



Biometric Entry-Exit H-1B and L-1 Fees Spend Plan

September 14, 2020

Fiscal Year 2020 Report to Congress



**Homeland
Security**

U.S. Customs and Border Protection

Message from the Deputy Commissioner of CBP

September 14, 2020

I am pleased to submit the following “Biometric Entry-Exit H-1B and L-1 Fees Spend Plan,” which has been prepared by U.S. Customs and Border Protection (CBP).

This document was compiled pursuant to direction set forth in House Report 116-180 and Senate Report 116-125, which both accompany the Fiscal Year (FY) 2020 Department of Homeland Security (DHS) Appropriations Act (P.L. 116-93). The report provides a detailed expenditure plan for biometric air entry-exit activities, which outlines how innovative technology and effective collaboration with airports and airlines will minimize the need for additional CBP staffing. This report also provides a spend plan for the H-1B and L-1 fees and other resources being applied to exit implementation in FY 2020.



Pursuant to congressional requirements, this report is being provided to the following Members of Congress:

The Honorable Lucille Roybal-Allard
Chairwoman, House Appropriations Subcommittee on Homeland Security

The Honorable Chuck Fleischmann
Ranking Member, House Appropriations Subcommittee on Homeland Security

The Honorable Shelley Moore Capito
Chairman, Senate Appropriations Subcommittee on Homeland Security

The Honorable Jon Tester
Ranking Member, Senate Appropriations Subcommittee on Homeland Security

I would be pleased to respond to any questions you may have. Please do not hesitate to contact my office at (202) 344-2001.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Perez". The signature is written over the printed name and title of the signatory.

Robert E. Perez
Deputy Commissioner
U.S. Customs and Border Protection

Executive Summary

The 9/11 Commission stated that “a biometric entry-exit system is an essential investment in national security.”¹ This Biometric Entry-Exit H-1B and L-1 Fees Spend Plan describes estimates to expend funds authorized by the FY 2016 DHS Appropriations Act (P.L. 114-113), which allows up to \$1 billion over a 10-year period for implementing a Biometric Entry-Exit Program.

The Biometric Entry-Exit Program is funded solely by variable fee collections on certain H-1B and L-1 visas. The onset of the Coronavirus Disease 2019 (COVID-19) pandemic and the drastic reduction in international travel have had severe and immediate impacts on the program’s funding. The program currently is receiving only a small fraction of the expected collections, which affects the most recently approved lifecycle cost estimate (LCCE) and budget forecasts that are detailed in this report. The program’s cost forecasting team currently is working with the DHS Office of the Chief Financial Officer’s Cost Analysis Division, as well as with stakeholders in CBP’s Office of Information Technology to update the LCCE. This update will take into account program changes due to the impacts of COVID-19.

This spend plan is based on a projection for all 10 years of the H-1B and L-1 fee fund based on analysis done through the first quarter of FY 2020. Although the Congressional Budget Office originally estimated an annual fee collection of \$115 million per year, actual collections have been lower than expected each year since FY 2016 and have continued to decline. In FY 2019, \$59.5 million was collected. In FY 2020, \$22-25 million was expected to be collected. With original estimates at \$60 million in collections per year going forward, the Biometric Entry-Exit Program would be approximately \$240 million short of the \$1 billion authorized through FY 2027 based on these projections. The impact of COVID-19 has exacerbated further the funding risk for the program. To date, the Biometric Entry-Exit team has continued to manage the program within the funding amounts received and without operational impact in the air exit environment.

Should the reduction continue and not be rectified in the future, operations may be affected whereby the program will not be able to afford the operations and maintenance of the biometric matching service, the continued partnership advancements with airlines and airport authorities, or the ability to leverage the technology at pedestrian or vehicle ports of entry. This impact could be realized as soon as FY 2021.

CBP has worked with U.S. Citizenship and Immigration Services (USCIS) to identify and remedy the root cause of the decline. USCIS issued a notice of proposed rulemaking to begin collection of new and extension applications, which, prior to COVID-19 impacts, was expected to meet the originally projected \$115 million per year until the \$1 billion funding cap is reached. The rule is expected to go into effect in FY 2020 when CBP would receive an uptick in funds in FY 2021.

¹ *National Commission on Terrorist Attacks Upon the United States* (9/11 Commission Report), p. 389.

