of Transportation for the State or territory for which the earmarked amount was originally designated or directed notifies the Secretary of Transportation of its intent to use its authority under this section and submits a quarterly report to the Secretary identifying the projects to which the funding would be applied. Notwithstanding the original period of availability of funds to be obligated under this section, such funds and associated obligation limitation shall remain available for obligation for a period of 3 fiscal years after the fiscal year in which the Secretary of Transportation is notified. The Federal share of the cost of a project carried out with funds made available under this section shall be the same as associated with the earmark.*

*(b) In this section, the term “earmarked amount” means—*

- (1) congressionally directed spending, as defined in rule XLIV of the Standing Rules of the Senate, identified in a prior law, report, or joint explanatory statement and administered by the Federal Highway Administration; or*
- (2) a congressional earmark, as defined in rule XXI of the Rules of the House of Representatives identified in a prior law, report, or joint explanatory statement and administered by the Federal Highway Administration.*

*(c) The authority under subsection (a) may be exercised only for those projects or activities that have obligated less than 10 percent of the amount made available for obligation as of October 1 of the current fiscal year, and shall be applied to projects within the same general geographic area within 100 miles for which the funding was designated, except that a State or territory may apply such authority to unexpended balances of funds from projects or activities the State or territory certifies have been closed and for which payments have been made under a final voucher.*

*(d) The Secretary shall submit consolidated reports of the information provided by the States and territories each quarter to the House and Senate Committees on Appropriations.*

*SEC. 125. Section 119(e)(5) of title 23, United States Code, is amended to read as follows-- “(5) REQUIREMENT FOR PLAN.—Notwithstanding section 120, beginning on October 1, 2019, and each fiscal year thereafter, if the Secretary determines that a State has not developed and implemented a State asset management plan consistent with this section, the Federal share payable on account of any project or activity for which funds*

*are obligated by the State in that fiscal year under this section shall be 65 percent. The Secretary shall make the determination no later than the day before the beginning of each fiscal year.”*

[Reason for including Sec. 125: The provision currently as written could be construed to apply to obligations made prior to October 1, 2019. This would result in States being penalized on obligations that occurred before the penalty took effect. As a result, States would be required to cover a higher State match than they had budgeted for at the time. This correction will ensure that the provision can only be read to apply to obligations beginning on October 1, 2019. We understand that this clarification is consistent with Congressional intent.]

*SEC. 126. (a) Of the unobligated balances of funds remaining from--*

- (1) Public Law 92-18, and any other Act, appropriated to the “Darien Gap Highway” account under Treasury Account Fund Symbol 69X0553, a total of \$2,037,035 is hereby permanently cancelled;*
- (2) Public Law 92-398, and any other Act, appropriated to the “Rail Crossings-Demonstration Projects” account under Treasury Account Fund Symbol 69X0555, a total of \$517,221 is hereby permanently cancelled;*
- (3) Public Law 94-387, and any other Act, appropriated to the “Railroad-Highway Crossings Demonstration Projects” account under Treasury Account Fund Symbol 69X0557, a total of \$2,180,720 is hereby permanently cancelled;*
- (4) Public Law 96-131, and any other Act, appropriated to the “Highway Beautification” account under Treasury Account Fund Symbol 69X0540, a total of \$488,910 is hereby permanently cancelled.*
- (5) Public Law 97-276, and any other Act, appropriated to the “Interstate Transfer Grants-Highways” account under Treasury Account Fund Symbol 69X0560, a total of \$5,211,249 is hereby permanently cancelled;*
- (6) Public Law 98-473, and any other Act, appropriated to the “Intermodal Urban Demonstration Project” account under Treasury Account Fund Symbol 69X8001, a total of \$2,254,066 is hereby permanently cancelled;*
- (7) Public Law 101-164, and any other Act, appropriated to the “Highway Demonstration Projects, Preliminary Engineering” account under Treasury Account Fund Symbol 69X0583, a total of \$2,414,514 is hereby permanently cancelled;*
- (8) Public Law 102-388, and any other Act, appropriated to the “Highway Projects” account under Treasury Account Fund Symbol 69X8382, a total of \$5,004,605 is hereby permanently cancelled;*
- (9) Public Law 105-66, and any other Act, appropriated to the “Appalachian Development Highway System” account under Treasury Account Fund Symbol 69X0640, a total of \$45,954,383 is hereby permanently cancelled;*
- (10) Public Law 106-246, and any other Act, appropriated to the “Construction and Improvements to Halls Mill Road, New Jersey” account under Treasury Account Fund Symbol 69X8061, a total of \$1,000,000 is hereby permanently cancelled;*

- (11) Public Law 106-346, and any other Act, appropriated to the “Miscellaneous Highway Project” account under Treasury Account Fund Symbol 69X8058, a total of \$48,019,600 is hereby permanently cancelled;*
  - (12) Public Law 106-346, and any other Act, appropriated to the “Miscellaneous Highway Project” account under Treasury Account Fund Symbol 69X8058.11, a total of \$3,000,063 is hereby permanently cancelled;*
  - (13) Public Law 107-87, and any other Act, appropriated to the “Miscellaneous Highway Project” account under Treasury Account Fund Symbol 69X0641, a total of \$9,782,607 is hereby permanently cancelled;*
  - (14) Public Law 107-87, and any other Act, appropriated to the “Miscellaneous Highway Project” account under Treasury Account Fund Symbol 69X0641.11, a total of \$496,750 is hereby permanently cancelled; and*
  - (15) Public Law 111-117, and any other Act, appropriated to the “Surface Transportation Priorities” account under Treasury Account Fund Symbol 69X0538, a total of \$88,588,897 is hereby permanently cancelled;*
- (b) The cancellations under subsection (a) shall not be taken from the portions of unobligated balances of funds in such accounts for which a State used its authority under section 125 of division L of Public Law 114-113 or section 422 of division K of Public Law 115-31.*

[Reason for including SEC. 126: Rescissions of old earmarked funds with no recent activity.]

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**EXHIBIT III-1  
FEDERAL-AID HIGHWAYS  
Summary by Program Activity  
Appropriations, Obligation Limitations, and Exempt Obligations  
(\$000)**

	<u>FY 2017 ACTUAL</u>	<u>FY 2018 ANNUALIZED CR</u>	<u>FY 2019 REQUEST</u>
Federal-aid Highways			
[Limitation on Administrative Expenses] <sup>1/</sup>	[435,795]	[432,836]	[449,692]
(Obligation Limitation)	(43,266,100)	(42,972,280)	(45,268,596)
Exempt Programs <sup>2/</sup>	739,000	739,000	739,000
Flex Transfers to/from FTA	-1,435,956	-1,300,000	-1,300,000
Transfer to NHTSA <sup>3/</sup>	-101,241	-99,262	-----
<b>Total, Obligation Limitation &amp; Authority</b>	<b><u>\$42,467,903</u></b>	<b><u>\$42,312,018</u></b>	<b><u>\$44,707,596</u></b>
<b>FTE</b>			
Direct Funded	2,443	2,463	2,456
Reimbursable	<u>245</u>	<u>245</u>	<u>245</u>
<b>Total, FTE</b>	<b><u>2,688</u></b>	<b><u>2,708</u></b>	<b><u>2,701</u></b>

**Program and Performance Statement**

**This account provides necessary resources to support Federal-aid highway program activities and maintain the agency's administrative infrastructure. Funding will maintain and improve the safety, condition, and performance of our national highway system. These funds will help create a well-coordinated, well-maintained transportation network that supports our economy, creates jobs, and leads us into the future.**

[ ] Non-add

1/ FY 2017 and FY 2018 include FHWA General Operating Expenses (GOE) and transfers to the Appalachian Regional Commission (ARC) for administrative activities associated with the Appalachian development highway system. FY 2019 includes FHWA GOE. All fiscal years do not include amounts for other non-administrative programs authorized under Administrative Expenses.

2/ FY 2017 does not reflect sequestration of 6.9 percent of contract authority exempt from obligation limitation per Sequestration Order dated February 9, 2016. FY 2018 does not reflect sequestration of 6.6 percent of contract authority exempt from obligation limitation per Sequestration Order dated May 23, 2017.

3/ FHWA anticipates transfers to NHTSA in FY 2019 in an amount to be determined based on State penalty information.

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**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL-AID HIGHWAYS**

**PROGRAM AND FINANCING SCHEDULE  
in millions of dollars**

Identification code: 69-8083-0-7-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Obligations by program activity:</b>			
Obligations by program activity:			
0010 Surface transportation block grant program	11,742	12,220	12,980
0014 National highway performance program	20,098	20,917	22,219
0015 Congestion mitigation and air quality improvement program	1,258	1,309	1,391
0016 Highway safety improvement program	2,911	3,030	3,218
0017 Metropolitan transportation planning	252	262	279
0019 National highway freight program	934	972	1,033
0020 Nationally significant freight and highway projects	210	790	1,208
0024 Federal lands and tribal programs	684	700	716
0029 Research, technology and education program	218	218	219
0032 Administration - LAE	426	431	450
0033 Administration - ARC	2	2	.....
0058 Other programs	3,147	1,605	803
0091 Programs subject to obligation limitation	41,882	42,456	44,516
0211 Exempt programs	676	798	775
0500 Total direct program	42,558	43,254	45,291
Credit program obligations:			
0701 Direct loan subsidy	202	249	249
0709 Administrative expenses	5	8	8
0791 Direct program activities, subtotal	207	257	257
0799 Total direct obligations	42,765	43,511	45,548
0801 Reimbursable program	289	488	340
0900 Total new obligations	43,054	43,999	45,888
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	24,476	23,333	22,490
1001 Discretionary unobligated balance brought fwd, Oct 1	362	407	.....
1013 Unobligated balance of contract authority transferred to or from other accounts [69-8350]	10	.....	.....
1050 Unobligated balance (total)	24,486	23,333	22,490
Budget authority:			
Appropriations, discretionary:			
1101 Appropriation (trust fund)	44,005	43,706	46,008
1120 Appropriations transferred to other accounts [69-8350]	-1,175	-1,300	-1,300
1120 Appropriations transferred to other accounts [69-8020]	-101	-99	.....
1121 Appropriations transferred from other accounts [69-8350]	52	.....	.....
1137 Appropriations applied to liquidate contract authority	-42,781	-42,307	-44,708
1160 Appropriations, discretionary (total)	.....	.....	.....
Contract authority, discretionary:			
1520 Contract authority/unobligated balances of contract authority permanently reduced	.....	-857	.....
1540 Contract authority, discretionary (total)	.....	-857	.....
Contract authority, mandatory:			
1600 Contract authority	44,005	44,973	46,008
1610 Transfer to other accounts [69-8350]	-1,478	-1,300	-1,300
1610 Transfer to other accounts [69-8020]	-101	-99	.....
1611 Transfer from other accounts [69-8350]	42	.....	.....
1620 Contract authority/unobligated balances of contract authority permanently reduced	-857	.....	.....
1621 Contract authority temporarily reduced	-51	-49	.....
1640 Contract authority, mandatory (total)	41,560	43,525	44,708
Spending authority from offsetting collections, discretionary:			
1700 Collected	334	488	340
1701 Change in uncollected payments, Federal sources	7	.....	.....
1750 Spending authority from offsetting collections, discretionary (total)	341	488	340
1900 Budget authority (total)	41,901	43,156	45,048
1930 Total budgetary resources available	66,387	66,489	67,538
Memorandum (non-add) entires:			
1941 Unexpired unobligated balance, end of year	23,333	22,490	21,650

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL-AID HIGHWAYS**

**PROGRAM AND FINANCING SCHEDULE  
in millions of dollars**

Identification code: 69-8083-0-7-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Change in obligated balance</b>			
Unpaid obligations:			
3000    Unpaid obligations, brought forward, Oct 1	63,260	62,395	62,235
3010    Obligations incurred, unexpired accounts	43,054	43,999	45,888
3020    Outlays (gross)	-43,919	-44,159	-45,241
3050    Unpaid obligations, end of year	62,395	62,235	62,882
Uncollected payments:			
3060    Uncollected payments, Federal sources, brought forward, Oct 1	-567	-574	-574
3070    Change in uncollected payments, Federal sources, unexpired	-7	.....	.....
3090    Uncollected payments, federal sources, end of year	-574	-574	-574
Memorandum (non-add) entries			
3100    Obligated balance, start of year	62,693	61,821	61,661
3200    Obligated balance, end of year	61,821	61,661	62,308
<b>Budget authority and outlays, net</b>			
Discretionary:			
4000    Budget authority, gross	341	-369	340
Outlays, gross:			
4010    Outlays from new discretionary authority	11,650	11,712	12,212
4011    Outlays from discretionary balances	31,497	31,727	32,275
4020    Outlays, gross (total)	43,147	43,439	44,487
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030        Federal sources	-225	-488	-340
4040        Offsets against gross budget authority and outlays	-334	-488	-340
Additional offsets against gross budget authority only:			
4050    Change in uncollected payments, Federal sources, unexpired	-7	.....	.....
4070    Budget authority, net (discretionary)	.....	-857	.....
4080    Outlays, net (discretionary)	42,813	42,951	44,147
Mandatory:			
4090    Budget authority, gross	41,560	43,525	44,708
Outlays, gross:			
4100    Outlays from new mandatory authority	193	186	200
4101    Outlays from mandatory balances	579	534	554
4110    Outlays, gross (total)	772	720	754
4160    Budget authority, net (mandatory)	41,560	43,525	44,708
4170    Outlays, net (mandatory)	772	720	754
4180    Budget authority, net (total)	41,560	42,668	44,708
4190    Outlays, net (total)	43,585	43,671	44,901

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
FEDERAL-AID HIGHWAYS**

**OBJECT CLASSIFICATION  
in millions of dollars**

Identification code: 69-8083-0-7-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Direct obligations:</b>			
Personnel compensation:			
11.1 Full-time permanent	292	296	301
11.3 Other than full-time permanent	4	4	4
11.5 Other personnel compensation	36	36	36
11.9 Total personnel compensation	332	336	341
12.1 Civilian personnel benefits	99	100	101
21.0 Travel and transportation of persons	21	21	21
22.0 Transportation of things	1	1	1
23.1 Rental payments to GSA	30	29	29
23.2 Rental payments to others	1	1	1
23.3 Communications, utilities, and misc. charges	8	8	8
24.0 Printing and reproduction	1	1	1
25.1 Advisory and assistance services	77	77	77
25.2 Other services from non-federal sources	545	545	545
25.3 Other goods and services from federal sources	436	436	436
25.4 Operation and maintenance of facilities	37	37	37
25.7 Operation and maintenance of equipment	48	48	48
26.0 Supplies and materials	5	5	5
31.0 Equipment	9	9	9
32.0 Land and structures	5	5	5
33.0 Investments and loans	202	249	249
41.0 Grants, subsidies, and contributions	40,908	41,603	43,634
99.0 Direct obligations	42,765	43,511	45,548
99.0 Reimbursable obligations	289	488	340
99.9 Total new obligations	43,054	43,999	45,888

**FEDERAL-AID HIGHWAYS  
EMPLOYMENT SUMMARY**

Identification code: 69-8083-0-7-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
Direct:			
1001 Civilian full-time equivalent employment	2,443	2,463	2,456
Reimbursable:			
2001 Civilian full-time equivalent employment	245	245	245
Allocation account:			
3001 Civilian full-time equivalent employment	3	3	3

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## **Executive Summary**

### **Highway Safety Improvement Program (HSIP)**

---

#### **What is the request and what funds are currently spent on the program?**

Our FY 2019 budget requests a \$2.60 billion Federal-aid safety program to significantly reduce fatalities and serious injuries on all public roads. The HSIP is leading the transition to a performance-based program, which will require that Federal-aid investments support State-set targets for safety, and will hold States accountable to achieving safety performance targets. Improving roadway safety is a top priority of the Department. The HSIP FY 2017 actual level is \$2.51 billion.

#### **What is this program and what does this funding level support?**

The HSIP is a performance-driven, strategic program that will reduce fatalities and serious injuries for all road users, including pedestrians and bicyclists. The program emphasizes coordination among all highway safety modes, including the National Highway Traffic Safety Administration (NHTSA), Federal Railroad Administration (FRA) and the Federal Motor Carrier Safety Administration (FMCSA). A primary component of the HSIP is the requirement that each State utilize a Strategic Highway Safety Plan (SHSP). This statewide, coordinated safety plan provides a comprehensive framework for establishing statewide goals and objectives to reduce fatalities and serious injuries.

Data from 2016 indicates that 37,461 people died in motor vehicle crashes on the nation's highways at an average daily rate of 102 deaths, representing a 5.6-percent increase from 2015. However, this 5.6-percent increase is lower than the 8.4-increase from 2014 to 2015. The largest percentage increase prior to the 8.4-percent increase was the 9.4-percent increase from 1963 to 1964. The Department must continue to take action to address this serious public safety problem. In addition to the human impact, NHTSA estimates that the annual societal burden of highway crashes when lost quality of life is taken into account is \$836 billion. No amount of money can replace the loss of a loved one or lessen a family member's suffering. However, quantifying the economic and societal costs of motor vehicle crashes demonstrates even further the importance of investing in highway safety and achieving a better safety record on U.S. highways.

Our \$2.60 billion request for HSIP represents a small increase in existing funding to maintain the substantial benefits of the HSIP. Safety is the Department's top priority, and it is critical that sufficient resources are provided to achieve an even better safety record on U.S. highways.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

This program saves lives and reduces fatalities and serious injuries on all public roadways for all road users. Despite the recent increase in fatalities, the overall number of highway-related fatalities decreased 14-percent between 2005 and 2016. This decrease in highway fatalities coincides with the establishment of the HSIP as a core Federal-aid program. An extrapolation of the data conservatively indicates that the full benefits of a \$2.60 billion program are as high as 1,800 lives saved and 6,000 serious injuries prevented over the average 10-year lifecycle of the safety infrastructure countermeasures funded by the HSIP. FHWA estimates that highway safety improvement projects return up to \$7 of benefits for every dollar invested.

## Detailed Justification Highway Safety Improvement Program

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Highway Safety Improvement Program (\$2.60 billion) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Highway Safety Improvement Program</b>			
Highway Safety Improvement Program	2,508,792	2,556,434	2,603,054
<b>Total</b>	<u>2,508,792</u>	<u>2,556,434</u>	<u>2,603,054</u>

### What is this program and what does this funding level support?

---

The HSIP is a safety-focused program that targets funds to achieve a significant reduction in fatalities and serious injuries on all public roads for all road users, including pedestrians and bicyclists. The HSIP includes a performance-driven, strategic approach to improving highway safety and assists the States in improving their roadway safety data. HSIP projects are consistent with the emphasis areas in the State SHSP, although the HSIP also includes set-asides for railway-highway crossings and for other safety-related programs. Safety investments from the HSIP tend to be infrastructure projects that save lives and reduce the severity of crashes. Anticipated FY 2019 accomplishments include State implementation of projects and strategies through a performance-based approach; improved safety data collection, analysis and use; improved program reporting; and compliance with Fixing America’s Surface Transportation Act (FAST Act) requirements.

#### Program Features:

- **Performance-based Framework** – HSIP is leading the implementation of FHWA’s overall transportation performance management framework. Beginning in 2017, States and metropolitan planning organizations (MPOs) set data-driven annual safety performance targets for the first time, which will further help guide their investment decision-making. The features of the framework include:
  - A coordinated set of performance measures for the number and rate of fatalities, number and rate of serious injuries, and number of non-motorized fatalities and non-motorized serious injuries. Three of the performance measures (number of fatalities, rate of fatalities, and number of serious injuries) are synchronized with the performance measures States report to NHTSA.
  - Performance management-based evaluation of program results.
  - Investments dedicated to safety for those States that do not meet or make significant progress toward meeting their targets.
  - Technical assistance aimed toward the achievement of State and MPO safety performance targets.

- **Statewide Strategic Highway Safety Plan** – Each State's SHSP is a statewide coordinated plan developed in cooperation with a broad range of multidisciplinary stakeholders that provides a comprehensive framework for safety. The data-driven State SHSP defines State safety goals and integrates the 4 “E’s” – engineering, education, enforcement, and emergency medical services. The States are guided by the plan and their data in using HSIP and other funds to solve State-specific safety problems and save lives. The SHSP provides the overarching strategic framework for the State DOTs' program of highway safety improvement projects.
- **Data and Analysis** – As part of the HSIP, States are required to develop and maintain a safety data system or advance their capabilities to collect, maintain, and share a record of safety data on all public roads for all road users including pedestrians and bicyclists; create or enhance a highway basemap of all public roads; collect a subset of the Model Inventory of Roadway Elements (MIRE); develop analytical processes for safety data elements; acquire and implement roadway safety analysis tools; identify roadway features that constitute a danger to all road users and perform safety problem identification and countermeasure analysis; and implement and evaluate highway safety improvement projects.
- **HSIP Reporting and Evaluation** – Each State prepares an annual report on its highway safety improvement program that describes the projects implemented under the program, assesses the effectiveness of those projects, and describes the extent to which the funded improvements contribute to the State meeting its targets and reducing the number and rate of fatalities and serious injuries on all public roads in the State. The results feed the next iteration of the SHSP and future data and analysis efforts.
- **Railway-Highway Crossing Funds** – \$240 million of HSIP funds are set aside to address safety at railway-highway crossings.
- **Safety-related Programs** – \$3.5 million of HSIP funds are set aside for transportation safety outreach, training, and education through the following activities: Operation Lifesaver, the Public Road Safety Clearinghouse, Work Zone Safety Grants, the National Work Zone Safety Information Clearinghouse, and guardrail training.

Our \$2.60 billion request for HSIP represents a modest increase in existing funding to maintain the substantial benefits of the HSIP. Safety is the Department’s top priority, and it is critical that sufficient resources are provided to achieve a better safety record on U.S. highways.

The HSIP is the main instrument for infrastructure safety to achieve the goal of reducing transportation-related fatalities, injuries, and crashes for all transportation users; and to work toward zero fatalities across all modes of travel. Achieving this goal requires undertaking various strategies in the focus areas of safer vehicles, safer driver behavior, and safer highway infrastructure. In MAP-21, Congress supported that vision by confirming the purpose of the HSIP – “to achieve a significant reduction in traffic fatalities and serious injuries.” The FAST Act and this budget request work to achieve this goal.

FHWA contributes greatly toward the achievement of the Safety Goal through the close working relationship with other safety modes, State, Tribal, local governments, and other partners. While NHTSA and FMCSA focus resources on improved vehicle and user safety, FHWA concentrates on ensuring the safety of the highway infrastructure. This balance of coordinated efforts enables the DOT modes to concentrate on their areas of expertise while working toward a single goal. This coordination encourages and enables greater unity of effort. Coupled with a comprehensive focus on the shared reliable safety data, the combined safety work of all modes will ensure that the federal efforts are implemented to their greatest potential.

The SHSP process has fostered an unprecedented level of partnership among a variety of safety stakeholders. As life-saving initiatives are identified, the demand for dedicated safety resources grows. Further, with an additional emphasis on safety and roadway design characteristics data, States will be able to more effectively use existing and future analysis tools for problem identification, trend analysis, safety projects, and systemic improvement planning.

Safety infrastructure investments are effective and cost-beneficial. FHWA identifies and promotes proven safety countermeasures that have a demonstrated ability to reduce crashes. FHWA helps document these at the Crash Modification Factors (CMF) Clearinghouse (<http://www.cmfclearinghouse.org>), a web-based database with supporting documentation to help transportation engineers identify the most appropriate countermeasure for their safety needs. A CMF is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site. For example, the installation of centerline rumble strips on a two-lane roadway can lead to a 14 percent reduction in all crashes and a 55 percent reduction in head-on crashes. Cable median barriers on multi-lane divided roadways can reduce injury crashes by 29 percent.

FHWA's Roadway Safety Data Program, as summarized at <http://safety.fhwa.dot.gov/rsdp/toolbox-home.aspx>, provides outreach guidance, technical support, training, and case studies on the use of the Highway Safety Manual, the CMF Clearinghouse and other related analysis tools such as the systemic safety project selection tool (<http://safety.fhwa.dot.gov/systemic/>) to support more scientifically rigorous safety investment decision-making. FHWA also works with State and local agencies to improve the safety data systems that are the foundation for data-driven, evidence-based decision-making.

**What benefits will be provided to the American public through this request and why is this program necessary?**

HSIP could reduce fatalities by as much as 180 per year and serious injuries by 600 per year; and is estimated to save 1,800 lives and 6,000 serious injuries over the average 10-year lifecycle of the safety infrastructure countermeasures funded by the HSIP. Funding the program at a lower level would reduce the States' ability to make the most effective safety investment decisions and result in fewer safety investments. Therefore, less funding will result in fewer lives saved and fewer serious injuries prevented. The \$2.60 billion HSIP request would provide an estimated economic benefit as high as \$18 billion, a benefit-cost ratio of approximately 7 to 1.

After States set safety targets, the performance-based aspects of HSIP will hold them accountable for achieving those targets. The public investment in transportation safety will be

more effectively managed through improved decision-making as a result of an increased focus on target achievement and a greater level of transparency and accountability.

A single death on our roadways, sidewalks, and bicycles paths is a tragedy; almost 102 deaths a day is unacceptable when we possess the tools and capability to help prevent them. This program will significantly reduce deaths and serious injuries for all road users. This data-driven, coordinated approach has played a significant role in achieving the 14 percent reduction in highway fatalities and serious injuries since 2005, the year that the HSIP was enacted.

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## **Executive Summary**

### **National Highway Performance Program**

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#### **What is the request and what funds are currently spent on the program?**

Our FY 2019 budget requests \$23.74 billion for the National Highway Performance Program (NHPP) to improve the condition and performance of the National Highway System (NHS). A key component of the NHPP is performance management requirements to focus Federal-aid investments to support progress toward the achievement of performance targets for the NHS. These requirements will hold States accountable for achieving performance targets while continuing to give them the flexibility to make transportation investment decisions. The FY 2017 actual level is \$22.83 billion.

#### **What is this program and what does this funding level support?**

The NHPP provides funds to the States on a formula basis. Its purpose is to preserve and improve the NHS. Due to expected population and economic growth, freight and passenger transportation demands are projected to increase 250 percent by 2050. Modernizing and preserving an efficient transportation system in this environment are critical to maintain the competitiveness of our economy.

In 2016, 61 percent of vehicle miles travelled on the NHS occurred on pavements with good ride quality. The condition of pavements and bridges across the country varies considerably as many States struggle to maintain current conditions. Investment in our nation's transportation infrastructure is needed right now if we expect to maintain a global competitive edge.

Funding the NHPP program at \$23.74 billion in FY 2019 supports improvements toward achieving a state of good repair and improved operations on the NHS, and is consistent with the analyses presented in the biennial *Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance* report to Congress (2015 C&P report). Maintaining a state of good repair on the NHS reduces more costly improvements that would be required if infrastructure is allowed to deteriorate.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

Preserving and improving the NHS keeps America's highways and bridges safe, supports United States (U.S.) competitiveness in world trade, and improves the U.S. economy. It binds the country together by making interstate and intra-state commerce possible, while allowing Americans to visit other parts of the country to experience its wonders. It creates employment opportunities to support the development of a skilled and diverse transportation workforce through FHWA's existing On-the-Job Training and workforce development programs. The NHPP emphasizes preservation of the NHS while giving States flexibility to make additional investments to enhance NHS condition and operational performance and to build new capacity. The NHPP addresses all areas of the U.S. including mobility and access in rural areas, ensuring that improvements to the NHS benefit both urban and rural areas.

## Detailed Justification National Highway Performance Program

### What is the request and what funds are currently spent on the program?

---

#### FY 2019 – National Highway Performance Program (\$23.74 billion) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>National Highway Performance Program</b>			
National Highway Performance Program <sup>1/</sup>	22,830,010	23,263,553	23,741,389
<b>Total</b>	<u>22,830,010</u>	<u>23,263,553</u>	<u>23,741,389</u>

1/ \$639 million in each fiscal year is exempt from obligation limitation of which \$44.1 million was sequestered in FY 2017, and \$42.2 million was sequestered in FY 2018. (sequestration not reflected in table).

### What is this program and what does this funding level support?

---

The NHPP is a formula-based program that supports the Department’s state of good repair outcome to increase the proportion of highways and bridges in good physical and operating condition. It helps to keep our roads and bridges safe; improves our Nation’s competitiveness in global trade; and maximizes the economic returns from transportation policies and investments.

This justification requests that the NHPP be funded at \$23.74 billion to continue progress towards achieving a state of good repair on the NHS.

Key features of the program include:

- a focus on improving and preserving the NHS;
- a performance-based framework;
- increased flexibility to the States for making transportation investment decisions; and
- requirements for risk-based asset management plans.

The NHPP requires a risk-based asset management approach to ensure that States have a strategic and systematic process for operating, preserving, and improving physical assets on the NHS. It focuses on engineering and economic analysis using quality information to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve a desired state of good repair over the lifecycle of the assets at minimum possible cost. The intent of this approach is to better manage system condition and performance.

#### The National Highway System (NHS)

The Federal Government has periodically defined and focused resources on the roads that were critical to national interests and that enhanced mobility, security, economic growth, and quality of life. Each time, the decision was made to emphasize a limited network of roads of critical national priority – the Federal-aid system (1921), the Interstate System (1956), and the National Highway System (1995). MAP-21 defined the NHS as a network composed of the Interstate System, all principal arterials, intermodal connectors, and roads important to national defense.

The FAST Act maintains this network and has added provisions for removing some principal arterials from the NHS after review and reclassification by the States and FHWA.

The NHS totals approximately 220,000 miles. The NHS provides mobility to the vast majority of the Nation's population and almost all of its commerce. It supports national defense and promotes intermodal connectivity. While NHS mileage is only a small portion of the nation's overall public road mileage, it carries 58 percent of all vehicular traffic. The majority of truck-borne freight uses it at some point in its journey. While it comprises 53 percent of U.S. highway border crossings, it handles 98 percent of the value of total truck trade with Canada and Mexico.

The key elements of NHS include:

- **Principal Arterials** (including the Interstate System) serving regional and national needs as conduits for major traffic flow and freight movement. In urban areas, all high volume corridors are included in the NHS. In rural areas, the NHS carries over 47 percent of all vehicle miles traveled, and provides critical access for jobs, health care, and commerce.
- **Intermodal Connectors** providing access between major intermodal facilities and the principal arterial system. These roads are often the important "last mile" connecting critical intermodal facilities, such as rail, bus, ports, etc. This also provides critical access for jobs, health care, and commerce.
- **Strategic Highway Network Roadways (STRAHNET)** providing defense access, network continuity, and emergency capabilities for defense purposes. It contains all of the routes, including connectors to major military installations, designated by the Department of Defense as essential for national defense.
- **Border Crossings on Principal Arterials** providing vital links with our largest trading partners. Maintaining efficient and effective transportation system connections to U.S. ports of entry is essential for global competitiveness and U.S. economic growth.

#### **Eligibility:**

NHPP projects must be on an eligible facility and support progress towards achievement of national performance goals for improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the NHS, and be consistent with metropolitan and statewide planning requirements. Eligible activities include:

- Construction, reconstruction, resurfacing, restoration, rehabilitation, preservation, operational improvements, and protection against extreme events of NHS segments.
- Construction, replacement, rehabilitation, preservation, and protection (including scour countermeasures, seismic retrofits, impact protection measures, security countermeasures, and protection against extreme events) of NHS bridges and tunnels.
- Reconstruction, resurfacing, restoration, rehabilitation, or preservation of a bridge on a Federal-aid highway that is not on the NHS.
- Inspection and evaluation of bridges and tunnels on the NHS, and inspection and evaluation of other NHS highway infrastructure assets.
- Training of bridge and tunnel inspectors.
- Construction, rehabilitation, or replacement of existing ferry boats and facilities, including approaches that connect road segments of the NHS.
- Construction, reconstruction, resurfacing, restoration, rehabilitation, preservation of, and operational improvements for, a Federal-aid highway not on the NHS; and construction

of a transit project eligible for assistance under chapter 53 of title 49, if the project is in the same corridor and in proximity to a fully access-controlled NHS route, if the improvement is more cost-effective (as determined by a benefit-cost analysis) than an NHS improvement, and will reduce delays or produce travel time savings on the NHS route and improve regional traffic flow.

- Bicycle transportation and pedestrian walkways.
- Highway safety improvements on the NHS.
- Capital and operating costs for traffic and traveler information, monitoring, management, and control facilities and programs.
- Development and implementation of a State NHS Asset Management Plan including data collection, maintenance and integration, software costs, and equipment costs.
- Infrastructure-based intelligent transportation systems capital improvements, including the installation of vehicle-to-vehicle-infrastructure communication equipment.
- Environmental restoration and pollution abatement.
- Control of noxious weeds and establishment of native species.
- Environmental mitigation related to NHPP projects.
- Construction of publicly owned intracity or intercity bus terminals servicing the NHS.
- Subsidy and administrative costs associated with providing Federal credit assistance for Transportation Infrastructure Finance and Innovation Act (TIFIA) projects.
- Projects to reduce the risk of failure of critical infrastructure in the State whose incapacity or failure would have a debilitating impact on national or regional economic security, national or regional energy security, national or regional public health or safety, or any combination of those matters.
- Payments made pursuant to a long term concession agreement, such as availability payments.

**Funding:**

Funds are apportioned by formula, and the majority are subject to the overall Federal-aid obligation limitation. State DOTs can spend NHPP funds on eligible facilities that support progress towards the achievement of national performance goals. Projects must be included in the Statewide Transportation Improvement Program (STIP) and in the Transportation Improvement Program (TIP) for urbanized areas.

Two percent of each State's NHPP apportionment is set aside for State Planning and Research.

**Federal Share:**

The Federal Government generally provides 90 percent of eligible project costs of projects on the Interstate system that do not add single occupant vehicle capacity. Otherwise, the federal share is generally 80 percent of eligible project costs of projects on the NHS.

Funding the NHPP program at \$23.74 billion in FY 2019 supports continued progress in achieving a state of good repair and improved operations of the NHS.

Previous programs that were focused on the NHS significantly improved the condition of the NHS. The NHPP program will continue to focus federal funds to address national performance

goals for the NHS. Among these are the condition of pavements and bridges. Past performance has demonstrated that sustained investment in our Nation's roads and bridges leads to better roadway and bridge conditions. A couple examples of this include:

- The share of travel on NHS pavements with good ride quality rose from 48 percent in 2000 to 61 percent in 2016 despite MAP-21 increasing NHS mileage by almost 60,000 miles. Bringing pavements up to a state of good repair yields benefits to system users in the form of decreased wear and tear on vehicles, and reduced repair costs; reduced traveler delays; and lower crash rates.
- Even as the total number of NHS bridges in the Nation's inventory increased from 116,340 in 2008 to 145,104 in 2017, the percentage of NHS bridges classified as structurally deficient dropped from 5.4 percent to 3.5 percent. Similarly, the percentage of the deck area (a measure of bridge size) on NHS bridges classified as structurally deficient has dropped from 8.2 percent in 2008 to 4.9 percent in 2017.

Additionally, the NHPP has performance provisions that will improve investment decision-making through a greater level of accountability for States to improve or preserve the condition of NHS pavements and bridges and the performance of the system. These provisions require States to carry out a risk-based asset management process to monitor and evaluate conditions, establish future condition targets, plan investment strategies, and program funding in support of these strategies. The NHPP has additional requirements for States to maintain minimum levels of condition for NHS bridges and interstate pavements and to make significant progress toward the achievement of their NHPP conditions and performance targets. The regulations to implement these new requirements went into effect on May 20, 2017. Examples of the measures to assess the condition of NHS bridges include the following:

- Even as the total number of NHS bridges in the Nation's inventory increased from 117,485 in 2012 to 145,104 in 2017, the percentage of the deck area on NHS bridges classified as in "Poor" condition dropped from 7.0 percent to 4.8 percent. Inversely, the percentage of deck area on NHS bridges classified as in "Good" condition increased from 41.7 percent to 44.3 percent<sup>1</sup>.

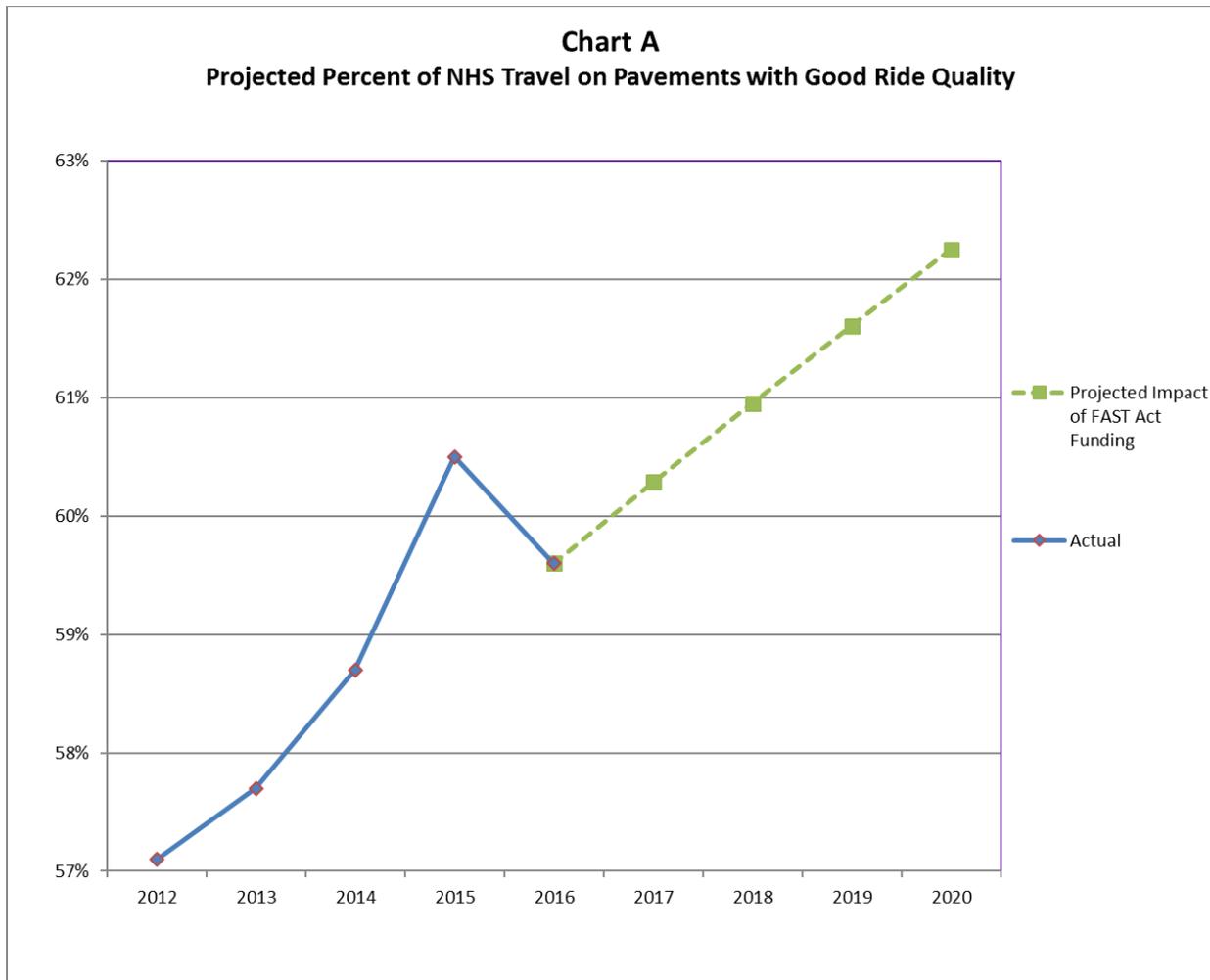
In addition to the performance measures mentioned above, the implementation of projects, including types of improvements, is tracked through FHWA's Financial Management Information System.

In 2016, 61 percent of NHS vehicle miles travelled occurred on pavements with good ride quality. As shown in Chart A, the proposed FAST Act investment level for NHPP is projected to increase this share to over 62 percent by 2020. This forecast is based on analyses developed for the biennial C&P report, and assumes a mix of highway and bridge investments generally consistent with recent trends. Given that the NHS carries a majority of all vehicular traffic, each

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<sup>1</sup> In 2012, the Moving Ahead to Progress in the 21st Century Act (P.L. 112-141) required the establishment of measures to assess the condition of bridges on the NHS. Beginning in 2018, FHWA will transition from the bridge classification of structurally deficient to the various measures to assess the condition of NHS bridges established in 23 CFR 490 Subpart D.

1 percentage point change translates into 18 billion more vehicle miles travelled occurring on pavements with good ride quality.

