

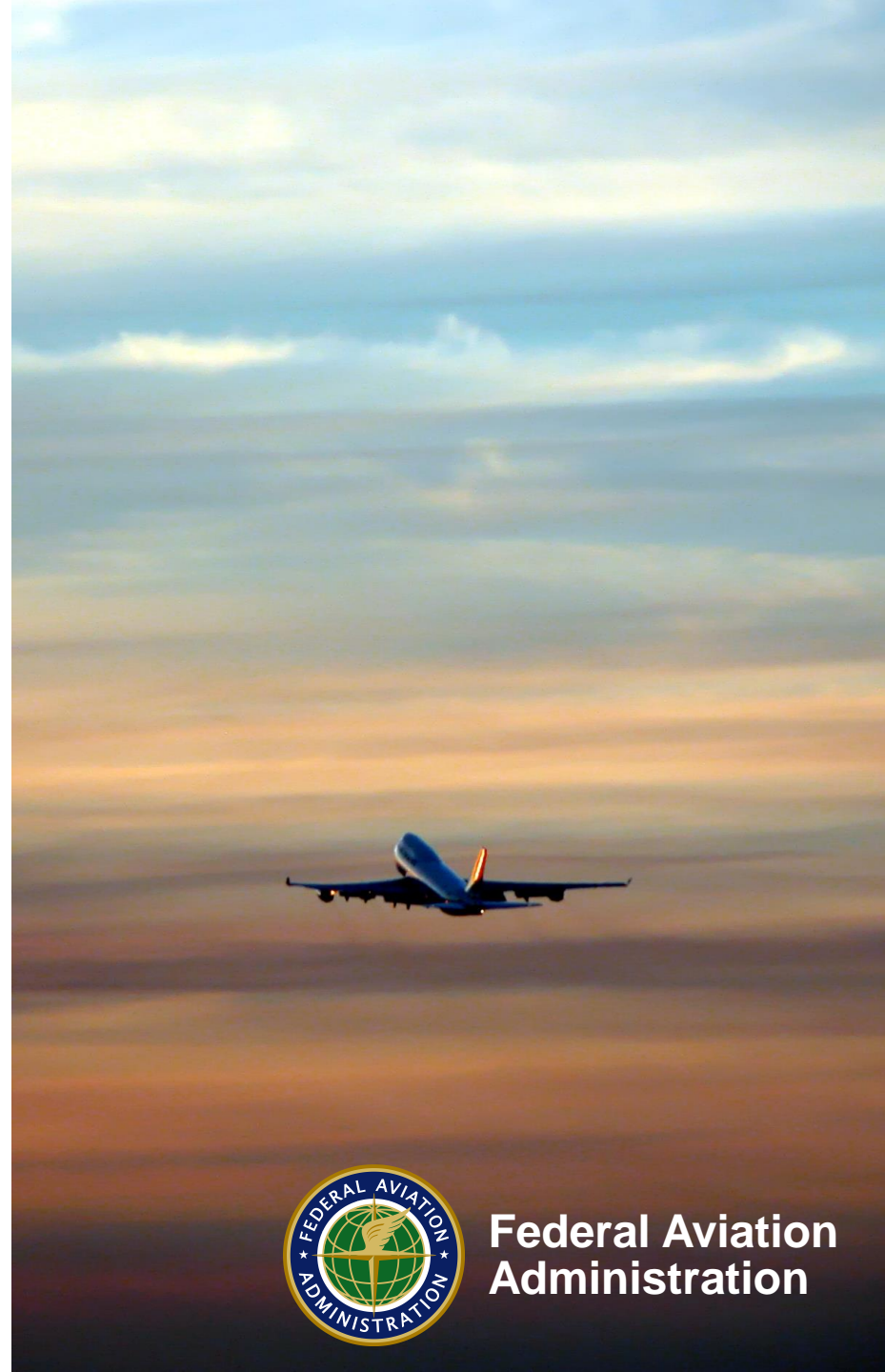
# Research, Engineering, & Development Advisory Committee (REDAC)

## R,E&D Budget Status

Presented to: NAS Ops REDAC  
By: Tennille Blackwell, ABP-310  
Date: March 19, 2024



**Federal Aviation  
Administration**



# Agenda

- **Budget Overview**
  - RE&D FY 2022-2026 Summary
  - IRA Summary
- **FY 2022-2024 RE&D Planned vs. Actuals**
- **FY 2025 PB Submission**
- **FY 2026 Planned**
- **FY 2027 - FY 2030**
  - Outyear Plans w/Inflationary Estimates