CBP's Biometric Entry-Exit Program has developed a biometric matching service that allows biometric exit to be integrated seamlessly into current airport operations. The back-end infrastructure is fully scalable for nationwide deployment. Partnership with the airlines has maximized the use of the fee funds for this development while allowing airports and airlines to select biometric collection equipment that meets their specific needs. CBP's partnership with airlines, airports, and other industry stakeholders is essential to successful implementation of a nationwide biometric entry-exit system.

CBP originally identified that a staffing requirement of 441 CBP officers would be needed to optimize outbound enforcement support for the Biometric Entry-Exit Program; however, because of the reduced fee collections, CBP has eliminated the funding of CBP officers from the program's spend plan in order to develop, operate, and maintain all non-officer requirements of the program. CBP will fund any additional officer staffing with discretionary resources, and all staffing estimates will be incorporated into the Workload Staffing Model recommendations.

CBP intends to update the spend plan annually on the basis of fees collected per year and the refined deployment schedule of biometric entry-exit capabilities at airports. CBP will continue to assess the program as deployed to recognize operational and technical efficiencies that can lower the overall cost of the program. The legislation that authorized collection of this fee originally was set for expiration in FY 2025; however, this date was changed to FY 2027. The current spend plan reflects cost through FY 2027 with the assumption that USCIS fee collection will be amended in FY 2020. CBP will receive funding at the original Congressional Budget Office estimate of \$115 million per year beginning in FY 2021. A long-term funding solution is required to cover operations and maintenance, technology refresh, and disposition of the solution beyond FY 2027.



Biometric Entry-Exit H-1B and L-1 Spend Plan (FY 2020)

Table of Contents

I.	Legislative Language.....	1
II.	Background.....	2
III.	Discussion.....	4
	A. Scope.....	5
	B. CBP’s Biometric Entry-Exit Vision for Air	5
	C. Cost Elements and Assumptions.....	6
	1. IT Investment.....	6
	2. Entry-Exit Network Upgrade Costs.....	6
	3. Entry Device Upgrades and Infrastructure Costs	7
	4. Entry Applications.....	7
	D. Programmatic and Operational Support	8
	1. Program Management	8
	2. Communications.....	8
	E. Technology Innovation Costs	9
	F. CBP Officers.....	9
IV.	Spend Plan Estimate	10
	A. Spend Plan Assumptions:	11
V.	Conclusion.....	12
VI.	Appendices.....	13
	Appendix A – List of Abbreviations.....	13
	Appendix B – Top 20 U.S. International Airports by Volume.....	14

I. Legislative Language

This document was compiled pursuant to direction set forth in House Report 116-180 and Senate Report 116-125, which both accompany the Fiscal Year (FY) 2020 Department of Homeland Security (DHS) Appropriations Act (P.L. 116-93).

House Report 116-180 states:

Biometric Exit.—The Committee directs CBP to provide a detailed expenditure plan for biometric exit activities within 90 days of the date of enactment of this Act, as directed in House Report 114–668.

Senate Report 116-125 states:

Biometric Exit.—The Department is directed to provide a spend plan for H–1B and L–1 fee revenues and any other resources being applied to biometric exit implementation not later than 30 days after the date of enactment of this act.

House Report 114-668, which accompanies the FY 2017 DHS Appropriations Act (P.L. 115-131), provides additional guidance:

The Committee directs the Commissioner to provide a detailed expenditure plan to the Committees not later than 90 days after the date of enactment of this Act, regarding the expenditure of funds available in the 9/11 Response and Biometric Exit Account established in Division O of Public Law 114–113, for the purpose of implementing the biometric entry and exit data system required by section 7208 of the Intelligence Reform and Terrorism Prevention Act. The plan should include information on the timeline for deployment of a biometric exit system, as well as a description of the capability that this funding can procure and support. Further, the plan should include a realistic cost estimate for full implementation.

II. Background

The U.S. Customs and Border Protection (CBP) Office of Field Operations (OFO) developed a long-term strategy to implement a comprehensive biometric entry-exit solution. On the basis of the new funding authorized under the FY 2016 DHS Appropriations Act (P.L. 114-113), OFO established a program of record (PoR) for the Biometric Entry-Exit Program in FY 2018. As a part of the PoR, OFO completed program artifacts, which documented concepts of operations and operational requirements for the comprehensive biometric entry-exit solution. These concepts and requirements are informed by CBP's past and ongoing market research, including findings from biometric experiments² conducted to date and partnership with the DHS Science and Technology Directorate. In FY 2020, the program received DHS approval from the Deputy Undersecretary for Management for Acquisition Decision Event 3, meaning that the Air Exit Segment of the program is authorized for full-scale deployment nationwide. The initial focus was to implement the Air Exit Segment. The current and future scope of the program will cover all travel modes.