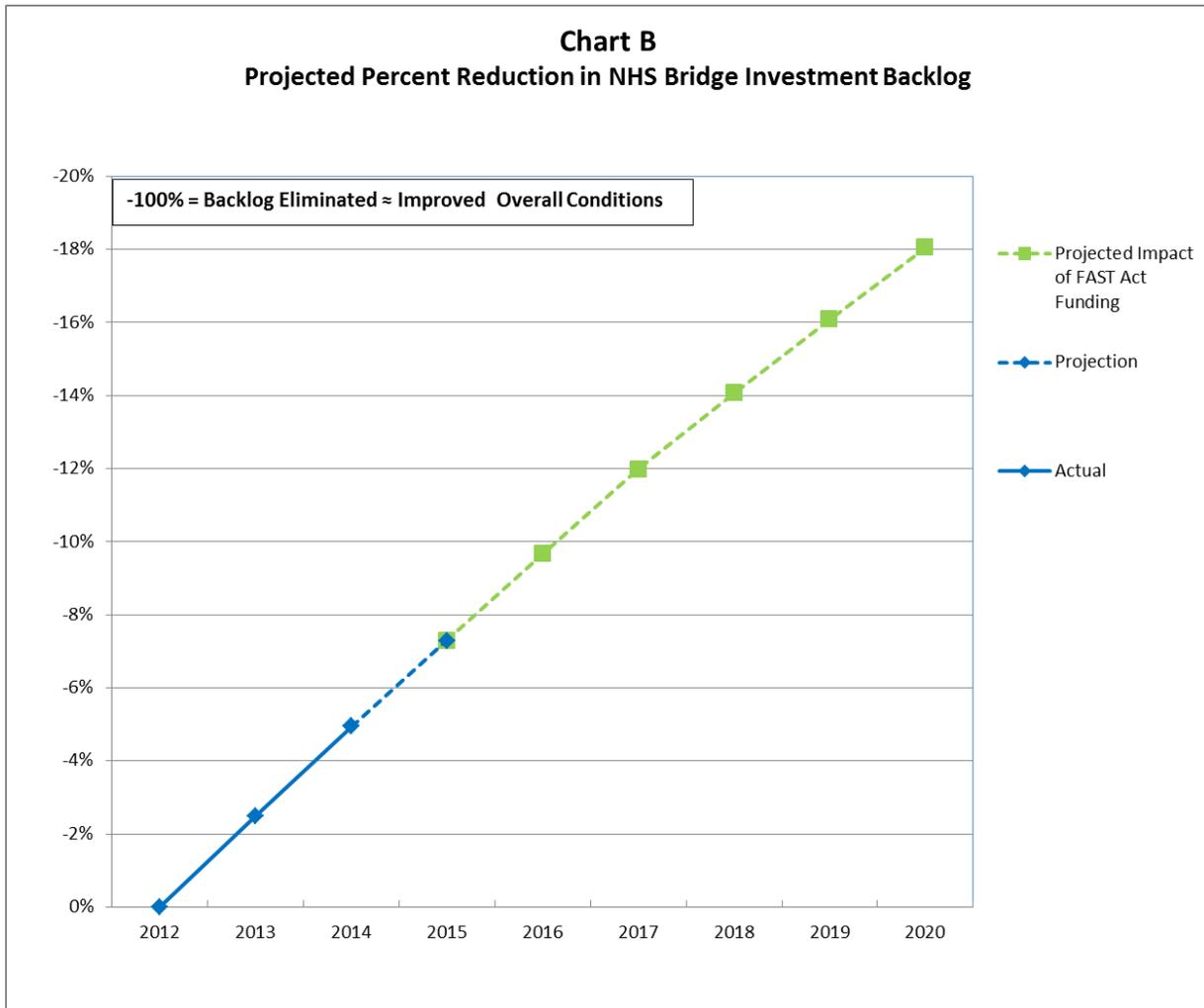


Note: Green line reflects proposed NHPP investment levels under the FAST Act for 2016 to 2020. Impacts shown assume State and local highway capital spending patterns are consistent with recent years, but that a greater share of national investment is directed towards improving operational performance for freight movements

Each biennial C&P report identifies a backlog of needed bridge rehabilitation investments, consisting of all potential improvements to bridges that appear to be cost-beneficial, based solely on their current conditions. Any reductions in this backlog over time would reflect improvements to overall bridge conditions; increases in this backlog would be consistent with a worsening of system-wide bridge conditions. Based on analyses developed for the latest biennial C&P report, the portion of the backlog attributable to bridges on the enhanced NHS was estimated to be \$74.2 billion. The proposed investment level for NHPP is projected to help reduce this economic investment backlog for NHS bridges by 18 percent by 2020, as shown in Chart B that follows.

An objective of the 2015 C&P report’s Improve Highway Conditions and Performance scenario was to eliminate the NHS bridge investment backlog by 2032. Assuming a steady glidepath of improvement, this scenario would reduce the backlog by 40 percent by 2020. The proposed

FAST Act investment level is projected to achieve over three-sevenths of the progress reflected under this idealized scenario for the period 2015 to 2020, representing significant progress towards achieving a state of good repair for NHS bridges. However, this progress is only a down payment towards achieving a state of good repair for NHS bridges. This is an ongoing need that will require continuing efforts and funding to address.



Note: Green line reflects proposed NHPP investment levels under the FAST ACT for 2016 to 2020. Impacts shown assume State and local highway capital spending patterns are consistent with recent years, but that a greater share of national investment is directed towards improving operational improvements for freight movements.

Charts A and B assume that future State and local investment patterns continue recent trends. If recent trends for the relative amounts of funds spent on bridges and pavements change, trends in Charts A and B would also change.

Future pavement and bridge performance will also be affected by other factors, including the overall level of highway capital investment funded by States and local governments as well as future changes in the prices of highway construction materials. To the extent that future State and local highway capital spending does not keep pace with inflation, this would negatively affect future highway and bridge performance.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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Preserving and improving the NHS keeps America's highways and bridges safe, supports U.S. economic world trade competitiveness, and improves the U.S. economy. The NHPP emphasizes preservation of the NHS while giving States the flexibility to make additional investments to enhance NHS condition and operational performance and to build new capacity while holding them accountable to minimum infrastructure condition requirements and the achievement of NHPP condition and performance targets.

The NHPP addresses all areas of the U.S., including mobility and access in rural areas, ensuring that improvements to the NHS benefit both urban and rural areas. It creates employment opportunities to support development of a skilled and diverse transportation workforce through FHWA's existing On-the-Job Training and workforce development programs. The public investment in transportation will be more effectively invested through improved decision-making as a result of an increased focus on national goals and a greater level of accountability on system condition and performance.

## **Executive Summary**

### **Surface Transportation Block Grant Program**

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#### **What is the request and what funds are currently spent on the program?**

Our FY 2019 budget request of \$11.88 billion for the Surface Transportation Block Grant Program (STBG) provides flexible funding that States and localities can use to improve the condition and performance of their roads and bridges through a wide range of eligible projects. The FY 2017 actual level is \$11.43 billion.

#### **What is this program and what does this funding level support?**

The STBG is a formula-based program that helps States and localities to invest in Federal-aid highways and support safe, multimodal transportation networks within communities.

The Fixing America's Surface Transportation (FAST) Act amended the Surface Transportation Program, which was first authorized in ISTEA, by renaming the program as the Surface Transportation Block Grant (STBG) Program to acknowledge that this program has the greatest flexibility of FHWA's core highway programs and to better align the name with how the program is (and has been) administered. The FAST Act also sets aside funding from STBG for Transportation Alternatives and Recreational Trails. Whereas the National Highway Performance Program (NHPP) program is limited to the approximately 220,000 mile National Highway System (NHS); the STBG program is available for the roughly 1,000,000 miles of Federal-aid highways, for bridges on any public road, and for transit capital projects. This program gives transportation agencies, local governments, and communities the ability to target funding to address State and local priorities.

Funding the STBG program at \$11.88 billion in FY 2019 supports progress towards improving the condition and performance of Federal-aid highways.

This program provides flexible funding that States and localities can use for projects to preserve and improve the condition and performance on any Federal-aid highway, bridges on any public road, and transit capital projects, including intercity bus terminals and vehicles. Additionally, this program will develop and improve interconnected, multimodal transportation networks, help improve roadway safety for all road users, especially pedestrians and bicyclists, improve air quality, reduce congestion, foster affordable transportation, and improve quality of life.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

The flexibility of the STBG provides transportation agencies with the ability to target funding to State and local priorities. It also provides incentives for Metropolitan Planning Organizations (MPOs) serving urbanized areas over 200,000 in population to improve decision making through encouragement of more equitable and regional approaches to decision making.

STBG increases mobility, access to community resources, and improves quality of life for all ages, abilities, and incomes. Projects funded through this program enjoy broad popularity with communities across the country.

## Detailed Justification Surface Transportation Block Grant Program

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Surface Transportation Block Grant Program (\$11.88 billion) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Surface Transportation Block Grant Program</b>			
Surface Transportation Block Grant Program	11,425,378	11,668,518	11,876,329
<b>Total</b>	<b>11,425,378</b>	<b>11,668,518</b>	<b>11,876,329</b>

### What is this program and what does this funding level support?

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An efficient transportation system is critical to maintaining the competitiveness of our economy. The highly developed U.S. transportation system played a key role in allowing GDP per capita to grow faster in the U.S. than comparable rates abroad. Additional transportation infrastructure investment is needed. This program will give transportation agencies the ability to target funding to State and local priorities.

While the NHS is the Nation’s primary highway system, a second level of roadways plays an important role in funneling the flow of people and goods onto the NHS. These roads connect the Nation’s communities, high-tech research facilities, farms, and recreational areas to the NHS and play an important role in our nation’s vitality and ability to move goods and people efficiently throughout the nation.

The STBG program is the most flexible of the core highway programs. While the NHPP is limited to the approximately 220,000 mile NHS, the STBG program is available for the roughly 1,000,000 miles of Federal-aid highways that include those public roads that are not functionally classified as rural minor collectors or local roads, and for bridges on any public road, for pedestrian and bicycle facilities, and for projects eligible under the Transportation Alternatives set-aside. It provides funding to both urban and rural areas of the States. The biennial Status of the Nation’s Highways, Bridges, and Transit: Conditions and Performance report to Congress (2015 C&P report) identified significant opportunities for additional investment to help achieve a state of good repair and improve the operational performance of Federal-aid highways.

The STBG provides additional eligibilities for transit capital projects, transportation alternative type projects, recreational trail projects, surface transportation projects within port terminal boundaries, truck parking facilities projects, and planning and research. STBG funds can be used to address local needs rather than those of the NHS. Many States will sub-grant STBG funds to cities, counties, and towns to help them connect to the nation’s transportation system. STBG funds improve access and connectivity to jobs and services in rural areas and reduce congestion and improve quality of life in urban areas. These funds give States the flexibility to

make decisions on transportation investments. STBG funds can be used to improve highway infrastructure condition and performance on and off the NHS.

The STBG provides funds to the States to invest in Federal-aid eligible highways to replace, rehabilitate, and preserve roads, bridges, and other highway infrastructure and to expand or build new transportation facilities. The STBG provides a set-aside to rehabilitate or replace bridges on public roads that are not located on a Federal-aid highway. Other illustrative activities include the removal of bottlenecks; projects and strategies to support congestion pricing, electronic toll collection, travel demand management strategies and programs; collection and dissemination of real-time travel information; deployment and integration of Intelligent Transportation System (ITS) technologies; and greater use of traffic incident management practices in corridors. Additionally, these funds will help to enhance access to education resources, health care, recreation, and other quality of life needs in rural areas.

Pursuant to section 504(e) of title 23, United States Code (U.S.C.), States may obligate STBG funds for surface transportation workforce development, training, and education. The application of 504(e) funds may be used to support a broad range of training and education activities, including targeted workforce skilled training; training for State and local transportation agency employees (excluding salaries); university or community college support; outreach to promote surface transportation career awareness, among others. The 504(e) funding may also be used to supplement On-the-Job-Training Supportive Services activities authorized under 23 U.S.C. 140(b), which are targeted to address the historical under-representation of minorities, women, and other disadvantaged individuals these groups in highway construction skilled crafts.

A long term commitment to funding this program has resulted in the following benefits:

- The share of vehicle miles travelled on Federal-aid highway pavements with good ride quality rose from 43 percent in 2000 to 49 percent in 2016.
- The percentage of bridges classified as structurally deficient dropped from 12.1 percent in 2008 to 8.9 percent in 2017 even as the total number of bridges in the Nation's inventory increased from 600,905 to 615,002. Similarly, the percentage of the deck area (a measure of bridge size) on bridges classified as structurally deficient has dropped from 9.4 percent in 2008 to 6.0 percent in 2017.
- The percentage of the deck area of bridges classified as in "Poor" condition dropped from 7.8 percent in 2012 to 5.6 percent in 2017 even as the total number of bridges in the Nation's inventory increased from 607,380 to 615,002. Inversely, the percentage of the deck area on bridges classified as in "Good" condition increased from 44.7 percent in 2012 to 46.1 percent in 2017<sup>1</sup>.

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<sup>1</sup> In 2012, the Moving Ahead to Progress in the 21st Century Act (P.L. 112-141) required the establishment of measures to assess the condition of bridges on the NHS. Beginning in 2018, FHWA will transition from the bridge classification of structurally deficient to the various measures to assess the condition of NHS bridges established in 23 CFR 490 Subpart D.

In addition to these benefits, implementation of projects, including types of improvements, is tracked through FHWA's Financial Management Information System.

STBG funds are primarily eligible for use on projects on Federal-aid highways that include those public roads that are not functionally classified as rural minor collectors or local roads. Federal-aid highways are roads on the National Highway System (including the Interstate system), other arterial roads, urban collectors, and major rural collectors. It accounts for approximately one million of the Nation's four million miles of public roads. STBG funds also may be used on:

- Set-aside funding for bridges on public roads that are not Federal-aid highways.
- Pedestrian and bicycle facilities, trails, and projects eligible under the Transportation Alternatives set-aside.
- Fifteen percent of the funds suballocated for areas with a population of less than 5,000 may be used on rural minor collectors.
- Appalachian local access roads designated in 40 U.S.C. 14501.

**Eligibility:**

- Construction of highways, bridges, tunnels, including designated routes of the Appalachian development highway system and local access roads under section 14501 of title 40; ferry boats and terminal facilities eligible for funding under section 129(c); transit capital projects eligible for assistance under chapter 53 of title 49; infrastructure-based intelligent transportation systems capital improvements, including the installation of vehicle-to-infrastructure communication equipment; truck parking facilities eligible for funding under section 1401 of MAP-21 (23 U.S.C. 137 note); and border infrastructure projects eligible for funding under section 1303 of SAFETEA-LU.
- Operational improvements and capital and operating costs for traffic monitoring, management, and control facilities and programs.
- Environmental measures eligible under sections 119(g), 328, and 329 and transportation control measures listed in section 108(f)(1)(A) (other than clause (xvi) of that section) of the Clean Air Act (42 U.S.C. 7408(f)(1)(A)).
- Highway and transit safety infrastructure improvements and programs, including railway-highway grade crossings.
- Fringe and corridor parking facilities and programs in accordance with section 137 and carpool projects in accordance with section 146.
- Recreational trails projects eligible for funding under section 206, pedestrian and bicycle projects in accordance with section 217 (including modifications to comply with accessibility requirements under the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.)), and the safe routes to school program under section 1404 of SAFETEA-LU (23 U.S.C. 402 note).
- Planning, design, or construction of boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.

- Development and implementation of a State asset management plan for the National Highway System and a performance-based management program for other public roads.
- Protection (including painting, scour countermeasures, seismic retrofits, impact protection measures, security countermeasures, and protection against extreme events) for bridges (including approaches to bridges and other elevated structures) and tunnels on public roads, and inspection and evaluation of bridges and tunnels and other highway assets.
- Surface transportation planning programs, highway and transit research and development and technology transfer programs, and workforce development, training, and education under chapter 5 of title 23 U.S.C.
- Surface transportation infrastructure modifications to facilitate direct intermodal interchange, transfer, and access into and out of a port terminal.
- Projects and strategies designed to support congestion pricing, including electronic toll collection and travel demand management strategies and programs.
- At the request of a State, and upon Secretarial approval of credit assistance under chapter 6 of title 23, subsidy and administrative costs necessary to provide an eligible entity Federal credit assistance under chapter 6 of title 23, with respect to a project eligible for assistance under section 133 of title 23.
- The creation and operation by a State of an office to assist in the design, implementation, and oversight of public-private partnerships eligible to receive funding under this title and chapter 53 of title 49, and the payment of a stipend to unsuccessful private bidders to offset their proposal development costs, if necessary to encourage robust competition in public-private partnership procurements.
- Any type of project eligible under this section as in effect on the day before the date of enactment of the FAST Act, including projects described under section 101(a)(29) as in effect on such date.
- Construction of any bridge in accordance with 23 U.S.C. 144(f) that replaces any low water crossing (regardless of the length of the low water crossing); any bridge that was destroyed prior to January 1, 1965; any ferry that was in existence on January 1, 1984; or any road bridge that is rendered obsolete as a result of a Corps of Engineers flood control or channelization project and is not rebuilt with funds from the Corps of Engineers.
- Actions in accordance with the definition and conditions in 23 U.S.C. 144(g) to preserve or reduce the impact of a project on the historic integrity of a historic bridge if the load capacity and safety features of the historic bridge are adequate to serve the intended use for the life of the historic bridge.

The eligible activities for the Transportation Alternatives set-aside include but are not limited to:

- Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act.
- Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers.
- Conversion and use of abandoned railroad corridors for trails.
- Construction of turnouts, overlooks, and viewing areas.

- Community improvement activities, which include but are not limited to:
  - Inventory, control, or removal of outdoor advertising.
  - Historic preservation and rehabilitation of historic transportation facilities.
  - Vegetation management practices in transportation rights-of-way to improve roadway safety, prevent against invasive species, and provide erosion control.
  - Archaeological activities relating to impacts from implementation of transportation projects eligible under this title.
- Any environmental mitigation activity, including pollution prevention, abatement, and mitigation to address stormwater management, control, and water pollution prevention or abatement related to highway construction or due to highway runoff; reduce vehicle-caused wildlife mortality; or restore and maintain connectivity among terrestrial or aquatic habitats.
- Recreational trails, including a set-aside for the recreational trails program.
- Safe routes to school projects.
- Planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.

**Funding:**

Funds are apportioned by formula and are subject to the overall Federal-aid obligation limitation.

The following amounts are set aside from each State’s STBG apportionment:

- 2 percent for State Planning and Research (SP&R).
- An amount for Transportation Alternatives (\$835 million in FY 2016 and FY 2017 and \$850 million in FY 2018 through FY 2020).
- 15 percent of the State’s FY 2009 Highway Bridge Program apportionment for bridges on public roads that are not Federal-aid highways. This set aside may not be taken from the suballocations described below.

The STBG suballocates 51 percent (in FY 2016, increases by 1 percent each year through FY 2020) of a State’s annual STBG apportionment, after the SP&R and Transportation Alternatives set-asides, for obligation in the following areas in proportion to their relative shares of a State’s population--

- Urbanized areas with population greater than 200,000.
- Areas with population greater than 5,000 but no more than 200,000.
- Areas with population of 5,000 or less.

The remaining 49 percent (in FY 2016, decreases by 1 percent each year through FY 2020) may be used in any area of the State.

- The Governor of a land border State may designate up to 5 percent of STBG funds available for use in any area of the State for border infrastructure projects eligible under the SAFETEA-LU border program.
- STBG funds available for use in any area of the State are subject to transfer penalties under section 154 (Open Container Requirements) and 164 (Minimum Penalties for Repeat DWI or DUI Offenders) of title 23, U.S.C., which then at the election of the State are released as HSIP funds and/or transferred to the National Highway Traffic Safety Administration.

The Transportation Alternatives set-aside suballocates 50 percent of funds (after the set-aside for the recreational trails program, unless a State opts out) for obligation in the following areas in proportion to their relative shares of a State's population--

- Urbanized areas with population greater than 200,000.
- Areas with population greater than 5,000 no more than 200,000.
- Areas with population of 5,000 or less.

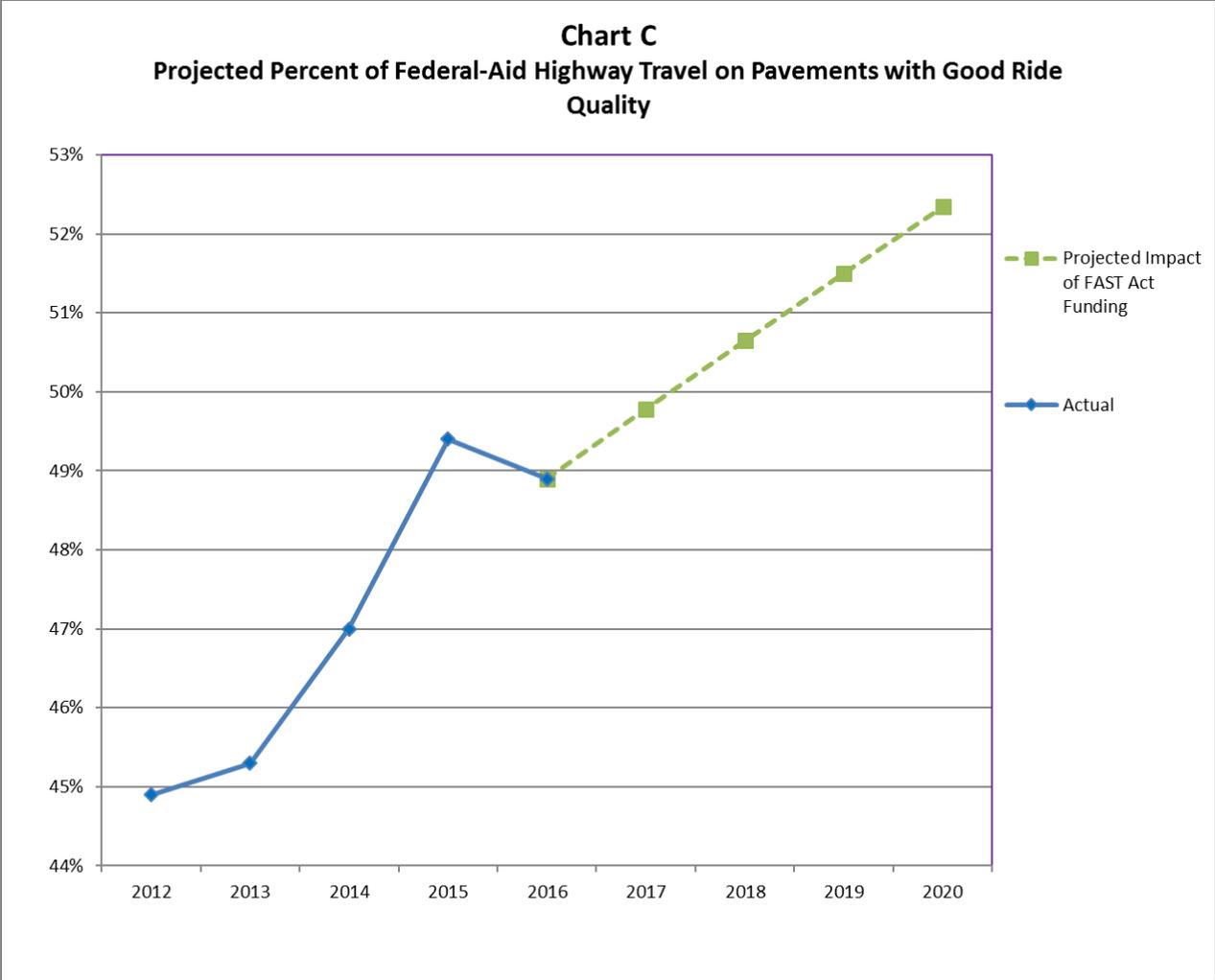
The remaining 50 percent may be used in any area of the State.

**Federal Share:**

The Federal Government generally provides 90 percent of eligible project costs for projects on the Interstate system that do not add single occupant vehicle capacity. Otherwise, the federal share is generally 80 percent of eligible project costs, with a sliding scale providing a higher federal share mostly affecting western States.

Funding the STBG program at \$11.88 billion in FY 2019 supports progress in achieving improved conditions and performance of Federal-aid highways. Our request will provide flexible funding that may be used by States and localities for projects to preserve and improve Federal-aid highways, bridges on any public road, and transit capital projects, including intercity bus terminals and vehicles.

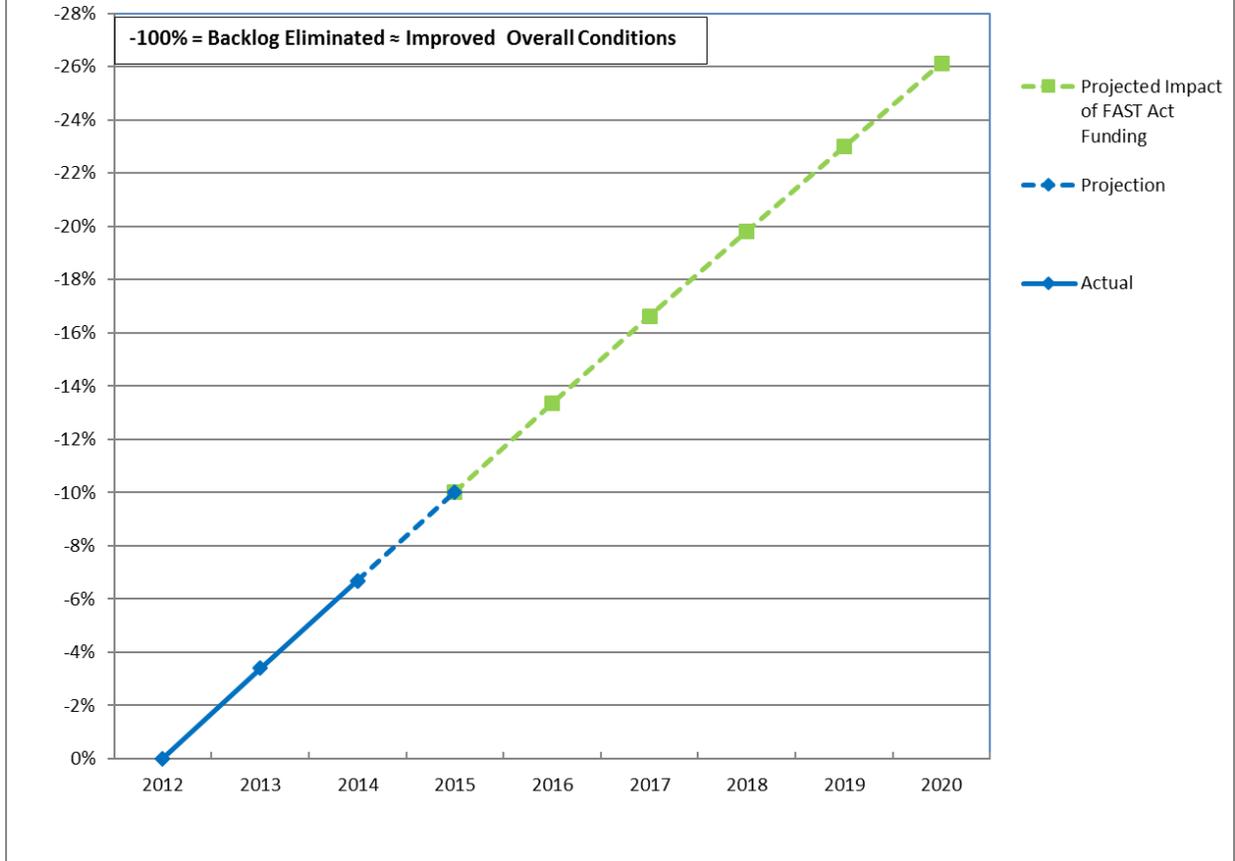
In 2016, 49 percent of vehicle miles travelled on Federal-aid highways occurred on pavements with good ride quality. As shown in Chart C, the proposed FAST Act investment level is projected to increase this share to over 52 percent by 2020. This forecast is based on analyses developed for the biennial C&P report, and takes into account increased funding requested for the STBG and NHPP programs. Given that Federal-aid highways carry five-sixths of all vehicular traffic, each 1 percentage point change translates into 28 billion more vehicle miles travelled occurring on pavements with good ride quality.



Note: Green line reflects Federal investment levels for 2016 to 2020 under the FAST Act for STBG and NHPP; impacts shown assume State and local highway capital spending patterns are consistent with recent years, but that a greater share of national investment is directed towards improving operational performance for freight movements.

Each biennial C&P report identifies a backlog of needed bridge rehabilitation investments, consisting of all potential improvements to bridges that appear to be cost-beneficial, based solely on their current conditions. Any reductions in this backlog over time would reflect improvements to overall bridge conditions; increases in this backlog would be consistent with a worsening of system-wide bridge conditions. The 2015 C&P report estimated this backlog to be \$123.1 billion. The proposed funding levels under the FAST Act, including funding requested for the STBG and NHPP programs, is projected to help reduce this economic investment backlog for bridges by 26 percent by 2020, as shown in Chart D that follows.

**Chart D**  
**Projected Percent Reduction in Total Bridge Investment Backlog**



Note: Green line reflects Federal investment levels for 2016 to 2020 under the FAST Act for STBG and NHPP; impacts shown assume State and local highway capital spending patterns are consistent with recent years, but that a greater share of national investment is directed towards improving operational performance for freight movements.

An objective of the 2015 C&P report’s Improve Highway Conditions and Performance scenario was to eliminate the bridge investment backlog by 2032. Assuming a steady glidepath of improvement, this scenario would reduce the backlog by 40 percent by 2020. The proposed FAST Act investment level for STBG and NHPP combined is projected to achieve roughly two-thirds of the progress reflected under this idealized scenario for the period 2015 to 2020, representing significant progress towards achieving a state of good repair for bridges. However, this progress is only a down payment towards achieving a state of good repair for our Nation’s bridges. This is an ongoing need that will require continuing efforts and funding to address.

Charts C and D assume that future State and local investment patterns continue recent trends. As STBG is the most flexible of FHWA’s core highway programs. How States choose to utilize their STBG funds will affect the relative amount of progress made on these different measures of performance.

Other factors will also affect future performance, including the overall level of State and locally funded highway capital investment, as well as future changes in the prices of highway construction materials. To the extent that future State and local highway capital spending does not keep pace with inflation, this would negatively affect future highway and bridge performance.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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An efficient transportation system is critical to maintaining our economic competitiveness. The highly developed U.S. transportation system played a key role in allowing GDP per capita to grow faster in the U.S. over the past century than in countries with less developed transportation systems. However, additional transportation infrastructure investment is needed to support a globally competitive economy.

The STBG responds to the public's desire to increase mobility, access community resources, and improve quality of life for all ages, abilities, and incomes. These projects are vital to improving the safety of all roadway users, including pedestrians and bicyclists, as well as providing accessible transportation choices and connections. The Transportation Alternatives set-aside provides States and communities opportunities to fund small projects at the community level that might not otherwise be funded.

It supports the development of a skilled and diverse transportation workforce through the use of 504(e) funds to supplement and expand upon FHWA's existing On-the-Job Training and workforce development programs.

The STBG is the most flexible of the core highway programs. This flexibility provides transportation agencies with the ability to target funding to State and local priorities. Furthermore, the STBG targets a significant portion of the funds to both rural and urban areas ensuring that all areas of the U.S. have an opportunity to improve their transportation priorities.

## **Executive Summary**

### **Congestion Mitigation & Air Quality Improvement Program**

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#### **What is the request and what funds are currently spent on the program?**

Our FY 2019 request level of \$2.45 billion for the Congestion Mitigation and Air Quality Improvement (CMAQ) Program will help States and local governments reduce highway congestion and harmful emissions, and also assist many areas in reaching attainment of the National Ambient Air Quality Standards (NAAQS). Our request is a slight increase over the FY 2017 actual level of \$2.36 billion. The \$46 million of additional funding could result in approximately 50 more projects that will improve air quality and provide congestion relief.

#### **What is this program and what does this funding level support?**

The purpose of the CMAQ program is to provide a funding source that benefits State and local governments in funding transportation projects and programs that help meet the requirements of the Clean Air Act, and that help reduce regional congestion on transportation networks. CMAQ projects include traffic flow improvements, alternative fuel vehicle and infrastructure, and intermodal freight projects. CMAQ funds can also be used to support innovative projects such as installation of vehicle-to-infrastructure communications equipment. These CMAQ investments support transportation projects that reduce the mobile source emissions for which an area has been designated nonattainment or maintenance for the ozone, carbon monoxide and particulate matter NAAQS by the Environmental Protection Agency (EPA). Many CMAQ-funded projects also reduce highway congestion that impedes economic development.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

The CMAQ program provides funding for projects that improve air quality; providing cleaner air and a more healthful environment in areas with air quality challenges. The CMAQ program is the only element of the Federal-aid highway program that specifically targets areas with air quality challenges. Through its statutory focus on transportation efforts that reduce harmful emissions, the CMAQ program enhances livability and improves health nationwide through its contributions to attainment and maintenance of the NAAQS that act as a public health benchmark for many of the more densely populated areas of the country.

Growing highway congestion continues to rise at a faster rate than transportation investments. Reducing congestion is a key objective of the Department, and one that has gathered increasing importance in the past several years. The costs of congestion can be an obstacle to economic activity. In addition, congestion can hamper quality of life through diminished air quality, lost personal time, and other negative factors. Since some congestion relief projects such as traffic flow improvement projects also reduce idling, and "stop and go" driving, the resulting optimized travel speeds would reduce vehicle emissions. Based on their emissions reductions, these types of projects are eligible for CMAQ funding. The Department believes State and local governments can simultaneously reduce the costly impacts of congestion while also improving air quality.

## Detailed Justification Congestion Mitigation & Air Quality Improvement Program

### What is the request and what funds are currently spent on the program?

#### FY 2019 – Congestion Mitigation & Air Quality Improvement Program (\$2.45 billion) (\$000)

Program Activity	FY 2017 Actual	FY 2018 Annualized CR	FY 2019 Request
Federal-aid Highways			
Congestion Mitigation & Air Quality Improvement Program			
Congestion Mitigation & Air Quality Improvement Program	2,357,350	2,402,948	2,449,216
<b>Total</b>	2,357,350	2,402,948	2,449,216

### What is this program and what does this funding level support?

CMAQ is less traditional than other FHWA capital programs, and serves a crossover function between transportation capital investments and environmental stewardship. Projects supported with CMAQ funds are required to demonstrate an emissions reduction projection. In addition, States provide an annual report on all CMAQ investments that covers the fiscal year’s obligations of program funds and provides descriptions of individual projects and the program’s potential impact on air quality, congestion, and multimodal choice. The data in the annual reports and the CMAQ Public Access System ensure transparency that the program continues to provide incremental benefits through enhanced regional and local air quality, and through contributions to congestion relief. Both of these areas—air pollution and highway congestion—are considered to be worsening externalities that affect quality of life in many metropolitan areas of the country. The CMAQ Program provides broad flexibility in project selection for States and communities. The program’s statutory focus on congestion- and emissions-reducing efforts is unique in the Federal-aid highway program as it seeks to employ tailored transportation investments to combat formidable air quality challenges around the country. Some of the eligible project categories available to States and local governments include:

- Congestion relief efforts through traffic flow improvements, e.g. intelligent transportation systems, and high occupancy vehicle/high occupancy toll lanes
- Intermodal freight projects
- Diesel retrofit projects
- Transit capital investments
- Transit and rail operating costs
- Travel demand management strategies
- Bicycle and pedestrian programs
- Alternative fuel vehicles
- Electric vehicle charging and natural gas vehicle refueling infrastructure

Projects supported with CMAQ funds must demonstrate the three primary requirements that have been a part of the program since its inception under the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991.

An eligible project must:

- Reduce emissions
- Be located in or benefit an EPA-designated nonattainment or maintenance area
- Be identified as a transportation project

The federal share for most CMAQ projects, with a few exceptions, is 80 percent. Project selection and implementation are made at the State and local levels. FHWA provides program eligibility criteria and broad policy guidance, as well as final project approvals. While most States must use program funds in either nonattainment or maintenance areas, States with small populations in these designated areas, or with none of these areas, have additional flexibility to use CMAQ funds anywhere in the State for any project eligible under the Surface Transportation Block Grant program or CMAQ program.

CMAQ funds are available to a wide range of government and non-profit organizations, as well as private entities contributing to public private partnerships (PPP), but are administered by the State DOTs and MPOs. These organizations often plan or implement air quality programs and projects as well as provide CMAQ funding to others to implement projects. Sharing of total project costs, both capital and operating, is a critical element of a successful public-private venture, particularly if the private entity is expected to realize profits as part of the joint venture. State and local officials are urged to consider a full range of cost-sharing options when developing a PPP, including a larger State/local match.

An estimated 142.2 million Americans live in places where the levels of one or more air pollutants exceed national air quality standards, threatening public health. The program will continue to help ensure continuity with State and local programming and provide adequate resources to maintain the air quality progress in many areas as they strive towards attainment of the NAAQS. The \$46 million of additional funding could result in approximately 50 more projects that will improve air quality in these areas.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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The CMAQ program provides funding for projects that improve air quality; providing cleaner air and a more healthful environment in areas with air quality challenges; and reduce traffic congestion. The CMAQ program is the only element of the Federal-aid highway program that specifically targets areas with air quality challenges. Through its statutory focus on transportation efforts that reduce harmful emissions, the program enhances livability and improves health nationwide through its contributions to attainment and maintenance of the NAAQS that act as a public health benchmark for many of the more densely populated areas of the country. The CMAQ program fills a unique niche in that it is easily adaptable to both large scale transportation issues as well as local traffic concerns. It is possible that without this dedicated funding source, many of these types of projects would go unfunded. Growing highway congestion continues to rise at a faster rate than transportation investments. Reducing congestion is a key objective of the Department, and one that has gathered increasing importance in the past several years. The costs of congestion can be an obstacle to economic activity. In addition, congestion can hamper quality of life through diminished air quality, lost personal time, and other negative factors. Since some congestion relief projects also reduce

idling, the negative emissions impacts of "stop and go" driving, and the number of vehicles on the road, they have a corollary benefit of improving air quality. Based on their emissions reductions, these types of projects are eligible for CMAQ funding. The Department believes State and local governments can simultaneously reduce the costly impacts of congestion while also improving air quality.

Since its inception through FY 2015, \$33 billion in CMAQ funds have supported more than 33,000 projects that reduced emissions of particulate matter, carbon monoxide, nitrogen oxides, and/or volatile organic compounds. CMAQ funded projects, such as public transit, bicycle and pedestrian facilities that promote alternative transportation options and active living can lead to congestion reduction, air quality improvements and positive health benefits. Many CMAQ projects also can provide additional public health benefits. For example, in addition to congestion relief, projects that focus on improved traffic flow and system efficiency can lower vehicle crash and injury risk while also reducing traveler stress levels.

Over the past 15 years, several large scale studies have evaluated the program effectiveness. Each study has documented the emissions and other benefits provided by the program. The most recent study conducted under MAP-21 by an independent research organization found that 73 percent of studied projects reported traffic or congestion mitigation. It found that the traffic congestion mitigated through the promotion of alternative transportation options can lead to positive health benefits for physical and mental health. It also found safety benefits due to improved traffic flow and system efficiency projects resulting in lower vehicle crash and injury risk while reducing traveler stress. For example, bus replacement projects provide enhanced benefits due to new technologies such as collision warning and avoidance systems.

Moving forward, the CMAQ program is part of the national goals and performance management and planning program established under MAP-21. Two national performance measures and associated target setting requirements were established to ensure accountability for the CMAQ program for congestion and emissions reductions. The performance measures will help ensure the advancement of the program objectives and success with program implementation.

## **Executive Summary**

### **National Highway Freight Program**

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#### **What is the request and what funds are currently spent on the program?**

Our FY 2019 budget requests \$1.34 billion for the National Highway Freight Program (NHFP) to provide funding for States to invest in infrastructure and operational improvements that reduce congestion, improve safety and productivity, and strengthen the contribution of the National Highway Freight Network (NHFN) to the economic competitiveness of the United States. Key components of the NHFP include: establishment of the NHFN, a requirement for States to develop State freight plans, and encouragement of States to create and involve freight advisory committees in the transportation planning process. Generally, uses of NHFP funds must contribute to the efficient movement of freight on the NHFN and be identified in a State's freight investment plan. Our FY 2019 request is a slight increase over the FY 2017 actual level of \$1.09 billion.

#### **What is this program and what does this funding level support?**

The NHFP provides funds to the States on a formula basis. Its purpose is to improve efficient movement of freight on the NHFN. The program strategically directs resources and policies to present solutions and strategies to address the infrastructure, institutional, and financial bottlenecks that hinder the safe and efficient movement of goods.

Investment in our nation's transportation freight infrastructure is needed right now if we expect to maintain a global competitive edge. By 2045, the nation's population is projected to increase to 389 million people, compared to 321 million in 2015 (United States Census 2014 National Population Projects). To support our projected population and economic growth, freight movements across all modes are expected to grow by roughly 42 percent by the year 2040 (Freight Analysis Framework).

Funding the NHFP at \$1.34 billion in FY 2019 supports projects to address expected growth in freight traffic and the need for more and better-directed investment on the freight infrastructure, consistent with the analyses presented in the biennial Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance report to Congress (2015 C&P report).

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

A national highway freight program with multi-year authorization offers States and their private-sector partners a path forward to make real improvements in freight infrastructure and operations and will yield a high return on federal investment for the economy and for public benefits in safety, mobility, health and the environment. Investments in freight infrastructure have a profoundly positive effect on the national economy, create jobs, and support economic growth and competitiveness.

## Detailed Justification National Highway Freight Program

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – National Highway Freight Program (\$1.34 billion) (\$000)

<u>Program Activity</u>	<u>FY 2017 Actual</u>	<u>FY 2018 Annualized CR</u>	<u>FY 2019 Request</u>
Federal-aid Highways			
<b>National Highway Freight Program</b>			
National Highway Freight Program	1,090,684	1,189,834	1,338,554
<b>Total</b>	<b>1,090,684</b>	<b>1,189,834</b>	<b>1,338,554</b>

### What is this program and what does this funding level support?

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The National Highway Freight program is a formula based program which provides funding to States to invest in infrastructure and operational improvements that reduce congestion, improve safety and productivity, and strengthen the contribution of the NHFN to the economic competitiveness of the United States.