# RE&D Summary

BLI Name	FY 2022 Enacted \$248.5M (\$000s)	FY 2023 Enacted \$255 M (\$000s)	FY 2024 Enacted \$280 M (\$000s)	FY 2025 PB \$250 M (\$000s)	FY 2026 NARP \$267 M (\$000s)	FY 2026 Planned \$256 M (\$000s)
Fire Research and Safety	7,136	7,136	7,136	8,750	7,722	7,136
Propulsion and Fuel Systems	3,000	3,000	4,000	5,174	6,880	3,000
Advanced Materials /Structural Safety	14,720	14,720	14,720	2,548	3,526	14,720
Aircraft Icing	2,472	2,472	2,472	3,064	4,000	2,472
Digital System Safety	3,689	3,689	3,689	6,312	7,110	3,689
Continued Air Worthiness	8,829	8,829	8,425	10,339	8,925	8,829
Flight deck/Maintenance/System Integration Human Factors	14,301	14,301	14,301	16,382	15,150	14,301
System Safety Management/Terminal Area Safety	7,000	9,252	9,252	15,000	9,650	9,252
Air Traffic Control/Technical Operations Human Factors	5,911	5,911	5,911	5,993	6,391	5,911
Aeromedical Research	11,000	9,000	10,000	12,186	12,205	9,000
*Weather Program	13,786	13,786	14,786	19,843	19,220	13,786
Unmanned Aircraft Systems Research	22,077	22,077	31,128	15,567	21,130	22,077
Alternative Fuels for General Aviation	5,434	10,000	11,201	8,411	11,700	10,000
Commercial Space Transportation Safety	5,708	4,708	2,000	5,350	5,657	4,708
NextGen Wake Turbulence	3,728	3,728	3,728	4,243	4,180	3,728
NextGen - Air Ground Integration Human Factors	3,000	-	-	-	-	-
*NextGen - Weather Technology in the Cockpit	2,659	4,000	-	-	-	4,000
NextGen - Flight Data Exchange	1,000	-	-	-	-	-
Information/Cyber Security	4,769	4,769	5,707	5,943	7,515	4,769
Environment & Energy	22,000	21,000	21,000	21,194	21,305	21,000
NextGen – Environmental Research – Aircraft Technologies and Fuels	67,500	68,000	68,000	70,994	71,034	68,000
System Planning and Resource Management	3,300	4,141	5,097	5,088	5,200	4,141
*Aviation Grant Management	10,000	15,000	20,000	2,125	13,000	15,000
*Women in Aviation and Pilot Shortage Study	-	-	5,000	-	-	0
William J. Hughes Technical Center Laboratory Facilities	5,481	5,481	5,447	5,494	5,500	5,481
*Aviation Accessibility Research	-	-	2,000	-	-	-
*Aircraft Radio Altimeter Development, Testing, and Certification	-	-	5,000	-	-	-
*FY 2026 Redistribution	-	-	-	-	-	1,000
<b>Grand Totals</b>	<b>248,500</b>	<b>255,000</b>	<b>280,000</b>	<b>250,000</b>	<b>267,000</b>	<b>256,000</b>

\*FY 2026 OMB Max reduces from \$267M to \$256M. BLI Planned Targets adjusted per the REB to FY 2023 Enacted



# IRA Summary

**IRA Funding Overview**

<b>Congressional Description</b>	<b>Allocated</b>	<b>Obligated</b>	<b>Available</b>
Sustainable Aviation Fuels	\$ 244,530,000	\$ 450,000	\$ 244,080,000
Grants and Administrative Oversight	\$ 5,940,000	\$ 245,781	\$ 5,694,219
Low Emissions	\$ 46,530,000	\$ -	\$ 46,530,000
<b>Grand Totals</b>	<b>\$ 297,000,000</b>	<b>\$ 695,781</b>	<b>\$ 296,304,219</b>