CBP's vision for seamless end-to-end travel uses a traveler's face to streamline identity verification and to eliminate repetitive manual checks of paper documentation. To achieve that vision, CBP built the Travel Verification Service, which is a device- and environment-agnostic facial comparison service.

In the air environment, this cloud-based service uses existing passenger information to create a pre-populated "gallery" of face images from U.S. Government databases. These photographs can come from passport applications, visa applications, or interactions with CBP at a prior border encounter where CBP typically takes a photograph. The facial comparison service compares a live photo of the traveler to the gallery of face images to identify the traveler biometrically and to enable CBP to confirm and expedite the traveler's arrival or departure. This expansive back-end infrastructure currently can handle all arriving and departing flights and is scaled fully to support a nationwide biometric entry-exit solution.

CBP's partnerships with airlines, airports, and other industry stakeholders are critical to implementation of a nationwide biometric entry-exit system, and CBP is committed to a process that meets the needs of all public and private stakeholders. If CBP were to deploy a government-only solution, cumbersome layers would be added to existing travel processes, which would have adverse effects on travel as a whole. Instead, CBP is partnering with air industry stakeholders to complete the biometric entry-exit system while simultaneously facilitating legitimate trade and travel. Partnerships with airlines and airports have demonstrated significant benefits including faster boarding times, enhanced customer experience, and improved utilization of CBP staff. CBP is committed to working with its travel industry partners to transform the travel process and to enhance the passenger experience.

² Experiments have included Biometric Exit Mobile, Pedestrian Biometric Exit, 1-to-1 Face Comparison, and the Atlanta Departure Information System Test, among others.

As of February 2020, the Biometric Entry-Exit Program has established 29 commitments with airlines and airport partners. Airports and airlines have invested in biometric collection equipment at 20 locations and are using CBP's biometric comparison service to perform biometric exit processing. CBP will continue to pursue additional commitments with other major international airports and airlines.

The Biometric Air Entry Segment of the program also has seen significant updates. Because of the Biometric Air Exit Segment's success using facial comparison, CBP has developed a facial comparison entry process. This updated entry process makes the inspection process more efficient and improves the throughput of travelers arriving in the United States. By virtually eliminating the administrative tasks involved in scanning a travel document and recollecting fingerprints from returning visitors, CBP can devote more resources to interviewing a traveler to determine his or her admissibility. Additionally, the use of facial comparison results in better security by reducing the imposter threat. Since implementation of the new facial comparison entry process, CBP officers successfully have intercepted seven imposters in the airport environment who then were denied admission to the United States.

As of January 2020, CBP officers at 13 air entry and 4 preclearance locations have verified biometrically more than 18.6 million entry passengers on more than 235,000 arriving flights. Since June 2017, 43,947 overstays have been confirmed biometrically.

III. Discussion

In 2016, Congress funded the Biometric Entry-Exit Program through up to \$1 billion in fees collected by U.S. Citizenship and Immigration Services (USCIS) on H-1B and L-1 applications through FY 2027.³ The Congressional Budget Office initially estimated an annual fee collection for the fees dedicated to Biometric Exit of \$115 million per year. This estimate indicated that fee collections would provide enough funding to reach the congressional authorization of \$1 billion prior to the FY 2027 end date.

CBP determined that \$1 billion in fee collections would allow the deployment and maintenance of full biometric air entry and exit operations through the end of FY 2027, and would allow CBP to conduct some biometric technical demonstrations in the land and sea environments.

At this time, the biometric fee account will continue to be underfunded for several years and may not reach the \$1 billion cap by 2027. Since inception, the fees collected by USCIS have fallen short of the Congressional Budget Office projections and also have decreased each year since 2016. The lower-than-projected collection of fees is a result of a narrow interpretation of the fee statute. Collections for FYs 2018-2019 were approximately \$59.5 million per year. For FY 2020, \$22-25 million is expected. At an estimated \$60 million in collections per year going forward, the Biometric Entry-Exit Program would be approximately \$240 million short of the \$1 billion authorized through FY 2027.