This justification requests that the NHFP be funded at \$1.34 billion to improve efficient movement of freight on the NHFN. The NHFP was established by the Fixing America’s Surface Transportation (FAST) Act.

Key features of the program include:

- Establishment of the NHFN;
- Requirement for States to develop comprehensive State Freight Plans; and
- Encouragement by US DOT directed at each State to create a multi-modal freight advisory committee with public and private sector representatives.

NHFP will leverage Federal investment in freight projects to advance innovation, improve safety and mobility, and improve access for rural areas. FHWA will:

- Proactively engage with State Departments of Transportation to encourage a data driven approach to using funds apportioned through this program to produce benefits in terms economic benefit to communities, improvements to freight mobility and overall safety improvements.
- Work with the States and Metropolitan organization on the designation of critical rural freight corridors. These are public roads in rural areas that provide access and connection to the primary highway freight system and the Interstate.
- Will encourage States to seek opportunities to use innovation and advanced technology to improve the safety, efficiency, and reliability of the NHFN.

### **National Highway Freight Network:**

The FAST Act requires the FHWA Administrator to establish a NHFN to strategically direct Federal resources and policies toward improved performance of the Network. Section 1103 of the FAST Act amends 23 U.S.C. 101(a)(15) to include a definition of the NHFN established under 23 U.S.C. 167. The NHFN includes the following subsystem of roadways:

- A. Primary Highway Freight System (PHFS) – This is a network of highways identified as the most critical highway portions of the U.S. freight transportation system determined by measureable and objective national data. The initial designation of the PHFS is the 41,518 centerline mile network identified as a comprehensive network during the development of the highway-only Primary Freight Network (PFN) under 23 U.S.C. 167(d). The comprehensive network includes 37,436 centerline miles of Interstate and 4,082 centerline miles of non-Interstate roads. Note: this network differs from the PFN that was ultimately designated to satisfy the MAP-21 requirement in October 2015. The FHWA Administrator is required to re-designate the PHFS every 5 years. Each re-designation is limited to a maximum 3 percent increase in the total mileage.
  
- B. Interstate Routes not on the PHFS – These highways consist of the remaining portion of interstate roads not designated as part of the PHFS. These routes provide important continuity and access to freight transportation facilities. Nationwide, these portions amount to 9,511 centerline miles of Interstate.
  
- C. Critical Rural Freight Corridors (CRFC) – These are rural principal arterials which provide access and connection to the PHFS and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities. States are responsible for designating public roads in their state as CRFCs. A State may designate a public road within the borders of the State as a CRFC if the public road is not in an urbanized area, and;
  - (1) is a rural principal arterial roadway and has a minimum of 25 percent of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks (Federal Highway Administration vehicle class 8 to 13);
  - (2) provides access to energy exploration, development, installation, or production areas;
  - (3) connects the primary highway freight system, a roadway described in subparagraph (1) or (2), or the Interstate System to facilities that handle more than—
    - i.* 50,000 20-foot equivalent units per year; or
    - ii.* 500,000 tons per year of bulk commodities;
  - (4) provides access to—
    - i.* a grain elevator;
    - ii.* an agricultural facility;
    - iii.* a mining facility;
    - iv.* a forestry facility; or
    - v.* an intermodal facility;
  - (5) connects to an international port of entry;

(6) provides access to significant air, rail, water, or other freight facilities in the State;  
or

(7) is determined by the State to be vital to improving the efficient movement of freight of importance to the economy of the State.

The designation of the CRFC is limited to a maximum of 150 miles of highway or 20 percent of the primary highway freight system mileage in the State, whichever is greater.

D. Critical Urban Freight Corridors (CUFC) – These are public roads in urbanized areas which provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities. In an urbanized area with a population of 500,000 or more, the metropolitan planning organization (MPO), in consultation with the State, is responsible for designating the CUFC. In an urbanized area with a population of less than 500,000, the State, in consultation with the MPO, is responsible for designating the CUFC. Regardless of population, designation of a public road as a CUFC must be in an urbanized area; and

(1) connects an intermodal facility to—

- i. the primary highway freight system;
- ii. the Interstate System; or
- iii. an intermodal freight facility;

(2) is located within a corridor of a route on the primary highway freight system and provides an alternative highway option important to goods movement;

(3) serves a major freight generator, logistic center, or manufacturing and warehouse industrial land; or

(4) is important to the movement of freight within the region, as determined by the metropolitan planning organization or the State.

The designation is limited to a maximum of 75 miles of highway or 10 percent of the PHFS mileage in the State, whichever is greater.

States with PHFS mileage greater than or equal to 2 percent, calculated based on the proportion of total designated PHFS mileage in the State to the total mileage of the PHFS in all States, are considered “high mileage States” with respect to the PHFS and may obligate funds for projects on the PHFS, the CRFC and the CUFC. States with PHFS mileage of less than 2 percent are considered “low mileage States” with respect to the PHFS and may obligate funds for projects on all portions of the NHFN (the PHFS, the CRFC, the CUFC, and the rest of the Interstate System in their State).

**High Mileage States (PHFS > 2%):**

Alaska  
 Arizona  
 California  
 Florida  
 Georgia  
 Illinois  
 Indiana  
 Missouri  
 Montana  
 New Mexico  
 New York  
 North Carolina  
 Ohio  
 Pennsylvania  
 Tennessee  
 Texas  
 Utah  
 Virginia

**Low Mileage States (PHFS < 2%):**

Alabama  
 Arkansas  
 Colorado  
 Connecticut  
 Delaware  
 Dist. of Columbia  
 Hawaii  
 Idaho  
 Iowa  
 Kansas  
 Kentucky  
 Louisiana  
 Maine  
 Maryland  
 Massachusetts  
 Michigan  
 Minnesota  
 Mississippi  
 Nebraska  
 Nevada  
 New Hampshire  
 New Jersey  
 North Dakota  
 Oklahoma  
 Oregon  
 Puerto Rico  
 Rhode Island  
 South Carolina  
 South Dakota  
 Vermont  
 Washington  
 West Virginia  
 Wisconsin  
 Wyoming

As designated in statute, the NHFN consisted of the PHFS and other Interstate portions not on the PHFS, as well as any CUFCs and CRFCs, for an initial total of 51,029 centerline miles. The NHFN mileage increases with the rolling designation of CRFCs and CUFCs by States and MPOs, which must certify to the FHWA Administrator that these new corridors meet the requirements of the applicable provision (CRFCs and CUFCs). As of October 2016, 834.26 interstate miles (Source: 2014 HPMS) and 1,053.48 miles of Critical Urban and Critical Rural Freight Corridors were added since the 2015 establishment of the NHFN. This reflects the designations made by the following States: Arizona (partial submission), Washington, Nevada, Idaho, Delaware, and Wyoming. States and MPOs seeking to make CRFC and CUFC designations should consult FHWA’s comprehensive guidance on the process for identification, designation, and certification of the CRFCs and CUFCs.

**State Freight Plan and State Freight Advisory Committee:**

Freight planning is an important component of statewide and metropolitan transportation planning processes. State freight planning is covered under section 8001 of the FAST Act and in subsection 70202 of subtitle IX of title 49, U.S.C. In accordance with 49 U.S.C. 70202, each State that seeks to continue to obligate NHFP funding after December 4, 2017 must have a comprehensive freight plan that provides for the immediate and long-range planning activities and investments in the State. The plan may be developed separate from or incorporated into the statewide strategic long-range transportation plan required by 23 U.S.C. 135. Among the factors that must be included in the State freight plan is a description of how the funds under section 167 of title 23, U.S.C., would be invested and matched. In addition, the statute requires an investment plan component that must include a list of priority projects, identify how the NHFP formula funding will be used and matched, and show how funding for completion of the project or an identified phase of a project in the investment plan can reasonably be anticipated to be

available for the project within the time period identified in the freight investment plan. As of December 2017, the majority of States that receive funding under this program had completed or initiated the development of a FAST Act compliant freight plan.

In addition, subsection 70201 of subtitle IX of title 49, U.S.C., encourages each State to establish a freight advisory committee consisting of a representative cross-section of public and private sector freight stakeholders, including representatives of ports, shippers, carriers, freight-related associations, the freight industry workforce, the transportation department of the State, and local governments. Under section 8001 of the FAST Act, States are required to consult their State freight advisory committee, if applicable, in the development of a State freight plan.

**Eligible Projects:**

Eligible projects shall contribute to the efficient movement of freight on the National Highway Freight Network, and be identified in a freight investment plan included in a State freight plan (December 2017 and after). NHFP funds may be obligated for one or more of the following:

- Development phase activities including planning, feasibility analysis, revenue forecasting, environmental review, preliminary engineering and design work, and other preconstruction activities.
- Construction, reconstruction, rehabilitation, acquisition of real property (including land relating to the project and improvements to land), construction contingencies, acquisition of equipment, and operational improvements directly relating to improving system performance.
- Intelligent transportation systems and other technology to improve the flow of freight, including intelligent freight transportation systems.
- Efforts to reduce the environmental impacts of freight movement.
- Environmental and community mitigation for freight movement.
- Railway-highway grade separation.
- Geometric improvements to interchanges and ramps.
- Truck-only lanes.
- Climbing and runaway truck lanes.
- Adding or widening of shoulders.
- Truck parking facilities eligible for funding under section 1401 of MAP-21
- Real-time traffic, truck parking, roadway condition, and multimodal transportation information systems.
- Electronic screening and credentialing systems for vehicles, including weigh-in-motion truck inspection technologies.
- Traffic signal optimization, including synchronized and adaptive signals.
- Work zone management and information systems.
- Highway ramp metering.
- Electronic cargo and border security technologies that improve truck freight movement.
- Intelligent transportation systems that would increase truck freight efficiencies inside the boundaries of intermodal facilities.
- Additional road capacity to address highway freight bottlenecks.
- Physical separation of passenger vehicles from commercial motor freight.

- Enhancement of the resiliency of critical highway infrastructure, including highway infrastructure that supports national energy security, to improve the flow of freight.
- A highway or bridge project to improve the flow of freight on the National Highway Freight Network.

In addition, any surface transportation project to improve the flow of freight into and out of a freight intermodal or freight rail facility is an eligible project. There is a cap on the use of NHFP funding for this type of project: For each fiscal year, a State may obligate not more than 10 percent of the total State apportionment under NHFP for freight intermodal or freight rail projects. This limitation applies, but is not limited to, such projects as those within the boundaries of public or private freight rail or water facilities (including ports), and that provide surface transportation infrastructure necessary to facilitate direct intermodal interchange, transfer, and access into or out of the facility.

In addition to the eligible projects identified above, a State may use apportioned funds for eligible costs, including carrying out diesel retrofit or alternative fuel projects under section 149 of title 23, U.S.C., for class 8 vehicles; conducting analyses and data collection related to the national highway freight program; and costs associated with developing and updating performance targets and reporting to the FHWA Administrator to comply with the freight performance targets established pursuant to 23 U.S.C. 150.

**Funding:**

NHFP funds may be obligated for projects that contribute to the efficient movement of freight on the National Highway Freight Network (NHFN), and are consistent with the planning requirements of sections 134 and 135 of title 23, U.S.C. Effective December 4, 2017, a State may not continue to obligate funds apportioned to the State under the NHFP unless the State has developed a freight plan pursuant to section 70202 of title 49, U.S.C. except that the multimodal component of the plan may be incomplete before an obligation may be made under this section. Projects must be identified in the Statewide Transportation Improvement Program/Transportation Improvement Program (STIP/TIP) and consistent with the Long-Range Statewide Transportation Plan and the Metropolitan Transportation Plan(s). A proportionate share of each State’s NHFP funds is set aside for the State’s Metropolitan Planning program.

**Federal share:**

Federal share is in accordance with 23 U.S.C. 120, which is generally an 80 percent federal share. Note that the FAST Act repealed section 1116 of MAP-21, which had offered an increased Federal share for certain projects that demonstrably improved freight movement.

Congress set the level of funding in the FAST Act to address needs in the system. The establishment of a National Highway Freight Program with multi-year authorization offering public sector agencies and their private sector partners a path forward to make real improvements in freight infrastructure and operations is unprecedented and yields a high return on federal investment for the economy and for public benefits in safety, mobility, health and the environment. The U.S. population growth, coupled with consumer demand for goods, will continue to drive freight growth. The program will have a significant effect on the ability of the

U.S. freight industry to meet the growth in demand in a responsible, effective and sustainable way.

Freight projects are often multimodal, multi-jurisdictional, complex, or involve partnership with the private sector, making them difficult to administer under current federal and State funding programs. Public- and private-sector freight proponents identify these issues along with a lack of predictable federal funds as challenges to implementing freight solutions despite widespread need and a significant backlog of projects.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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*Investments in Freight Improve the Economy* - Investments in freight infrastructure have had a profoundly positive effect on the national economy. Research has documented a highly positive correlation between federal investment in freight and economic growth. Further, these analyses confirm that an efficient, reliable transportation system enables the economic competitiveness that is vital to maintaining economic health and supporting employment for the Nation, States, and localities. For example, disruptions to the speed and reliability of freight transportation add directly and indirectly to businesses costs, export costs, the cost of consumer goods and the ability of industry to support jobs.

*Freight Projects Create Jobs and Supports Growth and Sustainability* - Investment in freight projects creates jobs, supports economic growth and competitiveness, and can improve safety and the environment. However, freight projects are often complex, involving numerous modes, public and private owners and operators, and diverse funding sources, and do not neatly fit into the design of current funding programs. Public- and private- sector freight proponents identify these characteristics along with a lack of sufficient funds in existing federal programs for freight projects as challenges to implementing freight solutions. As such, these projects struggle to progress.

*Freight Projects Yield a High Return on Investment* - This multimodal freight program with multi-year authorization offers public-sector agencies and their private-sector partners a path forward to make real improvements in freight infrastructure and operations. This program will leverage the federal investment in freight projects for the economy and for public benefits in safety, mobility, health and the environment.

## **Executive Summary**

### **Metropolitan Transportation Planning**

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#### **What is the request and what funds are currently spent on the program?**

Our FY 2019 budget requests \$350 million for metropolitan transportation planning (PL) funding. Metropolitan Planning Organizations (MPOs) use these funds for multimodal transportation planning and programming in metropolitan areas. Our request is a slight increase over the FY 2017 actual level of \$336 million.

#### **What is this program and what does this funding level support??**

Under the Fixing America's Surface Transportation (FAST) Act, census designated urbanized areas over 50,000 in population are required to designate an MPO to conduct a continuing, cooperative, and comprehensive transportation planning process as a condition to receiving federal funds for transportation projects.

Metropolitan areas are comprised of multiple governmental agencies and jurisdictions, each of which have an interest in and have needs for transportation investment. Through a coordinated, regional approach to planning, an MPO engages the local jurisdictions as well as the State DOT and transit operators in a regional process that identifies the needs and investment priorities for the region. The results are a performance-based long range (20-year) transportation plan and a shorter term (4-year) program of transportation projects for implementation through which the MPOs are required to establish system performance goals and outcomes as part of the metropolitan transportation planning process, and direct their investments toward meeting those system performance outcomes.

Our \$350 million request will ensure that MPOs have adequate resources to conduct the metropolitan planning process.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

This request will ensure that MPOs direct investments appropriately toward improving transportation system outcomes in a safe, transparent, and accountable manner while engaging the public, elected officials, and other stakeholders in the process. MPOs will then use federal transportation funds more efficiently and effectively, and focus on the national goal areas identified in MAP-21 and continued in the FAST Act.

## Detailed Justification Metropolitan Transportation Planning

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Metropolitan Transportation Planning (\$350 million) (\$000)

Program Activity	FY 2017 Actual	FY 2018 Annualized CR	FY 2019 Request
Federal-aid Highways			
Metropolitan Transportation Planning			
Metropolitan Transportation Planning	335,591	342,733	350,361
<b>Total</b>	<b>335,591</b>	<b>342,733</b>	<b>350,361</b>

### What is this program and what does this funding level support?

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The FAST Act requires census designated urbanized areas over 50,000 in population to designate an MPO to conduct a continuing, cooperative, and comprehensive transportation planning process as a condition of receiving federal funds for transportation projects. MPOs use metropolitan planning (PL) funds for multimodal transportation planning and programming in metropolitan areas. Metropolitan planning activities include the collection and analysis of data on demographics, trends, and system performance; travel demand and system performance forecasting; identification and prioritization of transportation system improvement needs; and coordination of the planning process and decision making with the public, elected officials, and stakeholder groups.

Metropolitan areas are comprised of multiple governmental agencies and jurisdictions, each of which have an interest in and have needs for transportation investment. Through a coordinated, regional approach to planning, an MPO engages the local jurisdictions as well as the State DOT and transit operators in a regional process that identifies the needs and investment priorities for the region. The results are a long range (20-year) transportation plan and a shorter term (4-year) program of transportation projects for implementation. MAP-21 added a performance based approach to the metropolitan and statewide transportation planning processes, which is continued in the FAST Act; MPOs must establish system performance goals and outcomes as part of the metropolitan transportation planning process, and direct their investments toward meeting those system performance outcomes.

Under the FAST Act, multiple MPOs serving a single region are encouraged to better coordinate transportation planning across their boundaries through development of a common plan and Transportation Improvement Program (TIP) as a means of enhancing metropolitan planning; and are incentivized for the consolidation of MPOs. In support of the transition to a performance-driven, outcome-based planning process, the FAST Act would require MPOs to have a performance-based project selection process for their TIPs. The FAST Act has new requirements for resiliency, and stormwater runoff mitigation, which MPOs will have to incorporate into their planning process. Public participation would be enhanced through additional opportunities for the public to participate and comment, such as when an MPO

chooses to conduct scenario planning as part of its plan development and also the addition of public port authorities to the list of interested parties provided an opportunity to comment on the metropolitan plan.

Our \$350 million FY 2019 budget request will ensure that the PL program has adequate resources to conduct the metropolitan planning processes and direct investments appropriately toward improving transportation system outcomes while engaging the public, elected officials, and other stakeholders. There were 384 MPOs prior to the 2010 Census, and 36 new urbanized areas were identified as a result of the 2010 Census. Some of those were within existing MPOs, or joined an existing MPO, and 25 decided to form new stand-alone MPOs. As a result, the total number of MPOs expanded from 384 to the current total of 409.

These funds allow each MPO to carry out a coordinated transportation planning process and develop long range transportation plans and transportation improvement programs that make effective use of limited transportation funding. These fiscally-constrained, prioritized plans and programs account for transportation system performance needs, future population and employment, future land use, economic development, public involvement, multimodal considerations and connectivity (including bicycle, pedestrian, highway, and transit), freight movement, environmental mitigation, transportation systems operation, safety, and congestion mitigation. The slight increase in program funds will provide MPOs with financial resources to aid in the implementation of FAST Act metropolitan planning provisions such as performance based planning and programming, and adding transit representation to MPOs serving transportation management areas.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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This request will ensure that MPOs direct investments appropriately toward improving transportation system outcomes in a safe, transparent, and accountable manner while engaging the public, elected officials, and other stakeholders in the process. MPOs will then use federal transportation funds more efficiently and effectively, and focus on the national goal areas of a continuing, cooperative, and comprehensive planning process identified in MAP-21 and continued in the FAST Act. MPOs' use of performance measures and targets in the decision making process will ensure transparency, and their reporting of progress toward achieving performance targets will lead to improved accountability.

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## **Executive Summary**

### **Infrastructure for Rebuilding America**

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#### **What is the request and what funds are currently spent on the program?**

As authorized in the Fixing America's Surface Transportation (FAST) Act, \$950 million is requested in FY 2019 for a discretionary grant program to support highway and freight projects of national or regional significance. The FY 2017 actual level is \$850 million.

#### **What is this program and what does this funding level support?**

The Infrastructure for Rebuilding America discretionary grant program (INFRA), will advance nationally significant freight and highway projects to improve the safety, efficiency and reliability of the movement of freight and people. This program allows States, metropolitan planning organizations, local governments and other eligible entities to apply for funding to complete projects that improve safety, generate economic benefits, reduce congestion, enhance resiliency, and hold the greatest promise to eliminate freight bottlenecks and improve critical freight movements.

Our FY 2019 budget request of \$950 million for this program will advance critical highway and bridge projects on the National Highway Freight Network (NHFN) and the National Highway System (NHS) that improve the safe, secure, and efficient movement of people and goods throughout the U.S., and improve the national economy. The program will also support the types of freight and highway projects that are often multimodal, multi-jurisdictional, complex, or involve partnership with the private sector, which are difficult to develop and implement using other federal and State funding programs.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

This program, which advances nationally significant freight and highway projects, offers public-sector agencies and their private-sector partners a path forward to make real improvements in highway and freight infrastructure and operations that will leverage federal investment. Projects supported by this program will provide public benefits including improving national and regional economic vitality, innovation, and safety in both rural and urban areas. The approach for implementing the program addresses critical issues facing our nation's highways and bridges. Projects funded by this program can be used to fix crumbling infrastructure and improve highways and the freight system. This program creates opportunities for all levels of government and the private sector to fund infrastructure, use innovative approaches to improve the necessary processes for building significant projects, and increase accountability for the projects that are built.

**Detailed Justification  
Infrastructure for Rebuilding America**

**What is the request and what funds are currently spent on the program?**

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**FY 2019 – Infrastructure for Rebuilding America (\$950 million)**  
(\$000)

<u>Program Activity</u>	<u>FY 2017 Actual</u>	<u>FY 2018 Annualized CR</u>	<u>FY 2019 Request</u>
Federal-aid Highways			
<b>Nationally Significant Freight and Highway Projects</b>			
Nationally Significant Freight and Highway Projects	850,000	900,000	950,000
<b>Total</b>	<b>850,000</b>	<b>900,000</b>	<b>950,000</b>

**What is this program and what does this funding level support?**

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In FY 2017 the Department restructured the administration of the Nationally Significant Freight and Highway Projects (NSFHP) program and titled it the Infrastructure for Rebuilding America (INFRA) discretionary grant program.

INFRA is a discretionary grant program that provides financial assistance to States, metropolitan planning organizations, Tribal governments, special purpose districts and port authorities with a transportation function and local governments to complete projects that align with the program’s statutory goals to:

- Improve safety, efficiency, and reliability of the movement of freight and people;
- Generate national or regional economic benefits and an increase in global economic competitiveness of the U.S.;
- Reduce highway congestion and bottlenecks;
- Improve connectivity between modes of freight transportation;
- Enhance the resiliency of critical highway infrastructure and help protect the environment;
- Improve roadways vital to national energy security; and
- Address the impact of population growth on the movement of people and freight

FY 2019 funds will be used to make awards that adhere to the statutory requirements for the NSFHP established in the FAST Act, while increasing the impact of projects by leveraging capital and allowing innovation in the project delivery and permitting processes, including public-private partnerships. INFRA promotes innovative safety solutions that will improve our transportation system. Additionally, INFRA also targets performance and accountability in project delivery and operations.

To maximize the value of INFRA funds for all Americans, the Department will focus this competitive grant program on transportation infrastructure projects that support four key objectives:

- *Supporting economic vitality at the national and regional level.*

The FAST Act directs that at least 25 percent of the funds provided for INFRA grants must be used for projects located in rural areas. Through INFRA, the Department is committed to strengthening the ability of rural communities to access national and international trade markets, and supporting regional economic development.

In FY 2017 the Department made 10 small project grant awards totaling \$78.88 million. Seven of the ten awards are targeted for projects in rural areas to increase freight mobility and produce greater economic opportunities. The awards will enhance safety at over 100 rail crossings, repair nearly 250 miles of track and improve over 70 rail bridges, allowing communities in Maine, Mississippi, Florida, Georgia, and Texas access to the national freight rail network.

- *Leveraging Federal funding to attract other, non-Federal sources of infrastructure investment, as well as accounting for the life-cycle costs of the project.*

The restructuring of the program aims to increase the total investment by State, local, and private partners. To maximize the impact of INFRA awards, the Department will seek to leverage INFRA funding non-Federal contributions. In making award decisions, the Department will consider the extent to which applicants propose to use non-Federal funding.

The FY 2017 awards of \$78.88 million are expected to lead to approximately \$217 million in total investment in infrastructure.

- *Using innovative approaches to improve safety and expedite project delivery.*

The Department will utilize innovative approaches to transportation safety, particularly in relation to automated vehicles and the detection, mitigation, and documentation of safety risks. When making INFRA award decisions, the Department will consider any innovative safety approaches proposed by the applicant, the safety benefits that those approaches could produce, and the broader applicability of the potential results

- *Holding grant recipients accountable for their performance and achieving specific, measurable outcomes identified by grant applicants.*

Additionally, safety is the top priority of the Department, and this program supports our continued commitment to reducing traffic fatalities and serious injuries on the surface transportation system. The Department seeks applications that are likely to yield safety benefits.

INFRA is administered under the Build America Bureau, within the Office of the Secretary of Transportation (OST). The program is necessary to fund highway and freight infrastructure projects that are critical for the efficient movement of goods and people. The program targets investments in highway freight projects carried out on the NHFN and highway and bridge projects carried out on the NHS, including projects on the Interstate System that improve

mobility through added capacity. In addition, subject to various conditions, funding is available to cover the costs of freight intermodal or freight rail projects, or freight projects within the boundaries of water facilities (including ports), intermodal facilities, and freight rail facilities, provided such projects generate public benefits and make a significant improvement to freight movements on the NHFN. The program is also necessary to fund railway-highway grade crossing and grade crossing separation projects that improve safety and improve the efficiency and reliability of freight rail service while reducing traffic and passenger rail delays.

The economy depends on efficient, reliable freight transportation to link businesses with suppliers and markets throughout the nation and the world. American farms and mines can market their goods to customers across and beyond the continent, using inexpensive transportation to compete against farming and mining industries in other countries. Domestic manufacturers increasingly use remote sources of raw materials and other inputs to produce goods for local and distant customers, all of which require efficient and reliable transportation to maintain a competitive advantage in a global marketplace. Wholesalers and retailers depend on fast and reliable transportation to obtain inexpensive or specialized goods through extensive supply chains. In the expanding world of e-commerce, households increasingly rely on freight transportation to deliver purchases directly to their door. Service providers, public utilities, construction companies, and government agencies also depend on freight transportation to get needed equipment and supplies from sources around the world.

Highway and freight projects to eliminate bottlenecks, reduce congestion, expand capacity, and improve efficiency can offer public benefits in terms of job creation, improved safety and congestion relief; and contributions to the economic growth of a region or the nation. The relationship between federal investment for goods movement, the impact on the economy, and the call for additional federal investment has been the subject of numerous federally supported studies, reports, State studies, and academic projects.

There are several project requirements that must be considered by U.S. DOT (the Department) when making awards for grants and assistance under this program. As examples, the Department is required to assess whether the project will generate national or regional economic, mobility, or safety benefits; whether the project will be cost effective; whether the project will contribute to the accomplishment of one or more of the national goals described under section 23 U.S.C. 150; and whether the project can be easily and efficiently completed without other federal funding or financial assistance available to the project sponsor.

To assess cost effectiveness and the potential benefit of freight investment, the INFRA uses benefit-cost analyses to support public funding for large freight projects. The analyses help ensure projects are likely to deliver anticipated benefits at reasonable costs. As an example, the Interstate 10 project in Arizona, selected for an FY 2016 award of \$54 million, is projected to generate travel time savings for private and commercial drivers along the corridor at approximately \$45.1 million, and will yield total project benefits of up to \$273 million over an approximate period of 23 years.

Similarly, the Georgia Port Authority was awarded a \$44 million grant for the Port of Savannah to eliminate a freight bottleneck by improving the way containerized cargo is transported

between the port and cities across the United States. The project is expected to add capacity to handle the port's growth projections into the next decade. The project will reduce the long wait times on at-grade crossings for motorists while trains maneuver in and out of the port. The project will also build rail capacity at the port and expedite service, generating freight mobility and positive economic outcomes through more direct and efficient movement of containerized freight.

The program leverages the utility of this federal funding in several ways. For example, the Department must determine that any project exceeding \$100 million in total project costs cannot be easily and efficiently completed without the INFRA funding. In some instances, the grant money will expedite project delivery by eliminating the need to wait additional years to assemble funding through other sources. The grant money can also be used to enhance a project scope to achieve more benefits, or to support a multi-state initiative. As an example, a \$40 million investment in one of four components of an Interstate 39/90 project in Wisconsin will allow the State Department of Transportation to accelerate project delivery of the three other components within the larger I-39/90 corridor project. This investment will expedite the realization of the safety, mobility, and economic benefits of the project.

## **Eligibilities**

Eligible applicants are:

- States or a group of States;
- Metropolitan planning organizations that serve an urbanized area, as defined by the Bureau of the Census, with a population of more than 200,000 individuals;
- Units of local government or a group of local governments;
- Political subdivisions of a State or local government; and,
- Special purpose districts or public authorities with a transportation function, including port authorities, Federal land management agencies that apply jointly with a State or group of States, and tribal governments or a consortium of Tribal governments.

Following are project eligibilities for the program:

- A highway freight project carried out on the NHFN established under 23 U.S.C 167;
- A highway or bridge project carried out on the NHS, including
  - a project to add capacity to the Interstate System to improve mobility
  - a project in a national scenic area;
- A freight project that is a freight intermodal or freight rail project; or within the boundaries of a public or private freight rail, water (including ports), or intermodal facility and that is a surface transportation infrastructure project necessary to facilitate direct intermodal inter-change, transfer, or access into or out of the facility; and,
- A railway-highway grade crossing or grade separation project.

Grants funding can be used for the following eligible project costs:

- Project development phase activities, including planning, feasibility analysis, revenue forecasting, environmental review, preliminary engineering;
- Design work, and other preconstruction activities; and,

- Construction, reconstruction, rehabilitation, acquisition of real property (including land related to the project and improvements to the land), environmental mitigation, construction contingencies, acquisition of equipment, and operational improvements directly related to improving system performance.

Congress provided funding in the FAST Act to address critical needs in the transportation system. This program will advance nationally significant freight and highway projects and offers public-sector agencies and their private-sector partners a path forward to make real improvements in infrastructure and operations that will leverage federal investment for public benefits in improving national and regional economic vitality, innovation, and safety. As noted previously, many reports support the view that investments in freight and highway infrastructure can have a positive effect on the national economy, create jobs, support economic growth, and increase the global economic competitiveness of the U.S.

As evidenced by the large number and value of applications received during the first two rounds of the program, there is significant unmet need in the nation for freight and highway investment. In the first call for grants under this program, the Department received 212 applications requesting approximately \$9.8 billion. In the second round, the Department received 195 applications requesting approximately \$7.15 billion.

The program is anticipated to have a significant effect on the ability of the U.S. to meet the growth in freight and passenger demand in a responsible, effective, and safer way. Nationally and regionally significant highway and freight projects are often multimodal, multi-jurisdictional, complex, or involve partnership with the private sector, making them difficult to efficiently implement under other federal and State funding programs.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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*Investments in Transportation Infrastructure Improve the Economy* – As highlighted above, investments in infrastructure have a positive effect on the national economy, and freight investment is in high demand. Analyses confirm that an efficient, reliable transportation system enables the economic competitiveness that is vital to maintaining economic health and supporting employment for the Nation, States, and localities. For example, disruptions to the speed and reliability of freight transportation add directly and indirectly to businesses costs, export costs, the cost of consumer goods and the ability of industry to support jobs.

*Operational Strategies Improve the Performance of the Transportation System* - This program offers opportunities to improve mobility, reduce congestion, improve reliability, or create options for travelers. In addition to mobility benefits, operational strategies often result in benefits such as increased safety and improved mobility outcomes (e.g., reduced travel time or shipping costs).

*Freight Projects Create Jobs and Supports Growth and Sustainability* – This program offers opportunities to create jobs, support economic growth and competitiveness, and can improve safety and the environment. In FY 2016, the Department awarded nearly \$800 million to support 18 infrastructure projects across the country, leveraging over \$3.6 billion in infrastructure investment in 15 States and the District of Columbia.

*Investing in Nationally and Regionally Significant Projects Yield a High Rate of Return* – A discretionary program for nationally and regionally significant highway and freight projects with multi-year authorization offers public-sector agencies and their private-sector partners funding certainty to make real improvements in infrastructure and operations.

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## **Executive Summary**

### **Federal Lands & Tribal Transportation Programs**

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#### **What is the request and what funds are currently spent on the program?**

Our FY 2019 budget requests \$1.13 billion for the Federal Lands and Tribal Transportation Programs (FLTTP) to provide funding for transportation construction and engineering projects on Federal and Tribal lands. These projects will provide multimodal access to basic community services for 567 Federally-recognized sovereign Tribal governments, improve multimodal access to public lands/national treasures, and expand economic development and accessibility in and around Federal and Tribal lands. Our FY 2019 request is a slight increase over the \$1.08 billion FY 2017 actual level.

#### **What is this program and what does this funding level support?**

The FLTTP is comprised of three primary programs:

- **Federal Lands Transportation Program** – \$365 million for projects that improve multimodal transportation on high-priority roads, bridges, trails, and transit systems within the Federal estate (national forests, national parks, national wildlife refuges, national recreation areas, and other Federal public lands) on infrastructure owned by the Federal Government.
- **Federal Lands Access Program** – \$265 million for projects that improve multimodal transportation on roads, bridges, trails, and transit systems that access the Federal estate on infrastructure owned by States, counties, and local governments.
- **Tribal Transportation Program** – \$495 million for projects to provide safe and adequate transportation and public road access to and within Indian reservations, Indian lands, and Alaska Native Village communities. The Tribal Transportation Program contributes to the economic development, self-determination, and employment of Indians and Native Americans.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

These programs support safe, seamless, and multimodal transportation access to and within Federal and Tribal lands. In turn these programs, and the nationally significant transportation facilities they support, contribute to the \$700 billion travel and tourism/ recreation industry including jobs in rural America. About 20 percent of all recreational experiences occur on Federal lands. Many rural townships' local economies, adjacent to national parks, forests and other Federal and Tribal lands, are fueled by recreational opportunities within the Federal estate. A reliable and safe surface transportation infrastructure that provides access to these recreational areas is critically important to sustaining and growing jobs in these remote areas.

These federally-owned roads also provide access to other nationally significant uses including energy production, livestock grazing, and mineral extraction. Public transportation facilities accessing Indian country are absolutely critical to ensure tribal residents can access schools, hospitals and other basic community services within their respective reservation(s). In the absence of these title 23 funded programs, it is highly likely, based on historical experiences, that the roads and bridges providing vital access to our Federal treasures and community services supporting tribal governments will fall into severe disrepair, jeopardizing the public's and Tribal members' ability to access these areas and services.

## Detailed Justification Federal Lands Transportation Program

**What is the request and what funds are currently spent on the program?**

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### FY 2019 – Federal Lands Transportation Program (\$365 million) (\$000)

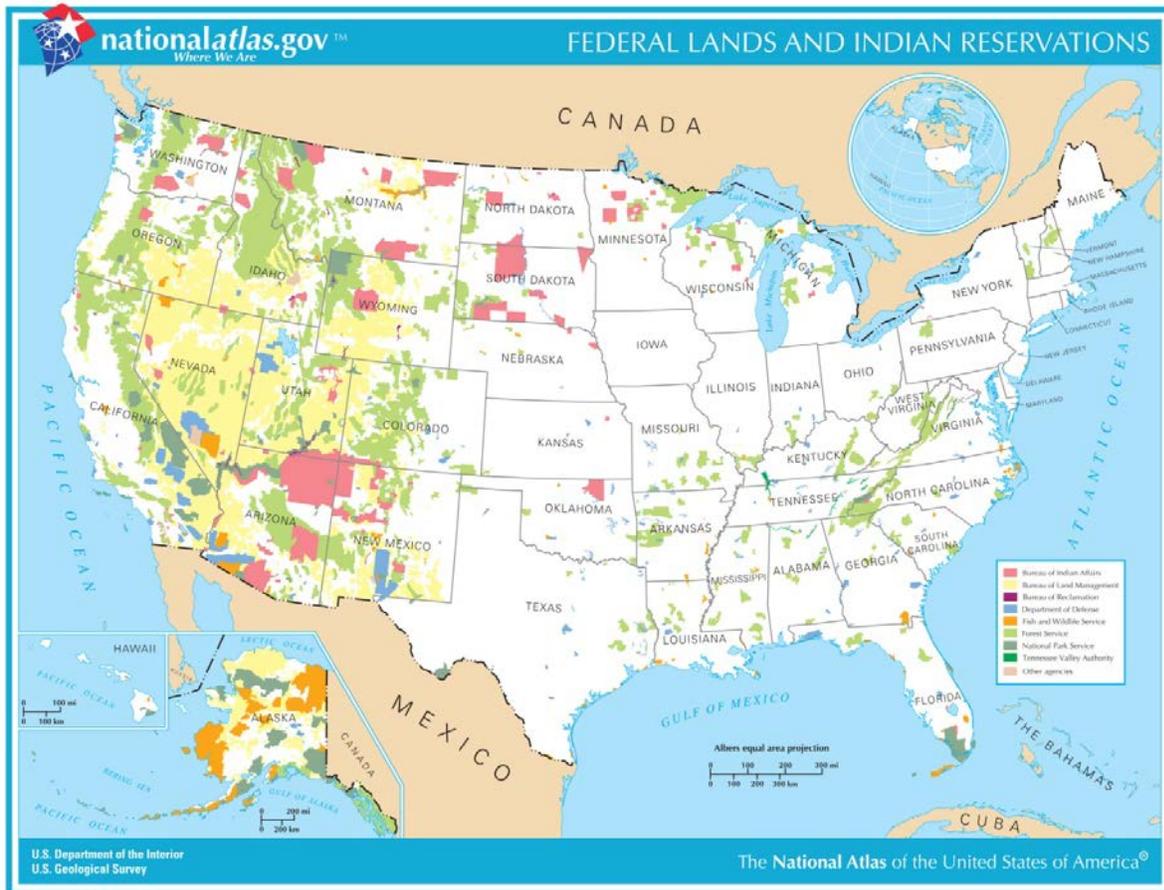
Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Federal Lands and Tribal Transportation Programs</b>			
Federal Lands Transportation Program	345,000	355,000	365,000
Federal Lands Access Program	255,000	260,000	265,000
Tribal Transportation Program	475,000	485,000	495,000
<b>Total</b>	<b>1,075,000</b>	<b>1,100,000</b>	<b>1,125,000</b>

Program Activity	FY 2017 Actual (\$000)	FY 2018 Annualized CR (\$000)	FY 2019 Request (\$000)
Federal Lands Transportation Program:			
Transportation facilities (roads, bridges, trails, and transit systems) owned by the National Park Service (NPS)	\$276,000	\$284,000	\$292,000
Transportation facilities owned by the U.S. Fish & Wildlife Service (USFWS)	\$30,000	\$30,000	\$30,000
Transportation facilities owned by the U.S. Forest Service (USFS)	\$16,000	\$17,000	\$18,000
Transportation facilities owned by the Bureau of Land Management (BLM), Bureau of Reclamation (BoR), U.S. Army Corps of Engineers (USACE), Presidio Trust Corporation, and independent federal agencies with natural resource and land management responsibilities	\$23,000	\$24,000	\$25,000
<b>Total</b>	<b>\$345,000</b>	<b>\$355,000</b>	<b>\$365,000</b>

## What is this program and what does this funding level support?

The performance-based Federal Lands Transportation Program (FLTP) supports critical transportation needs within the country's transportation network. It funds critical, multi-modal transportation projects on roads, bridges, transit systems, and trails owned by the Federal Government (7 agencies listed above). The purpose of the FLTP is to provide transportation access *within* our national parks, forests, wildlife refuges, recreation areas, and other Federal public lands. The Federal Government owns approximately 30 percent of the land in the United States (see Exhibit 1 that follows). This land is primarily rural in nature, though there are many Federal lands in urban settings, such as the Golden Gate National Recreation Area in San Francisco, CA.

Exhibit 1



Across the Federal estate from these seven agencies combined, this program supports:

- \$11 billion in deferred maintenance needs;
- 56,000 miles of roads;
- 8,535 bridges;
- access to over 693 million acres; and
- 937 million visitors.

The FLTP, using performance-based management principles, focuses on the subset of the Federal transportation infrastructure that is nationally significant, i.e., those roads, bridges, trails,

or transit systems which provide access to high-use recreation areas or provide critical access for economic generation to support the economy. In this manner, critical funding resources are strategically targeted to those major transportation facilities that provide access to the most popular recreational destination points within the Federal estate and thereby generate the greatest return on investment to land owners, communities adjacent to Federal lands, and the American people who are looking for seamless transportation to these popular locations.

- The Federal Land Management Agencies (FLMA) are required to identify and maintain a national transportation facility inventory and report annually on safety metrics and the condition of their roads and bridges in their national Federal lands transportation facility inventory.
- The FLTP focuses on those transportation facilities (about 55,000 miles) and projects that are in the national interest rather than broadly trying to include and maintain every road owned by the Federal Government (about 500,000 miles) .
- Each agency submits a single investment plan which describes how they intend to use their funds. Each proposed investment plan is required to demonstrate how it supports authorizing legislation and the Secretary of Transportation's goals and principles on safety, critical infrastructure, innovation, and leveraging other funds from public and private sources.

