



# **BUDGET ESTIMATES FISCAL YEAR 2021**

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## **PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**

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SUBMITTED FOR THE USE OF  
THE COMMITTEE ON APPROPRIATIONS

**U.S. DEPARTMENT OF TRANSPORTATION**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**FY 2021 BUDGET REQUEST**  
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**I: Overview**

**U.S. DEPARTMENT OF TRANSPORTATION  
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION  
FY 2021 ADMINISTRATOR'S OVERVIEW**

The Pipeline and Hazardous Materials Safety Administration (PHMSA) oversees the safe movement of hazardous materials and energy-related products. The consistent safe delivery of these commodities provides economic growth, that support packagers, shippers and pipeline operators as they move these products to the consumers – homes and business – that rely on them. PHMSA executes its mission by developing safety standards to protect the public, advancing industry safety systems, encouraging innovation and research, providing comprehensive safety inspections, and when necessary, executing enforcement actions.

PHMSA's safety mission extends to more than 40,000 companies involved in the transportation of regulated hazardous materials. PHMSA's oversight includes the expansive U.S. pipeline network of more than 2.8 million miles that moves more than 16 billion barrels of hazardous liquids and gases safely, as well as the air, highway, rail and water vessel transportation of hazardous materials, which accounts for more than 2.7 billion tons of regulated hazardous products valued at more than \$3.1 trillion, annually.

The request includes funding innovative programs to improve safety. PHMSA is proposing a new program to support state inspections of hazardous materials packagers and shippers, and is requesting added funding for existing State partner programs for pipeline and underground natural gas storage inspection. These cost-effective partner programs expand direct safety inspection resources, and result in a high safety impact.

To address challenges in the recruitment and retention of specialized engineering professionals, PHMSA's request funds incentive programs available to Federal agencies to ensure a highly trained and qualified workforce is available to support the safety mission. PHMSA's request also includes additional staff to address emerging safety issues caused by the rapid growth in Liquefied Natural Gas (LNG) facility development and transport.

Further, PHMSA's investments in research and development will be enhanced by conducting some research at an existing DOT facility, engaging uniquely qualified research and industry partners in the advancement of safety through innovation, an approach that will speed the adoption of new safety technologies to reduce pipeline incidents. In one example of advancing safety through new product development, years of continuing innovation in pipe manufacturing has yielded stronger and safer plastic pipe at a cost that provides economic incentive to accelerate the replacement of aged gas pipeline distribution systems. These aged systems present one of the largest safety risks among pipeline systems. Combined with new technologies that make locating underground plastic pipelines easier, evidence indicates that regulations supporting these technologies will yield much greater safety in the future while providing substantial economic cost savings.

PHMSA's FY 2021 budget request of \$276.2 million is largely funded by the regulated industries we support. User fees paid by hazardous materials shippers and pipeline operators, in addition to the Oil Spill Liability Trust fund, make up 70 percent of PHMSA's funding request, while the remainder is funded through the general fund. This request includes \$163.0 million for

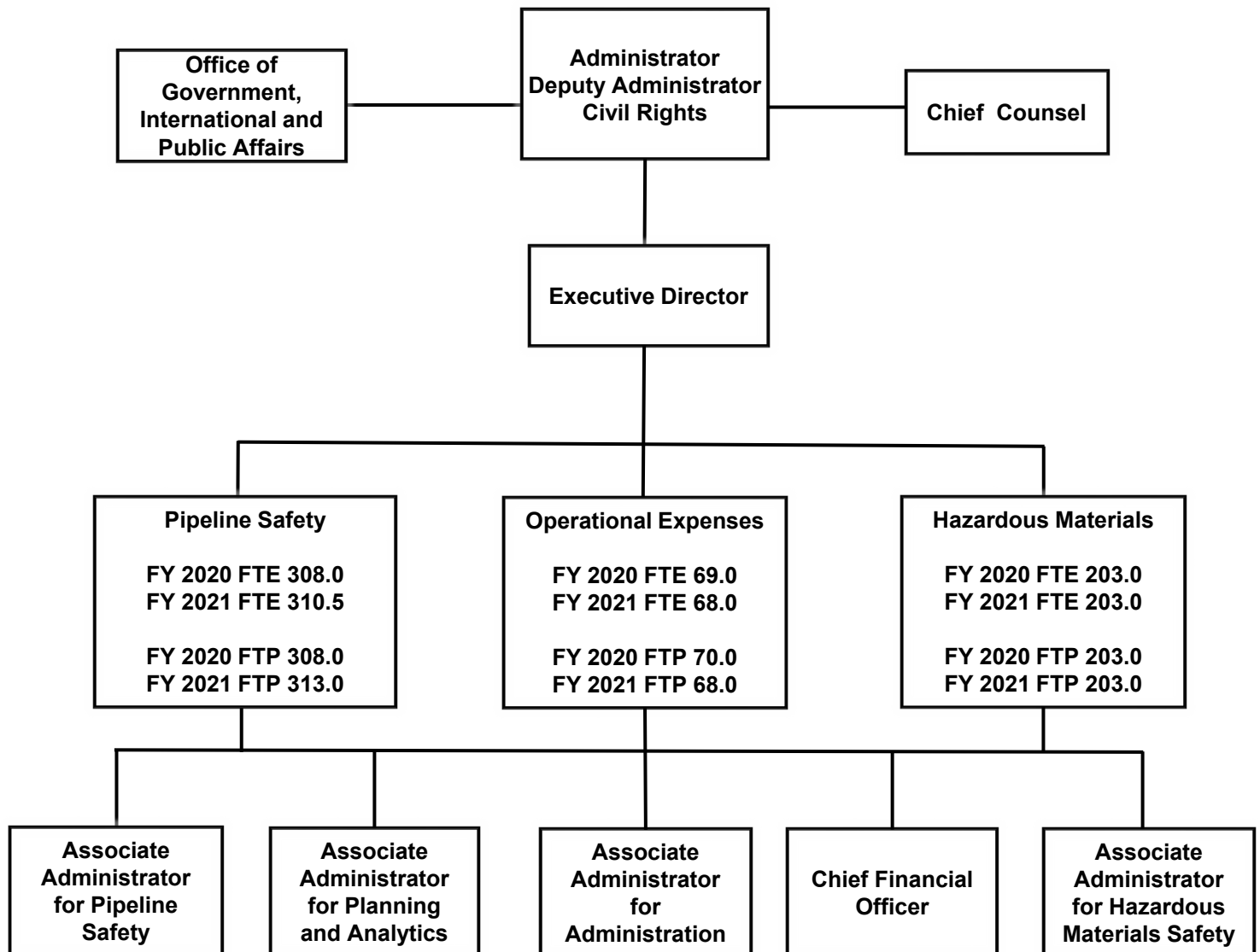
Pipeline Safety, \$60.7 million for Hazardous Materials Safety, \$28.3 million in Emergency Preparedness Grants, and \$24.2 million to fund the Operational Expenses account.

Safety is PHMSA's primary mission and foremost priority. PHMSA's FY 2021 funding request includes, among others, the following safety investments:

- Funding for 584 positions (581.5 FTE) that directly execute and support standards development, safety inspections, incident investigation, data analysis and safety support functions
- Investment of \$22.6 million in research and development that supports innovative safety inspection outcomes, advances in safer packaging and transportation methods, and insight into emerging issues such as the safe transportation of liquified natural gas
- Support for contract safety programs at \$32.0 million to extend and advance systems and technology, data analysis and information for effective safety programs
- \$90.5 million for grants to states, first responders, local communities, safety organizations and not-for-profits to help prevent, plan and prepare for, and respond to hazardous materials incidents.

PHMSA's funding request supports accomplishment of our mission to protect people and the environment by advancing the safe transportation of energy products and other hazardous materials that are essential to our daily lives.

**Exhibit I: Pipeline and Hazardous Materials Safety Administration (PHMSA)**  
**Full-Time Equivalents (FTE) and Full-Time Positions (FTP) for FY 2020 Enacted and FY 2021 Request**  
**FTE Totals: FY 2020 Enacted – 580.0 / FY 2021 Request – 581.5**  
**FTP Totals: FY 2020 Enacted – 581.0 / FY 2021 Request – 584.0**



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**II: Budget Summary**  
**Tables**

**EXHIBIT II-1**  
**FY 2021 BUDGET AUTHORITY**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>M / D</u>	(A) FY 2019 ACTUAL	(B) FY 2020 ENACTED	(C) FY 2021 PROGRAM CHANGES	(D) FY 2021 REQUEST (B+C)
<b>Pipeline Safety</b>					
Pipeline Safety Fund	D	\$ 134,000	\$ 137,000	\$ (6,443)	\$ 131,000
Pipeline Safety Fund /1	M	-	-	2,200	2,200
Pipeline Safety Facility Review Fees (Offsetting Collections) /1	M	-	-	(2,200)	(2,200)
Underground Natural Gas Storage	D	8,000	8,000	2,000	10,000
Oil Spill Liability Trust Fund	D	23,000	23,000	-	22,000
<b>Subtotal</b>		<b>\$ 165,000</b>	<b>\$ 168,000</b>	<b>\$ (4,443)</b>	<b>\$ 163,000</b>
<b>Hazardous Materials Safety</b>					
General Fund	D	58,000	61,000	(1,390)	60,700
<b>Subtotal</b>		<b>\$ 58,000</b>	<b>\$ 61,000</b>	<b>\$ (1,390)</b>	<b>\$ 60,700</b>
<b>Emergency Preparedness Grants</b>					
Emergency Preparedness Fund (Mandatory)	M	26,562	28,318	-	28,318
<b>Subtotal</b>		<b>\$ 26,562</b>	<b>\$ 28,318</b>	<b>\$ -</b>	<b>\$ 28,318</b>
<b>Operational Expenses</b>					
General Fund	D	23,710	24,215	(626)	24,215
<b>Subtotal</b>		<b>\$ 23,710</b>	<b>\$ 24,215</b>	<b>\$ (626)</b>	<b>\$ 24,215</b>
<b>TOTALS</b>		<b>\$ 273,272</b>	<b>\$ 281,533</b>	<b>\$ (6,459)</b>	<b>\$ 276,233</b>
<b>Gross New Budget Authority</b>		<b>\$ 273,272</b>	<b>\$ 281,533</b>	<b>\$ (6,459)</b>	<b>\$ 276,233</b>
<b>Rescissions</b>		-	-	-	-
<b>Transfers</b>		-	-	-	-
<b>Offsets</b>		<b>(142,000)</b>	<b>(145,000)</b>	<b>4,443</b>	<b>(141,000)</b>
<b>NET NEW BUDGET AUTHORITY:</b>		<b>\$ 131,272</b>	<b>\$ 136,533</b>	<b>\$ (2,016)</b>	<b>\$ 135,233</b>
<b>[Mandatory BA]</b>		<b>26,562</b>	<b>28,318</b>	<b>-</b>	<b>28,318</b>
<b>[Discretionary BA]</b>		<b>\$ 104,710</b>	<b>\$ 108,215</b>	<b>\$ (2,016)</b>	<b>\$ 106,915</b>

1/ includes Pipeline Safety design review fees and LNG siting fees and the related costs estimated at \$2.2 million provided by the FY 2020 PIPES Act reauthorization proposal. Receipts collected are available for use in FY 2021 without further appropriation.

**EXHIBIT II-2**  
**FY 2021 TOTAL BUDGETARY RESOURCES BY APPROPRIATION ACCOUNT**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

<b><u>ACCOUNT NAME</u></b>	<b><u>M / D</u></b>	<b>(A) FY 2019 ACTUAL</b>	<b>(B) FY 2020 ENACTED</b>	<b>(C) FY 2021 PROGRAM CHANGES</b>	<b>(D) FY 2021 REQUEST (B+C)</b>
<b>Pipeline Safety</b>		<b>\$ 165,000</b>	<b>\$ 168,000</b>	<b>\$ (4,443)</b>	<b>\$ 163,000</b>
Pipeline Safety Fund	D	134,000	137,000	(6,443)	131,000
Pipeline Safety Fund /1	M	-	-	2,200	2,200
Pipeline Safety Facility Review Fees (Offsetting Collections) /1	M	-	-	(2,200)	(2,200)
Underground Natural Gas Storage	D	8,000	8,000	2,000	10,000
Oil Spill Liability Trust Fund	D	23,000	23,000	-	22,000
<b>Hazardous Materials Safety</b>		<b>\$ 58,000</b>	<b>\$ 61,000</b>	<b>(1,390)</b>	<b>\$ 60,700</b>
General Fund	D	58,000	61,000	(1,390)	60,700
<b>Emergency Preparedness Grants</b>		<b>\$ 26,562</b>	<b>\$ 28,318</b>	<b>\$ -</b>	<b>\$ 28,318</b>
Emergency Preparedness Fund (Ob Lim)	D	26,562	28,318	-	28,318
<b>Operational Expenses</b>		<b>\$ 23,710</b>	<b>\$ 24,215</b>	<b>\$ (626)</b>	<b>\$ 24,215</b>
General Fund	D	23,710	24,215	(626)	24,215
<b>TOTALS</b>		<b>\$ 273,272</b>	<b>\$ 281,533</b>	<b>\$ (6,459)</b>	<b>\$ 276,233</b>
<b>Gross New Budget Authority</b>		<b>273,272</b>	<b>281,533</b>	<b>(6,459)</b>	<b>276,233</b>
<b>Rescissions</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Transfers</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Offsets</b>		<b>(142,000)</b>	<b>(145,000)</b>	<b>4,443</b>	<b>(141,000)</b>
<b>NET NEW BUDGET AUTHORITY:</b>		<b>\$ 131,272</b>	<b>\$ 136,533</b>	<b>\$ (2,016)</b>	<b>\$ 135,233</b>
<b>[Mandatory BA]</b>		<b>-</b>	<b>-</b>	<b>\$ -</b>	<b>\$ -</b>
<b>[Discretionary BA]</b>		<b>\$ 104,710</b>	<b>\$ 108,215</b>	<b>\$ (2,016)</b>	<b>\$ 106,915</b>
<b>[Obligation Limitation]</b>		<b>\$ 26,562</b>	<b>\$ 28,318</b>	<b>\$ -</b>	<b>\$ 28,318</b>

1/ includes Pipeline Safety design review fees and LNG siting fees and the related costs estimated at \$2.2 million provided by the FY 2020 PIPES Act reauthorization proposal.  
Receipts collected are available for use in FY 2021 without further appropriation.