CBP and USCIS jointly have addressed the root cause of the diminished collections, which was a narrow interpretation of fee collections. USCIS has committed to collecting the fee on visa extensions as well as on new visas. This remedy is expected to bring collections back to the originally projected \$115 million per year from FY 2021 forward until the \$1 billion funding cap is reached.⁴

The spend plan shows actual obligations and collections through FY 2019 and uses the program lifecycle cost estimate (LCCE) updates for FY 2020 forward. An updated LCCE was approved in December 2019, and a full LCCE is completed and updated annually as part of the Biometric Entry-Exit PoR.

CBP's focus is on the air environment with continued technical demonstrations for sea and land operational environments. The Sea Segment is similar to the Air Exit Segment of the program, whereby the cruise lines own, operate, and maintain front-end photo capture equipment. This significantly reduces the cost to the government. At this phase of the program, the Sea Segment costs are a fraction of the cost to maintain the Traveler Verification Service.

³ P.L. 114-113 was originally in effect until September 20, 2025, but was amended to extend the end date to 2027. See 49 U.S.C 40101.

⁴ See USCIS Fee Schedule and Changes to Certain Other Immigration Benefit Request Requirements Notice of Proposed Rulemaking, available at: <https://www.federalregister.gov/documents/2019/11/14/2019-24366/us-citizenship-and-immigration-services-fee-schedule-and-changes-to-certain-other-immigration>.

The program's land segment currently is conducting technical demonstrations to gather data to evaluate the technical maturity, feasibility, operational effectiveness, and cost of the solution in the pedestrian environment. To date, more than 8.6 million travelers have been verified biometrically in the land environment, with 267 imposters identified.

A. Scope

This document describes each of the cost elements required to continue implementation of the biometric air exit solution and the integration of biometric devices and applications in the air entry environment. While covering 10 years, this document focuses primarily on the next 2 years because those costs can be estimated with the most fidelity.

- **Information Technology (IT) Investment**, to include network and infrastructure costs, as well as upgrades or creation of entry and exit applications to support biometric entry-exit data collection;
- **Programmatic and Operational Support**, to include costs for managing the program, including acquisition, stakeholder management, and communications; and
- **Technology Innovation**, to continue furthering biometric entry-exit in the air, land, and sea environments.

B. CBP's Biometric Entry-Exit Vision for Air

Working in partnership with the air travel industry, CBP is leading the transformation of air travel using biometrics as the key to enhancing security and unlocking benefits that dramatically improve the entire traveler experience. CBP is working toward full implementation of biometric exit in the air environment to account for more than 97 percent of departing commercial air travelers from the United States. CBP envisions that facial comparison can automate manual processes for many of the routine aspects of airline travel. Ultimately, this will make air travel more convenient and easier for travelers while simultaneously making it more secure. Facial comparison also reinforces identity checks at multiple stages in the traveler's journey while meeting the biometric exit mandate.

A comprehensive system that leverages both biographic and biometric data is key to supporting CBP's mission. Adding biometrics provides greater assurance of the accuracy of information already collected by CBP and will allow for future facilitated processing upon both entry and exit. CBP will use facial comparison technology as the primary way of comparing travelers to their travel documents and of facilitating their entry to and exit from the United States. Benefits of facial comparison include faster boarding times, enhanced customer service, improved utilization of CBP staffing, and faster flight clearance times on arrival. Additionally, biometrics help to reduce the imposter threat and significantly improve security.

Despite advancements in facial comparison technology, fingerprints remain a foundational aspect of CBP's biometric system. Because fingerprint scans have proven to be an effective law enforcement tool, CBP will continue to capture fingerprints as the initial identification biometric during first-time encounters for certain foreign nationals. This will enable CBP to continue to leverage fingerprints for watchlist checks.

The CBP biometric air entry and exit solution utilizes facial comparison to streamline passenger processes throughout the air travel continuum. A facial comparison process at the time of boarding provides airport and airline entities with the opportunity to provide a convenient way for in-scope foreign nationals⁵ to meet their exit requirement utilizing existing information systems and available data. CBP’s system offers a facial comparison service at no cost to airline and airport partners, whose investment in biometric technology replaces manual identification of traveler identification and boarding passes. CBP currently is supporting small innovative projects including biometric check-in, baggage drop, Transportation Security Administration document checks, self-boarding gates, and other equipment. This system ultimately enables a biometric-based entry-exit system to provide significant benefits to private-sector air travel partners, in addition to establishing a biometric air exit system for the government.