The FLTP base funding provides an effective mechanism to leverage resources from other Federal and non-Federal funding sources. Many projects accessing Federal lands connect to other public roads owned by States and/or local governments. The Federal funding is frequently pooled with other State and/or county funds to deliver a single project consisting of multiple owners. This leveraging saves taxpayers' dollars and expedites project delivery through a single acquisition.

Recognizing the need for all public Federal and tribal transportation facilities to be treated under uniform policies, 23 U.S.C. 201(c) requires that the Secretary of Transportation, in consultation with the Secretary of each appropriate FLMA, implement transportation planning procedures for Federal lands and tribal transportation facilities that are consistent with the planning processes required under 23 U.S.C. 134 (Metropolitan Transportation Planning) and 135 (Statewide and Nonmetropolitan Transportation Planning). Therefore, the transportation planning program provides opportunities for inter-governmental cooperation in performance-based transportation planning, programming, and decision-making. To carry out eligible transportation planning and programming activities for Federal Lands Transportation Facilities, Federal Lands Access Transportation Facilities, and other federally owned roads open to public travel (as defined in 23 U.S.C. 125(e)), *23 U.S.C. 201(c)(8) requires the Secretary to combine and use each fiscal year not greater than 5 percent of the funds authorized for the Federal Lands Transportation and Federal Lands Access Programs (FLTP and FLAP, respectively) under sections 203 and 204 of title 23, United States Code.* This funding is managed as the Federal Lands Planning Program (FLPP) and supports long-range transportation planning, bridge inspections, management systems implementation, research and innovation deployment, and collection of road and bridge inventory and condition data.

## **What benefits will be provided to the American public through this request and why is this program necessary?**

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The FLTP outcomes include completed construction and engineering projects of paramount importance to improving multimodal access on Federal lands, supporting increasing visitation to recreational areas on public lands, expanding economic development and creating new jobs in and around Federal lands that contribute to the national economy. These collectively result in more options to improve the quality of life for all Americans, while increasing safety, preserving the environment, and reducing congestion at our national treasures.

Based on the requested amount, we anticipate the following accomplishments with these vital funds:

- Improve about 300 miles of roadways accessing Federal lands;
- Enhance safety through innovation deployments on projects;
- Complete over 10 bridge projects to improve safety and mobility;
- Complete approximately 185 active project designs; and
- Advance 112 active construction projects to completion.

Recent national trends indicate that national forests and parks that were once 60-90 minutes away from urban areas are now 15-20 minutes away as suburbs continue to expand further from the urban cores. Approximately 90 percent of the U.S. population is located within 50 miles of a U.S. Army Corps of Engineers recreation site.

The need and demand for recreation for the growing U.S. population is increasing. Outdoor recreation is playing a larger role in our nation's health and quality of life. Recreational spending is a significant portion of the hundreds of billions in travel and tourism dollars that are contributed to the U.S. economy every year. It is one of the fastest growing sectors of our economy—and more than 20 percent of Americans' recreational activities take place on Federal lands.

The FLTP provides attractive opportunities for big and small businesses alike. It provides access to those Federal lands for a wide variety of recreational activities: hunting, fishing, hiking, camping, RVing, skiing, snowshoeing, swimming, snorkeling, diving, running, biking, bird watching, sightseeing, horseback riding, driving for pleasure, snowmobiling, boating, waterskiing, and countless other outdoor activities. These activities create thousands of jobs for local communities surrounding Federal lands and support jobs for major equipment and supply manufacturers.

Effective access to these federally-owned treasures is dependent on safe and reliable infrastructure. This program addresses this need by funding the projects that make a positive difference for America.

## Detailed Justification Federal Lands Access Program

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Federal Lands Access Program (\$265 million) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Federal Lands and Tribal Transportation Programs</b>			
Federal Lands Transportation Program	345,000	355,000	365,000
Federal Lands Access Program	255,000	260,000	265,000
Tribal Transportation Program	475,000	485,000	495,000
<b>Total</b>	<b>1,075,000</b>	<b>1,100,000</b>	<b>1,125,000</b>

### What is this program and what does this funding level support?

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The Federal Lands Access Program (Access Program) funds and supports nationally significant transportation facilities owned by State, county, local, and Tribal governments, which provide direct access to lands owned and operated by the Federal Government, e.g., national parks, forests, refuges, military installations. Please note the Access Program (23 U.S.C. Sec 204) and Federal Lands Transportation Program (23 U.S.C. Sec 203) are separate yet complementary programs that support seamless transportation access to/through Federal lands.

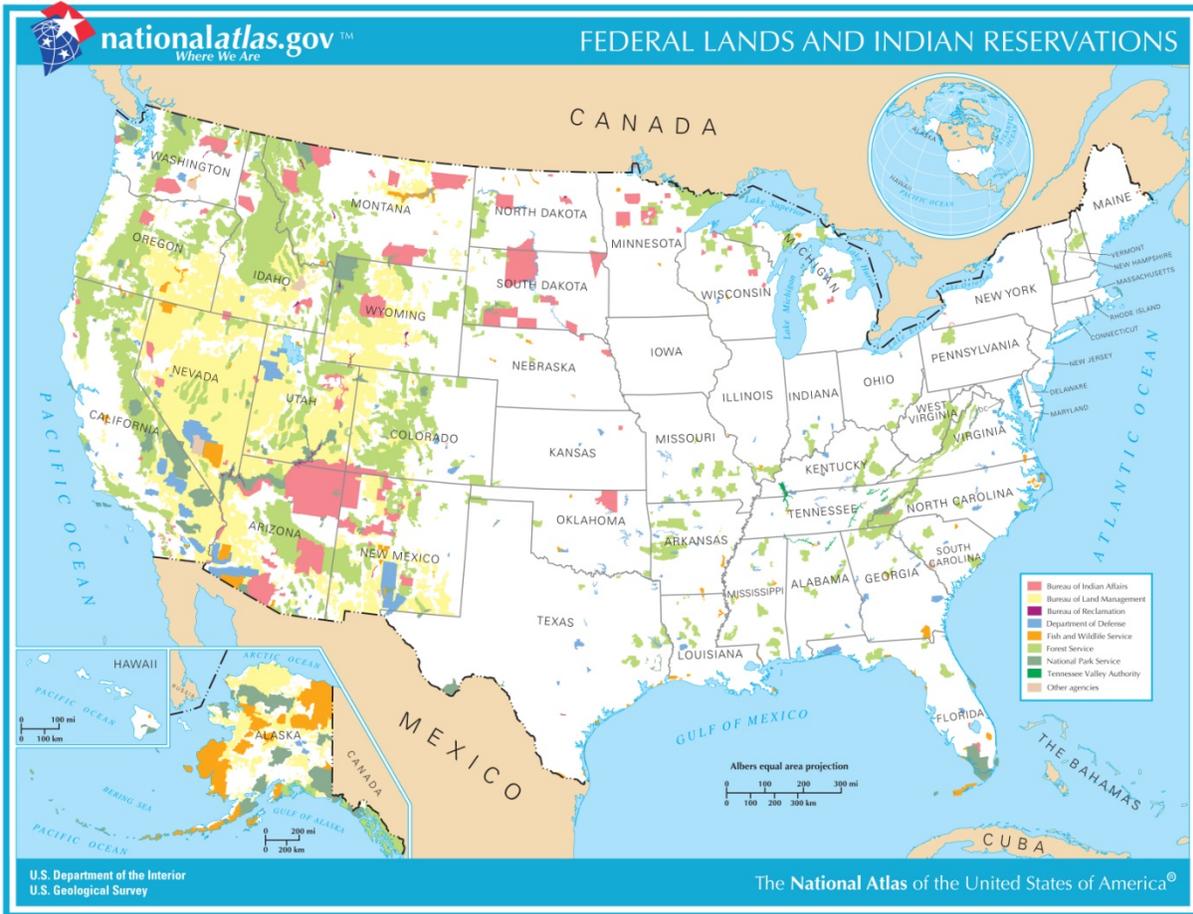
To promote efficient and effective access to destination points within the Federal estate, e.g., National Parks, it is vitally important that the local and State owned roads that connect with Federal Lands Transportation facilities, just outside a park or forest boundary, are in safe and good condition so the traveling public can seamlessly access these Federal properties and enjoy the recreational opportunities therein.

Frequently, the State and locally owned facilities accessing Federal lands are lower classification roads, e.g., minor, 2-lane collectors, that *are not* eligible under the Federal-aid highway system. Historically, prior to the authorization of the Access Program, many of these important State and county owned roads fell into a state of disrepair due to constrained transportation resources. The Access Program addresses this gap and serves as a vital component within the Federal Lands and Tribal Transportation Programs.

Critical funding resources will be targeted to those State and locally owned roads and bridges that provide access to the most highly used recreational destination points and economic generators within the Federal estate and thereby produce the greatest return on investment to land owners, communities adjacent to Federal lands, and the American people who are looking for seamless transportation to these popular recreational locations.

Put more plainly, the Access Program focuses on roads, bridges, trails, and transit systems that are in the national interest to maintain rather than broadly trying to include every State and/or county road that provides access to Federal lands.

As noted under the Federal Lands Transportation Program, the Federal Government owns about 30 percent of all U.S. acreage. This land is primarily rural in nature, though there are many Federal lands in urban settings, such as the National Mall and Memorial Parks in Washington, D.C. This program, in conjunction with the Federal Lands Transportation Program, supports safe, seamless, and multimodal access to and within our national parks, national forests, national wildlife refuges, and many other Federal lands.



The structure of the \$265 million Access Program is a formula distribution by State. Since all States have Federal lands of some type, each State benefits from some portion of this funding. The formula criteria includes visitation to Federal lands, Federal public road miles, number of Federal bridges, and the amount of Federal public lands within each State. Further, 80 percent of the funds are directed towards the 12 western States with at least 1.5 percent of total Federal lands: Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

The selection of nationally significant projects, in each State, are made locally by a Program Decisions Committee comprised of representatives of the State DOT, FHWA, and from county or local governments. These decisions are made in coordination with FLMA's. As noted, funds are used to target transportation infrastructure (roads, bridges, trails, and transit systems) that are owned by States, counties, Tribes, or local governments which support safety and provide critical

access to Federal lands with high-use Federal recreation areas or high-use Federal economic generators.

Access program funds are commonly pooled with other Federal and non-Federal funding sources and serve as an effective mechanism for leveraging taxpayers' dollars. Through funding flexibilities in current law coupled with integrated transportation planning between FLMAs and States, projects, that otherwise may have been constructed separately, can be combined into a single project and be delivered cheaper and quicker.

The Access Program reserves a percentage of the funding for long range transportation planning, bridge inspections, management systems, and collection of road and bridge inventory and condition data by FLMAs. This set-aside also supplements costs associated with bridge inspection activities on federally-owned bridges which are not on the national Federal transportation facility inventory. The set-aside focuses on comprehensive multi-agency planning efforts and positions the program more effectively to support performance management.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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The Access Program outcomes include completed construction and engineering projects that will improve multimodal access to/through Federal lands, support increasing visitation to recreational areas on public lands, expand economic development and create new jobs in and around Federal lands that contribute to the national economy. These collectively result in more options to improve the quality of life for all Americans, while preserving the environment and reducing congestion in our national treasures.

Many of these road and bridge improvements included multimodal options on the same road or bridge thereby providing visitors with transportation options (e.g., motoring, biking, walking).

Based on the requested amount, we anticipate the following accomplishments with these vital funds:

- Improve about 100 miles of roadways accessing Federal lands;
- Improving safety through use of innovations and design;
- Complete over 5 bridge projects to improve safety and mobility;
- Complete approximately 155 active project designs; and
- Advance 90 active construction projects to completion.

In summary, the program's transportation investments allow visitors from the United States and numerous countries to experience America's treasures in a safe and seamless manner.

## Detailed Justification Tribal Transportation Program

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Tribal Transportation Program (\$495 million) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Federal Lands and Tribal Transportation Programs</b>			
Federal Lands Transportation Program	345,000	355,000	365,000
Federal Lands Access Program	255,000	260,000	265,000
Tribal Transportation Program	475,000	485,000	495,000
<b>Total</b>	<b>1,075,000</b>	<b>1,100,000</b>	<b>1,125,000</b>

### What is this program and what does this funding level support?

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The performance based Tribal Transportation Program (TTP) promotes a coordinated approach to highway construction in Indian country on roads owned by the Bureau of Indian Affairs (BIA), sovereign Tribal governments, and other roads owned by States, counties, or local governments, which provide access to or are located within Indian communities.

The anticipated FY 2019 accomplishments will include the design and construction of Tribal transportation infrastructure consistent with strategic long-range transportation plans and goals of the Tribes and DOT, and benefit facilities included in the National Tribal Transportation Facility Inventory (NTTFI). These roads, trails, bridges, and other facilities provide safe and adequate transportation for public access to, within, and through Indian reservations and native communities for Native Americans, visitors, recreational users, resource users, and others, while contributing to the health, safety and economic development of Native American communities. There are currently more than 161,000 miles of roads on the NTTFI. Approximately 31,500 miles are identified as being BIA routes and another 27,000 miles as Tribal routes. All of the remaining mileage is owned by others including States, counties, townships, boroughs, or other Federal agencies.

The structure and allocation of the \$495 million to the 567 federally recognized Tribes is based on a statutory formula that was established in the Moving Ahead for Progress in the 21st Century Act (MAP-21) and carried forward in the Fixing America’s Surface Transportation (FAST) Act (23 U.S.C. 202(b)). This statutory funding formula replaced a previously used funding formula that was developed through Negotiated Rulemaking during the Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) and published in 2004. The current statutory funding formula has various factors and takedowns but ultimately determines a “tribal share percentage” for each federally recognized Tribe. This percentage is then applied to the year’s available program funding in order to calculate each Tribe’s share of TTP funding for that year. Since the transition to the new formula (as established in MAP-21) has been completed, the FY 2019 tribal share “percentages” will closely reflect those percentages used to distribute funding in FY 2016 and FY 2017.

The program would fund transportation planning, research, maintenance, engineering, rehabilitation, and construction of roads, bridges, trails, and transit systems that provide access to, are within, or are adjacent to Tribal lands. The BIA and Tribes are required to maintain a national road and bridge inventory, and report annually on the state of good repair of the TTP system. In addition, each user of TTP funds is statutorily required to report on their obligations and expenditures of TTP funds each year as well as on the number of jobs created and retained by the funding.

The TTP advances transportation accessibility in Tribal communities. This program provides better access to housing, emergency services, schools, stores, jobs, and medical services. Access to these basic services improves the quality of life on Tribal lands.

The TTP Safety Fund (TTPSF) supports the Secretary's data driven safety priorities. Since the TTPSF was created under MAP-21, FHWA has awarded \$34.5 million to 410 Indian Tribes for 454 projects, including development of safety plans to address safety issues in Indian country over four rounds of competitive grants. The intent of the TTPSF is to prevent and reduce deaths or serious injuries in transportation-related crashes on Tribal lands where statistics are consistently higher than the rest of the Nation as a whole. The TTPSF emphasizes the development of strategic Transportation Safety Plans using a data-driven process as a means for Tribes to determine how transportation safety needs will be addressed in Tribal communities.

Tribal Transportation Safety Plans are a tool used to identify risk factors that lead to serious injury or death and organize various entities to strategically reduce risk; projects submitted must be data-driven, must be consistent with a comprehensive safety strategy, and must correct or improve a hazardous road location or feature or address a highway safety problem. Because safety data is considered critical for informed transportation safety decisions, the TTPSF also places an emphasis on assessment and improvement of traffic records systems (primarily crash data systems).

The TTP has the following statutory set asides:

- A two percent set-aside for Transportation Planning. These funds are provided to each Tribe for use in carrying out transportation planning activities as identified in 25 CFR 170;
- A three percent set-aside for national bridge rehabilitation and replacement. The set-aside will be administered using the existing regulatory-defined grant program which prioritizes funds on the bridges with the lowest sufficiency rating. Applications are submitted by Tribes each year;
- A two percent set-aside for Transportation Safety Activities. These funds are provided to the Tribes on a competitive basis for safety projects eligible under the Highway Safety Improvement Program. In some States, the fatality and crash rates on Tribal lands are three to four times higher when compared to the balance of the same State(s); and
- A five percent set-aside for administration of the program. Funding from this set-aside helps to provide funding for the seven Tribal Technical Assistance Program Centers,

which provide technical assistance and training to Tribes, oversight and maintenance of the TTP Inventory, funding for the TTP Coordinating Committee, and funding for the BIA, BIA-DOT, and FHWA staff responsible for carrying out the Stewardship and Oversight and the inherent Federal functions/responsibilities of the program. These inherent Federal functions include fund distribution, technical assistance, environmental documentation review and approval, project construction inspection, and the travel by the Federal employees to carry out these activities.

The requested \$495 million is \$20 million above the FY 2017 actual level. The request supports a more comprehensive, coordinated, and goal-oriented approach to Tribal transportation infrastructure management.

**What benefits will be provided to the American public through this request and why is this program necessary?**

The TTP provides funding to improve the access to basic community services for all of the 567 federally-recognized sovereign Tribal governments. The transportation infrastructure supports better and safer access to housing, emergency services, schools, stores, places of employment, and medical services. On some rural reservations, a “complete street” means an all-weather road instead of a native-surface road. The TTP will promote access to Tribal lands for commerce and economic growth within Tribal communities. More than 8 billion vehicle miles are traveled annually on the TTP system, despite more than 60 percent of the system being unpaved.

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## Executive Summary

### Research, Technology & Education (RT&E) Program

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#### **What is the request and what funds are currently spent on the program?**

The FY 2019 request for the RT&E Program is \$420 million. This is a slight increase over FY 2017 actual level.

#### **What is this program and what does this funding level support?**

The RT&E Program is comprised of the following subprograms:

- Highway Research & Development Program (HRD): \$125 million for research and development to produce transformative solutions to improve safety, accelerate projects, and better meet operations, policy, and infrastructure needs.
- Technology & Innovation Deployment Program (TIDP): \$67.5 million to turn research products into proven technologies that address emerging needs, and to promote rapid adoption of proven, market-ready technologies and innovations. TIDP advances the Every Day Counts (EDC) initiative that identifies market-ready technologies with high pay-offs and accelerates their deployment and acceptance throughout the Nation.
- Training & Education Program (T&E): \$24 million to train the current and future transportation workforce, transferring knowledge quickly for effective deployment.
- Intelligent Transportation Systems Program (ITS): \$100 million for innovative research and rapid deployment of applications and tools that facilitate a safe, connected, integrated, and automated transportation system that is information-intensive to better serve the interests of users and be responsive to the needs of travelers and system operators.
- State Planning and Research program (SP&R – Research portion – Non-add): The States must set aside a portion of their formula program funds to conduct research and deploy technologies and innovations of local, regional, and national interest.
- University Transportation Centers (\$77.5 million), and Bureau of Transportation Statistics (\$26 million): These programs are administered by the Office of the Assistant Secretary for Research and Technology.

Research and development, technology deployment, and training are the highway program's primary means for developing and advancing transformative solutions that address real-world transportation issues to support and improve the transportation system. FHWA will strategically develop and deliver transformative and innovations through technology and practices that support and enable improved infrastructure resilience, enhance mobility and accessibility, enhance safety, stimulate economic growth, and promote more effective transportation performance management both in the short-term and long-term.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

FHWA's contributions to researching and implementing transformative innovations and technologies are changing the way roads, bridges, and other facilities are planned, designed, built, managed, and maintained across the country to be more responsive to current and future needs. Innovations developed and/or advanced through FHWA's R&T program enable and supports achievement and management of a safer and more reliable transportation system that is cost-effective and sustainable, thus improving overall economic competitiveness and quality of life.

**Detailed Justification  
Research, Technology & Education (RT&E) Program**

**What is the request and what funds are currently spent on the program?**

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**FY 2019 – Research, Technology, and Education Program (\$420 million)**  
(\$000)

<u>Program Activity</u>	<u>FY 2017 Actual</u>	<u>FY 2018 Annualized CR</u>	<u>FY 2019 Request</u>
Federal-aid Highways			
<b>Research, Technology &amp; Education Program</b>			
Highway Research and Development Program	125,000 <sup>1/</sup>	125,000 <sup>1/</sup>	125,000 <sup>1/</sup>
Technology and Innovation Deployment Program	67,500 <sup>1/</sup>	67,500 <sup>1/</sup>	67,500 <sup>1/</sup>
Training and Education	24,000	24,000	24,000
Intelligent Transportation Systems Program	100,000 <sup>1/</sup>	100,000 <sup>1/</sup>	100,000 <sup>1/</sup>
University Transportation Centers <sup>2/</sup>	75,000	75,000	77,500
Bureau of Transportation Statistics <sup>2/</sup>	26,000	26,000	26,000
State Planning & Research (SP&R research portion) [Non-Add]	[199,894]	[204,214]	[208,826]
<b>Total</b>	<b>417,500</b>	<b>417,500</b>	<b>420,000</b>

<sup>1/</sup> Per the FAST Act, the Advanced Transportation & Congestion Management Technologies Deployment Program (ATCMTD) will be included in the Technology and Innovation Deployment Program and will be funded by set-asides from the Highway Research and Development Program, Technology and Innovation Deployment Program, and Intelligent Transportation Systems Program.

The funding levels shown for these 3 programs are pre-ATCMTD set-aside.

<sup>2/</sup> Administered by the Office of the Assistant Secretary for Research and Technology.

**What is this program and what does this funding level support?**

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This request enables the Department to conduct, sponsor, sustain, and guide highway research and technology activities that addresses current and emerging highway challenges and provides data and information to support policy decisions. This request will provide a comprehensive and coordinated research, technology, and education program that will advance FAST Act priorities of accelerating innovation delivery and technology implementation. Additionally, the FHWA RT&E Program will advance the priorities of the Department of Transportation including reducing transportation-related deaths and injuries; investing in infrastructure research that enhances mobility and stimulates economic competitiveness; developing and deploying transformative innovations; and reducing regulatory burdens while increasing effectiveness and accountability.

FHWA will pursue efforts that support the transportation system of the future, leading to an environment of innovation and investment in support of other partners including State Departments of Transportation, university research centers, and private developers.

FHWA supports innovation development as a continuous cycle by working with stakeholders and private partners to identify and invest in emerging needs. Leveraging the outputs of this process the Agency sets goals to address the national gaps and opportunities through research and technology deployment. Through research, new products and processes are created and applied to projects that address the nation’s challenges. Collaboration and coordination with partners and stakeholders occur from agenda setting, through research, to assessing the impact of

new technologies. This ensures that the Agency's investments are aligned with transformational changes that will lead to the safe, efficient, and resilient transportation system of the future.

The RT&E Program is comprised of the following sub-programs:

- Highway Research & Development Program (HRD): \$125 million for research activities associated with safety; transformative infrastructure technologies, innovations, tools, and practices; environmental mitigation; operations; and policy.
- Technology & Innovation Deployment Program (TIDP): \$67.5 million to enable FHWA and its partners to strategically invest in research products that are proven technologies or demonstrate practices that address emerging needs. TIDP advances, and will continue to advance, the Every Day Counts (EDC) initiative that identifies market-ready technologies with high pay-offs and accelerates deployment and acceptance throughout the Nation.
- Training & Education Program (T&E): \$24 million to train the current and future transportation workforce, transferring knowledge quickly for effective deployment.
- Intelligent Transportation Systems Program (ITS): \$100 million for innovative research and rapid deployment of applications and tools that facilitate a safe, connected and automated transportation infrastructure that supports an interoperable transportation system with integrated ITS that are information-intensive to better serve the interests of users and be responsive to the needs of travelers and system operators.
- State Planning & Research Program (SP&R – Research portion – Non-add): The States must set aside a portion of their formula program funds to conduct research and deploy technologies and innovations of local, regional, and national interest.
- Office of the Assistant Secretary for Research and Technology-administered RT&E programs: University Transportation Centers and Bureau of Transportation Statistics. *Detailed justifications for these programs can be found in budget submission for the Office of the Secretary of Transportation (OST) - Office of the Assistant Secretary for Research and Technology.*

Without sufficient funding for the RT&E program, the nation's highway program would lose its primary means for advancing innovative solutions and leading the development of transformative technologies to support national policies, improve highways, and accelerate construction.

The programs under FHWA's RT&E portfolio cover all phases in the innovation life cycle: HRD covers exploratory advanced research, applied research and development, and initial testing of technological solutions that address emerging needs and support the infrastructure of the future. TIDP supports the implementation, delivery and deployment phase, conducting refined testing and evaluations, market research, and communicating the value of accelerating innovations that will make significant contributions to the advancement of the highway system. The ITS program develops and deploys applications for an informed, connected, and automated transportation system. The T&E program provides assistance to transportation agencies and users of these market-ready technologies, training and educating the workforce on how to efficiently

implement and deploy the innovations. Additionally, the States use the SP&R to conduct research of local, regional, and national interest.

Funding within the RT&E program is allocated based on the strategic value of the proposed effort in supporting Agency, Departmental, and FAST Act priorities. This process allows the FHWA to consider emerging needs, ensure that the Agency is advancing strategic goals, and leading the research, development, and deployment of technological solutions that will prepare the Nation's infrastructure for the future. The agency is well situated to pivot toward shifting priority research and technology areas as they arise. With a focus on transformational technologies and the future of the transportation system, the FHWA is providing an environment that supports technological innovations that arise through private investment and moves the nation toward a safer, more efficient, and resilient infrastructure.

The main components of the RT&E program are as follows:

***Highway Research and Development Program (HRD)***

Through HRD, FHWA provides leadership and contributes to a comprehensive, nationally-coordinated highway research and development program, engaging and cooperating with other highway research programs such as University Transportation Centers, the pooled fund National Cooperative Highway Research Program, and State-based research and technology initiatives. FHWA plays a key role in conducting and sponsoring transformative research that cannot be effectively pursued by other research sponsors. Research areas include:

- **Safety** - Activities emphasize data-driven analysis of roadway-related safety considerations and specific improvement in three crash areas: roadway departure, intersection design, and pedestrians and bicyclists. This includes leveraging big data solutions and other advanced analytical methods to offer solutions that improve safety in a more efficient and complete manner. Extensive data and analysis of available, and specialized, crash data supports developing program activity. The program conducts rigorous evaluations to determine what safety improvements can be expected with the introduction of countermeasure designs or operations in the context of changes to the transportation environment. All design or operational changes are assessed from a human factor perspective to eliminate or minimize unexpected consequences of change. FHWA works in cooperation with NHTSA, FRA, and FMCSA to develop tools and technologies to reduce crashes and improve transportation safety.
  - *High Friction Safety Treatment.* This technology can dramatically and immediately reduce crashes and related injuries and fatalities by helping maintain vehicle to pavement friction. Kentucky placed this technology on 26 curves and has seen an average reduction from 6.2 to 1.9 crashes per year at those locations.
  - *The FHWA Exploratory Advanced Research Program.* This program develops tools that increase the productivity of government, academic, and private sector researchers. Examples include new methods for analyzing safety data, for assessing the benefits and potential risks of increased vehicle connectivity and automation, and characterization of supplementary and alternative materials for

pavements and structures. Recent successes under the EAR program include demonstrating connected vehicle technologies in support of systems like GM Super Cruise and Peleton truck platooning.

- **Infrastructure** - FHWA's infrastructure research and technology program priorities are:
  - *Designing Infrastructure for Safety, Durability & Resiliency* - Safe, durable, sustainable and resilient highway infrastructure (pavements, bridges, tunnels and other structures) is essential to maintain the commercial and personal mobility that supports our economy and way of life. Innovations in materials, tools, technologies, test methods, specifications and guidance are needed to support more cost-effective designs for bridges, tunnels, pavements and other structures.
    - *Prediction, prevention and mitigation of damage.* Recent FHWA hydraulic engineering research culminated in the EDC-4 Collaborative Hydraulics: Advancing to the Next Generation of Engineering (CHANGE) initiative. By applying advanced hydraulic model tools, highway agencies can improve the quality and resiliency of highway infrastructure, improve collaboration, and streamline project delivery.
    - *Transformation of the selection, design, and specification of infrastructure and infrastructure materials.* FHWA is advancing performance-related specifications for highway pavements. Feedback from trial projects constructed in 2017 and planned for 2018 will be used to further develop and refine model specifications and applications to support full-scale implementation. By advancing performance-related specifications FHWA will enable greater innovation in highway infrastructure construction, with the potential for reduced cost and more efficient construction.
  - *Infrastructure Performance Management* -Advancements in infrastructure performance management tools, technologies and guidance are needed to maximize the benefits achieved through implementation of performance management regulations. The challenges to be addressed include understanding/prediction of long term infrastructure performance, including (but not limited to) the impacts of both traffic loads and the environment through the Long Term Infrastructure (Pavement and Bridge) Performance programs, as well as transformation of inspection and condition assessment practices to improve efficiency, the quality and quantity of information obtained, and reduce risks to the agency and impacts on the public.
    - *Transformation of inspection and condition assessment practices.* For example, FHWA is working to advance applications of unmanned aerial systems (UAS or "drones") to improve infrastructure condition inspection, and application of hand-held spectrometers to assess infrastructure materials. In addition, FHWA is working to develop improved technologies that will allow more rapid and accurate assessment of infrastructure condition, as well as data integration and analysis tools to support more effective interpretation of nondestructive evaluation. Through this work, FHWA will enable more efficient and cost effective infrastructure inspection practices, improve the

quality and quantity of information obtained to support asset management decisions, and reduce risks to the agency and impacts on the public.

- *Infrastructure Construction, Preservation & Rehabilitation* - As highway agencies strive to maintain our nation's highways in a state-of-good-condition, rapid construction, preservation and rehabilitation of long-lasting bridges, pavements, tunnels and other structures that are economical both initially, and over the full life-cycle remain essential. Expanded guidance and improved tools and automated construction technologies are needed to support and enable transformation of highway construction, preservation and rehabilitation practices to more effectively address these challenges.
  - *Effective Life-Cycle Management of highway infrastructure.* FHWA is building on past work that advanced e-construction concepts and practices to advance the application of civil integrated management. By maintaining and sharing complete digital records through all phases of the infrastructure life-cycle (planning, design, construction, asset management and maintenance) significant efficiencies in both cost and time can be achieved.

Through its work in these three priority areas, FHWA will develop and deliver guidance and innovations that support and enable improved highway safety, and increased return on highway infrastructure investments.

- **Planning and Environment** – Initiatives include:
  - *Developing strategies to accelerate projects and minimize negative impacts* to maximize benefits from transportation investment on the natural and human environment. FHWA accelerates project delivery through interagency collaboration, capacity building for environmental practitioners, integrating planning and environmental processes, and disseminating information about environmental programs and processes.
  - *Carrying out short and long-term sustainability initiatives* to improve project delivery and enhance communities that are impacted by transportation to make transportation systems more energy efficient and more resilient. FHWA is improving decision-making that considers potential impacts on the human and natural environment while meeting the public's need for safe and efficient transportation improvements.
- **Operations** - FHWA conducts research on the application of cutting-edge technologies to move people and goods more reliably, efficiently, safely and rapidly. The primary focus is on mitigating the impacts of recurring congestion and dealing more effectively with non-recurring events that cause congestion, as well as to efficiently integrate emerging technologies such as automation and connected vehicles into the transportation system and take maximum advantage of the capabilities offered by these and other emerging technologies. Operations research works in concert with connected vehicle and other Intelligent Transportation System initiatives, and pursues a broad range of activities designed

to enhance system performance, freight productivity, and economic competitiveness of the United States.

- **Policy** – Initiatives include:
  - *Analyzing emerging issues in the transportation community*, such as alternative highway revenues, understanding trends and patterns of how the system is used, and economic impacts of highway investment.
  - *Developing the Infrastructure Investment Needs Report* through data analysis to assess the current and future conditions of our Nation’s highways and bridges.
  - *Forming strategic alliances with international partners* to gain better knowledge of technology and best practices put in place in other countries related to FHWA priorities, including safety, infrastructure and innovation, that can improve the U.S. surface transportation system, and leverage resources to enable the U.S. to benefit from investments made by foreign counterparts in their own research.
  
- **Next Generation Research & Technology** – Activities include:
  - *Advancing the Exploratory Advanced Research (EAR) Program*, conducting longer-term, higher-risk research with the potential for dramatic breakthroughs. The EAR Program seeks opportunities from discoveries in basic science and technology and matches them to critical persistent and emerging highway transportation needs. EAR Program funding can lead to new research techniques, instruments, and processes accelerating the development of new technologies for increased safety, mobility, and the state of good repair. Examples of recent successes under the EAR program include demonstrating connected vehicle technologies in support of systems like GM Super Cruise and Peleton truck platooning as well as applying machine learning to allow U.S. researchers to accelerate the identification of safety factors necessary for continuing to reduce the number of traffic deaths and injuries and related highway congestion.
  - *Operating the FHWA’s Turner-Fairbank Highway Research Center (TFHRC)*, a federally-owned and operated research facility in McLean, Virginia that provides State and local governments, FHWA, and the world highway community with targeted applied research and development related to transformative highway technologies and innovations that address the needs of the transportation system of the future.
  
- **Surface Transportation System Funding Alternatives Demonstration Program:** The FAST Act requires FHWA to provide grants to States to demonstrate alternative funding sources for the Highway Trust Fund. The FAST Act provided \$15 million in FY 2016 and \$20 million each year from FY 2017 through FY 2020 to provide grants to States to demonstrate user-based alternative revenue mechanisms that utilize a user fee structure to maintain the long-term solvency of the Highway Trust Fund.

In FY 2017 FHWA awarded grants to six States for seven projects. The seven projects will investigate and evaluate various user-based approaches to raising revenue, including on-

board vehicle technologies to charge drivers based on miles traveled and multi-state or regional approaches to road user charges. They will address common challenges involved with implementing user-based fees such as public acceptance, privacy protection, equity and geographic diversity. The projects will also evaluate the reliability and security of the technologies available to implement mileage-based fees. For example, the California Department of Transportation will explore mechanisms to collect revenue at pay-at-the-pump stations.

### ***Technology & Innovation Deployment Program (TIDP)***

After innovations and technologies have gone through an initial testing and evaluation process and are ready to be put through a more refined, conclusive testing, or to be deployed, these technologies are advanced through the TIDP. The innovations and technologies come from domestic research efforts, and international exchanges and initiatives. This is where final evaluations, pilots, demonstrations, marketing, communications, and promotional activities are conducted to accelerate its adoption by Federal Lands Highways and State DOTs and other government entities or beneficiaries. The TIDP program aims to put transformational technologies in the hands of practitioners and industry partners to move toward the highway system of the future.

Examples of TIDP sub-programs include:

- **Every Day Counts Initiative (EDC):** The FAST Act recognizes the success of EDC, making it a required program. EDC identifies market-ready technologies with high pay-offs and accelerates their deployment and acceptance throughout the Nation.
- **Accelerated Innovation Deployment (AID) Demonstration Program:** FHWA provides incentive funding for eligible entities to accelerate the implementation and adoption of innovation in highway transportation. Funds are available to cover the cost of implementation of an innovation on a project. This program aims to move transformational technologies into the field faster to enhance the current state while also setting the stage for future technological development. Since September 2014, FHWA has awarded \$48 million to 69 innovations. Project examples include:
  - *Time and Costs Savings.* The Ohkay Owingeh Tribe used Geosynthetic Reinforced Soil (GRS) abutments and Pre-fabricated Bridge Elements and Systems (PBES) to accelerate their bridge construction schedule and deliver the project under time and under budget. Using GRS and PBES, they completed in 2 months what would have taken 4 ½ months under conventional construction methods. The GRS bridge system cost less than half of a conventional bridge and the technologies enabled the Ohkay Owingeh Road Crew to conduct the work resulting in half the labor cost of using an outside contractor.
- **State Transportation Innovation Council (STIC) Incentive Program:** FHWA offers technical assistance and resources to support the standardizing of innovative practices in a State transportation agency or other public sector STIC stakeholders.

- **Accelerate Market Readiness (AMR) Program** feeds the innovation pipeline and bridges the gap between research and technologies that are proven-in-the-field by field testing and evaluating technologies and practices to determine their market readiness. The AMR program works with both internal and external stakeholders and partners, including the National STIC Network and the AASHTO Innovation Initiative.
- **Accelerated deployment of pavement technologies:** The FAST Act extends the designation of funding to promote, deploy, demonstrate, and document the application of innovative pavement technologies, practices, performance, and benefits. In 2016, over 11,000 pavement professionals were trained under this program, over 100 publications and articles were distributed, and 25 agencies were provided with technical assistance.
- **Advanced Transportation and Congestion Management Technologies Deployment Program:** Funded out of the HRD, TIDP, and ITS programs, the FAST Act requires FHWA to award grants to States and other entities to deploy technologies with the potential to relieve congestion and improve the quality of life. This program emphasizes technologies that transform the way people and goods move on the Nation's highways. In 2017, FHWA awarded ATCMTD grants valued at \$53.6 million for 10 States to fund advanced technologies that will improve mobility and safety for drivers and enhance the performance of the nation's highway system. For example, the Texas Department of Transportation was awarded funding for its Connected Freight Corridors Project. This project will deploy connected-vehicle technologies in over 1,000 commercial trucks and other vehicles which will be able to transmit data and receive warnings from 12 different advanced information systems.

### ***Training and Education Program (T&E)***

T&E is responsible for training the current and future transportation workforce, transferring knowledge quickly and effectively to and among transportation professionals, and providing education solutions throughout the full innovation lifecycle. The T&E program provides training that is relevant to the changing transportation environment. This includes enhancing the skills of transportation professionals to address transformational technologies and ensure that the workforce is prepared to deal with the associated fast-paced changes. T&E provides a wide variety of services and products, including:

- *The National Highway Institute* provides training courses to present the latest technologies and best practices in highway construction.
- *The Local and Tribal Technical Assistance Programs (LTAP/TTAP)* support technology transfer centers in all 50 States, Puerto Rico, and a National Center coordinating service to Native American Tribal governments.
- *Training and Workforce Development Programs:*
  - The Dwight D. Eisenhower Transportation Fellowship Program provides opportunities for high performing students to pursue advanced transportation degrees.

- The Garrett A. Morgan Technology and Transportation Education Programs enhance science, technology, engineering, and mathematics at elementary and secondary school level.
- The Transportation Education Development Program supports Region Transportation Workforce Centers to establish new strategic partnerships and communicate best practices to educators and employers throughout the education continuum.
- The Surface Transportation Centers for Excellence promote and support strategic programs and activities in the areas of environment, surface transportation safety, rural safety, and project finance.

***Intelligent Transportation Systems Program (ITS)***

For FY 2019, the FAST Act authorized Intelligent Transportation Systems Program (ITS) will execute innovative research and rapid deployment efforts in six focus areas -- Connected Vehicles, Automated Vehicles, Enterprise Data, Interoperability, Emerging Technologies, and Accelerating Deployment. These six program categories provide the U.S. DOT the best tactical and strategic opportunities to exhibit federal leadership to rapidly, effectively, and safely transform transportation using ITS technologies. ITS, connected vehicles, and automated vehicles are the logical steps in developing a robust interoperable connected and automated transportation infrastructure to demonstrate what is possible when communities use technology to connect transportation assets into an interactive network.

The FY 2019 budget proposes the following strategies for these program categories:

- *Connected Vehicles (CV)* – Connected Vehicle (CV) technology is an essential core mechanism that allows wireless communications among automated vehicles, mobile devices, and roadside infrastructure. This program is the keystone of ITS JPO’s research and engagement and is aligned with U.S. DOT’s mission of advancing safety innovations in transportation. Capabilities leveraging these safety innovations have demonstrated new levels of personal mobility and dramatically improved the efficiency of goods movement. The current flagship effort of the program is the CV Pilot Deployment Program, funding large-scale CV system implementation efforts led by the New York City Department of Transportation (NYCDOT); the Tampa Hillsborough Expressway Authority (THEA); and the Wyoming Department of Transportation (WYDOT). Similar, interoperable technologies are being used differently at these three sites to improve safety in environments as diverse as dense urban grid networks and isolated high-plains interstates. The three sites piloted a deployment planning process that led to a design/test/build phase culminating in an operational phase in 2018. These efforts are transferrable to other regions of the U.S, providing opportunities for public private partnerships to rapidly and efficiently meet the demands for safe and speedy adoption and application of these transformative technologies.
- *Automated Vehicles(AV)* – The development of AV technology is occurring at a rapid pace, with industry investing billions of dollars a year. Several States have enacted legislation regarding AV and testing continues on public roads. Partially automated vehicles are available in the market today and heavy vehicle and low-speed shuttle automation technologies are approaching commercialization. Recognizing the importance of these advancements, the U.S. DOT is playing a significant role in

addressing the key technological and institutional barriers that have emerged. The Intelligent Transportation System Joint Program Office (ITS JPO) continues AV research with a multi-modal program plan. The goal of ITS JPO automation research is to promote policy and technical research to reduce risks and produce positive outcomes. The program seeks to “enable safe, efficient, and equitable integration of automation into the transportation system.” On-going efforts under this program include human factors evaluations of automated commercial vehicle concepts, driver vigilance research, truck platooning operational tests and infrastructure impact analyses, and advancing the state-of-the-practice for understanding the impacts of AVs on congestion, personal mobility, travel behavior, and vehicle ownership.