**EXHIBIT II-3**  
**FY 2021 BUDGET REQUEST BY DOT STRATEGIC AND ORGANIZATIONAL GOALS**  
**Appropriations, Obligation Limitation, and Exempt Obligations**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**(\$000)**

	<b>Safety</b>	<b>Infrastructure</b>	<b>Innovation</b>	<b>Accountability</b>	<b>Total</b>
<b>ACCOUNT</b>					
Pipeline Safety	\$ 159,505	\$ 3,495		\$ -	\$ 163,000
Hazardous Materials Safety	58,800	-	1,900	-	60,700
Emergency Preparedness Grants	28,318	-	-	-	28,318
Operational Expenses	24,215	-	-	-	24,215
<b>TOTAL</b>	<b>\$ 270,838</b>	<b>\$ 3,495</b>	<b>\$ 1,900</b>	<b>\$ -</b>	<b>\$ 276,233</b>

**EXHIBIT II-4**  
**FY 2021 OUTLAYS**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**(\$000)**

<u>ACCOUNT NAME</u>	<u>M/D</u>	<u>FY 2019 ACTUAL</u>	<u>FY 2020 ENACTED</u>	<u>FY 2021 REQUEST</u>
Pipeline Safety				
Pipeline Safety Fund	<i>D</i>	\$120,739	\$157,852	\$164,996
Trust Fund Share of Pipeline Safety	<i>D</i>	31,815	19,916	22,510
Subtotal, Pipeline Safety		152,554	177,768	187,506
 Hazardous Materials Safety	 <i>D</i>	 59,535	 66,358	 66,796
 Emergency Preparedness Grants				
Mandatory	<i>M</i>	22,261	36,911	37,616
Discretionary	<i>D</i>	(3)	0	0
Subtotal, Emergency Preparedness Grants		22,258	36,911	37,616
 Operational Expenses	 <i>D</i>	 22,292	 24,940	 24,215
 Research and Special Programs	 <i>D</i>	 14	 148	 0
 <b>TOTAL</b>		 <b>\$256,653</b>	 <b>\$306,125</b>	 <b>\$316,133</b>
<i>Discretionary</i>		234,392	269,214	278,517
<i>Mandatory</i>		22,261	36,911	37,616

**EXHIBIT II-5**  
**SUMMARY OF REQUESTED FUNDING CHANGES FROM BASE**  
**Pipeline and Hazardous Materials Safety Administration**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

PHMSA Summary	Baseline Changes													
	FY 2019 Actual	FY 2020 Enacted	Annualization of Prior Pay Raises (3.1%)	Annualization of new FY 2020 FTE	FY 2021 Pay Raises (1%)	Adjustment for Compensable Days (261 days)	GSA Rent	WCF Increase/ Decrease	Inflation and Other Adjustments to Base	FY 2021 Baseline Estimate	Program Increases/ Decreases	FY 2021 Request		
<b>PERSONNEL RESOURCES</b>	<b>555.0</b>	<b>580.0</b>		<b>1.0</b>						<b>(2.0)</b>	<b>579.0</b>	<b>2.5</b>	<b>581.5</b>	
Direct FTE	555.0	580.0		1.0						(2.0)	579.0	2.5	581.5	
<b><u>FINANCIAL RESOURCES</u></b>														
<b><u>Operations</u></b>														
Salaries and Benefits	\$ 88,737	\$ 92,550	\$ 547	\$ 143	\$ 1,095	\$ (353)	\$ -	\$ -	\$ 334	\$ 94,316	\$ 1,358	\$ 95,674		
Travel	6,510	6,067		12						6,079	55	6,134		
GSA Rent	6,792	7,099		13						7,112	33	7,145		
Communications, & Utilities	1,027	336							383	719		719		
Printing	309	348								348		348		
Other Services:														
-Other	7,001	8,738		38						8,776	(1,139)	7,637		
-WCF	3,955	3,843						781		4,624		4,624		
-WCF IT	5,343	9,710						357		10,067		10,067		
Supplies	413	765								765		765		
Equipment	596	192		9						201	42	243		
<b>Operations Subtotal</b>	<b>\$ 120,683</b>	<b>\$ 129,648</b>	<b>\$ 547</b>	<b>\$ 215</b>	<b>\$ 1,095</b>	<b>\$ (353)</b>	<b>\$ -</b>	<b>\$ 1,138</b>	<b>\$ 717</b>	<b>\$ 133,007</b>	<b>\$ 349</b>	<b>\$ 133,356</b>		
<b><u>PROGRAMS</u></b>														
<b><u>Contract Safety Programs</u></b>														
Pipeline Safety	24,353	22,021								22,021	(2,468)	19,553		
Hazardous Materials Safety	9,909	8,386								8,386	(1,656)	6,730		
Emergency Preparedness Grants	727	775								775		775		
Operational Expenses	5,657	4,087								4,087	874	4,961		
<b>Contract Safety Programs Subtotal</b>	<b>\$ 40,646</b>	<b>\$ 35,269</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 35,269</b>	<b>\$ (3,250)</b>	<b>\$ 32,019</b>		
<b><u>Research and Development</u></b>														
Pipeline Safety	15,000	15,000								15,000		15,000		
Hazardous Materials Safety	7,570	7,570								7,570		7,570		
<b>Research and Development Subtotal</b>	<b>\$ 22,570</b>	<b>\$ 22,570</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 22,570</b>	<b>\$ -</b>	<b>\$ 22,570</b>		
<b><u>Grants</u></b>														
Pipeline Safety	61,558	64,558								64,558	(3,558)	61,000		
Hazardous Materials Safety	1,000	1,000								1,000	1,500	2,500		
Emergency Preparedness Grants	25,315	26,988								26,988		26,988		
Operational Expenses	1,500	1,500								1,500	(1,500)	-		
<b>Grants Subtotal</b>	<b>\$ 89,373</b>	<b>\$ 94,046</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 94,046</b>	<b>\$ (3,558)</b>	<b>\$ 90,488</b>		
<b>Programs Subtotal</b>	<b>\$ 152,589</b>	<b>\$ 151,885</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 151,885</b>	<b>\$ (6,808)</b>	<b>\$ 145,077</b>		
<b>TOTAL</b>	<b>\$ 273,272</b>	<b>\$ 281,533</b>	<b>\$ 547</b>	<b>\$ 215</b>	<b>\$ 1,095</b>	<b>\$ (353)</b>	<b>\$ -</b>	<b>\$ 1,138</b>	<b>\$ 717</b>	<b>\$ 284,892</b>	<b>\$ (6,459)</b>	<b>\$ 278,433</b>		
<b><u>Less Offsetting Collections</u></b>														
Pipeline Safety Facility Review Fees (Offsetting Collections)	-	-									\$ (2,200)	\$ (2,200)		
<b>Total Requested Budget Authority</b>	<b>\$ 273,272</b>	<b>\$ 281,533</b>	<b>\$ 547</b>	<b>\$ 215</b>	<b>\$ 1,095</b>	<b>\$ (353)</b>	<b>\$ -</b>	<b>\$ 1,138</b>	<b>\$ 717</b>	<b>\$ 284,892</b>	<b>\$ (8,659)</b>	<b>\$ 276,233</b>		

**EXHIBIT II-5**  
**SUMMARY OF REQUESTED FUNDING CHANGES FROM BASE**  
**Pipeline and Hazardous Materials Safety Administration**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

Pipeline Safety Account	FY 2019 Actual	FY 2020 Enacted	Baseline Changes										FY 2021 Baseline Estimate	Program Increases/ Decreases	FY 2021 Request /1
			Annualization of Prior Pay Raises (3.1%)	Annualization of new FY 2020 FTE	FY 2021 Pay Raises (1%)	Adjustment for Compensable Days (261 days)	GSA Rent	WCF Increase/ Decrease	Information and Other Adjustments to Base						
PERSONNEL RESOURCES (FTE)	288.0	308.0											308.0	2.5	310.5
Direct FTE	288.0	308.0											308.0	2.5	310.5
FINANCIAL RESOURCES															
Operations															
Salaries and Benefits	\$ 47,101	\$ 48,566	\$ 287	\$ -	\$ 575	\$ (185)	\$ -	\$ -	\$ (8)	\$ 49,235	\$ 1,358	\$ 50,593			
Travel	4,500	3,786								3,786	55	3,841			
GSA Rent	3,012	3,528								3,528	33	3,561			
Communications, & Utilities	596	50							383	433		433			
Printing	104	90								90		90			
Other Services:															
-Other	3,069	2,553								2,553	95	2,648			
-WCF	2,203	2,037						428		2,465		2,465			
-WCF IT	2,832	5,164						163		5,327		5,327			
Supplies	248	547								547		547			
Equipment	424	100								100	42	142			
Operations Subtotal	\$ 64,089	\$ 66,421	\$ 287	\$ -	\$ 575	\$ (185)	\$ -	\$ 591	\$ 375	\$ 68,064	\$ 1,583	\$ 69,647			
PROGRAMS															
Contract Safety Programs															
Liquefied Natural Gas	-	-								-	960	960			
Pipeline Safety Facility Reviews	-	-								-	2,200	2,200			
Underground Natural Gas Storage Safety	2,000	2,000								2,000		2,000			
Compliance/Pipeline Integrity Management	10,563	8,231								8,231		8,231			
Training, Information & Community Assist. Services	8,443	8,443								8,443	(5,605)	2,838			
Mapping and Information Systems	1,809	1,809								1,809	(12)	1,797			
Implementing the Oil Pollution Act	1,538	1,538								1,538	(11)	1,527			
Contract Safety Programs Subtotal	\$ 24,353	\$ 22,021	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 22,021	\$ (2,468)	\$ 19,553			
Research & Development	15,000	15,000								15,000	-	15,000			
Research & Development Subtotal	\$ 15,000	\$ 15,000								\$ 15,000	\$ -	\$ 15,000			
Grants															
State Pipeline Safety Grants	53,000	56,000								56,000	(3,000)	53,000			
Underground Natural Gas Storage Grants	6,000	6,000								6,000	2,000	8,000			
State One-call Grants	1,058	1,058								1,058	(1,058)	-			
State Damage Prevention Grants	1,500	1,500								1,500	(1,500)	-			
Grants Subtotal	\$ 61,558	\$ 64,558	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 64,558	\$ (3,558)	\$ 61,000			
Programs Subtotal	\$ 100,911	\$ 101,579	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 101,579	\$ (6,026)	\$ 95,553			
TOTAL	\$ 165,000	\$ 168,000	\$ 287	\$ -	\$ 575	\$ (185)	\$ -	\$ 591	\$ 375	\$ 169,643	\$ (4,443)	\$ 165,200			
Less Offsetting Collections															
Pipeline Safety Facility Review Fees (Offsetting Collections)	-	-								-	(\$2,200)	(\$2,200)			
Total Requested Budget Authority	\$ 165,000	\$ 168,000	\$ 287	\$ -	\$ 575	\$ (185)	\$ -	\$ 591	\$ 375	\$ 169,643	\$ (2,243)	\$ 163,000			

1/ Does not include Pipeline Safety design review fees and LNG siting fees and the related costs estimated at \$2.2 million in mandatory offsetting collections provided by the FY 2020 PIPES Act reauthorization proposal available for use in FY 2021 without further appropriation.

**EXHIBIT II-5**  
**SUMMARY OF REQUESTED FUNDING CHANGES FROM BASE**  
**Pipeline and Hazardous Materials Safety Administration**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

Hazardous Materials Safety Account	FY 2019 Actual	FY 2020 Enacted	Baseline Changes						WCF Increase/ Decrease	Inflation and Other Adjustments to Base	FY 2021 Baseline Estimate	Program Increases/ Decreases	FY 2021 Request
			Annualization of Prior Pay Raises (3.1%)	Annualization of new FY 2020 FTE	FY 2021 Pay Raises (1%)	Adjustment for Compensable Days (261 days)	GSA Rent						
PERSONNEL RESOURCES (FTE)	198.0	203.0							-		203.0		203.0
Direct FTE	198.0	203.0							-		203.0		203.0
<u>FINANCIAL RESOURCES</u>													
<u>Operations</u>													
Salaries and Benefits	\$ 29,596	\$ 31,613	\$ 187	\$ -	\$ 374	\$ (121)	\$ -	\$ -	\$ 245	\$ 32,298	\$ 32,298		
Travel	1,900	2,069								2,069			2,069
GSA Rent	2,594	2,500								2,500			2,500
Communications, & Utilities	331	148								148			148
Printing	143	242								242			242
Other Services:													
-Other	1,440	2,570								2,570	(1,234)		1,336
-WCF	1,469	1,338							287	1,625			1,625
-WCF IT	1,870	3,393							118	3,511			3,511
Supplies	63	108								108			108
Equipment	115	63								63			63
Operations Subtotal	\$ 39,521	\$ 44,044	\$ 187	\$ -	\$ 374	\$ (121)	\$ -	\$ 405	\$ 245	\$ 45,134	\$ (1,234)	\$ 43,900	
<u>PROGRAMS</u>													
<u>Contract Safety Programs</u>													
Hazmat Information and Analysis	\$ 2,669	\$ 1,908								\$ 1,908	\$ (1,908)	\$ -	
Investigation and Enforcement	3,514	2,753								2,753	449		3,201
Outreach, Training and Compliance	2,937	2,937								2,937	203		3,140
Hazmat Registration Program	789	789							-	789	(400)		389
Contract Safety Programs Subtotal	\$ 9,909	\$ 8,386	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,386	\$ (1,656)	\$ 6,730	
<u>Research &amp; Development</u>	\$ 7,570	\$ 7,570								\$ 7,570	\$ -	\$ 7,570	
Research & Development Subtotal	\$ 7,570	\$ 7,570								\$ 7,570	\$ -	\$ 7,570	
<u>Grants</u>													
State Hazardous Materials Safety Training	-	-								-	2,500		2,500
Community Safety Grants	\$ 1,000	\$ 1,000								\$ 1,000	\$ (1,000)	\$ -	
Grants Subtotal	\$ 1,000	\$ 1,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,000	\$ 1,500	\$ 2,500	
Programs Subtotal	\$ 18,479	\$ 16,956	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16,956	\$ (156)	\$ 16,800	
TOTAL	\$ 58,000	\$ 61,000	\$ 187	\$ -	\$ 374	\$ (121)	\$ -	\$ 405	\$ 245	\$ 62,090	\$ (1,390)	\$ 60,700	



**EXHIBIT II-5**  
**SUMMARY OF REQUESTED FUNDING CHANGES FROM BASE**  
**Pipeline and Hazardous Materials Safety Administration**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

	FY 2019 Actual /1	FY 2020 Enacted /1	Baseline Changes					WCF Increase/ Decrease	Inflation and Other Adjustments to Base	FY 2021 Baseline Estimate	Program Increases/ Decreases	FY 2021 Request
			Annualization of Prior Pay Raises (3.1%)	Annualization of new FY 2020 FTE	FY 2021 Pay Raises (1%)	Adjustment for Compensable Days (261 days)	GSA Rent					
Emergency Preparedness Account												
<b><u>FINANCIAL RESOURCES</u></b>												
<b>Operations</b>												
Other Services:												
-Other	\$ 520	\$ 555								\$ 555		\$ 555
<b>Operations Subtotal</b>	<b>\$ 520</b>	<b>\$ 555</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 555</b>	<b>\$ -</b>	<b>\$ 555</b>
<b><u>PROGRAMS</u></b>												
Grants	\$ 25,315	\$ 26,988								\$ 26,988		\$ 26,988
Technical Assistance	141	150								150		150
Emergency Response Guidebook	586	625								625		625
<b>Programs Subtotal</b>	<b>\$ 26,042</b>	<b>\$ 27,763</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 27,763</b>	<b>\$ -</b>	<b>\$ 27,763</b>
<b>TOTAL</b>	<b>\$ 26,562</b>	<b>\$ 28,318</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 28,318</b>	<b>\$ -</b>	<b>\$ 28,318</b>

1/ post sequestration

**EXHIBIT II-5**  
**SUMMARY OF REQUESTED FUNDING CHANGES FROM BASE**  
**Pipeline and Hazardous Materials Safety Administration**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