C. Cost Elements and Assumptions

1. IT Investment

CBP has built the system to support biometric entry-exit that is fully scalable to support international air entry and exit nationwide, with cost estimates at the top 20 airports. The following are the estimated and planned costs to implement the program regardless of available funding with the assumption that the program eventually will hit the \$1 billion cap.

Scalable Infrastructure and System Maintenance

CBP has built a biometric matching service that facilitates investment in camera hardware and software by airlines, airports, or other stakeholders. CBP has the capacity to support increased usage of the CBP biometric matching service as more airlines participate. Costs associated with operating and maintaining the service under current requirements include the cost of monitoring the health of the application, troubleshooting software and system-related issues, fixing software defects, and testing performance and managing system interoperability. Additional test, evaluation, and monitoring for matching algorithm performance is captured within this cost. System maintenance also includes the integration of other transportation modes and applications into the system as they are deployed, developing and testing innovative concepts to facilitate biometric operations, enhancing disaster recovery, and upgrading infrastructure over time.

Estimated IT Investment Cost	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025-27
Phase III - Scalable Infrastructure and Systems Maintenance	\$27.29 M	\$16.00 M	\$36.35 M	\$37.10 M	\$37.86 M	\$37.86 M	\$118.28 M

2. Entry-Exit Network Upgrade Costs

CBP began implementing the necessary network infrastructure at the top 20 airports starting in FY 2017 to support biometric entry-exit. To increase the quality of biometrics at entry, CBP has included costs to upgrade entry networks at airports; these networks will support the additional

⁵ An “in-scope” traveler is any person who is required by law to provide biometrics upon exit from the United States, pursuant to 8 CFR 235.1(f)(ii)

bandwidth requirements needed for enhanced multimodal biometrics collection and processing during entry transactions.

The following table summarizes the cost elements and assumptions for the top 20 international airport sites.

ELEMENT	COST	DESCRIPTION
Entry-Exit Network Installations	~\$140,000 per terminal or site	Each airport where CBP processes foreign arrivals requires network upgrades to support the additional bandwidth for the capture of multimodal biometrics. The cost includes site survey and design costs as well as installation.

Additionally, operating costs for entry-exit networks include the cost for providing network operations center support. This will support CBP officers’ mobile presence and will help to facilitate processing and potential enforcement actions.

3. Entry Device Upgrades and Infrastructure Costs

In addition to upgrading the biometric exit environment, CBP will provide necessary entry upgrades at the top 20 airports. The entry device upgrades include entry network cameras and fingerprint devices to ensure the high-quality capture of biometrics that can be used to facilitate a higher success rate of photo matching in both the entry and exit environments. These upgrades will allow officers to focus on purpose and intent, as well as to facilitate lawful travelers further through the CBP process.

ELEMENT	COST	DESCRIPTION
Entry Lane Device Upgrade	\$15,200 per entry lane	Each entry lane will require new multimodal biometric hardware to be procured and installed. New e-Passport readers, fingerprint scanners, and cameras are included in this cost. The estimated cost per lane includes site survey, site design, procurement, and shipment and installation of all specialized equipment needed to perform biometric processing.

4. Entry Applications

To support the collection and verification of multimodal biometrics, existing CBP entry applications require upgrades to support new device interfaces, transmission of biometric data, and verification of biometric data. In FY 2019, the Simplified Arrival application will support automated photo capture. The application will work in any platform (desktop, tablet, phone, etc.). The costs associated with the entry applications include development, testing, training, and security. Estimated outyear costs include the cost to maintain change requests to the applications. Estimates are based on prior work efforts, modifying CBP primary applications and current requirements.

Estimated IT Investment Cost	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025-27
Entry Application	\$12.06 M	\$10.97 M	\$9.25 M	\$9.42 M	\$9.60 M	\$9.60 M	\$29.89 M

Operations and maintenance (O&M) of these applications include performance monitoring to identify and resolve risks prior to negative impact on mission performance. O&M cost also includes tier two and three support for any deficiencies or outages and provides system engineering, testing, and production training. O&M costs are evaluated annually and are revised on the basis of performance and evolving requirements.

