

# Department of Homeland Security

## *Countering Weapons of Mass Destruction*

### *Budget Overview*



**Fiscal Year 2024**

**Congressional Justification**

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## Countering Weapons of Mass Destruction

### Appropriation Organization Structure

	Level	Fund Type (* Includes Defense Funding)
<b>Countering Weapons of Mass Destruction</b>	<b>Component</b>	
<b>Operations and Support</b>	<b>Appropriation</b>	
Mission Support	PPA	Discretionary - Appropriation
Capability and Operational Support	PPA	Discretionary - Appropriation
<b>Procurement, Construction, and Improvements</b>	<b>Appropriation</b>	
Large Scale Detection Systems	PPA	
Radiation Portal Monitor Program (RPMP)	Investment,PPA Level II	Discretionary - Appropriation
Radiation Portal Monitor Replacement Program (RPM RP)	Investment,PPA Level II	Discretionary - Appropriation
International Rail (IRAIL)	Investment,PPA Level II	Discretionary - Appropriation
Common Viewer	Investment,PPA Level II	Discretionary - Appropriation
Radiation Portal Technology Enhancement and Replacement Program (RAPTER)	Investment,PPA Level II	Discretionary - Appropriation
Next Generation Mobile	Investment,PPA Level II	Discretionary - Appropriation
Border Patrol Checkpoint Program	Investment,PPA Level II	Discretionary - Appropriation
Portable Detection Systems	PPA	
Personal Radiation Detector	Investment,PPA Level II	Discretionary - Appropriation
Basic Handheld RIIDs	Investment,PPA Level II	Discretionary - Appropriation
Rapid CBRN Equipping	Investment,PPA Level II	Discretionary - Appropriation
Portable Detection Equipment End Items	Investment,PPA Level II	Discretionary - Appropriation
Backpack SLEP	Investment,PPA Level II	Discretionary - Appropriation
Biological Detection for the 21st Century (BD-21)	Investment,PPA Level II	Discretionary - Appropriation
Integrated Operations Assets and Infrastructure	PPA	
Medical Information Exchange (MIX)	Investment,PPA Level II	Discretionary - Appropriation
<b>Research and Development</b>	<b>Appropriation</b>	
Transformational Research and Development	PPA	
Transformational Research and Development	R&D Project,PPA Level II	Discretionary - Appropriation
Technical Forensics	PPA	

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Technical Forensics	R&D Project,PPA Level II	Discretionary - Appropriation
Detection Capability Development	PPA	
Detection Capability Development	R&D Project,PPA Level II	Discretionary - Appropriation
Rapid Capabilities	PPA	
Rapid Capabilities	R&D Project,PPA Level II	Discretionary - Appropriation
<b>Federal Assistance</b>	<b>Appropriation</b>	
Training, Exercises, and Readiness	PPA	Discretionary - Appropriation
Securing the Cities	PPA	Discretionary - Appropriation
Biological Support	PPA	Discretionary - Appropriation

## Countering Weapons of Mass Destruction Budget Comparison and Adjustments

### Appropriation and PPA Summary

*(Dollars in Thousands)*

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
<b>Operations and Support</b>	<b>\$176,750</b>	<b>\$151,970</b>	<b>\$164,315</b>
Mission Support	\$85,316	\$85,570	\$94,951
Capability and Operational Support	\$91,434	\$66,400	\$69,364
<b>Procurement, Construction, and Improvements</b>	<b>\$76,604</b>	<b>\$75,204</b>	<b>\$42,338</b>
Large Scale Detection Systems	\$53,667	\$66,137	\$35,678
Radiation Portal Monitor Program (RPMP)	\$36,413	\$21,942	\$20,478
Radiation Portal Monitor Replacement Program (RPM RP)	\$615	\$34,530	\$13,900
International Rail (IRAIL)	\$16,639	\$9,665	\$1,300
Portable Detection Systems	\$14,937	\$9,067	\$6,660
Personal Radiation Detector	\$500	\$1,067	-
Basic Handheld RIIDs	\$3,406	\$3,000	\$1,500
Rapid CBRN Equipping	\$8,531	\$5,000	-
Portable Detection Equipment End Items	-	-	\$5,160
Backpack SLEP	\$2,500	-	-
Integrated Operations Assets and Infrastructure	\$8,000	-	-
Medical Information Exchange (MIX)	\$8,000	-	-
<b>Research and Development</b>	<b>\$65,709</b>	<b>\$64,615</b>	<b>\$60,938</b>
Transformational Research and Development	\$31,378	\$37,004	\$39,460
Transformational Research and Development	\$31,378	\$37,004	\$39,460
Technical Forensics	\$3,500	\$2,000	\$6,530
Technical Forensics	\$3,500	\$2,000	\$6,530
Detection Capability Development	\$30,831	\$25,611	\$14,948
Detection Capability Development	\$30,831	\$25,611	\$14,948
<b>Federal Assistance</b>	<b>\$132,948</b>	<b>\$139,183</b>	<b>\$160,470</b>
Training, Exercises, and Readiness	\$19,251	\$19,559	\$21,268
Securing the Cities	\$30,040	\$34,628	\$34,465
Biological Support	\$83,657	\$84,996	\$104,737
<b>Total</b>	<b>\$452,011</b>	<b>\$430,972</b>	<b>\$428,061</b>

## Countering Weapons of Mass Destruction Comparison of Budget Authority and Request

(Dollars in Thousands)

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Operations and Support	309	279	\$176,750	269	252	\$151,970	286	263	\$164,315	17	11	\$12,345
Procurement, Construction, and Improvements	-	-	\$76,604	-	-	\$75,204	-	-	\$42,338	-	-	(\$32,866)
Research and Development	-	-	\$65,709	-	-	\$64,615	-	-	\$60,938	-	-	(\$3,677)
Federal Assistance	-	-	\$132,948	-	-	\$139,183	-	-	\$160,470	-	-	\$21,287
<b>Total</b>	<b>309</b>	<b>279</b>	<b>\$452,011</b>	<b>269</b>	<b>252</b>	<b>\$430,972</b>	<b>286</b>	<b>263</b>	<b>\$428,061</b>	<b>17</b>	<b>11</b>	<b>(\$2,911)</b>
Subtotal Discretionary - Appropriation	309	279	\$452,011	269	252	\$430,972	286	263	\$428,061	17	11	(\$2,911)

### Component Budget Overview

The FY 2024 Budget includes \$428.1M; 286 positions; and 263 full-time equivalents (FTE) for the Countering Weapons of Mass Destruction Office (CWMD). This funding level represents an increase of 17 positions and 11 FTE, and a decrease of \$2.9M below the FY 2023 Enacted appropriation.

CWMD was established by the *Homeland Security Act of 2002* (P.L. 107-296) as amended by the *Countering Weapons of Mass Destruction Act of 2018* (CWMD Act) (P.L. 115-387) to elevate and focus counter-WMD missions for the Department and to provide a focal point for the interagency. CWMD's mission is to enhance and coordinate DHS strategic and policy efforts with Federal, State, local, tribal, and territorial (FSLTT) governments and the private sector to prevent WMD use against the Homeland and promote readiness against chemical, biological, radiological, and nuclear (CBRN) threats. CWMD enhances the ability of high-risk urban areas across the United States to detect and prevent terrorist attacks using nuclear or other radiological material. CWMD is responsible for the development and implementation of the Global Nuclear Detection Architecture (GNDA), as well as coordination and support for DHS chemical and biological defense activities.

CWMD seeks permanent repeal of Section 1901(e) of the Homeland Security Act to ensure stability to plan, train, budget, procure, and execute CWMD's long-term operational programs and partnerships with FSLTT entities including information sharing, Securing the Cities (STC), Radiation Portal Monitor Program (RPM), and Mobile Deployment Detection Program (MDDP), while continuing to help secure the homeland by developing and deploying technology and other capabilities to counter WMD and other CBRN threats through programs such as BioWatch.

The FY 2024 Budget balances the requirements of DHS Components, SLTT partners, and the CWMD foundational activities that coordinate, strengthen, and deliver capabilities to reduce the threat posed by WMDs and CBRN threats. CWMD will continue the Securing the Cities, the National Biosurveillance Integration Center (NBIC), and the Radiation Portal Monitor Enterprise. CWMD will strengthen BioWatch with threat-based enhancements and increase investments in the Chemical Support portfolio from Research and Development to Federal Assistance.



## Countering Weapons of Mass Destruction Budget Authority and Obligations

*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$452,011</b>	<b>\$430,972</b>	<b>\$428,061</b>
Carryover - Start of Year	\$124,857	\$115,453	\$28,607
Recoveries	\$2,623	\$6,586	-
Rescissions to Current Year/Budget Year	(\$736)	(\$350)	(\$400)
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	(\$5,663)	\$350	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$573,092</b>	<b>\$553,011</b>	<b>\$456,268</b>
Collections - Reimbursable Resources	\$217	\$221	\$225
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$573,309</b>	<b>\$553,232</b>	<b>\$456,493</b>
Obligations (Actual/Estimates/Projections)	\$456,552	\$524,625	\$456,493
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	309	269	286
Enacted/Request FTE	279	252	263
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	255	269	286
FTE (Actual/Estimates/Projections)	251	252	263



Countering Weapons of Mass Destruction  
Collections – Reimbursable Resources  
*(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Department of Homeland Security - Management Directorate	-	-	\$217	-	-	\$221	-	-	\$225
Total Collections	-	-	\$217	-	-	\$221	-	-	\$225

## Countering Weapons of Mass Destruction Personnel Compensation and Benefits

### Pay Summary

*(Dollars in Thousands)*

	FY 2022 Enacted				FY 2023 Enacted				FY 2024 President's Budget				FY 2023 to FY 2024 Total			
	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate
Operations and Support	309	279	\$60,122	\$196.66	269	252	\$56,851	\$205.33	286	263	\$61,631	\$213.92	17	11	\$4,780	\$8.59
<b>Total</b>	<b>309</b>	<b>279</b>	<b>\$60,122</b>	<b>\$196.66</b>	<b>269</b>	<b>252</b>	<b>\$56,851</b>	<b>\$205.33</b>	<b>286</b>	<b>263</b>	<b>\$61,631</b>	<b>\$213.92</b>	<b>17</b>	<b>11</b>	<b>\$4,780</b>	<b>\$8.59</b>
Subtotal Discretionary - Appropriation	309	279	\$60,122	\$196.66	269	252	\$56,851	\$205.33	286	263	\$61,631	\$213.92	17	11	\$4,780	\$8.59

### Pay by Object Class

*(Dollars in Thousands)*

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget	FY 2023 to FY 2024 Change
11.1 Full-time Permanent	\$39,326	\$37,518	\$40,818	\$3,300
11.3 Other than Full-time Permanent	\$710	\$197	\$213	\$16
11.5 Other Personnel Compensation	\$505	\$750	\$830	\$80
11.8 Special Personal Services Payments	\$5,255	\$5,107	\$5,370	\$263
12.1 Civilian Personnel Benefits	\$14,326	\$13,279	\$14,400	\$1,121
<b>Total - Personnel Compensation and Benefits</b>	<b>\$60,122</b>	<b>\$56,851</b>	<b>\$61,631</b>	<b>\$4,780</b>
<b>Positions and FTE</b>				
Positions - Civilian	309	269	286	17
FTE - Civilian	279	252	263	11

## Countering Weapons of Mass Destruction Non Pay Budget Exhibits

### Non Pay Summary

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Operations and Support	\$116,628	\$95,119	\$102,684	\$7,565
Procurement, Construction, and Improvements	\$76,604	\$75,204	\$42,338	(\$32,866)
Research and Development	\$65,709	\$64,615	\$60,938	(\$3,677)
Federal Assistance	\$132,948	\$139,183	\$160,470	\$21,287
<b>Total</b>	<b>\$391,889</b>	<b>\$374,121</b>	<b>\$366,430</b>	<b>(\$7,691)</b>
Subtotal Discretionary - Appropriation	\$391,889	\$374,121	\$366,430	(\$7,691)

**Non Pay by Object Class***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$2,043	\$2,280	\$2,471	\$191
23.2 Rental Payments to Others	\$518	-	-	-
23.3 Communications, Utilities, & Miscellaneous	\$7	\$92	\$2,561	\$2,469
24.0 Printing and Reproduction	\$55	\$48	\$67	\$19
25.1 Advisory & Assistance Services	\$127,177	\$99,546	\$103,394	\$3,848
25.2 Other Services from Non-Federal Sources	\$16,140	\$51,315	\$34,927	(\$16,388)
25.3 Other Purchases of goods and services	\$35,069	\$31,727	\$30,353	(\$1,374)
25.4 Operations & Maintenance of Facilities	-	\$150	\$150	-
25.5 Research & Development Contracts	\$41,922	\$39,955	\$34,754	(\$5,201)
25.6 Medical Care	-	-	\$3	\$3
25.7 Operation & Maintenance of Equipment	\$7,038	\$19,769	\$21,409	\$1,640
26.0 Supplies & Materials	\$31,623	\$24,266	\$35,131	\$10,865
31.0 Equipment	\$80,508	\$53,703	\$47,497	(\$6,206)
41.0 Grants, Subsidies, and Contributions	\$49,777	\$51,270	\$53,713	\$2,443
94.0 Financial Transfers	\$12	-	-	-
<b>Total - Non Pay Budget Object Class</b>	<b>\$391,889</b>	<b>\$374,121</b>	<b>\$366,430</b>	<b>(\$7,691)</b>

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**Countering Weapons of Mass Destruction  
Supplemental Budget Justification Exhibits**

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**FY 2024 Counter Unmanned Aerial Systems (CUAS) Funding**

The FY 2024 Budget for CWMD does not include any dedicated resources for Counter Unmanned Aerial Systems programs.

**Countering Weapons of Mass Destruction**  
**FY 2022 – FY2024 Cyber Security Funding**  
*(Dollars in Thousands)*

<b>NIST Framework</b>	<b>FY 2022 Actual</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Detect	\$251	\$256	\$312
Identify	\$3,611	\$7,097	\$7,390
Protect	\$6,598	\$11,264	\$12,132
Recover	\$0	\$0	\$100
Respond	\$576	\$585	\$649
<b>Grand Total</b>	<b>\$11,036</b>	<b>\$19,202</b>	<b>\$20,583</b>

**Countering Weapons of Mass Destruction**  
**Status of Congressionally Requested Studies, Reports and Evaluations**

Fiscal Year	Due Date	Reference/Citation	Requirement	Status
FY 2023	April 28, 2023	Consolidated Appropriations Act, 2023	Securing the Cities Implementation Plan	Pending

## Countering Weapons of Mass Destruction Authorized/Unauthorized Appropriations

Budget Activity (Dollars in Thousands)	Last year of Authorization	Authorized Level	Appropriation in Last Year of Authorization	FY 2024 President's Budget
	Fiscal Year	Amount	Amount	Amount
<b>Operations and Support</b>	N/A	N/A	N/A	<b>\$164,315</b>
Mission Support	N/A	N/A	N/A	\$94,951
Capability and Operational Support	N/A	N/A	N/A	\$69,364
<b>Procurement, Construction, and Improvements</b>	N/A	N/A	N/A	<b>\$42,338</b>
Portable Detection Systems	N/A	N/A	N/A	\$6,660
Large Scale Detection Systems	N/A	N/A	N/A	\$35,678
<b>Research and Development</b>	N/A	N/A	N/A	<b>\$60,938</b>
Transformational Research and Development	N/A	N/A	N/A	\$39,460
Technical Forensics	N/A	N/A	N/A	\$6,530
Detection Capability Development	N/A	N/A	N/A	\$14,948
<b>Federal Assistance</b>	N/A	N/A	N/A	<b>\$160,470</b>
Training, Exercises, and Readiness	N/A	N/A	N/A	\$21,268
Securing the Cities	N/A	N/A	N/A	\$34,465
Biological Support	N/A	N/A	N/A	\$104,737
<b>Total Direct Authorization/Appropriation</b>	N/A	N/A	N/A	<b>\$428,061</b>

The Countering Weapons of Mass Destruction Act of 2018 (P.L. 115-387) (Dec. 21, 2018) authorizing the creation of the CWMD Office did not specify funding levels for the CWMD Office.



## Countering Weapons of Mass Destruction Proposed Legislative Language

### Operations and Support

For necessary expenses of the Countering Weapons of Mass Destruction Office for operations and support, [\$151,970,000] *\$164,315,000*, of which \$50,446,000 shall remain available until September 30, [2024] 2025: Provided, that not to exceed \$2,250 shall be for official reception and representation expenses.

Language Provision	Explanation
...[\$151,970,000] <i>\$164,315,000</i> ,...	Dollar change only. No substantial change proposed.
... [2024] 2025...	Fiscal year change only. No substantial change proposed. Two-year period of availability for the Capability and Operational Support PPA. The two-year funding is required because of the extended time needed for proper procurement of investment and support activities for data integration, developing complex strategies for risk assessments and capability building across the chemical, biological, radiological, and nuclear security threat spectrum, biosurveillance activities, partnership coordination, and supporting test and evaluation of major equipment procurements.

### Procurement, Construction, and Improvements

For necessary expenses of the Countering Weapons of Mass Destruction Office for procurement, construction, and improvements, [\$75,204,000] *\$42,338,000*, to remain available until September 30, [2025] 2026.

Language Provision	Explanation
...[\$75,204,000] <i>\$42,338,000</i> ...	Dollar change only. No substantial change proposed.
...[2025] 2026.	Fiscal year change only. No substantial change proposed.

### Research and Development

For necessary expenses of the Countering Weapons of Mass Destruction Office for research and development, [\$64,615,000] *\$60,938,000*, to remain available until September 30, [2025] 2026.

Language Provision	Explanation
...[\$64,615,000] \$60,938,000...	Dollar change only. No substantial change proposed.
...[2025] 2026.	Fiscal year change only. No substantial change proposed. Based on average time to identify and complete the scope of work for R&D projects, the FY 2024 CWMD R&D account is three-year funding. Three-year funding allows for sufficient time to define research topics, solicit for performer(s), conduct source selection, award contract(s), initiate research, identify technology approaches, conduct repeated refinement of the technological approaches and demonstrate the technology in the relevant operational environment.

### Federal Assistance

For necessary expenses of the Countering Weapons of Mass Destruction Office for Federal assistance through grants, contracts, cooperative agreements, and other activities, [\$139,183,000] \$160,470,000, to remain available until September 30, [2025] 2026.

Language Provision	Explanation
...[\$139,183,000] \$160,470,000...	Dollar change only. No substantial change proposed.
...[2025] 2026.	Fiscal year change only. No substantial change proposed.

### Administrative Provision

Language Provision	Explanation
<i>SEC. 408. Section 1901(e) of the Homeland Security Act of 2002 (6 U.S.C. 591(e)) is repealed.</i>	The Administrative Provision is necessary to repeal the CWMD five-year termination clause in Section 1901(e) of the Homeland Security Act (codified at 6 U.S.C. 591(e)) for the CWMD Office, which would otherwise terminate on December 21, 2023. CWMD seeks permanent repeal of the termination provision to ensure stability to plan, budget, and execute CWMD's long-term operational programs and partnerships with Federal, State, local, tribal, and territorial entities via Securing the Cities (STC), Radiation Portal Monitor Program (RPM), and Mobile Deployment Detection Program (MDDP), while continuing to help secure the homeland by developing and deploying technology and other capabilities to counter WMD and other CBRN threats via BioWatch.

# Department of Homeland Security

## *Countering Weapons of Mass Destruction*

### *Strategic Context*



**Fiscal Year 2024**

**Congressional Justification**

## Countering Weapons of Mass Destruction Strategic Context

### Component Overview

The Countering Weapons of Mass Destruction Office (CWMD) leads DHS efforts and coordinates with domestic and international partners to safeguard the United States against CBRN threats.

The strategic context presents the performance budget by tying together programs with performance measures that gauge the delivery of results to our stakeholders. DHS has integrated a mission and mission support programmatic view into a significant portion of the Level 1 Program, Project, or Activities (PPAs) in the budget. A mission program is a group of activities acting together to accomplish a specific high-level outcome external to DHS, and includes operational processes, skills, technology, human capital, and other resources. Mission support programs are those that are cross-cutting in nature and support multiple mission programs. Performance measures associated with CWMD's mission support program are presented in two measure sets, strategic and management measures. Strategic measures communicate results delivered for our agency mission and are considered our Government Performance and Results Act Modernization Act (GPRAMA) measures. Additional supporting measures, known as management measures, are displayed to enhance connections to resource requests. The measure tables indicate new measures and those being retired, along with historical data if available.

**Capability and Operational Support:** The Capability and Operational Support program analyzes sensor data, defines requirements, provides test and evaluation capabilities, and procures chemical/biological and radiological/nuclear detection equipment that can be carried, worn, or easily moved to support operational end-users. The program manages and supports national biosurveillance and detection capabilities, coordination, and preparedness for biological and chemical events to help communities build capabilities to prepare, respond, and recover.

#### Strategic Measures

<b>Measure Name:</b>	Number of High Risk Urban Areas that have achieved Full Operational Capability to combat radiological/nuclear threats through the Securing the Cities Program						
<b>Strategic Alignment:</b>	1.2 : Prevent and Disrupt Threats						
<b>Description:</b>	This measure assesses the number of High Risk Urban Areas that have achieved Full Operational Capability through the Securing the Cities (STC) program. The STC program seeks to give state and local agencies the ability to detect and deter nuclear terrorism. The program provides funding for equipment, such as radiation detectors, and training during an initial five-year capability development period. Funding for sustainment beyond five years is available to participating high risk urban areas contingent upon satisfying criteria specified in the STC Implementation Plan; includes a region's ongoing commitment to the mission and successful completion of a series of validation exercises that include one Tabletop Exercise (TTX) and one Full Scale Exercise (FSE). A major metropolitan area is deemed fully mission capable when 5-10 percent of its law enforcement is trained and equipped to detect and report Radiological/Nuclear material out of regulatory control. This performance measure aligns with the CWMD Office mission as defined in Public Law 115-387, Countering Weapons of Mass Destruction Act of 2018.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	---	---	FOUO	FOUO	FOUO	FOUO
<b>Results:</b>	---	---	---	FOUO	FOUO	TBD	TBD

## Countering Weapons of Mass Destruction

## Strategic Context

<b>Explanation of Result:</b>	FY 2022 was a very busy year but no one conducted a Full Scale Exercise (FSE) as is required to be FOC.						
<b>Measure Name:</b>	Percent of Acquisition programs to counter hor threats that meet their Acquisition Program Baseline (APB) schedule, cost, and performance thresholds						
<b>Strategic Alignment:</b>	1.4 : Counter Weapons of Mass Destruction and Emerging Threats						
<b>Description:</b>	This metric will assess two things: 1) programs having APB schedule thresholds which remain to be achieved, and programs that have completed their final baselined key event during the current annual evaluation period; and 2) programs that have not yet reached Full Operational Capability (FOC) and those that have reached FOC during the current annual evaluation period, defined as CWMD and all supported Component(s) having signed an FOC Achievement Memorandum.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	---	---	---	---	100%	100%
<b>Results:</b>	---	---	---	---	---	TBD	TBD

## Management Measures

<b>Measure Name:</b>	Number of Biowatch exercises to increase the number of exercises conducted each fiscal year in Biowatch jurisdictions						
<b>Strategic Alignment:</b>	1.2 : Prevent and Disrupt Threats						
<b>Description:</b>	The measure quantifies the number of Homeland Security Exercise and Evaluation Program (HSEEP) exercises that CWMD conducts in BioWatch jurisdictions. The range in the measure target is the number of HSEEP events conducted throughout all the BioWatch jurisdictions visited, rather than the number of jurisdictions visited. The numbers in the target indicate the number of jurisdictions conducting exercises broken down by size (small, medium, and large). Small jurisdictions are defined as having a Metropolitan Statistical Area (MSA) population less than 500,000 people, medium jurisdictions are defined as having an MSA population between 500,000 and 1,000,000 people, and large jurisdictions are defined as an MSA population greater than 1,000,000 people.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	---	---	---	7	7	7
<b>Results:</b>	---	---	---	---	21	TBD	TBD
<b>Explanation of Result:</b>	In FY 2022 Q4, the Exercise Branch conducted two tabletop exercises for the St. Louis and Denver jurisdictions and one full-scale exercise for the St. Louis jurisdiction. The exercises conducted in Q4 were 14% of the total number of exercises (21) conducted in FY22 or 43% of the maximum projected number of exercises (7) in FY22.						

<b>Measure Name:</b>	Number of Federal, state, local, tribal, and territorial (FSLTT) stakeholders receiving the National Biosurveillance Integration Center's reports						
<b>Strategic Alignment:</b>	1.4 : Counter Weapons of Mass Destruction and Emerging Threats						
<b>Description:</b>	This measure assesses growth of Federal, state, local, tribal, and territorial (FSLTT) stakeholders receiving the National Biosurveillance Integration Center's (NBIC) reports. Stakeholder growth includes new individuals or groups receiving NBIC reports as well as removal of any recipients electing not to receive future reports or for which the email address is no longer valid. Only active stakeholder accounts are measured as the total recipient population. Assessing the percentage of growth also results in a greater annual effort even if the measure target percentage remains unchanged. This is due to having achieved an annual target of growth, the base is now larger, and the following year will have to achieve a greater number of active accounts than the year prior although the target percentage goal did not change.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	---	---	---	---	4	4
<b>Results:</b>	---	---	---	---	---	TBD	TBD

<b>Measure Name:</b>	Percent of BioWatch laboratories meeting expectation for scored proficiency tests to ensure they can identify known microorganisms of interest						
<b>Strategic Alignment:</b>	1.2 : Prevent and Disrupt Threats						
<b>Description:</b>	This measure gauges whether BioWatch laboratories evaluating environmental samples for biological agents meet program quality assurance (QA) expectations to ensure they can identify known microorganisms of interest. It is essential that Federal, state, and local agencies have high confidence in the specificity and sensitivity of a BioWatch detection to allow them to make critical decisions in a timely manner to ensure public safety. A robust and respected quality assurance process provides that assurance and when discrepancies are found, aides the lab in correcting deficiencies. The total number of proficiencies may also vary annually by laboratory.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	---	---	96%	96%	96%	96%
<b>Results:</b>	---	---	---	99%	96%	TBD	TBD
<b>Explanation of Result:</b>	Target exceeded. In FY 2022, three BioWatch Proficiency Tests (PT) were conducted at 29 BioWatch laboratories. For PT1, labs met expectations for 54 out of 54 scoring opportunities. For PT2, labs met expectations for 54 out of 58 scoring opportunities. For PT3, labs met expectations for 49 out of 52 scoring opportunities.						

<b>Measure Name:</b>	Percent of identified federal, state, local, tribal, and territorial stakeholders receiving the National Biosurveillance Integration Center reports						
<b>Strategic Alignment:</b>	1.2 : Prevent and Disrupt Threats						
<b>Description:</b>	This measure assesses growth of Federal, state, local, tribal, and territorial (FSLTT) stakeholders receiving the National Biosurveillance Integration Center's (NBIC) reports. Stakeholder growth includes new individuals or groups receiving NBIC reports as well as removal of any recipients electing not to receive future reports or for which the email address is no longer valid. Only active stakeholder accounts are measured as the total recipient population. Assessing the percentage of growth also results in a greater annual effort even if the measure target percentage remains unchanged. This is due to having achieved an annual target of growth, the						

## Countering Weapons of Mass Destruction

## Strategic Context

	base is now larger, and the following year will have to achieve a greater number of active accounts than the year prior although the target percentage goal did not change.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	---	---	---	95%	N/A	N/A
<b>Results:</b>	---	---	---	---	96%	N/A	N/A
<b>Explanation of Result:</b>	NBIC sent out 153 reports to 2232 recipients using the Granicus GovDelivery system, which calculates the number of emails sent successfully and the number not sent successfully.						

<b>Measure Name:</b>	Percent of intelligence requirements answered in the annual program of analysis						
<b>Strategic Alignment:</b>	1.4 : Counter Weapons of Mass Destruction and Emerging Threats						
<b>Description:</b>	This measure assesses consistency of program responsiveness to customer requirements. Intelligence customer requirements fall into one of three categories: 1) Directed Production: Products directed and/or endorsed by DHS-CWMD Front Office leadership for the purpose of informing upcoming strategic initiatives; 2) Planned Production: Customer requested products that have been vetted and slotted for production during the upcoming FY; and 3) ADHOC Production: Products generated as the result of new and/or evolving threat information that informs an Intelligence Priority or mission relevant key intelligence question. Additionally, ADHOC requirements also refer to Products generated as result of emerging need reflected from a specific customer request.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	---	---	---	---	75%	75%
<b>Results:</b>	---	---	---	---	---	TBD	TBD

**Countering Weapons of Mass Destruction****Strategic Context**

**CWMD Research and Development:** The Research and Development program manages efforts to identify, explore, develop, and demonstrate science and technologies that address gaps in the detection architecture. Activities also improve the performance of detection and analysis and forensics capabilities, and/or significantly reduce the operational burden of detection systems in the field. The program works closely with supported operational customers to ensure the effective transition of technologies to the field. This program includes Technology Advancement projects, as well as Small Business Innovation Research projects.

*Strategic Measures*

<b>Measure Name:</b>	Percent of technology or knowledge products transitioned to customers for planned improvements in the Homeland Security Enterprise						
<b>Strategic Alignment:</b>	1.4 : Counter Weapons of Mass Destruction and Emerging Threats						
<b>Description:</b>	This measure reflects the percent at which CWMD meets its planned fiscal year transitions of technology or knowledge products for research and development funded programs/projects. A successful transition is the transition/transfer of ownership and/or operation of a technology or knowledge product from CWMD to a customer within DHS or industry. A technology product is a piece of equipment, system, or component of a system, such as an algorithm to be embedded into a piece of software. Knowledge products may be assessments, standards, training, or documents for decision support. The transition of technology or knowledge products reflects the value that CWMD provides in delivering solutions to secure key assets, enhance operational efficiencies and effectiveness, and enable the Department and first responders to do their jobs safer, better, and smarter.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	---	---	---	---	40%	50%
<b>Results:</b>	---	---	---	---	---	TBD	TBD

*Management Measures*

<b>Measure Name:</b>	Percent of annual Research and Development program and project milestones successfully achieved						
<b>Strategic Alignment:</b>	1.2 : Prevent and Disrupt Threats						
<b>Description:</b>	This measure will gauge how well Research and Development program and project activities and their progress milestones are executed by the Transformational and Applied Research Directorate against numerous types of projects that are planned for and budgeted each year. A steady or slightly increasing number of milestones met is an indicator of effective program management.						
<b>Fiscal Year:</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Targets:</b>	---	90.0%	90.0%	95.0%	95.0%	95.0%	95.0%
<b>Results:</b>	---	91.4%	57.0%	81.0%	81.0%	TBD	TBD
<b>Explanation of Result:</b>	In FY 2022 Q4, 32% (47 of the planned 58) research & development milestones for the fiscal year were successfully achieved. Schedule delays were largely due to equipment malfunction, delayed receiving of materials, and classification reviews. No cost extensions have been granted and numerous closeout items have been sheduled for Q1 and Q2 of FY 2023.						
<b>Corrective Action:</b>	CWMD is reassessing the 95% goal for this measure. Historical results (FY 2020: 57%; FY 2021: 80.7%; and FY 2023: 81%) suggest that an 80% target may be more applicable due to external factors which may cause unexpected delays in part avaiability and scheduling of testing.						