# RE&D FY 2022 Plan vs. Actuals

Program	Allocation	Obligations	Available
Fire Research and Safety	\$ 7,136,000	\$ 7,045,561	\$ 90,439
Propulsion and Fuel Systems	\$ 3,000,000	\$ 2,593,380	\$ 406,620
Advanced Materials /Structural Safety	\$ 14,720,000	\$ 13,902,098	\$ 817,902
Aircraft Icing	\$ 2,472,000	\$ 1,515,805	\$ 956,195
Digital System Safety	\$ 3,689,000	\$ 2,945,383	\$ 743,617
Continued Air Worthiness	\$ 8,829,000	\$ 6,577,821	\$ 2,251,179
Flight deck/Maintenance/System Integration Human Factors	\$ 14,301,000	\$ 8,528,710	\$ 5,772,290
System Safety Management/Terminal Area Safety	\$ 7,000,000	\$ 6,192,637	\$ 807,363
Air Traffic Control/Technical Operations Human Factors	\$ 5,911,000	\$ 3,403,124	\$ 2,507,876
Aeromedical Research	\$ 11,000,000	\$ 10,968,270	\$ 31,730
Weather Program	\$ 13,786,000	\$ 13,535,570	\$ 250,430
Unmanned Aircraft Systems Research	\$ 22,077,000	\$ 18,680,029	\$ 3,396,971
Alternative Fuels for General Aviation	\$ 5,434,000	\$ 4,600,263	\$ 833,737
Commercial Space Transportation Safety	\$ 5,708,000	\$ 5,750,413	\$ (42,413)
Wake Turbulence	\$ 3,728,000	\$ 3,711,297	\$ 16,703
NextGen - Air Ground Integration Human Factors	\$ 3,000,000	\$ 2,779,929	\$ 220,071
NextGen - Weather Technology in the Cockpit	\$ 2,659,000	\$ 2,646,511	\$ 12,489
NextGen - Flight Data Exchange	\$ 1,000,000	\$ 199,927	\$ 800,073
Information/Cyber Security	\$ 4,769,000	\$ 4,737,815	\$ 31,185
Environment & Energy	\$ 22,000,000	\$ 19,794,319	\$ 2,205,681
NextGen – Environmental Research – Aircraft Technologies and Fuels	\$ 67,500,000	\$ 63,397,942	\$ 4,102,058
System Planning and Resource Management	\$ 3,300,000	\$ 3,277,482	\$ 22,518
Aviation Workforce Development - Section 625	\$ 10,000,000	\$ 1,115,929	\$ 8,884,071
William J. Hughes Technical Center Laboratory Facilities	\$ 5,481,000	\$ 5,449,793	\$ 31,207
<b>Grand Totals</b>	<b>\$ 248,500,000</b>	<b>\$ 213,350,007</b>	<b>\$ 35,149,993</b>

*Expiring funds need to be obligated by September 30, 2024*

*\*Deficit being cleared by AST. CO working deobligation award.*



# FY 2023 Plan vs. Actuals

Program	Allocation	Obligations	Available
Fire Research and Safety	\$ 7,136,000	\$ 6,846,300	\$ 289,700
Propulsion and Fuel Systems	\$ 3,000,000	\$ 2,256,002	\$ 743,998
Advanced Materials /Structural Safety	\$ 14,720,000	\$ 992,095	\$ 13,727,905
Aircraft Icing	\$ 2,472,000	\$ 1,147,216	\$ 1,324,784
Digital System Safety	\$ 3,689,000	\$ 1,278,898	\$ 2,410,102
Continued Air Worthiness	\$ 8,829,000	\$ 5,061,485	\$ 3,767,515
Flight Deck/Maintenance/System Integration Human Factors	\$ 14,301,000	\$ 5,501,805	\$ 8,799,195
System Safety Management/Terminal Area Safety	\$ 9,252,000	\$ 5,476,417	\$ 3,775,583
Air Traffic Control/Technical Operations Human Factors	\$ 5,911,000	\$ 3,368,791	\$ 2,542,209
Aeromedical Research	\$ 9,000,000	\$ 4,348,838	\$ 4,651,162
Weather Program	\$ 13,786,000	\$ 7,626,157	\$ 6,159,843
Unmanned Aircraft Systems Research	\$ 22,077,000	\$ 3,895,190	\$ 18,181,810
Alternative Fuels for General Aviation	\$ 10,000,000	\$ 3,909,732	\$ 6,090,268
Commercial Space Transportation Safety	\$ 4,708,000	\$ 929,152	\$ 3,778,848
Wake Turbulence	\$ 3,728,000	\$ 2,535,697	\$ 1,192,303
NextGen - Air Ground Integration Human Factors	\$ -	\$ 176,680	\$ (176,680)
NextGen - Weather Technology in the Cockpit	\$ 4,000,000	\$ 2,331,507	\$ 1,668,493
Information/Cyber Security	\$ 4,769,000	\$ 4,045,065	\$ 723,935
Environment & Energy	\$ 21,000,000	\$ 13,639,648	\$ 7,360,352
NextGen – Environmental Research – Aircraft Technologies and Fuels	\$ 68,000,000	\$ 21,064,249	\$ 46,935,751
System Planning and Resource Management	\$ 4,141,000	\$ 4,062,589	\$ 78,411
Aviation Workforce Development - Section 625	\$ 15,000,000	\$ 737,078	\$ 14,262,922
William J. Hughes Technical Center Laboratory Facilities	\$ 5,481,000	\$ 5,354,900	\$ 126,100
<b>Grand Totals</b>	<b>\$ 255,000,000</b>	<b>\$ 106,585,489</b>	<b>\$ 148,414,511</b>