Operational Expenses Account	FY 2019 Actual	FY 2020 Enacted	Baseline Changes					WCF Increase/ Decrease	Inflation and Other Adjustments to Base	FY 2021 Baseline Estimate	Program Increases/ Decreases	FY 2021 Request
			Annualization of Prior Pay Raises (3.1%)	Annualization of new FY 2020 FTE	FY 2021 Pay Raises (1%)	Adjustment for Compensable Days (261 days)	GSA Rent					
<b>PERSONNEL RESOURCES (FTE)</b>	<b>69.0</b>	<b>69.0</b>		<b>1.0</b>					<b>(2.0)</b>	<b>68.0</b>		<b>68.0</b>
Direct FTE	69.0	69.0		1.0				-	(2.0)	68.0		68.0
<b><u>FINANCIAL RESOURCES</u></b>												
<b><u>Operations</u></b>												
Salaries and Benefits	\$ 12,040	\$ 12,371	\$ 73	\$ 143	\$ 146	\$ (47)	\$ -	\$ -	\$ 97	\$ 12,783		\$ 12,783
Travel	110	212		12						224		224
GSA Rent	1,186	1,071		13						1,084		1,084
Communications & Utilities	100	138								138		138
Printing	62	16								16		16
Other Services:												
-Other	1,972	3,060		38						3,098		3,098
-WCF	283	468						66		534		534
-WCF IT	641	1,153						76		1,229		1,229
Supplies	102	110								110		110
Equipment	57	29		9						38		38
<b>Operations Subtotal</b>	<b>\$ 16,553</b>	<b>\$ 18,628</b>	<b>\$ 73</b>	<b>\$ 215</b>	<b>\$ 146</b>	<b>\$ (47)</b>	<b>\$ -</b>	<b>\$ 142</b>	<b>\$ 97</b>	<b>\$ 19,254</b>	<b>\$ -</b>	<b>\$ 19,254</b>
<b><u>PROGRAMS</u></b>												
<b><u>Contract Safety Programs</u></b>												
Information Technology	5,657	4,087								4,087	874	4,961
<b>Contract Safety Programs Subtotal</b>	<b>\$ 5,657</b>	<b>\$ 4,087</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 4,087</b>	<b>\$ 874</b>	<b>\$ 4,961</b>
<b><u>Grants</u></b>												
Information Grants to Communities	1,500	1,500								1,500	(1,500)	0
<b>Grants Subtotal</b>	<b>\$ 1,500</b>	<b>\$ 1,500</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,500</b>	<b>\$ (1,500)</b>	<b>\$ -</b>
<b>Programs Subtotal</b>	<b>\$ 7,157</b>	<b>\$ 5,587</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 5,587</b>	<b>\$ (626)</b>	<b>\$ 4,961</b>
<b>TOTAL</b>	<b>\$ 23,710</b>	<b>\$ 24,215</b>	<b>\$ 73</b>	<b>\$ 215</b>	<b>\$ 146</b>	<b>\$ (47)</b>	<b>\$ -</b>	<b>\$ 142</b>	<b>\$ 97</b>	<b>\$ 24,841</b>	<b>\$ (626)</b>	<b>\$ 24,215</b>

**EXHIBIT II-6**  
**WORKING CAPITAL FUND**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**(\$000)**

	<b>FY 2019 ACTUAL</b>	<b>FY 2020 ENACTED</b>	<b>FY 2021 REQUEST</b>
<b>DIRECT:</b>			
Pipeline Safety	\$ 2,203	\$ 2,037	\$ 2,465
Commodity Shared Services and WCF IT	4,832	5,164	5,327
Hazardous Materials Safety	1,469	1,338	1,625
Commodity Shared Services and WCF IT	3,870	3,393	3,511
Operational Expenses	283	468	534
Commodity Shared Services and WCF IT	1,006	1,153	1,229
Emergency Preparedness Grants /1	-	-	-
<b>TOTAL</b>	<b>\$ 13,663</b>	<b>\$ 13,553</b>	<b>\$ 14,691</b>

1/ Does not include FY 2020 amounts reported in EP Grants for emergency Response Guidebook which are funded through the EP grant Mandatory account as an annual set aside.

**EXHIBIT II-7**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**PERSONNEL RESOURCE -- SUMMARY**  
**TOTAL FULL-TIME EQUIVALENTS**

	<b>FY 2019 ACTUAL</b>	<b>FY 2020 ENACTED</b>	<b>FY 2021 REQUEST</b>
<b><u>DIRECT FUNDED BY APPROPRIATION</u></b>			
Pipeline Safety	288.0	308.0	310.5
Hazardous Materials Safety	198.0	203.0	203.0
Operational Expenses	69.0	69.0	68.0
<b>SUBTOTAL, DIRECT FUNDED</b>	<b>555.0</b>	<b>580.0</b>	<b>581.5</b>

**EXHIBIT II-8**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**RESOURCE SUMMARY – STAFFING**  
**FULL-TIME PERMANENT POSITIONS**

	<b><u>FY 2019 ACTUAL</u></b>	<b><u>FY 2020 ENACTED</u></b>	<b><u>FY 2021 REQUEST</u></b>
<b><u>DIRECT FUNDED BY APPROPRIATION</u></b>			
Pipeline Safety	288.0	308.0	313.0
Hazardous Materials Safety	198.0	203.0	203.0
Operational Expenses	69.0	70.0	68.0
<b>SUBTOTAL, DIRECT FUNDED</b>	<b><u>555.0</u></b>	<b><u>581.0</u></b>	<b><u>584.0</u></b>

**EXHIBIT III-1a**

**All Accounts  
SUMMARY ANALYSIS OF CHANGE FROM FY 2020 TO FY 2021  
Appropriations, Obligations, Limitations, and Exempt Obligations  
(\$000)**

	<u><b>\$000</b></u>	<u><b>FTE</b></u>
<b>FY 2020 ENACTED</b>	<u>\$ 281,533</u>	<u>580.0</u>
<b>ADJUSTMENTS TO BASE:</b>		
Annualization of Prior Pay Raises (3.1%)	547	
Annualization of FY 2020 FTE	215	1.0
FY 2021 Pay Raise (1.0%)	1,095	
GSA Rent	-	
Working Capital Fund	1,138	
Adjustment for Compensable Days (261 days)	(353)	
Inflation and Other Adjustments to Base	717	(2.0)
<b>SUBTOTAL, ADJUSTMENTS TO BASE</b>	<b>3,359</b>	<b>(1.0)</b>
<b>PROGRAM REDUCTIONS</b>		
<b>Pipeline Safety</b>		
Training, Information & Community Assist. Services	(5,605)	
State Damage Prevention Grants	(1,500)	
State Pipeline Safety Grants	(3,000)	
Implementing The Oil Pollution Act	(11)	
Pipeline Safety Facility Review Fees (Offsetting Collections)	(2,200) /1	
<b>Hazarous Materials Safety</b>		
Hazmat Information and Analysis	(1,908)	
Hazmat Registration Program	(400)	
Community Safety Grants	(1,000)	
Other Services: Other	(1,234)	
<b>Operational Expenses</b>		
Information Grants to Communities	(1,500)	
<b>SUBTOTAL, PROGRAM REDUCTIONS</b>	<b>(19,428)</b>	<b>-</b>
<b>PROGRAM INCREASES</b>		
<b>Pipeline Safety</b>		
Additional LNG Staff	583	2.5
Hiring Incentives	1,000	
Liquefied Natural Gas	960	
Underground Natural Gas Storage Grants	2,000	
Pipeline Safety Facility Reviews	2,200 /1	
<b>Hazardous Materials Safety</b>		
Investigation and Enforcement	449	
State Hazardous Materials Safety Training	2,500	
Investigation and Enforcement	203	
<b>OPERATIONAL EXPENSES</b>		
Information Technology	874	
<b>SUBTOTAL, PROGRAM INCREASES</b>	<b>10,768</b>	<b>2.5</b>
<b>FY 2021 REQUEST</b>	<b>\$ 276,233</b>	<b>581.5</b>

1/ includes Pipeline Safety design review fees and LNG siting fees and the related costs estimated at \$2.2 million provided by the FY 2020 PIPES Act reauthorization proposal. Receipts collected are available for use in FY 2021 without further appropriation.

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**III: Budget Request by  
Appropriation Account  
Exhibits and Narrative  
Justification**



**Pipeline Safety**

## **APPROPRIATIONS LANGUAGE**

### **PIPELINE SAFETY**

#### **(PIPELINE SAFETY FUND)**

#### **(OIL SPILL LIABILITY TRUST FUND)**

For expenses necessary to carry out a pipeline safety program, as authorized by 49 U.S.C. 60107, and to discharge the pipeline program responsibilities of the Oil Pollution Act of 1990, [\$168,000,000] *\$163,000,000* to remain available until September 30, [2022] *2023*, of which [\$23,000,000] *\$22,000,000* shall be derived from the Oil Spill Liability Trust Fund; of which [\$137,000,000] *\$131,000,000* shall be derived from the Pipeline Safety Fund; and of which [\$8,000,000] *\$10,000,000* shall be derived from fees collected under 49 U.S.C. 60302 and deposited in the Underground Natural Gas Storage Facility Safety Account for the purpose of carrying out 49 U.S.C. 60141: [Provided, That not less than \$1,058,000 of the funds provided under this heading shall be for the One-Call State grant program.]

**EXHIBIT III-1**  
**Pipeline Safety**  
**SUMMARY BY PROGRAM ACTIVITY**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

	<b>FY 2019 ACTUAL</b>	<b>FY 2020 ENACTED</b>	<b>FY 2021 REQUEST</b>
Operations /1	\$ 88,442	\$ 88,442	\$ 87,000
Research and Development	15,000	15,000	15,000
Grants	61,558	64,558	61,000
<b>TOTAL</b>	<b>\$ 165,000</b>	<b>\$ 168,000</b>	<b>\$ 163,000</b>
FTEs			
Direct Funded	288.0	308.0	310.5

1/ includes Pipeline Safety design review fees and LNG siting fees and the related costs estimated at \$2.2 million provided by the FY 2020 PIPES Act reauthorization proposal. Receipts collected are available for use in FY 2021 without further appropriation.

**Program and Performance Statement**

PHMSA is responsible for overseeing the safe transportation of energy products and hazardous materials through pipelines. PHMSA's Pipeline Safety program regulates an expansive network of more than 2.8 million miles of gas and hazardous liquid pipelines within the United States, as well as facilities that liquefy natural gas, and store natural gas underground. PHMSA establishes and enforces pipeline safety standards and conducts pipeline safety inspections in collaboration with State partners to determine that pipelines are working safely. The Pipeline Safety program is funded by fees collected from pipeline operators and underground natural gas storage facility operators, and by an annual allocation from the Oil Spill Liability Trust Fund.

**EXHIBIT III-1a**

**Pipeline Safety  
SUMMARY ANALYSIS OF CHANGE FROM FY 2020 TO FY 2021  
Appropriations, Obligations, Limitations, and Exempt Obligations  
(\$000)**

	<u><b>\$000</b></u>	<u><b>FTE</b></u>
<b>FY 2020 ENACTED</b>	<u>\$ 168,000</u>	<u>308.0</u>
<b>ADJUSTMENTS TO BASE:</b>	-	-
Annualization of FY 2020 FTE	-	-
Annualization of Prior Pay Raises (3.1%)	287	-
FY 2021 Pay Raises (1%)	575	-
GSA Rent	-	-
Working Capital Fund	608	-
Inflation and Other Adjustments to Base	375	-
Adjustment for Compensable Days (261 days)	(185)	-
<b>SUBTOTAL, ADJUSTMENTS TO BASE</b>	<b>1,660</b>	<b>-</b>
<b>PROGRAM REDUCTIONS</b>		
Pipeline Safety Facility Review Fees (Offsetting Collections) /1	(2,200)	-
Training, Information & Community Assist. Services	(5,605)	-
Mapping and Information Systems	(12)	-
State One-call Grants	(1,058)	-
State Damage Prevention Grants	(1,500)	-
State Pipeline Safety Grants	(3,000)	-
Implementing the Oil Pollution Act	(11)	-
<b>SUBTOTAL, PROGRAM REDUCTIONS</b>	<b>(13,386)</b>	<b>-</b>
<b>PROGRAM INCREASES</b>		
Pipeline Safety Facility Reviews /1	2,200	2.5
Additional LNG Staff	566	-
Hiring Incentives	1,000	-
Liquefied Natural Gas	960	-
Underground Natural Gas Storage Grants	2,000	-
<b>SUBTOTAL, PROGRAM INCREASES</b>	<b>6,726</b>	<b>2.5</b>
<b>FY 2021 REQUEST</b>	<b>\$ 163,000</b>	<b>310.5</b>

1/ includes Pipeline Safety design review fees and LNG siting fees and the related costs estimated at \$2.2 million provided by the FY 2020 PIPES Act reauthorization proposal. Receipts collected are available for use in FY 2021 without further appropriation.

## Detailed Justification for the Pipeline Safety Program

### FY 2021 – Pipeline Safety Program Budget Request (\$000)

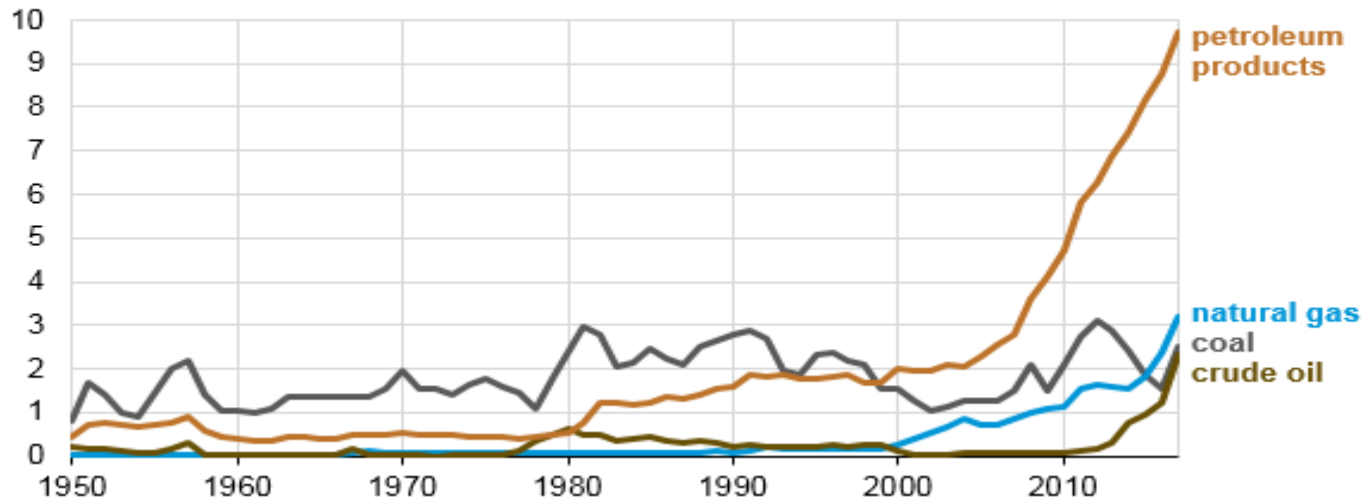
Program Activity	FY 2019 Actual	FY 2020 Enacted	FY 2021 Request
Operations	\$ 64,089	\$ 66,404	\$ 69,630
Contract Safety Programs	22,353	22,038	17,370 <sup>1/</sup>
Research and Development	15,000	15,000	15,000
Grants	61,558	64,558	61,000
<b>Total</b>	<b>\$ 165,000</b>	<b>\$ 168,000</b>	<b>\$163,000</b>
<b>FTEs</b>	<b>308.0</b>	<b>308.0</b>	<b>310.5</b>

1/ Net of \$2.2 million offsetting collection of design review fees and LNG siting fees.

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

**PHMSA's pipeline safety program supports the safe delivery of energy products to market:** The United States continues to experience an energy production boom accompanied by growth in exports (see graphic below). Most gas and oil products are moved via pipeline from their sources to refineries and then to market. Since 2000, U.S. energy production has more than doubled, with nearly all this product transported without incident to refineries and into consumer markets.