# Department of Homeland Security

## *Countering Weapons of Mass Destruction*

### *Operations and Support*



**Fiscal Year 2024**

**Congressional Justification**

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## Operations and Support

## Budget Comparison and Adjustments

## Comparison of Budget Authority and Request

*(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Mission Support	309	279	\$85,316	269	252	\$85,570	286	263	\$94,951	17	11	\$9,381
Capability and Operational Support	-	-	\$91,434	-	-	\$66,400	-	-	\$69,364	-	-	\$2,964
<b>Total</b>	<b>309</b>	<b>279</b>	<b>\$176,750</b>	<b>269</b>	<b>252</b>	<b>\$151,970</b>	<b>286</b>	<b>263</b>	<b>\$164,315</b>	<b>17</b>	<b>11</b>	<b>\$12,345</b>
Subtotal Discretionary - Appropriation	309	279	\$176,750	269	252	\$151,970	286	263	\$164,315	17	11	\$12,345

The Countering Weapons of Mass Destruction Office (CWMD) Operations and Support (O&S) appropriation funds activities to counter WMD and chemical, biological, radiological, and nuclear (CBRN) threats, provide situational awareness, and support decision making for DHS leadership and Federal, State, local, tribal, and territorial (FSLTT) partners. O&S also funds the day-to-day operation of the organization, including salaries, travel, and enterprise services.

The appropriation is broken out into the following Programs, Projects, and Activities (PPA):

**Mission Support:** The Mission Support PPA funds the Office of the Assistant Secretary and Enterprise Services. This PPA funds support compensation and benefits for CWMD employees; maintains enterprise leadership, management, and business administration for daily operations; and supports CWMD regional personnel. Key capabilities include workforce management, financial management, physical and personnel security, goods and services acquisition, information technology, compliance monitoring, property and assets management, communications, and general management and administration.

**Capability & Operational Support (C&OS):** The C&OS PPA funds programs and activities that provide situational awareness and decision support for DHS leadership and Federal partners, the National Biosurveillance Integration Center (NBIC), and the CWMD test and evaluation infrastructure. Additionally, it supports CWMD capabilities through the development of strategies, plans, and policy, capability and threat analysis, and provides outreach to and operational support for FSLTT partners.

**Operations and Support**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$176,750</b>	<b>\$151,970</b>	<b>\$164,315</b>
Carryover - Start of Year	\$3,850	\$24,219	-
Recoveries	\$929	\$3,625	-
Rescissions to Current Year/Budget Year	(\$386)	(\$350)	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	(\$151)	\$350	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$180,992</b>	<b>\$179,814</b>	<b>\$164,315</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$180,992</b>	<b>\$179,814</b>	<b>\$164,315</b>
Obligations (Actual/Estimates/Projections)	\$156,122	\$179,814	\$164,315
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	309	269	286
Enacted/Request FTE	279	252	263
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	255	269	286
FTE (Actual/Estimates/Projections)	251	252	263

**Operations and Support**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>FY 2022 Enacted</b>	<b>309</b>	<b>279</b>	<b>\$60,122</b>	<b>\$116,628</b>	<b>\$176,750</b>
<b>FY 2023 Enacted</b>	<b>269</b>	<b>252</b>	<b>\$56,851</b>	<b>\$95,119</b>	<b>\$151,970</b>
<b>FY 2024 Base Budget</b>	<b>269</b>	<b>252</b>	<b>\$56,851</b>	<b>\$95,119</b>	<b>\$151,970</b>
<b>Total Technical Changes</b>	-	-	-	-	-
Annualization of Federal Staff for CFO	-	1	\$182	-	\$182
<b>Total Annualizations and Non-Recurs</b>	-	<b>1</b>	<b>\$182</b>	-	<b>\$182</b>
Civilian Pay Raise Total	-	-	\$2,252	-	\$2,252
Annualization of Prior Year Pay Raise	-	-	\$696	-	\$696
<b>Total Pricing Changes</b>	-	-	<b>\$2,948</b>	-	<b>\$2,948</b>
<b>Total Adjustments-to-Base</b>	-	<b>1</b>	<b>\$3,130</b>	-	<b>\$3,130</b>
<b>FY 2024 Current Services</b>	<b>269</b>	<b>253</b>	<b>\$59,981</b>	<b>\$95,119</b>	<b>\$155,100</b>
<b>Total Transfers</b>	-	-	-	-	-
CBRN Expertise Workforce Enhancement	17	10	\$1,650	\$661	\$2,311
CWMD PPBE OneNumber System	-	-	-	\$2,831	\$2,831
Information Architecture and Data Systems Maintenance	-	-	-	\$1,267	\$1,267
SLTT Coordination and Support	-	-	-	\$806	\$806
Test & Evaluation of CBRN Detection Equipment	-	-	-	\$2,000	\$2,000
<b>Total Program Changes</b>	<b>17</b>	<b>10</b>	<b>\$1,650</b>	<b>\$7,565</b>	<b>\$9,215</b>
<b>FY 2024 Request</b>	<b>286</b>	<b>263</b>	<b>\$61,631</b>	<b>\$102,684</b>	<b>\$164,315</b>
<b>FY 2023 TO FY 2024 Change</b>	<b>17</b>	<b>11</b>	<b>\$4,780</b>	<b>\$7,565</b>	<b>\$12,345</b>

**Operations and Support**  
**Justification of Pricing Changes**  
*(Dollars in Thousands)*

	FY 2024 President's Budget				
	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>Pricing Change 1 - Civilian Pay Raise Total</b>	-	-	<b>\$2,252</b>	-	<b>\$2,252</b>
Mission Support	-	-	\$2,252	-	\$2,252
<b>Pricing Change 2 - Annualization of Prior Year Pay Raise</b>	-	-	<b>\$696</b>	-	<b>\$696</b>
Mission Support	-	-	\$696	-	\$696
<b>Total Pricing Changes</b>	-	-	<b>\$2,948</b>	-	<b>\$2,948</b>

**Pricing Change 1 – Civilian Pay Raise Total:**

Base Activity Funding: This pricing change impacts civilian pay funding in the Base and Annualizations, which totals \$57.0M.

Pricing Change Explanation: This pricing change represents the costs of the first three quarters of the calendar year 2024 5.2 percent civilian pay increase. It is calculated by adding the Annualization of Prior Year Pay Raise pricing change to the Base and Annualization amounts and multiplying that total by three-fourths of the pay increase rate.

**Pricing Change 2 – Annualization of Prior Year Pay Raise:**

Base Activity Funding: This pricing change impacts civilian pay funding in the Base and Annualizations, which totals \$57.0M.

Pricing Change Explanation: This Pricing Change represents the costs of the 2023 4.6 percent civilian pay increase in the first quarter of Fiscal Year 2024.

## Operations and Support Justification of Program Changes

*(Dollars in Thousands)*

	FY 2024 President's Budget				
	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>Program Change 1 - CBRN Expertise Workforce Enhancement</b>	<b>17</b>	<b>10</b>	<b>\$1,650</b>	<b>\$661</b>	<b>\$2,311</b>
Mission Support	17	10	\$1,650	\$1,770	\$3,420
Capability and Operational Support	-	-	-	(\$1,109)	(\$1,109)
<b>Program Change 2 - CWMD PPBE OneNumber System</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$2,831</b>	<b>\$2,831</b>
Mission Support	-	-	-	\$2,831	\$2,831
<b>Program Change 3 - Information Architecture and Data Systems Maintenance</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$1,267</b>	<b>\$1,267</b>
Capability and Operational Support	-	-	-	\$1,267	\$1,267
<b>Program Change 4 - SLTT Coordination and Support</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$806</b>	<b>\$806</b>
Capability and Operational Support	-	-	-	\$806	\$806
<b>Program Change 5 - Test &amp; Evaluation of CBRN Detection Equipment</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$2,000</b>	<b>\$2,000</b>
Capability and Operational Support	-	-	-	\$2,000	\$2,000
<b>Total Program Changes</b>	<b>17</b>	<b>10</b>	<b>\$1,650</b>	<b>\$7,565</b>	<b>\$9,215</b>

### Program Change 1 – CBRN Expertise Workforce Enhancement:

<i>(\$ in thousands)</i>	Pos	FTE	Amount
Base: Current Services & Transfers	269	252	\$55,602
Program Change	17	10	\$2,311

### **Description**

Readiness for CBRN threats requires specialized expertise, skills, and equipment. CWMD programs help ensure that FSLTT front-line responders are aware of these threats and have the capabilities to protect against them. The \$2.3M for workforce enhancements will support staff training initiatives, add CBRN technical expertise, and develop analytical and program planning and implementation skills. The funding will support 17 positions. :

## Countering Weapons of Mass Destruction

## Operations and Support

<b>CBRN Expertise Workforce Enhancement Personnel</b>	<b>Positions</b>
Risk & Capability Analysis, Enterprise Architect, Policy	4
National Biosurveillance Integration Center (NBIC)	1
Securing the Cities (STC)	2
Chemical Defense Program	2
Mobile Detection Deployment Program (MDDP)	1
Bio Defense Operations	1
Cyber Security Analysts	3
Executive Secretary, Security and Contract Management	3
Total Positions	17

### Justification

Additional personnel will supplement existing staff and programs, including those like NBIC, Securing the Cities (STC), Mobile Detection Deployment Program, and BioWatch that support our State and local partners. The Operational personnel will provide detection equipment training, exercise, and support to help front line operators detect CBRN threats early and take quick action to save lives. The risk analysis, policy, and enterprise architect staff will support the development of a comprehensive national strategy to protect our communities from CBRN threats that can have catastrophic effects. The technical and engineering experts will provide capacity for cyber security on networked detectors and IT systems. The administrative, security, and contract management staff will perform business, administrative, communications, and other functions necessary for strengthening and sustaining the organization. The positions for contract management and risk and planning support are offset by contract cost reductions for systems and contractors. The 17 positions are allocated as indicated below:

### Performance

Increased funding for Federal staff and training will support DHS, national priorities, and the CWMD mission resulting in early detection of CBRN threats, increased cyber security capacity, and mitigation of capability gaps among other benefits to enhance and enable the domestic ability to detect, disrupt, and respond to threats of concern.

### Program Change 2 – CWMD PPBE OneNumber System:

<i>(\$ in thousands)</i>	<b>Pos</b>	<b>FTE</b>	<b>Amount</b>
Base: Current Services & Transfers	-	-	\$790
Program Change	-	-	\$2,831



Description

The FY 2024 Budget includes \$2.8M to continue to implement a CWMD budget system to support the planning, programming, budgeting, and execution (PPBE) phases of the budget development. This funding will acquire support services and software for a PPBE system that will communicate and integrate directly with the DHS HQ PPBE system and maintain alignment with HQ data structures required to submit and produce PPBE deliverables.

Justification

The PPBE One Number system will enable CWMD to effectively plan for, request, and execute public funds, including staffing management, overseeing performance management, and aligning measures and budget resources to the DHS strategic plan.

Performance

The program change will support improvement of a system with functionality that encompasses and tracks CWMD internal costs for program and personnel through the programming, budgeting, and execution phases of the PPBE cycle. CWMD will implement a separate instance of the software which will capture internal, bottom-up cost and schedule details and track the request for funds through the programming and budgeting phases and then track the commitment, obligation, and expenditure of those funds during the execution phase. The long-term outcome should improve the planning, implementation, and execution of the operational CWMD funds control and reporting requirements.

Program Change 3 – Information Architecture and Data Systems Maintenance:

<i>(\$ in thousands)</i>	Pos	FTE	Amount
Base: Current Services & Transfers	-	-	\$9,768
Program Change	-	-	\$1,267

Description

The FY 2024 Budget includes \$1.3M to continue IT improvements for transmission and networking of CBRN equipment and to maintain the GATE-U Cloud Platform. This funding supports data engineers and data scientists to evaluate platforms and develop methods to ensure that synthetic data generated will work for existing and planned CWMD programs and ensure that sensor data from deployed CBRN sensors in remote areas can be telemetered to centralized locations for more advanced analytics.

**Justification**

CWMD has several legacy CBRN sensors that are deployed in the field but do not currently communicate with CWMD's cloud-based Information Architecture. This change will fund the transmission and networking of CBRN equipment that will enable CWMD to deploy chosen IT. These technologies will enhance detection capabilities to efficiently ingest data from legacy sensors, many of which belong to DHS Components, to determine anomalous activities and provide relevant outputs to FSLTT law enforcement and investigatory partners. With this funding, CWMD will gain the ability to streamline manually intensive data curation and information sharing initiatives to improve CWMD's ability to comprehensively identify and address CBRN threats. Finally, the increase will support the operations and maintenance of the CWMD GATE-U Platform, which provides the data infrastructure to support the data analytics, data acquisition, code development, and data exploitation.

**Performance**

The capability will ensure that CWMD will continue to aggregate and analyze CBRN-related data and disseminate actionable information to internal and external stakeholders. By integrating relevant operational information with CWMD sensor data, CWMD can construct a more holistic assessment of the CBRN threat landscape than is available from any current source. With this increase in funding, CWMD will be able to continue to translate the information and data obtained from operational partners into a format that enables transformational analytic approaches to identify novel CBRN threats and empower our operational partners to defeat these threats.

**Program Change 4 – SLTT Coordination and Support:**

<i>(\$ in thousands)</i>	<b>Pos</b>	<b>FTE</b>	<b>Amount</b>
Base: Current Services & Transfers	-	-	\$6,523
Program Change	-	-	\$806

**Description**

The FY 2024 Budget includes \$0.8M to enhance CWMD FSLTT outreach and coordination activities, build out crisis action planning capability, and improve operational data visualization and reporting. This program change will fund additional crisis and emergency management specialists and add capability for integrated operations, alerts, and reporting to enhance situational awareness.

**Justification**

CWMD outreach and coordination activities include interaction with emergency managers, law enforcement, fire/HAZMAT, Federal Bureau of Investigation, health officials and other partners/stakeholders to ensure preparedness and coordinated incident response across the interagency community. CWMD captures operational data metrics that are used for trend analysis and crisis action support. This funding will support CWMD's ability to respond to emergent crisis situations and maintain continuity of mission operations through developing and exercising crisis action plans.

**Performance**

## Countering Weapons of Mass Destruction

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With this increase, CWMD will be able to keep pace with a dynamic threat environment, data integration, and information coordination demands. The additional funding will develop and exercise an array of CBRN crisis scenario plans to expand surge capability for various crises. The additional crisis action planners will ensure that capability development will be accomplished as a team effort and that effective training, exercises, tabletop exercises, and wargaming can occur to validate crisis action plans.

### Program Change 5 – Test & Evaluation of CBRN Detection Equipment:

<i>(\$ in thousands)</i>	<b>Pos</b>	<b>FTE</b>	<b>Amount</b>
Base: Current Services & Transfers	-	-	\$16,666
Program Change	-	-	\$2,000

### **Description**

The FY 2024 Budget increases Test and Evaluation (T&E) capability by \$2.0M to support operational analysis and technical assessment of CBRN detection equipment, including mature, commercially available CBRN systems in operational scenarios faced by FSLTT end-users.

### **Justification**

Additional funding is required to support T&E Operations, and Operational Analysis and Technical Assessment activities, the characterization of CBRN detection equipment, and additional contractor staff support. The additional funds will support System Performance Evaluations (evaluates the system against the threat, primarily through modeling and simulation), Model and Simulation Verification, Validation, and Accreditation (enables the use of models that have been accredited to reduce the cost of testing and lowers the risk to the program), Cyber Resiliency Testing (assesses a systems vulnerability to cyber-attacks so that the necessary steps can be taken to decrease the impact to operations), and operational analyses for currently deployed systems (supports the end user by analyzing the performance of the system after it has been deployed to ensure that the performance has not degraded). In addition, through the characterization of CBRN detection equipment, CWMD conducts test campaigns using mature, commercially available CBRN detection systems in operational scenarios faced by FSLTT end-users. These tests produce independent assessments of equipment to confirm vendor performance claims and can help with development and/or refinement of the end-users' concepts of operations and can help identify training needs. This testing also provides an opportunity for end users to report anomalous behavior of an instrument or class of instruments that could be resolved using these testing resources.

### **Performance**

This program provides the Homeland Security enterprise community as a whole with data to ensure that selected CBRN equipment has been shown to fulfill the missions' criteria and that they are used properly. The data collected also provide cost benefit information to support acquisition decisions at the Federal and SLTT levels. The data are also shareable with the proper protection with the commercial and international community to support the global architecture. The body of data collected during these tests can be used to inform systems threat reviews, acquisition programs, and research and development programs. The data will be archived for later re-use by other programs and activities.

## Operations and Support Personnel Compensation and Benefits

### Pay Summary

*(Dollars in Thousands)*

	FY 2022 Enacted				FY 2023 Enacted				FY 2024 President's Budget				FY 2023 to FY 2024 Total			
	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate
Mission Support	309	279	\$60,122	\$196.66	269	252	\$56,851	\$205.33	286	263	\$61,631	\$213.92	17	11	\$4,780	\$8.59
<b>Total</b>	<b>309</b>	<b>279</b>	<b>\$60,122</b>	<b>\$196.66</b>	<b>269</b>	<b>252</b>	<b>\$56,851</b>	<b>\$205.33</b>	<b>286</b>	<b>263</b>	<b>\$61,631</b>	<b>\$213.92</b>	<b>17</b>	<b>11</b>	<b>\$4,780</b>	<b>\$8.59</b>
Subtotal Discretionary - Appropriation	309	279	\$60,122	\$196.66	269	252	\$56,851	\$205.33	286	263	\$61,631	\$213.92	17	11	\$4,780	\$8.59

### Pay by Object Class

*(Dollars in Thousands)*

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget	FY 2023 to FY 2024 Change
11.1 Full-time Permanent	\$39,326	\$37,518	\$40,818	\$3,300
11.3 Other than Full-time Permanent	\$710	\$197	\$213	\$16
11.5 Other Personnel Compensation	\$505	\$750	\$830	\$80
11.8 Special Personal Services Payments	\$5,255	\$5,107	\$5,370	\$263
12.1 Civilian Personnel Benefits	\$14,326	\$13,279	\$14,400	\$1,121
<b>Total - Personnel Compensation and Benefits</b>	<b>\$60,122</b>	<b>\$56,851</b>	<b>\$61,631</b>	<b>\$4,780</b>
<b>Positions and FTE</b>				
Positions - Civilian	309	269	286	17
FTE - Civilian	279	252	263	11

**Operations and Support**  
**Permanent Positions by Grade – Appropriation**  
*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
SES	24	13	13	-
EX	-	1	1	-
GS-15	80	77	79	2
GS-14	96	100	108	8
GS-13	42	48	52	4
GS-12	36	15	15	-
GS-11	12	4	7	3
GS-10	5	-	-	-
GS-9	3	4	4	-
Other Grade Positions	11	7	7	-
<b>Total Permanent Positions</b>	<b>309</b>	<b>269</b>	<b>286</b>	<b>17</b>
Total Perm. Employment (Filled Positions) EOY	255	269	286	17
Unfilled Positions EOY	54	-	-	-
<b>Position Locations</b>				
Headquarters Civilian	274	243	260	17
U.S. Field Civilian	35	26	26	-
<b>Averages</b>				
Average Personnel Costs, ES Positions	\$198,155	\$205,779	\$214,010	\$8,231
Average Personnel Costs, GS Positions	\$146,774	\$151,655	\$159,541	\$7,886
Average Grade, GS Positions	14	14	14	-

## Operations and Support Non Pay Budget Exhibits

### Non Pay Summary *(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Mission Support	\$25,194	\$28,719	\$33,320	\$4,601
Capability and Operational Support	\$91,434	\$66,400	\$69,364	\$2,964
<b>Total</b>	<b>\$116,628</b>	<b>\$95,119</b>	<b>\$102,684</b>	<b>\$7,565</b>
Subtotal Discretionary - Appropriation	\$116,628	\$95,119	\$102,684	\$7,565

### Non Pay by Object Class *(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$1,334	\$1,551	\$1,612	\$61
23.2 Rental Payments to Others	\$518	-	-	-
23.3 Communications, Utilities, & Miscellaneous	-	\$85	\$291	\$206
24.0 Printing and Reproduction	\$55	\$48	\$67	\$19
25.1 Advisory & Assistance Services	\$59,714	\$37,019	\$37,835	\$816
25.2 Other Services from Non-Federal Sources	\$8,581	\$13,395	\$15,245	\$1,850
25.3 Other Purchases of goods and services	\$26,347	\$19,503	\$18,938	(\$565)
25.4 Operations & Maintenance of Facilities	-	\$150	\$150	-
25.5 Research & Development Contracts	\$1,000	\$1,000	\$1,000	-
25.6 Medical Care	-	-	\$3	\$3
25.7 Operation & Maintenance of Equipment	\$4,851	\$15,796	\$17,205	\$1,409
26.0 Supplies & Materials	\$9,523	\$2,372	\$2,662	\$290
31.0 Equipment	\$2,843	\$2,806	\$6,282	\$3,476
41.0 Grants, Subsidies, and Contributions	\$1,850	\$1,394	\$1,394	-
94.0 Financial Transfers	\$12	-	-	-
<b>Total - Non Pay Budget Object Class</b>	<b>\$116,628</b>	<b>\$95,119</b>	<b>\$102,684</b>	<b>\$7,565</b>

*Mission Support – PPA*

**Budget Comparison and Adjustments**

**Comparison of Budget Authority and Request**

*(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Mission Support	309	279	\$85,316	269	252	\$85,570	286	263	\$94,951	17	11	\$9,381
<b>Total</b>	<b>309</b>	<b>279</b>	<b>\$85,316</b>	<b>269</b>	<b>252</b>	<b>\$85,570</b>	<b>286</b>	<b>263</b>	<b>\$94,951</b>	<b>17</b>	<b>11</b>	<b>\$9,381</b>
Subtotal Discretionary - Appropriation	309	279	\$85,316	269	252	\$85,570	286	263	\$94,951	17	11	\$9,381

**PPA Level I Description**

Mission Support funds personnel compensation and benefits for all CWMD employees and provides enterprise leadership, management, and business administration in support of daily operations. Key capabilities include workforce management, financial management, physical and personnel security, goods and services acquisition, information technology, compliance activities, property and assets management, communications, and general management and administration.

Programs funded by the Mission Support PPA include the following:

**Office of the Assistant Secretary and Enterprise Services:** The Office of the Assistant Secretary and Enterprise Services provide overall management of CWMD and develop long-range management plans for the efficient and effective operation of the organization. The office develops and reviews CWMD strategic direction and policy and issues internal guidance to employees that is consistent with regulations and the authority delegated by DHS. The office comprises the Chief of Staff, Executive Secretary, Communications staff, and Enterprise Services. Business requirements include financial management systems and operations, workforce management, information technology, compliance and evidence monitoring, facility management, and personnel security services.

**Salaries, Benefits, and Detailees:** Provides compensation for all CWMD Federal personnel and reimbursement to other Federal agencies for detailees, for personnel from Federal and other interagency partners, and the Office of General Counsel (OGC).

**Mission Support – PPA**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$85,316</b>	<b>\$85,570</b>	<b>\$94,951</b>
Carryover - Start of Year	-	-	-
Recoveries	-	-	-
Rescissions to Current Year/Budget Year	-	(\$350)	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	(\$679)	\$350	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$84,637</b>	<b>\$85,570</b>	<b>\$94,951</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$84,637</b>	<b>\$85,570</b>	<b>\$94,951</b>
Obligations (Actual/Estimates/Projections)	\$84,316	\$85,570	\$94,951
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	309	269	286
Enacted/Request FTE	279	252	263
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	255	269	286
FTE (Actual/Estimates/Projections)	251	252	263



**Mission Support – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>FY 2022 Enacted</b>	<b>309</b>	<b>279</b>	<b>\$60,122</b>	<b>\$25,194</b>	<b>\$85,316</b>
<b>FY 2023 Enacted</b>	<b>269</b>	<b>252</b>	<b>\$56,851</b>	<b>\$28,719</b>	<b>\$85,570</b>
<b>FY 2024 Base Budget</b>	<b>269</b>	<b>252</b>	<b>\$56,851</b>	<b>\$28,719</b>	<b>\$85,570</b>
<b>Total Technical Changes</b>	-	-	-	-	-
Annualization of Federal Staff for CFO	-	1	\$182	-	\$182
<b>Total Annualizations and Non-Recurs</b>	-	<b>1</b>	<b>\$182</b>	-	<b>\$182</b>
Civilian Pay Raise Total	-	-	\$2,252	-	\$2,252
Annualization of Prior Year Pay Raise	-	-	\$696	-	\$696
<b>Total Pricing Changes</b>	-	-	<b>\$2,948</b>	-	<b>\$2,948</b>
<b>Total Adjustments-to-Base</b>	-	<b>1</b>	<b>\$3,130</b>	-	<b>\$3,130</b>
<b>FY 2024 Current Services</b>	<b>269</b>	<b>253</b>	<b>\$59,981</b>	<b>\$28,719</b>	<b>\$88,700</b>
<b>Total Transfers</b>	-	-	-	-	-
CBRN Expertise Workforce Enhancement	17	10	\$1,650	\$1,770	\$3,420
CWMD PPBE OneNumber System	-	-	-	\$2,831	\$2,831
<b>Total Program Changes</b>	<b>17</b>	<b>10</b>	<b>\$1,650</b>	<b>\$4,601</b>	<b>\$6,251</b>
<b>FY 2024 Request</b>	<b>286</b>	<b>263</b>	<b>\$61,631</b>	<b>\$33,320</b>	<b>\$94,951</b>
<b>FY 2023 TO FY 2024 Change</b>	<b>17</b>	<b>11</b>	<b>\$4,780</b>	<b>\$4,601</b>	<b>\$9,381</b>

## Mission Support – PPA Personnel Compensation and Benefits

### Pay Summary (Dollars in Thousands)

	FY 2022 Enacted				FY 2023 Enacted				FY 2024 President's Budget				FY 2023 to FY 2024 Total			
	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate	Pos.	FTE	Amount	Rate
Mission Support	309	279	\$60,122	\$196.66	269	252	\$56,851	\$205.33	286	263	\$61,631	\$213.92	17	11	\$4,780	\$8.59
<b>Total</b>	<b>309</b>	<b>279</b>	<b>\$60,122</b>	<b>\$196.66</b>	<b>269</b>	<b>252</b>	<b>\$56,851</b>	<b>\$205.33</b>	<b>286</b>	<b>263</b>	<b>\$61,631</b>	<b>\$213.92</b>	<b>17</b>	<b>11</b>	<b>\$4,780</b>	<b>\$8.59</b>
Subtotal Discretionary - Appropriation	309	279	\$60,122	\$196.66	269	252	\$56,851	\$205.33	286	263	\$61,631	\$213.92	17	11	\$4,780	\$8.59

### Pay by Object Class (Dollars in Thousands)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget	FY 2023 to FY 2024 Change
11.1 Full-time Permanent	\$39,326	\$37,518	\$40,818	\$3,300
11.3 Other than Full-time Permanent	\$710	\$197	\$213	\$16
11.5 Other Personnel Compensation	\$505	\$750	\$830	\$80
11.8 Special Personal Services Payments	\$5,255	\$5,107	\$5,370	\$263
12.1 Civilian Personnel Benefits	\$14,326	\$13,279	\$14,400	\$1,121
<b>Total - Personnel Compensation and Benefits</b>	<b>\$60,122</b>	<b>\$56,851</b>	<b>\$61,631</b>	<b>\$4,780</b>
<b>Positions and FTE</b>				
Positions - Civilian	309	269	286	17
FTE - Civilian	279	252	263	11

## Pay Cost Drivers

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	FTE	Amount	Rate	FTE	Amount	Rate	FTE	Amount	Rate	FTE	Amount	Rate
Mission Personnel Compensation and Benefits	192	\$37,758	\$196.66	159	\$32,535	\$204.62	168	\$36,121	\$215.01	9	\$3,586	\$10.38
Mission Support Personnel Compensation and Benefits	87	\$17,109	\$196.66	93	\$19,209	\$206.55	95	\$20,140	\$212.00	2	\$931	\$5.45
Other PC&B Costs	-	\$5,255	-	-	\$5,107	-	-	\$5,370	-	-	\$263	-
<b>Total - Pay Cost Drivers</b>	<b>279</b>	<b>\$60,122</b>	<b>\$196.66</b>	<b>252</b>	<b>\$56,851</b>	<b>\$205.33</b>	<b>263</b>	<b>\$61,631</b>	<b>\$213.92</b>	<b>11</b>	<b>\$4,780</b>	<b>\$8.59</b>

Explanation of Pay Cost Drivers

**Mission Personnel Compensation and Benefits:** This cost driver supports personnel compensation, benefits, and performance awards for Federal employees who are direct, mission-focused personnel. In FY 2024, this cost driver includes an increase of 14 positions and 9 FTE for mission critical CBRN expertise.

**Mission Support Personnel Compensation and Benefits:** This cost driver supports personnel compensation, benefits, and performance awards for Federal employees indirectly facilitating the operations and mission of CWMD. They include Front Office personnel and those in Enterprise Services such as business, administrative, communications, facilities management, security, and finance personnel. In FY 2024, the cost driver includes three (3) additional positions with two (2) FTE to strengthen program and financial oversight and reporting.

**Other PC&B Costs:** This cost driver provides funding for Federal personnel detailed from DHS Operational Components, OGC, HHS Public Health Service Officers (PHSOs), and other interagency partners. The FY 2024 change reflects the pay increase for reimbursable detailees.

## Mission Support – PPA Non Pay Budget Exhibits

### Non Pay Summary *(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Mission Support	\$25,194	\$28,719	\$33,320	\$4,601
<b>Total</b>	<b>\$25,194</b>	<b>\$28,719</b>	<b>\$33,320</b>	<b>\$4,601</b>
Subtotal Discretionary - Appropriation	\$25,194	\$28,719	\$33,320	\$4,601

### Non Pay by Object Class *(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$206	\$83	\$119	\$36
23.2 Rental Payments to Others	\$518	-	-	-
23.3 Communications, Utilities, & Miscellaneous	-	\$85	\$170	\$85
24.0 Printing and Reproduction	\$27	\$26	\$45	\$19
25.1 Advisory & Assistance Services	\$13,032	\$15,667	\$16,317	\$650
25.2 Other Services from Non-Federal Sources	\$552	\$743	\$1,548	\$805
25.3 Other Purchases of goods and services	\$8,709	\$2,408	\$2,243	(\$165)
25.4 Operations & Maintenance of Facilities	-	\$150	\$150	-
25.6 Medical Care	-	-	\$3	\$3
25.7 Operation & Maintenance of Equipment	\$1,446	\$8,361	\$8,883	\$522
26.0 Supplies & Materials	\$299	\$351	\$441	\$90
31.0 Equipment	\$393	\$845	\$3,401	\$2,556
94.0 Financial Transfers	\$12	-	-	-
<b>Total - Non Pay Budget Object Class</b>	<b>\$25,194</b>	<b>\$28,719</b>	<b>\$33,320</b>	<b>\$4,601</b>

## Non Pay Cost Drivers

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget	FY 2023 to FY 2024 Total Changes
Operations Support	\$8,033	\$9,053	\$9,053	-
Financial Systems	\$4,254	\$4,504	\$7,230	\$2,726
Information Technology Support	\$3,712	\$5,849	\$6,189	\$340
Financial Systems Support	\$4,095	\$4,140	\$4,140	-
Other Costs	\$5,100	\$5,173	\$6,708	\$1,535
<b>Total - Non-Pay Cost Drivers</b>	<b>\$25,194</b>	<b>\$28,719</b>	<b>\$33,320</b>	<b>\$4,601</b>

Explanation of Non Pay Cost Drivers

**Operations Support:** This includes costs for the financial management contract support staff; Evidence Act staff; executive assistants and security contract staff; and facilities support personnel.