*\*Deficit being cleared by ANG. PCB transactions being reclassified to Flight Deck/Maintenance/System Intergration Human Factors.*



# FY 2024 Plan vs. Actuals

Program	Target	Obligations	Available
Fire Research and Safety	\$ 7,136,000	\$ 1,846,098	\$ 5,289,902
Propulsion and Fuel Systems	\$ 4,000,000	\$ 926,357	\$ 3,073,643
Advanced Materials /Structural Safety	\$ 14,720,000	\$ 563,221	\$ 14,156,779
Aircraft Icing	\$ 2,472,000	\$ 57,895	\$ 2,414,105
Digital System Safety	\$ 3,689,000	\$ 478,743	\$ 3,210,257
Continued Air Worthiness	\$ 8,425,000	\$ 613,892	\$ 7,811,108
Flight deck/Maintenance/System Integration Human Factors	\$ 14,301,000	\$ 1,860,611	\$ 12,440,389
System Safety Management/Terminal Area Safety	\$ 9,252,000	\$ 1,381,714	\$ 7,870,286
Air Traffic Control/Technical Operations Human Factors	\$ 5,911,000	\$ 1,466,761	\$ 4,444,239
Aeromedical Research	\$ 10,000,000	\$ 1,297,447	\$ 8,702,553
<b>*Weather Program</b>	\$ 14,786,000	\$ 2,285,228	\$ 12,500,772
Unmanned Aircraft Systems Research	\$ 31,128,000	\$ 381,661	\$ 30,746,339
Alternative Fuels for General Aviation	\$ 11,201,000	\$ 746,353	\$ 10,454,647
Commercial Space Transportation Safety	\$ 2,000,000	\$ 2,915	\$ 1,997,085
Wake Turbulence	\$ 3,728,000	\$ 401,944	\$ 3,326,056
<b>*NextGen - Weather Technology in the Cockpit</b>	\$ -	\$ -	\$ -
Information/Cyber Security	\$ 5,707,000	\$ 9,916	\$ 5,697,084
Environment & Energy	\$ 21,000,000	\$ 973,116	\$ 20,026,884
NextGen – Environmental Research – Aircraft Technologies and Fuels	\$ 68,000,000	\$ 511,633	\$ 67,488,367
System Planning and Resource Management	\$ 5,097,000	\$ 959,959	\$ 4,137,041
<b>*Aviation Grant Management - Section 625 Workforce Development</b>	\$ 20,000,000	\$ 437,737	\$ 19,562,263
<b>*Women in Aviation and Pilot Shortage Study</b>	\$ 5,000,000	\$ -	\$ 5,000,000
William J. Hughes Technical Center Laboratory Facilities	\$ 5,447,000	\$ 1,215,758	\$ 4,231,242
<b>*Aviation Accessibility Research</b>	\$ 2,000,000	\$ -	\$ 2,000,000
<b>*Aircraft Radio Altimeter Development, Testing, and Certification</b>	\$ 5,000,000	\$ -	\$ 5,000,000
<b>Grand Totals</b>	<b>\$ 280,000,000</b>	<b>\$ 18,418,960</b>	<b>\$ 261,581,040</b>

*\*Weather in the Cockpit Merged with the Weather Program - Merger*

*\*Aviation Workforce Development renamed to Aviation Grant Management*

*\*Women in Aviation and Pilot Shortage Study - New*

*\*Aviation Accessibility Research new BLI to fund Wheelchair Accessibility on Airplanes Research*

*\*Aircraft Radio Altimeter Development, Testing, and Certification - New*

See FY24 \$280M RE&D THUD Conf.pdf for Congressional Language



Federal Aviation  
Administration

# FY 2025 PB Request

- FY 2025 Request  
\$250M**

- FY 2025 OMB Passback early December reduced Aviation Workforce Development from \$12,994,000 to \$2,125,000.