**U.S. gross energy exports (1950-2017)**  
quadrillion British thermal units



The United States has the most expansive network of energy pipelines in the world. Annual report data shows that PHMSA oversees the safe operation of 215,622 miles of hazardous liquid pipelines, 300,651 miles of gas transmission pipelines, 2,223,021 miles of gas distribution mains and services, 18,382 miles of gas-gathering pipelines, and 152 liquefied natural gas plants with a total storage capacity of more than 54 million barrels. This network stretches more than 2.8 million miles and transports 65 percent of the energy consumed in the United States, helping to power nearly every facet of our daily lives. For hazardous liquids transported by pipeline, product moves without incident 99.997 percent of the time.

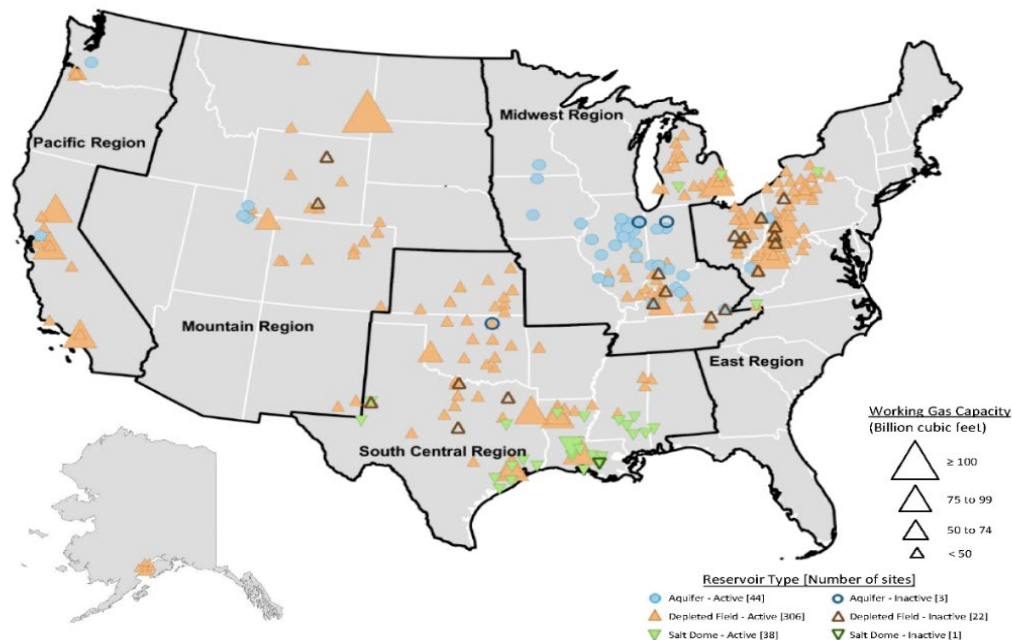
To accomplish its safety mission, PHMSA develops and promotes national pipeline safety standards and policy, conducts inspections to validate the safe operation of pipeline systems, investigates pipeline incidents, promotes safety management systems, and conducts research to inform safety regulation and policy.

**PHMSA supports and oversees the safe storage of natural gas underground:** The Protecting our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act of 2016 charged PHMSA with the oversight of safety for facilities that store natural gas underground. There are more than 400 underground natural gas storage facilities in the United States.

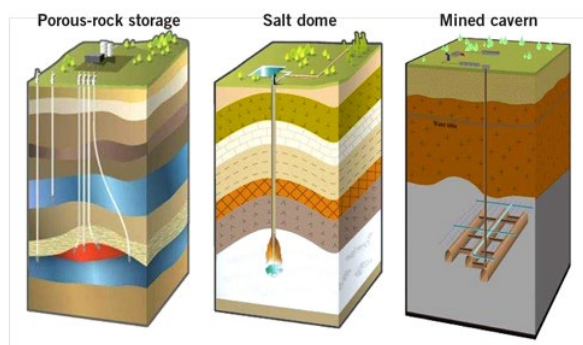
The benefits of underground natural gas storage are substantial. Natural gas is an important commodity in the United States and the world, particularly for heating and power generation. Underground storage also offers natural gas providers the ability to manage seasonal variations in natural gas demand and provides a buffer for changing production levels. For example, the facilities can provide quick access to

large volumes of gas for end users during periods of high demand, such as during a cold spell in the winter or a period of high electricity demand in the summer. Underground storage also allows U.S. natural gas to be stored safely after extraction while awaiting domestic use or export.

**U.S. Underground Natural Gas Storage Facility, by Type (December 2017)**



#### STORAGE TYPES



Roughly 90 percent of all such U.S. facilities hold natural gas in depleted oil and gas reservoirs, while the remaining storage is in salt caverns and depleted aquifers. PHMSA's expanded role includes developing safety standards for containment within these natural formations and conducting periodic inspections.

#### Operations: \$69.6 million

PHMSA's FY 2021 request includes \$69.6 million to fund 313 positions (310.5 FTE) and all related costs, including salaries and benefits, travel, training, supplies, and equipment (including personal protective equipment for all inspectors). The request supports 224 inspection and enforcement staff distributed across the country throughout a network of regional offices, as well as subject matter experts that guide the safe operation of pipelines and underground natural gas storage facilities.

PHMSA's Office of Pipeline Safety staff operate out of our headquarters in Washington, D.C., eight field offices (West Trenton, NJ; Atlanta, GA; Kansas City, MO; Houston, TX; Lakewood, CO; Chicago,

IL; Ontario, CA; and Anchorage, AK), and a national training center and accident investigation team located in Oklahoma City, OK. Inspection and enforcement staff conduct inspections, investigations and outreach. They also work on the ground with State partners and participate with in-area response drills sponsored by the U.S. Coast Guard.

### **Hiring and Retention Incentives for Hard-to-Fill Positions**

The effectiveness of executing PHMSA's safety mission is directly linked to the safety staff that conduct inspection and enforcement activities. PHMSA competes with the energy industry to attract and retain qualified pipeline and LNG engineers. These industries can pay higher salaries and offer bonus incentives to staff.

To fill existing vacancies and to attract and retain highly qualified staff to meet growing safety risks in the competitive market for highly sought skill sets, PHMSA's request includes funding for recruitment and retention bonuses, tuition assistance and student loan reimbursement. To achieve longer-term retention, PHMSA will require commitments to serve at the agency for a specified period in exchange for these benefits.

PHMSA's request includes \$1.0 million to supplement salaries and benefits costs for bonus funding to improve our ability to recruit and retain highly qualified pipeline and LNG engineers.

### **Contract Safety Programs: \$17.4 million**

Pipeline Safety's contract safety programs support inspection and compliance activities to help ensure the safe movement of hazardous materials through our Nation's pipeline network. PHMSA collects and analyzes data to inform safety standards and trains both Federal and State inspection and enforcement staff. Contract safety programs fund PHMSA's work to increase stakeholder communications, support damage prevention efforts, and assists operators in facilitating special permits. The Office of Pipeline Safety contract safety programs include the following:

**Liquefied Natural Gas Siting Reviews, \$960 thousand:** PHMSA has exclusive authority to determine whether the design, construction and operation of certain large scale Liquefied Natural Gas (LNG) facilities are compliant with federal safety standards. This funding provides engineering and safety support services.

### **Response to the Safety Risks from Growth in Liquefied Natural Gas Facilities and Transport:**

Recent expansion in the production of natural gas for consumption in the U.S. and for export has contributed to the expansion of liquefaction facilities and transportation of the liquefied gas. One measure of the anticipated growth is that in FY 2019, PHMSA issued 12 Letters of Determination regarding the safety of the location of new facilities. Transport of LNG by rail is already underway and expected to rapidly expand as new facilities come on line.

In addition to agency obligations for evaluating the safety of siting of LNG plants, PHMSA is also responsible for conducting safety inspections during facility construction. The imminent start of the facilities approved for siting in FY 2019 and anticipated in FY 2020 increases demand for PHMSA's limited qualified staff in the near term.



PHMSA currently employs engineers and scientists with expertise in energy products, but LNG provides additional safety risks that require specialized skills. Between the need for these specialized skills, and the rapid expansion of the market for LNG, existing PHMSA staffing levels will not be sufficient to respond to the growing risk.

PHMSA's request includes \$1.5 million for the cost (\$540 thousand included in Operations) of 5 positions (2.5 FTE in FY 2021) and for other costs (\$960 thousand), to address growing LNG safety challenges.

**Facility Design Reviews, \$2.2 million:** PHMSA incurs substantial cost in performing technical reviews to determine whether a project will conform with applicable design, materials, and construction safety standards. In FY 2021, PHMSA's pending reauthorization proposal, allows PHMSA to collect fees from project applicants to recover the costs incurred in conducting project design reviews for projects greater than \$250.0 million. This will serve to pass the cost of these reviews on to the applicants. Similarly, PHMSA proposes to collect from applicants for the cost of completing LNG facility safety reviews.

**Underground Natural Gas Storage Facilities, \$2.0 million:** The storage of natural gas at underground facilities across the United States plays a critical role in our energy independence, and buffers seasonal variations in demand for natural gas. Congress mandated through the PIPES Act that PHMSA issue minimum safety standards for such facilities, inspect underground natural gas storage facilities, and provide grants-in-aid to State pipeline safety inspection programs.

**Compliance and Pipeline Integrity Management, \$8.2 million:** PHMSA puts in place safety standards and regulations that operators use to assess the condition and maintenance of pipelines. Specifically, each operator must have formal pipeline integrity management plans in place that are updated regularly. Such plans assess pipeline conditions and account for oversight and action for pipeline incidents that take place or threaten to harm environmental resources such as drinking water.

**Training, Information and Community Assistance Services, \$2.8 million:** To enhance pipeline safety, PHMSA funds important training, information-sharing and community assistance services for internal and external stakeholders. PHMSA facilitates communication among pipeline stakeholders, including the public, operators and government officials. PHMSA also participates with the Common Ground Alliance on pipeline damage prevention efforts and maintains representatives in each region who inform communities about pipeline safety risks, answer questions, and field complaints.

**Mapping and Information Systems, \$1.8 million:** A National Pipeline Mapping System (NPMS) designed to assist federal, State and local government officials and pipeline operators with displaying and querying data related to gas transmission and hazardous liquid pipelines, liquefied natural gas plants, and breakout tanks.

**Implementing the Oil Pollution Act, \$1.5 million:** This 1990 law requires the preparation of spill response plans by operators that store, handle or transport oil. The purpose of these plans is to minimize the environmental impact of oil spills and improve public and private sector responses. PHMSA reviews response plans submitted by operators of onshore oil pipelines to ensure compliance.

**Research and Development: \$15.0 million**

PHMSA's Office of Pipeline Safety Research & Development (R&D) program sponsors research on projects that provide near-term solutions to improve pipeline safety, reduce the environmental impact of failures, and enhance the safety and reliability of the nation's pipeline transportation system. Additionally, it informs both regulatory and enforcement activities and provides the technical and analytical foundation necessary to plan, evaluate, and improve the pipeline safety program.

PHMSA's R&D program is focused on bringing new technology to market to pursue the elimination of failures and pushing to explore how to deploy technology to enhance the safety of pipelines, including better methods to detect liquid and gas leaks, prevent excavation damage to pipelines, conduct material testing for cured-in-place liners, and expand the capability of new robotic inspection tools for difficult-to-inspect pipelines.

R&D projects are co-funded with industry and/or academia. Projects focus on technology development, with recent topic areas including leak detection, mechanical damage detection, damage prevention, pipeline system control improvements, monitoring and operations, and pipeline material improvements. When deciding which R&D proposals to fund, the Office of Pipeline Safety gives preference to those that are designed to bring a new product to market within five years. Since 2002, the R&D program has brought 31 new technologies to market.

As an example, the use of in-line inspection devices was once limited to larger-diameter pipelines with long, smooth bends. The PHMSA R&D program helped develop technology to allow small-diameter pipelines with sharp turns to be internally inspected for defects, thereby increasing the percentage of pipelines that can be internally inspected. In addition, PHMSA's research supported aircraft-based systems that can detect leaks from gas and hazardous liquid pipelines.

In FY 2020 PHMSA's investments in research and development will be enhanced by conducting some research at an existing DOT facility, engaging uniquely qualified research and industry partners in the advancement of safety through innovation--an approach that will speed the adoption of new safety technologies to reduce pipeline incidents. PHMSA anticipates research at the DOT facility will continue in FY 2021 as the pipeline industry has expressed strong interest in access to an expanded safety research facility.

Underground natural gas storage and LNG facility safety are also areas of increasing R&D importance due to the expansion of these markets and the changes in PHMSA's responsibilities. In terms of underground storage, the record Aliso Canyon natural gas leak gained national attention and prompted new R&D initiatives. Underground storage research will support risk assessments, well-casing integrity, subsurface safety valve testing, and subsurface- and facility-level equipment analysis and monitoring.

Similarly, the rapid growth of both the domestic and international LNG transportation industries necessitates that best safety practices be established and implemented. LNG transportation research will address LNG specific safety system testing, quantitative risk-assessment methodologies, hazard mitigation models, and emerging technologies.

**Grants: \$ 61.0 million**

PHMSA provides grants to States to support inspection and enforcement activities of the nation's vast network of intrastate pipelines, which includes pipelines that operate in cities and neighborhoods. Our strong partnership allows States to provide a local presence for inspection of these pipeline systems, to offer input into the design of community safety programs, and to provide for more economical oversight of intrastate facilities. The total amount requested for grants includes the cost of the following programs:

**State Pipeline Safety Grants, \$53.0 million:** The State Pipeline Safety Grant program supports State inspections of pipeline facilities that run within the State (intrastate) and nine States, who also act as agents for PHMSA, inspecting pipelines crossing State boundaries (interstate). The PIPES Act of 2016 authorized PHMSA to reimburse States for up to 80 percent of the reasonable cost of carrying out their pipeline safety programs, including the cost of inspection staff and equipment. Reimbursement under this grant program is based on both the costs incurred by a State and the effectiveness of its pipeline safety program, as determined by PHMSA's evaluation of the State's performance.

PHMSA evaluates the quality of State programs and the safe operation of intrastate pipelines by scoring State programs through the annual Program Evaluation and Progress Report. This evaluation includes an on-site review of the State's records and activities related to inspections, compliance, accident investigations, training, and excavation damage prevention. PHMSA also reviews the States' inspection of the safe construction of new pipelines and the implementation of pipeline operator integrity management systems designed to prevent accidents and spills as part of a State's performance evaluation.

In FY 2018, the State Pipeline Safety Grant program provided funding to support 352 gas and 40 hazardous liquid pipeline inspectors. In 2018, there were 36 gas distribution and 2 gas transmission pipeline incidents with related deaths or injuries under State safety authority; additionally, there was one liquid pipeline failure under State authority. All States except Alaska and Hawaii participate in PHMSA's pipeline safety program. The requested funding will support improving pipeline safety through State inspections, funding an estimated 64 percent of State pipeline safety costs.

**Underground Natural Gas Storage Facilities Safety Grants, \$8.0 million:** PHMSA reimburses inspection costs to States participating in the program. Thirty-one States have intrastate underground natural gas storage facilities. To be eligible for reimbursement of costs, States must first have their inspection programs certified by PHMSA. As with the long-established State Pipeline Safety Grants program, Underground Natural Gas Storage Facility Safety Grants pay up to 80 percent of the qualifying costs related to inspections, enforcement, personnel and equipment.

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

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Pipelines cross thousands of communities in every State. Thus, millions of Americans count on both pipeline operators and PHMSA to oversee their safe operation. The requested funding will provide PHMSA with the resources it needs to support safe delivery of hazardous materials via pipelines while protecting people and the environment.