**Financial Systems:** This cost driver supports the financial systems currently utilized by CWMD to execute its mission. It includes the cost for the DHS Financial Systems Modernization Solution (FSMS), CWMD Planning, PPBE System, and the remaining Immigration and Customs Enforcement (ICE) Federal Financial Management System (FFMS). The increase reflects the CWMD PPBE system investment.

**Information Technology Support:** Includes costs for Information Technology and Cyber Security support, compliance activities, secure telephone lines, HSDN data network circuits, Enterprise license agreements, and SharePoint site operations and maintenance costs.

**Financial Systems Support:** This includes the costs for U.S. Coast Guard Finance Center, FSMS licenses, and FSMS integration costs to the DHS travel management system.

**Other Costs:** This cost driver includes for supplies, materials, enterprise service support, transit expenses, printing and reproduction, travel, training of personnel, information subscription services, facility support, and reception. The increase reflects workforce enhancement activities to support CBRN expertise and to strengthen CWMD program management.

***Capability and Operations Support – PPA*****Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Capability and Operational Support	-	-	\$91,434	-	-	\$66,400	-	-	\$69,364	-	-	\$2,964
<b>Total</b>	-	-	<b>\$91,434</b>	-	-	<b>\$66,400</b>	-	-	<b>\$69,364</b>	-	-	<b>\$2,964</b>
Subtotal Discretionary - Appropriation	-	-	\$91,434	-	-	\$66,400	-	-	\$69,364	-	-	\$2,964

**PPA Level I Description**

The C&OS PPA funds programs and activities that provide situational awareness and decision support for DHS leadership and Federal partners. The C&OS PPA supports CWMD capabilities through the development of strategies, plans, policies, capability gap and threat/risk analyses, and the formulation of operational requirements. The C&OS PPA also funds the NBIC, CWMD Test and Evaluation infrastructure, and CWMD operations that provide an effective means of surveillance, collaboration, and response to emerging WMD threats.

This PPA includes the following programs:

**Strategic Planning and Threat Analysis:** Costs associated with Strategic Planning include the development and coordination of DHS policies, strategies, and plans to counter CBRN and security threats affecting the United States. CWMD also conducts assessments to improve the capability to understand, anticipate, and mitigate the risk of CBRN. Funding within this program provides administrative and programmatic services across many disciplines, including:

- 1) development of DHS and CWMD strategies, plans, and policies related to CBRN security issues;
- 2) coordination across CWMD, DHS, and the interagency addressing the CBRN mission space;
- 3) policy review of all DHS external communications on CBRN;
- 4) support for White House engagement by CWMD and DHS senior leaders;
- 5) development, coordination, and publication of reports required by Congress and DHS;
- 6) support to and engagement with FSLTT partners to implement and align strategies, plans, and policies that enable an informed, prepared homeland security posture; and
- 7) strengthen the CWMD requirements function by adding a formal, enterprise-wide capability and risk assessment function.

Additionally, CWMD provides mission-area information to support the DHS Office of Intelligence and Analysis' process to provide senior leaders with the most current and accurate WMD threat information available. CWMD coordinates with the Science & Technology Directorate and interagency partners on research and development requirements as necessary.

- *Strategic Planning* provides necessary support to develop and coordinate strategies, plans, policy, and reports on behalf of DHS on CBRN and related matters. This project supports CWMD policy coordination for DHS and strategy development and implementation planning for DHS and CWMD. This effort includes support for coordination of Department-wide implementation activities, such as for the National Biodefense Strategy, development of Department-wide and multi-Component steady state and contingency plans, including the DHS Chemical Defense Strategy Implementation Plan and Inbound Nuclear Threat Planning Framework, and White House engagement and coordination.
- *Capabilities and Risk Assessments* leads development and implementation of a robust, enterprise-wide CBRN risk assessment and gap identification capability to prioritize investments that directly address CBRN risks and capability gaps. The program will conduct capabilities-based assessments to identify capability gaps and prioritize processes and resources that may prevent exploitable vulnerabilities, ultimately improving the capability to understand, anticipate, and mitigate the risk of CBRN security threats.
- *Countering Emerging & Enduring Biological and Chemical Threats* leverages CWMD's responsibility to coordinate Federal Government actions and help ensure the U.S. Government is countering enduring and emerging biological and chemical threats in a cohesive, comprehensive, and effective manner. CWMD will utilize integrative yet focused support, engagement, and studies to implement strategies, plans, and policies that enable an informed, prepared homeland security posture.
- *International Partner Engagement Support Project* facilitates CWMD engagement with international partners to identify threats and disrupt adversary acquisition planning, transport, and use of WMD before they reach U.S. borders. CWMD actively engages with DHS Headquarters, Components, Federal interagency partners, and when appropriate, directly with international partners and organizations to accomplish its mission to prevent the use of WMD against the homeland and promote readiness for CBRN and other security threats.
- *CWMD Threat Analysis Activities* develops a robust and technologically advanced analytic capability to counter chemical, biological, radiological, and nuclear threats to the homeland and U.S. interests. The program provides timely current/strategic intelligence and classified situational awareness for DHS, via oral presentations, alerts, and via a Common Intelligence Picture that provides DHS with a geospatial view of WMD and WMD-related materials potentially at risk, pathways to the Homeland, U.S. and Allied countermeasures, and current threats. Additionally, the program maintains a capability to provide DHS leadership with warning of emergent WMD threats, based upon information from across the Intelligence Community (IC) and, where appropriate, from its own warning analysis.

**Information Architecture and Data System Maintenance:** The CWMD Information Architecture provides a framework to gather, integrate, analyze, and disseminate information/data to better anticipate, prevent, and respond to WMD threats. The Information Architecture is a system-of-systems architecture to interconnect information systems and data sources, both inside and outside of CWMD. The Information Architecture also provides a unified data sharing and analytics environment to facilitate identification of CBRN threats using advanced analytic techniques, including data science, machine learning, and artificial intelligence.

- *Data Integration* is responsible for developing a robust and technologically advanced analytic capabilities to combat CBRN threats to the homeland and U.S. interests. This effort provides operationally focused WMD intelligence, sensor data interpretation and tool integration, operational integration with departmental field operations, and Department of Defense (DoD), Information Analysis (IA), IC, and Foreign Partner collaboration. Data Integration also defines requirements for Information Technology (IT) systems needed to support this function.
- */Machine Learning* supports two Administration priorities. First, Transmission and Network funding will facilitate the collection and integration of legacy CBRN sensor data into a centralized analytics platform. Second, funding to support Common Annotation Standards, participation in a Data Annotation Contract, and generation of Synthetic Data will provide tools and capabilities that allow CWMD to rapidly ingest, process, and analyze new data and information sources for evidence or indicators of CBRN threats.
- *Information Architecture Platform Operations and Maintenance* supports the operations and maintenance of the CWMD Information Architecture (GATE-U) Platform and supports the data infrastructure for the data analytics, data acquisition, code development, and data exploitation. CWMD Information Architecture (GATE-U) Maintenance and Support activities include contracted software engineering labor to properly maintain and support the system, contract technical capabilities, third-party cybersecurity software required to properly secure and operate the system, and contracted cybersecurity labor to support authorization activities and security integrity monitoring of the system.

**NBIC:** NBIC detects early indicators of biological threats of national concern, whether intentional bioterrorism or nationally occurring pandemics, across human, animal, and plant species in service to the FSLTT governments. NBIC disseminates biosurveillance tools, analysis, and information to support common situational awareness and operational responses. NBIC is expanding its reach into partner biosurveillance organization and systems and greatly enhance its analytic capabilities to handle the increasing complex information needs of leaders within the Department as well as in our FSLTT partners. NBIC also supports the development and deployment of IT systems to support NBIC's mission, and to provide a framework for collaboration with its interagency National Biosurveillance Integration System (NBIS) partners. These systems include the Biosurveillance Ecosystem (BSVE), a cloud-based platform that facilitates information sharing and analysis capabilities for NBIC's partners, and the Biofeeds system, which enables the efficient review of large volumes of open-source data, rapid curation and analysis, and the generation of NBIC products and reports.

**Test and Evaluation (T&E):** The T&E program provides funds to characterize, verify, and validate technical performance, and assess the operational effectiveness and suitability of chemical, biological, and radiological/nuclear detection technologies under development, commercially available systems, and emerging technologies and systems prior to deployment (full operational capability). CWMD's suite of test instrumentation and automated data collection systems enable testing teams to rapidly verify and validate data. The Standards project follows a development, use, and revision cycle to ensure that consensus and technical capability standards remain effective for detection technology.

T&E supports CWMD programs by conducting tests and evaluations to determine technological maturity, effectiveness, suitability, and compliance with cybersecurity requirements.



- *T&E Operations* implement innovative methods scalability testing based on the maturity, complexity, and cost of the technology being tested. This includes actions to identify and implement T&E best practices for supporting traditional and rapid Acquisition Programs; incorporate best T&E practices into the T&E Operational Instruction; deliver T&E solutions for rapid and conventional acquisitions; evaluate technical maturity of materiel solutions in support of their transfer from R&D to Acquisition; and developmental T&E, operational T&E, and regression testing for deployed capabilities. Additionally, T&E Operations supports operational analyses, deployments of capabilities (e.g., Radiation Portal Monitor Enterprise), and support for System Performance Evaluations.
- *T&E Operational Analysis and Technical Assessments* supports subject matter expertise for T&E, particularly the Data Mining, Analysis, and Modeling Cell (DMAMC). DMAMC is a unique resource that optimizes the use of CWMD's existing knowledge base to improve efficiency of test planning and execution, address questions of detector performance through the reuse and evaluation of existing data and shift the reliance on testing only when needed to acquire new knowledge. The program has consolidated and built several databases and libraries that feature common, controlled access and easy reuse of CWMD data, and DMAMC personnel are vital resources for using these databases. Projects funded directly by DMAMC cut across programs and past tests to ensure CWMD maintains a comprehensive view of its knowledge base in detection, modeling and simulation, data management, and analysis. DMAMC allows CWMD to respond to requests for information from stakeholders that require such cross-cutting analyses.
- *T&E Infrastructure* supports the maintenance and sustainment of testing and evaluation infrastructure to promote efficiencies, cost savings, consistency, and robustness across all types of test and evaluation events. This infrastructure includes but is not limited to the design/fabrication of fissile material handling, maintenance, sustainment, and storage of radiological and Special Nuclear Material sources, chem/biomaterials, test and analysis tools, and equipment that are required to support test execution and analysis, software and licenses, cybersecurity tools, data catalogs, databases, data collection systems, specialized testing equipment, models, and data repositories to allow for the reuse of data. This program also supports CWMD's data governance and management activities.
- *The Standards* effort supports the development and maintenance of performance standards for radiological and nuclear, biological, and chemical detection systems as required by CWMD acquisition and research and development programs. The program provides funding for the development and maintenance of Institute of Electrical and Electronics Engineers, American Society for Testing and Materials, and International Electrotechnical Commission voluntary consensus standards. CWMD also publishes Technical Capability Standards as directed by section 121 of the *Security and Accountability for Every (SAFE) Port Act of 2006* (P.L. 109-347) (6 U.S.C. 921). Voluntary consensus standards establish baseline performance requirements, provide a means to verify those requirements are met, and help promote development and revision of detection equipment for operational government users, law enforcement, and other State and local users. The standards serve as the premier benchmark criteria for detection system capability requirements for radiological/nuclear detection. The program also works in the international consensus standard arena to keep U.S. and international standards harmonized when not feasible to be identical.

- *T&E Directed Testing* provides performance data to DHS Components, other FSLTT program managers, requirements developers, and operations managers to address existing and emerging needs. Assessment topics are selected based on input from the end-users, who are included throughout the life cycle of the assessments from scoping to interpretation. Consequently, the resulting information responds to specific questions and is uniquely relevant to the stakeholders. The program also affords end users, such as front-line officers, the opportunity to participate in the planning, execution, and interpretation of sophisticated test campaigns and/or test events that are designed to provide them with targeted, specific, and comprehensive performance data on CBRN technology. The program provides the countering WMD community with information that ensures that selected CBRN equipment have demonstrated that they fulfill the missions' criteria and that they are used properly. The data collected also provide cost-benefit information to support and defend acquisition decisions at the Federal and SLTT levels. The data are also shareable with the proper protection with the commercial and international community to support the global architecture and improve the state of the technologies. The body of data collected during directed tests can be used to inform systems threat reviews, acquisition program, and research and development programs. Directed Testing data is always archived for later re-use. The Directed Test Program works closely with the DMAMC to coordinate activities.

**Coordination & Requirements:** The Coordination and Requirements program provides funds for requirements, current operations, chemical support coordination, and field operations.

- *Requirements* serves as the central integrator of countering WMD capability gap identification across the Department and works with DHS Components to identify, validate, prioritize, and catalog capability gaps and support the development of requirements documents as required by the Department's Joint Requirements Council. Requirements project personnel oversee the development and management of a standardized process to generate and maintain capability (operational) requirements for DHS frontline operators and first responders in support of follow-on acquisition activities. This project ensures validated countering WMD capability gaps are prioritized by a cross-Component evaluation team using a CWMD Requirements Oversight Council (WROC)-approved evaluation process. The prioritized list is then used to inform the CWMD PPBE process and CWMD Directorate activities and initiatives. This project also serves as the executive secretariat of the WROC, which functions as CWMD's oversight and coordination body for countering WMD requirements and capability gap validation. It comprises Senior Executives from nine DHS Components.
- *Current Operations* provides near real-time situational awareness and analysis daily to CWMD leadership on emerging threats or incidents as they relate to WMD, CBRN, and terrorism events. Current Operations will continue to leverage existing, off-the-shelf technologies to provide near-real time reporting and situational awareness to both CWMD leadership and personnel/assets deployed in support of CBRN detection missions. This includes comprehensive daily, steady-state reporting, and situational crisis reporting. Specifically, Current Operations is responsible for:
  - Coordinating the DHS informational updates for Federal Bureau of Investigation Weapons of Mass Destruction Strategic Group deployment.
  - Through assigned Federal staff, maintaining CWMD's liaison with the DHS Office of Homeland Security Situational Awareness, which coordinates planning for future operations and threat responses (i.e., countering unmanned aerial systems, and inbound nuclear threat planning).
  - Maintaining the family of plans and responses to continuity of operations, continuity of government, and CWMD's devolution of authority.

- Implementing Incident Coordination for CWMD efforts and provide the Assistant Secretary the most accurate and actionable information to aid in emergency decision making.
  - Maintaining a contingency planning capability allowing support and course of action development for CWMD senior leadership in response to CBRN security threats and incidents.
  - Managing the CWMD Watch Desk at the DHS National Operations Center, which develops and provides 24/7/365 situational awareness and related incident information with DHS and Federal agencies. This is executed by providing end-to-end scalable operations coordination, which is required to support CWMD and the Department's information sharing and coordination requirements, across the chemical, biological, radiological, and nuclear domains.
- *Chemical Support* leads DHS-wide chemical defense coordination through Chemical Coordination Group (CCG), a coordination body comprising DHS operational and Headquarters Components with significant chemical defense equities to align, enhance, and integrate DHS chemical defense capabilities. The CCG serves as the principal DHS coordination body for both strategic and emergent operational issues related to chemical defense. In conjunction with CWMD, the CCG developed and maintains the DHS Chemical Defense Strategy, which was signed by the Acting Secretary in December 2019. To implement the strategy and enhance DHS-wide unity of effort, the CCG is:
    - 1) holding monthly group meetings;
    - 2) identifying implementation priorities to take to action;
    - 3) holding threat-based workshops to provide state of the science education and identify current capabilities and potential gaps; and
    - 4) developing inventories and in-depth analyses to identify key areas of improvement and unity of effort across DHS components.
  - *Field Operations* supports CWMD forward deployed personnel across the Nation, focusing on high-risk metropolitan areas included in CWMD's regional approach to support operations. These personnel interface with CWMD stakeholders allowing CWMD to provide direct and focused support CBRN expertise in support of CWMD programs within the area of operation.

## Capability and Operations Support – PPA

### Budget Authority and Obligations

*(Dollars in Thousands)*

	FY 2022	FY 2023	FY 2024
<b>Enacted/Request</b>	<b>\$91,434</b>	<b>\$66,400</b>	<b>\$69,364</b>
Carryover - Start of Year	\$3,850	\$24,219	-
Recoveries	\$929	\$3,625	-
Rescissions to Current Year/Budget Year	(\$386)	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	\$528	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$96,355</b>	<b>\$94,244</b>	<b>\$69,364</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$96,355</b>	<b>\$94,244</b>	<b>\$69,364</b>
Obligations (Actual/Estimates/Projections)	\$71,806	\$94,244	\$69,364
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Capability and Operations Support – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>FY 2022 Enacted</b>	-	-	-	<b>\$91,434</b>	<b>\$91,434</b>
<b>FY 2023 Enacted</b>	-	-	-	<b>\$66,400</b>	<b>\$66,400</b>
<b>FY 2024 Base Budget</b>	-	-	-	<b>\$66,400</b>	<b>\$66,400</b>
<b>Total Technical Changes</b>	-	-	-	-	-
<b>Total Annualizations and Non-Recurs</b>	-	-	-	-	-
<b>Total Pricing Changes</b>	-	-	-	-	-
<b>Total Adjustments-to-Base</b>	-	-	-	-	-
<b>FY 2024 Current Services</b>	-	-	-	<b>\$66,400</b>	<b>\$66,400</b>
<b>Total Transfers</b>	-	-	-	-	-
CBRN Expertise Workforce Enhancement	-	-	-	(\$1,109)	(\$1,109)
Information Architecture and Data Systems Maintenance	-	-	-	\$1,267	\$1,267
SLTT Coordination and Support	-	-	-	\$806	\$806
Test & Evaluation of CBRN Detection Equipment	-	-	-	\$2,000	\$2,000
<b>Total Program Changes</b>	-	-	-	<b>\$2,964</b>	<b>\$2,964</b>
<b>FY 2024 Request</b>	-	-	-	<b>\$69,364</b>	<b>\$69,364</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	-	<b>\$2,964</b>	<b>\$2,964</b>

## Capability and Operations Support – PPA

### Non Pay Budget Exhibits

#### Non Pay Summary

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Capability and Operational Support	\$91,434	\$66,400	\$69,364	\$2,964
<b>Total</b>	<b>\$91,434</b>	<b>\$66,400</b>	<b>\$69,364</b>	<b>\$2,964</b>
Subtotal Discretionary - Appropriation	\$91,434	\$66,400	\$69,364	\$2,964

#### Non Pay by Object Class

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$1,128	\$1,468	\$1,493	\$25
23.3 Communications, Utilities, & Miscellaneous	-	-	\$121	\$121
24.0 Printing and Reproduction	\$28	\$22	\$22	-
25.1 Advisory & Assistance Services	\$46,682	\$21,352	\$21,518	\$166
25.2 Other Services from Non-Federal Sources	\$8,029	\$12,652	\$13,697	\$1,045
25.3 Other Purchases of goods and services	\$17,638	\$17,095	\$16,695	(\$400)
25.5 Research & Development Contracts	\$1,000	\$1,000	\$1,000	-
25.7 Operation & Maintenance of Equipment	\$3,405	\$7,435	\$8,322	\$887
26.0 Supplies & Materials	\$9,224	\$2,021	\$2,221	\$200
31.0 Equipment	\$2,450	\$1,961	\$2,881	\$920
41.0 Grants, Subsidies, and Contributions	\$1,850	\$1,394	\$1,394	-
<b>Total - Non Pay Budget Object Class</b>	<b>\$91,434</b>	<b>\$66,400</b>	<b>\$69,364</b>	<b>\$2,964</b>

### Non Pay Cost Drivers

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget	FY 2023 to FY 2024 Total Changes
Strategic Planning and Analysis	\$19,753	\$20,625	\$19,516	(\$1,109)
Test and Evaluation (T&E)	\$15,348	\$16,666	\$18,666	\$2,000
National BioSurveillance Integration Center	\$15,756	\$16,008	\$16,008	-
Machine Learning	-	\$3,250	\$4,250	\$1,000
Medical Support and Food, Ag, Vet	\$31,602	-	-	-
Other Costs	\$8,975	\$9,851	\$10,924	\$1,073
<b>Total - Non-Pay Cost Drivers</b>	<b>\$91,434</b>	<b>\$66,400</b>	<b>\$69,364</b>	<b>\$2,964</b>

#### Explanation of Non Pay Cost Drivers

**Strategic Planning and Analysis:** Strategic Planning and Threat Analysis provides resources for the development and coordination of DHS policy, strategy, and plans to counter CBRN and security threats affecting the United States, capability gap and risk assessments, and information analysis and anomaly detection. This includes operationally focused WMD intelligence, sensor data interpretation and tool integration, biosurveillance, and interagency collaboration. The decrease reflects the reduced need for contract advisory and assistance services due to a planned increase in Federal personnel to accomplish the work.

**Test and Evaluation (T&E):** Includes funds for T&E Operations, Operational Analysis and Technical Assessments, Sources and Infrastructure, Standards and Conformity, and test campaigns for characterization of CBRN detection equipment. The increase reflects improvements to operations and infrastructure and the Test and Evaluation of CBRN equipment program change.

**National BioSurveillance Integration Center:** NBIC provides biosurveillance tools, analysis, and information to support common situational awareness and operational responses. NBIC also supports the development and deployment of IT systems to support NBIC's mission and provide a framework for collaboration with its interagency NBIC partners.

**Machine Learning:** Includes funding to facilitate the collection and integration of legacy CBRN sensor data into a centralized analytics platform. It also supports developing Common Annotation Standards and generating Synthetic Data, which will provide tools and capabilities that allow CWMD to rapidly ingest, process, and analyze new data and information sources for evidence or indicators of CBRN threats. The increase is for the transmission and networking of CBRN equipment will enable CWMD to deploy chosen IT technologies.

## **Operations and Support**

## **Capability and Operations Support – PPA**

**Medical Support and Food, Agriculture, and Veterinary Defense:** Included funding in FY 2022 for the Chief Medical Officer programs including the Food, Agriculture, and Veterinary Defense efforts. These programs and accompanying funding are transferred to the Office of Health Security within OSEM's appropriation in FY 2023 and no funds are requested in FY 2024 in CWMD.

**Other Costs:** Includes funding for operations support including requirements, current operations—watch desk, continuity, and contingency planning, chemical support coordination, and field operations. The change from FY 2023 to FY 2024 reflects the increase for operations and maintenance of the CWMD GATE-U Platform and SLTT coordination and support.



# Department of Homeland Security

## *Countering Weapons of Mass Destruction*

### *Procurement, Construction, and Improvements*



**Fiscal Year 2024**

**Congressional Justification**

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*Procurement, Construction, and Improvements***Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Large Scale Detection Systems	\$53,667	\$66,137	\$35,678	(\$30,459)
Portable Detection Systems	\$14,937	\$9,067	\$6,660	(\$2,407)
Integrated Operations Assets and Infrastructure	\$8,000	-	-	-
<b>Total</b>	<b>\$76,604</b>	<b>\$75,204</b>	<b>\$42,338</b>	<b>(\$32,866)</b>
Subtotal Discretionary - Appropriation	\$76,604	\$75,204	\$42,338	(\$32,866)

The Countering Weapons of Mass Destruction Office (CWMD) Procurement, Construction, and Improvements (PC&I) appropriation provides resources necessary for the planning, development, procurement, deployment, operational test and evaluation, and improvement of assets that help the Department of Homeland Security (DHS) and its partners to prevent, protect against, respond to, and mitigate chemical, biological, radiological, and nuclear (CBRN) threats and incidents. It also provides for minor construction related to the deployment of Radiation Portal Monitors (RPM).

The PC&I appropriation includes the following Programs, Projects, and Activities (PPA): Large Scale Detection Systems, Portable Detection Systems, and Integrated Operations Assets and Infrastructure.

**Large Scale Detection Systems:** This PPA includes resources to enhance, acquire, deploy Radiation Portal Monitors (RPMs) and related systems, and ancillary equipment under an integrated portfolio enterprise. This PPA supports DHS operational end-users and addresses operational and technical detection requirements at user locations throughout the United States, and provides the programmatic, scientific, and technical expertise to design, acquire, and deploy these systems. This PPA also funds the limited sustainment activities such as collecting and analyzing Reliability, Availability, and Maintainability (RAM) data, conducting Operational Assessments (OAs) and Integrated Life Cycle Management Reviews (ILCMRs).

**Portable Detection Systems:** This PPA supports the procurement of chemical, biological, radiological, and nuclear detection equipment that can be carried, worn, or easily moved to support operational end-users and Special Mission Units. This PPA also includes limited sustainment of sensors, detectors and/or equipment that CWMD provides to support DHS Components and other first responders. Activities such as conducting RAM data collection and analysis, OAs, and ILCMRs are part of these limited sustainment activities.

**Integrated Operations Assets and Infrastructure:** No funding is included in this PPA in the FY 2024 Budget as the program resides with the Office of the Secretary and Executive Management (OSEM).

**Procurement, Construction, and Improvements**

**Budget Authority and Obligations**

*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$76,604</b>	<b>\$75,204</b>	<b>\$42,338</b>
Carryover - Start of Year	\$73,828	\$43,770	\$22,599
Recoveries	\$449	\$2,957	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	(\$6,000)	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$144,881</b>	<b>\$121,931</b>	<b>\$64,937</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$144,881</b>	<b>\$121,931</b>	<b>\$64,937</b>
Obligations (Actual/Estimates/Projections)	\$101,061	\$99,332	\$64,937
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Procurement, Construction, and Improvements****Summary of Budget Changes***(Dollars in Thousands)*

	<b>Positions</b>	<b>FTE</b>	<b>Amount</b>
<b>FY 2022 Enacted</b>	-	-	<b>\$76,604</b>
<b>FY 2023 Enacted</b>	-	-	<b>\$75,204</b>
<b>FY 2024 Base Budget</b>	-	-	-
Radiation Portal Monitor Program (RPMP)	-	-	\$20,478
Radiation Portal Monitor Replacement Program (RPM RP)	-	-	\$13,900
International Rail (IRAIL)	-	-	\$1,300
Basic Handheld RIIDs	-	-	\$1,500
Portable Detection Equipment End Items	-	-	\$5,160
<b>Total Investment Elements</b>	-	-	<b>\$42,338</b>
<b>FY 2024 Request</b>	-	-	<b>\$42,338</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	<b>(\$32,866)</b>

**Procurement, Construction, and Improvements****Non Pay Budget Exhibits****Non Pay by Object Class***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$191	\$35	\$20	(\$15)
25.1 Advisory & Assistance Services	\$5,696	\$9,853	\$9,061	(\$792)
25.2 Other Services from Non-Federal Sources	\$5,000	\$30,330	\$13,350	(\$16,980)
25.3 Other Purchases of goods and services	\$1,800	\$4,120	\$1,050	(\$3,070)
31.0 Equipment	\$63,917	\$30,866	\$18,857	(\$12,009)
<b>Total - Non Pay Budget Object Class</b>	<b>\$76,604</b>	<b>\$75,204</b>	<b>\$42,338</b>	<b>(\$32,866)</b>

## Procurement, Construction, and Improvements Capital Investment Exhibits

### Capital Investments

*(Dollars in Thousands)*

	<b>Acquisition Level</b>	<b>IT/ Non-IT</b>	<b>MAOL</b>	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
N024_000005961 - Radiation Portal Monitor Replacement Program (RPM RP)	Level 3	Non-IT	No	\$615	\$34,530	\$13,900
N024_000005959 - Personal Radiation Detector	Level 3	Non-IT	No	\$500	\$1,067	-
N024_000005960 - Basic Handheld RIIDs	Level 3	Non-IT	No	\$3,406	\$3,000	\$1,500
N/A - Radiation Portal Monitor Program (RPMP)	Level 3	Non-IT	No	\$36,413	\$21,942	\$20,478
N/A - International Rail (IRAIL)	Level 3	Non-IT	No	\$16,639	\$9,665	\$1,300
N/A - Rapid CBRN Equipping	Level 3	Non-IT	No	\$8,531	\$5,000	-
N/A - Portable Detection Equipment End Items	Level 3	Non-IT	No	-	-	\$5,160
N/A - Backpack SLEP	Level 3	Non-IT	No	\$2,500	-	-
N/A - Medical Information Exchange (MIX)				\$8,000	-	-



*Large Scale Detection Systems – PPA***Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Radiation Portal Monitor Program (RPMP)	\$36,413	\$21,942	\$20,478	(\$1,464)
Radiation Portal Monitor Replacement Program (RPM RP)	\$615	\$34,530	\$13,900	(\$20,630)
International Rail (IRAIL)	\$16,639	\$9,665	\$1,300	(\$8,365)
<b>Total</b>	<b>\$53,667</b>	<b>\$66,137</b>	<b>\$35,678</b>	<b>(\$30,459)</b>
Subtotal Discretionary - Appropriation	\$53,667	\$66,137	\$35,678	(\$30,459)

**PPA Level I Description**

Large Scale Detection Systems PPA includes resources to enhance, acquire and deploy large, fixed, and vehicle-mounted RPMs, and other related systems and ancillary equipment, to support DHS operational end-users address operational and technical detection requirements. This PPA includes the enhancements, procurement and/or deployment of RPM systems at user locations throughout the United States, and provides the programmatic, scientific, and technical expertise to design, acquire, and deploy these systems. This PPA also funds the limited sustainment activities such as collecting and analyzing RAM data, conducting OAs and ILCMRs. CWMD is transitioning to managing these projects as an integrated RPM Enterprise Portfolio. As such, CWMD has coordinated with U.S. Custom and Border Protection (CBP) to implement operational priorities with regards to deployment of RPM technologies to Port of Entry (POEs) and funding allocations across the portfolio reflect those priorities.

The Large-Scale Detection Systems PPA includes the following projects:

**Radiation Portal Monitor Program (RPMP):** RPMP is a post-Full Operational Capability (FOC) program to maintain scanning coverage in support of CBP operations at previously deployed POEs. Major activities include deploying, and redeploying refurbished RPMs to address POE requirements, including new POEs being constructed such as the Gordie Howe Bridge; and evaluating, acquiring, and deploying improvements to fielded RPM systems. Includes conducting analysis of RAM data, OAs in collaboration with CBP, and ILCMRs for all post- FOC programs in this PPA.

**Radiation Portal Monitor Replacement Program (RPM RP):** RPM RP will acquire and deploy a limited number of enhanced RPMs to improve effectiveness of the current fleet of fixed RPMs in support of the CBP operation at priority POEs. Once FOC has been reached, these systems will be incorporated into the RPM fleet and any limited future sustainment activities will be accomplished by the RPMP.

**International Rail (IRAIL):** IRAIL will acquire and deploy a solution to detect and identify nuclear or other radioactive materials out of regulatory control entering the United States via freight rail. This solution will be integrated with the CBP-led rail Non-Intrusive Inspection (NII) Recapitalization Program by procuring, integrating, and testing RDE deployed with rail NII.