Program	Target
Fire Research and Safety	\$ 8,750
Propulsion and Fuel Systems	\$ 5,174
Advanced Materials /Structural Safety	\$ 2,548
Aircraft Icing	\$ 3,064
Digital System Safety	\$ 6,312
Continued Air Worthiness	\$ 10,339
Flight deck/Maintenance/System Integration Human Factors	\$ 16,382
System Safety Management/Terminal Area Safety	\$ 15,000
Air Traffic Control/Technical Operations Human Factors	\$ 5,993
Aeromedical Research	\$ 12,186
<b>Weather Program</b>	\$ 19,843
Unmanned Aircraft Systems Research	\$ 15,567
Alternative Fuels for General Aviation	\$ 8,411
Commercial Space Transportation Safety	\$ 5,350
Wake Turbulence	\$ 4,243
Information/Cyber Security	\$ 5,943
Environment & Energy	\$ 21,194
NextGen – Environmental Research – Aircraft Technologies and Fuels	\$ 70,994
System Planning and Resource Management	\$ 5,088
<b>Aviation Grant Management - Section 625</b>	\$ 2,125
William J. Hughes Technical Center Laboratory Facilities	\$ 5,494
<b>Grand Totals</b>	<b>\$ 250,000</b>

In FY24 WTIC proposed to merged with Weather.

In FY24 Aviation Workforce Development changed to Aviation Grant Management

FY 2025 Budget Estimates: <https://www.transportation.gov/mission/budget/fiscal-year-2025-budget-estimates>  
 S-1 Press Call 03-11-24: <https://www.youtube.com/embed/v3RnkcDP3Wg?si=uyIDbedvbiDIZ7jx>





# FY 2026 Planned

- **FY 2026 Planned \$256M**
  - OMB reduced from \$267M to \$256M subject to change.
  - REB requested to revised FY26 BLI targets to FY23 Enacted. \$1M remaining for redistribution

Program	NARP Planned	OMB Planned
Fire Research and Safety	\$ 7,722	\$ 7,136
Propulsion and Fuel Systems	\$ 6,880	\$ 3,000
Advanced Materials /Structural Safety	\$ 3,526	\$ 14,720
Aircraft Icing	\$ 4,000	\$ 2,472
Digital System Safety	\$ 7,110	\$ 3,689
Continued Air Worthiness	\$ 8,925	\$ 8,829
Flight deck/Maintenance/System Integration Human Factors	\$ 15,150	\$ 14,301
System Safety Management/Terminal Area Safety	\$ 9,650	\$ 9,252
Air Traffic Control/Technical Operations Human Factors	\$ 6,391	\$ 5,911
Aeromedical Research	\$ 12,205	\$ 9,000
<b>Weather Program</b>	\$ 19,220	\$ 17,786
Unmanned Aircraft Systems Research	\$ 21,130	\$ 22,077
Alternative Fuels for General Aviation	\$ 11,700	\$ 10,000
Commercial Space Transportation Safety	\$ 5,657	\$ 4,708
Wake Turbulence	\$ 4,180	\$ 3,728
Information/Cyber Security	\$ 7,515	\$ 4,769
Environment & Energy	\$ 21,305	\$ 21,000
NextGen – Environmental Research – Aircraft Technologies and Fuels	\$ 71,034	\$ 68,000
System Planning and Resource Management	\$ 5,200	\$ 4,141
<b>Aviation Grant Management - Section 625</b>	\$ 13,000	\$ 15,000
William J. Hughes Technical Center Laboratory Facilities	\$ 5,500	\$ 5,481
Redistribution		\$ 1,000
<b>Grand Totals</b>	<b>\$ 267,000</b>	<b>\$ 256,000</b>

In FY24 WTIC proposed to merge with Weather.

FY24 REB request for FY26 targets to FY23 Enacted. RE&D Planned Target reduced from \$267M to \$256M.



# Out-Year Targets

## Inflationary Estimates:

- FY 2027 - \$262M
- FY 2028 - \$268M
- FY 2029 - \$274M
- FY 2030 - \$280M

**\*Targets subject to change.**



# Questions