**Trust Fund Share of  
Pipeline Safety**

## **APPROPRIATIONS EXPLANATION**

### **TRUST FUND SHARE OF PIPELINE SAFETY**

#### **(OIL SPILL LIABILITY TRUST FUND)**

The Oil Spill Liability Trust Fund was created by the U.S. Congress to help fund efforts designed to minimize oil spills into the water and environmentally sensitive areas. Funding from the Oil Spill Liability Trust Fund contributes to some of the Office of Pipeline Safety's expenses and is included in its request. This section is provided as additional information about the fund. Funding from the Oil Spill Liability Trust Fund is accounted for by an expenditure transfer from which obligations are made and tracked separately from other pipeline safety funds.

**EXHIBIT III-1**  
**TRUST FUND SHARE OF PIPELINE SAFETY**  
**Summary by Program Activity**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

	<b>FY 2019 ACTUAL</b>	<b>FY 2020 ENACTED</b>	<b>FY 2021 REQUEST</b>
Operations	\$ 11,933	\$ 11,933	\$ 10,933
Research and Development	3,000	3,000	3,000
Grants	8,067	8,067	8,067
<b>TOTAL</b>	<u><u>\$ 23,000</u></u>	<u><u>\$ 23,000</u></u>	<u><u>\$ 22,000</u></u>
FTEs			
Direct Funded	-	-	-

**Program and Performance Statement**

PHMSA is responsible for collection and review of oil spill response plans prepared under the Oil Pollution Act of 1990. Response plans are required for operators that store, handle, or transport oil for purposes of minimizing the environmental impact of oil spills and improving incident response. PHMSA reviews ensure that plans are submitted timely and are updated regularly to be in compliance with regulations. PHMSA improves oil spill preparedness and incident response through data analysis, spill monitoring, pipeline mapping in areas unusually sensitive to environmental damage, and advancing technologies to detect and prevent leaks from hazardous liquid pipelines. These, and related activities are funded in part by the Oil Spill Liability Trust Fund.

## Detailed Justification for the Trust Fund Share of Pipeline Safety

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

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#### FY 2021 – Oil Spill Liability Trust Fund Budget Request (Included in the Pipeline Safety Account) (\$000)

Program Activity	FY 2019 Actual	FY 2020 Enacted	FY 2021 Request
Operations	\$11,933	\$11,933	\$10,933
Research and Development	3,000	3,000	3,000
Grants	8,067	8,067	8,067
<b>Total</b>	<b>\$23,000</b>	<b>\$23,000</b>	<b>\$22,000</b>

### What is this program and why is it necessary?

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The Oil Spill Liability Trust Fund was created by the U.S. Congress to finance efforts to prevent, remove, and mitigate damage from oil spills into the water and environmentally sensitive areas. Funding from the Oil Spill Liability Trust Fund contributes to the following: Pipeline Integrity Management; pipeline compliance inspection and enforcement; emergency preparedness related to pipeline spills and incidents; training, competency standards, and qualifications for inspection, enforcement and operation of pipelines; State Pipeline Safety Grants; and pipeline research and development. The Fund contribution amount is based on a reasonable share of the cost of these activities for pipelines in and around inland waterways.

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**Hazardous Materials**  
**Safety**

## **APPROPRIATIONS LANGUAGE**

### **HAZARDOUS MATERIALS SAFETY**

*Contingent upon enactment of multi-year surface transportation authorization legislation* For expenses, necessary to discharge the hazardous materials safety functions of the Pipeline and Hazardous Materials Safety Administration, [\$61,000,000] *\$60,700,000* [of which \$ 7,570,000] shall remain available until September 30, [2022] *2023*: Provided, That up to \$800,000 in fees collected under 49 U.S.C. 5108(g) shall be deposited in the general fund of the Treasury as offsetting receipts: Provided further, That there may be credited to this appropriation, to be available until expended, funds received from States, counties, municipalities, other public authorities, and private sources for expenses incurred for training, for reports publication and dissemination, and for travel expenses incurred in performance of hazardous materials exemptions and approvals functions.

**EXHIBIT III-1**

**Hazardous Materials Safety  
SUMMARY BY PROGRAM ACTIVITY  
Appropriations, Obligation Limitations, and Exempt Obligations  
(\$000)**

	<b>FY 2019 ACTUAL</b>	<b>FY 2020 ENACTED</b>	<b>FY 2021 REQUEST</b>
Operations	\$ 49,430	\$ 52,430	\$ 50,630
Research and Development	7,570	7,570	7,570
Grants	1,000	1,000	2,500
<b>TOTAL</b>	<b>\$ 58,000</b>	<b>\$ 61,000</b>	<b>\$ 60,700</b>
FTEs			
Direct Funded	198.0	203.0	203.0

**Program and Performance Statement**

PHMSA's Hazardous Materials Safety program is responsible for oversight of the safe transportation of hazardous materials. The hazardous materials safety program relies on comprehensive risk management to establish policy, standards and regulations for hazmat transport via air, highway, rail and vessel. The program utilizes inspection, enforcement, outreach and incident analysis in efforts to reduce incidents, minimize fatalities and injuries, mitigate the consequences of incidents that occur, train and prepare first responders, and enhance safety.

**EXHIBIT III-1a**

**Hazardous Materials Safety  
SUMMARY ANALYSIS OF CHANGE FROM FY 2020 TO FY 2021  
Appropriations, Obligations, Limitations, and Exempt Obligations  
(\$000)**

	<b><u>\$000</u></b>	<b><u>FTE</u></b>
<b>FY 2020 ENACTED</b>	<u>\$ 61,000</u>	<u>203.0</u>
<b>ADJUSTMENTS TO BASE:</b>		
Annualization of FY 2020 FTE	-	
Annualization of Prior Pay Raise(s)	187	
FY 2021 Pay Raises (1%)	374	
GSA Rent	-	
Working Capital Fund	405	-
Non-Pay Inflation	245	
Adjustment for Compensable Days (261 days)	(121)	
<b>SUBTOTAL, ADJUSTMENTS TO BASE</b>	<b>1,090</b>	<b>-</b>
<b>PROGRAM REDUCTIONS</b>		
Hazmat Information and Analysis	(1,908)	
Hazmat Registration Program	(400)	
Community Safety Grants	(1,000)	
Other Services: Other	(1,234)	
<b>SUBTOTAL, PROGRAM REDUCTIONS</b>	<b>(4,542)</b>	<b>-</b>
<b>PROGRAM INCREASES</b>		
Investigation and Enforcement	449	
State Hazardous Materials Safety Training grant	2,500	
Outreach, Training and Compliance	203	
<b>SUBTOTAL, PROGRAM INCREASES</b>	<b>3,152</b>	<b>-</b>
<b>FY 2021 REQUEST</b>	<b>\$ 60,700</b>	<b>203.0</b>

## Detailed Justification for Hazardous Materials Safety

### FY 2021 – Hazardous Materials Safety Budget Request (\$000)

Program Activity	FY 2019 Actual	FY 2020 Enacted	FY 2021 Request
Operations	\$ 39,521	\$ 44,043	\$ 43,900
Contract Safety Programs	9,909	8,387	6,730
Research and Development	7,570	7,570	7,570
Grants	1,000	1,000	2,500
<b>Total</b>	<b>\$ 58,000</b>	<b>\$ 61,000</b>	<b>\$ 60,700</b>
<b>FTEs</b>	<b>198.0</b>	<b>203.0</b>	<b>203.0</b>

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

Safely transported hazardous materials are an integral and growing part of the American way of life and a critical element of our vibrant economy. Countless products used in homes and gardens, farms, vehicles, and industry are potentially dangerous if improperly packaged or unsafely transported. PHMSA's mission is to protect people and the environment by advancing the safe transportation of hazardous materials that are essential to our daily lives. The Hazardous Materials Safety program serves PHMSA's mission by focusing on the packaging, shipment and training requirements for hazardous materials transportation by air, highway, rail, and vessel.

In our interconnected and highly developed transportation network, hazardous materials move by all modes of transport. A single package may be transported in multiple modes from its point of origin to its destination. PHMSA's guidance provides the critical connection that enables end-to-end consistency and interoperability throughout the transportation system. Our work force fosters a high degree of transportation safety, and facilitates trade and economic growth by eliminating the potential for overlapping regulatory burdens that could impede commerce. The result is a safe and reliable transportation network that protects the American people and the environment while supporting economic growth and export.

The movement of hazardous materials is inherently dangerous. According to the U.S. Department of the Census, Commodity Flow Survey, more than 2.7 billion tons of hazardous materials valued at more than \$3.1 trillion are transported annually by air, highway, rail, and vessel.<sup>1</sup> On average more than 1,200,000 hazardous materials shipments occur every day. From 2012 to 2017, the total hazmat shipped annually has increased by 15%, or by 500 million tons per year, with nearly all of the 3.4 billion tons in shipments arriving at their destinations safely.

<sup>1</sup> Commodity Flow Surveys; Hazardous Materials data; PHMSA projections.

PHMSA works to promote safety and maintain a system where hazardous materials are packaged and shipped without incident. The program accomplishes this with a variety of packaging and transportation safety standards, safety checks, and outreach to the packaging and shipping industries. Hazardous materials shipped include oil and gas, liquefied natural gas (LNG), explosives, other flammable liquids and solids, oxidizing substances and organic peroxides, lithium-ion batteries, corrosive substances, and radioactive materials.



**Clear labeling with placards and graphics is central to reducing hazardous materials risk**

PHMSA checks energy products, shipped by road and rail, so they arrive safely and without incident. New extraction technologies' ability to tap previously inaccessible sources of natural gas and crude oil has transformed the domestic energy landscape. For example, in 2020, the United States (U.S.) crude production reached 12.9 million barrels per day, with a corresponding surge in high volume rail shipments. Similarly, growth in U.S. natural gas production has driven the development of many large and small-scale liquefaction facilities to store natural gas in a compact liquid state while awaiting delivery to market. This growth and its impact on a capacity-strained pipeline network has resulted in the increased use of rail and road transport.

PHMSA works to prevent hazardous materials transportation accidents and to mitigate the consequences of incidents involving these materials when they occur. Meeting safety objectives requires that PHMSA continue to support safe packaging, train first responders, and invest in promising research and development that solves complex packaging challenges.

Congress has given direction to PHMSA to modernize the safety standards for shipping crude by rail, among other directives. This funding request enables PHMSA to complete these calls for action, including:

- **Improving the Safe Transportation of Flammable Liquids by Rail**

Requires that all tank cars used to transport crude oil and other hazardous liquids meet the new, safer tank car specifications outlined in DOT's High Hazard Flammable Train final rule to strengthen the safe transportation of flammable liquids by rail, regardless of train composition. The FAST Act would require that an estimated additional 40,000 tank cars be retrofitted to meet the new DOT-117, DOT-117P or DOT-117R specifications outlined in DOT's final rule, and establishes a new timeline to phase out tank cars that do not meet these new specifications.

- **Improving Emergency Preparedness and Response**

Clarifies the U.S. Department of Transportation's (DOT) authority to facilitate the movement of essential hazardous material during national emergencies and disasters in order to improve the government's ability to carry out emergency response and relief efforts.

- **Improving the Effectiveness of the Hazardous Materials Grant Programs**

Calls on PHMSA to assist emergency responders, hazardous materials professionals, and local communities that are likely to be impacted by the increase of hazardous materials shipments through their neighborhoods. The FAST Act made several changes to the grant programs to promote greater accountability and give grantees more flexibility in administering grants that help emergency responders prepare for and respond to incidents involving hazardous materials.

PHMSA is also responsible for the safe movement of liquefied natural gas (LNG). A new era in energy transport is underway and set to accelerate with exponential growth in U.S. exports of LNG. As recently as 2015, the U.S. was a net importer of LNG. In February 2016, the first export of LNG from the lower 48 States left Sabine Pass, Louisiana. While initially the lone



exporting plant in the contiguous U.S., many more exist today. As of January 2020, seven are operational and another eight are under construction. Another twelve U.S. liquefied natural gas export sites have been approved to bring abundant American energy to markets abroad. Multi-modal transportation options will provide the flexibility that will enable and aid commerce in this shift in the LNG market.

Additionally, interstate transport of LNG by rail has begun. In

late September 2016, Alaska Railroad delivered liquefied natural gas from Anchorage, Alaska to Fairbanks, Alaska in the first-ever shipment of its kind. This led to additional movements to ports in Florida. In January 2017, a petition was filed with PHMSA to develop standards to allow rail cars to transport liquefied natural gas. Following thorough reviews, PHMSA accepted the LNG-by-rail petition in May 2018 and issued a special permit and Notice of Proposed Rulemaking in 2019. A final rule is due out in 2020, in accordance with the Executive Order on Promoting Energy Independence and Economic Growth.

# North American LNG Export Terminals

## Approved, Not Yet Built



### Export Terminals

#### UNITED STATES

##### APPROVED - UNDER CONSTRUCTION - FERC

1. Hackberry, LA: 1.43 Bcfd (Semptra-Cameron LNG, Trains 2 & 3) (CP13-25)
2. Freeport, TX: 0.713 Bcfd (Freeport LNG Dev/Freeport LNG Expansion/FLNG Liquefaction Train 3) (CP12-509) (CP15-518)
3. Corpus Christi, TX: 0.72 Bcfd (Cheniere-Corpus Christi LNG Train 2) (CP12-507)
4. Sabine Pass, LA: 0.7 Bcfd Train 6 (Sabine Pass Liquefaction) (CP13-552)
5. Elba Island, GA: 0.210 Bcfd (Southern LNG Company Units 5-10) (CP14-103)
6. Cameron Parish, LA: 1.41 Bcfd (Venture Global Calcasieu Pass) (CP15-550)
7. Sabine Pass, TX: 2.1 Bcfd (ExxonMobil - Golden Pass) (CP14-517)
8. Calcasieu Parish, LA: 4.0 Bcfd (Driftwood LNG) (CP17-117)

##### APPROVED - NOT UNDER CONSTRUCTION - FERC

- A. Lake Charles, LA: 2.2 Bcfd (Southern Union - Lake Charles LNG) (CP14-120)
- B. Lake Charles, LA: 1.08 Bcfd (Magnolia LNG) (CP14-347)
- C. Hackberry, LA: 1.41 Bcfd (Semptra - Cameron LNG) (CP15-560)
- D. Port Arthur, TX: 1.86 Bcfd (Port Arthur LNG Trains 1 & 2) (CP17-20)
- F. Freeport, TX: 0.72 Bcfd (Freeport LNG Dev Train 4) (CP17-470)
- G. Pascagoula, MS: 1.5 Bcfd (Gulf LNG Liquefaction) (CP15-521)
- H. Jacksonville, FL: 0.132 Bcfd (Eagle LNG Partners) (CP17-41)
- I. Plaquemines Parish, LA: 3.40 Bcfd (Venture Global LNG) (CP17-66)
- J. Brownsville, TX: 0.55 Bcfd (Texas LNG Brownsville) (CP16-116)
- K. Brownsville, TX: 3.6 Bcfd (Rio Grande LNG - NextDecade) (CP16-454)
- L. Brownsville, TX: 0.9 Bcfd (Annova LNG Brownsville) (CP16-480)
- M. Corpus Christi, TX: 1.86 Bcfd (Cheniere Corpus Christi LNG) (CP18-512)

##### APPROVED - NOT UNDER CONSTRUCTION - MARAD/Coast Guard

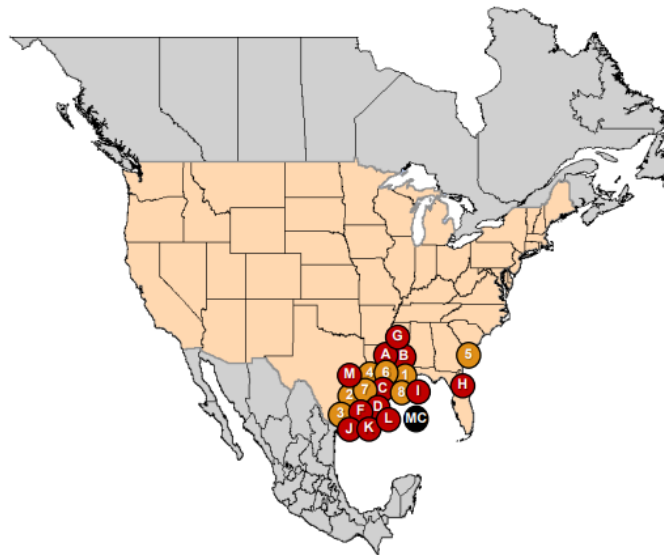
MC. Gulf of Mexico: 1.8 Bcfd (Delfin LNG)

#### CANADA

For Canadian LNG Import and Proposed Export Facilities go to:

<https://www.nrcan.gc.ca/energy/natural-gas/5683>

As of January 24, 2020



PHMSA's research informs safety standards for the movement of dangerous products. PHMSA's Hazmat Research and Development program is designed to solve complex problems in the packaging and movement of hazardous materials. This includes researching and identifying best practices regarding hazardous materials transport with a better classification of the most dangerous products, development of new packaging materials and methods to contain those products, and conducting engineering and scientific analysis to reduce regulatory burdens while improving safety. Recently completed research on lithium-ion batteries has led to the development of a battery health monitoring device that can anticipate potential shipment issues without affecting packaging weight. PHMSA continues to review and communicate hazards tied to lithium-ion batteries in both cargo and passenger aircraft, as that mode of transportation poses the greatest threat to the public. Significant emphasis is placed on finding innovative ways to enhance safety while easing commerce.