**Large Scale Detection Systems – PPA**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$53,667</b>	<b>\$66,137</b>	<b>\$35,678</b>
Carryover - Start of Year	\$64,903	\$33,279	\$21,170
Recoveries	\$289	\$2,957	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	(\$5,000)	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$113,859</b>	<b>\$102,373</b>	<b>\$56,848</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$113,859</b>	<b>\$102,373</b>	<b>\$56,848</b>
Obligations (Actual/Estimates/Projections)	\$80,535	\$81,203	\$56,848
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Large Scale Detection Systems – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	<b>Positions</b>	<b>FTE</b>	<b>Amount</b>
<b>FY 2022 Enacted</b>	-	-	<b>\$53,667</b>
<b>FY 2023 Enacted</b>	-	-	<b>\$66,137</b>
<b>FY 2024 Base Budget</b>	-	-	-
Radiation Portal Monitor Program (RPMP)	-	-	\$20,478
Radiation Portal Monitor Replacement Program (RPM RP)	-	-	\$13,900
International Rail (IRAIL)	-	-	\$1,300
<b>Total Investment Elements</b>	-	-	<b>\$35,678</b>
<b>FY 2024 Request</b>	-	-	<b>\$35,678</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	<b>(\$30,459)</b>

## Large Scale Detection Systems – PPA

### Non Pay Budget Exhibits

#### Non Pay by Object Class

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$180	\$25	-	(\$25)
25.1 Advisory & Assistance Services	\$3,500	\$9,100	\$8,000	(\$1,100)
25.2 Other Services from Non-Federal Sources	\$5,000	\$30,330	\$13,100	(\$17,230)
25.3 Other Purchases of goods and services	\$1,800	\$4,120	\$1,050	(\$3,070)
31.0 Equipment	\$43,187	\$22,562	\$13,528	(\$9,034)
<b>Total - Non Pay Budget Object Class</b>	<b>\$53,667</b>	<b>\$66,137</b>	<b>\$35,678</b>	<b>(\$30,459)</b>

## Large Scale Detection Systems – PPA

### Capital Investment Exhibits

#### Capital Investments

*(Dollars in Thousands)*

	<b>Acquisition Level</b>	<b>IT/ Non-IT</b>	<b>MAOL</b>	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
N024_000005961 - Radiation Portal Monitor Replacement Program (RPM RP)	Level 3	Non-IT	No	\$615	\$34,530	\$13,900
N/A - Radiation Portal Monitor Program (RPMP)	Level 3	Non-IT	No	\$36,413	\$21,942	\$20,478
N/A - International Rail (IRAIL)	Level 3	Non-IT	No	\$16,639	\$9,665	\$1,300

## Radiation Portal Monitor Program (RPMP) – Investment Capital Investment Exhibits

### Procurement/Acquisition Programs

*(Dollars in Thousands)*

	Acquisition Level	IT/ Non-IT	MAOL	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
N/A - Radiation Portal Monitor Program (RPMP)	Level 3	Non-IT	No	\$36,413	\$21,942	\$20,478

#### **Investment Description**

RPMs operated by CBP at U.S. land and sea POEs to scan cargo and conveyances are a critical component of the Global Nuclear Detection Architecture to prevent the smuggling of R/N threats or threat materials into the United States, while facilitating the flow of legitimate trade and travel.

The RPMP supports CBP's efforts to continue scanning coverage at POEs. As POEs are reconfigured, expanded, or new POEs are opened, RPMs must be relocated, decommissioned, and/or additional RPM systems must be deployed to uphold current scanning capabilities. In addition, improvements will be deployed to systems in the field to extend the service life of RPMs, including mobile RPMs (mRPM), as well as augment detection efficacy, operational performance, and operational efficiency such as implementing capability to enable Remote Operations by CBP officers and improved algorithms to detect threats and reduce nuisance alarms.

In FY 2024, CWMD plans to continue managing the redeployment of legacy RPM systems as well as decommissioning, inventory management, functional checkout, and deployment of selected improvements that enhance operational or threat detection performance for fielded systems to meet CBP operational requirements. These activities have been coordinated with CBP to reflect the relative operational priorities across the entire RPM Enterprise portfolio. The RPM Enterprise will have a commercial contract available for the deployment and commissioning of RPM systems to the field. This program will utilize this contract vehicle and transition the RPM deployment activity from the existing Interagency Agreement (IAA) with Pacific Northwest National Laboratory (PNNL) to better align with commercial competition. Deployment activities will be closely coordinated across the RPM Enterprise portfolio.

**Justification**

RPMs are an essential capability to protect the United States from R/N threats. Funding in FY 2024 will support fulfilling CWMD's responsibilities in continuing to scan inbound commercial cargo and vehicles using the legacy fleet of RPMs as well as needed improvements to detection efficacy and efficiency to ensure DHS meets the legislative requirements of section 232 of the *Security and Accountability for Every (SAFE) Port Act of 2006*, (P.L. 109-347) (6 U.S.C. 982). RPMP ensures statutorily required radiation scanning coverage to threat detection at the Nation's seaports, land border POEs and Express Consignment and Carrier Facilities (ECCF) without an adverse impact to the flow of commerce. The RPMP funding allocations reflect CBP operational priorities across the RPM Enterprise portfolio and supports construction and modernization activities at previously deployed sites based on available funding and priority of activities.

**FY 2022 Key Milestone Events**

- Reconfigured RPMs at 13 POEs.
- Deployed remote operations equipment at three POEs.

**FY 2023 Planned Key Milestone Events**

- Reconfigure deployment of RPMs at 15 POEs.
- Deploy remote operations equipment at three POEs.
- Decommission at one POE.
- Identify/decommission low use/no use.
- Upgrade/Field Test RPMs with encapsulated Polyvinyl Toluene (PVT).

**FY 2024 Planned Key Milestone Events**

- Reconfigure deployment of RPMs at 14 POEs.
- Deploy remote operations equipment at five POEs.
- Deploy 38 RPMs with encapsulated PVT.
- Decommission at two POEs.



## Large Scale Detection Systems – PPA

## Radiation Portal Monitor Program

### Overall Investment Funding

<i>(Dollars in Thousands)</i>	Prior Years	FY 2022	FY 2023	FY 2024
Operations and Support <sup>1</sup>	-	-	-	-
Procurement, Construction, and Improvements <sup>2</sup>	\$101,749	\$36,413	\$21,942	\$20,478
Research and Development	-	-	-	-
Legacy Appropriations	\$974,385			
<b>Total Project Funding</b>	<b>\$1,076,134</b>	<b>\$36,413</b>	<b>\$21,942</b>	<b>\$20,478</b>
Obligations	\$1,057,208	\$14,468		
Expenditures	\$1,043,610	\$18		

1 – Note: RPMs are transferred to CBP, which funds associated Operations and Support (O&S) costs separately under their budget authority.

2 – Note: CWMD re-allocated \$2.1M in Fiscal Year 2023 RPMP funding to the RPM-RP program.

### Contract Information (Current/Execution Year, Budget Year)

Contract Number	Contractor	Type	Award Date (mo/yr)	Start Date (mo/yr)	End Date (mo/yr)	EVM in Contract	Total Value <i>(Dollars in Thousands)</i>
70RDND19K00000015	Pacific Northwest National Lab	IAA	06/2019	06/2019	05/2024	No	\$104,940
70RWMD20F00000034	Mayvin	Contract Existing	09/2020	01/2021	12/2024	No	\$2,032
HSHQDC-20-ACQ01-003	CBP Data Analysis Center – Threat Evaluation Reduction (DAC-TER)	IAA	01/2022	01/2022	01/2024	No	\$1,414
HSHQDC-22-ACQ001	CBP Border Security Deployment Program (BSDP)	IAA	07/2022	07/2022	07/2025	No	\$710

**Large Scale Detection Systems – PPA****Radiation Portal Monitor Program****Significant Changes to Investment since Prior Year Enacted**

CWMD coordinates closely with CBP's NII Division to align CWMD acquisition and deployment programs with CBP Operational Priorities.

Reflective of these priorities, CWMD has re-allocated \$2.1M in FY 2023 RPMP funding to the RPM-RP program to support completing deployment of the already procured enhanced RPM-RP systems.

**Investment Schedule**

Description	Design Work		Project Work	
	Initiated	Completed	Initiated	Completed
	FY 2022			
Deployment/redeployment including but not limited to: • Thirteen POEs including land, sea, and airports	-	-	FY 2022 Q1	FY 2022 Q4
Continuing System Improvements incl Remote Ops Including but not limited to: • Three seaports at LA/LB • Three terminals at LA/LB seaport of entry	-	-	FY 2022 Q1	FY 2022 Q4
Science and Engineering including but not limited to: • Programmable Logic Controller Design at Seagirt • Remote Officer Experience Interface integration to USPS LAX • Visual Inspection System security upgrade	-	-	FY 2022 Q1	FY 2022 Q4
Program Support	-	-	FY 2022 Q1	FY 2022 Q4
	FY 2023			
Deployment/redeployment including but not limited to land and seaports of entry: • Laredo Bridge Shipping Support • Pharr, TX • Vancouver, CAN	-	-	FY 2023 Q1	FY 2023 Q4
Continuing System Improvement including Remote Operations but not limited to: • Wando Welch, TX • Greensport, TX • Hugh Leatherman, SC	-	-	FY 2023 Q1	FY 2023 Q4
Science and Engineering including but not limited to: • RPM Next Generation Windows Interface • Remote Secondary Operations Design • Encapsulated PVT Field Validation	-	-	FY 2023 Q1	FY 2023 Q4
Program Support	-	-	FY 2023 Q1	FY 2023 Q4
	FY 2024			

**Large Scale Detection Systems – PPA****Radiation Portal Monitor Program**

Deployment/redeployment including but not limited to land and seaports of entry: <ul style="list-style-type: none"><li>• Albur Springs, VT</li><li>• Anzalduas, TX</li><li>• Gordie Howe International Bridge, MI</li></ul>	-	-	FY 2024 Q1	FY 2024 Q4
Continuing System Improvement including Remote Operations but not limited to: <ul style="list-style-type: none"><li>• Turning Basin, TX</li><li>• Galena Park, TX</li></ul>	-	-	FY 2024 Q1	FY 2024 Q4
Science and Engineering including but not limited to: <ul style="list-style-type: none"><li>• Calibration and Interval Analysis</li><li>• State of Health Integration</li></ul>	-	-	FY 2024 Q1	FY 2024 Q4
Program Support	-	-	FY 2024 Q1	FY 2024 Q4

## Radiation Portal Monitor Replacement Program (RPM RP) – Investment Capital Investment Exhibits

### Procurement/Acquisition Programs

*(Dollars in Thousands)*

	Acquisition Level	IT/ Non-IT	MAOL	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
N024_000005961 - Radiation Portal Monitor Replacement Program (RPM RP)	Level 3	Non-IT	No	\$615	\$34,530	\$13,900

#### **Investment Description**

RPMs are used at U.S. land and sea POEs by CBP to scan cargo and conveyances to prevent the smuggling of R/N threats or threat materials into the United States, while facilitating the flow of legitimate trade and commerce. This program supports the needed enhancements to CBP R/N materials detection and identification capabilities at high-volume POEs.

The focus of the RPM-RP is the deployment of enhanced RPMs to reduce nuisance alarms at specific high-volume POEs to facilitate remote operation and monitoring and reducing the operational burden on CBP. RPM-RP is aligned to several overarching technical requirements for improving R/N detection, including the following areas:

- 1) Deploy detection systems for scanning of cargo and conveyances for R/N materials at U.S. POEs.
- 2) Ensure steady state operations of deployed radiation detection systems do not unduly disrupt commercial cargo and passenger flow.

CWMD previously procured 217 enhanced RPM-RP systems. The FY 2024 Budget, along with prior year funding, will support the deployment, installation, and commissioning of a total of 156 RPM-RP systems at 39 POEs.

#### **Justification**

RPMs are an essential capability to protect the United States from R/N threats. The FY 2024 Budget provides funding required to complete deployment, installation, and commissioning of 63 RPM-RP systems at 17 POE. In accordance with CBP Operational Priorities, CWMD re-allocated funds within the Large-Scale PPA to support deployment of the already procured RPM-RP systems.

#### **FY 2022 Key Milestone Events**

- Commissioned two RPM-RPs at one CBP POE.

## Large Scale Detection Systems – PPA

## Radiation Portal Monitor Replacement Program

### FY 2023 Planned Key Milestone Events

- Declare Initial Operating Capability (IOC) after successful deployments.
- Commission 91 RPM-RP systems at 21 POEs.
  - Validate blanking technology

### FY 2024 Planned Key Milestone Events

- Commission 63 RPM-RP Systems at 17 POEs.

### Overall Investment Funding

<i>(Dollars in Thousands)</i>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
Operations and Support <sup>1</sup>	-	-	-	-
Procurement, Construction, and Improvements <sup>2, 3</sup>	\$162,683	\$615	\$34,530	\$13,900
Research and Development	-	-	-	-
Legacy Appropriations	\$6,460			
<b>Total Project Funding</b>	<b>\$169,143</b>	<b>\$615</b>	<b>\$34,530</b>	<b>13,900</b>
Obligations	\$152,621	-		
Expenditures	\$59,831	-		

1 – Note: RPMs are transferred to CBP, which funds associated O&S costs separately under their budget authority.

2 – Note: Original capital investment plan did not include procurement and deployment funding beyond FY 2023.

3 – Note: CWMD re-allocated \$2.1M in RPMP and \$11.9M in Next Generation Mobile program FY 2023 funding to the RPM-RP program.

### Contract Information (Current/Execution Year, Budget Year)

<b>Contract Number</b>	<b>Contractor</b>	<b>Type</b>	<b>Award Date (mo/yr)</b>	<b>Start Date (mo/yr)</b>	<b>End Date (mo/yr)</b>	<b>EVM in Contract</b>	<b>Total Value (Dollars in Thousands)</b>
70RDND18D00000001	Leidos/L-3 Communications	IDIQ	09/2018	09/2018	09/2033	No	\$291,400 <sup>1</sup>
70RDND18D00000002	Leidos	IDIQ	09/2018	09/2018	09/2033	No	\$291,400 <sup>1</sup>
70RDND18D00000003	Smith's Detection	IDIQ	09/2018	09/2018	09/2033	No	\$291,400 <sup>1</sup>

1 - The program contract ceiling is \$291.4M (the total is shared between all three contractors).

**Large Scale Detection Systems – PPA****Radiation Portal Monitor Replacement Program****Significant Changes to Investment since Prior Year Enacted**

In close coordination with CBP’s NII Division, CWMD has revised the RPM-RP deployment plan and funding strategy to meet CBP operational priorities. Reflective of these priorities, CWMD re-allocated \$2.1M in RPMP FY 2023 funding and \$11.9M in Next Generation Mobile program FY 2023 funding to the RPM-RP program to support completing deployment of the already procured enhanced RPM-RP systems. This re-allocation of funding will result in commissioning of 91 RPM-RP systems at 21 POEs. Commencement of the commercial contract for deployment of RPM systems was delayed due to contract protests. The contract award is now expected to start in FY 2023.

**Investment Schedule**

Description	Design Work		Project Work	
	Initiated	Completed	Initiated	Completed
	FY 2022			
System Deployment and Construction to:	-	-	FY 2022 Q3	FY 2023 Q4
• Eagle Pass, TX				
Program Support	-	-	FY 2022 Q1	FY 2023 Q4
	FY 2023			
System Deployment and Construction including but not limited to land and sea POE:	-	-	FY 2023 Q1	FY 2023 Q4
• North Charleston, SC				
• Oakland Seaport, CA				
• Pembina, ND				
• Portal, ND				
• Champlain, NY				
Program Support	-	-	FY 2023 Q1	FY 2023 Q4
	FY 2024			
System Deployment and Construction including but not limited to land and sea POE:	-	-	FY 2024 Q1	FY 2024 Q4
• GCT Bayonne, NJ				
• Wando Welch, SC				
• World Trade Bridge, Laredo, TX				
• Otay Mesa, CA				
Program Support	-	-	FY 2024 Q1	FY 2024 Q4

## International Rail (IRAIL) – Investment Capital Investment Exhibits

### Procurement/Acquisition Programs

*(Dollars in Thousands)*

	Acquisition Level	IT/ Non-IT	MAOL	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
N/A - International Rail (IRAIL)	Level 3	Non-IT	No	\$16,639	\$9,665	\$1,300

#### **Investment Description**

The International Rail (IRAIL) program will acquire and deploy fixed Radiation Detection Equipment (RDE) in the form of RPM configured specifically for the freight rail environment (rail variant) and integrated with the CBP High Energy Rail Radiography system to allow for side-by-side operation. The RDE will detect and identify nuclear or other radioactive materials out of regulatory control entering the United States via freight rail cargo through the active rail POEs. The CWMD IRAIL program will acquire and deploy the solution in coordination with the CBP NII Program, which is recapitalizing aging NII High Energy Rail Radiography systems at rail POEs.

#### **Justification**

The FY 2024 Budget provides the RDE component of the integrated solution, development, configuration, integration, test, vendor oversight, and deployment of configured RPM systems for operation in a rail environment and capable of functioning side-by-side with the CBP High Energy Rail system.

#### **FY 2022 Key Milestone Events**

- Purchased two RDE systems from two vendors.
- Developed Multi-Cargo Data Collector System.
- Conducted Blanking Study at Billerica, MA.

#### **FY 2023 Planned Key Milestone Events**

- Purchase one RDE system from one vendor.
- Conduct factory testing for three systems.
- Conduct data collection at six sites in support of test and evaluation.
- Conduct Blanking Studies at Vista, CA and Edgewood, MD.
- Initiate System Performance Evaluation (SPE) modeling and simulation.

#### **FY 2024 Planned Key Milestone Events**

- Conduct operational testing at three sites.

**Overall Investment Funding**

<i>(Dollars in Thousands)</i>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
Operations and Support <sup>1</sup>	-	-	-	-
Procurement, Construction, and Improvements	\$17,106	\$16,639	\$9,665	\$1,300
Research and Development	\$5,750	-	-	-
Legacy Appropriations	-			
<b>Total Project Funding</b>	<b>\$22,856</b>	<b>\$16,639</b>	<b>\$9,665</b>	<b>\$1,300</b>
Obligations	\$15,628	\$16,639		
Expenditures	\$7,185	-		

1 - Note: This technology is transferred to CBP, which funds associated O&S costs separately under their budget authority.

**Contract Information (Current/Execution Year, Budget Year)**

<b>Contract Number</b>	<b>Contractor</b>	<b>Type</b>	<b>Award Date (mo/yr)</b>	<b>Start Date (mo/yr)</b>	<b>End Date (mo/yr)</b>	<b>EVM in Contract</b>	<b>Total Value (Dollars in Thousands)</b>
70B03C20R00000011	CBP	Existing IAA	03/2022	04/2022	09/2023	No	\$13,040
70RWMD21K00000013	PNNL	Existing IAA	05/2022	06/2022	09/2023	No	\$7,035
70RWMD20Q00000004	Mayvin	Existing Contract	09/2020	01/2021	12/2024	No	\$2,000

**Significant Changes to Investment since Prior Year Enacted**

Schedule continues to be coordinated with CBP. Delays experienced by CBP NII portion of this joint program due to coordination with rail owners impacts the IRAIL schedule.



**Large Scale Detection Systems – PPA**  
**Investment Schedule**

**International Rail**

Description	Design Work		Project Work	
	Initiated	Completed	Initiated	Completed
	FY 2022			
Purchase and test two systems.	-	-	FY 2022 Q1	FY 2023 Q4
	FY 2023			
Initiate deployment of first three systems, coordinated with CBP.	-	-	FY 2023 Q2	FY 2024 Q2
Perform three factory validation tests	-	-	FY 2023 Q4	FY 2024 Q4
Initiate three field operational tests.	-	-	FY 2023 Q4	FY 2024 Q4
	FY 2024			
Deployment of three systems, coordinated with CBP.	-	-	FY 2024 Q2	FY 2025 Q1
Perform three field operational tests.	-	-	FY 2024 Q2	FY 2025 Q1

***Portable Detection Systems – PPA*****Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Personal Radiation Detector	\$500	\$1,067	-	(\$1,067)
Basic Handheld RIIDs	\$3,406	\$3,000	\$1,500	(\$1,500)
Rapid CBRN Equipping	\$8,531	\$5,000	-	(\$5,000)
Portable Detection Equipment End Items	-	-	\$5,160	\$5,160
Backpack SLEP	\$2,500	-	-	-
<b>Total</b>	<b>\$14,937</b>	<b>\$9,067</b>	<b>\$6,660</b>	<b>(\$2,407)</b>
Subtotal Discretionary - Appropriation	\$14,937	\$9,067	\$6,660	(\$2,407)

**PPA Level I Description**

The Portable Detection Systems PPA supports the procurement of chemical, biological, radiological, and nuclear (CBRN) detection equipment that can be carried, worn, or easily moved to support operational end-users. This program provides the programmatic, scientific, and technical expertise to design, acquire, deploy, and limited sustainment of portable detection systems. This PPA also funds the limited sustainment activities such as collecting and analyzing RAM data, conducting OAs, and ILCMRs. limited sustainment of sensors, detectors and/or equipment that CWMD provides to support DHS Components and other first responders.

The Portable Detection Systems PPA includes the following projects:

**Basic Handheld (BHH) Radioisotope Identification Devices (RIID):** BHH RIIDs are used for search, detection, localization, and identification of R/N materials, and for quick and accurate measurement of dose rate, and count rate. These devices also support secondary screening and small-area searches. Advanced Handheld (AHH) RIIDs are deployed and included in this project to maintain operational capability.

**Portable Detection Equipment End Items:**

- **Personal Radiation Detectors (PRDs):** PRDs are pager-size devices always worn by an operator for the purposes of R/N detection. They monitor the user's environment and alert operators when radioactivity levels above the natural background are detected, at which time the user would call for an identification device.
- **Rapid CBRN Equipping:** Critical counter-WMD capabilities including detection and identification equipment, interdiction equipment, personal protective equipment, and decontamination equipment for DHS Special Mission Units and other operational entities requiring urgently needed CBRN equipment. Rapid CBRN Equipping varies by year in types of equipment items and number of items depending on requirements from DHS customers.

**Backpack Service Life Extension Program (SLEP):** Backpacks are used for the interdiction of R/N materials at the Nation's land and maritime borders. This project will carry out a Service Life Extension Program (SLEP) on DHS's entire inventory of 600 RadPack backpack units.

**Portable Detection Systems – PPA**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$14,937</b>	<b>\$9,067</b>	<b>\$6,660</b>
Carryover - Start of Year	\$2,222	\$3,594	\$1,429
Recoveries	\$130	-	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	(\$1,000)	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$16,289</b>	<b>\$12,661</b>	<b>\$8,089</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$16,289</b>	<b>\$12,661</b>	<b>\$8,089</b>
Obligations (Actual/Estimates/Projections)	\$12,690	\$11,232	\$8,089
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Portable Detection Systems – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Amount
<b>FY 2022 Enacted</b>	-	-	<b>\$14,937</b>
<b>FY 2023 Enacted</b>	-	-	<b>\$9,067</b>
<b>FY 2024 Base Budget</b>	-	-	-
Basic Handheld RIIDs	-	-	\$1,500
Portable Detection Equipment End Items	-	-	\$5,160
<b>Total Investment Elements</b>	-	-	<b>\$6,660</b>
<b>FY 2024 Request</b>	-	-	<b>\$6,660</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	<b>(\$2,407)</b>

Portable Detection Systems – PPA

Non Pay Budget Exhibits

Non Pay by Object Class

*(Dollars in Thousands)*

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget	FY 2023 to FY 2024 Change
21.0 Travel and Transportation of Persons	\$11	\$10	\$20	\$10
25.1 Advisory & Assistance Services	\$2,196	\$753	\$1,061	\$308
25.2 Other Services from Non-Federal Sources	-	-	\$250	\$250
31.0 Equipment	\$12,730	\$8,304	\$5,329	(\$2,975)
Total - Non Pay Budget Object Class	\$14,937	\$9,067	\$6,660	(\$2,407)

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**Portable Detection Systems – PPA**  
**Capital Investment Exhibits**

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**Capital Investments**

*(Dollars in Thousands)*

	<b>Acquisition Level</b>	<b>IT/ Non-IT</b>	<b>MAOL</b>	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
N024_000005959 - Personal Radiation Detector	Level 3	Non-IT	No	\$500	\$1,067	-
N024_000005960 - Basic Handheld RIIDs	Level 3	Non-IT	No	\$3,406	\$3,000	\$1,500
N/A - Rapid CBRN Equipping	Level 3	Non-IT	No	\$8,531	\$5,000	-
N/A - Portable Detection Equipment End Items	Level 3	Non-IT	No	-	-	\$5,160
N/A - Backpack SLEP	Level 3	Non-IT	No	\$2,500	-	-

**Personal Radiation Detectors – Investment  
Capital Investment Exhibits**

**Procurement/Acquisition Programs**  
*(Dollars in Thousands)*

	<b>Acquisition Level</b>	<b>IT/ Non-IT</b>	<b>MAOL</b>	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
N024_000005959 - Personal Radiation Detector	Level 3	Non-IT	No	\$500	\$1,067	-

**Investment Description**

Personal Radiation Detectors (PRDs) and Rapid CBRN Equipping are reflected under the Portable Detection Equipment End Items for FY 2024 and are described in that section.



## Basic Handheld RIIDs – Investment Capital Investment Exhibits

### Procurement/Acquisition Programs

*(Dollars in Thousands)*

	Acquisition Level	IT/ Non-IT	MAOL	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
N024_000005960 - Basic Handheld RIIDs	Level 3	Non-IT	No	\$3,406	\$3,000	\$1,500

#### **Investment Description**

Basic Handheld (BHH) Radioisotope Identification Devices (RIID) are used for search, detection, localization, and identification of R/N materials, and for quick and accurate measurement of dose rate, count rate, and some spectral data for identification. These devices also support secondary screening and small-area searches. Advanced Handheld (AHH) RIIDs are also included in this investment as needed to maintain operational capability. This project will conduct a Service Life Extension Program (SLEP) on CBP's fleet of approximately 708 RadSeeker DL devices, which represents one-third of CBP's entire RIID fleet. Also includes support to Helium-3 Alternative Implementation Backpack Program (HAIBP) system. This funding provides the programmatic, scientific, and technical expertise to manage the portfolio of small-scale detection systems. Also funds the limited sustainment activities such as collecting and analyzing RAM data, conducting OAs and ILCMRs.

#### **Justification**

The FY 2024 Budget includes funding for a SLEP of Radseeker DL devices to replace the internal radiological source used for calibration and to update critical components so these systems will remain operationally effective for several more years. This SLEP is a cost-effective means of maintaining existing capability of the RIID fleet. Funding is needed for programmatic, scientific, and technical expertise needed to implement limited sustainment of post-FOC deployed systems in this category as well as planning recapitalization, if necessary, of the remaining RIID fleet with commercially available products.

#### **FY 2022 Key Milestone Events**

- Continued refurbishment and SLEP of RadSeeker DL RIIDs for CBP.
- Initiated planning of recapitalization of the remainder of TSA and CBP's RIID fleet.
- Continued the contract for the upgrade of AHH RIIDs.

#### **FY 2023 Planned Key Milestone Events**

- Continue the refurbishment and SLEP of RadSeeker DL RIIDs for CBP.
- Complete the contract for the upgrade of AHH RIIDs.
- Continue planning and support of recapitalization of the remainder of TSA's and CBP's RIID fleet.

**FY 2024 Planned Key Milestone Events**

- Continue planning and support of recapitalization of the remainder of TSA and CBP’s RIID fleet.
- Continue the collection and analysis of RAM.
- Conduct annual OA’s.
- Continue collaboration with DHS Components to host and improve ILCMR’s.

**Overall Investment Funding**

<i>(Dollars in Thousands)</i>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
Operations and Support <sup>1</sup>	-	-	-	-
Procurement, Construction, and Improvements <sup>2, 3</sup>	\$20,077	\$2,406	\$3,000	\$1,500
Research and Development	-	-	-	-
Legacy Appropriations	\$7,708			
<b>Total Project Funding</b>	<b>\$27,785</b>	<b>\$2,406</b>	<b>\$3,000</b>	<b>\$1,500</b>
Obligations	\$16,601	\$642		
Expenditures	\$14,672	\$51		

1 – Note: BHH RIIDs are transferred to CBP and USCG, which fund associated O&S costs separately from their appropriations.

2 – Note: FY 2022 Above Threshold notification to transfer \$1.0M from PC&I BHH to FA BioWatch program.

3 – Note: CWMD re-allocated \$500,000 BD-21 program FY 2023 funding to the BHH program.

**Contract Information (Current/Execution Year, Budget Year)**

<b>Contract Number</b>	<b>Contractor</b>	<b>Type</b>	<b>Award Date (mo/yr)</b>	<b>Start Date (mo/yr)</b>	<b>End Date (mo/yr)</b>	<b>EVM in Contract</b>	<b>Total Value <i>(Dollars in Thousands)</i></b>
70RWMD20D00000001	BHH: Symetrica, Inc.	IDIQ TO 3	09/2022	10/2022	09/2023	No	\$1,941
70RWMD20Q00000004	Mayvin	Contract Existing	09/2020	01/2021	12/2024	No	\$1,000
70RWMD20C00000018	AHH: Ortec/Ametek	Contract existing	09/2020	10/2020	03/2023	No	\$444

**Significant Changes to Investment since Prior Year Enacted**

CWMD re-allocated \$500,000 BD-21 program FY 2023 funding to the BHH program to continue with option 2 as option 1 was delayed due to not receiving the units from the operational component in a timely manner.

**Investment Schedule**

Description	Design Work		Project Work	
	Initiated	Completed	Initiated	Completed
	FY 2022			
BHH equipment service life extension.	-	-	FY 2022 Q1	FY 2022 Q4
BHH program documentation, analysis, and Q&A check.	-	-	FY 2022 Q1	FY 2022 Q4
	FY 2023			
BHH equipment service life extension.	-	-	FY 2023 Q1	FY 2023 Q4
BHH program documentation, analysis, and Q&A check.	-	-	FY 2023 Q1	FY 2023 Q3
	FY 2024			
BHH equipment service life extension.	-	-	FY 2024 Q1	FY 2024 Q4
BHH and AHH program documentation, analysis, and Q&A check.	-	-	FY 2024 Q1	FY 2024 Q4
BHH Operational Analysis.	-	-	FY 2024 Q1	FY 2024 Q4

**Rapid CBRN Equipping – Investment  
Capital Investment Exhibits**

**Procurement/Acquisition Programs**

*(Dollars in Thousands)*

	<b>Acquisition Level</b>	<b>IT/ Non-IT</b>	<b>MAOL</b>	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
N/A - Rapid CBRN Equipping	Level 3	Non-IT	No	\$8,531	\$5,000	-

**Investment Description**

Rapid CBRN Equipping moves to Portable Detection Equipment End Items starting in FY 2024 and is described in that section.