Automation is integrated into the six program areas identified in the Modal Research Plan. For FY 2019 the ITS JPO estimates \$10 million for research investment in automation (this is in addition to Smart Cities and ATCMTD activities, which may fund automation efforts). However, this amount is likely to change, based on emerging needs, issues, and trends. The ITS JPO works closely with NHTSA, FHWA, FTA, FMCSA, and MARAD to address key technical and policy challenges for automation.

- *Enterprise Data* – This program seeks to develop a better understanding of critical uses for data, their value for the public, private, and academic sectors, and the potential Federal role in enabling these data to be collected and shared to unlock the full potential societal value of deploying these new technologies. This program will build on efforts in the connected and automated vehicle research programs, and the expansion into research activities involving the development of mechanisms for housing, sharing, analyzing, transporting, and applying the data for improved safety and mobility across all modes of travel.
- *Interoperability* – This funds key enabling technical research and deployment support necessary for national deployment of connected automated infrastructure, and includes ITS Architecture and Standards, cyber security, and human factors required for test beds to ensure a sound industrial base, and safe, secure, and efficient National and international interoperability and economies of scale. The goal of this research is to ensure effective connectivity from the device level to the transportation system level to support all travelers and system operators.
- *Emerging Technologies* – This area scans the technology horizon for emerging technologies and trends to identify opportunities to adapt or leverage these technologies to create innovative ITS solutions. It addresses our statutory requirements for the Small Business Innovation Research program as well as conducts focused technology inquiries on emerging capabilities with a focus on future generations of transportation systems.
- *Accelerating Deployment* – This area seeks to spur rapid adoption of technology and aid stakeholders and localities deploy maturing ITS systems. Funds are directed at technical assistance, training, outreach, program evaluation and public/private stakeholder engagement to advance ITS work from research to initial adoption to wider scale deployment in coordination with industry and other stakeholders at the federal, State, regional and local level.

ITS program research is conducted by ITS JPO staff and stakeholders in collaboration with other U.S. DOT modal agencies in keeping with the ITS JPO's coordination role. The ITS JPO advances and coordinates the Department's cross modal ITS research program. Research investments are determined through an inclusive, collaborative, interactive, and iterative process, with a wide mix of modal engagement opportunities. The process includes modal program managers; the Strategic Planning Group (SPG), made up of senior modal representatives; and the Management Council (MC), which is comprised of modal administrators.

ITS outreach efforts extend to the entire U.S. DOT and its network of State and local transportation authorities, leveraging modal research and applying innovative solutions to our nation's transportation challenges. The budget request is necessary to work across U.S. DOT modes to implement results for the ITS Program to advance safe, efficient transportation systems. The funding supports related research that expands this technology to achieve benefits for mobility and economic growth. The funding will also allow the program to accelerate deployment of ITS technologies through demonstration programs, grants, incentives, and other strategies. These efforts will enable the definition of the required performance areas and objectives and threshold performance criteria to allow the government, automotive industry, equipment manufacturers, and the standards development organizations to define the necessary preconditions needed to commercialize and deploy affordable interoperable connected and automated infrastructure in the U.S. with improved safety performance.

***State Planning & Research Program (SP&R – Research portion – Non-add)***

The SP&R program is a set aside of five of the formula programs: National Highway Performance Program, Surface Transportation Block Grant Program, Congestion Mitigation & Air Quality Improvement Program, Highway Safety Improvement Program, and National Highway Freight Program that the States must use for planning and research purposes.

States must allocate a minimum of 25 percent of their SP&R apportionment for research, development, and technology activities. SP&R is intended to solve problems identified by the States, and typically involve research on new areas of knowledge; adapting findings to practical applications by developing new technologies; and the transfer of these technologies, including the process of dissemination, demonstration, training, and adoption of innovations by users.

States are encouraged to pool their funds in cooperative research efforts as a means of addressing national and regional issues and as a means of leveraging funds. This includes contributing to cooperative programs such as the National Cooperative Highway Research Program (NCHRP), the Transportation Research Board (TRB), and transportation pooled fund studies.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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FHWA's continued investment in highway research and the implementation of transformative technology and innovation is changing the way roads, bridges, and other facilities are planned, designed, built, and maintained across the country. This commitment ultimately delivers a safer, more reliable transportation system that is both effective and environmentally sustainable.

Below are examples of ways the RT&E programs benefits the American public.

### **Consistently Improving USDOT's Safety Mission**

EDC-Endorsed: High Friction Surface Treatment (HFST): This technology can dramatically and immediately reduce crashes and the related injuries and fatalities. HFSTs are site-specific application of very high-quality, durable aggregates using a polymer binder that restores and maintains pavement friction where the need for a safer pavement surface is the greatest. Maintaining the appropriate amount of pavement friction is critical for safe driving. This innovation has application to State departments of transportation (DOTs), counties, cities, Tribes and federal lands agencies across the country. For example, Kentucky placed HFST on 26 curves and has seen an average reduction from 6.2 to 1.9 crashes per year at those locations. A before-and-after study from South Carolina DOT for a series of curve installations of HFST indicates a cost-benefit ratio of about 24 to 1.

EDC-Endorsed: Data Driven Safety Analysis (DDSA): DDSA employs newer, evidence-based models that provide State and local agencies with the means to quantify safety impacts similar to the way they do other impacts such as environmental effects, traffic operations and pavement life. This effort focuses on both predictive and systemic analyses—two types of data-driven approaches that state and local agencies can implement individually or in combination. Predictive analysis helps identify roadway sites with the greatest potential for improvement and quantify the expected safety performance of different project alternatives. Predictive approaches combine crash, roadway inventory, and traffic volume data to provide more reliable estimates of an existing or proposed roadway's expected safety performance. Systemic analysis uses crash and roadway data in combination to identify high-risk roadway features that correlate with particular crash types. Agencies have traditionally relied on crash history data to identify "hot spots," or sites with high crash frequency. However, severe crashes are widely dispersed over road networks, and their location and frequency fluctuate over time. Systemic analysis identifies locations that are at risk for severe crashes, even if there is not a high crash frequency. Practitioners can then apply low-cost countermeasures to those locations. The benefit is wider, but more targeted, safety investment. To date, 75 percent of States are applying DDSA in one or more of their project development processes.

EDC-Endorsed: Safe Transportation for Every Pedestrian (STEP): Cost-effective countermeasures with known safety benefits can help reduce pedestrian fatalities at uncontrolled crossing locations and un-signalized intersections. FHWA is promoting several pedestrian safety countermeasures. Road Diets can reduce vehicle speeds and the number of lanes pedestrians cross, and they can create space to add new pedestrian facilities. Pedestrian hybrid beacons (PHBs) provide positive stop control in areas without the high pedestrian traffic volumes that typically warrant signal installation. Pedestrian refuge islands allow pedestrians a safe place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for older pedestrians or others with limited mobility. Raised crosswalks can reduce vehicle speeds. Road Diets, pedestrian refuge islands, and PHBs are all considered proven safety countermeasures by the FHWA. Communities benefitting from their use include Tampa, Florida, where PHBs are already in place and have produced a significant drop in pedestrian and bicycle crashes relative to the years before PHBs were installed. In Michigan, the Department of Transportation (DOT) developed a Road Diets checklist to ensure smooth administrative procedures. STEP is an important action in FHWA's Strategic Agenda for Pedestrian and

Bicycle Transportation, which is a collaborative framework for pedestrian and bicycle planning, design, and research efforts being developed over the next five years.

Innovative Technologies for Pedestrian Safety: Through the Small Business Innovation Research (SBIR) program, a small business developed a new stereovision-based approach for detecting pedestrians at intersections. Based on a concept borrowed from military tracking, the company used a new light-emitting diode (LED) stereo camera and advanced pedestrian-detection algorithms to distinguish pedestrians and vehicles on the roadways. FHWA and the FTA are collaborating on a follow-up project to research whether the information from the project can be used in connected-vehicle research to greatly reduce pedestrian fatalities. Another SBIR project developed a smartphone application called SmartCross that alerts pedestrians before crossing the street. Sending signals between the pedestrian's phone and the traffic signal box, the application becomes a warning sign to notify when it's safe for the pedestrian to step into the crosswalk.

Low Cost Safety Countermeasures: FHWA and 40 partner States collaborate on a broad research portfolio in the largest highway-related pooled fund study program. This program evaluated the benefits of deploying over 40 low-cost highway safety countermeasures, such as offset improvements for left-turn lanes, increased retro-reflectivity at stop signs, and lane and shoulder width combinations on rural, two-lane, undivided roads. These deployment evaluations have stimulated improved roadway design throughout the country. The program focuses on the compelling issues among the States and delivers improvements for pedestrians, bicyclists, and vehicle occupants alike.

Safety Performance Management: FHWA implemented the safety performance management framework enacted in MAP-21. States are investing resources in Highway Safety Improvement Program projects that achieve statewide safety targets aimed at making progress toward our national safety goal.

Leading the development of Small Town and Rural Multimodal Networks:

The *Small Town and Rural Multimodal Networks* guide is a design resource and idea book to help small towns and rural communities support safe, accessible, comfortable, and active travel for people of all ages and abilities. This guide translates existing street design guidance and best practices for bicycle and pedestrian safety and comfort to the rural context, and provides examples of how to interpret and apply these design practices to create safe, accessible, and comfortable multimodal networks.

The FHWA Traffic Noise Model: version 3.0 (TNM 3.0) is the latest version of FHWA's noise analysis software. TNM 3.0 will replace TNM 2.5, which first came into use in 2004. Features of TNM 3.0 include integration with the ESRI Runtime for GIS implementation within the software as well as extensions that allow users to work within ArcGIS, AutoCAD, or MicroStation to develop TNM objects. TNM 3 integration with these common design packages will help improve project work flows and increase efficiencies in model development. The model also includes improved acoustics capability by incorporating calculation of all 1/3 octave bands and calculation of three dimensional spreading. These improvements help to increase the accuracy of the model and help project sponsors assess noise impacts and design mitigation for nearby communities.

The FHWA Exploratory Advanced Research Program develops tools that increase the productivity of government, academic, and private sector researchers. Examples include new methods for analyzing safety data, for assessing the benefits and potential risks of increased vehicle connectivity and automation, and characterization of supplementary and alternative materials for pavements and structures. Continued government investment in exploratory advanced research ensures a steady flow of innovation starting in basic research moving through applied research and development and into commercial deployment of new technologies that support U.S. innovation and economic growth. Recent successes under the EAR program include demonstrating connected vehicle technologies in support of systems like GM Super Cruise and Peleton truck platooning.

### **Transportation Workforce Development and Accessible Transportation**

The National Network for Transportation Workforce (NNTW) representing the five FHWA Sponsored Region Transportation Workforce Centers is managing the “National Transportation Career Pathways Initiative” (NTCPI). The Initiative will identify changing and new skill sets/competencies, and experiential learning programs that will affect the balance of the current workforce skills and competencies for the next 5 to 10 years. The effort will determine what changes are needed in curriculum and experiential learning programs at the technical school, community college, and university levels in the key discipline areas of planning, environment, safety, engineering, and operations. The goal is to establish a more effective and cohesive transportation career pathway for students and others in key disciplines to meet the transportation industry’s changing workforce needs.

Dwight David Eisenhower Transportation Fellowship Program (DDETFP): The DDETFP provides approximately 200 fellowships each year to institutions of higher education for university and community college students, including underrepresented groups, to pursue advanced transportation degrees. The DDETFP fellowship categories are: Graduate; Grants for Research; Historically Black Colleges and Universities; Hispanic Serving Institution; Community College; and the Transportation Research Board Minority Student Fellowship.

Accessible Transportation Technologies Research Initiative (ATTRI): ATTRI, a multi-modal U.S. DOT effort designed to enhance mobility choices for travelers with disabilities, is exploring development of transformative new applications in the areas of 1) wayfinding and navigation systems; 2) pre-trip and concierge services; 3) safe intersection crossing; and 4) robotics and automation for accessible transportation. ATTRI applications will use emerging new technologies, universal design, and inclusive Information Communication Technologies (ICT) to extend the benefits to all travelers. To encourage widespread use and adoption, and to increase the broader impact, the Federal Highway Administration, the ITS Joint Program Office, and the Federal Transit Administration (FTA) are working on developing a national demonstration, integration, deployment, and guidance plan that will involve collaboration with the National Institute of Disability and Rehabilitation Research, other Federal agencies, and public/ private entities to test and deploy ATTRI applications. The ITS Joint Program Office, the National Institute of Disability and Rehabilitation Research, and other Federal agencies are participating in ATTRI application development efforts. The ATTRI team is also exploring solutions in the areas of mapping, standards, artificial intelligence, augmented and virtual reality.

Each year, over 100,000 local and Tribal transportation officials receive training in infrastructure management, safety, and workforce development through Local and Tribal Technical Assistance Program (LTAP/TTAP) centers. The Local Technical Assistance Centers are located in all 50 States and Puerto Rico, and a National Center coordinates the Tribal Technical Assistance service to Native American Tribal governments. In some rural areas, LTAP centers provide the only professional development and technical training the local agency staff receives. LTAP/TTAP Centers are FHWA's primary connection for technology deployment to local agencies and Tribes, and they also provide technical assistance for deploying market ready, proven innovations in the local program.

**Increasing Public-Private Partnerships and Supporting Infrastructure Investment Center for Excellence in Project Finance:** The BATIC Institute: An AASHTO Center for Excellence provides capacity building and technical assistance education and outreach on project finance to decision makers and transportation project leaders at State DOTs and local partner agencies. The Institute offers expertise in all forms and types of innovative transportation infrastructure finance, including public-private partnerships (P3s), how long-term contracts enable performance-based innovation in project delivery, bonding, State infrastructure banks, and Federal credit assistance.

### **Leading Towards Innovation in Transportation**

**EDC-Endorsed: Slide-in Bridge Construction (SIBC):** SIBC accelerates bridge construction whereby a new bridge is built next to an existing bridge out of the way of traffic. Once ready, the roadway is closed for a short period of time, the old bridge is quickly removed, and the new bridge is slid into place. Under SIBC, the bridge can be replaced in a matter of hours or days, instead of drivers dealing with lane closures and/or detours for months. The New York State DOT replaced two bridges on I-84 during a 20-hour time period over a weekend using the SIBC method; resulting in estimated savings of \$900,000 in construction costs and \$1.37 million in user delay costs.

Together, the savings represented 22 percent of the \$10.2 million construction cost of the project.

*(Photo: New York State's Dingle Bridge Rd. replacement using slide-in bridge construction)*



**Shared Mobility Current Practices and Guiding Principles:** Shared mobility is an innovative transportation strategy that enables users to gain short-term access to transportation modes on an as-needed basis. Shared mobility includes various forms of carsharing, bikesharing, ridesharing (carpooling and vanpooling), and on-demand ride services. It can also include alternative transit services, such as paratransit, shuttles, and private transit services which can supplement fixed-route bus and rail services. In addition to these innovative travel modes, new ways of transporting and delivering goods are also emerging. These courier network services have the potential to change the nature of the package and food delivery industry, as well as the broader transportation network. This Shared Mobility Primer provides an introduction, background, and

overview to shared mobility; discusses the government's role; reviews success stories; examines challenges, lessons learned, and proposed solutions; and concludes with guiding principles for public agencies.

### **Bringing Global Advanced Innovations to the U.S.**

Through international efforts, advanced technologies and best practices developed in other countries can be brought back to the U.S. highway community to improve the U.S. system. These developments save lives, speed project delivery and save millions of dollars on costs. Examples include Self-Propelled Modular Transporters (SPMTs), which were uncovered during a study on “Prefabricated Bridge Elements and Systems.” SPMTs are being used on bridge projects throughout the U.S., resulting in millions of dollars saved. For example, the total saved on six Utah DOT projects was approximately \$55.16 million. Replacing bridges with SPMTs increases worker and traffic safety and improves construction and durability. Road Safety Audits (RSAs) were introduced in the United States following a study to Australia and New Zealand. Today, RSAs are used throughout the country, resulting in crash reductions.

In one illustration, New York DOT’s program has led to crash reductions at over 300 high crash locations treated, with low cost improvements. These crash reductions range from 20 percent to 40 percent depending on the type of improvement implemented. Exchanges with Japan on seismic issues has led to many benefits, including a seismic design test that led to 50 percent cost reduction in safety modifications; using data from the 2011 Tohouku earthquake that provided critical information on how bridges performed during the tsunami event; technology transferred to U.S. on technical issues and code development of new high strength steel; and buckling performance data collected from joint bridge reconnaissance of the 1995 Kobe earthquake, which helped validate U.S. bridge design codes.

### **Using Data Analysis to Improve Performance Management**

SHRP2 Naturalistic Driving Study (NDS) and Roadway Information Database (RID): Through a cooperative agreement with the Transportation Research Board (TRB), FHWA facilitated collection of an unprecedented amount of actual driver behavior data (including video) and associated road conditions. FHWA continues to fund TRB’s oversight and public availability of NDS data. The combined data will help researchers and practitioners identify the behaviors and road designs that cause and/or can avert collisions. The National Highway Traffic Safety Administration (NHTSA) is using the data for driver research. FHWA and AASHTO are also supporting 10 State DOTs to use these databases on projects to advance highway safety goals through the Implementation Assistance Program. In parallel, FHWA is conducting 6 State DOT and University-led projects to create safety countermeasures from this new data source. FHWA recently established a Safety Training and Analysis Center (STAC) at FHWA’s TFHRC to expand access to these data bases and apply to road safety questions.

e-Construction: FHWA research supports efforts to advance e-construction, construction automation and other technologies to accelerate and/or improve construction quality and performance-based construction standards.

Infrastructure Preservation: FHWA research supports advancements to support timely and appropriate application of effective treatments to preserve infrastructure in a state of good repair.

Implementation and Improvement of Performance Management: Through the Long Term Pavement and Long Term Bridge Performance Programs, FHWA is delivering data and analytical results to provide the understanding of infrastructure performance that is needed to achieve effective management, and greater accountability for the funds invested in highway infrastructure.

Materials Innovations: FHWA research is advancing the use of Ultra High Performance Concrete (UHPC) to improve highway bridges, and developing guidance and test methods to improve the durability and sustainability of highway pavements through performance-based approaches to material specification..

Data Collection and Analysis: The FHWA research program supports data collection and analysis to assist and improve policy and decision making. For example, the National Household Travel Survey collects data on daily trips, including purpose of the trip, means of transportation used, and other useful data used to quantify travel behavior and analyze changes in travel characteristics over time, among other purposes. FHWA also supports the Highway Performance Monitoring System (HPMS), a national-level highway information system that includes data on the extent, condition, performance, use, and operating characteristics of the nation's highways. The purpose of HPMS is to support transportation performance management, project authorizations, and a data driven decision process within FHWA, the U.S. DOT, and Congress.

Travel Time Data for Performance Management: The FHWA research program supports the National Performance Management Research Data Set (NPMRDS), that not only supports internal FHWA/U.S. DOT research efforts on congestion, but is also provided for State DOTs and MPOs for their use in their performance management activities, including the requirements of the third MAP-21 performance measure final rule.

### **Leading Towards Automation in Transportation**

The ITS Joint Program Office leads the Department's Connected Vehicle work which is laying the foundation for the nationwide deployment of automated vehicles. ITS provides the best opportunity to leverage infrastructure investments to cost-effectively increase safety, mobility, and efficiency of the transportation network. Additionally, the public will gain a leading-edge solution to support private and secure, trusted, and authenticable transportation communications.

In FY 2019, the ITS program will continue to support efforts on the Connected Vehicle Pilots to significantly accelerate the deployment of research through the deployment of connected, integrated, automated transportation systems on three major pilots. These research pilots will enable the definition of the required performance areas and objectives and threshold performance criteria to allow the government, automotive industry, equipment manufacturers and standards development organizations to define the necessary preconditions needed to commercialize and deploy affordable connected and integrated transportation systems in the U.S. with safety, mobility, and efficiency performance superior to the norm.

ITS, connected vehicles, and automated vehicles are the next logical step in developing a robust interoperable connected and automated transportation infrastructure to demonstrate what is

possible when communities use technology to connect transportation assets into an interactive network. The ITS Program will continue to support these efforts.

The FHWA research program has conducted foundational research in Connected Automation proof-of-concepts in Cooperative Adaptive Cruise Control (CACC) Platooning, Speed Harmonization, and Signalized Intersection Approach and Departure applications. Preliminary results have indicated improvements in congestion and capacity. For example, simulation of the CACC platooning application resulted in reduced congestion and doubled the capacity of vehicles per lane.

The FHWA research program is currently advancing connected automation technologies that build upon existing commercial products in cars and trucks. Connected and automated vehicles could enable improvements to vehicle performance and traffic operations that would result in additional, and very significant, public as well as private benefits through less recurring traffic congestion and more reliable travel. Under its automated vehicle project research, FHWA will develop research vehicles, and integrate and test prototype applications that incorporate SAE Level 2 driving automation system capabilities for lateral as well as longitudinal control. These applications will couple lane management with speed management to reduce traffic disruptions from lane changing, merging and diverging, and weaving, and balance traffic in multiple lanes to allow better utilization of roadways. Applications will be tested at the U.S. Army's Aberdeen Test Center and at the Department of Homeland Security's Federal Law Enforcement Test Center, with whom FHWA have partnership agreements. The algorithms, data, and other results from the testing will be shared with both the vehicle manufacturers who are considering commercial applications, and with the infrastructure stakeholders who can begin considering how these innovative technologies might be used to reduce traffic congestion, improve travel reliability, and improve efficiency for cars and trucks.

Partnerships with the automotive Original Equipment Manufacturers (OEMs) will enable individual OEMs, or even several OEMs together, to enhance their existing driving automation systems, through vehicle-vehicle and vehicle-infrastructure communication and cooperation, to offer commercial products that can work as systems to provide public benefits that enhance mobility as well as safety and driver convenience. Pilot tests of these cooperative driving systems on public roadways will demonstrate the viability of these strategies both to the automotive OEMs who can manufacture and market vehicle systems as well as to roadway owners and operators who can recognize the significant potential of public benefits from these innovative products and operating strategies.

### **Regulatory Reform**

FHWA's research program supports activities to reduce the regulatory burden associated with environmental laws by developing strategies to expedite and improve environmental permitting and regulatory processes. The research program supports coordination and collaboration across modes, industries and with stakeholders to accelerate project delivery. One method is through interagency collaboration, capacity building for environmental practitioners, integrating planning and environmental processes, and disseminating information about environmental programs and

processes to help eliminate duplication of environmental reviews and allow for concurrent reviews (eNEPA). Examples of strategies to accelerate project Delivery include:

- An e-NEPA online tool for interagency environmental and permitting review, which meets the requirements of the Federal permitting dashboard.
- Improvements to the Quality of Environmental Documents, which will provide tools for environmental practitioners to reduce the size and improve the readability of NEPA documents
- Environmental course development that allows environmental practitioners remain informed about the latest developments in their field
- Environmental Conflict Resolution case studies and technical assistance that supports States with coordination issues that delay the environmental review process receive technical assistance and third party neutral conflict resolution to develop new program approaches with stakeholders and resource agencies in their State.
- Streamlining Endangered Species Act (ESA) requirements by providing programmatic approaches to ESA consultation that allows States to use flexibilities in the process that FHWA developed with resource agencies to expedite projects.

**See the Office of the Secretary of Transportation (OST) -- Office of the Assistant Secretary for Research and Technology budget submission for details about the University Transportation Centers program and the Bureau of Transportation Statistics.**

## **Executive Summary**

### **Federal Allocation Programs**

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#### **What is the request and what funds are currently spent on the program?**

Our FY 2019 budget request for the Federal Allocation Programs includes: \$80.0 million for the Construction of Ferry Boats and Ferry Terminal Facilities Program; \$10.0 million for the Disadvantaged Business Enterprise (DBE); \$100.0 million for the Emergency Relief (ER) program; \$4.0 million for the Highway Use Tax Evasion Projects; \$10.0 million for the On-The-Job Training (OJT) Program; and \$200.0 million for the Territorial and Puerto Rico Highway Program.

#### **What is this program and what does this funding level support?**

This program category contains six separate programs that will provide vital functions to assist federal highways. This includes assistance: to construct ferry boat and ferry terminals to enhance the federal-aid network; for States to assist certified DBE firms in becoming competitive when seeking to obtain highway and bridge construction contracts; to States and localities for the repair of damage to Federal-aid highways from natural events and catastrophic failures due to an external cause; to support highway use tax evasion enforcement efforts; for States to enhance the development of our nation's highway construction industry workforce; and for Puerto Rico and U.S. territories to build vital transportation infrastructure important for their mobility needs and to serve national defense and global trade needs.

These diverse programs serve key functions that provide long-standing, positive impacts on the U.S. highway infrastructure.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

The long-standing programs in the overall Federal Allocation Programs perform the following vital functions: construct ferry boat and ferry terminals to improve the mobility of the transportation network; assist certified DBE firms in becoming competitive when seeking to obtain highway and bridge construction contracts; help States, territories, and localities repair damage to Federal-aid highways from natural events and catastrophic failures due to an external cause; support highway use tax evasion enforcement efforts; enhance development of our nation's highway construction industry workforce, particularly for historically underrepresented groups; and build vital transportation infrastructure in Puerto Rico and the U.S. territories that is important for their mobility needs and to serve national defense and global trade needs.

## Detailed Justification

### Construction of Ferry Boats and Ferry Terminal Facilities

#### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Construction of Ferry Boats and Ferry Terminal Facilities (\$80 million)

(\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Federal Allocation Programs</b>			
Construction of Ferry Boats and Ferry Terminal Facilities	80,000	80,000	80,000
Disadvantaged Business Enterprise <sup>1/</sup>	10,000	10,000	10,000
Emergency Relief (exempt from obligation limitation) <sup>2/</sup>	100,000	100,000	100,000
Highway Use Tax Evasion Projects <sup>1/</sup>	4,000	4,000	4,000
On-the-Job Training <sup>1/</sup>	10,000	10,000	10,000
Territorial and Puerto Rico Highway Program	200,000	200,000	200,000
<b>Total</b>	<b>404,000</b>	<b>404,000</b>	<b>404,000</b>

<sup>1/</sup> Programs funded as set-asides from Administrative Expenses.

<sup>2/</sup> In FY 2017 \$6.9 million and in FY 2018 \$6.6 million was sequestered from Emergency Relief (sequestration not reflected in table).

#### What is this program and what does this funding level support?

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This is an allocated program that will provide funding to construct ferry boats and ferry terminal facilities. Funds are proportionally distributed to eligible ferry operations, based on the number of ferry passengers, the number of vehicles carried, and the total route miles serviced.

Ferry services are important links in the network of Federal-aid highways. Often times these carry significant numbers of passengers and vehicles. In 2009, the national ridership was in excess of 100 million passengers. In many cases, they are the only reasonable form of transportation, particularly on coastal islands which have year round residents.

Our FY 2019 budget request of \$80 million, which is in line with the FAST Act, is required to maintain and improve important transportation connections on the Federal-aid highway system, as well as provide access to remote areas where other modes of transportation may not be available for passengers and vehicles.

#### What benefits will be provided to the American public through this request and why is this program necessary?

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The Construction of Ferry Boats and Ferry Terminal Facilities program addresses mobility and access in urban and rural areas by providing valuable assistance to help States and other entities replace or acquire new ferry boats; replace propulsion systems with newer cleaner and more energy efficient power plants; update navigational control systems; construct new terminals; improve access for the disabled; and replace and construct new docking facilities. Through these activities, the program provides vital connections on the network of Federal-aid highways, increasing mobility and safety particularly for citizens for which ferry services are the only reasonable transportation option. To date, this program has made available funding for 119 ferry operations in 35 States and one U.S. territory.

## Detailed Justification

### Disadvantaged Business Enterprise Supportive Services (DBE/SS) Program

#### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Disadvantaged Business Enterprise Supportive Services (\$10 million)

(\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Federal Allocation Programs</b>			
Construction of Ferry Boats and Ferry Terminal Facilities	80,000	80,000	80,000
Disadvantaged Business Enterprise <sup>1/</sup>	10,000	10,000	10,000
Emergency Relief (exempt from obligation limitation) <sup>2/</sup>	100,000	100,000	100,000
Highway Use Tax Evasion Projects <sup>1/</sup>	4,000	4,000	4,000
On-the-Job Training <sup>1/</sup>	10,000	10,000	10,000
Territorial and Puerto Rico Highway Program	200,000	200,000	200,000
<b>Total</b>	<b>404,000</b>	<b>404,000</b>	<b>404,000</b>

1/ Programs funded as set-asides from Administrative Expenses.

2/ In FY 2017 \$6.9 million and in FY 2018 \$6.6 million was sequestered from Emergency Relief (sequestration not reflected in table).

#### What is this program and what does this funding level support?

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The DBE/SS program was established by regulation (23 CFR 230, Subpart B) under statutory authority at 23 U.S.C. 140(c) to develop, conduct, and administer training and provide technical assistance programs to increase the efficiency of small businesses owned and controlled by socially and economically disadvantaged individuals to compete, on an equal basis, for federally-assisted highway contracts.

The program supports State Department of Transportation (DOT) DBE programs required for recipients of federal highway, transit, and aviation funds (49 CFR Part 26). The DBE/SS funds made available each fiscal year are allocated by the FHWA Office of Civil Rights to State DOTs and are eligible for a 100 percent federal share, with no State match required. The primary purpose of the DBE/SS program is to ensure training, capacity building assistance, and services (e.g., training in business development; mentoring, bonding and financial assistance; marketing; and accounting) to firms certified in the DBE program. This training and support is intended to increase their activity within the program, and to facilitate the firms' development into viable, self-sufficient organizations capable of competing for, and performing on, federally-assisted highway projects. Beginning in FY 2015, FHWA requires State DOTs accepting DBE/SS funds to create and administer Business Development Programs (BDPs). State DOTs should select certified DBE candidates for BDPs, focusing on underperforming DBEs with the desire and potential for growth. The BDP must assess these DBEs in all areas of performance and business acumen and create a Business Development Plan tailored to their individual needs.

The program is necessary to assist a sector of the small business community to build their capacity and ability to compete for contracts. Additionally, this program assists with creating a

well-rounded heavy highway construction industry that is prepared to address America's future infrastructure needs.

Our \$10 million FY 2019 budget request is in line with the FAST Act, and is equal to the FY 2017 actual level amount. Our request level supports the ability of States to enhance these vital DBE/SS programs. FHWA requires State DOTs to use their DBE/SS allocation to create Business Development Programs to ensure that DBEs are afforded the opportunity to be evaluated and provided a structured process to receive firm-specific training and guidance to be competitive within the heavy highway marketplace. Program activities include seminars that highlight DBE Program regulation and/or policy changes, workshops geared to help small firms grow their business capacity, and training in bonding financial assistance, marketing, and accounting.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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The DBE/SS program is an essential tool for a successful DBE program. The DBE/SS program benefits the American Public by assisting small and disadvantaged firms with building capacity and improving their ability to compete for Federal-aid highway contracts. Moreover, a healthy small business sector creates jobs, stimulates innovation, and provides employment opportunities for many people, including women and minorities.

## Detailed Justification Emergency Relief (ER) Program

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Emergency Relief Program (\$100 million) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Federal Allocation Programs</b>			
Construction of Ferry Boats and Ferry Terminal Facilities	80,000	80,000	80,000
Disadvantaged Business Enterprise <sup>1/</sup>	10,000	10,000	10,000
Emergency Relief (exempt from obligation limitation) <sup>2/</sup>	100,000	100,000	100,000
Highway Use Tax Evasion Projects <sup>1/</sup>	4,000	4,000	4,000
On-the-Job Training <sup>1/</sup>	10,000	10,000	10,000
Territorial and Puerto Rico Highway Program	200,000	200,000	200,000
<b>Total</b>	<b>404,000</b>	<b>404,000</b>	<b>404,000</b>

1/ Programs funded as set-asides from Administrative Expenses.

2/ In FY 2017 \$6.9 million and in FY 2018 \$6.6 million was sequestered from Emergency Relief (sequestration not reflected in table).

### What is this program and what does this funding level support?

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Congress authorized in section 125 of title 23, United States Code, a special program from the Highway Trust Fund for the repair or reconstruction of Federal-aid highways and roads on Federal lands, which have suffered serious damage as a result of (1) natural disasters or (2) catastrophic failures from an external cause. This program, commonly referred to as the Emergency Relief (ER) program, supplements the commitment of resources by States, their political subdivisions, or other federal agencies to help pay for unusually heavy expenses resulting from extraordinary conditions.

Examples of natural disasters include floods, hurricanes, earthquakes, tornadoes, tidal waves, severe storms, and landslides. A catastrophic failure is defined as the sudden and complete failure of a major element or segment of the highway system that causes a disastrous impact on transportation services. Additionally, the cause of the catastrophic failure must be determined to be external to the facility. A bridge suddenly collapsing after being struck by a barge is an example of a catastrophic failure from an external cause. Failures due to an inherent flaw in the facility itself do not qualify for ER assistance.

Emergency repairs accomplished in the first 180 days after the occurrence of the disaster to restore essential traffic, minimize the extent of damage, or protect the remaining facilities may be reimbursed at a 100 percent federal share. ER funds for permanent repairs and for emergency repair work accomplished more than 180 days after an event are at the pro rata Federal-aid share that would normally apply to the facility being repaired. This 180-day period can be extended in consideration of any delay in the State's ability to access damaged facilities to evaluate damage and the cost of repair.

The implementation of projects, including types of improvements, is tracked through FHWA's Financial Management Information System.

Following the 2005 Gulf Coast Hurricanes, more than \$2.8 billion in ER funds were provided to assist States in the repair and recovery of Federal-aid highways damaged by the hurricanes. These funds were instrumental in assisting the Gulf Coast region with needed recovery efforts following the devastating impact from Hurricanes Katrina, Rita, and Wilma. After Superstorm Sandy in 2012, over \$700 million was provided to Mid-Atlantic and Northeast States. A total of \$29 million of this funding was provided within 3 days after the storm to allow States to address their most critical emergency needs. Most recently, \$133 million of ER funds was provided to Florida, Texas, Puerto Rico, and the U.S. Virgin Islands to reopen roads and restore infrastructure following the catastrophic hurricanes of Harvey, Irma, and Maria.

When a natural disaster or catastrophe strikes, the ER program is available to provide assistance to get damaged highways open to essential traffic. Longer term permanent repairs to restore damaged highways are also funded through the ER program. When economically justified, betterments to damaged highways, aimed at improving the resiliency of those facilities, would be eligible for funding through the ER program. Additionally, the law makes eligible the cost of a comparable facility that is designed to current geometric and construction standards required for the types and volume of traffic the facility will carry over its design life.

The ER program has been funded through a recurring annual authorization of \$100 million since 1972. When ER program needs exceed available funding, Congress has provided supplemental appropriations to cover the ER backlog.

Over the past 12 years, the costs of nationwide ER events, not including large scale disasters (e.g., Hurricane Katrina, Hurricane Sandy) have averaged about \$360 million annually. Within the same time frame, including large scale disasters, the average costs increased to about \$730 million annually. Over the past 20 years, \$14 billion has been provided through supplemental appropriations to the ER program, in addition to the annual \$100 million authorization. In FY 2017, Congress appropriated \$1.5 billion for nationwide disasters; that appropriation is not part of the Federal-aid Highway Account and is funded by the General Fund.

In FY 2018, ER funds were provided for 120 separate disasters. These needs have been funded from the supplemental funds provided by Congress. As of November 29, 2017, the estimate of the cost to repair previous ER damage is \$2.9 billion.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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ER program funds are critical to maintaining mobility and safety for the American public following a disaster. Natural disasters and catastrophes that destroy highways and bridges are unpredictable events and can occur anywhere in the country. The ER program provides funding to States for the repair and reconstruction of Federal-aid highways and roads on Federal lands following a disaster.

## Detailed Justification Highway Use Tax Evasion Projects

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Highway Use Tax Evasion Projects (\$4 million) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Federal Allocation Programs</b>			
Construction of Ferry Boats and Ferry Terminal Facilities	80,000	80,000	80,000
Disadvantaged Business Enterprise <sup>1/</sup>	10,000	10,000	10,000
Emergency Relief (exempt from obligation limitation) <sup>2/</sup>	100,000	100,000	100,000
Highway Use Tax Evasion Projects <sup>1/</sup>	4,000	4,000	4,000
On-the-Job Training <sup>1/</sup>	10,000	10,000	10,000
Territorial and Puerto Rico Highway Program	200,000	200,000	200,000
<b>Total</b>	<b>404,000</b>	<b>404,000</b>	<b>404,000</b>

1/ Programs funded as set-asides from Administrative Expenses.

2/ In FY 2017 \$6.9 million and in FY 2018 \$6.6 million was sequestered from Emergency Relief (sequestration not reflected in table).

### What is this program and what does this funding level support?

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The Highway Use Tax Evasion Projects program provides funding to the Internal Revenue Service (IRS) and the States to carry out intergovernmental enforcement efforts, along with training and research, to reduce evasion of payment of motor fuel and other highway use taxes, which are the principal sources for Federal and State highway funding. Consistent with the FAST Act, FHWA requests up to \$4 million to fund the vital Highway Use Tax Evasion Projects program in FY 2019. Of this amount, \$2 million is available only to make grants for intergovernmental enforcement efforts, including research and training. The intergovernmental enforcement efforts grants are awarded to State agencies through a competitive application process from which FHWA and the IRS make selections based on the most innovative, intergovernmental proposals. The States then perform various tasks, including increased enforcement, enhancement of data systems, and coordination with other State agencies. The remaining \$2 million may, at the discretion of the Secretary of Transportation, either be awarded for intergovernmental enforcement efforts grants or allocated to the IRS for their enforcement efforts.

While the statute allows for the IRS to determine the use of their allocations, they must be used in some fashion related to the identification and elimination of highway use tax evasion. While the initiatives change from year to year, they include office examinations, refinery and terminal examinations, and on-road enforcement in areas such as dyed diesel fuel use. Diesel fuel that has a red dye introduced has no Federal and State fuel excise taxes imposed and is intended for use only in non-highway situations. The enforcement is to identify and penalize those who use dyed diesel fuel on the highway.

Since no system exists that can definitively track all motor fuels in the distribution system in the United States, it is impossible to determine if all fuel volumes are reported on the Federal and State levels. Thus, it is difficult to measure accurately the level of highway fuel tax evasion. However, the Joint Operations Center for National Fuel Tax Compliance (JOC), a joint FHWA/IRS/State initiative, is making great advances in tracking the fuel movement. Problem areas for evasion include imports, production and distribution of fuels outside of the normal distribution system (including alternative fuels), and correct State identification of sales. The best validation of the need for continued efforts in this area are the assessments made by the IRS and the State agencies in the area of evasion. As with many areas of taxation, new technologies and new fuels are no exception; there are always people willing to find ways of collecting taxes from customers, while never remitting the taxes to the proper agency.

While it is not funded by this program, an indication of the possible level of evasion in just one area can be found with the results of the reporting of dyed diesel fuel enforcement efforts throughout the United States. The violation rates found in the various initiatives average around 0.27 percent. Considering that about 40 billion gallons of taxable diesel fuel are used by the States, as reported to FHWA each year, the evasion in that area alone is estimated to be approximately \$550 million. This data is collected and compiled by the Minnesota Department of Revenue and is not publicly released. Based on the results of other initiatives, considering all forms of highway use tax evasion at the Federal and State levels, the amount may approach \$1 billion annually.

Our FY 2019 request will continue to fund IRS initiatives, including the expansion of the JOC, and new, innovative, and intergovernmental enforcement efforts at the State level.

Our \$4 million request for FY 2019 is in line with the FAST Act and will be used by the IRS, other Federal agencies, and the States to carry out significant intergovernmental enforcement efforts to increase collections, along with training and research, to reduce evasion of payment of motor fuel and other highway use taxes.

Through the efforts of this program, the IRS has launched a number of initiatives, including the review of Heavy Highway Vehicle Use Tax (HVUT) returns (\$2 million in 2016), mislabeled imported fuel examinations (\$26.9 million in assessments in 2012), examinations of mislabeled products at refineries and terminals (\$9.1 million in assessments in FY 2013), and examinations of questionable credit claims (\$44.4 million in assessments, \$6.2 million in disallowed credits in 2015). These are just some of the efforts supported in part by the annual allocation to the IRS. From FY 2014 through FY 2016, \$10 million in funding was provided to the IRS (\$8 million in 2014; \$2 million in 2016), which resulted in \$286 million in assessments through various activities, including internal audits, refinery and terminal inspections, and retail truck inspections. The IRS initiatives are not solely funded from Highway Use Tax Evasion funds, but they provide a significant portion of the funding. No funding was provided to the IRS in FY 2015, and the FAST Act reduced the annual allowance from \$8 million to \$2 million. This has had an effect on the number of personnel the IRS has assigned to the project, and they expect the assessments and collections to decrease by a proportional amount.

The following table shows examples of initiatives at the State level, comparing amounts provided by this program and the results.

<b>Year</b>	<b>Agency</b>	<b>Expenditures</b>	<b>Results</b>	<b>Description</b>
2014	Arizona DOT	\$41,112	\$570,740	Dyed diesel enforcement, data validation, Port of Entry assessments.
2014	Kentucky State Police	\$3,992	\$79,388	Vehicle screenings at weigh stations.
2014	Missouri Criminal Investigation Bureau	\$11,403	\$21,440	Dyed fuel investigations. Reports that collections are up over 1300% since program started with grant funding.
2014	North Dakota Department of Revenue	\$8,314	\$29,500	Dyed diesel fuel on-highway enforcement and IFTA enforcement.