Research for FY 2021 will focus on the following strategic areas: risk management and mitigation, package integrity, emerging technologies, and technical analysis to aid risk assessments. Some research addresses risks in multiple areas. For instance, emerging technology research on new materials may translate into advances in packaging integrity. Much of PHMSA's hazardous materials research is done cooperatively with government and industry entities with a focus on near-term solutions to evolving hazardous materials related transportation challenges.



To continue the safe movement of hazardous materials, PHMSA requests \$60.7 million for the Hazardous Materials Safety program as follows:

### **Operating Expenses: \$43.9 million**

PHMSA's fiscal year (FY) 2021 request includes \$43.9 million for hazardous materials safety-related operating expenses to support the costs of 203 staff, including salaries and benefits, travel, training, supplies, equipment and uniforms for all inspectors. The request also includes investments in PHMSA's core business areas of Inspection, Investigation, Compliance and Safety Management.

### **Contract Safety Programs: \$ 6.7 million**

PHMSA's Contract Safety programs include cost of contracted support as follows:

**Investigation and Enforcement** program supports the inspection and investigative staff located mostly in the PHMSA regional offices. This provides package testing, professional support, and equipment needed to test hazardous materials such as radioactive substances.

**Outreach, Training and Compliance** program provides outreach, education, and training to communities and first responders on hazardous materials safety and enables hazardous materials packagers and shipper's compliance with safety standards and regulations.

PHMSA plans to drive improvements in the safe delivery of hazardous materials by investing in a new training and certification program for States to conduct inspections for hazmat transport by all modes other than pipelines. The investment will provide a robust training curriculum to be delivered online and in-person at an expanded facility currently shared with the Pipeline Safety program. This training and certification program will provide a major expansion of PHMSA's current inspection and enforcement capabilities through engagement of State inspectors. Providing training and certification is expected to improve the quality and effectiveness of inspections, reduce hazmat incidents and increase overall safety in the transportation of hazardous materials.

**Hazardous Materials Registration** program gives support to, and collects annual registration statements and fees from hazardous materials shippers. These fees provide essential funding for grants to first responders.

These programs are designed to advance PHMSA's mission towards the safe transportation of energy and hazardous materials through monitoring Special Permit and Approval applications; the development and dissemination of educational tools for outreach; engagement with industry stakeholders and the emergency response community; and ensuring a data-driven approach to managing hazardous materials risks with its one-stop, multi-modal Hazardous Materials Intelligence Portal. These programs also support PHMSA's ability to verify and analyze incident reports submitted through the Hazardous Materials Information Communication System and the ability to obtain emergency notifications when a hazardous material incident occurs.

## Research and Development: \$7.6 million

PHMSA's Research & Development (R&D) solves complex problems in the packaging and movement of hazardous materials business. The R&D program funds multi-modal programs supporting improved packaging and equipment designs that improve the performance of highway transport, including unmanned autonomous vehicles, rail cars, airplane cargo holds, and vessels used to transport hazardous materials. In allocating PHMSA's R&D agenda, significant emphasis is placed on innovative ways to enhance safety while facilitating the efficiency of commerce. For example, previously low volume products that are now routinely transported in large packages will undergo shock and vibration testing. Improved packaging for better protection of lithium batteries at risk of thermal runaway will also be a research focus. Some important projects include:

- **Safe packaging transportation practices for lithium batteries.** Lithium batteries are regulated as hazardous materials. They pose special risks during transportation since they can overheat and ignite under certain conditions and, once ignited, can be especially difficult to extinguish. Lithium batteries present both chemical (e.g. flammable electrolyte) and electrical hazards. Lithium batteries can short circuit, overheat, and sometimes cause a fire when misused, mishandled, improperly packaged, improperly stored, overcharged or subject to failure due to latent or evolving internal defect(s). This research will evaluate the current packaging practices for lithium ion cells and batteries in the air transport environment, and if there are any recommendations for packaging improvements.
- **Developing annual commodity flow and packaging data through the US Census Bureau** Complete a multiyear program providing PHMSA with high-quality data on hazmat packaging by use and number of shipments. Specifically, this project validates and provides context to the hazardous material packaging, transport and incident data. This data will help PHMSA avoid and eliminate burdensome regulation and quickly and precisely calculate the changing risks associated with transport of hazardous materials
- **Hazardous materials shipped by autonomous vehicles.** The use of autonomous vehicles presents new dangers that will need to be evaluated and mitigated. PHMSA's research will ensure the safe introduction and ultimately lower the risk of incidents caused by unmanned vehicles.

PHMSA works cooperatively with shippers, carriers, emergency responders, State and local officials, other Federal agencies that oversee transportation systems, and academic institutions in its hazardous materials research. It accomplishes this through shared development of proposals and joint funding of the most promising research.

## Grant Programs: \$2.5 million

### State Program for Hazardous Materials Safety Inspection and Enforcement Training and Inspection

PHMSA's request for FY 2021 includes \$2.5 million for enhancements to the current Hazardous Materials Safety program by leveraging State resources to conduct inspections of hazardous

materials shippers. This current gap in DOT modal inspection programs results in many of the roughly 90,000 shipper locations throughout the United States operating with little safety oversight. This model parallels but does not duplicate other programs across DOT including in PHMSA's Pipeline Safety program, which provides up to 80% of the costs incurred by States to conduct pipeline safety inspections. The funding will be used to provide training normally funded by States, reimburse shipper inspection costs, and develop a certification for State hazardous materials packaging and shipping inspection programs.

The concept behind the initiative is to improve the quality and consistency of shipper inspections that impact all modes of hazmat transport (other than pipelines) by increasing oversight at shipper locations. Currently, inspection resources focus almost exclusively at carrier locations. A training program to provide State inspection authorities with additional funding will expand the number of inspections and qualified inspectors, improving the safe transport of hazmat. Participating States will be eligible for program certification as an indication of their inspection quality.

Given the rapid growth in hazmat transport, PHMSA does not have sufficient numbers of Federal safety inspectors to effectively monitor the growing safety risks. Providing funding to States to improve the number and quality of safety inspections is the most effective means for addressing the growing risk. Improving the consistency and quality of safety inspections also provides industry with certainty about the rules and costs of compliance. PHMSA estimates that the program could establish certification programs with up to five States in its first year.

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

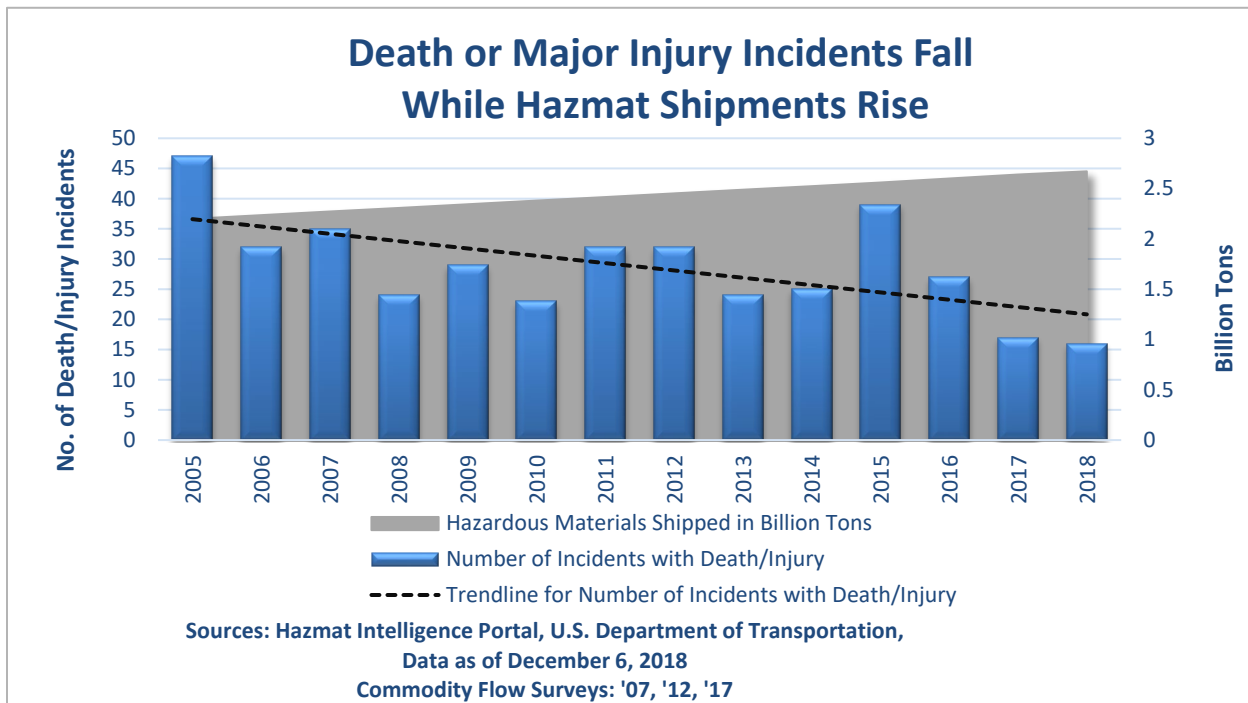
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PHMSA provides benefits to the American public by carefully balancing regulatory burdens, while improving levels of safety in the packaging and shipping hazardous materials. Our Systems Integrity Safety Program helps companies that have systemic noncompliance; a substantially high percentage of incidents leading to deaths, injuries, and environmental releases; or present a high level of risk to the public. The program enables these companies to develop sustainable solutions by investing in themselves. This voluntary action, instead of traditional enforcement actions, has improved compliance, achieved a higher level of safety than possible with standard processes, and leveraged limited investigator resources.

PHMSA investigators have also established liaisons with senior company officials at organizations including major hazardous materials distributors and manufacturers of chemicals and packaging to correct widespread systemic problems through innovative, non-punitive methods. PHMSA does this by working with affected companies to make them aware of the problems they are experiencing, propose solutions, and periodically tracks progress. In one instance, a company reported that it recouped investments through operational cost savings and improved processes within three years.

PHMSA participated in regulatory reform to improve hazardous materials packaging and shipping safety at lower economic costs. In 2017, PHMSA's deregulatory actions provided about \$100.0 million in economic benefits. For 2018, these benefits grew to approximately \$600.0 million, while improving safety.

PHMSA's Hazardous Materials Safety program also supports the economy through safe transport of products to market while simultaneously making communities safer and more livable. An effective transportation safety program requires continuous evaluation, revitalization, and updating to address modern risks. While commerce has grown, safety has increased. As shown below, total death and major injury incidents have declined steadily since 2005.



These ongoing successes cannot occur without a continuous commitment to excellence in safety. New inventions/products packaged in cutting edge/advanced packaging solutions/technologies being transported through unfamiliar ports of origin raise the stakes for safety precautions and preventative measures in the transportation of hazardous materials. PHMSA's funding request facilitates its ability to identify the highest risks in moving energy to domestic and international markets, technology changes, and new shipping methods. PHMSA requests funding to manage the evolving challenges of packaging and shipping hazardous materials, with a commitment to R&D to continue gathering information, solving problems and moving the U.S. hazardous materials industry forward, protecting the American people, property and ensuring the safe acceleration of our booming energy economy.

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**Emergency  
Preparedness Grants**

## APPROPRIATIONS LANGUAGE

### EMERGENCY PREPAREDNESS GRANTS

#### (LIMITATION ON OBLIGATIONS)

#### (EMERGENCY PREPAREDNESS FUND)

*Contingent upon enactment of multi-year surface transportation authorization legislation, for expenses necessary to carry out the Emergency Preparedness Grants program, not more than \$28,318,000 shall remain available until September 30, [2022] 2023, from amounts made available by 49 U.S.C. 5116(h), and 5128(b) and (c): Provided, That notwithstanding 49 U.S.C. 5116(h)(4), not more than 4 percent of the amounts made available from this account shall be available to pay administrative costs: *Provided further, That notwithstanding 49 U.S.C. 5128(b) and (c) and the limitation on obligations provided under this heading, prior year recoveries recognized in the current year shall be available to develop and deliver hazardous materials emergency response training for emergency responders, including response activities for the transportation of flammable liquids and other hazardous commodities by rail, consistent with the National Fire Protection Association standards; Provided further, That the prior year recoveries made available under this heading shall also be available to carry out 49 U.S.C. 5116 (a) (1) (C) and 5116(i).**

**EXHIBIT III-1**  
**Emergency Preparedness Grants**  
**Summary by Program Activity**  
**Appropriations, Obligation Limitations, and Exempt Obligations**  
**(\$000)**

	<u><b>FY 2019 ACTUAL</b></u>	<u><b>FY 2020 ENACTED</b></u>	<u><b>FY 2021 REQUEST</b></u>
Operations	\$ 520	\$ 555	\$ 555
Grants	\$ 26,042	\$ 27,763	\$ 27,763
<b>TOTAL</b>	<u><u>\$ 26,562</u></u>	<u><u>\$ 28,318</u></u>	<u><u>\$ 28,318</u></u>
FTEs			
Direct Funded	0	0	0

**Program and Performance Statement**

PHMSA operates a national registration program for shippers and carriers of hazardous materials and collects a fee from each registrant. The fees collected are used for emergency preparedness planning and training grants; publication and distribution of the Emergency Response Guidebook; development of training curriculum guidelines for emergency responders and technical assistance to States, political subdivisions, and Native American Tribes; and administrative costs for these programs.