## Portable Detection Equipment End Items – Investment Itemized Procurements

### End Items Purchases

*(Dollars in Thousands)*

	Acquisition Level	IT/ Non-IT	MAOL	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
N/A - Portable Detection Equipment End Items	Level 3	Non-IT	No	-	-	\$5,160

End Items Breakdown <i>(Dollars in Thousands)</i>	FY 2022 Enacted <sup>1</sup>		FY 2023 President's Budget <sup>1</sup>		FY 2024 President's Budget	
	Quantity	Amount	Quantity	Amount	Quantity	Amount
Personal Radiation Detectors <sup>2</sup>	-	\$500	-	\$1,067	-	\$80
Rapid CBRN Equipping	-	\$8,531	-	\$5,000	-	\$5,080
<b>Total</b>	-	<b>\$11,531</b>	-	<b>\$6,067</b>	-	<b>\$5,160</b>

1 – Note: In Fiscal Year 2022 and Fiscal Year 2023, both Personal Radiation Detectors and Rapid CBRN Equipping were funded as individual investments; funding detail for these three projects in these Fiscal Years immediately proceeds this exhibit.

2 – Note: CWMD re-allocated \$987,000 from the BD-21 program Fiscal Year 2023 funding to the PRD program.

### End Items Description

- **Personal Radiation Detectors (PRDs):** PRDs are pager-size devices worn by an operator for the purposes of R/N detection. They monitor the user's environment and alert operators when radioactivity levels above the natural background are detected. CWMD procures two types of PRD variants for our DHS operational partners: a general-purpose variant and a maritime variant.
- **Rapid CBRN Equipping:** CWMD will rapidly equip DHS Special Mission Units and other operational entities requiring CBRN equipment with critical counter-WMD capabilities including detection and identification equipment, interdiction equipment, personal protective equipment, and decontamination equipment. This equipment is necessary to enable mission success and ensure the unimpeded employment of DHS Special Mission Units and other operational entities in potentially toxic/hazardous environments to execute their counter-WMD mission. CWMD fills the role to acquire the capability with sustainment being provided by the DHS Operational Components. Rapid CBRN Equipping varies by year in types of equipment items and number of items depending on requirements from DHS customers.

## Backpack SLEP – Investment Capital Investment Exhibits

### Procurement/Acquisition Programs

*(Dollars in Thousands)*

	Acquisition Level	IT/ Non-IT	MAOL	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
N/A - Backpack SLEP	Level 3	Non-IT	No	\$2,500	-	-

#### **Investment Description**

Backpacks are used for the interdiction of R/N materials at the Nation's land and maritime borders. This project will implement a Service Life Extension Program (SLEP) on DHS's entire inventory of 600 RadPack backpack units.

#### **Justification**

No CWMD PC&I funding is included in the FY 2024 Budget for Backpack SLEP.

#### **FY 2022 Key Milestone Events**

- Awarded a contract to implement the backpack SLEP.
- Initiated the processing of backpacks under the SLEP.

#### **FY 2023 Planned Key Milestone Events**

- Continue the processing of backpacks under the SLEP.

#### **FY 2024 Planned Key Milestone Events**

- Complete the processing of backpacks under the SLEP.

**Overall Investment Funding**

<i>(Dollars in Thousands)</i>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
Operations and Support	-	-	-	-
Procurement, Construction, and Improvements	-	\$2,500	-	-
Research and Development	-	-	-	-
Legacy Appropriations	-			
<b>Total Project Funding</b>	-	<b>\$2,500</b>	-	-
Obligations	-	\$833		
Expenditures	-	-		

**Contract Information (Current/Execution Year, Budget Year)**

<b>Contract Number</b>	<b>Contractor</b>	<b>Type</b>	<b>Award Date (mo/yr)</b>	<b>Start Date (mo/yr)</b>	<b>End Date (mo/yr)</b>	<b>EVM in Contract</b>	<b>Total Value <i>(Dollars in Thousands)</i></b>
70RWMD22P00000002	Sensor Technology Engineering, LLC (STE)	Firm Fixed Price	08/2022	08/2022	11/2024	No	\$2,105

**Significant Changes to Investment since Prior Year Enacted**

N/A

**Portable Detection Systems – PPA**  
**Investment Schedule**

**Backpack SLEP**

Description	Design Work		Project Work	
	Initiated	Completed	Initiated	Completed
	FY 2022			
Backpack SLEP contract award and begin processing backpacks.	-	-	FY 2022 Q3	FY 2024 Q2
	FY 2023			
Process backpacks, rotate units to maintain operational capability.	-	-	FY 2023 Q1	FY 2024 Q2
	FY 2024			
Continue to process backpacks, rotate units to maintain operational capability.	-	-	FY 2024 Q1	FY 2024 Q2



Budget Comparison and Adjustments

Comparison of Budget Authority and Request

(Dollars in Thousands)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget	FY 2023 to FY 2024 Change
Medical Information Exchange (MIX)	\$8,000	-	-	-
<b>Total</b>	<b>\$8,000</b>	-	-	-
Subtotal Discretionary - Appropriation	\$8,000	-	-	-

**PPA Level I Description**  
No funding is included in this PPA in the FY 2024 Budget as the program resides with the Office of the Secretary and Executive Management (OSEM).

**Integrated Operations Assets and Infrastructure – PPA****Budget Authority and Obligations***(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$8,000</b>	-	-
Carryover - Start of Year	\$6,703	\$6,897	-
Recoveries	\$30	-	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	-	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$14,733</b>	<b>\$6,897</b>	-
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$14,733</b>	<b>\$6,897</b>	-
Obligations (Actual/Estimates/Projections)	\$7,836	\$6,897	-
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Integrated Operations Assets and Infrastructure – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Amount
FY 2022 Enacted	-	-	\$8,000
FY 2023 Enacted	-	-	-
FY 2024 Base Budget	-	-	-
FY 2024 Request	-	-	-
FY 2023 TO FY 2024 Change	-	-	-

Integrated Operations Assets and Infrastructure – PPA

Non Pay Budget Exhibits

Non Pay by Object Class

(Dollars in Thousands)

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget	FY 2023 to FY 2024 Change
31.0 Equipment	\$8,000	-	-	-
Total - Non Pay Budget Object Class	\$8,000	-	-	-

**Integrated Operations Assets and Infrastructure – PPA**  
**Capital Investment Exhibits**

**Capital Investments**  
*(Dollars in Thousands)*

	<b>Acquisition Level</b>	<b>IT/ Non-IT</b>	<b>MAOL</b>	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
N/A - Medical Information Exchange (MIX)	-	-	-	\$8,000	-	-

## Medical Information Exchange (MIX) – Investment Capital Investment Exhibits

### Procurement/Acquisition Programs

*(Dollars in Thousands)*

	Acquisition Level	IT/ Non-IT	MAOL	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
N/A - Medical Information Exchange (MIX)	-	-	-	\$8,000	-	-

#### **Investment Description**

No funding is included in this PPA in the CWMD FY 2024 Budget as the program resides with the Office of the Secretary and Executive Management (OSEM).

#### **Justification**

No CWMD PC&I funding is included in the FY 2024 Budget for MIX.

#### **FY 2022 Key Milestone Events**

- Developed integration between the Unified Immigration Portal and Medical Information Exchange.

#### **FY 2023 Planned Key Milestone Events**

- Achieve Initial Operational Capability (IOC).

#### **FY 2024 Planned Key Milestone Events**

N/A

**Overall Investment Funding**

<i>(Dollars in Thousands)</i>	<b>Prior Years</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
Operations and Support	-	-	-	-
Procurement, Construction, and Improvements	-	\$8,000	-	-
Research and Development	-	-	-	-
Legacy Appropriations	-			
<b>Total Project Funding</b>	-	<b>\$8,000</b>	-	-
Obligations	-	\$1,105		
Expenditures	-	-		

**Contract Information (Current/Execution Year, Budget Year)**

<b>Contract Number</b>	<b>Contractor</b>	<b>Type</b>	<b>Award Date (mo/yr)</b>	<b>Start Date (mo/yr)</b>	<b>End Date (mo/yr)</b>	<b>EVM in Contract</b>	<b>Total Value <i>(Dollars in Thousands)</i></b>
70RWMD21K00000002	System Integrator	Contract	04/2021	04/2022	04/2023	No	\$155
HSHQDC-21-IESD046	National Laboratory	IAA	09/2021	09/2021	12/2022	No	\$735
70RWMD20F00000020	A&AS Provider	Contract	04/2020	04/2022	04/2023	No	\$215

**Significant Changes to Investment since Prior Year Enacted**

N/A

**Integrated Operations Assets and Infrastructure – PPA**  
**Investment Schedule**

**Medical Information Exchange (MIX)**

Description	Design Work		Project Work	
	Initiated	Completed	Initiated	Completed
	FY 2022			
Development towards Initial Operational Capability	N/A	N/A	FY 2022 Q1	N/A
	FY 2023			
N/A	-	-	-	-
	FY 2024			
N/A	-	-	-	-



# Department of Homeland Security

## *Countering Weapons of Mass Destruction*

### *Research and Development*



**Fiscal Year 2024**

**Congressional Justification**

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## Research and Development

### Budget Comparison and Adjustments

### Comparison of Budget Authority and Request

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Transformational Research and Development	\$31,378	\$37,004	\$39,460	\$2,456
Technical Forensics	\$3,500	\$2,000	\$6,530	\$4,530
Detection Capability Development	\$30,831	\$25,611	\$14,948	(\$10,663)
<b>Total</b>	<b>\$65,709</b>	<b>\$64,615</b>	<b>\$60,938</b>	<b>(\$3,677)</b>
Subtotal Discretionary - Appropriation	\$65,709	\$64,615	\$60,938	(\$3,677)

The Countering Weapons of Mass Destruction Office (CWMD) Research and Development (R&D) appropriation provides resources necessary to identify, explore, develop, and demonstrate new technologies and capabilities that will help enable the Department of Homeland Security (DHS) and its partners to succeed in our mission to safeguard the American people, our homeland, and our values. This includes providing funding through cooperative agreements. R&D funds are used to support the following Technology Readiness Levels (TRLs):

<b>Basic Research</b>		<b>Applied Research</b>		<b>Technology Development</b>	<b>Technology Demonstration</b>	<b>System Development</b>
TRL-1	TRL-2	TRL-3	TRL-4	TRL-5	TRL-6	TRL-7
Basic Principles Observed/ Reported	Technology Concept/Application Formulated	Critical Function or Characteristic Proof of Concept	Validation in Lab Environment	Validation in Relevant Environment	System Prototypes in Relevant Environment	System Prototypes in Operational Environment

The R&D Appropriation includes the following PPAs:

**Transformational Research and Development:** This program covers basic and applied research and technology development at TRL 1-5 related to chemical, biological, radiological, and nuclear (CBRN) threat detection; counter weapons of mass destruction (WMD) data analytics focused on artificial intelligence and machine learning algorithmic approach; Small Business Innovation Research (SBIR) projects; and historically, Food Agriculture, Veterinary Defense (FAVD) research and development.

**Technical Forensics:** This program advances technological capabilities to characterize and identify the nature, origin, and history of nuclear materials interdicted before a detonation rapidly, accurately, and credibly. CWMD supports the National Nuclear Forensics Expertise Development program that addresses the enduring challenge of sustaining a preeminent workforce of scientists and policymakers that are educated and trained in nuclear forensics-related specialties by funding research projects.

**Detection Capability Development:** This program supports capability development projects that are characterized as late-stage TRL (6-7) and are anticipated to lead to a materiel solution. CWMD acquisition activities adhere to the Department's integrated lifecycle management approach to develop, acquire, procure, deploy, and sustain CBRN detection systems for operational customers that operate the systems in the field.

**Research and Development**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$65,709</b>	<b>\$64,615</b>	<b>\$60,938</b>
Carryover - Start of Year	\$42,975	\$39,580	\$6,008
Recoveries	\$1,035	\$1	-
Rescissions to Current Year/Budget Year	(\$350)	-	(\$400)
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	(\$512)	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$108,857</b>	<b>\$104,196</b>	<b>\$66,546</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$108,857</b>	<b>\$104,196</b>	<b>\$66,546</b>
Obligations (Actual/Estimates/Projections)	\$68,889	\$98,188	\$66,546
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Research and Development  
Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Amount
<b>FY 2022 Enacted</b>	-	-	<b>\$65,709</b>
<b>FY 2023 Enacted</b>	-	-	<b>\$64,615</b>
<b>FY 2024 Base Budget</b>	-	-	-
Transformational Research and Development	-	-	\$39,460
Technical Forensics	-	-	\$6,530
Detection Capability Development	-	-	\$14,948
<b>Total Research and Development Projects</b>	-	-	<b>\$60,938</b>
<b>FY 2024 Request</b>	-	-	<b>\$60,938</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	<b>(\$3,677)</b>

## Research and Development Non Pay Budget Exhibits

### Non Pay by Object Class *(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$140	\$76	\$259	\$183
25.1 Advisory & Assistance Services	\$15,928	\$7,218	\$8,346	\$1,128
25.2 Other Services from Non-Federal Sources	-	\$5,032	\$2,065	(\$2,967)
25.3 Other Purchases of goods and services	\$4,827	\$5,900	\$8,161	\$2,261
25.5 Research & Development Contracts	\$40,922	\$38,955	\$33,754	(\$5,201)
31.0 Equipment	-	\$2,965	\$3,030	\$65
41.0 Grants, Subsidies, and Contributions	\$3,892	\$4,469	\$5,323	\$854
<b>Total - Non Pay Budget Object Class</b>	<b>\$65,709</b>	<b>\$64,615</b>	<b>\$60,938</b>	<b>(\$3,677)</b>

Research and Development  
Research and Development Projects

Summary of Projects  
*(Dollars in Thousands)*

	FY 2022 Enacted	FY 2023 Enacted	FY 2024 President's Budget
Transformational Research and Development	\$31,378	\$37,004	\$39,460
Technical Forensics	\$3,500	\$2,000	\$6,530
Detection Capability Development	\$30,831	\$25,611	\$14,948



***Transformational Research and Development – PPA*****Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Transformational Research and Development	\$31,378	\$37,004	\$39,460	\$2,456
<b>Total</b>	<b>\$31,378</b>	<b>\$37,004</b>	<b>\$39,460</b>	<b>\$2,456</b>
Subtotal Discretionary - Appropriation	\$31,378	\$37,004	\$39,460	\$2,456

**PPA Level I Description**

The Transformational R&D PPA covers basic and applied research and technology development (TRL 1-5) related to CBRN threat detection; counter WMD data analytics focused on artificial intelligence and machine learning algorithmic approach; and SBIR projects. For purposes of Fiscal Year 2023, this also included Food, Agriculture, and Veterinary Defense (FAVD) research and development funding. In FY 2024, this responsibility will move to the Office of Health Security (OHS) and the DHS Science and Technology Directorate (S&T) for FAVD Research and Development activities.

Recurring analyses and reviews conducted by CWMD in conjunction with U.S. Government partner agencies on CBRN detection have highlighted several technical areas that provide a focus for research activities to be conducted through Transformational R&D.

This type of R&D explores innovative technologies that address gaps in U.S. counter WMD and CBRN detection capabilities. These technologies also provide improvements in performance or a reduction in cost for CBRN detection capabilities that support the CWMD mission. Work also includes the maturation and transition of technologies developed by interagency partners for operational capability. R&D for less mature technology components in support of the next-generation biodetection system will also occur under this project, such as anomaly detection algorithmic capabilities and alternative approaches to biodetection.

## Transformational Research and Development – PPA

### Budget Authority and Obligations

*(Dollars in Thousands)*

	FY 2022	FY 2023	FY 2024
<b>Enacted/Request</b>	<b>\$31,378</b>	<b>\$37,004</b>	<b>\$39,460</b>
Carryover - Start of Year	\$11,625	\$10,734	-
Recoveries	\$136	\$1	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	-	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$43,139</b>	<b>\$47,739</b>	<b>\$39,460</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$43,139</b>	<b>\$47,739</b>	<b>\$39,460</b>
Obligations (Actual/Estimates/Projections)	\$32,337	\$47,739	\$39,460
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

## Transformational Research and Development – PPA

### Summary of Budget Changes

*(Dollars in Thousands)*

	Positions	FTE	Amount
<b>FY 2022 Enacted</b>	-	-	<b>\$31,378</b>
<b>FY 2023 Enacted</b>	-	-	<b>\$37,004</b>
<b>FY 2024 Base Budget</b>	-	-	-
Transformational Research and Development	-	-	\$39,460
<b>Total Research and Development Projects</b>	-	-	<b>\$39,460</b>
<b>FY 2024 Request</b>	-	-	<b>\$39,460</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	<b>\$2,456</b>

## Transformational Research and Development – PPA

### Non Pay Budget Exhibits

### Non Pay by Object Class

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$70	\$71	\$30	(\$41)
25.1 Advisory & Assistance Services	\$8,163	\$2,604	\$2,718	\$114
25.3 Other Purchases of goods and services	\$2,742	-	\$1,304	\$1,304
25.5 Research & Development Contracts	\$16,511	\$31,360	\$30,985	(\$375)
41.0 Grants, Subsidies, and Contributions	\$3,892	\$2,969	\$4,423	\$1,454
<b>Total - Non Pay Budget Object Class</b>	<b>\$31,378</b>	<b>\$37,004</b>	<b>\$39,460</b>	<b>\$2,456</b>

**Research and Development**  
**Research and Development Projects**

**Summary of Projects**  
*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Transformational Research and Development	\$31,378	\$37,004	\$39,460

## Transformational Research and Development Research and Development

### Technology Readiness Level Exhibit

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Transformational Research and Development	\$31,378	\$37,004	\$39,460

### R&D Description

Funding for Transformational R&D will enable the development of innovative new detection and identification technologies, connectivity technologies, and data analytic efforts focused on artificial intelligence and machine learning related to advanced algorithms for the purpose of strengthening DHS and U.S. Government agencies' WMD detection programs. This R&D is intended to enable new technologies to be fielded or to directly spur commercial development that strengthens the Homeland Security Enterprise.

Transformational R&D includes multiple projects. The table that follows identifies and summarizes the initiatives and funding levels for FY 2024. Details on the projects are outlined in the narrative below.

<b>Transformational Research and Development</b> <i>(Dollars in Thousands)</i>			
<b>Project</b>	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Radiological/Nuclear (R/N) Research and Development	\$7,945	\$8,136	\$8,266
Chemical Research and Development	\$4,100	\$4,190	\$9,775
Biological Research and Development	\$8,044	\$8,100	\$9,665
Data Analytics	\$8,850	\$9,025	\$9,201
Small Business Innovation Research (SBIR)	\$2,439	\$2,553	\$2,553
Food, Agriculture, Veterinary Defense (FAVD) Research and Development <sup>1</sup>	-	\$5,000	-
<b>Total – Transformational Research and Development</b>	<b>\$31,378</b>	<b>\$37,004</b>	<b>\$39,460</b>

<sup>1</sup> – Note: This responsibility was moved to OHS and S&T for FAVD Research and Development activities in FY 2024.

**Radiological Nuclear (R/N) Research and Development**

- **Problem:** Analyses and reviews conducted by CWMD in conjunction with U.S. Government partner agencies on detection related to countering WMD have highlighted several technical areas that provide a focus for research activities to be conducted under the R/N R&D program. Furthermore, through government consensus in framing the Nuclear Defense Research and Development Strategic Plan for Fiscal Years 2020 - 2024, several important challenges were identified to help inform agencies that enable capabilities through research and development related to R/N detection.
- **Solution:** This project enhances the Nation's ability to prevent the use of R/N weapons by developing break-through technologies that meet DHS operational requirements. Funding for the R/N R&D project will be used to explore innovative, high payoff, high-risk technologies that address gaps in U.S. R/N detection capabilities and provide improvements in performance or reduction in cost of R/N detection capabilities in support of the CWMD mission. Examples of technologies developed under this project include components for next generation R/N detection capabilities such as compact, high energy resolution (high isotope specificity), high sensitivity, gamma ray semiconductor materials for radioisotope identification devices (RIIDs), low cost robust ceramic scintillator gamma detectors, non-fogging plastic scintillator gamma detectors for Radiation Portal Monitors (RPMs) and other materials for future RPMs, and linear accelerators and detector materials with enhanced performance for detection of shielded Special Nuclear Material (SNM) in conveyances.
- **Justification:** The FY 2024 President's Budget provides \$8.3M, a \$0.1M increase from the FY 2023 Enactment. Funding for this research initiative will be used to develop and demonstrate breakthrough technologies that address R/N detection technical capability needs and provide cost effective, enhanced performance to counter WMD.
- **Impact:** Completion of activities under the R/N R&D project will result in the development and demonstration of enabling prototype technologies in support of the developmental R&D programs within CWMD to meet the DHS component operator requirements or directly spur commercial development. Some developments can transition to existing and future projects as enhancements and improvements to detection capabilities.

**Type of Research**

Basic, Applied

**Technology Readiness Level**

TRL varies between levels 1-5, with the majority in TRL 3-5 for counter WMD radiological and nuclear detection and technology development. Technologies developed under this project will undergo TRL changes as they mature through the R&D pipeline during budget years. The frequency of TRL changes will be dependent on the technology itself and the technology needs which the program is aiming to address. In general, TRL changes within the program do occur annually.

**Transition Plans**

Technologies developed under the R/N R&D project will transition to developmental R&D programs within CWMD to meet specific needs for DHS Components or Homeland Security Enterprise customers. There is a potential for direct commercialization to industry as well. Technologies developed under this program will undergo transitions as they mature through the R&D pipeline. The frequency of transitions will be dependent on the technology itself and the need it is aiming to address. Transition typically happens at TRL 5 with a successful demonstration of the prototype technology in a relevant environment. In general, research at TRL 1-2 can take anywhere from 5-10 years to achieve TRL 5 and research in the TRL 3-4 range can take anywhere from 3-5 years to achieve TRL 5.

**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
<b>FY 2022</b>			
Continue development of Integrated Predictive Modeling Code for predicting unacceptable R/N detection equipment performance.	FY 2021 Q3	FY 2022 Q4	5
Continue basic research into development and evaluation of perovskites and ceramics for x-ray radiography and optimize materials fabricated.	FY 2021 Q4	FY 2022 Q4	2
Complete feasibility evaluation of basic research into wearable radiation detectors utilizing quantum dots.	FY 2021 Q4	FY 2022 Q4	2
Demonstrate novel detectors and techniques for neutron detection in a high-flux photon active interrogation environment.	FY 2022 Q2	FY 2022 Q4	4
Continue basic research into technology component improvements for active interrogation systems using neutrons with initial algorithm development and interrogation simulations.	FY 2022 Q1	FY 2022 Q4	2
Continue basic research into photo nuclear data for active interrogation to improve modeling capabilities with exclusive photofission and initial delayed neutron and photon measurements.	FY 2022 Q1	FY 2022 Q4	2
Continue development of a compact, high repetition-rate linear accelerator for future NII systems and demonstrate component-level capabilities.	FY 2022 Q1	FY 2022 Q4	3
Initiate basic research into high performance and cost-effective polycrystalline-based semiconductor radiation detectors.	FY 2022 Q3	FY 2022 Q4	2
Initiate new R&D to meet emerging needs for R/N detection capabilities for DHS Components and SLTT partners.	FY 2022 Q3	FY 2022 Q4	3
<b>FY 2023</b>			
Complete development of thallium bromide-based core detector modules for future radioisotope identification device development for transition to thallium bromide RIID (THOR) program.	FY 2022 Q4	FY 2023 Q2	5
Complete demonstration unit of large ceramic panels for future RPM gamma detection.	FY 2022 Q4	FY 2023 Q4	4
Complete final demonstration of Integrated Predictive Modeling Code.	FY 2023 Q1	FY 2023 Q2	5



## Research and Development

## Transformational Research and Development – PPA

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
Continue basic research studies into scaled up perovskites and ceramics for x-ray radiography and fabricate optimized pixels and arrays.	FY 2022 Q4	FY 2023 Q4	2
Continue basic research into photo fission nuclear data for active interrogation to improve modeling capabilities with further exclusive photofission and delayed neutron and photon measurements.	FY 2023 Q1	FY 2023 Q4	2
Continue basic research into technology component improvements for active interrogation systems using neutrons with algorithm development and active background measurements.	FY 2023 Q1	FY 2023 Q4	2
Proof-of-concept demonstration of a compact, high repetition-rate linear accelerator for future NII systems.	FY 2023 Q2	FY 2023 Q3	4
Initiate spiral development of a compact, high repetition-rate linear accelerator based on the proof-of-concept demonstration to target specific applications.	FY 2023 Q4	FY 2023 Q4	5
Initiate research into multi-mode ceramic-based detector materials to discover and develop durable, highly-efficient, and good energy resolution detectors for neutron and photon detection.	FY 2023 Q1	FY 2023 Q2	2
Continue existing and initiate new R&D to meet emerging needs for R/N detection capabilities for DHS Components and SLTT partners.	FY 2023 Q3	FY 2023 Q4	3
	<b>FY 2024</b>		
Conduct the integration of the thallium bromide-based radioisotope identification device (RIID) prototypes under the THOR program.	FY 2023 Q4	FY 2024 Q4	5
Continue basic research studies into scaled up perovskites and ceramics for x-ray radiography, characterize fabricated materials and implement improved processes into fabrication of pixels and arrays.	FY 2023 Q4	FY 2024 Q4	3
Continue basic research into photo fission nuclear data for active interrogation to improve modeling capabilities by completing measurement analysis and publishing completed results.	FY 2024 Q1	FY 2024 Q4	2
Continue basic research into technology component improvements for active interrogation systems using neutrons with system integration and algorithm refinement.	FY 2024 Q1	FY 2024 Q4	2
Continue research into multi-mode ceramic-based detector materials to discover and develop durable, highly-efficient, and good energy resolution detectors for neutron and photon detection.	FY 2024 Q1	FY 2024 Q4	2
Continue existing and initiate new R&D to meet emerging needs for R/N detection capabilities for DHS components and SLTT partners.	FY 2024 Q3	FY 2024 Q4	3

**Chemical Research and Development**

- **Problem:** There is a wide range of chemical threat scenarios of concern to DHS, including chemical agent attacks as well as deliberate or accidental industrial releases, all of which have the potential to cause widespread casualties and severe environmental impact. Analyses and reviews conducted by CWMD in conjunction with U.S. Government partner agencies on counter WMD detection have highlighted several technical areas that provide a focus for research activities to be conducted under the Transformational R&D program. Specifically, the requirement exists for advances in innovative technologies for the detection and identification of chemical threats. CWMD seeks improvements in the fidelity of detection along with a reduction in overall costs of the detection systems that support DHS components and state, local, tribal, and territorial (SLTT) partners.
- **Solution:** The Chemical R&D portfolio will focus on developing technologies that decrease the time to detect the occurrence of an attack, improve the fidelity of that detection, and reduce the overall costs of detection systems (manpower and materials). Examples of these efforts include explorations focused on identifying and characterizing existing, as well as new and alternative or emerging signatures in detection, particularly in a ‘field-forward’ setting. These activities have the potential to lead to new technical solutions. The Chemical R&D portfolio also explores newly developed high-risk technologies that address gaps in United States chemical detection capabilities and provide improvements in performance or reduction in cost of chemical detection capabilities in support of the CWMD mission. The Chemical R&D portfolio will leverage interagency efforts for traditional and non-traditional chemical warfare agent detection and contamination avoidance and focus on DHS-specific scenarios such as toxic industrial chemicals and materials precursors, and scenarios such as checkpoint screening and soft targets/crowded spaces.
- **Justification:** The FY 2024 President’s Budget provides \$9.8M for this project, a \$5.6M increase from the FY 2023 Enactment. Funding for these research initiatives will be used to support activities that develop and demonstrate breakthrough technologies that address emerging chemical detection technical capability needs and provide cost effective and enhanced performance to DHS Operational Components and State and local first responders.

The R&D supported by this funding will enable CWMD to pursue R&D efforts to develop essential capabilities to improve detection of chemical threats. Examples of such areas include: 1) Transportation defense: Improved checkpoint and mass transit chemical threat detection, 2) Wide area monitoring for early chemical threat warning, and 3) Improved fieldable detection and identification for chemical threats. These focus areas each include technological development for automated approaches to sample collection and identification, improved sensors expanding the detection range of chemical agents and increasing specificity/sensitivity; non-intrusive inspection approaches for detecting bulk chemical threats in conveyances; development of prototype technologies for standoff trace chemical detection for applications such as checkpoint or parcel screening; and addressing technology gaps identified by the Transportation Security Administration (TSA), U.S. Coast Guard (USCG), and other DHS Components.

- **Impact:** Completion of activities under the Chemical R&D project will result in the development and demonstration of enabling prototype technologies in support of the developmental R&D programs within CWMD to meet operator needs or directly spur commercial development.

**Type of Research**

Basic, Applied

**Technology Readiness Level**

The TRL varies between levels 1-5, with the majority in TRL 3-5 for counter WMD chemical detection and technology development. This research also includes a review of chemical detection technologies developed by government and industry partners and transition of developments from lower TRL (concepts, hardware components and or prototypes) stages to higher TRL products.

**Transition Plans**

Technologies developed under the Chemical R&D project will transition to developmental R&D programs within CWMD to meet specific requirements for DHS Components or Homeland Security Enterprise customers. There is potential for commercialization, as well. Technologies developed under this program will undergo transitions as they mature through the R&D pipeline. The frequency of transitions will be dependent on the maturity of the technology itself and the need it is aiming to address. Transition of a technology typically happens at TRL 5 with a successful demonstration of the prototype technology in a relevant environment.

**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
FY 2022			
Complete demonstration of chemical standoff detection for parcel screening.	FY 2022 Q1	FY 2022 Q3	5
Continue research activities that address current and emerging chemical threats to aviation security.	FY 2022 Q1	FY 2022 Q4	5
Continue existing and initiate new research & development to meet emerging needs for chemical detection capabilities for DHS Operational Components and State and local first responders.	FY 2022 Q1	FY 2022 Q4	3
Initiate R&D to augment X-ray algorithms for chemical threats to aviation security.	FY 2022 Q2	FY 2022 Q4	4
Award and kick off new R&D to mature and demonstrate non-contact detection technologies for sensing of chemical threats relevant to checkpoint screening scenarios.	FY 2022 Q4	FY 2022 Q4	4
FY 2023			
Continue research activities that address current and emerging chemical threats to aviation security.	FY 2023 Q1	FY 2023 Q4	5
Complete R&D to augment X-ray algorithms for chemical threats to aviation security.	FY 2023 Q1	FY 2023 Q2	5
Continue or start basic research in chemical R&D in areas such as Indicator Materials for Chemical Threat Sensing, and Host-Pathogen Response Pattern Investigations.	FY 2023 Q1	FY 2023 Q4	2

**Research and Development****Transformational Research and Development – PPA**

<b>Research &amp; Development Description</b>	<b>Planned Start Date</b>	<b>Planned Completion</b>	<b>TRL Level(s)</b>
Conduct feasibility assessment for R&D to mature and demonstrate non-contact detection technologies for sensing of chemical threats relevant to checkpoint screening scenarios.	FY 2023 Q1	FY 2023 Q4	4
Continue existing and initiate new research & development to meet emerging needs for chemical detection capabilities for DHS Operational Components and State and local first responders.	FY 2023 Q1	FY 2023 Q4	3
Award and kick off new R&D for a through container screening capability.	FY 2023 Q2	FY 2023 Q4	4
	<b>FY 2024</b>		
Continue research activities that address current and emerging chemical threats to aviation security.	FY 2024 Q1	FY 2024 Q4	5
Conduct preliminary design for R&D to mature and demonstrate non-contact detection technologies for sensing of chemical threats relevant to checkpoint screening scenarios.	FY 2024 Q1	FY 2024 Q4	5
Continue research activities for development of a through container screening capability.	FY 2024 Q1	FY 2024 Q4	5
Continue basic research in chemical R&D in areas such as Indicator Materials for Chemical Threat Sensing.	FY 2024 Q1	FY 2024 Q4	2
Award and kick off new R&D for Standoff Wide Area Remote Monitoring Systems for chemical detection.	FY 2024 Q4	FY 2024 Q4	4
Start new research in emerging basic research area for chemical detection.	FY 2024 Q4	FY 2024 Q4	1

**Biological Research and Development**

- **Problem:** Analyses and reviews conducted by CWMD in conjunction with U.S. Government partner agencies on counter WMD detection have highlighted several technical areas that provide a focus for research activities to be conducted under the Transformational R&D program. Specifically, the requirement exists for advancements in innovative technologies for the detection and identification of biological agents, in order to decrease the time interval between the occurrence of a presumptive attack and confirmation that it has occurred. CWMD seeks improvements in the fidelity of detection along with a reduction in overall costs of the detection systems that support DHS Components and SLTT partners. It is crucial to move high fidelity detection and identification ‘field forward’ to reduce response time and limit consequences of a biological weapons event.