As the data indicates, there are significant findings at the IRS and State levels; however, highway use tax evasion persists with new methods of evasion regularly employed. The continued funding of this program would strengthen not only the successful efforts already in place, but also the enhanced practices resulting from training and vital equipment, such as enhanced motor fuel tracking computer software that is critical for sharing information between the IRS and States.

Highway Use Tax Evasion Projects program funding can also be used for training in the assessment of highway tax evasion. Many States have opted for this training, which provides great value by preparing practitioners to complete the valuable assessments noted in the above table.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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The collection of highway use taxes has always been an important part of the Federal-aid highway program. It is critical that we collect all of the highway use taxes that are applicable at the Federal and State levels. This program will enhance transportation revenues at the Federal and State levels and will identify trends and patterns that can be shared with other tax collection agencies to ensure the proper payment of highway use taxes. As the FAST Act seeks to provide critical growth in surface transportation, this program supports that goal in collecting all taxes that support the funded programs.

Throughout its history, the Highway Use Tax Evasion Projects program has been able to identify not only isolated incidents, but also patterns of tax evasion that can be identified through the enhanced analysis of data; in some cases, using non-traditional data. The JOC uses nearly 100 unique data sources to identify anomalies, which often result in assessments. These assessments represent valuable tax dollars that then can be properly used to increase the safety and mobility of our nation’s roads and bridges. Some of the schemes employed to evade taxes involve the adulteration of fuel or adding non-fuel liquids to motor fuels. As these are hazardous materials,

this is a safety issue not only in the handling of fuels outside of the traditional delivery process, but also in the damage that can be done to vehicles, ultimately causing performance issues and jeopardizing safety.

## Detailed Justification On-the-Job Training

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – On-the-Job Training (\$10 million) (\$000)

Program Activity	FY 2017 Actual	FY 2018 Annualized CR	FY 2019 Request
Federal-aid Highways			
<b>Federal Allocation Programs</b>			
Construction of Ferry Boats and Ferry Terminal Facilities	80,000	80,000	80,000
Disadvantaged Business Enterprise <sup>1/</sup>	10,000	10,000	10,000
Emergency Relief (exempt from obligation limitation) <sup>2/</sup>	100,000	100,000	100,000
Highway Use Tax Evasion Projects <sup>1/</sup>	4,000	4,000	4,000
On-the-Job Training <sup>1/</sup>	10,000	10,000	10,000
Territorial and Puerto Rico Highway Program	200,000	200,000	200,000
<b>Total</b>	<b>404,000</b>	<b>404,000</b>	<b>404,000</b>

1/ Programs funded as set-asides from Administrative Expenses.

2/ In FY 2017 \$6.9 million and in FY 2018 \$6.6 million was sequestered from Emergency Relief (sequestration not reflected in table).

### What is this program and what does this funding level support?

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Statutory authority 23 USC 140(b) established regulation 23 CFR 230, Subpart A and the On-the-Job Training Supportive Services Program (OJT/SS) as a program of the FHWA that supports the State DOTs On-the-Job Training (OJT) programs with an OJT/SS program. This is a necessary program that ensures a competent, available, and diverse workforce to meet the present and future highway construction hiring needs, and to remedy historical underrepresentation of minority, women, and the disadvantaged groups in highway construction skilled crafts.

As recipients of federal transportation funds, the FHWA requires each State DOT to have an OJT program. This program requires prime contractors participating on federally-assisted contracts to establish apprenticeship and training programs targeted to move minorities, women, and disadvantaged individuals into journey-level positions. The OJT/SS program directly supports this requirement and provides funds for State DOTs to implement skills training programs to prepare individuals, focusing on historically underrepresented groups, to participate in the highway construction workforce as trainees and apprentices on federally-assisted construction contracts as part of the States' OJT programs.

OJT/SS funds are apportioned by formula allocation to each State. Such funds are eligible for a 100 percent federal share, with no State match required.

The OJT/SS Program currently consists of three distinct programs: the OJT/SS Program; the Summer Transportation Internship Program for Diverse Groups (STIPDG); and the National Summer Transportation Institute Program (NSTI). The \$10 million request is distributed among the three programs as follows: OJT/SS is allocated \$6 million; NSTI is allocated \$2.7 million; and STIPDG is allocated \$1.3 million.

The NSTI program is a key component among FHWA's educational initiatives. It is a Science, Technology, Engineering, and Math (STEM) focused program for high school and junior high/middle school students. It is administered by accredited colleges, community colleges, universities, and accredited Minority Serving Institutions (MSIs) throughout the United States, the District of Columbia, the Commonwealth of Puerto Rico, Pacific Island territories and the U.S. Virgin Islands. In addition, the program requires host sites to commit significant program time to classroom participation. The program length varies but is typically two to four consecutive weeks. Host sites may be student day programs or residential programs in which room and board are provided to the students by the host sites.

The STIPDG Program provides college students with a unique opportunity to gain valuable professional experience and skills that will complement their academic pursuits. FHWA designed this hands-on program to mentor and cultivate tomorrow's leaders, to strengthen their understanding of the transportation industry, and to prepare them for future public service opportunities. It is a paid internship program open to all qualified candidates without regard to race, color, national origin, sex (including gender identity and sexual orientation), age, or physical or mental disability, veteran status, religion, or any other characteristic prohibited by State or local law. FHWA administers the STIDG Program for all of USDOT.

The FY 2019 budget request corresponds with the FAST Act and equals the FY 2017 actual level amount. FHWA strongly encourages States accepting OJT/SS funds to partner with other State, local entities, and the private sector, such as other agencies, colleges and universities, workforce development boards, unions, youth corps groups, etc., with existing training, recruiting and job placement capabilities. Such partnerships can focus skills training in areas of the industry in which state and localities identify current and future gaps. Partnering will also improve the quality of the services provided to participants as well as have a greater likelihood of success in actual long-term job placement. Further, for States to receive funding in subsequent years, they must demonstrate program outcomes through accomplishment reports that directly address objective measurements such as the number of program participants trained, the type of career job development training provided, the number of participants employed because of the training received, and the dollar cost per program participant. FHWA and the OJT/SS Program needs this funding request level to continue to assist States with administering these programs that are vital to train our Nation's future workforce.

**What benefits will be provided to the American public through this request and why is this program necessary?**

The American public benefits because this program ensures continuity of our nation's current and future highway construction industry workforce by providing the development and diversity of skilled labor. A skilled workforce is vital to constructing and maintaining a safe and efficient transportation system.

## Detailed Justification Territorial and Puerto Rico Highway Program

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Territorial and Puerto Rico Highway Program (\$200 million) (\$000)

<u>Program Activity</u>	<u>FY 2017 Actual</u>	<u>FY 2018 Annualized CR</u>	<u>FY 2019 Request</u>
Federal-aid Highways			
<b>Federal Allocation Programs</b>			
Construction of Ferry Boats and Ferry Terminal Facilities	80,000	80,000	80,000
Disadvantaged Business Enterprise <sup>1/</sup>	10,000	10,000	10,000
Emergency Relief (exempt from obligation limitation) <sup>2/</sup>	100,000	100,000	100,000
Highway Use Tax Evasion Projects <sup>1/</sup>	4,000	4,000	4,000
On-the-Job Training <sup>1/</sup>	10,000	10,000	10,000
Territorial and Puerto Rico Highway Program	200,000	200,000	200,000
<b>Total</b>	<b>404,000</b>	<b>404,000</b>	<b>404,000</b>

1/ Programs funded as set-asides from Administrative Expenses.

2/ In FY 2017 \$6.9 million and in FY 2018 \$6.6 million was sequestered from Emergency Relief (sequestration not reflected in table).

### What is this program and what does this funding level support?

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This program provides funding to Puerto Rico and the four territories of American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the United States Virgin Islands. From our FY 2019 budget request of \$200 million, \$158 million would be provided to Puerto Rico by authorization and the remaining \$42 million is divided among the four territories via an administrative formula.

Fifty percent of the funds provided to Puerto Rico must be spent on projects eligible under the National Highway Performance Program (NHPP), twenty five percent must be spent on projects eligible under the Highway Safety Improvement Program (HSIP), and the remaining twenty five percent can be spent for any purpose under Chapter 1 of 23 U.S.C. The location and eligibility requirements are similar to those that apply to the States.

Funds provided to the four territories may be used for projects eligible under the Surface Transportation Block Grant Program (STBG); preventive maintenance; ferry boats, terminals, and approach roadways; engineering, economic and planning studies; regulation and equitable taxation of highways; and research and development. Territorial funds are generally subject to the location requirements of the STBG, except that rural minor collector routes are eligible. The four programs are administered under individual agreements between the Secretary and the chief executive officer of each of the territories.

The implementation of projects, including types of improvements, is tracked through FHWA's Financial Management Information System.

Territorial and Puerto Rico Highway Program funding is critical to providing transportation infrastructure to Puerto Rico and the four territories. Puerto Rico and the four territories have military facilities or serve a strategic role important to national defense. They also contribute to the national economy through tourism, agriculture and access to foreign trade.

**What benefits will be provided to the American public through this request and why is this program necessary?**

The Territorial and Puerto Rico Highway Program has provided for the construction of critical infrastructure in Puerto Rico and the four territories. It helps them to develop economically and contribute to the national economy. It also provides critical infrastructure that serves key facilities which in themselves serve a strategic role for national defense.

## **Executive Summary**

### **Transportation Infrastructure Finance and Innovation Act (TIFIA) Program**

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#### **What is the request and what funds are currently spent on the program?**

DOT is requesting \$300 million for the Transportation Infrastructure Finance and Innovation Act (TIFIA) Program in FY 2019, which is consistent with the level authorized under the FAST Act. The TIFIA program provides critical financing support to infrastructure projects across the country, and is a central tool for leveraging both public and private investment. DOT's ongoing work to implement a new National Surface Transportation and Innovative Finance Bureau, authorized under the FAST Act, will continue to expand access to, and demand for, this already successful program.

#### **What is this program and what does this funding level support?**

The TIFIA Program provides federal credit assistance to surface transportation projects of national or regional significance. The TIFIA Program leverages federal dollars in a time of scarce budgetary resources, facilitating private participation in transportation projects and encouraging innovative financing mechanisms that help accelerate project delivery. By offering flexible repayment terms and attracting private capital, the TIFIA Program stimulates infrastructure investment that would be significantly or permanently delayed without TIFIA financing.

The TIFIA Program FY 2019 funding level of \$300 million is essential in meeting the continued demand for TIFIA credit support. Despite the FAST Act significantly reducing funding for the TIFIA Program, the demand and need for the program is as strong as ever. Additionally, the requested funding will support work to meet new requirements pursuant to the FAST Act, which include, among other changes, increased funding flexibility for local governments, transit oriented development, and rural infrastructure projects. Additionally, it will support administrative resources to meet the TIFIA Program's staffing needs.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

The TIFIA Program will make possible the delivery of significant transportation projects throughout the United States. It will also facilitate projects that would otherwise be delayed or deferred due to lack of funding. By stimulating investment in the country's transportation infrastructure, the TIFIA program will improve the economy – it will help create jobs, improve mobility and enhance transportation options via new eligibilities under the FAST Act for transit-oriented development, help American businesses improve productivity and competitiveness, and improve access in local as well as rural communities.

## Detailed Justification Transportation Infrastructure Finance and Innovation (TIFIA) Program

### What Is The Request And What Funds Are Currently Spent On The Program?

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#### FY 2019 – TIFIA Program (\$300 million) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 <u>Annualized CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>TIFIA Program (loan program subsidies)</b>			
TIFIA Program (loan program subsidies)	275,000	285,000	300,000
<b>Total</b>	<b>275,000</b>	<b>285,000</b>	<b>300,000</b>

### What is this program and what does this funding level support?

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Congress created the TIFIA Program as part of its 1998 enactment of the Transportation Equity Act for the 21st Century (TEA-21, P.L. 105-78), as amended by the TEA-21 Restoration Act (Title IX, P.L. 105-206), further amended in 2005 by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU, P.L. 109-59), amended and restated in 2012 by the Moving Ahead for Progress in the 21st Century Act (MAP-21, P.L. 112-141), and most recently, as amended in 2015 by the Fixing America's Surface Transportation Act (FAST, P.L. 114-94).

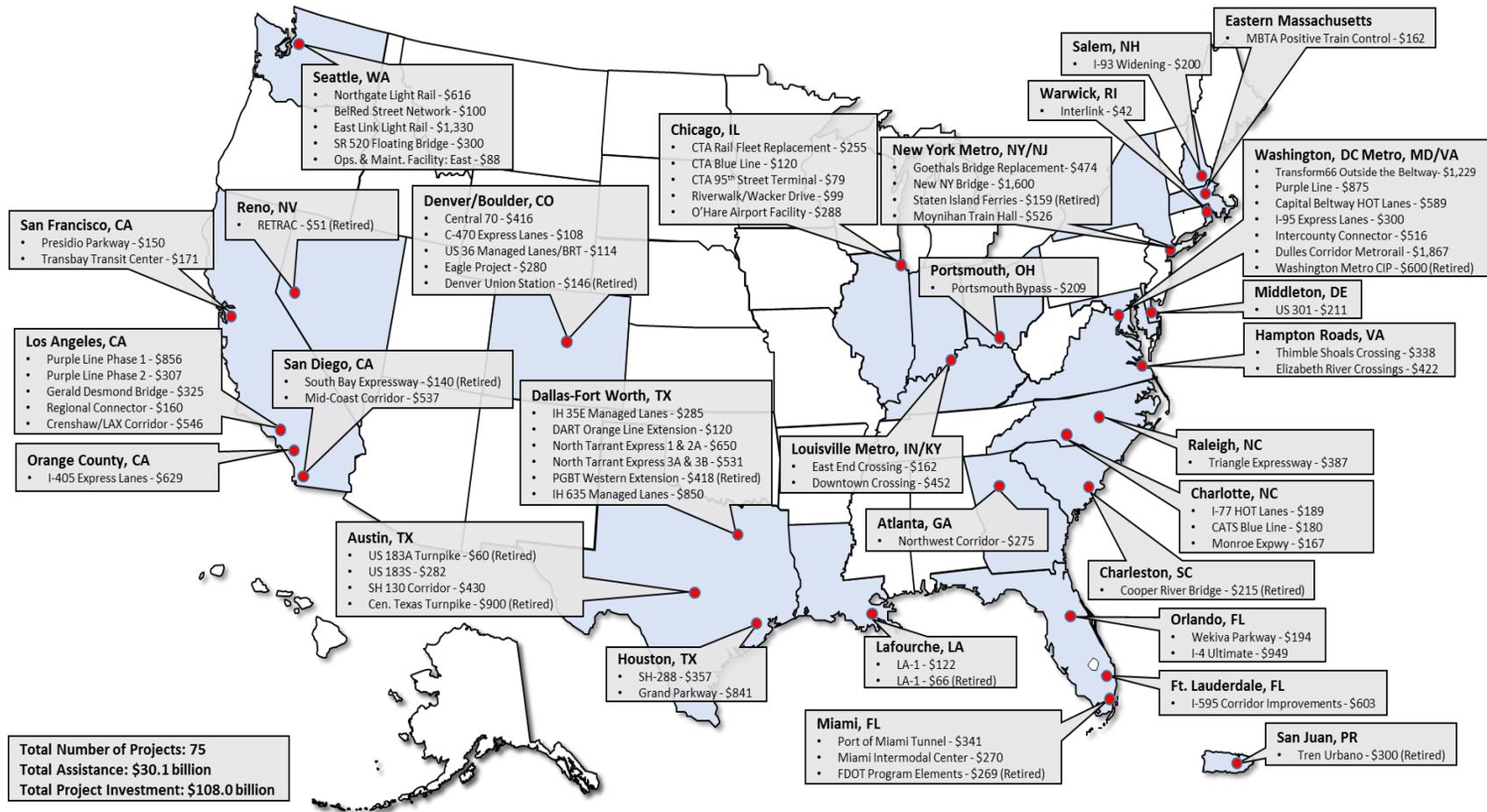
The TIFIA Program is a federal financing program that provides credit assistance to sponsors of surface transportation projects. The Program offers three types of credit assistance: direct loans, loan guarantees, and lines of credit. The Office of the Secretary oversees the TIFIA program, including the evaluation of individual projects, and provides overall policy direction and program decisions for the TIFIA Program.

Pursuant to the FAST Act, DOT is authorized in the amount of \$1.435 billion for the full 5-year period. This includes \$275 million in fiscal year (FY) 2016 funds; \$275 million in FY 2017 funds; \$285 million in FY 2018 funds; \$300 million in FY 2019 funds; and \$300 million in FY 2020 funds. Additional funds may also be available from funding authority carried over from previous fiscal years. Any funding authority not obligated in the fiscal year for which it is authorized remains available for obligation in subsequent years. The TIFIA funding authority is subject to an annual obligation limitation that may be established in appropriations law.

In addition to direct funding for the TIFIA program, the FAST Act permits the use of certain Federal-aid funds to cover the subsidy and administrative costs associated with TIFIA credit assistance. Under the FAST Act, Surface Transportation Block Grant Program funds (section 133), National Highway Performance Program funds (section 119), and Nationally Significant Freight and Highway Projects Program grant funds (section 117) may be used by eligible recipients to cover the subsidy and administrative costs of TIFIA credit assistance. Similarly, Transportation Investment Generating Economic Recovery (TIGER) program funds may also be used to pay for such costs.

The TIFIA Program has played a significant role in delivering infrastructure projects. Since its launch, the TIFIA Program has financed 75 diverse projects across the United States, including 5 intermodal projects, 48 highway projects, and 22 transit projects. Currently, the TIFIA Program's portfolio represents over \$108 billion in infrastructure investment spread across the country. Under MAP-21 and the FAST Act, the TIFIA Program has dramatically increased its investment and expanded its portfolio into new States and municipalities. For instance, the TIFIA Program now has projects in the States of Delaware, Georgia, Indiana, Kentucky, Massachusetts, New Hampshire, New Jersey, and Ohio. The TIFIA Program's portfolio spans all regions in the country, covering a total of 22 States, as well as the District of Columbia and Puerto Rico.

## Locations of TIFIA Investment (\$ in millions)



The TIFIA Program is designed to fill market gaps and leverage substantial private co-investment by providing supplemental and subordinate capital to projects. The TIFIA Program maximizes limited federal resources to deliver large infrastructure investments. Historically, each dollar of TIFIA funding authority has allowed DOT to provide approximately \$14 in credit assistance. Given statutory changes in the TIFIA credit program under the FAST Act, and the need to calculate credit subsidies on a project-by-project basis, actual lending capacity could vary. On average, TIFIA has supported total infrastructure investment of 3 to 4 times the amount of total credit assistance it has made available.

The TIFIA Program is necessary because of its role in stimulating transportation infrastructure investments that would be temporarily or permanently delayed without TIFIA financing. The program leverages federal resources to accelerate project delivery and facilitate private participation in transportation infrastructure projects.

Since the beginning of FY 2016, the Department has closed 21 projects and extended nearly \$8 billion in credit support to stimulate nearly \$27 billion in infrastructure investment.

FY 2016 Activity: The Department closed six projects totaling \$6.8 billion in infrastructure investment in FY 2016. One example is the I-93 Improvement Project in New Hampshire.

*The I-93 Improvement Project:* In May 2016, the Department closed a \$200 million loan for this highway project. This \$784 million project that will reconstruct 19.8 miles of I-93 from Manchester to Salem, New Hampshire. The New Hampshire Department of Transportation applied for TIFIA loan at the rural interest rate, which was a new provision under MAP-21 allowing an interest rate equal to one-half of the Treasury rate. Because of the rural rate, the State will save nearly \$250 million in resources that otherwise would go toward I-93 debt payments. The State plans to use the savings on maintenance projects for rural roads and reconstruction of rural and deficient bridges, which will include timely maintenance of 40% of the State roads and 30% of structurally deficient bridges across the State.

FY 2017 and FY2018 Activity: The Department closed on loans for 12 projects during FY 2017. The Department currently has a robust and active pipeline of 12 additional projects from around the country in various stages of the review process. The Department has requested further information from and is actively reviewing these projects estimated to add \$14 billion in infrastructure investment when constructed. Like the TIFIA portfolio itself, the pipeline of projects is a diverse mix of rural and urban, public private partnerships (P3) and public projects, and projects in States using TIFIA for the first time. An example of one of the projects in the pipeline is the San Bernardino County Transportation Authority's I-10 Express Lanes Project.

*The I-10 Express Lanes Project:* The San Bernardino County Transportation Authority has requested a TIFIA loan of approximately \$200 million loan for a \$625 million project to convert and expand approximately 10 miles of an existing high-occupancy vehicle lane to two tolled, managed lanes on Interstate 10 in each direction from the Los Angeles County line to I-15 in San Bernardino County. The project will add capacity through congestion-pricing of managed lanes, thereby reducing congestion, increasing vehicle throughput, enhancing trip reliability, and managing the long-term congestion resulting from economic growth in the region. The project is

also expected to improve access to transit services, including the commuter rail system and bus passenger services.

The TIFIA Program’s success in delivering projects and the active pipeline of projects support this budget request of \$300 million for FY 2019. Through TIFIA, the Department has helped advance important infrastructure projects around the country and this positive momentum will continue in FY 2019.

**What benefits will be provided to the American public through this request and why is this program necessary?**

The TIFIA Program will accelerate delivery of significant transportation projects throughout the United States. By stimulating investment in the country’s transportation infrastructure, the TIFIA program will improve the economy, create jobs, and improve access to opportunities.

Stimulating Significant Economic Benefits Including Job Creation: TIFIA credit assistance provides improved access to capital markets, flexible repayment terms, and more favorable interest rates than can be found in private capital markets for similar instruments. In this way, the TIFIA Program can help accelerate delivery of qualified projects that otherwise might be delayed or deferred because of size, complexity, or uncertainty over the timing of revenues. Below is an example of a complex project that benefited greatly from TIFIA assistance and will in turn have a positive economic impact.

*The Texas Transportation Commission’s (Commission) 35 Express Project:* The Commission received a \$285 million TIFIA loan from the Department to finance the reconstruction and expansion of a section of I-35E in the Dallas metro area, the 35 Express Project. This project, to be completed in phases, will reconstruct and expand a 28-mile section of I-35E between I-635 to U.S. 380, serving the areas of southern and central Denton County and other major Dallas suburbs north of I-635. The TIFIA loan will be used towards funding the first phase of the project that is highly congested, serving more than 200,000 vehicles per day on certain sections. In addition to being a major artery for commuters, it is a primary link to Denton-area universities. The improvements include one additional general purpose lane in each direction and two reversible priced lanes. The lanes will be priced according to time of day and will be shifted in the direction of heavy traffic flow during peak times to relieve congestion. This investment has significant economic advantages. According to Commission estimates, the 35 Express Project is expected to create or sustain over 33,000 jobs during construction. After construction, lower levels of traffic congestion will improve access to jobs in the rapidly growing areas of Denton and Dallas Counties.





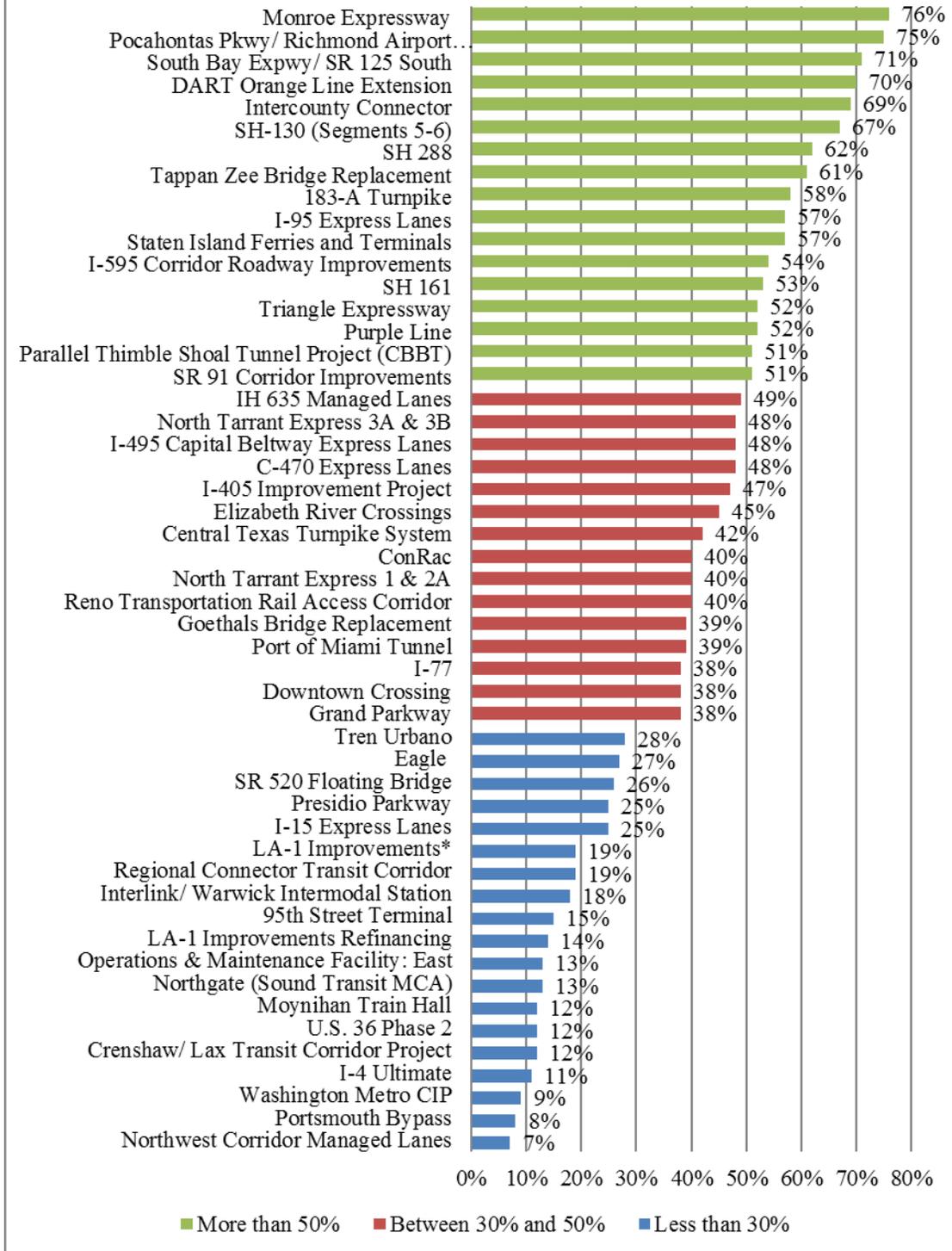
*The Moynihan Train Hall Redevelopment Project:*

The Moynihan Train Hall Redevelopment Project is part of the first stage of the widely-anticipated Gateway Program and aims to transform the James A. Farley Post Office Building into a modern, state of the art transportation facility. The Department is providing a \$526.1 million TIFIA loan to fund the \$1.85 billion project. The project, being completed in two phases, is expected to deliver critical improvements, mediate congestion and delays, and facilitate future passenger demand at New York City's Penn Station, the busiest passenger transportation facility in the U.S. with an estimated volume of over 650,000 passengers per weekday. The TIFIA loan will provide critical financing to this public-private partnership, in which Empire State Development, the Port Authority of New York and New Jersey, the New York Metropolitan Transportation Authority, Amtrak, and private developers will provide the remainder of the approximately \$1.3 billion in funding for the project.



The Moynihan Train Hall Redevelopment Project is just one of many examples of P3 projects. In total, there have been 21 projects financed with TIFIA that have advanced as P3s, and the private equity committed to these projects exceeds \$4 billion. On the debt side, TIFIA has been combined with other debt sources including Private Activity Bonds (PABs), bank debt, and Grant Anticipation Revenue Vehicle (GARVEE) Bonds, that total over \$12 billion in financing for surface transportation. Currently, over two-thirds of the entire portfolio has received a level of private participation in financing, as shown in the following chart.

**Private Debt & Equity as a Percentage of Total Project Costs**



Enhancing Economic Competitiveness: By facilitating projects that would have been delayed or deferred, the TIFIA Program will help modernize our transportation system, which will advance communities and help American businesses compete and grow in the global economy.

Consistent with the FAST Act, the TIFIA Program will accelerate project delivery by stimulating new revenue streams for transportation projects and attracting private investment. Furthermore, TIFIA funding will leverage limited federal funds, so that a relatively small federal commitment will stimulate a large amount of State, local, and private investment.

## **Executive Summary**

### **Administrative Expenses**

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#### **What is the request and what funds are currently spent on the program?**

FHWA requests \$449.7 million for FHWA General Operating Expenses (GOE). This is consistent with the administrative expenses funding level under the FAST Act.

#### **What is this program and what does this funding level support?**

GOE funds salaries and benefits for approximately 2,100 employees, as well as rent, communications, utilities, contractual services, travel, supplies, and equipment to support the delivery of the Federal-aid Highway Program. The funding level requested for administrative expenses will support the \$46.0 billion Federal highway program and amounts to just under 1 percent of the overall budget request for FHWA programs. This funding level is essential for FHWA to effectively deliver and manage the Federal-aid Highway Program.

Due to funding shortfalls in recent years, FHWA instituted significant cost savings measures including an agency-wide hiring freeze, reduced information technology (IT) support, decreased funding for field and headquarters operations, and curtailed funding for many critical training programs. While FHWA partially restored some of these services, the agency has permanently reduced its staffing allocations by 8.2% since January 2014.

#### **What benefits will be provided to the American public through this request and why is this program necessary?**

This program provides essential resources to carry out the agency's mission. FHWA requires adequate administrative funding to maintain its leadership and oversight role for the Federal-aid Highway Program's new era of complexity, accountability, and transparency under the FAST Act.

The Federal-aid Highway Program requires an appropriately staffed workforce that is sufficiently supported and well-trained. FHWA's immediate response to the I-85 roadway collapse; our response to Hurricanes Harvey, Irma, and Maria that helped restore essential highway service to affected areas; our work with stakeholders on the Louisville–Southern Indiana Ohio River Bridges project, one of the largest transportation improvement projects in the United States; and innovations like High Friction Surface Treatment and slide-in bridge construction, which have benefits such as improving safety and minimizing traffic disruptions, are just a few examples of how the agency is providing benefits to the American public.

Without a well-sized, trained and equipped staff capable of carrying out the Federal-aid highway program, the program would not be able to make roadways safer, maintain and improve road conditions, rehabilitate and repair structurally deficient bridges, accelerate project delivery, conduct and deploy innovative transportation research, and undertake many other functions critical to maintaining a safe and efficient transportation network.

## Detailed Justification Limitation on Administrative Expenses

### What is the request and what funds are currently spent on the program?

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#### FY 2019 – Limitation on Administrative Expenses (\$449.7 million) (\$000)

Program Activity	FY 2017 <u>Actual</u>	FY 2018 Annualized <u>CR</u>	FY 2019 <u>Request</u>
Federal-aid Highways			
<b>Limitation on Administrative Expenses</b>			
Limitation on Administrative Expenses <sup>1/</sup>	435,795	432,836	449,692
<b>Total</b>	<u>435,795</u>	<u>432,836</u>	<u>449,692</u>

1/ FY 2017 and FY 2018 includes FHWA General Operating Expenses (GOE) and transfers to the Appalachian Regional Commission (ARC) for administrative activities associated with the Appalachian development highway system. FY 2019 includes FHWA GOE only. Other non-administrative programs funded by set-asides from administrative expenses (On-the-Job Training, Disadvantaged Business Enterprises, and Highway Use Tax Evasion Projects) are included in the Federal Allocation Programs

### What is this program and what does this funding level support?

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The Limitation on Administrative Expenses funds salaries and benefits, travel, rent, communications, utilities, printing, contractual services, supplies and equipment. This account provides the resources necessary to maintain the Federal-aid oversight and administrative operations. Funding will support activities to meet FHWA goals and other Federal mandates.

#### *Program Purpose*

Administrative expenses fund the oversight and management of the Federal-aid Highway Program. This includes direct interaction in the field with State and local partners, as well as Federal agencies and Tribes. These administrative expenses provide critical on-the-ground technical assistance in areas such as bridge oversight and safety, accelerating project delivery, expediting the environmental review and approval process, development and review of performance management metrics/standards and freight plans, and coordination with other Federal agencies. These funds also provide the means to approve project agreements, environmental actions, and State Transportation Improvement Plans (STIPs), and approve and process obligations and reimbursements, as well as ensure compliance with the Federal-aid Highway Program and proper use of Federal funds.

The majority of FHWA's employees are located in 52 Division offices – one in each State; Washington, DC; and Puerto Rico. The agency also has 3 Federal Lands Highway Program Field offices and a Resource Center, which provides technical assistance, training, and innovative technology deployment assistance for the Division offices, State departments of transportation, metropolitan planning organizations, and local agencies. In total, FHWA has approximately 1,250 field staff, comprising 60 percent of the GOE-funded workforce. Field staff work directly with State and local partners and other Federal agencies and Tribes to oversee the

Federal-aid program and assist these partners in advancing projects more quickly through innovations such as E-NEPA and accelerated project delivery tools.

FHWA’s Headquarters program staff provides national leadership and works directly with division offices, States, and other partners to advance the Federal-aid Highway Program. These offices are responsible for innovations to accelerate project delivery and reduce environmental review time, instituting performance management standards and processes, oversight of bridge inspection, coordination among other Federal agencies, and providing critical technical assistance to division offices, States, and other partners. The program offices lead implementation of the various components of the FAST Act, especially in the areas of performance management, environmental review, and project/program innovation.

FHWA’s Headquarters support offices provide agency-wide support for the Federal-aid Highway Program. These offices provide all legal, IT, policy, human resources, training, finance, budget, and acquisitions support for the entire agency. These offices play a key role in administering IT systems such as those used to manage highway funding or report highway data, providing critical technical assistance on reauthorization and other legislation, and establishing employee programs and training opportunities to maintain a knowledgeable workforce, among other essential responsibilities.

***Funding Request***

FHWA requests a \$449.7 million Limitation on Administrative Expenses (LAE) for FHWA Federal-Aid General Operating Expenses (GOE).

The following table summarizes the requested FY 2019 obligation limitation changes from the FY 2017 actual levels.

<b>Summary of Requested FY 2019 Funding Changes from FY 2017 actuals</b>	
<b>GOE Activity</b>	<b>Amount (\$000)</b>
<b>Adjustments to Base</b>	
Salaries and Benefits (FY 2017 to Current Year)	5,936
Annualization of President’s pay raise	1,492
Additional Compensable Day	1,214
GSA Rent	474
Working Capital Fund (WCF)	1,141
Inflation	573
<b>Subtotal, adjustments to base</b>	<b>10,830</b>
<b>Program Increases/Decreases</b>	
Eastern Federal Lands Facility Refresh/Relocation	3,599
Cloud Migration Projects	1,725
Relocation of Hawaii Division Office	1,200

User Profile and Access Control System (UPACS) Modernization	1,000
Computer Refreshes	900
Public Website Migration (Phase III & IV)	800
Enterprise Service Center (ESC) Cost Increases	750
Installation of Security Cameras at Field Offices	500
National Bridge Inventory (NBI) Support	400
Appalachian Regional Commission	-1,923
<b>Subtotal, program increases/decreases</b>	<b>8,951</b>
<b>Total</b>	<b>\$19,781</b>

Of the increased funding requested, \$10.8 million is for adjustments to the base for salaries and benefits (\$5.9 million), for pay raises (\$1.5 million), an additional compensable day (\$1.2 million), rent (\$0.5 million), Working Capital Fund (\$1.1 million), and inflation (\$0.6 million).

The remaining increases are for items that FHWA requests to provide funding for in FY 2019. Descriptions and justifications for these program increases are as follows:

- **Eastern Federal Lands Facility Refresh/Relocation (\$3.6 million)** – The lease for the Eastern Federal Lands facility in Sterling, Virginia will expire in January 2019, requiring either relocation to a new facility or a refresh of the current facility. The cost of this project will be substantial due to the large amount of space involved – approximately 55,000 square feet. The project is expected to cost up to \$4.3 million – 3.6 million more than the base funding level.

If Eastern Federal Lands stays at the current facility, significant construction will be necessary to meet Department of Transportation space standards and Office of Management and Budget space reduction guidelines. This will include right-sizing workspaces, eliminating excess space, and constructing the appropriate number of offices, conference rooms, and break rooms, as well as carpet, paint, and other similar items. In addition, all furniture will need to be replaced. The goal is to reduce the footprint from 55,000 square feet to approximately 45,000 square feet. If Eastern Federal Lands must relocate, FHWA will have to build out new space in a new facility, which will be approximately the same cost. This refresh/relocation project is expected to save approximately \$275,000 to \$325,000 annually in future years.

- **Cloud Migration Projects (\$1.7 million)** – FHWA requests \$1,725,000 to replicate the current computing environment in a cloud-based platform without disruption of operations. Cloud computing enables efficient access to shared technology system resources with less maintenance effort, quick scalability, and flexibility as compared to traditional means of storage. The cloud offers potential cost savings by significantly reducing or eliminating the costs associated with acquiring, maintaining, and refreshing legacy network storage infrastructure, such as server hardware and software costs, and annual license fees. Upon successful replication and testing, a feasibility analysis will be

conducted so FHWA leadership can determine whether FHWA will fully transition the computing environment to the cloud.

- **Relocation of Hawaii Division Office (\$1.2 million)** – The lease for the FHWA office in Hawaii is nearing expiration, requiring either relocation to a new facility or a refresh of the current facility. The project is expected to cost \$1,200,000.

If the Hawaii office stays at the current facility, construction will be necessary to meet Department of Transportation space standards and Office of Management and Budget space reduction guidelines. This construction will include right-sizing workspaces, eliminating excess space, and constructing the appropriate number of offices, conference rooms, and break rooms, as well as carpet, paint, and other similar items. In addition, all furniture will need to be replaced. If the Hawaii office must relocate, FHWA will have to build out space in a new facility, which will be approximately the same cost.

- **User Profile and Access Control System (UPACS) Modernization (\$1.0 million)** – FHWA requests \$1,000,000 to modernize the User Profile and Access Control System (UPACS), which is a mission critical system that controls user authentication and access rights for all FHWA systems for both internal users and external partners (e.g., State partners). Funding for the UPACS modernization will be used to upgrade the coding language and validate that it meets security requirements. The risk of not upgrading UPACS is an increased likelihood of security vulnerabilities that may lead to a cybersecurity breach. Such a cybersecurity incident would be especially detrimental to the mission-critical Fiscal Management Information System, as States would be unable to authorize projects, manage funds, or receive reimbursement.
- **Computer Refreshes (\$0.9 million)** – FHWA is currently operating under a 5-year refresh cycle for personal computers (PC); however, the Department of Transportation standard is a 4-year cycle. FHWA requests additional one-time funding of \$900,000 to adjust to a 4-year refresh cycle, which will reduce the total cost by reducing out of warranty repair and support costs. According to research conducted by Wipro, an IT consulting and services firm, a 5-year old PC costs twice as much to maintain as a new computer.
- **Public Website Migration (\$0.8 million)** – The Department of Transportation is modernizing the FHWA public website ([www.fhwa.dot.gov](http://www.fhwa.dot.gov)) using their centralized Drupal service. Drupal is an open-source content-management framework, which provides a back-end framework for web sites, and is used for knowledge management and collaboration. FHWA requests \$800,000 for the remaining 50 percent migration of the FHWA environment under Phases III and IV, and operation and maintenance costs for those services that have been migrated. Phase I and II, which represent the initial 50 percent of the FHWA environment migration, will occur in FY 2018

- **Enterprise Service Center (ESC) Cost Increases (\$0.8 million)** – FHWA expects to see a significant increase in its costs for ESC accounting services and maintaining its accounting system, which are vital to the management of funding for the Federal-aid Highway Program. This increase is based on a new methodology for assessing the costs of maintaining the accounting system and providing accounting services, with a projected increase of approximately \$750,000.
- **Installation of Security Cameras at Field Offices (\$0.5 million)** – FHWA requests \$500,000 for the installation of security cameras at field offices to meet Federal Protective Services recommended facility security standards. The cameras will be positioned to monitor and record activity in and around all entrance and exit points to ensure a safe and secure environment. If there is a security incident, or attempted incident at a FHWA location, the cameras will provide a recording of all individuals that entered and exited the FHWA space, which can be used by law enforcement and FHWA leadership in reviewing and investigating incidents.
- **National Bridge Inventory (NBI) Support (\$0.4 million)** – FHWA requests \$400,000 for operations and maintenance of the NBI, which is a mission critical system, to support additional system demands such as new data fields required by the recently published Performance Management rules, and collected element data accessibility. FHWA, as required by statute, inventories all highway bridges and public roads using the NBI to ensure the safety of the traveling public. Maintenance of the NBI is required to support transportation performance management, the minimum bridge condition provision within 23 U.S.C. 119, as well as providing oversight to the National Bridge Inspection Program. With the implementation of MAP-21, FHWA is also required to collect element level condition data for all bridges on the National Highway System.