**EXHIBIT III-1a**

**Emergency Preparedness Grants**  
**SUMMARY ANALYSIS OF CHANGE FROM FY 2020 TO FY 2021**  
**Appropriations, Obligations, Limitations, and Exempt Obligations**  
**(\$000)**

	<b><u>\$000</u></b>	<b><u>FTE</u></b>
<b>FY 2020 ENACTED</b>	<u>\$ 28,318</u>	<u>-</u>
<b>ADJUSTMENTS TO BASE:</b>		
Annualization of FY 2020 FTE	-	
Annualization of Prior Pay Raise(s)	-	
FY 2021 Pay Raise	-	
GSA Rent	-	
Working Capital Fund	-	
Non-Pay Inflation	-	
<b>SUBTOTAL, ADJUSTMENTS TO BASE</b>	-	-
<b>PROGRAM REDUCTIONS</b>	-	
None		
<b>SUBTOTAL, PROGRAM REDUCTIONS</b>	-	-
<b>PROGRAM INCREASES</b>		
None	-	
<b>SUBTOTAL, PROGRAM INCREASES</b>	-	-
<b>FY 2021 REQUEST</b>	<b>\$ 28,318</b>	<b>-</b>

## Detailed Justification for Hazardous Materials Emergency Preparedness Grants

### FY 2021 – Hazardous Materials Emergency Preparedness Grants Budget Request (\$000)

Program Activity	FY 2019 Enacted	FY 2020 Request	FY 2021 Request
Operations	\$ 520	\$ 555	\$ 555
Grants	26,042	27,763	27,763
<b>Total</b>	<b>\$ 26,562</b>	<b>\$ 28,318</b>	<b>\$ 28,318</b>

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

Over the past decade, there has been tremendous growth in the shipment of hazardous materials throughout the nation. As reported by the US Department of Census Since 2012, the total hazmat shipped annually has increased by 15%, or by 500 million tons per year. Thus, carrier movement of hazardous materials has increased dramatically on roads and waterways, and by rail, within the United States. Communities impacted by hazardous materials shipments need to train and prepare first responders to control and contain accidents and incidents involving hazardous materials.

Congress, through the Fixing America's Surface Transportation (FAST) Act of 2015, recognized the need for the support of communities and first responders most affected by this growth. Funding for the program comes from approximately 40,000 hazardous materials shippers' (truckers, rail companies, and airlines) registration fees. The monies collected aid communities planning for unique risks of hazardous material accidents/incidents is especially needed for first responders due to the increased risk of hazardous materials freight passing through their neighborhoods. The program funds local firefighters' and other first responders' training, across all 50 States and territories, on the response and remediation of difficult hazardous materials fires and incidents.

In fiscal year 2021, PHMSA requests a budget authority of \$28.3 million for the Emergency Preparedness Grants program. This funding level allows PHMSA to continue important emergency preparedness training and planning grants, technical assistance to grant recipients, and the printing of the *Emergency Response Guidebook*.

#### Operations: \$555.0 thousand

Operations includes the costs to manage the emergency preparedness and grants programs including creating training modules for grantees and first responders, and support for the review of State plans for improving local response to hazardous materials shipments, routes, and incidents.

## **Grants Program: \$27.8 million**

Emergency Preparedness Grants provide Federal financial and technical assistance to States, territories and Native American tribes to develop, improve, and carry out emergency plans.

Grants include the cost of the following grant programs: Hazardous Materials Emergency Preparedness (HMEP) Grants, \$22.0 million, Hazardous Materials Instructor Training (HMIT) Grants, \$4.0 million, and Supplemental Public-Sector Training Grants, \$1.0 million.

### **Hazardous Materials Emergency Preparedness Grants, \$22.0 million**

The training and planning grants is distributed among States through a formula that factors in population density, the frequency, and costs associated with serious and non-serious incidents, and mode(s) of transportation involved in previous hazardous materials accidents/incidents. These grants are awarded to States that provide funding to localities and first responders most in need of planning and training. In the 2018 Report to Congress PHMSA reported the Hazardous Materials Emergency Preparedness grant funded training of over 102,000 emergency responders and funds the update or development of over 1,300 emergency response plans, performance of 1,134 emergency response exercises, and completion of 124 commodity flow studies.

### **Hazardous Materials Instructor Training (HMIT) Grants, \$4.0 million**

The HMIT Grants program provides funding to train hazardous materials safety employees to become instructors and develops tools to extend the reach of hazardous materials training. These grants are awarded to nonprofit organizations with expertise in training hazardous materials safety employees. In 2015, more than 13,000 hazardous materials employees and instructors were trained.

### **Supplemental Public Sector Training Grants, \$1.0 million**

These grants help train hazardous materials training instructors so they are well versed in the best practices in modern hazardous material incident remediation. These grants are made to national, nonprofit fire service organizations. In 2018 Report to Congress, PHMSA reported 1,422 emergency responders received supplemental training from these grants.

The grant programs provide funding to States, localities, and local fire and rescue centers managing hazardous materials shipping routes in their communities. Recipients of these funds train first responders in identifying and containing leaked chemicals and extinguishing dangerous fire substances. These subsidies are also used to develop and/or revise emergency plans for bulk transportation of energy products by rail and over the road.

In addition, the Hazardous Materials Emergency Preparedness Grants program supports State, local and tribal hazardous materials training initiatives through the publication of *Guidelines for Response, Planning and Prevention Training for Incidents Involving Hazardous Materials and Weapons of Mass Destruction*.

### **Oversight and Technical Assistance, \$150.0 thousand**

The FAST Act requires the Department to provide technical assistance to a State, its political subdivisions or Native American tribes for carrying out emergency response training and planning for incidents involving hazardous materials. PHMSA does this through direct training and outreach, web-based and media outreach.

### **Emergency Response Guidebook, \$625.0 thousand**

PHMSA develops, publishes and distributes an updated version of its *Emergency Response Guidebook (ERG)* every four years (both paperback and electronic versions). The *Emergency Response Guidebook* is developed jointly by the U.S. Department of Transportation, Transport Canada and the Secretariat of Communications and Transportation of Mexico for use by first responders. The guidebook is for initial actions to be taken to protect first responders and the public during hazardous materials incidents (see <http://www.phmsa.dot.gov/hazmat/library/erg>). The *Emergency Response Guidebook* is widely used by the transportation industry and is internationally recognized.

Finally, 14.5 million copies of the *Emergency Response Guidebook* have been published and distributed since 1993. The *Emergency Response Guidebook* is the primary resource for the Nation's first responders, and is the globally recognized authority in hazardous materials containment, having been translated into more than a dozen languages. *Emergency Response Guidebooks* are present in almost every emergency response vehicle in the United States.

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

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It has been proven that grant programs supporting emergency preparedness have resulted in low rates of hazardous materials transportation-related deaths, major injuries, and significant damage to property and the environment. Studies have shown that low impact incidents can be attributed to first responders and their ability to identify hazardous materials spilled, secure a site, and extinguish hazardous material fires.

Hazardous materials employees and emergency responders also benefit from qualified training instructors. These grants help ensure workplace safety and compliance when transporting hazardous materials and provide training to firefighters across the Nation to ensure a safe and efficient response to hazardous material incidents. Every year selected nonprofit organizations instruct thousands of such trainers and hazardous materials employees on the rules, regulations and best practices on the containment of hazardous materials accidents/incidents.

Emergency preparedness and response training are vital components in supporting the safety of the Nation's first responders and the American public. Effective preparation for emergencies help prevent and/or contain the impact(s) of hazardous materials incidents/accidents, saving lives and reducing environmental damage every year.

**Operational Expenses**

## **APPROPRIATIONS LANGUAGE**

### **OPERATIONAL EXPENSES**

For necessary operational expenses of the Pipeline and Hazardous Materials Safety Administration, \$24,215,000. [Provided, That notwithstanding the amounts specified in 49 U.S.C. 60130(c), \$2,000,000 shall remain available until September 30,2022.]

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

	<b>FY 2019 ACTUAL</b>	<b>FY 2020 ENACTED</b>	<b>FY 2021 REQUEST</b>
Operations	\$ 22,210	\$ 22,715	\$ 24,215
Grants	\$ 1,500	\$ 1,500	\$ -
<b>TOTAL</b>	<b>\$ 23,710</b>	<b>\$ 24,215</b>	<b>\$ 24,215</b>
FTEs			
Direct Funded	69.0	71.0	68.0

**Program and Performance Statement**

The success of the PHMSA safety programs is dependent on effective support organizations that hire staff, acquire goods and services, develop and sustain information technology, write complex regulations, and support enforcement actions, among others. PHMSA provides support through the Offices of the Administrator, Deputy Administrator, Executive Director/Chief Safety Officer; Planning and Analytics; Chief Counsel; Governmental, International and Public Affairs; Chief Financial Officer, Budget and Finance, Acquisition and Information Technology Services; Associate Administrator for Administration, Administrative Services, Human Resources; and Civil Rights.

**EXHIBIT III-1a**

**Operational Expenses**  
**SUMMARY ANALYSIS OF CHANGE FROM FY 2020 TO FY 2021**  
**Appropriations, Obligations, Limitations, and Exempt Obligations**  
**(\$000)**

	<b><u>\$000</u></b>	<b><u>FTE</u></b>
<b>FY 2020 ENACTED</b>	<b>\$ 24,215</b>	<b>71.0</b>
<b>ADJUSTMENTS TO BASE:</b>		
Annualization of FY 2020 FTE	215	1.0
Annualization of Prior Pay Raise(s)	73	
FY 2021 Pay Raise	146	
GSA Rent	-	
Working Capital Fund	142	(4.0)
Non-Pay Inflation	97	
Adjustment for Compensable Days (261 days)	(47)	
<b>SUBTOTAL, ADJUSTMENTS TO BASE</b>	<b>626</b>	<b>(3.0)</b>
<b>PROGRAM REDUCTIONS</b>		
Information Grants to Communities	(1,500)	
<b>SUBTOTAL, PROGRAM REDUCTIONS</b>	<b>(1,500)</b>	<b>-</b>
<b>PROGRAM INCREASES</b>		
Information Technology	874	
<b>SUBTOTAL, PROGRAM INCREASES</b>	<b>874</b>	<b>-</b>
<b>FY 2021 REQUEST</b>	<b>\$ 24,215</b>	<b>68.0</b>



## Detailed Justification for the Operational Expenses Program

### FY 2021 Operational Expenses Budget Request (\$000)

Program Activity	FY 2019 Actual	FY 2020 Enacted	FY 2021 Request
Operations	\$16,553	\$18,628	\$19,261
Contract Safety Programs	5,657	4,087	4,954
Grants	1,500	1,500	-
<b>Total</b>	<b>\$23,710</b>	<b>\$24,215</b>	<b>\$24,215</b>
<b>FTEs</b>	<b>69.0</b>	<b>71.0</b>	<b>68.0</b>

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

The Pipeline and Hazardous Materials Safety Administration's mission is to ensure the safe transportation of hazardous materials across all modes of transportation and through pipelines. The Operational Expenses account provides resources that support a world-class safety organization. Operational Expenses funding provides for regulatory and enforcement support, maintaining modern data systems, financial management, grants administration and acquisition services necessary to support PHMSA's mission.

#### **Operations: \$19.3 million**

PHMSA's FY 2021 operations request of \$19.3 million supports the safety organization, funds the Department of Transportation shared costs through the Working Capital Fund, and equips our safety staff with the tools, training, and technology necessary to operate a first-rate safety organization.

PHMSA requests funding for the annualization of (1 FTE) for continued regulatory reform efforts. PHMSA's ongoing review of regulations is designed to improve and enhance safety outcomes and update standards for advances in shipping, packaging and pipeline technology. In FY 2018, PHMSA conducted an extensive regulatory review process, identified 18 potentially deregulatory actions and prioritized other regulations in response to safety needs and mandates.

## **Contract Safety Programs: \$4.9 million**

PHMSA's request for contract safety programs in the Operational Expenses account is \$4.9 million. PHMSA completed its electronic Hazardous Materials Safety incident reporting system, as well as the new Hazardous Materials Online Registration Service. PHMSA also released the pilot version of the new online fireworks transport approval system. Additional mobile technologies are being developed to support field operations, inspection, investigation, and enforcement. Contract safety programs for information technology improve PHMSA's ability to deliver on its core safety mission by providing automation tools and data analysis capabilities. PHMSA is positioned to continue innovations to provide support to field personnel, gather and analyze data, improve accountability and customer service, supply better information for first responders, and share information to improve safety outcomes.

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

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The request will allow PHMSA to carry out an effective staffing plan, support innovative modern information technology, improve internal management processes for the safety organization, and enhance responsiveness to Congressional and regulatory requirements.

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**IV: Research,  
Development and  
Technology**

**DEPARTMENT OF TRANSPORTATION**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**RESEARCH, DEVELOPMENT & TECHNOLOGY**  
**BUDGET AUTHORITY**  
(In thousands of dollars)

<b>Account / Program</b>	<b>Class.</b>	<b>FY 2019 Actual</b>	<b>FY 2020 Enacted</b>	<b>FY 2021 Request</b>
<b>Pipeline Safety</b>		<b>\$ 16,363</b>	<b>\$ 16,363</b>	<b>\$ 16,363</b>
Pipeline Safety Research	D	15,000	15,000	15,000
Trust Fund Share [Non-Add]		[2,750]	[2,750]	[2,750]
Administrative Expenses	D	1,363	1,363	1,363
<b>Hazardous Materials Safety</b>		<b>\$ 8,116</b>	<b>\$ 8,116</b>	<b>\$ 8,116</b>
Hazardous Materials Safety Research	A	7,570	7,570	7,570
Administrative Expenses	A	546	546	546
Subtotal, Basic Research (B)		-	-	-
Subtotal, Applied Research (A)		8,116	8,116	8,116
Subtotal, Development Research (D)		16,363	16,363	16,363
Total Technology Transfer/Deployment (T)		-	-	-
Subtotal, Research and Development Facilities (F)		-	-	-
Administrative Expenses [Non-Add]		[1,909]	[1,909]	[1,909]
<b>Total</b>		<b>\$ 24,479</b>	<b>\$ 24,479</b>	<b>\$ 24,479</b>

## **RESEARCH STRATEGY**

The Pipeline and Hazardous Materials Safety Administration's (PHMSA) protects people, property and the environment by advancing the safe transportation of energy products and the safe packaging and shipment of hazardous materials that are essential to our daily lives. We operate in an ever-evolving, fast-paced, dynamic and challenging environment in which new, advanced and upgraded technological inventions, chemical volumes, manufacturing, and energy products pose great dangers while being transported from one point to another. PHMSA anticipates that the scope and complexity of our safety mission will continue to grow, requiring the agency to solve complex problems and fill information gaps to achieve the safe delivery of all products during their transportation cycle.

Pipeline energy transportation alone has increased more than 40 percent in recent years. America's pipeline infrastructure spans more than 2.8 million miles, and is used to transport nearly all the natural gas and about two-thirds of the liquid petroleum energy products consumed domestically. Furthermore, our country is developing new energy resources in areas without pipeline infrastructure, and must find ways for it to be transported safely and efficiently to end users. PHMSA also confronts safety challenges posed by the increased transportation of hazardous materials across all modes - more than 2.7 billion tons annually and more than 1,200,000 shipments per day.

In December 2016, the Department of Transportation (DOT) established a set of research-related objectives including identifying emerging risks, developing technologies, strengthening industry consensus standards, and promoting the best safety management policies and practices. PHMSA research informs safety management policy, safety standards, and develops safety technology for transfer to pipeline operators, safety inspectors, packagers, shippers, and first responders. PHMSA uses these objectives to guide its research work.

## **FY 2021 RD&T Program Summary**

**Program Name:** Pipeline Safety Research

**FY 2021 Request:** \$16,363,000

**Description:** Research in this area leads to the development of new or improved tools and technology to aid in the prevention and reduction of damage to pipelines, thereby preventing/lessening releases of hazardous materials into the environment. This supports the Department of Transportation's (DOT) Strategic Goal of Safety. Within this research, program projects are awarded in any of the following areas:

- Pipeline Inspection Technology
- Pipeline Leak Detection
- Pipeline Anomaly Detection/Characterization
- Underground Natural Gas Storage (UGS) Facilities Safety
- Liquefied Natural (LNG) Gas Safety

Investments in Pipeline Safety Research will lead to the development of new or improved tools/technology with solutions to reduce the release of dangerous chemicals into the environment and the identification of leaks before they lead to catastrophic ruptures. This supports the DOT's Strategic Goals of Safety programs and initiatives.