There is a requirement to explore the ability to improve biosensor manufacturability to enable more cost effective and efficient production approaches needed to meet the demands and multipurpose applications of biosensors for interagencies across DHS and DoD. There is also a requirement for biosurveillance technologies capable of surveying environments and enable early warning of intentional, natural, and/or inadvertent release of biological materials that can cause human illness.

As new and emerging biological threats either occurring naturally or developed by threat actors become more imminent, the requirement for detecting threats with unknown threat signatures is becoming more significant (agent agnostic detection). Most current biodetection systems require a library of known threat agent characteristics to detect and identify threats by associating the threat to its respective threat signature. New and emerging threats can go undetected if their biological signatures are unique and do not match any of the associated threat signatures within the biodetection system library. A missed detection is likely because most threat libraries are not specific to the DNA or RNA level, and the mutation or genetic engineering of a biological concern will likely have a unique threat signature that will not match any signatures contained in a library. For these reasons, the ability to detect agents without the reliance of threat libraries or associated threat signatures is necessary to enable detection of new and emerging biological threats.

- **Solution:** Biological R&D (Bio R&D) will focus on developing technologies that decrease the time to detect the occurrence of an attack, increase the fidelity of detection and identification, and reduce the overall costs of detection/identification systems (hardware, manpower, materials, and maintenance). Examples of these efforts include explorations focused on identifying and characterizing existing, as well as new and emerging biological signatures, particularly in a ‘field-forward’ setting. These activities have the potential to lead to new technical solutions. The Bio R&D portfolio will assess the commercial manufacturability of advanced biological detection technologies in efforts to identify sensor cost efficiencies through mass production, reproducibility, quality control, and decreased production lead time and labor costs by alleviating custom sensor development by scientists. The Bio R&D portfolio will explore agent agnostic detection approaches, such as utilization of existing genomic databases for data analytics and machine learning application, and detection capabilities with species level specificity leveraging genomic sequencing, rapid assay development, and/or alternative signature technologies. The Bio R&D portfolio also explores newly developed high-risk technologies that address gaps in U.S. biological detection capabilities and provides improvements in performance or reduction in cost of biological detection/identification capabilities in support of the CWMD mission.

- **Justification:** The FY 2024 President’s Budget provides \$9.7M for this project, a \$1.6M increase from the FY 2023 Enactment. Funding for this research initiatives will be used to support activities that develop and demonstrate breakthrough technologies that address emerging biological detection technical capability requirements and provide cost effective and enhanced performance to DHS Operational Components and State and local first responders. It will enable CWMD to pursue R&D efforts to develop essential capabilities to improve detection and identification of biological threats. Examples of such areas include: automated approaches to sample collection and identification for biothreats; improved sensors expanding the detection range of bioagents and increasing specificity/sensitivity; next generation genetic sequencing of samples for biothreat detection; standoff non-intrusive inspection approaches for detecting biological threats in conveyances; development of prototype technologies for standoff trace biological detection for applications such as food/consumables screening; and addressing technology gaps identified by TSA, USCG, and UCBP.
- **Impact:** Completion of activities under the Bio R&D portfolio will result in the development and demonstration of enabling prototype technologies in support of the developmental R&D programs to meet CWMD operator needs or directly spur commercial development.

**Type of Research**

Basic, Applied

**Technology Readiness Level**

The starting TRL varies between levels 1-5, with the majority in TRL 3-5 for counter WMD biological detection/identification and technology development. This research also includes a review of biological detection technologies developed by government, academic, and industry partners and transition of developments from lower TRL (concepts, hardware components and or prototypes) stages to higher TRL products.

**Transition Plans**

Technologies developed under the Bio R&D project will transition to developmental R&D programs to meet specific requirements for DHS Components, Homeland Security Enterprise customers and/or potential commercialization. Technologies developed under this program will undergo transitions as they mature through the R&D pipeline. The frequency of transitions will be dependent on the maturity of the technology itself and the need it is aiming to address. Transition typically occurs at TRL 5 with a successful demonstration of the prototype technology in a relevant environment. In general, research at TRL 1-2 can take anywhere from 5-10 years to achieve TRL 5 and research in the TRL 3-4 range can take anywhere from 3-5 years to achieve TRL 5.

**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Continue basic research for microfluids-based biodetection capabilities.	FY 2022 Q1	FY 2022 Q4	2
Continue basic research for alternative signatures for biodetection using mass spectroscopy for metabolomic finger printing of pathogens.	FY 2022 Q1	FY 2022 Q4	2
Conduct indoor simulant development and release demonstration for assessing real-time anomaly detection algorithm monitoring.	FY 2022 Q1	FY 2022 Q4	5
Continue existing and initiate new research & development to meet emerging needs for bio detection capabilities for DHS Operational Components and State and local first responders.	FY 2022 Q1	FY 2022 Q4	3
Deliver autonomous presumptive identification requirements assessment report for extreme polymerase chain reaction (xPCR) development.	FY 2022 Q3	FY 2022 Q4	1-2
Initiate mass spectroscopy based sensor development for urban biothreat identification capability.	FY 2022 Q3	FY 2022 Q4	3
Initiate the advanced sensor redesign for urban biothreat classification using raman spectroscopy.	FY 2022 Q3	FY 2022 Q4	4
Initiate the advanced sensor redesign for urban biothreat detection using spark induced breakdown spectroscopy and multi-channel UV-LIF bio particle technologies.	FY 2022 Q3	FY 2022 Q4	4
	FY 2023		
Deliver autonomous presumptive identification preliminary design review for xPCR development.	FY 2022 Q3	FY 2023 Q3	1-2
Deliver autonomous presumptive identification critical design review xPCR development.	FY 2022 Q3	FY 2023 Q4	1-2
Continue basic research for fluid-based biodetection capabilities.	FY 2023 Q1	FY 2023 Q4	3
Continue basic research for alternative signatures for biodetection using mass spectroscopy for metabolomic finger printing of pathogens.	FY 2023 Q1	FY 2023 Q4	2
Continue R&D sensor redesign development of advanced biosensors.	FY 2023 Q1	FY 2023 Q3	5
Initiate assessment study for cost effective manufacturing and production of advanced biological detection sensors.	FY 2023 Q1	FY2024 Q1	3-4
Conduct outdoor simulant development and release demonstration for real time monitoring of advanced anomaly detection algorithm.	FY 2023 Q1	FY 2023 Q4	6
Initiate multiplex nucleic assay prototype modification development to extending assay shelf life in the field.	FY 2023 Q1	FY 2023 Q4	4
Continue existing and initiate new research & development to meet emerging needs for bio detection capabilities for DHS Operational Components and State and local first responders.	FY 2023 Q1	FY 2023 Q4	3

**Research and Development****Transformational Research and Development – PPA**

<b>Research &amp; Development Description</b>	<b>Planned Start Date</b>	<b>Planned Completion</b>	<b>TRL Level(s)</b>
	<b>FY 2024</b>		
Continue basic research for microfluids-based biodetection capabilities.	FY 2024 Q1	FY 2024 Q4	4
Continue multiplex nucleic assay prototype modification development to extending assay shelf life in the field.	FY 2024 Q1	FY 2024 Q4	5
Initiate next generation sequencing development for autonomous biodetectors.	FY 2024 Q1	FY 2024 Q4	1
Continue autonomous presumptive identification prototype development for xPCR.	FY 2024 Q1	FY 2024 Q4	3
Continue R&D sensor redesign development of advanced biosensors.	FY 2024 Q1	FY 2024 Q4	6
Initiate technology development approaches to improve cost effective manufacturing and production of advanced biological detection sensors.	FY 2024 Q1	FY 2024 Q4	3-4
Continue existing and initiate new research & development to meet emerging needs for bio detection capabilities for DHS Operational Components and State and local first responders.	FY 2024 Q1	FY 2024 Q4	3



### Data Analytics

- **Problem:** CBRN threat detection relies on operators and analysts, detectors, and information. The special challenges in CBRN are the threats are generally rare, detections must be reliable and traceable, and the time-to-detection must be as short as possible. Integration of situational awareness across wide geographical and informatic spaces, including networked CBRN detectors, remains a persistent challenge. Meeting these challenges requires mission-targeted investment in artificial intelligence/machine learning (AI/ML) technology development.
- **Solution:** The Data Analytics portfolio sponsors R&D initiatives focused on technologies that (a) identify anomalies within information data streams, (b) integrate physical sensor data with other information streams, and (c) identify patterns in the CBRN domain. In an analytic environment developed by a DHS Component partner, CWMD sponsored an initiative to research expert-led, operator-focused analytics, and structured queries to support CBRN counter proliferation. Other efforts include multimodal data fusion on networked detectors, threat detection in radiography, and improving operational performance of an aging but very much serviceable fleet of radiation portal monitors using machine learning (e.g., Enhanced Radiological Nuclear Inspection and Evaluation (ERNIE) and more recently, the Advanced RPM Maintenance Operating Reporter (ARMOR), under the Detection Capability Development PPA). Initiatives also include the development of an Anomaly Detection Algorithm (ADA), which will be a key component in the BD-21 program. These activities will support targeting and interdiction by domestic and global partners, to improve capabilities and for the prevention of WMD terrorism. The research activities to meet this challenge support the Transformational R&D Program, as a pipeline for innovative operator capabilities.
- **Justification:** The FY 2024 President’s Budget provides \$9.2M for this project, a \$0.2M increase from the FY 2023 Enactment. Funding for this research initiative will be used to develop breakthrough computational technologies in AI/ML and other advanced algorithms to enhance the capabilities of DHS Operational Components and State and local first responders to prevent WMD terrorism. Pursuing R&D in applying AI/ML and/or advanced algorithms to data streams from CBRN sensors and other contextual information improves the likelihood of discovering threats, and with the goal of shortening the time to detect.
- **Impact:** Completion of activities under the Data Analytics project will result in the development and demonstration of enabling prototype technologies in support of the developmental R&D programs within CWMD or directly spur commercial development.

### Type of Research

Basic, Applied

**Technology Readiness Level**

The TRL varies between levels 1-5, with the majority in TRL 3-5 for counter WMD detection and technology development. Technologies developed under this project will undergo TRL changes as they mature through the R&D pipeline during budget years. The frequency of TRL changes will be dependent on the technology itself and the needs of the technology which the project aims to address. In general, TRL changes within the program do occur annually.

**Transition Plans**

Technologies developed under the Data Analytics project will transition to developmental R&D programs within CWMD to meet specific needs for DHS Components, Homeland Security Enterprise customers, and/or commercialization. Technologies developed under this program will undergo transitions as they mature through the R&D pipeline. The frequency of transitions will be dependent on the technology itself and the need it is aiming to address.

**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2023		
Initiate new R&D for algorithm development of Automated Threat Recognition (ATR) for Non-Intrusive Inspection (NII) to identify high-Z threats in cargo.	FY 2022 Q4	FY 2023 Q2	4
Continue WMD SME development support for analytics-based graph project utilizing an AI/ML informatics analytic platform. Effort will allow more effective analysis of relevant data streams to generate actionable information in the CWMD mission area.	FY 2021 Q4	FY 2023 Q4	3
Deliver Feasibility Evaluation Review and report for ATR for NII project.	FY 2023 Q2	FY 2023 Q4	4
Progression of three university-based projects exploring basic R&D for CBRN wide area sensor approaches leading to initial dataset either in the laboratory (for lower TRL projects) or in public areas.	FY 2023 Q1	FY 2023 Q4	2-3
Conclusion of four university-based projects focused on radiological anomaly detection in transportation pathways leading to deployment in transportation pathway, delivery of datasets and final report.	FY 2023 Q1	FY 2023 Q4	4
Initiate biodetection anomaly detection algorithm development version for an array of sensor nodes to include current BD-21 sensors, new enhanced sensor modalities, and informed by simulant releases.	FY 2023 Q1	FY2023 Q4	4
Initiate Multi-sensor, Multi-Data Analysis (MSMDA) research for development of a toolkit for fusing data from multiple radiation detectors to achieve enhanced threat detection, reduced false alarm, and operationally focused reporting.	FY 2023 Q2	FY 2023 Q4	3
Initiate study to describe applications of Data Analytics in the National Biosurveillance Integration Center	FY2023 Q3	FY 2023 Q3	4
	FY 2024		
Develop an initial working prototype of the ATR for NII algorithm and software architecture.	FY 2023 Q4	FY 2024 Q4	4
Conduct MSMDA critical design review.	FY 2023 Q4	FY 2024 Q3	4
Progression of three university-based projects exploring basic R&D for CBRN analytics on wide area sensor networks leading to an operational sensor network and initial data collections take place.	FY 2024 Q1	FY 2024 Q4	3-4
Initiate new R&D to meet emerging needs for data analytics capabilities for DHS Operational Components and State and local first responders.	FY 2024 Q1	FY 2024 Q4	3

**Small Business Innovation Research (SBIR)**

- **Problem:** Analyses and reviews conducted by CWMD in conjunction with U.S. Government partner agencies on counter WMD detection have highlighted several technical areas that provide a focus for research activities to be conducted under the Transformational R&D program to enable detection of a WMD. Specifically, there exists a need for greater innovation in CBRN detection technologies and methodologies, developing systems for early warning and diagnostics, and advance data analytics capabilities into unique solutions which complement and support DHS Operational Components and State and local first responders for rapid detection WMD threats.
- **Solution:** Small businesses capable of conducting research and development in homeland security-related areas can provide unique capabilities and expertise that could address these needs by stimulating high-tech innovation in the United States while looking for an incentive to profit from commercialization. The near term solutions are opportunities for small businesses to harness leading edge technologies applicable to homeland security. The SBIR program enables technological innovation by strengthening the role of small businesses in federally funded R&D. The CWMD SBIR program is specifically focused on meeting Federal R&D needs aimed at CBRN detection and R&D for countering WMD. The R&D needs include technological approaches that address gaps in the larger framework for CBRN detection and counter WMD capabilities, significantly improve the performance of detection methods, components, and systems, and/or significantly reduce the operational burden of using these technologies.
- **Justification:** The FY 2024 President’s Budget provides \$2.6M, the same as the FY 2023 Enactment. Funding for this research initiative will support SBIR Phase I and Phase II activities that enable small businesses to develop and demonstrate technologies that address counter WMD technical capability needs, ultimately allowing the CWMD SBIR program to encompass a wider breadth of activities across the CBRN detection and counter WMD R&D spectrum.
- **Impact:** Completion of this project will stimulate technological innovation by strengthening the role of innovative small businesses in federally funded R&D to meet DHS Operational Components needs. SBIR programs transition near-term solutions, supporting identified capability gaps, into commercial products or services.

**Type of Research**

Applied, Developmental

**Technology Readiness Level**

SBIR includes applied and developmental R&D, depending on the phase. SBIR Phase I projects are applied R&D, ending in TRL 3-4. SBIR Phase II projects are applied and developmental R&D, ending at a TRL 5-7.

**Transition Plans**

The primary objective of the SBIR program, at the whole-of-government level, is for new innovative products to reach the consumer market towards one or more identified end users – i.e., “commercialization.” The CWMD SBIR program also seeks projects which can meet R&D needs identified by operational end-users and subject matter experts, as well as the development of components that can be integrated into larger development R&D projects or utilized by CWMD. Aspects of the technologies developed under SBIR will support and can further augment technologies of all other R&D programs within CWMD.

**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Fieldable Multiplex Detection Biothreats Phase I final review and final report.	FY 2022 Q1	FY 2022 Q1	3
Sensor Fusion Phase II video management system architecture data collection campaign, demonstration, and final report.	FY 2022 Q1	FY 2022 Q2	5
Ground Based Robotic Inspection Phase II autonomous system demonstration and final report.	FY 2022 Q1	FY 2022 Q3	5
Fieldable Multiplex Detection of Biothreats Phase II award and kickoff.	FY 2022 Q3	FY 2022 Q3	3
Next Generation Semiconductor-Based Spectroscopic Personal Radiation Detectors (SPRDs) Phase I award and kickoff.	FY 2022 Q3	FY 2022 Q3	3
Field Forward Diagnostics for Select Agent List Toxins Phase I award and kickoff.	FY 2022 Q3	FY 2022 Q3	3
Wearable Detector for Aerosolized Chemical Threats Phase I award and kickoff.	FY 2022 Q3	FY 2022 Q3	3
From Port-Side to Pen-Side: Low Cost Detection/Diagnostics for High-Consequence Transboundary or Nationally Reportable Animal Diseases, Particularly Those with Zoonotic Propensity Phase I award and kickoff.	FY 2022 Q3	FY 2022 Q3	3
	FY 2023		
Networked sensors Phase II adaptable sensor network management infrastructure demonstration and final report.	FY 2022 Q4	FY 2023 Q1	5
Next Generation Semiconductor-Based Spectroscopic Personal Radiation Detectors (SPRDs) Phase I benchtop demonstration, demonstrate fabrication quality, characterize detector material, final review, and final report.	FY 2023 Q1	FY 2023 Q3	3
Field Forward Diagnostics for Select Agent List Toxins Phase I develop conceptual toxin detection assay, proof of concept and feasibility results of design, final review, and final report.	FY 2023 Q1	FY 2023 Q4	3
Wearable Detector for Aerosolized Chemical Threats Phase I conceptual design and breadboard, analysis and proof of low SWAP, outline of success criteria, final review, and final report.	FY 2023 Q1	FY 2023 Q4	3

## Research and Development

## Transformational Research and Development – PPA

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
From Port-Side to Pen-Side: Low Cost Detection/Diagnostics for High-Consequence Transboundary or Nationally Reportable Animal Diseases, Particularly Those with Zoonotic Propensity Phase I conceptual design, final determination of specifications, demonstrate ability to develop system, final review, and final report.	FY 2023 Q1	FY 2023 Q3	3
Fieldable Multiplex Detection of Biothreats Phase II demonstrate initial prototype bio detector, develop multiplex panel for biothreats, characterize results and midphase review.	FY 2023 Q2	FY 2023 Q3	4-5
Initiate up to four SBIR Phase I projects capable of meeting DHS Component countering WMD mission needs.	FY 2023 Q3	FY 2023 Q3	3-4
Next Generation Semiconductor-Based Spectroscopic Personal Radiation Detectors (SPRDs) Phase II award and kickoff.	FY 2023 Q3	FY 2023 Q3	3
Field Forward Diagnostics for Select Agent List Toxins Phase II award and kickoff.	FY 2023 Q3	FY 2023 Q3	3
Wearable Detector for Aerosolized Chemical Threats Phase II award and kickoff.	FY 2023 Q3	FY 2023 Q3	3
	<b>FY 2024</b>		
Fieldable Multiplex Detection of Biothreats Phase II field final prototype bio detector, complete multiplex panel for biothreats, provide analysis of capability, and final review.	FY 2024 Q2	FY 2024 Q3	6
Initiate up to two SBIR Phase II projects from Phase I projects initiated in FY 2023 capable of meeting DHS Component countering WMD mission needs.	FY 2024 Q2	FY 2024 Q3	4
Next Generation Semiconductor-Based Spectroscopic Personal Radiation Detectors (SPRDs) Phase II produce a functional prototype SPRD design, build two prototypes, provide detailed cost model, and midphase review.	FY 2024 Q3	FY 2024 Q4	3-4
Wearable Detector for Aerosolized Chemical Threats Phase II complete component hardware and software design, fabrication of prototype update, and laboratory characterization experiments, and midphase review.	FY 2024 Q3	FY 2024 Q4	3-4
Initiate up to four SBIR Phase I projects capable of meeting DHS component CWMD mission needs.	FY 2024 Q3	FY 2024 Q3	3-4

**Food, Agriculture, Veterinary Defense (FAVD) Research and Development**

- **Problem:** Section 528 of the *Homeland Security Act of 2002* (P.L. 107-296) (6 U.S.C. 321q), as amended by the *Securing our Agriculture and Food Act* (SAFA) (P.L. 115-43) requires DHS to coordinate efforts related to defending the food, agricultural, and veterinary defense (FAVD) systems of the United States against terrorism and other high-consequence events. This responsibility was moved to the Office of Health Security (OHS) and DHS S&T for FAVD Research and Development activities. Analyses and reviews conducted by the DHS Chief Medical Officer in conjunction with U.S. Government partner agencies on the existing and emerging threats to FAV systems highlighted several technical areas for research under the Transformational R&D program. These analyses identified the need to improve the detection, characterization, forecasting, and prevention of, and the mitigation, protection, response, and recovery from high-consequence agents in the agricultural, food, and water supply chains and/or interdependent systems.
- **Solution:** FAVD R&D will accelerate and expand the development of current and new countermeasures against threats to domestic and non-domestic populations of animals and plants, whether they originate from the natural, intentional, or unintentional introduction of an etiologic agent, or from the chemical, biological, nuclear, or radiological adulteration of the agricultural, food, and water supply chains. CWMD will coordinate with the DHS Office of Health Security (OHS) and DHS S&T (as guided by the DHS FAVD Research, Development, Testing, and Evaluation Strategic Plan), as well as USDA and other partner agencies, to prioritize these efforts.
- **Justification:** No CWMD R&D funding is included for FAVD R&D in the FY 2024 Budget.
- **Impact:** The responsibility and funding for FAVD R&D will move to S&T in FY 2024.

**Type of Research**

Basic and Applied

**Technology Readiness Level**

The TRL varies between levels 1-5, with the majority in TRL 3-5 for health security-related R&D.

**Transition Plans**

CWMD and S&T will work together to execute the FY 2023 funding in conjunction with S&T FY 2024 Budget request.

Project Schedule

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2023		
Execute R&D efforts with S&T, which seek to develop either new or existing technologies to address identified gaps and requirements in the FAV sector.	FY 2023 Q4	FY 2024 Q1	N/A
	FY 2024		
N/A	N/A	N/A	N/A



*Technical Forensics – PPA*

**Budget Comparison and Adjustments**

**Comparison of Budget Authority and Request**

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Technical Forensics	\$3,500	\$2,000	\$6,530	\$4,530
<b>Total</b>	<b>\$3,500</b>	<b>\$2,000</b>	<b>\$6,530</b>	<b>\$4,530</b>
Subtotal Discretionary - Appropriation	\$3,500	\$2,000	\$6,530	\$4,530

**PPA Level I Description**

The Technical Forensics program advances the U.S. Government’s technical capability to assess pre- and post-detonation material with novel analysis methods for identification of signatures and device characteristics, and to improve post-detonation material collection and prompt signal analysis methods. CWMD manages the National Nuclear Forensics Expertise Development Program (NNFEDP) that addresses the enduring challenge of sustaining a preeminent workforce of scientists and policymakers that are educated and trained in nuclear forensics-related specialties by funding undergraduate and advanced education and research projects.

**Technical Forensics – PPA**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$3,500</b>	<b>\$2,000</b>	<b>\$6,530</b>
Carryover - Start of Year	\$3,597	\$5,096	-
Recoveries	\$416	-	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	-	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$7,513</b>	<b>\$7,096</b>	<b>\$6,530</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$7,513</b>	<b>\$7,096</b>	<b>\$6,530</b>
Obligations (Actual/Estimates/Projections)	\$2,110	\$7,096	\$6,530
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Technical Forensics – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Amount
<b>FY 2022 Enacted</b>	-	-	<b>\$3,500</b>
<b>FY 2023 Enacted</b>	-	-	<b>\$2,000</b>
<b>FY 2024 Base Budget</b>	-	-	-
Technical Forensics	-	-	\$6,530
<b>Total Research and Development Projects</b>	-	-	<b>\$6,530</b>
<b>FY 2024 Request</b>	-	-	<b>\$6,530</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	<b>\$4,530</b>

## Technical Forensics – PPA Non Pay Budget Exhibits

### Non Pay by Object Class *(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$10	-	\$14	\$14
25.1 Advisory & Assistance Services	\$786	\$500	\$1,168	\$668
25.3 Other Purchases of goods and services	-	-	\$4,448	\$4,448
25.5 Research & Development Contracts	\$2,704	-	-	-
41.0 Grants, Subsidies, and Contributions	-	\$1,500	\$900	(\$600)
<b>Total - Non Pay Budget Object Class</b>	<b>\$3,500</b>	<b>\$2,000</b>	<b>\$6,530</b>	<b>\$4,530</b>

**Research and Development**  
**Research and Development Projects**

**Summary of Projects**  
*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Technical Forensics	\$3,500	\$2,000	\$6,530

**Technical Forensics  
Research and Development**

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**Technology Readiness Level Exhibit**  
*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Technical Forensics	\$3,500	\$2,000	\$6,530

**R&D Project Description**

The Technical Forensics program advances the U.S. Government's technical capability to assess pre- and post-detonation material. CWMD manages the NNFEDP that addresses the enduring challenge of sustaining a preeminent workforce of scientists and policymakers that is educated and trained in nuclear forensics-related specialties by funding research projects.

- **Problem:** Nuclear forensics-related disciplines at U.S. universities have declined and there exists a need to develop the next generation of U.S. nuclear forensic scientists. The disciplines of pre- and post-detonation forensics are evolving and critical fields. The narrowing pipeline of qualified people into these critical fields is a serious impediment to maintaining a robust and credible nuclear forensics program.
- **Solution:** Established within the Nuclear Forensics and Attribution Act (NFAA) (P.L.111-140), and later reaffirmed in the Homeland Security Act of 2002 (P.L. 107-296), as amended by the CWMD Act of 2018 (P.L. 115-387), DHS is directed to establish a National Nuclear Forensics Expertise Development Program, which is devoted to developing and maintaining a vibrant and enduring academic pathway from undergraduate to post-doctorate study in nuclear and geochemical science specialties directly relevant to technical nuclear forensics, including radiochemistry, geochemistry, nuclear physics, nuclear engineering, materials science, and analytical chemistry. The NNFEDP is led by The National Technical Nuclear Forensics Center.

DHS CWMD proposes to meet this objective by implementing the NNFEDP in close coordination with other Departments and Agencies to ensure a robust academic pathway needed to sustain a viable nuclear forensics workforce; and by sponsoring post-doctoral fellowships, nuclear forensics research awards to universities, and federal expertise development opportunities. These initiatives will develop future technical experts and leaders by funding nuclear forensics-related research efforts and establishing links among university faculty, graduate and undergraduate students, national technical nuclear forensics (NTNF)-supporting Departments, Agencies, and staff at the national and defense laboratories. Per section 1902 of the Homeland Security Act of 2002, as amended (P.L. 107-296) (6 U.S.C. 592), CWMD aims to build capability and capacity in nuclear forensics among Alaska Native-serving institutions, Asian American and Native American Pacific Islander-serving institutions, Native Hawaiian-serving institutions, Hispanic-serving institutions, Tribal Colleges or Universities, and Historically Black Colleges or Universities and will encourage them to participate.

- **Justification:** The FY 2024 President’s Budget provides \$6.5M for this project, a \$4.5M increase from the FY 2023 Enactment. Funding will meet this CWMD requirement through the sponsorship of Nuclear Forensics Research Awards, postdoctoral fellowships, laboratory R&D with directed support to graduate and undergraduate students, and specialized nuclear forensics related coursework.
- **Impact:** The DHS CWMD expertise development program maintains the pipeline of technical professionals at the national laboratories supporting technical nuclear forensics that continuously improves the United States Government pre-and post-detonation nuclear forensics operational capability. These improvements allow experts to reach technical conclusions in support of forensics and attribution assessments for decision makers.

### Type of Research

Basic, Applied, Developmental

### Technology Readiness Level

This project includes TRLs 1-7. The project maintains the technical expertise required to execute the Nation’s Nuclear Forensics mission through interdisciplinary R&D collaboration among students, academic departments, universities, and national laboratories.

### Transition Plans

Students trained under the expertise development program will likely obtain employment either at a DoE National/DoD Defense Laboratory or a Federal agency responsible for nuclear forensics. Capabilities developed under this program will transition to the Laboratories/Federal Departments and Agencies that are responsible for the operational technical nuclear forensics mission.

### Project Schedule

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Expertise Development- Sponsorship of postdoctoral fellows, undergraduate and graduate students and mentors aligned with technical nuclear forensics focus areas.	FY 2021 Q1	FY 2022 Q4	7
	FY 2023		
Expertise Development- Sponsorship of postdoctoral fellows, undergraduate and graduate students and mentors aligned with technical nuclear forensics focus areas.	FY 2022 Q1	FY 2023 Q4	7
	FY 2024		
Expertise Development- Sponsorship of postdoctoral fellows, undergraduate and graduate students and mentors aligned with technical nuclear forensics focus areas.	FY 2023 Q1	FY 2024 Q4	7

***Detection Capability Development – PPA*****Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Detection Capability Development	\$30,831	\$25,611	\$14,948	(\$10,663)
<b>Total</b>	<b>\$30,831</b>	<b>\$25,611</b>	<b>\$14,948</b>	<b>(\$10,663)</b>
Subtotal Discretionary - Appropriation	\$30,831	\$25,611	\$14,948	(\$10,663)

**PPA Level I Description**

The Detection Capability Development program supports R&D projects anticipated to lead to a materiel solution. Capability gaps exist across multiple pathways through which WMD can be transported. These capability gaps can to some degree be mitigated with non-materiel solutions but primarily require a materiel solution to be developed, tested, acquired, and deployed to address the gap. DHS operational users and CWMD recognize many deployed systems will be reaching their respective end-of-life, and modernization and/or recapitalization efforts will be required to maintain or improve CWMD sensor capabilities. Additionally, potential COTS material solutions may require customization and will always require test and evaluation to ensure they meet operational and functional requirements.

Through analyses of alternatives (AoAs), threat assessments, preparation of documentation to prepare for materiel solution acquisition, development activities to mature material solutions that meet operational partners requirements, evaluation of proposed materiel solutions, and test and evaluation activities, CWMD can conduct the capability development effort necessary to acquire and deploy materiel solutions. CWMD acquisition activities adhere to the Department's Integrated Lifecycle Management approach to develop, acquire, procure, deploy, and sustain chemical, biological, radiological, and nuclear detection systems for customers that operate the systems in the field. Throughout the life of each Detection Capability Development project, CWMD works collaboratively with the DHS Operational Components and with State and local agencies to manage the equipment configuration to ensure it continues to meet its operational requirements, as well as collect and analyze operational performance and maintenance data to maximize performance per maintenance dollar and inform future procurement requirements.