Funding at the requested, authorized amount will enable FHWA to effectively oversee the Federal-aid Highway Program. It is also important to note the following factors that affect the administration of the Federal-aid program:

***Continued program consolidation has not reduced staffing requirements.***

The FAST Act effectively continued the consolidated program structure from MAP-21; however, nearly all eligibilities and activities from previous authorizations continue. FHWA has been and remains organized around core areas of expertise such as infrastructure, safety, operations, environmental assessments, and project planning. Those core areas of expertise remain critical to delivering the consolidated program structure under the FAST Act and the budget request.

***Federal-aid program continues to grow in scope and complexity.***

The FAST Act established both a freight formula and freight discretionary program, along with programmatic requirements such as the designation of a freight network, oversight of State freight plans, and in the case of the discretionary program, a role in project review and selection. While FHWA strongly supports these measures, and believes that these programs will improve the movement of goods throughout the country, these new programs will increase the FHWA's administrative responsibilities.

The FAST Act continued and expanded many of the management and oversight responsibilities under MAP-21. While increased project management, accelerated project delivery, and shortening environmental reviews and approvals are all worthy initiatives, they require both human and financial resources to achieve. FHWA fully supports these initiatives, and will continue these efforts under the FAST Act and in our FY 2019 budget proposal— we simply need sufficient resources to effectively carry out these tasks.

***No request for Appalachian Regional Commission (ARC) administrative funding.***

While administrative funding for ARC has been included within FHWA’s overall administrative request in the past, the FY 2019 Budget proposes to eliminate funding for ARC. Accordingly, there is also no administrative funding for ARC in the FY 2019 request. FHWA employees that currently work on the Appalachian Development Highway System (ADHS) will be absorbed into FHWA’s GOE and will continue to support the ADHS program as needed. As the ADHS is completed in the coming years, those FHWA staff will gradually return to support other FHWA programs as warranted by the workload related to the ADHS.

**What benefits will be provided to the American public through this request and why is this program necessary?**

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FHWA and our administrative funding are integral to the effective delivery of the Federal-aid Highway Program. In support of the program’s delivery, we:

- Ensure that \$46.0 billion of annual Federal funding is delivered in accordance with Federal laws and regulations and protected from fraud, waste and abuse.
- Protect the safety of the traveling public through highway and bridge design and operations standards and guidance as well as by establishing requirements for and monitoring bridge inspection practice.
- Help communities recover from disasters through administration of the emergency relief program and by providing internationally recognized technical expertise. For instance, when a section of I-85 collapsed, FHWA provided immediate assistance, including \$10 million in “Quick Release” Emergency Relief Program funds the next day. This support allowed emergency repairs to be completed within weeks, and full repairs to be completed by June 2017, less than three months after the collapse.
- Shorten project delivery through assistance to State and local governments in the planning, design and construction process, including meeting NEPA requirements and coordinating with other federal agencies to obtain the required permits.
- Design and manage the construction for projects on federal lands, including National Parks and forest highways. We provide public access to America's treasures.
- Conduct research, advance technologies and practices, deliver training and provide technical assistance to States, local and tribal governments. These new technologies save taxpayer time, money and lives

With qualified staff and necessary contracts to provide oversight, FHWA will be able to make roadways safer, maintain and improve road conditions, rehabilitate and repair structurally deficient bridges, improve access to and roads within Federal and Tribal lands, conduct and deploy innovative transportation research, and many other functions critical to maintaining an efficient and safe transportation network.

In recent years, FHWA has increased its focus on innovation, making significant improvements in shortening project delivery and accelerating technology and innovation deployment. For example, FHWA has worked closely with State partners on the use of programmatic agreements, which are documents that establish a streamlined process for handling routine environmental requirements for commonly encountered project types. All 50 states now have a programmatic agreement in place and 37 have 2 or more, with a wide range of benefits reported, including cost savings, accelerated project delivery, and increased certainty about the project development process and project schedule.

The focus on innovation has also had a significant impact on safety and reduced construction-related traffic delays. Recent successes include the release of a new group of “Proven Safety Countermeasures” - infrastructure-oriented safety treatments and strategies, chosen based on proven effectiveness and benefits. One example, reduced left turn conflict intersections, has been shown to reduce serious crashes by up to 54 percent.

Also, FHWA has supported the development of Slide-in Bridge Construction (SIBC), with benefits that include reduced construction-related traffic delays and lower construction costs. SIBC accelerates bridge construction whereby a new bridge is built next to an existing bridge out of the way of traffic. Once ready, the roadway is closed for a short period of time, the old bridge is quickly removed, and the new bridge is slid into place. For instance, the New York State DOT replaced two bridges on I-84 during a 20-hour time period over a weekend using the SIBC method; this resulted in estimated savings in construction costs and user delay costs of 22 percent of the \$10.2 million construction cost for the project.

FHWA works closely with its State, local, Federal and Tribal partners to improve project delivery. For example, the Louisville–Southern Indiana Ohio River Bridges (LSIORB) project involved the construction of two new toll bridges over the Ohio River to address the long-term cross-river transportation needs in the Louisville-Southern Indiana region. Public involvement and community considerations have been a critical component throughout the project development process, with stakeholder, historic advisory team and public meetings highlighting a truly regional initiative aimed at meeting the public’s needs and wishes. The culmination of more than 40 years of planning, the \$2.6 billion LSIORB project is the largest bi-state transportation project ever undertaken by the states of Kentucky and Indiana, and one of the largest transportation improvement projects in the United States—named by Congress as one of 13 projects of national importance.

These are just a few examples of FHWA employing innovation to assist its partners in completing transportation projects more safely, quickly, and efficiently, which results in fewer fatalities and accidents, reduced congestion and commute times, and accelerates better movement of goods and services throughout the nation.

In addition, FHWA is continuing to remain accountable by examining regulations to identify those that should be modified, streamlined or repealed to reduce costs or eliminate bureaucratic obstacles to efficient project delivery. FHWA recently repealed certain planning regulations pertaining to establishment of metropolitan planning area boundaries and coordination among metropolitan planning organizations

By providing funding at the requested level, FHWA can continue to provide these valuable services, enhancing the transportation experience for all Americans.

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**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
HIGHWAY INFRASTRUCTURE INVESTMENT, RECOVERY ACT**

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**BACKGROUND**

Enacted on February 17, 2009, the American Recovery and Reinvestment Act of 2009 (Recovery Act) provided \$27.5 billion from the General Fund to the Federal Highway Administration (FHWA), of which \$26.6 billion was apportioned to States based on formulas described in the Recovery Act and \$0.9 billion was allocated to programs identified in the Recovery Act, including the Indian Reservation Roads Program, Park Roads and Parkway Program, Forest Highway Program, Refuge Roads Program, Disadvantaged Business Enterprise Bonding Assistance, Territorial Highway Program, Puerto Rico Highway Program, and the Ferry Boat Discretionary Program. Administrative oversight funds were available through September 30, 2012 and all other funds were available through September 30, 2010.

The FHWA Recovery Act funds have been used to invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits to the Nation. The Recovery Act funds augmented existing investments authorized by the Safe, Accountable, Flexible, Efficient Transportation Equity Act of 2005: A Legacy for Users (SAFETEA-LU), enabling States, regional, and local governments to accelerate to completion a number of highway infrastructure projects planned or underway. Since the Recovery Act was enacted in February 2009, more than 42,000 miles of pavement across the United States have been improved. As of September 30, 2015, States have expended 100% of Recovery Act obligations. As of September 30, 2015, Recovery Act funds are cancelled and are no longer available for expenditure.

FY 2018 includes upward and downward re-estimates and interest on the re-estimates for the Transportation Infrastructure Finance and Innovation (TIFIA) Act program.

**BUDGETARY RESOURCES**

No new budget authority is requested for FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
HIGHWAY INFRASTRUCTURE INVESTMENT, RECOVERY ACT**

**PROGRAM AND FINANCING SCHEDULE**

In millions of dollars

Identification code: 69-0504-01-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
Obligations by program activity:			
Credit program obligations			
0705    Reestimates of direct loan subsidy	.....	88	.....
0706    Interest on reestimates of direct loan subsidy	.....	23	.....
0900    Total new obligations, unexpired accounts	.....	111	.....
Budgetary Resources:			
Budget authority			
Appropriations, mandatory:			
1200    Appropriation	.....	111	.....
<b>Change in obligated balance</b>			
Unpaid obligations:			
3000    Unpaid obligations, brought forward, Oct 1	.....	.....	.....
3001    Adjustment to unpaid obligations, brought forward, Oct 1	.....	.....	.....
3011    Obligations incurred, expired accounts	.....	111	.....
3020    Outlays (gross)	.....	-111	.....
3041    Recoveries of prior year unpaid obligations, expired	.....	.....	.....
3050    Unpaid obligations, end of year	.....	.....	.....
Uncollected payments:			
3060    Uncollected payments, Federal sources, brought forward, Oct 1	.....	.....	.....
3061    Adjustments to uncollected pymts, Fed sources, brought forward, Oct 1	.....	.....	.....
3090    Uncollected payments, Federal sources, end of year	.....	.....	.....
Memorandum (non-add) entries:			
3100    Obligated balance, start of year	.....	.....	.....
3200    Obligated balance, end of year	.....	.....	.....
<b>Budget authority and outlays, net</b>			
Discretionary:			
4090    Budget authority, gross		111	
Outlays, gross			
4100    Outlays from new mandatory authority	.....	111	.....
4160    Budget authority, net (mandatory)	.....	111	.....
4170    Outlays, net (mandatory)	.....	111	.....

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EMERGENCY RELIEF**

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**BACKGROUND**

The Emergency Relief program receives \$100 million annually in mandatory funds in the Federal-aid Highways account. The Safe, Accountable, Flexible, Efficient Transportation Equity Act of 2005: A Legacy for Users (SAFETEA-LU); the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21), enacted July 6, 2012, and the Fixing America's Surface Transportation (FAST) Act, enacted December 4, 2015, authorized the program to receive additional General Fund discretionary funding for eligible emergency relief as needed.

In FY 2012, \$1,662 million was enacted to remain available until expended, in FY 2013, \$2,022 million was enacted to remain available until expended, and in FY 2017, \$1,532 million was enacted to remain available until expended, all for necessary expenses resulting from major disasters declared pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.).

**BUDGETARY RESOURCES**

No further appropriations are requested for this account in FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EMERGENCY RELIEF**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-0500-0	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>New obligations:</b>			
Obligations by program by activity:			
0001 Direct program activity	820	618	309
0900 Total new obligations (object class 41.0)	820	618	309
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	386	1,236	618
1021 Recoveries of prior year unpaid obligations	138	.....	.....
1050 Unobligated balance (total)	524	1,236	618
<b>Budget authority:</b>			
Appropriations, discretionary:			
1100 Appropriation	1,532	.....	.....
1130 Appropriations permanently reduced	.....		
1160 Appropriation, discretionary (total)	1,532	.....	.....
1930 Total budgetary resources available	2,056	1,236	618
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year	1,236	618	309
<b>Change in obligated balances</b>			
Obligated balance, start of year (net):			
3000 Unpaid obligations, brought forward, Oct 1	533	700	707
3010 Obligations incurred, unexpired accounts	820	618	309
3020 Outlays (gross)	-515	-611	-496
3040 Recoveries of prior year unpaid obligations, unexpired	-138	.....	.....
3050 Unpaid obligations, end of year	700	707	520
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	533	700	707
3200 Obligated balance, end of year	700	707	520
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross	1,532	.....	.....
4010 Outlays from new discretionary authority	258	.....	.....
4011 Outlays from discretionary balances	257	611	496
4080 Outlays, net (discretionary)	515	611	496
4180 Budget authority, net (total)	1,532	.....	.....
4190 Outlays, net (total)	515	611	496

OBJECT CLASSIFICATION

In millions of dollars

Identification code: 69-0500-0	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Direct Obligations:</b>			
41.0 Direct obligations: Emergency Relief Backlog	820	618	309

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM**

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**BACKGROUND**

Funding for this program is used for the necessary expenses relating to construction of, and improvements to, corridors of the Appalachian Development Highway System as distributed to the following states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

**BUDGETARY RESOURCES**

No new budget authority is requested for FY 2019. A cancellation of \$46 million of unobligated balances is proposed in FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-0640-0-1-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>New obligations:</b>			
Obligations by program by activity:			
0001 Appalachian Development Highway System	.....	.....	.....
0900 Total new obligations (object class 41.0)	.....	.....	.....
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	46	46	46
1021 Recoveries of prior year unpaid obligations	.....	.....	.....
1050 Unobligated balance (total)	46	46	46
<b>Budget authority:</b>			
1131 Unobligated balance of appropriations permanently reduced	.....	.....	-46
1160 Appropriation, discretionary (total)	.....	.....	-46
1930 Total budgetary resources available	46	46	.....
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year	46	46	.....
<b>Change in obligated balances</b>			
Obligated balance, start of year (net):			
3000 Unpaid obligations, brought forward, Oct 1	11	10	6
3010 Obligations incurred, unexpired accounts	.....	.....	.....
3020 Outlays (gross)	-1	-4	-4
3040 Recoveries of prior year unpaid obligations, unexpired	.....	.....	.....
3050 Unpaid obligations, end of year	10	6	2
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	11	10	8
3200 Obligated balance, end of year	10	8	6
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross	.....	.....	-46
4011 Outlays from discretionary balances	1	4	4
4070 Budget authority, net (discretionary)	.....	.....	-46
4080 Outlays, net (discretionary)	1	4	4
4180 Budget authority, net (total)	.....	.....	-46
4190 Outlays, net (total)	1	4	4

**APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM**

OBJECT CLASSIFICATION

In millions of dollars

Identification code: 69-0640-0-1-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Direct Obligations:</b>			
41.0 Direct obligations: Grants, subsidies, and contributions	.....	.....	.....

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-8072-0-1-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	.....	.....	.....
1029 Other balances withdrawn (-)	.....	.....	.....
1050 Unobligated balance (total)	.....	.....	.....
<b>Budget authority:</b>			
Spending authority from offsetting collections, discretionary:			
1750 Spending auth from offsetting collections, disc (total)	.....	.....	.....
1930 Total budgetary resources available	.....	.....	.....
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year	.....	.....	.....
<b>Change in obligated balances</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	.....	.....	.....
3020 Outlays (gross)	.....	.....	.....
3050 Unpaid obligations, end of year	.....	.....	.....
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	.....	.....	.....
3200 Obligated balance, end of year	.....	.....	.....
<b>Budget authority and outlays, net:</b>			
Discretionary:			
Outlays, gross:			
4011 Outlays from discretionary balances	.....	.....	.....
4080 Outlays, net (discretionary)	.....	.....	.....
4180 Budget authority, net (total)	.....	.....	.....
4190 Outlays, net (total)	.....	.....	.....

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**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
MISCELLANEOUS APPROPRIATIONS**

---

**BACKGROUND**

This consolidated schedule shows the obligation and outlay of amounts appropriated from the General Fund for miscellaneous programs. The schedule reflects a Transportation Infrastructure Finance and Innovation (TIFIA) Act program upward re-estimate and interest on the re-estimate of \$2 million for FY 2017 and \$251 million for FY 2018. The Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21), enacted July 6, 2012, and the Fixing America's Surface Transportation (FAST) Act, enacted December 4, 2015, included the TIFIA program upward subsidy re-estimate with this account.

**BUDGETARY RESOURCES**

No further discretionary appropriations are requested for FY 2019. A cancellation of \$112 million of unobligated balances is proposed in FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
MISCELLANEOUS APPROPRIATIONS**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-9911-01-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>New obligations:</b>			
Obligations by program by activity:			
0002 Surface Transportation Priorities	14	13	.....
0003 Miscellaneous highway projects	14	10	.....
0083 Interest on TIFIA Upward Reestimate	2	251	.....
0900 Total new obligation (object class 41.0)	30	274	.....
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	159	135	112
1021 Recoveries of prior year unpaid obligations	4	.....	.....
1050 Unobligated balance (total)	163	135	112
<b>Budget authority:</b>			
Appropriations, discretionary:			
1131 Unobligated balance of appropriations permanently reduced	.....	.....	-112
1160 Appropriation (total discretionary)	.....	.....	-112
Appropriations, mandatory:			
1200 Appropriation	2	251	.....
1260 Appropriations, mandatory (total)	2	251	.....
1900 Budget authority (total)	2	251	-112
1930 Total budgetary resources available	165	386	.....
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year	135	112	.....
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	55	52	44
3010 Obligations incurred, unexpired accounts	30	274	.....
3020 Outlays (gross)	-29	-282	-22
3040 Recoveries of prior year obligations, unexpired	-4	.....	.....
3050 Unpaid obligations, end of year	52	44	22
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	55	52	44
3200 Obligated balance, end of year	52	44	22
<b>Budget authority and outlays, net:</b>			
Discretionary:			
Outlays, gross:			
4000 Budget authority, gross	.....	.....	-112
4011 Outlays from discretionary balances	27	31	22
Offsetting collections (collected) from:			
4070 Budget authority, net (discretionary)	.....	.....	-112
4080 Outlays, net (discretionary)	27	31	22
Mandatory:			
4090 Budget authority, gross	2	251	.....
Outlays, gross:			
4100 Outlays from new mandatory authority	2	251	.....
4160 Budget authority, net (mandatory)	2	251	.....
4170 Outlays, net (mandatory)	2	251	.....
4180 Budget authority, net (total)	2	251	-112
4190 Outlays, net (total)	29	282	22

OBJECT CLASSIFICATION

In millions of dollars

Identification code: 69-9911-01-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Direct obligations:</b>			
41.0 Direct obligations: grants, subsidies, and contributions	30	274	.....

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
MISCELLANEOUS HIGHWAY TRUST FUNDS**

---

**BACKGROUND**

This account contains miscellaneous appropriations from the Highway Trust Fund. Obligations and outlays result from prior year appropriations.

**BUDGETARY RESOURCES**

No new budget authority is requested for FY 2019. A cancellation of \$59 million of unobligated balances is proposed in FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
MISCELLANEOUS HIGHWAY TRUST FUNDS**

**PROGRAM AND FINANCING SCHEDULE**

In millions of dollars

Identification code: 69-9972-0-7-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>New obligations:</b>			
Obligations by program activity:			
0027    Miscellaneous highway projects	6	12	.....
0900    Total new obligations (object class 41.0)	6	12	.....
<b>Budgetary resources:</b>			
Unobligated balance:			
1000    Unobligated balance brought forward, Oct 1	77	71	59
1021    Recoveries of prior year unpaid obligations	.....	.....	.....
1033    Recoveries of prior year paid obligations	.....	.....	.....
1050    Unobligated balance (total)	77	71	59
<b>Budget authority:</b>			
Appropriations, discretionary:			
1131    Unobligated balance of appropriations permanently reduced	.....	.....	-59
1160    Appropriations, discretionary (total)	.....	.....	-59
1700    Spending authority form offsetting collections, disc (total)	.....	.....	.....
1930    Total budgetary resources available	77	71	.....
Memorandum (non-add) entries:			
1941    Unexpired unobligated balance, end of year	71	59	.....
<b>Change in obligated balances</b>			
Unpaid obligations			
3000    Unpaid obligations, brought forward, Oct 1	34	29	29
3010    Obligations incurred, unexpired accounts	6	12	.....
3020    Outlays (gross)	-11	-12	-7
3040    Recoveries of prior year unpaid obligations, unexpired	.....	.....	.....
3050    Unpaid obligations, end of year	29	29	22
Memorandum (non-add) entries:			
3100    Obligated balance, start of year	34	29	29
3200    Obligated balance, end of year	29	29	22
<b>Budget authority and outlays net:</b>			
Discretionary:			
4000    Budget authority, gross	.....	.....	-59
4011    Outlays from discretionary balances	11	12	7
4033    Offsetting collections from non-Federal sources	.....	.....	.....
4070    Budget authority, net (discretionary)	.....	.....	-59
4080    Outlays, net (discretionary)	11	12	7
4180    Budget authority, net (total)	.....	.....	-59
4190    Outlays, net (total)	11	12	7
<b>OBJECT CLASSIFICATION</b>			
In millions of dollars			
Identification code: 69-9972-0-7-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Direct Obligations:</b>			
41.0    Direct obligations: Grants, subsidies, and contributions	6	12	.....

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
MISCELLANEOUS TRUST FUNDS**

---

**BACKGROUND**

Funds received by this account come from entities (governmental and non-governmental) outside of FHWA. FHWA holds these funds in trust until they outlay. The following programs are included in this fund:

- Advances from state cooperating agencies and foreign governments – Contributions are received from other entities in connection with cooperative engineering, survey, maintenance, and construction projects.
- Contributions for highway research programs – Contributions are received from various sources in support of FHWA transportation research programs. The funds are used primarily in support of pooled-funds projects.

**BUDGETARY RESOURCES**

The budget estimates that \$20 million of new authority will be available from non-FHWA sources in FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
MISCELLANEOUS TRUST FUNDS**

**PROGRAM AND FINANCING SCHEDULE**

In millions of dollars

Identification code: 69-9971-0-7-999	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>New obligations:</b>			
Obligations by program by activity:			
0001 Advances from State cooperating agencies 69-X-8054	59	25	25
900 Total new obligations	59	25	25
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	85	108	103
1021 Recoveries of prior year unpaid obligations	4	.....	.....
1050 Unobligated balance (total)	89	108	103
<b>Budget authority:</b>			
Appropriations, mandatory:			
1201 Appropriation (trust fund)	78	20	20
1260 Appropriations, mandatory (total)	78	20	20
1930 Total budgetary resources available	78	20	20
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year	108	103	98
<b>Change in obligated balance:</b>			
Obligated balance, start of year (net):			
3000 Unpaid obligations, brought forward, Oct 1	29	65	56
3010 Obligations incurred, unexpired accounts	59	25	25
3020 Outlays (gross)	-19	-34	-36
3040 Recoveries of prior year unpaid obligations, unexpired	-4	.....	.....
3050 Unpaid obligations, end of year	65	56	45
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	29	65	56
3200 Obligated balance, end of year	65	56	45
<b>Budget authority and outlays, net:</b>			
Mandatory:			
4090 Budget authority, gross	78	20	20
Outlays (gross)			
4100 Outlays from new mandatory authority	4	16	16
4101 Outlays from mandatory balances	15	18	20
4110 Outlays, gross (total)	19	34	36
4160 Budget authority, net (mandatory)	78	20	20
4170 Outlays, net (mandatory)	19	34	36
4180 Budget authority, net (total)	78	20	20
4190 Outlays, net (total)	19	34	36

**OBJECT CLASSIFICATION**

In millions of dollars

Identification code: 69-9971-0-7-999	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Direct obligations:</b>			
Personnel compensation:			
11.1	1	1	1
21.0	1	1	1
25.1 Advisory and assistance services	2	2	2
25.2 Other services from non-Federal sources	46	17	17
25.3 Other goods and services from Federal sources	7	3	3
44.0 Refunds	1	1	1
99.0 Subtotal, obligations	58	25	25
99.5 Below reporting threshold	1	.....	.....
99.9 Total new obligations	59	25	25

**EMPLOYMENT SUMMARY**

Identification code: 69-9971-0-7-999	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
1001 Direct civilian full-time equivalent employment	9	9	9

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION ACT  
FINANCING ACCOUNTS**

---

**BACKGROUND**

Federal-aid Highways

As required by the Federal Credit Reform Act of 1990, this non-budgetary account records cash flows to and from the Government resulting from direct loans made under the Transportation Infrastructure Finance and Innovation Act (TIFIA) Program. The amounts in this account are a means of financing and are not included in the budget totals.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act of 2005: A Legacy for Users (SAFETEA-LU); the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (MAP-21), enacted July 5, 2012; and the Fixing America's Surface Transportation (FAST) Act, enacted December 4, 2015, have provided contract authority for the TIFIA Program to assist in the funding of nationally or regionally significant transportation projects. The subsidy costs and administrative expenses associated with this program are included in the Federal-aid Highway schedules.

National Infrastructure Investment

The Office of the Secretary of Transportation (OST) received appropriations totaling \$1,127 million for TIGER Discretionary Grants as part of the 2010 and 2011 Department of Transportation (DOT) Appropriations Acts. The appropriations authorized DOT to pay subsidy and administrative costs, not to exceed \$300 million, of projects eligible for Federal credit assistance under Chapter 6 of Title 23 United States Code. In 2012, \$45 million was provided for TIGER discretionary grants as part of the 2012 DOT Appropriation Act to pay subsidy and administrative costs. OST has delegated the authority to negotiate and administer Transportation Infrastructure Finance Innovation Act of 1998 loans under this program to the Federal Highway Administration.

American Recovery and Reinvestment Act of 2009

OST received a FY 2009 appropriation of \$1.5 billion into its Supplemental Discretionary Grants for a National Surface Transportation System as part of the American Recovery and Reinvestment Act of 2009 (ARRA). The ARRA appropriation authorized the DOT to pay subsidy and administrative costs not to exceed \$200 million, of projects eligible for Federal credit assistance under chapter 6 of title 23, United States Code. The Office of the Secretary of Transportation (OST) has delegated the authority to negotiate and administer TIFIA loans under this program to the FHWA.

**BUDGETARY RESOURCES**

No further amounts are requested for FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION  
FINANCING ACCOUNT - DIRECT LOAN**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-4123-0-3-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Obligations by program activity:</b>			
Credit program obligations:			
0710 Direct loan obligations	3,851	3,751	3,945
0713 Payment of interest to Treasury	417	482	601
0742 Downward reestimate paid to receipt account	81	659	.....
0743 Interest on downward reestimate	25	62	.....
0900 Total new obligations	4,374	4,954	4,546
<b>Budgetary Resources:</b>			
1000 Unobligated balance brought forward, Oct 1	4	1	.....
Financing authority:			
Borrowing authority, mandatory:			
1021 Recoveries of prior year unpaid obligations	14	.....	.....
1024 Unobligated balance of borrowing authority withdrawn	-13	.....	.....
1050 Unobligated balance (total)	5	1	.....
1400 Borrowing authority	4,041	4,548	4,289
1420 Borrowing authority permanently reduced			
1440 Borrowing authority, mandatory (total)	4,041	4,548	4,289
Spending authority from offsetting collections, mandatory:			
1800 Collected	671	894	460
1801 Change in uncollected payments, Federal sources	-110	-25	-149
1825 Spending Authority from offsetting collections to repay debt	-232	-464	-54
1850 Spending authority from offsetting collections, mandatory (total)	329	405	257
1900 Financing authority (total)	4,370	4,953	4,546
1930 Total budgetary resources available	4,375	4,954	4,546
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year	1	.....	.....
<b>Change in obligated balances</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	11,661	11,480	12,064
3010 Obligations incurred, unexpired accounts	4,374	4,954	4,546
3020 Financing disbursements (gross)	-4,541	-4,370	-4,001
3040 Recoveries of prior year unpaid obligations, unexpired	-14	.....	.....
3050 Unpaid Obligations, end of year	11,480	12,064	12,609
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1	-738	-628	-603
3070 Change in uncollected pymts, Fed sources, unexpired	110	25	149
3090 Uncollected pymts, Fed sources, end of year	-628	-603	-454
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	10,923	10,852	11,461
3200 Obligated balance, end of year	10,852	11,461	12,155
<b>Financing authority and disbursements, net:</b>			
Mandatory:			
4090 Financing authority, gross	4,370	4,953	4,546
4110 Financing disbursements, gross	-4,541	-4,370	-4,001
Offsets against gross financing authority and disbursements:			
Offsetting collections (collected) from:			
4120.01 Federal sources: Subsidy from program account	-312	-274	-155
4120.02 Federal sources: Upward Reestimate	-1	-161	.....
4120.03 Federal sources: Interest on upward reestimate	-1	-90	.....
4122.01 Interest on uninvested funds	-39	0	-2
4123.01 Non-Federal Sources - Interest payments	-104	-156	-249
4123.02 Non-Federal Sources - Principal payments	-214	-213	-54
4130 Offsets against gross financing authority and disbursements (total)	-671	-894	-460
Additional offsets against financing authority only (total):			
4140 Change in uncollected payments, Federal Sources, unexpired	110	25	149
4160 Financing authority, net (mandatory)	3,809	4,084	4,235
4170 Financing disbursements, net (mandatory)	-3,870	-3,476	-3,541
4180 Financing authority, net (total)	3,809	4,084	4,235
4190 Financing disbursements, net (total)	-3,870	-3,476	-3,541

STATUS OF DIRECT LOANS

In millions of dollars

Identification code: 69-4123-0-3-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Position with respect to appropriations act limitation on obligations:</b>			
1111 Direct loan obligations from current-year authority	3,851	3,751	3,945
1150 Total direct loan obligations	3,851	3,751	3,945
Cumulative balance of direct loans outstanding:			
1210 Outstanding, start of year	12,742	12,677	16,380
1231 Disbursement: Direct loan disbursements	4,009	3,093	3,400
1251 Repayments: Repayments and Prepayments	-214	-213	-54
1261 Adjustments: Capitalized interest	226	823	1,143
1263 Write-offs for default: Direct loans	-448	.....	.....
1264 Write-offs for default: Other adjustments	-3,638	.....	.....
1290 Outstanding, end of year	12,677	16,380	20,869

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION  
FINANCING ACCOUNT - DIRECT LOAN**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-4347-0-3-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Obligations by program activity:</b>			
Credit program obligations:			
0713    Payment of interest to Treasury	20	5	2
0742    Downward reestimate paid to receipt account	3	1	.....
0743    Interest on downward reestimate	1	.....	.....
0900 Total new obligations	24	6	2
<b>Budgetary resources:</b>			
1400    Borrowing authority	22	1	2
1440    Borrowing authority, mandatory (total)	22	1	2
Spending authority from offsetting collections, mandatory:			
Financing authority:			
Spending authority from offsetting collections, mandatory:			
1800    Collected	.....	.....	.....
1801    Change in uncollected payments, Federal sources	.....	.....	.....
1850    Spending authority from offsetting collections, mandatory (total)	.....	.....	.....
1900    Financing authority (total)	24	6	2
1930 Total budgetary resources available	24	6	2
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000    Unpaid obligations, brought forward, Oct 1	.....	.....	1
3010    Obligations incurred, unexpired accounts	24	6	2
3020    Financing disbursements (gross)	-24	-5	-2
3050    Unpaid obligations, end of year	.....	1	1
Uncollected payments:			
3060    Uncollected pymts, Fed sources, brought forward, Oct 1	.....	.....	.....
3070    Change in uncollected pymts, Fed sources, unexpired	.....	.....	.....
3090    Uncollected pymts, Fed sources, end of year	.....	.....	.....
Memorandum (non-add) entries:			
3100    Obligated balance, start of year	.....	.....	1
3200    Obligated balance, end of year	.....	1	1
<b>Financing authority and disbursements, net:</b>			
Mandatory:			
4090    Financing authority, gross	24	6	2
Financing disbursements:			
4110    Financing disbursements, gross	24	5	2
Offsets against gross financing authority and disbursements:			
Offsetting collections (collected) from:			
4120    Federal sources	.....	-111	.....
4123    Non-Federal sources - Interest payments	-2	-5	.....
4123    Non-Federal sources - Principal payments	.....	-478	.....
4123    Non-Federal sources (total)	-2	-483	.....
4130    Offsets against gross budget authority and outlays (total)	-2	-594	.....
Additional offsets against financing authority only (total):			
4140    Change in uncollected pymts, Fed sources, unexpired	.....	.....	.....
4160    Financing authority, net (mandatory)	22	-588	-2
4170    Financing disbursements, net (mandatory)	22	-589	2
4180    Financing authority, net (total)	22	-588	-2
4190    Financing disbursements, net (total)	22	-589	2

STATUS OF DIRECT LOANS

In millions of dollars

Identification code: 69-4347-0-3-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Cumulative balance of direct loans outstanding:</b>			
1210 Outstanding, start of year	531	536	59
1231 Disbursement: Direct loan disbursements	.....	.....	.....
1251 Repayments: Repayments and prepayments	.....	-478	.....
1261 Adjustments: Capitalized interest	21	1	1
1264 Write-offs for default	-16	.....	.....
1290 Outstanding, end of year	536	59	60

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION  
FINANCING ACCOUNT - DIRECT LOAN**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-4348-0-3-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Obligations by program activity:</b>			
Credit program obligations:			
0713 Payment of interest to Treasury	25	32	36
0741 Modification savings	12	.....	.....
0742 Downward reestimates paid to receipt accounts	12	4	.....
0743 Interest on downward reestimates	5	.....	.....
0900 Total new obligations	54	36	36
<b>Budgetary resources:</b>			
1000 Unobligated balance brought forward, Oct 1	.....	.....	.....
1021 Recoveries of prior year unpaid obligations	15	.....	.....
1024 Unobligated balance of borrowing authority withdrawn	-15	.....	.....
1050 Unobligated balance (total)	.....	.....	.....
Financing authority:			
Borrowing authority, mandatory:			
1400 Borrowing authority	51	32	31
1440 Borrowing authority, mandatory (total)	51	32	31
Spending authority from offsetting collections, mandatory:			
1800 Collected	18	9	8
1801 Change in uncollected payments, Federal sources	.....	.....	.....
1825 Spending authority from offsetting collections applied to repay debt	-15	-5	-3
1850 Spending authority from offsetting collections, mandatory (total)	3	4	5
1900 Financing authority (total)	54	36	36
1930 Total budgetary resources available	54	36	36
<b>Change in obligated balances</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	94	79	81
3010 Obligations incurred, unexpired accounts	54	36	36
3020 Financing disbursements (gross)	-54	-34	-113
3040 Recoveries of prior year unpaid obligations, unexpired	-15	.....	.....
3050 Unpaid obligations, end of year	79	81	4
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1	-2	-2	-2
3070 Change in uncollected pymts, Fed sources, unexpired	.....	.....	.....
3090 Uncollected pymts, Fed sources, end of year	-2	-2	-2
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	92	77	79
3200 Obligated balance, end of year	77	79	2
<b>Financing authority and disbursements, net:</b>			
Mandatory:			
4090 Financing authority, gross	54	36	36
4110 Financing disbursements, gross	54	34	113
Offsets against gross financing authority and disbursements:			
Offsetting collections (collected) from:			
4120 Federal sources	-4	-3	.....
4122 Interest on uninvested funds	.....	-1	-1
4123 Non-Federal sources	-14	-5	-7
4130 Offsets against gross financing auth and disbursements (total)	-18	-9	-8
Additional offsets against financing authority only (total):			
4140 Change in uncollected pymts, Fed sources, unexpired	.....	.....	.....
4160 Financing authority, net (mandatory)	36	27	28
4170 Financing disbursements, net (mandatory)	36	25	105
4180 Financing authority, net (total)	36	27	28
4190 Financing disbursements, net (total)	36	25	105

STATUS OF DIRECT LOANS

In millions of dollars

Identification code: 69-4348-0-3-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Position with respect to appropriations act limitation on obligations:</b>			
1131 Direct loan obligations exempt from limitation	.....	.....	.....
1150 Total direct loan obligations	.....	.....	.....
Cumulative balance of direct loans outstanding:			
1210 Outstanding, start of year	956	985	1,008
1231 Disbursement: Direct loan disbursements	.....	.....	77
1251 Repayments: Repayments and prepayments	-11	-2	-3
1261 Adjustments: Capitalized interest	20	25	28
1264 Write-off for default: Other adjustments	20	.....	.....
1290 Outstanding, end of year	985	1,008	1,110

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
TRANSPORTATION INFRASTRUCTURE FINANCE AND INNOVATION  
TIFIA GENERAL FUND PROGRAM ACCOUNT**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-0542-0	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Obligations by program activity:</b>			
0705 Reestimates of direct loan subsidy	3	.....	.....
0706 Interest on reestimates of direct loan subsidy	.....	3	.....
0900 Total new obligations	3	3	.....
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1	.....	.....	.....
Budget authority:			
Spending authority from offsetting collections, discretionary:			
1200 Appropriation	3	3	.....
1260 Appropriations, mandatory (total)	3	3	.....
1930 Total budgetary resources available	3	3	.....
<b>Change in obligated balances</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1	2	2	2
3010 Obligations incurred, unexpired accounts	3	3	.....
3020 Outlays (gross)	-3	-3	.....
3050 Unpaid obligations, end of year	2	2	2
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	2	2	2
3200 Obligated balance, end of year	2	2	2
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross	.....	.....	.....
Outlays, gross:			
4010 Outlays from new discretionary authority	.....	.....	.....
4011 Outlays from discretionary balances	.....	.....	.....
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4080 Outlays, net (discretionary)	.....	.....	.....
4090 Budget Authority (gross)	3	3	.....
4100 Outlays from new mandatory authority	3	3	.....
4160 Budget authority, net (mandatory)	3	3	.....
4170 Outlays, net (mandatory)	3	3	.....
4180 Budget authority, net (total)	3	3	.....
4190 Outlays, net (total)	3	5	.....

OBJECT CLASSIFICATION

In millions of dollars

Identification code: 69-0542-0	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Direct Obligations:</b>			
41.0 Grants, subsidies, and contributions	3	3	.....

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**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
RIGHT-OF-WAY REVOLVING FUND**

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**BACKGROUND**

The Federal-Aid Highway Act of 1968 authorized the establishment of a right-of-way revolving fund. This fund was used to make cash advances to States for the purpose of purchasing right-of-way parcels in advance of highway construction and thereby preventing the inflation of land prices from significantly increasing construction costs. The purchase of right-of-way is an eligible expense of the Federal-aid program.

This program was terminated by the Transportation Equity Act for the 21<sup>st</sup> Century of 1998, but will continue to be shown for reporting purposes as loan balances remain outstanding.

**BUDGETARY RESOURCES**

No new budgetary resources are requested in FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
RIGHT-OF-WAY (ROW) REVOLVING FUND  
LIQUIDATING ACCOUNT**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-8402-0-8-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Budgetary resources:</b>			
Unobligated balance:			
1000    Unobligated balance brought forward, Oct 1	.....	.....	.....
1021    Recoveries of prior year unpaid obligations	.....	.....	.....
1022    Capital transfer of unobligated balances to general fund	.....	.....	.....
1050    Unobligated balance (total)	.....	.....	.....
Budget authority:			
Spending authority from offsetting collections, mandatory:			
1800        Collected	.....	.....	.....
1820        Capital transfer of spending authority from offsetting collections to general fund	.....	.....	.....
1850        Spending authority from offsetting collections, mandatory (total)	.....	.....	.....
1930    Total budgetary resources available	.....	.....	.....
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000    Unpaid obligations, brought forward, Oct 1	4	4	.....
3020    Outlays (gross)		-4	.....
3040    Recoveries of prior year unpaid obligations, unexpired	.....	.....	.....
3050    Unpaid obligations, end of year	4	.....	.....
Memorandum (non-add) entries:			
3100    Obligated balance, start of year	4	4	.....
3200    Obligated balance, end of year	4	.....	.....
<b>Budget authority and outlays, net:</b>			
Mandatory:			
Outlays, gross			
4101        Outlays from mandatory balances	.....	4	.....
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4123        Non-Federal sources	.....	.....	.....
4160        Budget authority, net (mandatory)	.....	.....	.....
4170        Outlays, net (mandatory)	.....	4	.....
4180        Budget authority, net (total)	.....	.....	.....
4190        Outlays, net (total)	.....	4	.....

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
STATE INFRASTRUCTURE BANKS**

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**BACKGROUND**

In FY 1997, FHWA received an appropriation from the General Fund for the State Infrastructure Banks (SIBs) program.

All of the funds have been provided to the States to capitalize the infrastructure banks. Because the funding was provided as grants, and not loans, FHWA will not receive reimbursements of amounts expended for the SIBs program.

**BUDGETARY RESOURCES**

No new budgetary resources are requested in FY 2019.

**DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 STATE INFRASTRUCTURE BANKS  
 DIRECT LOAN FINANCING ACCOUNT**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-0549-0-1-401	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
Budgetary Resources:			
Unobligated balance:			
1000     Unobligated balance brought forward, Oct 1	1	1	1
1,930 Total budgetary resouces available	1	1	1
Memorandum (non-add) entries:			
1941     Unexpired unobligated balance, end of year	1	1	1
4180 Budget authority, net (total)	.....	.....	.....
4190 Outlays, net (total)	.....	.....	.....

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
HIGHWAY INFRASTRUCTURE PROGRAMS**

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**BACKGROUND**

In FY 2010, the Federal Highway Administration received a General Fund appropriation of \$650 million for the restoration, repair, and construction of highway infrastructure and other activities eligible under paragraph (b) of section 133 of title 23, United States Code. The authority for this appropriation is Division A, Title I of P.L. 111-117 (Consolidated Appropriations Act, 2010), Section 122 and was available through FY 2012.

**BUDGETARY RESOURCES**

No new budget authority is requested for FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
HIGHWAY INFRASTRUCTURE PROGRAMS**

PROGRAM AND FINANCING SCHEDULE

In millions of dollars

Identification code: 69-0548-0	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>Budgetary resources:</b>			
<b>Budget authority:</b>			
Appropriations, discretionary:			
1160 Appropriation, discretionary (total)	.....	.....	.....
<b>Change in obligated balance:</b>			
Unpaid obligations			
3000 Unpaid obligations, brought forward, Oct 1	7	.....	.....
3020 Outlays (gross)	-3	.....	.....
3041 Recoveries of prior year unpaid obligations, expired	-4	.....	.....
3050 Unpaid obligations, end of year	.....	.....	.....
Memorandum (non-add) entries:			
3100 Obligated balance, start of year	7	.....	.....
3200 Obligated balance, end of year	.....	.....	.....
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4011 Outlays from discretionary balances	3	.....	.....
4080 Outlays, net (discretionary)	3	.....	.....
4180 Budget authority, net (total)	.....	.....	.....
4190 Outlays, net (total)	3	.....	.....