The Pipeline Safety Research division is collaborative by design. Research funding is derived from the operators themselves through user fee assessments and from a contribution from the Oil Spill Liability Trust Fund. Research projects originate from forums of pipeline experts and operators that pose research questions, propose research areas, and ultimately develop technology that is used to check the safe operation of pipeline facilities.

Research partners in the Pipeline Safety business include Universities, industry, and safety organizations that specialize in bringing safety technology to production. One important component of this program is that it develops partnerships with colleges and universities through the Competitive Academic Agreement Program (CAAP), which works with colleges and universities to establish proof of concept designs for safety technology that leads to commercialization and technology transfer. This program also exposes students to both the pipeline industry and common pipeline safety challenges to illustrate how their engineering and technical disciplines are highly desired and needed in the pipeline field.

**Expected Outputs/Products:** PHMSA's pipeline-related research is dedicated to informing and producing new products that will improve pipeline safety and performance. PHMSA anticipates that research in this sector will result in the commercialization and transfer of cutting edge pipeline safety technologies, the issuance of new U.S. patents, and solve complex research questions that inform safety standards. In addition, as CAAP projects transition to development, PHMSA looks forward to advancing the pipeline safety profession through both student internships and career employment.

## **Performance Measures:**

**Technology Transfer (T2) measure:** PHMSA measures the performance of its pipeline research in how often the research results in safety products commercialized. This **Technology Transfer (T2)** measure is closely tied to the intent of the program. The research is funded by the pipeline operators and is intended to develop new pipeline safety inspection technologies. This includes technologies such as new smart Pipeline Inspection Gadgets (known as Smart PIGS), pipeline X-ray devices, and probes.

PHMSA includes several contractual stipulations in its agreements with research partners to best promote and track the transfer of technology to the market. The three requirements below are intended to improve the chances of success with transferring research results into the market including the following research agreement requirements:

- Plan for technology transfer while identifying research priorities.
- Involve end users (i.e., regulators, pipeline operators, and service providers) in the research gap analysis and road mapping activities.
- Measure a technology's readiness using demonstrations in front of potential service providers and other end-users.

**Success at resolving complex safety questions:** PHMSA uses research to inform safety standards on complex issues such as improving the stability of Underground Natural Gas Storage, locating otherwise unlocatable plastic pipes, the safe movement and storage of liquefied natural gas, and the impacts of corrosion and earth movements, etc. PHMSA frames research questions around safety standards and measures the success of research on how well it answers the question, informs safety standards, and improves overall safety outcomes.



**Program Name:** Hazardous Materials Safety Research

**FY 2021 Request:** \$8,116,000

**Description:** Research informs the safe transport of hazardous materials across all modes. PHMSA will complete research within the core areas of risk management and mitigation, package integrity, emerging technologies, and technical analysis to aid risk assessments, as discussed below:

- **Risk management and mitigation** research considers the probability of hazardous materials transport incidents and associated consequences. Specific projects in this strategic area include the development of risk management methods and tools to improve the understanding of key risks by the hazardous materials packaging and transport industry.
- **Package Integrity** research studies help form standards that ensure hazardous materials remain contained within original packaging during the entire transportation cycle. Package integrity research evaluates and verifies the suitability and effectiveness of packaging standards and practices. Specific research areas will include testing and evaluation of existing packaging materials and packaging technologies; analysis, and performance evaluation of emerging packaging materials and methods; and evaluation of component materials of combination packaging.
- **Emerging technologies** research identifies and analyzes emerging materials, packaging technologies, and transport operations. Research in this sector often looks at emerging energy products, including various grades of crude oil and liquefied natural gas; analysis of new packaging materials and technologies; analysis of transportation systems and operations; and international collaborative research to support the export of U.S. energy products.
- **Technical Analysis to Aid Risk Assessments** research evaluates activities, events, and incidents. Planned research activities include the analysis of individual incidents and accidents involving hazardous materials to determine root cause; determine patterns or anomalies within packaging or systems; and the development of new inspection and test methods to classify materials and certify packaging.

**Expected Outputs/Products:** PHMSA's Hazardous Materials research informs improvements in packaging and transport of dangerous products. Some important outcomes include safety standards in transport such as rail cars, autonomous vehicle application, and lithium battery state of charge and containment in aircraft shipments. Areas such as these results in safety guidance like the *Emergency Response Guidebook* for hazardous materials remediation and cleanup. This publication requires research to inform cleanup and remediation of highly combustible and toxic materials often released in accident scenes.

**Performance Measures:**

**Technology Transfer (T2) measure:** PHMSA measures the performance of its Hazardous materials research in part by how often the research results in widely adopted shipping and packaging standards.

**Success at resolving complex safety questions:** PHMSA uses research to inform safety standards on complex issues such as volatility of crude in rail cars, suitable packaging and transport of lithium batteries, and effective rail car safety standards. PHMSA frames research questions around safety standards and measures the success of research on how well it answers the question, informs safety standards, and improves overall safety outcomes.

**V: Information**  
**Technology Expenditure**

**INFORMATION TECHNOLOGY  
DEPARTMENT OF TRANSPORTATION  
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION  
BUDGET AUTHORITY**

**FY 2021 Budget  
Pipeline and Hazardous Materials Safety Administration  
Information Technology Budget Narrative**

(Budget Authority in Thousands)				
<b>Budget Account</b>	<b>FY 2019 Actual</b>	<b>FY 2020 Enacted</b>	<b>FY 2021 Request</b>	
<b>Pipeline Safety</b>	<b>\$ 15,380</b>	<b>\$ 11,316</b>	<b>\$ 11,058</b>	
Commodity Shared	4,832	5,164	5,327	
Services and IT WCF	10,548	6,152	5,731	
Modal IT				
<b>Hazardous Materials Safety</b>	<b>\$ 7,968</b>	<b>\$ 7,979</b>	<b>\$ 6,061</b>	
Commodity Shared	3,870	3,393	3,511	
Services and IT WCF	4,098	4,586	2,550	
Modal IT				
<b>Operational Expenses</b>	<b>\$ 6,885</b>	<b>\$ 7,654</b>	<b>\$ 6,190</b>	
Commodity Shared	1,006	1,153	1,229	
Services and IT WCF	5,879	6,501	4,961	
Modal IT				
<b>Total</b>	<b>\$30,233</b>	<b>\$26,949</b>	<b>\$23,309</b>	

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is requesting **\$23.3 million** in FY 2021 for information technologies that support PHMSA safety programs as well as the Department's initiative to transform and consolidate the management of certain IT solutions centrally by the Office of the Chief Information Officer (OCIO).

**Commodity IT Shared Services (SS) through the Working Capital Fund**

PHMSA requests \$10.0 million: \$5.3 million from the Pipeline Safety account, \$3.5 million from the Hazardous Materials Safety account and \$1.2 million from the Operational Expenses account for Commodity IT Shared Services. PHMSA's share was based on actual commodity IT consumption in prior years as well as planned future consumption. OCIO, in collaboration with PHMSA, assumed a one-to-one cost estimate to transition all commodity IT to OCIO. PHMSA will only be charged for services rendered.

**Full Time Equivalent Changes**

PHMSA transferred 2 FTE to OCIO in FY 2020 as proposed in the FY 2020 President's Budget.

## **Modal IT**

PHMSA requests \$13.3 million: \$5.7 million from the Pipeline Safety account, \$2.6 million from the Hazardous Materials Safety account and \$5.0 million from the Operational Expenses account for Modal IT projects where PHMSA develops and maintains safety information systems. These investments include:

### **PHMSA Overall Operations**

- **Cybersecurity** – PHMSA requests \$1.1 million for security activities to safeguard PHMSA’s mission systems and data, as well as to support compliance with Cybersecurity Standards (FISMA and NIST).
- **Information technology support** – PHMSA requests \$4.2 million for expertise and safety mission support to PHMSA regional offices, operations and maintenance for other safety systems and application technical assistance for the investments above.
- **PHMSA Datamart** – PHMSA requests \$2.5 million to collect and report pipeline and some hazardous material incident data, associate causality, and attach data elements that allow for use in inspection planning and safety standards design.

### **PHMSA Pipeline Safety**

- **National Pipeline Mapping System** – PHMSA requests \$1.7 million for operation and maintenance of this mission critical pipeline location and mapping system. This system is used to display the location of the nation’s pipelines overlaid with highly populated areas, environmentally sensitive areas, and drinking water sources. It provides aerial photography, topographic data and road overlays to inform safety inspections and new pipeline construction inspections.
- **Pipeline Risk Management Information System (PRIMIS)** – PHMSA requests \$2.0 million for a system that disseminates safety and regulatory information to the public, State partners and industry. In addition, PRIMIS provides simple applications utilized by PHMSA’s State partners to collect information on specific types of inspections.

### **PHMSA Hazardous Materials Safety**

- **Hazardous Materials Intelligence Portal** – PHMSA requests \$2.1 million for the data system that collects information on packagers and shippers, generating a risk rating for each regulated entity, and retains the inspection history for each entity we regulate.

**VI: 10 Year Funding**  
**History Tables**

**EXHIBIT II-9**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**HISTORY OF APPROPRIATIONS**  
**Pipeline Safety**

<u>YEAR</u>	<u>REQUEST</u>		<u>ENACTED</u>	
2012	\$99,354,000	1/	\$91,679,000	1/
2013	\$155,500,000	1/	\$86,884,000	1/, 2/ & 3/
2014	\$133,000,000	4/	\$100,014,000	4/
2015	\$140,000,000	4/ & 5/	\$126,000,000	4/
2016	\$155,604,000	4/ & 5/	\$124,500,000	
2017	\$156,943,000	4/ & 5/	\$154,580,000	
2018	\$132,263,326	6/	\$139,000,000	6/
2019	\$127,200,000	6/	\$142,000,000	6/
2020	\$127,000,000	6/	\$145,000,000	6/
2021	\$141,000,000	6/		

1/ Reflects the inclusion of \$1.0 million in General Funds for Information Grants to Communities.

2/ Reflects the funding levels provided by a full-year continuing resolution.

3/ Reflects reductions from sequestration (Sec. 1113 of Division B of P.L.113-6).

4/ Reflects the inclusion of \$1.5 million in General Funds for Information Grants to Communities.

5/ Reflects the inclusion of \$2.0 million Design Review Fund.

6/ Reflects the inclusion of \$8.0 million in Underground Natural Gas Storage Facility fees.

**EXHIBIT II-9**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**HISTORY OF APPROPRIATIONS**  
**Hazardous Materials Safety**

<u>YEAR</u>	<u>REQUEST</u>	<u>ENACTED</u>
2012	\$50,089,000	\$42,338,000
2013	\$50,673,000	\$40,123,000 1/ & 2/
2014	\$51,801,000	\$45,000,000
2015	\$52,000,000	\$52,000,000
2016	\$64,254,000	\$55,619,000
2017	\$68,249,000	\$57,000,000
2018	\$55,513,268	\$59,000,000
2019	\$52,070,000	\$58,000,000
2020	\$53,000,000	\$61,000,000
2021	\$60,700,000	

1/ Reflects the funding levels provided by a full-year continuing resolution.

2/ Reflects sequestered amount (Sec. 1113 of Division B of P.L. 113-6).



**EXHIBIT II-9**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**HISTORY OF APPROPRIATIONS**  
**Emergency Preparedness Grants**  
**(Obligation Limitation)**

<u><b>YEAR</b></u>	<u><b>REQUEST</b></u>	<u><b>ENACTED</b></u>	
2012	\$28,318,000	\$28,318,000	
2013	\$28,318,000	\$26,865,000	1/
2014	\$28,318,000	\$26,293,000	2/
2015	\$28,318,000	\$26,265,000	3/
2016	\$28,318,000	\$26,405,000	4/
2017	\$28,318,000	\$26,364,058	5/
2018	\$28,318,000	\$26,449,012	6/
2019	\$28,318,000	\$26,562,000	7/
2020	\$28,318,000	\$28,318,000	
2021	\$28,318,000		

1/ Reflects actual funding levels after a 0.2% across-the-board cut on the \$188,000 discretionary portion pursuant to P.L. 113-6. Also reflects a reduction of both the mandatory and discretionary funding pursuant to the FY 2013 Sequester Order dated March 1, 2013.

2/ Reflects sequester of Emergency Preparedness Grants pursuant to the OMB Sequestration Preview Report to the President and Congress for Fiscal Year 2014, May 20, 2013.

3/ Reflects sequester of Emergency Preparedness Grants pursuant to the OMB Sequestration Preview Report to the President and Congress for Fiscal Year 2015, March 10, 2014.

4/ Reflects sequester of Emergency Preparedness Grants pursuant to the OMB Sequestration, Preview Report to the President and Congress for Fiscal Year 2016, February 2, 2015.

5/ Reflects sequester of Emergency Preparedness Grants pursuant to the OMB Sequestration, Preview Report to the President and Congress for Fiscal Year 2017, February 9, 2016.

6/ Reflects sequester of Emergency Preparedness Grants pursuant to the OMB Sequestration, Preview Report to the President and Congress for Fiscal Year 2018, May 23, 2017.

7/ Reflects sequester of Emergency Preparedness Grants pursuant to the OMB Sequestration, Preview Report to the President and Congress for Fiscal Year 2019, February 12, 2018.

**EXHIBIT II-9**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**HISTORY OF APPROPRIATIONS**  
**Operational Expenses**

<u>YEAR</u>	<u>REQUEST</u>		<u>ENACTED</u>	
2012	\$21,158,000	1/	\$20,360,000	1/
2013	\$20,047,000	1/	\$19,295,000	1/ & 2/
2014	\$20,154,000	3/	\$20,154,000	3/
2015	\$20,725,000	3/	\$20,725,000	3/
2016	\$21,000,000	3/	\$21,000,000	
2017	\$22,188,000	3/	\$22,500,000	
2018	\$20,960,079		\$23,000,000	
2019	\$23,710,000		\$23,710,000	
2020	\$24,215,000		\$24,215,000	
2021	\$24,215,000			

1/ Reflects the exclusion of \$1,000,000 to be transferred to Pipeline Safety for the Information Grants to Communities program.

2/ Reflects reductions from sequestration (Sec. 1113 of Division B of P.L. 113-6).

3/ Reflects the exclusion of \$1,500,000 to be transferred to Pipeline Safety for the Information Grants to Communities program.

**EXHIBIT II-9**  
**PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**  
**HISTORY OF APPROPRIATIONS**  
**Trust Fund Share of Pipeline Safety**  
**(Oil Spill Liability Trust Fund)**

<u>YEAR</u>	<u>REQUEST</u>	<u>ENACTED</u>	
2012	\$21,510,000	\$18,573,000	
2013	\$21,510,000	\$17,602,000	1/ & 2/
2014	\$18,573,000	\$18,573,000	
2015	\$19,500,000	\$19,500,000	
2016	\$19,500,000	\$22,123,000	
2017	\$19,500,000	\$20,288,000	
2018	\$22,080,944	\$23,000,000	
2019	\$23,000,000	\$23,000,000	
2020	\$22,000,000	\$23,000,000	
2021	\$22,000,000		

1/ Reflects the funding levels provided by a full-year continuing resolution.

2/ Reflects reductions from sequestration (Sec. 1113 of Division B of P.L. 113-6).