**Detection Capability Development – PPA**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$30,831</b>	<b>\$25,611</b>	<b>\$14,948</b>
Carryover - Start of Year	\$21,537	\$22,904	\$5,996
Recoveries	\$463	-	-
Rescissions to Current Year/Budget Year	-	-	(\$388)
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	(\$512)	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$52,319</b>	<b>\$48,515</b>	<b>\$20,556</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$52,319</b>	<b>\$48,515</b>	<b>\$20,556</b>
Obligations (Actual/Estimates/Projections)	\$29,403	\$42,519	\$20,556
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Detection Capability Development – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Amount
<b>FY 2022 Enacted</b>	-	-	<b>\$30,831</b>
<b>FY 2023 Enacted</b>	-	-	<b>\$25,611</b>
<b>FY 2024 Base Budget</b>	-	-	-
Detection Capability Development	-	-	\$14,948
<b>Total Research and Development Projects</b>	-	-	<b>\$14,948</b>
<b>FY 2024 Request</b>	-	-	<b>\$14,948</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	<b>(\$10,663)</b>

## Detection Capability Development – PPA

### Non Pay Budget Exhibits

### Non Pay by Object Class

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$60	\$5	\$215	\$210
25.1 Advisory & Assistance Services	\$6,979	\$4,114	\$4,460	\$346
25.2 Other Services from Non-Federal Sources	-	\$5,032	\$2,065	(\$2,967)
25.3 Other Purchases of goods and services	\$2,085	\$5,900	\$2,409	(\$3,491)
25.5 Research & Development Contracts	\$21,707	\$7,595	\$2,769	(\$4,826)
31.0 Equipment	-	\$2,965	\$3,030	\$65
<b>Total - Non Pay Budget Object Class</b>	<b>\$30,831</b>	<b>\$25,611</b>	<b>\$14,948</b>	<b>(\$10,663)</b>

**Research and Development**  
**Research and Development Projects**

**Summary of Projects**  
*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Detection Capability Development	\$30,831	\$25,611	\$14,948

**Detection Capability Development  
Research and Development**

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**Technology Readiness Level Exhibit**  
*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Detection Capability Development	\$30,831	\$25,611	\$14,948

**R&D Project Description**

The capability development activities funded with this program will support acquisition and deployment of counter WMD devices that will partially or wholly address capability gaps and provide DHS operational users and other Federal users with commercially available or next-generation counter WMD devices. This R&D is intended to enable new technologies to be fielded or to directly spur commercial development that strengthens the Homeland Security Enterprise.

The Detection Capability Development R&D program includes multiple projects. The table that follows identifies and summarizes the initiatives and funding levels for FY 2024. Details on the projects are outlined in the narrative below.

<b>Detection Capability Development</b> <i>(Dollars in Thousands)</i>			
<b>Project</b>	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>
Biological Detection for the 21st Century (BD-21)	\$9,654	\$17,004	\$6,737
CWMD GATE-U (formerly Information Architecture (IA)/GATE-U)	\$2,000	\$2,032	\$2,065
Advanced Technology Demonstration/Rapid Prototyping	\$4,065	\$4,065	\$4,130
TIBr HPRDS Objective Resolution (THOR) (formerly Thallium Bromide RIID)	\$1,000	\$1,000	\$500
CWMD Sensor Integration	\$1,000	\$1,000	\$1,016
Mobile Active Interrogation Using Neutrons (MAIN)	\$1,500	\$500	\$500
Next Generation Mobile System	\$3,500	-	-
Radiation Portal Monitor (RPM) Recapitalization (RAPTER)	\$8,112	\$10	-
<b>Total – Detection Capability Development</b>	<b>\$30,831</b>	<b>\$25,611</b>	<b>\$14,948</b>

**Biological Detection for the 21<sup>st</sup> Century (BD-21)**

- **Problem:** The existing bio-detection capability has several capability gaps validated by DHS, the most significant being a prolonged event-to-detection timeline. The current capability is not postured to address threats in indoor environments in ways that match anticipated threat vectors, and it does not provide a common operating picture. The goal for biodetection, as stated in the 2019 Mission Needs Statement for Biological Detection, is to achieve near real-time anomaly detection and provide an alert to responders. The BioWatch capability requires a shorter timeline to detection to elicit a more effective emergency management, medical, and public health response to mitigate the effects of a biological incident.
- **Solution:** Recognizing opportunities for improvements in the current U.S. system that monitors for biological attack, CWMD is leading an effort to develop environmental biodetection systems that can address the distinct operational and jurisdictional needs of our partners. The BD-21 program of record is working to design, develop, and deploy networked detection systems that continuously monitor the air, collect real-time data, and employ data analytics to detect anomalies. The faster anomalies are detected, the faster first responders can address potential threats. BD-21 efforts are supported by the Anomaly Detection Algorithm development efforts funded by Transformational R&D PPA. DHS Science and Technology Directorate (S&T) plays an integral role in the development of BD-21 through membership on integrated product teams (IPTs), through the CWMD Alliance (a collaborative partnership between S&T, CWMD, and the Department of Defense Joint Program Executive Office for CBRN Defense), and through execution of several supporting bio-detection projects. S&T oversees several technical reviews to approve the Test and Evaluation Strategy, assess the technical risks to the program, and evaluate the program's technical progress to ensure that the program remains on track to meet its stated goals.
- **Justification:** The FY 2024 President's Budget provides \$6.7M for this project, a \$10.3M decrease from the FY 2023 Enactment. Funding for this initiative will be used to support an indoor system concept testbed, develop program requirements, conduct a Technology Readiness Assessment, conduct stakeholder engagement to assess feasibility and acceptance, and assess outdoor concept options through test and evaluation and research and development. BD-21 will advance the existing biological detection capability provided by BioWatch, by developing a new capability that will provide continuous monitoring for airborne biological agent releases using anomaly detection sensors and data analytics, provide timely notification to first responders of a potential release using common operating picture technology, and interface with portable field screening equipment to test collected samples. BD-21 will enable first responders and state and local public health officials to take quick actions that minimize the impact of a biological release.
- **Impact:** Completion of this project will reduce follow-on acquisition risk and inform decisions regarding the progression to subsequent phases of the acquisition life cycle. Test and evaluation activities will confirm solutions are both effective and affordable over the life of their deployment. This will result in more effective acquisition decision-making by CWMD. Future BD-21 deployment will provide a networked detection solution that continuously monitors the air, collects real-time data, and employs data analytics to detect anomalies. The faster anomalies are detected, the faster first responders can address potential threats.

**Type of Research**

Developmental

**Technology Readiness Level**

In the current acquisition phase, the program is performing Technology Readiness Assessment on the BD-21 Critical Technology Elements (CTE). Several of the BD-21 CTEs are mature (TRL-7 and above) in DoD operating environments but must be assessed in the Homeland operational environment. The BD-21 program will conduct additional technology maturation efforts to ensure all indoor and outdoor concept CTEs are assessed at TRL-6.

**Transition Plans**

N/A

**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Program conducts technology maturation efforts for Sensor, Collector, Control Module, and Anomaly Algorithm CTEs.	FY 2022 Q1	FY 2022 Q4	3-6
Program conducts indoor system concept testbed.	FY 2022 Q4	FY 2022 Q4	5-6
	FY 2023		
Program conducts indoor system testbed.	FY 2023 Q1	FY 2023 Q4	6
Program conducts stakeholder engagement to assess notional indoor concept acceptance.	FY 2023 Q3	FY2023 Q4	6
Program conducts updated Technology Readiness Assessment for the indoor system concept.	FY 2023 Q3	FY 2023 Q4	6
Program coordinates review of complete Indoor and Outdoor ORD with JRIMS.	FY 2023 Q3	FY 2023 Q4	6
	FY 2024		
Program conducts updated integrated indoor/outdoor system testbed.	FY 2024 Q1	FY 2024 Q4	6-7
Program coordinates review of CEBD, LCCE, TEMP, P-ILSP, P-APB, SELC-TP, Acquisition Plan with JRIMS.	FY 2024 Q1	FY 2024 Q4	6-7
Program conducts updated Technology Readiness Assessment for complete indoor/outdoor system concept.	FY 2024 Q3	FY 2024 Q4	6-7

**CWMD GATE-U (formerly Information Architecture (IA)/GATE-U)**

- **Problem:** The need to collect, maintain, secure, and share diverse data sets is growing to support the countering-WMD mission. The threat to data security is ever changing. The CWMD Office lacks a common platform for advanced data analytics, data pattern recognition, and a common platform to securely store, analyze, and archive large data sets (e.g., sensor networks).
- **Solution:** The CWMD GATE-U environment will provide a common platform to gather, integrate, analyze, and disseminate information to CWMD partners to anticipate, prevent, and respond to WMD threats to the homeland. The GATE-U environment can support an interconnected system-of-systems approach capable of integrating disparate data streams and information sources to identify unique indicators of threats to the homeland based on WMD activity. The GATE-U will disseminate operationally relevant results to Federal, State, local, and international partners.
- **Justification:** The FY 2024 President’s Budget provides \$2.1M for this project, same as the FY 2023 Enactment. Funding for this initiative will continue the development and integration of additional user sensors, data streams, applications, and information sources into the cloud-based environment. Additionally, CWMD will continue the development and integration of required security protocols as new applications and data collection and/or analysis enhancements are added. With a common platform, CWMD will have an agile environment for the development of security protocols and tools to leverage data into actionable information to support the CWMD mission.
- **Impact:** Completion of this project will support expansion of the quality and breadth of information available to complete data driven CWMD missions. It is expected to save cost and time by automating data analysis and promote integration between programs and DHS Components.

**Type of Research**

Developmental

**Technology Readiness Level**

TRLs 6-7

**Transition Plans**

The GATE-U environment will likely span development and operations due to the ever-changing threats and the growing need to collect, store, combine, and transmit data and information. Upon completion of the development efforts, the operations will transition to the appropriate operational Components with support by the GATE-U engineering team.



**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Continued development of the GATE-U environment to support addition of advanced analytics tools to the environment. Inclusion of Cognitive Sensor Network technology.	FY 2022 Q1	FY 2022 Q4	7
	FY 2023		
Continue development of the GATE-U environment to support addition of advanced analytics tools to the environment. Inclusion of Cognitive Sensor Network technology.	FY 2023 Q1	FY 2023 Q4	7
	FY 2024		
Continue development of the GATE-U environment to support addition of advanced analytics tools to the environment. Inclusion of Cognitive Sensor Network technology and prototyping operational user sensor network feeds.	FY 2024 Q1	FY 2024 Q4	7

**Advanced Technology Demonstration/Rapid Prototyping**

- **Problem:** There is a need to ensure that there are mechanisms in place to transition promising technologies developed by applied and developmental research into operational capabilities available for future acquisitions. As technologies mature, there is a need to develop research and operational prototype systems via an Advanced Technology Demonstration (ATD) or Rapid Prototyping. These efforts highlight the potential of the technology by placing a prototype system with operational users in an operational environment to gain feedback to inform acquisition requirements. As threats evolve and new operational capability gaps become known, it is expected one or more efforts to characterize new technologies in field environments will be needed to meet emerging operational gaps and requirements quickly and effectively.
- **Solution:** Funding will support the development, execution, and documentation of ATD and Rapid Prototyping projects. Since technologies mature at various rates and emerging operational gaps are identified in real-time, the exact nature of the projects is unknown until typically the year of execution.
- **Justification:** The FY 2024 President’s Budget provides \$4.1M for this project, an increase of \$0.1 million from the FY 2023 Enactment. Funding for this initiative will enable CWMD to rapidly address emerging threats and capability gaps through first-look operational assessments and proof-of-concept demonstrations of new prototype systems, with minimal modification as required to meet the operational scenario and application. It is crucial to have a process in place that allows new and emerging technologies to be developed into prototype systems that can be used to inform operational users and develop acquisition requirements.
- **Impact:** ATD/Rapid Prototyping funding will allow CWMD to be responsive to emerging technologies and urgent operational requirements/requests. Funding will allow CWMD to be proactive with operational users, industry partners, and inter-agency partners.

**Type of Research**

Developmental

**Technology Readiness Level**

TRL 6-7

**Transition Plans**

As the ATDs and prototypes conclude, the capability may stay with the operational Component to provide an interim capability until the final solution to provide the capability is produced, tested, and deployed or the ATD/prototype critical technology elements are transferred to the next phase of development and/or included in a production system.

**Project Schedule**

Research and Development Description	Planned Start Date	Planned Completion	TRL
	<b>FY 2022</b>		
Training toolkit for radiological/nuclear/chemical Phase III development and delivery of toolkits for demonstrations with operators.	FY 2021 Q1	FY 2022 Q3	6
Complete Preliminary Design Review of Low Profile, LIDAR-Enhanced Mobile Urban Radiation System (LP LEMURS).	FY 2022 Q1	FY 2022 Q3	6
Continue development and perform evaluation of an automated machine learning algorithm for predictive maintenance of RPMs - Advanced RPM Maintenance Operating Reporter (ARMOR).	FY 2021 Q4	FY 2022 Q4	5
	<b>FY 2023</b>		
Demonstrate LP LEMURS.	FY 2022 Q4	FY 2023 Q4	6
ATD(s) based on urgent/emerging capability gaps.	FY 2023 Q1	FY 2023 Q4	6-7
Training toolkit for radiological/nuclear/chemical Phase III final demonstration, equipment builds, report, and review.	FY 2023 Q1	FY 2023 Q1	7
Initiate up to one SBIR Phase III project capable of meeting DHS Component CWMD mission needs.	FY 2023 Q2	FY 2023 Q4	6
Continue R&D for the improvement and further development of enhanced biosensors.	FY 2023 Q3	FY 2023 Q4	6-7
	<b>FY 2024</b>		
Deliver LP LEMURS.	FY 2023 Q4	FY 2024 Q2	7
Conduct independent Government operational background and chamber testing for redesigned affordable, commercial-off-the-shelf aerosol biosensors that can rapidly detect, classify, and provide presumptive identification of biological agents in aerosolized samples in an operational (indoor and outdoor) environment.	FY 2024 Q1	FY 2024 Q2	6
ATD/Prototype(s) based on urgent/emerging capability gaps.	FY 2024 Q1	FY 2024 Q4	6-7
Continue R&D for the improvement and further development of enhanced biosensors.	FY 2024 Q1	FY 2024 Q4	6-7
Continue development of R/N detection and identification prototypes across land and seaports of entry.	FY 2024 Q1	FY 2024 Q4	6-7
Initiate up to one SBIR Phase III project capable of meeting DHS Component CWMD mission needs.	FY 2024 Q2	FY 2024 Q4	6

**TIBr HPRDS Objective Resolution (THOR) (formerly Thallium Bromide RIID)**

- **Problem:** There is a requirement to improve the efficiency of R/N detection and identification operations in the field and in performing secondary inspections. The current Basic HandHeld (BHH) RIIDs are limited by their detection and identification performance due to limited selection of detection materials available in the marketplace at prices that can be widely deployed to meet operational requirements. The current Concept of Operations consists of using the BHH RIIDs and supplementing them with advanced RIIDs for adjudicating sources that BHH cannot identify with certainty. The advanced RIIDs have the necessary identification but are expensive to deploy widely and present operational challenges such as weight and cryogenic cooling. The lack of cost-effective and better performing detection materials available in the marketplace is limiting the end user's efficiency of operations.
- **Solution:** Thallium Bromide RIID detection capability development, referred to as program TIBr Human Portable Radiological/Nuclear Detection Systems (HPRDS) Objective Resolution (THOR), is intended to transition this emerging technology from R&D to industry. This will be accomplished by developing TIBr Core Detection Modules (CDMs) and integrating CDMs into technology demonstrator RIIDs to demonstrate key attributes of the new technology. These improved capabilities will enable better detection, as well as better identification or equivalent detection and identification using less detector material and at a lower cost.
- **Justification:** The FY 2024 President's Budget provides \$0.5M for this project, a \$0.5M decrease from the FY 2023 Enactment. Funding for this initiative will allow the integration of CDMs into RIID prototypes and performing initial testing in laboratory environment. This work will set ground for developing up to nine TIBr technology demonstrators (comprised of prototype RIIDs based on TIBr core detector modules) and conducting performance testing assessing the advancement of the technology to TRL-6. The goal is to position the marketplace to be able to take over the technology to make further refinements of the RIIDs in advance of a next-generation RIID procurement. The program will facilitate acceleration of TIBr technology transition to the marketplace. This program will fund industry prototyping of radioisotope detectors with high resolution, as well as greater efficiency and sensitivity for Government evaluation. It will also promote competition of next generation RIIDs for a follow-on CWMD acquisition program. The successful development of a TIBr RIID that has near Advanced Handheld capability at a Basic Handheld price would provide significant benefits to CBP and other operational partners. A higher resolution RIID for initial secondary inspection would reduce the number of inconclusive secondary adjudications that would have to be referred to Laboratory and Scientific Services (LSS) for technical reach-back, potentially saving many hours of work, or allowing existing resources to be employed for higher priorities. It may eliminate the need to deploy and maintain a whole class of expensive Advanced Hand-Held systems. A better RIID system may also reduce the amount of wait time for commercial cargo conveyances to be cleared from secondary inspection, resulting in more efficient trade.
- **Impact:** Completion of this project will enable early transition of TIBr technology from R&D to Commercial Off-The-Shelf (COTS) available radioisotope detectors that could significantly improve operations and alarm adjudications in the field.

**Type of Research**

Developmental

**Technology Readiness Level**

TRL 5

**Transition Plans**

This program plans to transition the R&D TlBr effort to industry once it reaches TRL-6.

**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Laboratory Development of TlBr subassembly (Conducted under Transformational R&D).	FY 2022 Q3	FY 2023 Q2	5
	FY 2023		
Design TlBr Brassboard.	FY 2023 Q4	FY 2023 Q4	5
Vendor Development of Brassboard.	FY 2023 Q4	FY 2024 Q4	5
	FY 2024		
Vendor Testing of the TlBr Brassboard.	FY 2024 Q3	FY 2024 Q4	5
Brassboard Prototype Design Review and Demonstration.	FY 2024 Q3	FY 2024 Q4	5
Preliminary Design of TlBr Technology Demonstrator RIID.	FY 2024 Q3	FY 2024 Q4	5

### **CWMD Sensor Integration**

- **Problem:** Thousands of CBRN detection devices have been deployed across the United States. However, these detection devices have limits in the ability to integrate into a network that can collect, analyze, and distribute real-time information from deployed devices due to technological limitations. CWMD needs to establish the ability to collect, analyze, and distribute near real-time information from deployed detection devices to better protect the homeland.
- **Solution:** Recent detection and communication technology improvements provide an opportunity to network many CBRN sensors to provide a greatly enhanced real-time situational awareness system. CWMD will capture data from current and future fielded sensors and analyze that data using advanced algorithms to provide meaningful and actionable CBRN information. This project will expand upon prior research under the Cognitive Sensor Network (CSN) program to demonstrate integration of legacy and future detection technologies and cloud analytics.
- **Justification:** The FY 2024 President’s Budget provides \$1.0M for this project, same as the FY 2023 Enactment. Funding for this initiative will transition the CSN technology into the CWMD GATE-U cloud environment to support an information architecture. CWMD will build upon the CSN activity, further enhancing the interoperability of detection equipment and the capability of cloud analytics. The purpose is to enable the near real-time gathering and distribution of actionable CBRN data that can be analyzed centrally to search for and enable safe response to WMD threat signatures.
- **Impact:** Upon completion of this program, CWMD will have demonstrated interoperability and networking of CBRN sensors to support future requirements for detector communications. The CBRN sensors will feed cloud-based analytics in the CWMD GATE-U environment, to include machine learning approaches for CBRN anomaly and threat detection.

### **Type of Research**

Developmental

### **Technology Readiness Level**

TRLs 5-6

### **Transition Plans**

Upon completion of this program, CWMD will have demonstrated interoperability and networking of CBRN sensors to support future requirements for detector communications. The CBRN sensors will feed cloud-based analytics in the CWMD GATE-U environment, to include machine learning approaches for CBRN anomaly and threat detection.

**Project Schedule**

Research and Development Description	Planned Start Date	Planned Completion	TRL
	FY 2022		
Solicitation of R&D to support detector networking and analytics objectives, concluding with an initial demonstration.	FY 2022 Q2	FY 2023 Q2	5
	FY 2023		
Integration of new sensor capabilities into the GATE-U environment, to complement or supplant portions of the prior Cognitive Sensor Network technology.	FY 2023 Q2	FY 2024 Q2	6
	FY 2024		
Spiral development and integration of new sensor capabilities into the GATE-U environment, to complement or supplant portions of the prior Cognitive Sensor Network technology.	FY 2024 Q2	FY 2025 Q2	6-7

**Mobile Active Interrogation Using Neutrons (MAIN)**

- **Problem:** Current capabilities for scanning conveyances for shielded nuclear material (SNM) involve the use of individual platforms and technologies specifically designed to penetrate shielding materials and detect SNM. These systems have the advantage that they are also able to detect explosives or contraband. There exists a requirement for a single platform capable of scanning conveyances for multiple items of concern to DHS Components and SLTT partners.
- **Solution:** Development and demonstration of a mobile system using neutron interrogation to scan conveyances for SNM, drugs, and explosives in both CBP and TSA applications.
- **Justification:** The FY 2024 President’s Budget provides \$0.5M for this project, same as the FY 2023 Enactment. Funding for this research initiative will be used for spiral development of the developed capability for both CBP and TSA applications. This includes spiral development of hardware and algorithms for the optimized system.
- **Impact:** Completion of this project will result in a demonstration of a technology for scanning conveyances for SNM, drugs, and explosives in both CBP and TSA applications.

**Type of Research**

Developmental

**Technology Readiness Level**

TRL 5-7

**Transition Plans**

Technologies developed under the MAIN project will transition to a future acquisition supporting TSA and CBP applications.



**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Complete integration of component technologies in preparation for Vendor Development Tests.	FY 2022 Q3	FY 2022 Q3	6
Carry out Vendor Development Tests and evaluate results.	FY 2022 Q3	FY 2022 Q4	6
Continue planning for government-led characterization events.	FY 2022 Q1	FY 2022 Q4	6
Technology demonstration and characterization (TD&C).	FY 2022 Q3	FY 2022 Q4	7
	FY 2023		
Carry out government-led characterization and evaluate results.	FY 2023 Q1	FY 2023 Q3	7
Initiate spiral development and integration of hardware and algorithms for optimized system leading to data collection and analysis.	FY 2023 Q4	FY 2023 Q4	7
	FY 2024		
Continue spiral development and integration of hardware and algorithms for optimized system leading to data collection and analysis.	FY 2024 Q1	FY 2024 Q4	7

**Next Generation Mobile Systems**

- **Problem:** Due to the aged and obsolete state of the currently deployed mobile Radiation Portal Monitors (mRPM), CBP has a requirement to recapitalize the current mRPM fleet with a more agile capability that also supports surge operations with improved efficacy, ease of set up, function of multiple units, and more effective transport and deployment to other POEs when required.
- **Solution:** To develop, test, and acquire next generation mobile systems (MRPM-SV) in support of CBP with enhanced capabilities that include more agile, surge capable, relocatable, and mobile radiological/nuclear (R/N) scanning capabilities to detect and classify R/N threat sources and weapon Components that may be smuggled into the United States CWMD may leverage the investment in Radiation Portal Monitor Replacement Program (RPM-RP) detectors for integration into a new vehicular and/or movable platform that meets operational requirements.
- **Justification:** No CWMD R&D funding for this project is included in the FY 2024 President's Budget.
- **Impact:** Mobile systems are essential to protecting the homeland from radiological and nuclear threats and to the ability of CBP to continue to perform its radiation scanning mission. The MRPM-SV systems will provide CBP with critical radiation scanning capability through replacement of the current aged mRPM fleet with more agile and surge capable systems.

**Type of Research**

Developmental

**Technology Readiness Level**

TRL 7

**Transition Plans**

N/A

**Project Schedule**

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Continue acquisition artifact and acquisition strategy development.	FY 2022 Q4	FY 2023 Q4	N/A
	FY 2023		
Complete ADE-1	FY 2023 Q3	FY 2023 Q3	N/A
Complete Alternatives Analysis	FY 2023 Q3	FY 2024 Q2	N/A
	FY 2024		
Conduct ADE-2A	FY 2024 Q3	FY 2024 Q3	N/A

**Radiation Portal Monitor (RPM) Recapitalization (RAPTER)**

- **Problem:** Since 2003, DHS has deployed approximately 1,400 RPM systems at Land and Sea ports of entry, airports, and mail facilities within the US, with an original estimated operational life of 10 to 13 years. Many of the deployed RPMs have surpassed their intended design life. Due to the age of the deployed systems, a number of known obsolescence issues exist, including limited state of health reporting, no automatic gain stabilization, no automatic calibration, nuisance alarms, and limited capability to inform users when systems are no longer operating within the required performance envelope.
- **Solution:** CWMD will support CBP’s requirement in law to maintain nearly 100 percent R/N screening of conveyances entering the U.S. at land and seaports of entry. The anticipated solution will be influenced by CBP’s strategy to deploy NII systems extensively and be documented in terms of CBP’s Port of the Future concept. In the near term, this will involve CWMD supporting CBP’s efforts to document mission needs/gaps/requirements and enhancing the existing fleet up RPMs via SLEP efforts and modular upgrades until a fleet recapitalization is justified.
- **Justification:** No CWMD R&D funding is included for RAPTER in the FY 2024 President’s Budget.
- **Impact:** CWMD will work with CBP to determine whether a future recapitalization effort is needed for the current fleet maintaining R/N screening of conveyances entering the United States at land and seaports of entry.

**Type of Research**

N/A

**Technology Readiness Level**

N/A

**Transition Plans**

N/A

Project Schedule

Research & Development Description	Planned Start Date	Planned Completion	TRL Level(s)
	FY 2022		
Complete required acquisition document artifacts for ADE-1.	FY 2022 Q4	FY 2023 Q1	N/A
Upgrade proof-of-concept system with new gamma detector material.	FY 2022 Q4	FY 2024 Q1	6
	FY 2023		
Support the CBP needs/gaps/requirements documentation efforts as needed.	FY 2023 Q1	N/A	N/A
	FY 2024		
Support the CBP needs/gaps/requirements documentation efforts as needed.	FY 2023 Q1	N/A	N/A

# Department of Homeland Security

## *Countering Weapons of Mass Destruction*

### *Federal Assistance*



**Fiscal Year 2024**

**Congressional Justification**

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## Federal Assistance

## Budget Comparison and Adjustments

## Comparison of Budget Authority and Request

*(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Training, Exercises, and Readiness	-	-	\$19,251	-	-	\$19,559	-	-	\$21,268	-	-	\$1,709
Securing the Cities	-	-	\$30,040	-	-	\$34,628	-	-	\$34,465	-	-	(\$163)
Biological Support	-	-	\$83,657	-	-	\$84,996	-	-	\$104,737	-	-	\$19,741
<b>Total</b>	-	-	<b>\$132,948</b>	-	-	<b>\$139,183</b>	-	-	<b>\$160,470</b>	-	-	<b>\$21,287</b>
Subtotal Discretionary - Appropriation	-	-	\$132,948	-	-	\$139,183	-	-	\$160,470	-	-	\$21,287

The Countering Weapons of Mass Destruction Office (CWMD) supports the frontline operations of its State, local, tribal, and territorial (SLTT) partners. This office addresses critical vulnerabilities to help local communities prepare and build capacity in detecting, identifying, responding to, and mitigating chemical, biological, radiological, and nuclear threats and incidents. With the Federal Assistance appropriation and mission, CWMD aligns operational programs and activities across the WMD threat space and allows for consistent and persistent engagement.

The FA appropriation includes the following Programs, Projects, and Activities (PPAs):

**Training, Exercise, and Readiness:** This PPA provides support to local and regional jurisdictions and DHS operating Components to reduce the risk of a deployment of a weapon of mass destruction and the movement of chemical, biological, radiological, and nuclear materials within the homeland. This includes readiness programs and activities that provide mission-related training, exercises, technical assistance, subject matter expertise, and capability enhancement for local jurisdictions and DHS Component personnel to support preparedness for chemical, biological, radiological, and nuclear events.

**Securing the Cities (STC):** This PPA enhances the ability of the United States to detect and prevent terrorist attacks and other high-consequence events utilizing nuclear or other radiological materials that pose a risk to homeland security in high-risk urban areas

**Biological Support:** This PPA supports the Nation's primary biodetection capability, BioWatch, which provides early warning of bioterrorism and helps communities across the Nation prepare and respond. Supporting detection, rapid notification, preparedness, and planning efforts helps Federal, State, and local decision-makers take steps to save lives and mitigate consequences. BioWatch provides early warning of a bioterrorism attack in over 30 densely populated jurisdictions and special events across the country.



**Federal Assistance**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$132,948</b>	<b>\$139,183</b>	<b>\$160,470</b>
Carryover - Start of Year	\$4,204	\$7,884	-
Recoveries	\$210	\$3	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	\$1,000	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$138,362</b>	<b>\$147,070</b>	<b>\$160,470</b>
Collections - Reimbursable Resources	\$217	\$221	\$225
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$138,579</b>	<b>\$147,291</b>	<b>\$160,695</b>
Obligations (Actual/Estimates/Projections)	\$130,480	\$147,291	\$160,695
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

Federal Assistance  
Collections – Reimbursable Resources  
*(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Department of Homeland Security - Management Directorate	-	-	\$217	-	-	\$221	-	-	\$225
Total Collections	-	-	\$217	-	-	\$221	-	-	\$225

**Federal Assistance**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>FY 2022 Enacted</b>	-	-	-	<b>\$132,948</b>	<b>\$132,948</b>
<b>FY 2023 Enacted</b>	-	-	-	<b>\$139,183</b>	<b>\$139,183</b>
<b>FY 2024 Base Budget</b>	-	-	-	<b>\$139,183</b>	<b>\$139,183</b>
<b>Total Technical Changes</b>	-	-	-	-	-
<b>Total Annualizations and Non-Recurs</b>	-	-	-	-	-
BioWatch Current Service Adjustments	-	-	-	\$2,156	\$2,156
Securing the Cities (STC)	-	-	-	(\$163)	(\$163)
Training, Exercise, and Readiness	-	-	-	\$409	\$409
<b>Total Pricing Changes</b>	-	-	-	<b>\$2,402</b>	<b>\$2,402</b>
<b>Total Adjustments-to-Base</b>	-	-	-	<b>\$2,402</b>	<b>\$2,402</b>
<b>FY 2024 Current Services</b>	-	-	-	<b>\$141,585</b>	<b>\$141,585</b>
<b>Total Transfers</b>	-	-	-	-	-
BioWatch Threat Based Enhancement	-	-	-	\$17,585	\$17,585
Chemical Support	-	-	-	\$1,300	\$1,300
<b>Total Program Changes</b>	-	-	-	<b>\$18,885</b>	<b>\$18,885</b>
<b>FY 2024 Request</b>	-	-	-	<b>\$160,470</b>	<b>\$160,470</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	-	<b>\$21,287</b>	<b>\$21,287</b>

## Federal Assistance Justification of Pricing Changes

*(Dollars in Thousands)*

	FY 2024 President's Budget				
	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>Pricing Change 1 - BioWatch Current Service Adjustments</b>	-	-	-	\$2,156	\$2,156
Biological Support	-	-	-	\$2,156	\$2,156
<b>Pricing Change 2 - Securing the Cities (STC)</b>	-	-	-	(\$163)	(\$163)
Securing the Cities	-	-	-	(\$163)	(\$163)
<b>Pricing Change 3 - Training, Exercise, and Readiness</b>	-	-	-	\$409	\$409
Training, Exercises, and Readiness	-	-	-	\$409	\$409
<b>Total Pricing Changes</b>	-	-	-	\$2,402	\$2,402

### **Pricing Change 1 – BioWatch Current Services Adjustments:**

Base Activity Funding: This pricing change impacts the Base non-pay cost drivers for the Biological Support PPA, which totals \$85.0M.