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
PAYMENT TO THE HIGHWAY TRUST FUND**

---

**BACKGROUND**

No payments to the Highway Trust Fund occurred in FY 2017. No payments to the Highway Trust Fund are expected in FY 2018.

**BUDGETARY RESOURCES**

No payments to the Highway Trust Fund are expected in FY 2019.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
PAYMENT TO THE HIGHWAY TRUST FUND**

**PROGRAM AND FINANCING SCHEDULE**

In millions of dollars

Identification code: 69-0534-0	FY 2017 ACTUAL	FY 2018 ANNUALIZED CR	FY 2019 REQUEST
<b>New obligations:</b>			
Obligations by program by activity:			
0001 Direct program activity	.....	.....	.....
0900 Total new obligations	.....	.....	.....
<b>Budget authority:</b>			
Appropriations, mandatory:			
1200 Appropriation	.....	.....	.....
1260 Appropriation, mandatory (total)	.....	.....	.....
1930 Total budgetary resources available	.....	.....	.....
<b>Change in obligated balances</b>			
Unpaid obligations			
3000 Unpaid obligations, brought forward, Oct 1	.....	.....	.....
3010 Obligations incurred, unexpired accounts	.....	.....	.....
3020 Outlays (gross)	.....	.....	.....
3050 Unpaid obligations, end of year	.....	.....	.....
<b>Budget authority and outlays, net:</b>			
Mandatory:			
4090 Budget authority, gross	.....	.....	.....
4100 Outlays from new mandatory authority	.....	.....	.....
4160 Budget authority, net (mandatory)	.....	.....	.....
4170 Outlays, net (mandatory)	.....	.....	.....
4180 Budget authority, net (total)	.....	.....	.....
4190 Outlays, net (total)	.....	.....	.....

**EXHIBIT IV-1**  
**RESEARCH, TECHNOLOGY & EDUCATION**  
**DEPARTMENT OF TRANSPORTATION**  
**Budget Authority**  
**(\$000)**

<b>FEDERAL HIGHWAY ADMINISTRATION</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2019</b>	<b>FY 2019</b>
<b>Research, Technology &amp; Education (RT&amp;E) Program</b>	<b><u>ACTUAL</u></b>	<b><u>ANNUALIZED CR</u></b>	<b><u>REQUEST</u></b>	<b><u>APPLIED</u></b>	<b><u>DEVELOP.</u></b>
<b>A. Highway Research and Development</b>	<b>116,000</b>	<b>111,250</b>	<b>125,000</b>	<b>68,000</b>	<b>17,000</b>
<i>Highway Research and Development</i>	78,880	75,650	85,000	68,000	17,000
<i>Highway Research and Development (T)</i> <sup>1/</sup>	37,120	35,600	40,000		
<b>B. Technology and Innovation Deployment Program (T)</b>	<b>62,640</b>	<b>60,075</b>	<b>67,500</b>	<b>0</b>	<b>0</b>
<b>C. Training and Education (T)</b>	<b>22,272</b>	<b>21,360</b>	<b>24,000</b>	<b>0</b>	<b>0</b>
<b>D. Intelligent Transportation Systems</b>	<b>92,800</b>	<b>89,000</b>	<b>100,000</b>	<b>79,000</b>	<b>0</b>
<i>Intelligent Transportation Systems</i>	73,312	70,310	79,000	79,000	0
<i>Intelligent Transportation Systems (T)</i>	19,488	18,690	21,000		
<b>E. University Transportation Centers (UTC) (T)</b> <sup>2/</sup>	<b>69,600</b>	<b>66,750</b>	<b>77,500</b>	<b>0</b>	<b>0</b>
<b>F. State Planning and Research (SP&amp;R)</b> <sup>3/</sup>	<b>199,894</b>	<b>204,214</b>	<b>208,826</b>	<b>125,296</b>	<b>31,324</b>
<i>State Planning and Research (SP&amp;R)</i>	149,921	153,161	156,620	125,296	31,324
<i>State Planning and Research (SP&amp;R) (T)</i>	49,974	51,054	52,207		
<b>G. Administrative Expenses</b>	<b>20,736</b>	<b>21,130</b>	<b>21,130</b>	<b>12,679</b>	<b>3,169</b>
<i>Administrative Expenses</i>	15,552	15,847	15,847	12,679	3,169
<i>Administrative Expenses (T)</i>	5,184	5,282	5,282		
<b>H. Advanced Transportation &amp; Congestion Mgmt. Technologies Deployment [Non-add]</b> <sup>4/</sup>	<b>[60,000]</b>	<b>[60,000]</b>	<b>[60,000]</b>	<b>0</b>	<b>0</b>
<b>Subtotal</b>	<b>583,942</b>	<b>573,779</b>	<b>623,956</b>	284,975	51,493
<b>Subtotal, Research and Development</b> <sup>5/</sup>	317,665	314,968	336,467	284,975	51,493
<b>Subtotal, Technology Investment (T)</b> <sup>5/</sup>	266,278	258,811	287,489		
<b>Add: Bureau of Transportation Statistics</b> <sup>2/</sup>	26,000	26,000	26,000		
<b>Less: Administrative Expenses</b>	-20,736	-21,130	-21,130		
<b>Less: State Planning and Research (SP&amp;R)</b>	-199,894	-204,214	-208,826		
<b>Total Title V Programs</b> <sup>5/ 6/</sup>	<b>389,312</b>	<b>374,435</b>	<b>420,000</b>		

1/ Throughout the exhibit, (T) represents funding used for technology investment.

2/ Details for this program are contained in the Office of the Assistant Secretary for Research and Technology FY 2019 budget.

3/ Title 23 U.S.C. 505(b) requires State DOT's to expend no less than 25 percent of their annual SP&R funds on RT&E activities. Total SP&R funding represents 2 percent of apportioned programs, exclusive of the Metropolitan Planning Program.

4/ Per the FAST Act, the Advanced Transportation & Congestion Management Technologies Deployment Program will be funded by set-asides from Highway Research and Development, Technology and Innovation Deployment Program, and Intelligent Transportation Systems.

5/ Subtotals may not add due to rounding.

6/ FY 2017 amounts reflect the 7.2% "lop-off" resulting from the imposition of the obligation limitation. FY 2018 amounts reflect an estimated "lop-off" of 11.0% based on an annualized CR. FY 2019 amounts are authorized amounts prior to any "lop-off" determined for FY 2019.

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**FEDERAL HIGHWAY ADMINISTRATION  
RESEARCH, TECHNOLOGY, AND EDUCATION (RT&E)**

**RT&E PROGRAM NAME: HIGHWAY RESEARCH & DEVELOPMENT PROGRAM**

**AMOUNT REQUESTED FOR FY 2019: \$125 million**

**Project Name or Program Activity: Core Highway Research and Development Programs**

**Objectives:** To research and develop transformational technologies that improve the mobility of people and goods; stimulate growth, productivity, and competitiveness; reduce congestion; promote safety; improve the durability and extend the life of transportation infrastructure; preserve the environment; preserve the existing transportation system, and support the transition to the future transportation system through innovative practices and technologies.

**Description:** FHWA's core R&D programs improve safety, enhance the transportation infrastructure, reduce congestion, provide data and analysis to transportation decision-makers, and improve infrastructure designs to enhance connectivity throughout communities.

- The Safety research area addresses the contributing factors of deaths and injuries related to roadway design, construction, and maintenance, and develops robust data analysis tools that enable transportation professionals to match contributing factors with cost-effective countermeasures.
- The Infrastructure area engages in forward-looking researches to develop the advanced technologies, practices and knowledge to deliver projects faster and more efficiently; enable greater accountability for public investments in highway infrastructure through effective transportation performance management, support; enable achievement and maintenance of a state of good condition; and improve the sustainability of highway infrastructure. Among the transformational technologies and innovations to be pursued are automation and robotics, Civil Integrated Management (CIM), unmanned aerial vehicles (UAVs), nondestructive evaluation, simulation, and advanced technologies for material characterization and assessment. These innovations support and enable highway agency efforts to achieve and sustain a state of good repair, enhance the effectiveness of transportation performance management and deliver projects faster and more efficiently.
- The Operations area develops innovative technologies and processes that lead to system-wide improvements in how FHWA and its State and local partners manage and increase the reliability of the National Highway System, and conducts activities to improve the efficient movement of freight on the National Highway Freight Network.
- The Policy area develops and implements new data methods, supports international exchanges and collaboration across all FHWA offices, evaluates the impacts of a broad range of policy options, and analyzes current and emerging issues that will affect how transportation systems are built, maintained, and used.
- The Planning and Environment area assesses new tools and processes that can consider the complex relationships among individuals, communities, economy, and environment;

enable better decisions; lead to improved outcomes; and support the future transportation system.

- The Exploratory Advanced Research program conducts longer-term, higher-risk research in all the research areas above. These research products have the potential for dramatic breakthroughs in transportation and ensure a continued U.S. pipeline of technology innovations.
- The Turner-Fairbank Highway Research Center is a federally-owned and operated research facility in McLean, VA, where most of FHWA’s research projects are conducted, sponsored, or coordinated.

<b>Outputs and Deliverables</b>	<b>Outcomes and Impacts</b>
Safety analysis tools, procedures, and design guides that leverage advanced analytical techniques.	Better highway, intersection, roadside, pedestrian, and bicyclist safety design.
Countermeasures to keep vehicles on the road and to reduce the severity of crashes, particularly pedestrian and bicycle crashes.	Improved safety through reduction of crash frequency and severity.
Improved design systems, materials selection, and performance prediction technologies to optimize infrastructure performance for new and recycled materials.	Enhanced quality and durability of pavements, bridges, tunnels, and other highway structures.
Tools and technologies that enhance the speed and efficiency of highway construction, inspection and condition assessment, and life-cycle management. Specifications and guidelines to improve the durability, resilience and sustainability of highway infrastructure. Information, tools and guidelines to support effective, data-driven management of highway infrastructure.	More rapid and efficient construction, reduced costs (to both the agency and those affected by collateral impacts of highway construction). Improved infrastructure durability and sustainability. More cost-effective highway infrastructure.
Publicly available data sets documenting the performance of a well-characterized set of pavement test sections and bridges.	Improved evidence-based infrastructure performance management decisions founded on enhanced understanding of long-term performance . More cost-effective highway infrastructure.
Emissions, energy efficiency and fuels, sustainability, resiliency and adaptation, connectivity, bicycle and pedestrian and livability strategies.	Improved state of the practice regarding the impact of transportation on the environment and communities.
Techniques to improve decision-making through collaboration, coordination and communication.	Accelerate projects and environmental mitigation.
Promotion of environmental streamlining/stewardship and sustainability.	Strengthened and advanced State/local and Tribal capabilities regarding surface transportation and the environment.

Techniques to measure congestion when it occurs and to assess the performance of the highway system.	Improved decision-making tools to address causes of congestion.
Techniques to measure the role freight movement plays in congestion and the effects of congestion on interstate commerce.	Improved freight operations and interstate commerce.
Techniques and tools to proactively manage the transportation system during disruptions such as traffic incidents, work zones, adverse weather, special events, and emergency situations.	Decreased congestion during disruptive events.
System specifications, test results, benefits assessments, and stakeholder understanding of connected automation applications to improve operations.	Decreased recurring congestion and more realistic plans for future highways.
Innovative techniques to better balance transportation supply and demand through congestion pricing.	Improved tools for decision-makers addressing congestion; improved traffic flow.
<i>Status of the Nation's Highways, Bridges, &amp; Transit: Conditions &amp; Performance</i> report to Congress.	Reliable data and analysis for improved transportation decisions.
Enabled Data and Information Framework Supporting Informed Decision Making.	Provided foundational and systemic data for safety, infrastructure, planning, operations and policy research and program management.

**Project Name or Program Activity: Surface Transportation System Funding Alternatives**

**Objectives:** To develop solutions to maintain the long-term solvency of the Highway Trust Fund.

**Description:** As required by the FAST Act, this program will provide grants to States to demonstrate user-based revenue mechanisms that utilize a user fee structure to maintain the long-term solvency of the Highway Trust Fund. The FAST Act made available \$15 million in FY 2016 and \$20 million for each year from FY 2017 through FY 2020 for this program.

<b>Outputs and Deliverables</b>	<b>Outcomes and Impacts</b>
Recommendations regarding adoption of user-based alternative revenue mechanisms.	Improved functionality of user-based alternative revenue mechanisms.
Lessons learned for future deployment of alternative revenue mechanisms that utilize a user fee structure.	Increased public awareness regarding the need for alternative funding sources for surface transportation programs.

**Project Name or Program Activity: Performance Management Data Support Program**

**Objectives:** To improve data collection for performance analysis.

**Description:** Per the FAST Act, up to \$10 million for each of fiscal years 2016 through 2020 may be used to carry out this program. This initiative will develop, use, and maintain data sets and data analysis tools to assist metropolitan planning organizations, States, and the FHWA in carrying out performance management analyses.

<b><u>Outputs and Deliverables</u></b>	<b><u>Outcomes and Impacts</u></b>
Reliable data sets and data analysis tools for performance management analysis.	Improved decision-making tools to evaluate the effects of project investments on performance.

**RT&E PROGRAM NAME: TECHNOLOGY AND INNOVATION DEPLOYMENT PROGRAM (TIDP)**

**AMOUNT REQUESTED FOR FY 2019: \$67.5 million**

**Objectives:** To accelerate the adoption of proven innovative practices and technologies as standard practices to significantly improve safety, system efficiency, infrastructure health, reliability and performance, and livable/sustainable communities. The TIDP program aims to put transformational technologies and innovations in the hands of practitioners and industry partners to move toward the highway system of the future.

**Description:** FHWA achieves the objectives of this program through the following sub-programs:

- *Every Day Counts Initiative (EDC):* The FAST Act recognizes the success of the EDC program and adds it as a required program. EDC identifies under-utilized market-ready technologies with high pay-offs and accelerates their deployment and acceptance throughout the Nation.
- *Accelerated Innovation Deployment (AID) Demonstration Program:* Provides incentive funding for eligible entities to accelerate the implementation and adoption of innovation in highway transportation at the project level. This program aims to move transformational technologies into the field faster to enhance the current state while also setting the stage for future technological development.
- *State Transportation Innovation Council (STIC) Incentive Program:* FHWA offers technical assistance and resources to support the standardizing of innovative practices in a State transportation agency or other public sector STIC stakeholders. The STIC Network is supported by the STIC Incentive Program, which provides funding up to \$100,000 per State per federal fiscal year to support or offset the costs of standardizing innovative practices in a State transportation agency or other public sector STIC stakeholder.
- *Accelerated Market Readiness (AMR) Program* feeds the innovation pipeline and bridges the gap between research and technologies that are proven-in-the-field. The AMR program works with both internal and external stakeholders and partners, including the National STIC Network and the AASHTO Innovation Initiative.
- *Accelerated deployment of pavement technologies:* The FAST Act extends the designation of \$12 million per fiscal year to promote, demonstrate, support, and

document the application of innovative pavement technologies, practices, performance, and benefits.

- *Advanced Transportation and Congestion Management Technologies Deployment Program*: The FAST Act requires FHWA to award grants to States and other entities to deploy technologies with the potential to relieve congestion and improve the quality of life. The FAST Act made available \$60 million per fiscal year for this program.
- Accelerated deployment of innovative methods, practices, and technologies to States and transportation practitioners through program area-focused implementation.

<b><u>Outputs and Deliverables</u></b>	<b><u>Outcomes and Impacts</u></b>
Accelerated deployment of innovative methods, practices, and technologies to States and transportation practitioners.	Improved safety and infrastructure integrity; increased support of all DOT and FHWA goals and objectives.
Accelerated adoption of market-ready technologies through the EDC initiative.	Significant acceleration of the benefits provided by new technologies.
Incentive funding to STICs to conduct internal assessments, develop guidance, standards, and specifications, implement process changes, or fund other activities to deploy innovations.	Increased use of innovations though assisting States offset the risks of trying innovations.
Grants to States to implement advanced transportation and congestion management technologies.	Reduced congestion, improved travel reliability.

**RT&E PROGRAM NAME: TRAINING AND EDUCATION (T&E)**

**AMOUNT REQUESTED FOR FY 2019: \$24 million**

**Objectives:** To foster a safe, efficient, and environmentally sound surface transportation system by improving skills and increasing the knowledge of the transportation workforce and decision makers through training and information exchanges. To attract qualified students to the field of transportation and advance transportation workforce development.

**Description:** This program provides leadership, training, educational materials and resources for the development and delivery of training, professional development and education programs to improve the quality of our highway system and its intermodal connections. It also provides educational opportunities to the surface transportation community through developing core competencies and new skills, enabling technology transfer, and sharing best practices.

<b><u>Outputs and Deliverables</u></b>	<b><u>Outcomes and Impacts</u></b>
Training resources to customers, partners, and learners in every State.	Improved workforce training.
Information exchange, professional development, training, and facilitate technology transfer to local governments, Tribes and Federal Land Management Agencies	Advancements in State, local, Tribal, and Federal Land Management Agencies capabilities regarding the complex relationships in surface transportation.
Scholarships, fellowships, educational grants.	Advancement of careers in transportation.
The National Network for the Transportation Workforce (NNTW) consisting of five Regional Surface Transportation Workforce Centers serves as a resource to support, grow and maintain a skilled and career-ready transportation workforce.	Strategic partnerships to communicate workforce programs and best practices to educators and employers.
Grants to educational pipeline organizations for educational materials and innovative practices in transportation.	A well-educated transportation workforce.
Congressionally-mandated centers for surface transportation excellence to address the areas of environment, surface transportation safety, rural safety, and project finance.	Performance-based surface transportation programs and activities in the areas of environment, safety, and project finance.

**RT&E PROGRAM NAME: INTELLIGENT TRANSPORTATION SYSTEMS PROGRAM (ITS)**

**AMOUNT REQUESTED FOR FY 2019: \$100 million**

**Project Name or Program Activity: Connected Vehicles (CV)**

**Objectives:** To integrate CV system needs into legacy ITS (Research); to collect benefits and costs and implementation lessons learned information from high priority CV applications (Development); and to support State and local, and transit agency integrating CV environment deployments (Adoption).

**Description:**

The U.S. DOT’s top priority is the safety of all users of the transportation system. In keeping with this objective, the ITS Joint Program Office (JPO) in coordination with U.S. DOT’s modal entities and in collaboration with state officials, industry, car manufacturers, academia, and other organizations, created a technology-driven framework to advance CV development. The CV Program is the keystone of ITS JPO’s research and engagement process building on over a decade of experience aligned with U.S. DOT’s mission of advancing safety innovations in transportation. Capabilities leveraging these safety innovations also have demonstrated

capability to provide new levels of personal mobility and dramatically improve the efficiency of goods movement.

The flagship effort of the program is the CV Pilot Deployment Program, funding large-scale CV system implementation efforts led by the New York City Department of Transportation (NYCDOT); the Tampa Hillsborough Expressway Authority (THEA); and the Wyoming Department of Transportation (WYDOT). Similar, interoperable technologies are being used differently at these three sites to improve safety in environments as diverse as dense urban grid networks and isolated high-plains interstates. The three sites piloted a deployment planning process that led to a design/test/build phase culminating in an operational phase in 2018. These efforts are transferable to other regions in the U.S.

<b><u>Outputs and Deliverables</u></b>	<b><u>Outcomes and Impacts</u></b>
Evaluate CV Pilot sites in New York City, Tampa, FL and Wyoming.	Demonstrations of CV environments that fit into real-world environments of today.
Operate SCMS for CV deployment sites.	Real-time and real-world data to help with transportation planning and transportation system operations.
Knowledge and Technology Transfer (KTT) to Support CV Environment	Increase in safety, mobility, system efficiency and access to resources for disadvantaged groups, and decreases in vehicle emissions.
	Increased opportunities to partner with non-government groups, such as private industry and universities.
	Reduction of fatalities through weather-related safety, infrastructure-based, and other applications.

**Project Name or Program Activity: Automated Vehicles (AV)**

**Objectives:** To define the core elements and the performance criteria and appropriate standards for automation (Research); to test and evaluate automation components in the Smart City Challenge and FAST Act Advanced Transportation and Congestion Management Technologies Deployment Program grants, as well as in other operational scenarios (Development); and to define the Federal role in facilitating and encouraging deployment of automated systems (Adoption).

**Description:** The development of AV technology is occurring at a rapid pace, with industry investing billions of dollars a year. Several States have enacted legislation regarding AV and testing currently continues on public roads. Partially automated vehicles are available in the market today and heavy vehicle and low-speed shuttle automation technologies are approaching commercialization.

Recognizing the importance of these advancements, the U.S. DOT is playing a significant role in addressing the key technological and institutional barriers that have emerged. The Intelligent Transportation System Joint Program Office (ITS JPO) initiated the AV research with a multi-modal program plan. The goal of ITS JPO automation research is to promote policy and technical research to reduce risks and produce positive outcomes. The program seeks to “enable safe, efficient, and equitable integration of automation into the transportation system.”

ITS program research is conducted by ITS JPO staff and stakeholders in collaboration with other U.S. DOT modal agencies in keeping with the ITS JPO’s coordination role. The ITS JPO advances and coordinates the Department’s cross modal ITS research program. Research investments are determined through an inclusive, collaborative, interactive, and iterative process, with a wide mix of modal engagement opportunities. The process includes modal program managers; the Strategic Planning Group (SPG), made up of senior modal representatives; and the Management Council (MC), which is comprised of modal administrators.

Automation is one of the six program areas identified in the Modal Research Plan. For FY 2019 the ITS JPO estimates \$10 Million dollars for research investment in automation. However, this amount is likely to change based on emerging needs, issues, and trends. The ITS JPO works closely with NHTSA, FHWA, FTA, FMCSA, and MARAD to address key technical and policy challenges for automation.

<b><u>Outputs and Deliverables</u></b>	<b><u>Outcomes and Impacts</u></b>
<p>Complete a study of automated vehicle intent and status communication with other road users and report results.</p> <p>Conduct human factors evaluations of automated commercial vehicle concepts.</p> <p>Conduct driver vigilance research for Level 2 and 3 AV systems.</p> <p>Test the safety of transfer of control for production automated vehicles.</p> <p>Systematically investigate the effects of individual and combined disengagement factors on driver re-engagement time and success in Level 2 and Level 3 vehicles.</p>	<p>Reduce the number and severity of crashes caused by drivers or by other conditions (e.g. weather, pedestrians, and roadway conditions).</p>
<p>Incorporate connected driver assistance automation into transportation systems management and operations.</p> <p>Conduct truck platooning operational tests and infrastructure impact analyses</p>	<p>Increase the safety and efficiency of roadway infrastructure.</p>

Advance the state-of-the-practice for understanding the impacts of AVs on congestion, personal mobility, travel behavior, and vehicle ownership.	Expand the reach of transportation modes to disabled and older users and provide “first and last mile” connectivity services for all users.
Assess the mobility and equity impacts of automated vehicle deployment.	Quantify system performance benefits from automation.

**Project Name or Program Activity: Emerging Technology**

**Objectives:** The Emerging Technology program initiatives focus on cultivating the next generation of transportation systems. As the scale of ITS increases, vehicle manufacturers, infrastructure providers, innovators, and entrepreneurs discover new opportunities to use technology and the data that will be generated. These technological advances, new functionality, new applications, new operational concepts, and disruptive innovations need to be tracked by the U.S. DOT to determine technological, market, and demographic trends throughout the globe and across industries to seek, evaluate and sometimes incubate emerging capabilities that demonstrate the potential to transform transportation. As this happens, the U.S. DOT will be positioned and engaged as a partner to guide research, development, and technology adoption in a systematic manner.

**Description:** This area scans the technology horizon for emerging technologies and trends. It addresses our statutory requirement for the Small Business Innovation Research (SBIR) program as well as conducting focused technology inquiries on emerging capabilities with a focus on future generations of transportation systems. An example of a major initiative in Emerging Capabilities program is the Smart City Challenge. In June 2016, Columbus was selected as the winner of the Smart City Challenge. The deployment planning process, design/test/build, and operational phases of the Columbus effort should lead to transferrable technology strategies for adoption elsewhere in the US.

<b><u>Outputs and Deliverables</u></b>	<b><u>Outcomes and Impacts</u></b>
Conduct an extensive demonstration and evaluation with Columbus, Ohio to test, capture, evaluate and demonstrate the benefits of connected city concepts.	Forge stronger relationships and partnerships with private industry and universities.
Identify truck port staging, queuing and access technology applications and approaches for the ITS MARAD Program.	Ability to adapt existing or upcoming program to accommodate new ITS technologies.
	Stimulate economic growth through innovation and technological leadership.

**Project Name or Program Activity: Enterprise Data**

**Objectives:** To integrate new data sets with other legacy data management systems (Research); to identify a model for data management and ownership (Development); and to enable new business relationships between the public and private sector to ensure privacy protection (Adoption).

**Description:** As our transportation system becomes more technologically advanced, connected, and automated, it may generate unprecedented amounts of data of increasing complexity. New methods to collect, share, and use these data may be needed for management and operations of ITS, and state and local governments need to have the capacity – and motivation – to implement these new methods nationwide to enable interoperability of the future transportation system and effective privacy protection for travelers. The Enterprise Data program will develop a better understanding of critical uses for these data, their value for the public, private, and academic sectors, and the potential Federal role in enabling these data to be collected and shared to unlock the full potential societal value of deploying these new technologies.

<b><u>Outputs and Deliverables</u></b>	<b><u>Outcomes and Impacts</u></b>
Identification of opportunities to integrate CV data and enhanced data collection into transportation management systems for integrated big data in operational practice.	Improve quality (accuracy and timeliness) of data.
Conduct national/regional workshops (and supporting virtual events/activities) to elicit stakeholder needs related to data sharing, identify potential approaches to federate data among operational data environments, and summarize findings.	Increase efficiency of information sharing. Assuring the public that the privacy of data will be protected.
Engage State, metropolitan, and local agencies regarding the value of sharing data among multiple Operational Data Environments (ODEs), develop use cases for sharing real-time data among ODEs as well as finding regional/national uses of the data, development of institutional, financial, and technical products useful to encouraging efficient data sharing across jurisdictions and functional boundaries in the surface transportation system.	Stimulate innovation in new applications by enabling research.  Monitor performance and enabling more efficient responses.

**Project Name or Program Activity: Interoperability**

**Objectives:** To develop and evolve a comprehensive National ITS reference system architecture to support large scale safe, efficient and secure interoperable ITS infrastructure, connected vehicle, and connected automation deployments across the nation – and across borders with

Canada and Mexico (Development); to develop and maintain an inventory of candidate interfaces for standardization and support standards development efforts for interfaces where there is greatest public interest and benefit, including those interfaces required to support regulatory activity (Development); to cooperate internationally, leveraging common interests to reduce US resource requirements, access broader expertise, speed development and harmonize architecture and standards to support an international marketplace for US vendors (Adoption); and to facilitate availability of testing and certification processes and procedures to ensure required interoperability and regulatory compliance (Adoption).

**Description:**

Interoperability is essential for the safe, secure and efficient operation of the transportation system. As ITS are focused on the application of Information Technology (IT) to manage and operate the surface transportation network, the interoperability and cybersecurity needs are partially analogous to those of the internet with the added dimension of ITS supporting operation of physical systems which move people and goods -- where failures can have severe consequences.

As ITS evolves to include technology installations to infrastructure to greatly improve transportation system performance – for example traffic signal coordination or ramp metering – to a nationwide or, preferably North American, complex “system of systems” which includes all types of travelers and system operators as well, the secure system-wide interoperability becomes far more critical. Incorporating CV capabilities offers great promise to improve safety and mobility while reducing fuel consumption delay time. However, once vehicles and other mobile participants, which can easily travel across North America, become part of the ITS system, multi-regional interoperability becomes a requirement rather than merely a benefit. Beyond interoperability, standards-based ITS deployments can facilitate more competitive procurement of ITS components and systems and incentivize innovation. Open, interoperable and secure systems will reduce life-cycle cost and increase performance. ITS JPO supports interoperability via funding and work program execution in cross-modal cooperation with all US DOT surface transportation modes along with state, local, international, industry and academic partners

<b>Outputs and Deliverable</b>	<b>Outcomes and Impacts</b>
<p>Release of second version of the integrated ITS reference architecture and toolsets to support large-scale infrastructure and connected vehicle deployments. Architecture evolution to continue to remain consistent with ITS infrastructure, connected vehicle and connected automation technological advancements, inclusive of and stakeholder input, and leveraging international cooperation when in the public interest. Provide support to State and local ITS deployers to assist in development and maintenance of regional architectures.</p>	<p>Secure nationwide interoperability for all participants – vehicles and other mobile participants included - in the ITS system inclusive of ITS-supported cross border movement of people and goods.</p> <p>Architecture and standards tools and solutions that facilitate efficient, effective and secure interoperable ITS infrastructure, connected vehicle and connected automation deployments.</p> <p>Efficient, standardized sharing of relevant information across transportation network</p>

<p>Complete detailed IT and ITS standards recommendations for all interfaces within the connected vehicle portion of the system architecture, identify remaining gaps to be addressed and begin cooperative work to address these gaps. Work is conducted in resource-sharing collaboration with Australia and Europe and possibly other partners; leveraging common interests to minimize cost to U.S. while accessing international expertise when in the U.S. interest.</p> <p>Evaluate and initiate internationally cooperative effort to further enhance support for full-scale connected and automated vehicle developments by adding detailed test and certification recommendations for key interfaces within the connected vehicle portion of the architecture. Work planned to be conducted in resource-sharing collaboration with Australia and Europe and possibly other partners; leveraging common interests to minimize cost to U.S. while accessing international expertise when in the US interest.</p> <p>Building on the successful completion of vehicle-to-vehicle standards to support initial operating capability, continued development and updates of key vehicle –to-infrastructure standards to support connected vehicle deployment, leveraging international cooperation when in the U.S. interest.</p> <p>Ongoing support for interoperable architectures with Mexico and Canada to permit North American interoperability for all ITS services and efficient cross-border movement of people and goods.</p> <p>Self-sustaining certification capability for key connected vehicle and connected automated vehicle capabilities.</p>	<p>operators, users and stakeholders as well as archiving of information to support transportation planning and other analyses.</p> <p>Increased harmonization between U.S. and other global ITS architectures and standards, resulting in broader, more efficient markets for vehicles, infrastructure and services and greater business opportunities abroad for US suppliers.</p> <p>Needed maintenance and updates of published standards required to support Nationwide – and preferably North American – interoperability to assure suitability for intended purposes, security and required forward/backward compatibility to support optimizing performance and life-cycle cost.</p>
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**Project Name or Program Activity: Accelerating Deployment**

**Objectives:** To define collaboration and communication mechanisms and targets to encourage public and private investment (Research); to develop comprehensive cost benefits and analytic tools that allow deployers to understand the financial and operational benefits of new technologies and systems (Development); and to establish the tools that support the new user base (Adoption)

**Description:** As new ITS technologies and systems evolve into market-ready products, the ITS program is addressing questions associated with adoption and deployment. The goal of the Accelerating Deployment program is to speed up the transformation of ITS research and prototypes into market-ready technologies that are commercially viable and adopted by the transportation community. This program provides communication and education support to facilitate awareness, understanding, acceptance, adoption, and deployment of ITS technologies across stakeholder groups; and ensures effective partnerships are fostered and developed at various levels – executive, program, and project. We seek to spur adoption of technology, and help stakeholders and localities deploy maturing ITS systems. ITS JPO provides knowledge transfer, and supports technical assistance, training, outreach, program evaluation, and other stakeholder engagement. The program supports advancing ITS research, to initial adoption, and subsequently on to wider scale deployment in coordination with other stakeholders at the Federal, State, regional and local levels.

<b><u>Outputs and Deliverables:</u></b>	<b><u>Outcomes and Impacts</u></b>
Prepare publications in Technical Journals for connected and automated transportation infrastructure outreach support.	Accelerate deployment by assisting with transition planning, training, transition plans, timelines and milestone development.
Research recommendations for ITS transit technical support.	Accelerate deployment through communication and education support to facilitate awareness, understanding, acceptance, adoption, and deployment of ITS technologies across all stakeholder groups.
Conduct workshops to increase technical knowledge of connected and automated transportation infrastructure deployers.	
Create Emerging Technologies outreach and training activities.	Develop effective partnerships at various levels – executive, program and project. The partnerships will encompass a wide range of public and private partners.
Develop University ITS & Community College ITS Workshops to facilitate deployment of ITS and connected and automated transportation infrastructure teaching within higher education venues.	
Conduct stakeholder outreach through workshops and webinars including peer-to-peer events.	

Provide active technical assistance to early deployers of connected and automated transportation infrastructure and other emerging ITS technologies.	
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**RT&E PROGRAM NAME: STATE PLANNING & RESEARCH (SP&R)**

**AMOUNT REQUESTED FOR FY 2019: \$208.83 million (non-add)**

**Objectives:** To solve transportation problems identified by the States. To encourage cooperation among States to leverage funds and conduct research of relevance to multi-State regions.

**Description:** States are required to set aside 2 percent of the apportionments they receive from five of the major Federal-aid programs authorized in the FAST Act for their State Planning and Research Program. At least 25 percent of the total SP&R has to be used for research, development, and technology transfer purposes. Each State may tailor its SP&R program to meet the local needs. High priority is given to applied research on State or regional problems, transfer of technologies from researchers to users, and research for setting standards and specifications. States can contribute SP&R research funds to cooperative research programs such as the National Cooperative Highway Research Program and transportation pooled fund studies.

<b><u>Outputs and Deliverables</u></b>	<b><u>Outcomes and Impacts</u></b>
Reports, data, and tools that meet State and local needs.	Enhanced solutions to highway problems identified by the States.
Technology deployment activities essential to States and local transportation agencies.	Adapting findings to practical applications by developing and transferring new technologies.
Contribution to cooperative research programs such as the National Cooperative Highway Research Program, TRB, and Transportation Pooled Fund projects.	Enhanced collaboration practices with transportation stakeholders.
Comprehensive truck size and weight research including assessments of emerging trends and technologies.	Better informed policy decisions that balance safety, productivity, and infrastructure preservation.

**EXPECTED OUTPUTS OF INTERNAL DOT COLLABORATION (Applies to all RT&E programs)**

Examples of current and ongoing collaborative efforts include:

- Accessible Transportation Technologies Research Initiative (ATTRI): FHWA leads ATTRI, a multi-modal U.S. DOT effort designed to enhance mobility choices for

travelers with disabilities, including those with mobility, vision, hearing and intellectual impairments, veterans with disabilities, as well as our aging population. The goal is to provide them with the capability to reliably, safely and independently plan and execute their travel, which in turn allows for more opportunities to work and connect. The Federal Transit Administration, the ITS JPO, the National Institute of Disability and Rehabilitation Research and other Federal agencies are participating. Solutions being expored under the ATTRI program will bring a hostistic new approach to completing a trip, getting from point a to point b. These solutions will use emerging new technologies, universal design, and inclusive Information Communication Technologies (ICT) to enhance the total travel chain experience for travelers with disabilities and others.

- FHWA coordinates annual publication of the “Freight Facts and Figures”, developed in partnership with BTS, FTA and MARAD-- a multi-modal snapshot of freight movement information.
- FHWA partners with the U.S. Army’s Aberdeen Test Center and the Department of Homeland Security’s Federal Law Enforcement Test Center to support our research and testing of connected and automated vehicle applications and enabling technologies.
- FHWA partners with the State Department to design and crash test security barriers used to protect U.S. government facilities and personnel located around the world. FHWA continues to coordinate work addressing alternatives to traditional Portland cement concrete with FAA and other Federal agencies to advance understanding of how these materials may be effectively used in infrastructure applications.
- FHWA is partnering with the NHTSA Special Crash Investigation (SCI) Team to investigate crashes involving the most widely used energy absorbing guardrail end terminals as part of a two-year pilot in-service performance evaluation. This has led to the possibility of including several of the roadway study variables as standard features of future NHTSA data collection efforts.
- FHWA is working closely with NHTSA and FMCSA to ensure States have the resources and technical assistance to comply with the suspected serious injury reporting requirement in the Safety Performance Management Final Rule and NHTSA’s Highway Safety Grants Interim Final Rule. By April 15, 2019, States must use a single definition for reporting serious injuries to the U.S. DOT. This action will result in a consistent, coordinated and comparable serious injury data system.
- Safety Data and analytics – Exploratory Advanced Research Program investment in new tools for analysis of safety data including video image data will accelerate the ability of U.S. DOT modal agencies to develop lifesavings countermeasures and prepare for emerging transportation technologies. We already are testing preliminary results from these projects and coordinating with NHTSA, FTA, FMCSA and FAA. Freight data and analytics – Exploratory Advanced Research Program is investing in new methods for collecting and modeling freight data that will provide U.S. DOT modal agencies with an improved ability to make data-driven decisions to improve the economic benefits of reliable movement of goods. This work is closely coordinated with FMCSA, FRA, PHMSA, and BTS.

## **EXPECTED OUTPUTS OF EXTERNAL DOT COLLABORATION (applies to all RT&E programs)**

Examples of current and ongoing collaborative efforts include:

- FHWA staff annually participates in the National Cooperative Highway Research Program (NCHRP) by reviewing problem statements, participating in selection panels and synthesis groups. In addition, FHWA has provided problem statements describing needed analysis of the Long Term Pavement Performance Data for possible pursuit via the NCHRP.
- FHWA administers the Transportation Pooled Fund program, which pools funds from States (generally SP&R funds), federal agencies, and private entities that allow participants to collaborate on research in areas of interest to one or more States and other partners.
- FHWA administers the Transportation Pooled Fund program, which pools funds (generally SP&R funds) for the States to perform research in areas of interest to one or more States.
- National Transportation Liaison Community of Practice: Transportation liaisons facilitate the environmental and permit review processes for transportation projects by providing technical assistance and coordinating between resource and regulatory agencies, State departments of transportation, and metropolitan planning organizations. FHWA created a web site to assist liaisons in sharing information and resources. The site includes a resource library, list of subject matter experts, quarterly liaison profiles, a calendar of events, and a newly launched discussion board.
- The FHWA Exploratory Advanced Research Program engages federally funded basic research programs to identify and demonstrate the potential for highway transportation applications from advances in science and engineering and Defense Department research programs and laboratories to identify and demonstrate the potential for civilian uses of advances in military technology
- The Global Benchmarking Program provides a dedicated mechanism for obtaining and adapting proven foreign innovations that can help FHWA respond to challenges facing the U.S. highway system. The program connects FHWA and U.S. technical experts with transportation advances around the world and thereby helps avoid duplicative research, reduce overall costs and accelerate improvements to our transportation system.
- The Global Technology Exchange Program promotes knowledge exchange by leveraging partnerships, and establishing and managing cooperative agreements with other government agencies and professional organizations worldwide. These efforts help provide direction for U.S. collaboration on highway research, and practice and broaden the depth of knowledge in given priority areas. These exchanges address areas of national significance that deliver a clear public benefit to the U.S., current or emerging needs, gaps in research and priorities of FHWA and the U.S. transportation community.

**Internal DOT Collaboration Partners (applies to all RT&E programs)**

National Highway Traffic Safety Administration (NHTSA), Federal Motor Carrier Safety Administration (FMCSA), Federal Aviation Administration (FAA), Federal Transit Administration (FTA), FRA, OST-R, Volpe Center.

**External DOT Collaboration Partners: (applies to all RT&E programs)**

State Transportation Agencies, MPOs, Local Public Agencies, STICs, TRB, AASHTO, UTCs, The Human Factors Coordinating Council, academia, industry, National Association of County Engineers (NACE), ITS America, Institute of Transportation Engineers (ITE), Society of Automotive Engineers, American Concrete Pavement Association, National Steel Bridge Alliance, Portland Cement Association, the National Asphalt Pavement Association, National Stone Sand and Gravel Association, National Concrete Bridge Council, American Concrete Institute, Association of Metropolitan Planning Organizations (AMPO), National Association of Regional Councils (NARC), non-governmental organizations, first responders, law enforcement, freight community, International transportation groups (e.g., the World Road Association), foreign ministries and departments responsible for road transportation; other U.S. Federal agencies and departments, Local and Tribal Technical Assistance Program Centers.

**Does this Program/Project have a Technology Component? (applies to all RT&E programs)**

All FHWA's research programs have a technology component.

**Is this Program/Project listed in the U.S. DOT Research Hub or TRB Research in Progress Database? (applies to all RT&E programs)**

Per the FAST Act, all research programs must be included in the U.S. DOT Research database.

**RT&E PROGRAM NAME: UNIVERSITY TRANSPORTATION CENTERS (UTC)**

**AMOUNT REQUESTED FOR FY 2019: \$77.5 million**

Project and activity summaries are provided in the Office of the Secretary of Transportation (OST) -- Office of the Assistant Secretary for Research and Technology FY 2019 budget submission.

**RT&E PROGRAM NAME: BUREAU OF TRANSPORTATION STATISTICS (BTS)**

**AMOUNT REQUESTED FOR FY 2019: \$26 million**

Project and activity summaries are provided in the Office of the Secretary of Transportation (OST) -- Office of the Assistant Secretary for Research and Technology FY 2019 budget submission.

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