D. Programmatic and Operational Support

1. Program Management

Program management support will be required over the lifecycle of the Biometric Entry-Exit Program. The program management costs are made up of government full-time equivalents and contractor support. The program management office is responsible for the Biometric Entry-Exit Program operations including upholding standards; maintaining and establishing public and private partnerships; coordinating integration of the biometric entry-exit solution; addressing the privacy, legal, and regulatory challenges of implementing a biometric entry-exit solution; monitoring performance; and reporting.

Contractor support costs for program management also are included in the overall estimate for program management services. In the initial years of the program, the total cost allocated for program management support from contractors is higher than in outyears to support the acquisition and program management documentation, oversight, requirements, deployment, and test and evaluation. Contractor support staff will drop off as the program reaches O&M status because this is the natural progression of contractor support services. The table below provides the annual programmatic and IT costs that will fund contract services.

Contractor Support Costs	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025-27
Program Management Costs	\$15.04 M	\$14.87 M	\$24.12 M				

2. Communications

Communications will consist of both national and local outreach for biometric entry-exit to educate travelers. Additionally, resources will be required to work with travel authorities such as airports and airlines to ensure that biometric entry-exit solutions are integrated with existing travel processes. Estimated costs for communications and outreach are based on programs of similar size and complexity, such as the Western Hemisphere Travel Initiative/Land Border Integration.

The communications and outreach costs include a communications team to support the overall planning and national implementation of the program. The communications team will continue to manage the media and marketing strategy for industry and travelers and will continue to produce materials for public awareness. These costs are largely front-loaded in the early years of the program because of the planning and educational requirements as the program matures. These costs are reduced greatly in the outyears and serve primarily as a maintenance function as stakeholders' knowledge of the program increases.

Communications Costs	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025-27
Communication Team	\$2.68 M	\$2.46 M	\$2.50 M	\$2.50 M	\$2.50 M	\$2.50 M	\$7.50 M

E. Technology Innovation Costs

CBP will continue to conduct biometric entry and exit innovation tests in air, land, and sea operational environments to implement CBP’s strategic vision fully. CBP will work with stakeholders to implement these tests. CBP will evaluate new and emerging technologies, which could facilitate biometric entry-exit. The costs may include hardware, software, deployment, and operations and may vary by the type of test. CBP utilized historical cost data from previous biometric entry-exit projects for the estimate. The following table provides the costs to facilitate and enhance data exchange with bordering countries.

Technology Innovation Cost	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025-27
Cost	\$0.00 M	\$4.00 M	\$12.00 M				

F. CBP Officers

CBP currently performs watchlist vetting of departing travelers. On the basis of law enforcement information, CBP must respond to identified watchlist hits such as wants and warrants, and those travelers unlawfully present in the United States without inspection. CBP currently estimates that an additional 441 CBP officers would be needed to perform this additional enforcement work nationwide. Although this increased workload originally was supported by the Biometric Entry-Exit Fee authorization, the decline of that fee (see Section III above) means that CBP will need to fund any additional officer staffing with discretionary resources, which will be reflected in the Workload Staffing Model recommendations.

IV. Spend Plan Estimate

The Biometric Entry-Exit Program has developed a biometric matching service that allows biometric exit to be integrated seamlessly into current airport operations. The back-end infrastructure is fully scalable for nationwide deployment. Partnership with the airlines has maximized use of the fee funds for this development while allowing airports and airlines to select biometric collection equipment that meets their specific needs. This ensures a simple and integrated exit process for travelers. The CBP system leverages a cloud hosting environment, minimizing cost because database management is handled through services rather than onsite personnel. In addition, the program management support team has adhered to and met all privacy and security requirements.

In developing the facial comparison system, CBP implemented a privacy-by-design approach to ensure that CBP embedded data protection into its use of facial comparison technology. CBP employs four primary safeguards to secure data: secure storage, a short retention period, irreversible biometric templates, and secure encryption during data storage and transfer. Additionally, CBP has a rigorous process in place to review data and metrics associated with biometric facial comparison-matching performance. The program also is undergoing thorough cybersecurity testing to optimize system integrity and penetration testing to ensure protection of personally identifiable information.

The chart on the next page presents the spend plan estimate to deploy the biometric entry-exit capability at the top 20 airports, based on collecting fees to the \$1 billion authorization cap. All nonlabor requirements are projected to be affordable under the current funding estimates from fee collections.