Pricing Change Explanation: This pricing change reflects BioWatch operating cost increase of \$2.2M, largely associated with daily field sample collection, laboratory staffing, purchases of critical reagents, and other supplies/consumables for field and lab operations, and the staffing associated with the quality assurance program and jurisdictional coordination. The growth was calculated based on changes in contract costs, consumables acquisition, and field collection costs. Collectively, these represent a 2.5 percent increase over the current services cost of \$85M.

### **Pricing Change 2 – Securing the Cities (STC):**

Base Activity Funding: This pricing change impacts the Base non-pay cost drivers for the Securing the Cities PPA, which totals \$34.6M.

Pricing Change Explanation: This pricing change reflects an adjustment of (0.5 percent) reflecting regional program management costs that do not re-occur. The (0.5 percent) represents a net decrease of \$0.2M over the current services costs of \$34.6M.

### **Pricing Change 3 – Training, Exercise, and Readiness:**

Base Activity Funding: This Pricing change impacts the Base non-pay cost drivers for Training and Exercise activities, which total \$7.6M within the Training, Exercise, and Readiness PPA.

Pricing Change Explanation: This pricing change reflects an increase of 5.4 percent for Training, Exercise, and Readiness operating costs largely associated with spectral analysis software, staffing for training and threat materials management, and exercise implementation. The increase of \$0.4M was calculated by changes in contract costs and increases for deployment costs. Collectively, the changes represent a 5.4 percent increase.

## Federal Assistance Justification of Program Changes

(Dollars in Thousands)

	FY 2024 President's Budget				
	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>Program Change 1 - BioWatch Threat Based Enhancement</b>	-	-	-	<b>\$17,585</b>	<b>\$17,585</b>
Biological Support	-	-	-	\$17,585	\$17,585
<b>Program Change 2 - Chemical Support</b>	-	-	-	<b>\$1,300</b>	<b>\$1,300</b>
Training, Exercises, and Readiness	-	-	-	\$1,300	\$1,300
<b>Total Program Changes</b>	-	-	-	<b>\$18,885</b>	<b>\$18,885</b>

### **Program Change 1 – BioWatch Threat-Based Enhancement:**

(\$ in thousands)	Pos	FTE	Amount
Base: Current Services & Transfers	-	-	\$84,996
Program Change	-	-	\$17,585

**Description:** CWMD is transitioning to an adaptive approach to environmental biodetection to better meet the distinct capabilities and operational needs of SLTT jurisdictions. As part of this adaptive approach and to enhance capabilities and target areas of highest residual national security risk, the BioWatch program office is taking steps to better address the dynamic threat environment, reduce detection times, expand program coverage, and bolster operational stakeholder engagement. The FY 2024 Budget includes an increase of \$17.6M for threat-based program enhancements to 1) introduce advanced testing techniques for emerging biothreats, 2) optimize laboratory workflows, 3) expand surge detection capacity for special events and non-BioWatch jurisdictions, and 4) provide State and local stakeholders with training and exercising of broadened biodefense capabilities. Much of the work on biodetection capability enhancements was initiated in FY 2023 as the program adjusts to the needs of the state and local stakeholders. To continue this work, an investment is required to support partners to move biodetection forward with CWMD. The program base is \$85M.

### **Justification:**

**Threats:** Consistent with recent biological threat and risk assessments and strategic biodefense guidance, testing for additional threat agents is prudent. Expanded coverage of the biothreat spectrum requires additional advisory and assistance services (A&AS) and supplies/consumables for lab operations and quality assurance (QA). Polymerase chain reaction analysis that tests for both RNA and DNA genetic material requires new assays, reagents, and test plates, along with additional lab staff and test equipment. Additional reagents and A&AS labor are also needed for QA proficiency testing and audits of the additional threat agents to ensure continued accuracy and reliability of sample test results. An expanded sample set better covers the spectrum of potential aerosolized threats that could be weaponized. [\$15.7M]

**Timeliness:** Technical studies & analysis to perform workflow testing and optimization are needed to reduce the time required to analyze air samples and increase testing throughput. End-user feedback and engagement in the optimization process are critical to ensure process improvements function as intended. [\$0.7M]

**Coverage:** Deployment to cover special events in non-BioWatch jurisdictions requires significant planning, movement, positioning, and recovery of biodetection assets, federal employees, and support staff. Because there is no infrastructure already in place, portable sample unit (PSU) arrays must be modeled and deployed according to site surveys/visits. Estimated costs, based largely on past event coverage, allow the program to cover one additional major (5-day) event and one additional minor (2-day) event per year. [\$0.4M]

**Engagement:** Cooperative agreements with State and local jurisdictions will provide backfill and overtime funding for staff to develop and maintain robust response plans and participate in training and scaled exercises related to biodefense for improved operational proficiency. [\$0.8M]

**Performance:** An expanded sample set better covers the spectrum of potential aerosolized threats that could be weaponized. Workflow optimization shrinks overall detection timelines, thereby enabling more rapid incident response. Expanded coverage of high-visibility special events protects more people and enhances the agility and unpredictability of the program, thereby serving as a strategic deterrent to drive down national security risk. Increased State and local participation in biodefense exercises improve operational proficiency and response effectiveness to save lives and mitigate consequences.

#### **Program Change 2 – Chemical Support:**

<i>(\$ in thousands)</i>	<b>Pos</b>	<b>FTE</b>	<b>Amount</b>
Base: Current Services & Transfers	-	-	\$5,080
Program Change	-	-	\$1,300

**Description:** The FY 2024 Budget includes an increase of \$1.3M for Chemical Support to expand the implementation of the program's work with SLTT partners to expand engagements and assessment methodologies to one additional jurisdiction, with the goal of helping the jurisdiction optimize their chemical response capabilities. The base for Chemical Support is \$5.1M. Engaging with and assessing a single jurisdiction requires providing technical assistance to CWMD's SLTT partners. Technical Assistance for a single jurisdiction includes subject matter experts, training and engagement, administrative support, and travel. Technical Assistance is provided to a jurisdiction for a year at an average cost of \$1.3M. This program change will support engagement and assessment of one additional jurisdiction.

**Justification:** The engagements and assessment methodologies are building off the legacy Chemical Defense Demonstration Initiative to deliver a comprehensive methodology for all cities to evaluate local chemical threats and defensive capability gaps at the community level. Base funding

enables engaging and assessing two jurisdictions every year. The additional \$1.3M request will allow the program to provide this assistance to one additional jurisdiction in FY 2024, for a total of three jurisdictions.

**Performance:** Expanded engagements and assessments to one additional jurisdiction each year will support community preparedness for chemical attacks. Timely identification and closure of local detection and response capability gaps will improve defensive postures in these jurisdictions to help save lives and mitigate damage.



## Federal Assistance Non Pay Budget Exhibits

### Non Pay Summary (Dollars in Thousands)

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Training, Exercises, and Readiness	\$19,251	\$19,559	\$21,268	\$1,709
Securing the Cities	\$30,040	\$34,628	\$34,465	(\$163)
Biological Support	\$83,657	\$84,996	\$104,737	\$19,741
<b>Total</b>	<b>\$132,948</b>	<b>\$139,183</b>	<b>\$160,470</b>	<b>\$21,287</b>
Subtotal Discretionary - Appropriation	\$132,948	\$139,183	\$160,470	\$21,287

### Non Pay by Object Class (Dollars in Thousands)

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$378	\$618	\$580	(\$38)
23.3 Communications, Utilities, & Miscellaneous	\$7	\$7	\$2,270	\$2,263
25.1 Advisory & Assistance Services	\$45,839	\$45,456	\$48,152	\$2,696
25.2 Other Services from Non-Federal Sources	\$2,559	\$2,558	\$4,267	\$1,709
25.3 Other Purchases of goods and services	\$2,095	\$2,204	\$2,204	-
25.7 Operation & Maintenance of Equipment	\$2,187	\$3,973	\$4,204	\$231
26.0 Supplies & Materials	\$22,100	\$21,894	\$32,469	\$10,575
31.0 Equipment	\$13,748	\$17,066	\$19,328	\$2,262
41.0 Grants, Subsidies, and Contributions	\$44,035	\$45,407	\$46,996	\$1,589
<b>Total - Non Pay Budget Object Class</b>	<b>\$132,948</b>	<b>\$139,183</b>	<b>\$160,470</b>	<b>\$21,287</b>

*Training, Exercises, and Readiness – PPA***Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Training, Exercises, and Readiness	-	-	\$19,251	-	-	\$19,559	-	-	\$21,268	-	-	\$1,709
<b>Total</b>	-	-	<b>\$19,251</b>	-	-	<b>\$19,559</b>	-	-	<b>\$21,268</b>	-	-	<b>\$1,709</b>
Subtotal Discretionary - Appropriation	-	-	\$19,251	-	-	\$19,559	-	-	\$21,268	-	-	\$1,709

**PPA Level I Description**

The Training, Exercises, and Readiness PPA prepares local jurisdictions and DHS Components to prevent, protect against, and respond to chemical, biological, radiological, and nuclear (CBRN) events in the homeland. This includes readiness programs and activities that provide mission-related training, exercises, technical assistance, subject matter expertise, and capability building for local jurisdictions and DHS Component personnel to support preparedness for CBRN events. The PPA consists of three separate programs: Training and Exercises, Chemical Support, and Mobile Detection Deployment Program (MDDP).

**Training and Exercises:** CWMD's Training and Exercise program provides the requisite knowledge, technical skills, and resources to Federal, State, and local law enforcement, public health, and first responder communities to ensure communities are effective and proficient in preparing for, preventing, protecting against, and responding to CBRN threats to the homeland. Working with CWMD program offices like Chemical Support, BioWatch, STC, and MDDP, Training delivers in-person and virtual courses in detection, identification, and response to DHS operational Component (CBP, TSA, USCG), local, and regional mission partners across the entire spectrum of CBRN threats. CWMD's Training and Exercise program enables partner stakeholders to assess capability-related training and skills in realistic threat environments, including using CBRN threat source material (e.g., special nuclear material) and simulated adversaries and mock device training aids. Using the Homeland Security Exercise and Evaluation Program (HSEEP) methodology, Exercises works with partners to identify strengths and weaknesses in the overall effectiveness of plans, policies, procedures, and stakeholder knowledge to ensure operator proficiency, promote readiness, and evaluate program and operational efficacy across all levels.

**Chemical Support:** Chemical Support facilitates collaboration and coordination with and Homeland Security Enterprise (HSE) partners which enables them to prevent, protect against, and rapidly respond to chemical incidents. The program provides technical expertise on current, emerging, and forecasted chemical risks (threats, vulnerabilities, consequences, and related health security matters) and advises Federal and SLTT stakeholders on policy, plans, and operational requirements for a robust chemical defense and security posture. The program works with SLTT jurisdictions to

assess and optimize jurisdictional capabilities through engagements and assessment methodologies and delivers analytic decision support directly to local jurisdictions for defensive capability building and resourcing necessary to address identified shortfalls.

**Mobile Detection Deployment Program:** MDDP supplements CBRN detection and reporting capabilities for Federal and SLTT authorities. Using six pre-positioned Mobile Detection Deployment Units (MDDU) outfitted with an extensive suite of advanced CBRN detection equipment and communications, MDDP supports domestic law enforcement and first responder capabilities across the country to detect chemical/biological agents and R/N material and devices (e.g., improvised nuclear device, radiological dispersal device, radiological explosive device). Deployments to locations across the country can support the full range of mission postures, from steady-state operations to intelligence/incident-driven search operations.

## Training, Exercises, and Readiness – PPA Budget Authority and Obligations

*(Dollars in Thousands)*

	FY 2022	FY 2023	FY 2024
<b>Enacted/Request</b>	<b>\$19,251</b>	<b>\$19,559</b>	<b>\$21,268</b>
Carryover - Start of Year	\$1,460	\$4,762	-
Recoveries	\$206	\$2	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	-	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$20,917</b>	<b>\$24,323</b>	<b>\$21,268</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$20,917</b>	<b>\$24,323</b>	<b>\$21,268</b>
Obligations (Actual/Estimates/Projections)	\$16,183	\$24,323	\$21,268
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

## Training, Exercises, and Readiness – PPA

### Summary of Budget Changes

*(Dollars in Thousands)*

	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>FY 2022 Enacted</b>	-	-	-	<b>\$19,251</b>	<b>\$19,251</b>
<b>FY 2023 Enacted</b>	-	-	-	<b>\$19,559</b>	<b>\$19,559</b>
<b>FY 2024 Base Budget</b>	-	-	-	<b>\$19,559</b>	<b>\$19,559</b>
<b>Total Technical Changes</b>	-	-	-	-	-
<b>Total Annualizations and Non-Recurs</b>	-	-	-	-	-
Training, Exercise, and Readiness	-	-	-	\$409	\$409
<b>Total Pricing Changes</b>	-	-	-	<b>\$409</b>	<b>\$409</b>
<b>Total Adjustments-to-Base</b>	-	-	-	<b>\$409</b>	<b>\$409</b>
<b>FY 2024 Current Services</b>	-	-	-	<b>\$19,968</b>	<b>\$19,968</b>
<b>Total Transfers</b>	-	-	-	-	-
Chemical Support	-	-	-	\$1,300	\$1,300
<b>Total Program Changes</b>	-	-	-	<b>\$1,300</b>	<b>\$1,300</b>
<b>FY 2024 Request</b>	-	-	-	<b>\$21,268</b>	<b>\$21,268</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	-	<b>\$1,709</b>	<b>\$1,709</b>

## Training, Exercises, and Readiness – PPA

### Non Pay Budget Exhibits

#### Non Pay Summary

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Training, Exercises, and Readiness	\$19,251	\$19,559	\$21,268	\$1,709
<b>Total</b>	<b>\$19,251</b>	<b>\$19,559</b>	<b>\$21,268</b>	<b>\$1,709</b>
Subtotal Discretionary - Appropriation	\$19,251	\$19,559	\$21,268	\$1,709

#### Non Pay by Object Class

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$145	\$265	\$265	-
25.1 Advisory & Assistance Services	\$14,327	\$14,327	\$14,327	-
25.2 Other Services from Non-Federal Sources	\$2,559	\$2,558	\$4,267	\$1,709
25.3 Other Purchases of goods and services	\$2,095	\$2,204	\$2,204	-
25.7 Operation & Maintenance of Equipment	\$125	\$205	\$205	-
<b>Total - Non Pay Budget Object Class</b>	<b>\$19,251</b>	<b>\$19,559</b>	<b>\$21,268</b>	<b>\$1,709</b>

**Non Pay Cost Drivers***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Total Changes</b>
Training and Exercises	\$7,492	\$7,613	\$8,022	\$409
Mobile Detection Deployment Program	\$6,759	\$6,866	\$6,866	-
Chemical Support	\$5,000	\$5,080	\$6,380	\$1,300
<b>Total - Non-Pay Cost Drivers</b>	<b>\$19,251</b>	<b>\$19,559</b>	<b>\$21,268</b>	<b>\$1,709</b>

**Explanation of Non-Pay Cost Drivers**

**Training and Exercise:** Cost drivers for the Training and Exercise program include technical assistance, advisory and assistance services, and Federal staff travel. Shared program costs include technical assistance for CBRN source material storage, transport, and handling and the development of training aids (e.g., mock devices) for realistic training and exercise environments; Federal staff travel is needed to provide oversight and participant/stakeholder coordination, as well as advisory and assistance services for program management support. In addition, Training provides technical assistance for course design, development, and administration through FEMA's National Domestic Preparedness Consortium, U.S. Department of Energy National Laboratories, and contracted training providers. Exercise costs stem primarily from advisory and assistance services needed to plan, develop, execute, and report on the broad range of CBRN exercises (tabletop to full-scale) conducted across the country.

**Mobile Detection Deployment Program:** MDDP cost drivers include storage, fuel, and maintenance of the distributed MDDU fleet; procurement, maintenance, calibration, and logistics hub of CBRN detection equipment for the MDDUs; and advisory and assistance services for just-in-time tailgate training, steady-state / enhanced steady-state deployment support and program management. Other IT-related costs include mobile devices and cellular service for deployed communications; cloud-based CBRN sensor networking; and licensing of spectral analysis software for technical reach-back.

**Chemical Support:** Chemical Support provides technical assistance to SLTT public safety authorities to assess and optimize jurisdictional capabilities through engagements and assessment methodologies. An additional \$1.3M will provide technical assistance to three jurisdictions in FY 2024.

*Securing the Cities – PPA***Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Securing the Cities	-	-	\$30,040	-	-	\$34,628	-	-	\$34,465	-	-	(\$163)
<b>Total</b>	-	-	<b>\$30,040</b>	-	-	<b>\$34,628</b>	-	-	<b>\$34,465</b>	-	-	<b>(\$163)</b>
Subtotal Discretionary - Appropriation	-	-	\$30,040	-	-	\$34,628	-	-	\$34,465	-	-	(\$163)

**PPA Level I Description**

**Securing The Cities:** Through the STC PPA, CWMD enhances the Nation's ability to detect and prevent terrorist attacks and other high-consequence events utilizing nuclear or radiological materials that threaten high-risk urban areas. STC is a critical component of CWMD's defense-in-depth strategy to maximize detection opportunities from the furthest distance practicable to the intended target area. STC provides funding, equipment, and training and exercise support through cooperative agreements to ensure that radiological detection is integrated into day-to-day operations. Using regional program offices, STC procures detection equipment, guides the development of contingency operations and standard operating procedures, and integrates STC partner programs into a national radiological/nuclear (R/N) detection architecture.



**Securing the Cities – PPA**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$30,040</b>	<b>\$34,628</b>	<b>\$34,465</b>
Carryover - Start of Year	\$707	\$3,057	-
Recoveries	\$4	\$1	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	-	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$30,751</b>	<b>\$37,686</b>	<b>\$34,465</b>
Collections - Reimbursable Resources	-	-	-
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$30,751</b>	<b>\$37,686</b>	<b>\$34,465</b>
Obligations (Actual/Estimates/Projections)	\$27,668	\$37,686	\$34,465
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Securing the Cities – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>FY 2022 Enacted</b>	-	-	-	<b>\$30,040</b>	<b>\$30,040</b>
<b>FY 2023 Enacted</b>	-	-	-	<b>\$34,628</b>	<b>\$34,628</b>
<b>FY 2024 Base Budget</b>	-	-	-	<b>\$34,628</b>	<b>\$34,628</b>
<b>Total Technical Changes</b>	-	-	-	-	-
<b>Total Annualizations and Non-Recurs</b>	-	-	-	-	-
Securing the Cities (STC)	-	-	-	(\$163)	(\$163)
<b>Total Pricing Changes</b>	-	-	-	<b>(\$163)</b>	<b>(\$163)</b>
<b>Total Adjustments-to-Base</b>	-	-	-	<b>(\$163)</b>	<b>(\$163)</b>
<b>FY 2024 Current Services</b>	-	-	-	<b>\$34,465</b>	<b>\$34,465</b>
<b>Total Transfers</b>	-	-	-	-	-
<b>Total Program Changes</b>	-	-	-	-	-
<b>FY 2024 Request</b>	-	-	-	<b>\$34,465</b>	<b>\$34,465</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	-	<b>(\$163)</b>	<b>(\$163)</b>

## Securing the Cities – PPA Non Pay Budget Exhibits

### Non Pay Summary (Dollars in Thousands)

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Securing the Cities	\$30,040	\$34,628	\$34,465	(\$163)
<b>Total</b>	<b>\$30,040</b>	<b>\$34,628</b>	<b>\$34,465</b>	<b>(\$163)</b>
Subtotal Discretionary - Appropriation	\$30,040	\$34,628	\$34,465	(\$163)

### Non Pay by Object Class (Dollars in Thousands)

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$113	\$113	\$75	(\$38)
23.3 Communications, Utilities, & Miscellaneous	-	-	\$2,263	\$2,263
25.1 Advisory & Assistance Services	\$4,455	\$4,455	\$2,212	(\$2,243)
25.7 Operation & Maintenance of Equipment	-	-	\$231	\$231
31.0 Equipment	\$12,478	\$17,066	\$18,454	\$1,388
41.0 Grants, Subsidies, and Contributions	\$12,994	\$12,994	\$11,230	(\$1,764)
<b>Total - Non Pay Budget Object Class</b>	<b>\$30,040</b>	<b>\$34,628</b>	<b>\$34,465</b>	<b>(\$163)</b>

**Non Pay Cost Drivers***(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Total Changes</b>
Equipment	\$5,345	\$17,241	\$18,454	\$1,213
Regional Program Management	\$11,645	\$7,008	\$6,100	(\$908)
Backfill and Overtime	\$6,891	\$4,732	\$5,130	\$398
Other Costs	\$6,159	\$5,647	\$4,781	(\$866)
<b>Total - Non-Pay Cost Drivers</b>	<b>\$30,040</b>	<b>\$34,628</b>	<b>\$34,465</b>	<b>(\$163)</b>

**Explanation of Non-Pay Cost Drivers**

**Equipment:** This funding supports new equipment procurement as well as operations and maintenance of fielded assets. STC plans to develop and implement an Integrated Logistics Hub to provide long-term logistic support to regional partners.

**Regional Program Management:** These are costs associated with maintaining the 13 regional offices, including salaries for the program manager and staff,

**Backfill and Overtime:** Cooperative agreement funding for this effort supports initial training of non-Federal personnel in new STC regions as well as initial and refresher training for regional partners in sustainment to maintain capability. This level of funding supports the continuation of training in all 13 STC regions.

**Other Costs:** CWMD requires support contractors to develop and administer the STC program. CWMD also has other costs with program administration, such as contracts to support wireless networks and a Global Information Infrastructure providing a common operating picture to Federal, State, and local agencies for STC regions.

*Biological Support – PPA***Budget Comparison and Adjustments****Comparison of Budget Authority and Request***(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget			FY 2023 to FY 2024 Total Changes		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Biological Support	-	-	\$83,657	-	-	\$84,996	-	-	\$104,737	-	-	\$19,741
<b>Total</b>	-	-	<b>\$83,657</b>	-	-	<b>\$84,996</b>	-	-	<b>\$104,737</b>	-	-	<b>\$19,741</b>
Subtotal Discretionary - Appropriation	-	-	\$83,657	-	-	\$84,996	-	-	\$104,737	-	-	\$19,741

**PPA Level I Description**

**Biological Support:** The Biological Support PPA encompasses CWMD efforts to detect and safeguard against biological threats to the Homeland. Biological support is routinely delivered through BioWatch steady-state and special event detection operations across the country. As the Nation's primary biodetection capability, BioWatch provides early warning of bioterrorism and helps local communities prepare to respond. The combination of detection, rapid notification, preparedness, and planning helps FSLTT decision-makers take steps to save lives and mitigate consequences.

While centrally managed by the CWMD Office, the program is locally operated through cooperative agreements by a network of field staff, scientists, laboratory technicians, emergency managers, and public health officials. In each of the 30+ BioWatch jurisdictions, collectors draw air through filters to capture particles, and field technicians transport those filters to labs, where scientists process and analyze the samples for evidence of biological threat agents.

In the event a potential threat is identified, the BioWatch program office within CWMD alerts FSLTT subject matter experts and decision-makers using a robust notification system and facilitates a national coordination call to confirm the threat. By establishing a pre-coordinated local stakeholder community in each jurisdiction and by training and exercising proper stakeholder response actions to realistic threat scenarios, the BioWatch program office ensures local jurisdictions are prepared to take prompt response actions that minimize casualties and protect the public.

Spanning the entire local collection and testing cycle is a rigorous quality assurance program that ensures the overall reliability and accuracy of sample results for the BioWatch program. This allows decision-makers to respond with confidence in the event of a positive test result. The program office also provides significant logistics support to local field and laboratory operations for the continuous operation and maintenance of portable sampling units and the replenishment of supplies and consumables like air filters and laboratory reagents.

As part of CWMD's adaptive approach to environmental biodetection to enhance capabilities and target areas of highest residual national security risk, the BioWatch program office is taking steps to better address the dynamic threat environment, reduce detection times, expand program coverage, and bolster operational stakeholder engagement. This includes the introduction of advanced testing techniques for emerging biothreats, optimization of field and laboratory workflows, consideration of novel screening technologies, expansion of surge detection capacity for special events and non-BioWatch jurisdictions, and training/exercising of expanded State and local biodefense capabilities.

**Biological Support – PPA**  
**Budget Authority and Obligations**  
*(Dollars in Thousands)*

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Enacted/Request</b>	<b>\$83,657</b>	<b>\$84,996</b>	<b>\$104,737</b>
Carryover - Start of Year	\$2,037	\$65	-
Recoveries	-	-	-
Rescissions to Current Year/Budget Year	-	-	-
Net Sequestered Resources	-	-	-
Reprogramming/Transfers	\$1,000	-	-
Supplementals	-	-	-
<b>Total Budget Authority</b>	<b>\$86,694</b>	<b>\$85,061</b>	<b>\$104,737</b>
Collections - Reimbursable Resources	\$217	\$221	\$225
Collections - Other Sources	-	-	-
<b>Total Budget Resources</b>	<b>\$86,911</b>	<b>\$85,282</b>	<b>\$104,962</b>
Obligations (Actual/Estimates/Projections)	\$86,629	\$85,282	\$104,962
<b>Personnel: Positions and FTE</b>			
Enacted/Request Positions	-	-	-
Enacted/Request FTE	-	-	-
<b>Onboard and Actual FTE</b>			
Onboard (Actual/Estimates/Projections)	-	-	-
FTE (Actual/Estimates/Projections)	-	-	-

**Biological Support – PPA**  
**Collections – Reimbursable Resources**  
*(Dollars in Thousands)*

	FY 2022 Enacted			FY 2023 Enacted			FY 2024 President's Budget		
	Pos.	FTE	Amount	Pos.	FTE	Amount	Pos.	FTE	Amount
Department of Homeland Security - Management Directorate	-	-	\$217	-	-	\$221	-	-	\$225
<b>Total Collections</b>	-	-	\$217	-	-	\$221	-	-	\$225



**Biological Support – PPA**  
**Summary of Budget Changes**  
*(Dollars in Thousands)*

	Positions	FTE	Pay Amount	Non-Pay Amount	Amount
<b>FY 2022 Enacted</b>	-	-	-	<b>\$83,657</b>	<b>\$83,657</b>
<b>FY 2023 Enacted</b>	-	-	-	<b>\$84,996</b>	<b>\$84,996</b>
<b>FY 2024 Base Budget</b>	-	-	-	<b>\$84,996</b>	<b>\$84,996</b>
<b>Total Technical Changes</b>	-	-	-	-	-
<b>Total Annualizations and Non-Recurs</b>	-	-	-	-	-
BioWatch Current Service Adjustments	-	-	-	\$2,156	\$2,156
<b>Total Pricing Changes</b>	-	-	-	<b>\$2,156</b>	<b>\$2,156</b>
<b>Total Adjustments-to-Base</b>	-	-	-	<b>\$2,156</b>	<b>\$2,156</b>
<b>FY 2024 Current Services</b>	-	-	-	<b>\$87,152</b>	<b>\$87,152</b>
<b>Total Transfers</b>	-	-	-	-	-
BioWatch Threat Based Enhancement	-	-	-	\$17,585	\$17,585
<b>Total Program Changes</b>	-	-	-	<b>\$17,585</b>	<b>\$17,585</b>
<b>FY 2024 Request</b>	-	-	-	<b>\$104,737</b>	<b>\$104,737</b>
<b>FY 2023 TO FY 2024 Change</b>	-	-	-	<b>\$19,741</b>	<b>\$19,741</b>

## Biological Support – PPA Non Pay Budget Exhibits

### Non Pay Summary (Dollars in Thousands)

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
Biological Support	\$83,657	\$84,996	\$104,737	\$19,741
<b>Total</b>	<b>\$83,657</b>	<b>\$84,996</b>	<b>\$104,737</b>	<b>\$19,741</b>
Subtotal Discretionary - Appropriation	\$83,657	\$84,996	\$104,737	\$19,741

### Non Pay by Object Class (Dollars in Thousands)

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Change</b>
21.0 Travel and Transportation of Persons	\$120	\$240	\$240	-
23.3 Communications, Utilities, & Miscellaneous	\$7	\$7	\$7	-
25.1 Advisory & Assistance Services	\$27,057	\$26,674	\$31,613	\$4,939
25.7 Operation & Maintenance of Equipment	\$2,062	\$3,768	\$3,768	-
26.0 Supplies & Materials	\$22,100	\$21,894	\$32,469	\$10,575
31.0 Equipment	\$1,270	-	\$874	\$874
41.0 Grants, Subsidies, and Contributions	\$31,041	\$32,413	\$35,766	\$3,353
<b>Total - Non Pay Budget Object Class</b>	<b>\$83,657</b>	<b>\$84,996</b>	<b>\$104,737</b>	<b>\$19,741</b>

## Non Pay Cost Drivers

*(Dollars in Thousands)*

	<b>FY 2022 Enacted</b>	<b>FY 2023 Enacted</b>	<b>FY 2024 President's Budget</b>	<b>FY 2023 to FY 2024 Total Changes</b>
Field Collection	\$31,761	\$32,522	\$35,406	\$2,884
Logistics Supplies and Consumables	\$23,136	\$22,968	\$33,312	\$10,344
Laboratory Staffing and Waste Management	\$15,883	\$16,137	\$22,505	\$6,368
Quality Assurance and Program Management	\$9,876	\$10,446	\$10,779	\$333
Other Costs	\$3,001	\$2,923	\$2,735	(\$188)
<b>Total - Non-Pay Cost Drivers</b>	<b>\$83,657</b>	<b>\$84,996</b>	<b>\$104,737</b>	<b>\$19,741</b>

### Explanation of Non-Pay Cost Drivers

**Field Collection:** BioWatch uses cooperative agreements with State and local jurisdictions to operate and maintain biodetection capabilities, including personnel for the collection and delivery of detection unit samples to laboratories, maintenance of the detection equipment, and coverage of additional resources as needed for special events in existing jurisdictions. BioWatch also models indoor and outdoor collector arrays to optimize field collection in each jurisdiction and special event venue.

**Logistic Supplies and Consumables:** BioWatch provides local field operations with a supply of air filters and collector spare parts. This cost driver also provides jurisdiction laboratories and the rapidly deployable lab with sample testing supplies, critical reagents, and other consumables.

**Laboratory Staffing and Waste Management:** BioWatch funds laboratory staff and biological waste disposal needed to process, test, report on, and dispose of over 250,000 air samples per year.

**Quality Assurance and Program Management:** The Quality Assurance advisory and assistance service provides proficiency testing and audits of State and local field and lab operators to ensure the overall reliability and accuracy of sample test results. The advisory and assistance services provided by the Program Office helps coordinate among State and local authorities within and across jurisdictions. These services enable the integration and exercising of field collection, laboratory analysis, supply chain logistics, and incident response. The Program Office also administers the BioWatch program.

**Other Costs:** Other program costs include information technology (e.g., communications portal, air sample tracking tool, laboratory information management system), network collector array upgrades, and Federal travel for special event coverage and program performance monitoring in local jurisdictions.