The final deployment schedule will be dependent on completion of public and private partnerships.

Section A on the next page shows the overall spend plan to utilize the \$1 billion in fee funding through the end of 2027. The funding is applied to technical investment, programmatic and operational support, and technology innovation to provide biometric entry-exit capabilities at the top 20 airports. The spend plan is based on funding estimates calculated at the end of the first quarter in FY 2020.

Top 20 Airports – Spend Plan

	2017	2018	2019	2020	2021	2022	2023	2024	2025 27	Total
IT Investment (Non-Recurring and O&M)	\$29.21 M	\$52.36 M	\$44.42 M	\$35.47 M	\$54.10 M	\$46.52 M	\$47.45 M	\$47.45 M	\$148.18 M	\$505.17 M
Phase I - Operationalize Departure Information Systems	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M				
Phase II - Build Enterprise Services and End-State Biometric Exit	\$24.84 M	\$39.64 M	\$5.06 M	\$8.50 M	\$8.50 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$86.54 M
Phase III - Scalable Infrastructure	\$0.00 M	\$0.00 M	\$27.29 M	\$16.00 M	\$36.35 M	\$37.10 M	\$37.86 M	\$37.86 M	\$118.28 M	\$310.74 M
Entry Applications	\$4.37 M	\$12.72 M	\$12.06 M	\$10.97 M	\$9.25 M	\$9.42 M	\$9.60 M	\$9.60 M	\$29.89 M	\$107.89 M
Programmatic and Operational Support	\$22.83 M	\$20.91 M	\$17.72 M	\$17.33 M	\$17.37 M	\$17.37 M	\$17.37 M	\$17.37 M	\$31.62 M	\$179.89 M
Program Management	\$21.17 M	\$18.70 M	\$15.04 M	\$14.87 M	\$14.87 M	\$14.87 M	\$14.87 M	\$14.87 M	\$24.12 M	\$153.37 M
Communications and Stakeholder Management	\$1.67 M	\$2.21 M	\$2.68 M	\$2.46 M	\$2.50 M	\$2.50 M	\$2.50 M	\$2.50 M	\$7.50 M	\$26.52 M
Technology Innovation Costs	\$0.00 M	\$0.00 M	\$0.00 M	\$4.00 M	\$4.00 M	\$4.00 M	\$4.00 M	\$4.00 M	\$12.00 M	\$32.00 M
Site Deployments: Top 20 Airports	\$9.49 M	\$1.42 M	\$21.22 M	\$26.48 M	\$24.72 M	\$21.80 M	\$22.24 M	\$22.24 M	\$69.42 M	\$219.03 M
Entry Infrastructure Upgrades	\$7.60 M	\$0.22 M	\$10.16 M	\$6.49 M	\$3.48 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$27.94 M
Exit Network Upgrades - Terminal & Gates (w/O&M)	\$1.00 M	\$1.20 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$2.20 M
Exit Gate Equipment - (Public/Private Partnership)	\$0.89 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.00 M	\$0.89 M
Site Operations and Maintenance	\$0.00 M	\$0.00 M	\$11.06 M	\$20.00 M	\$21.25 M	\$21.80 M	\$22.24 M	\$22.24 M	\$69.42 M	\$187.99 M
Total Programmatic and IT Investment	\$61.54 M	\$74.69 M	\$83.35 M	\$83.28 M	\$100.20 M	\$89.69 M	\$91.06 M	\$91.06 M	\$261.21 M	\$936.09 M
Funding Remaining	\$79.20 M	\$64.03 M	\$39.80 M	\$16.51 M	\$31.32 M	\$56.63 M	\$80.57 M	\$104.50 M	\$63.91 M	\$63.91 M

* The above numbers represent multiple cost factors that are rounded to the nearest ten thousands' place. The calculations in this table are based on the actual unrounded numbers. Any marginal discrepancies in the summation of numbers in this table represent the variance between the rounded and actual numbers.

A. Spend Plan Assumptions:

- The current fee-collection forecasts estimate that funding will accumulate at \$60 million in FY 2020.
- Fee collections will increase to the originally projected \$115 million per year until reaching the \$1 billion cap after USCIS begins collecting on extensions.
- Actual collection amounts were used for FYs 2016-2019.
- The \$1 billion is applied to IT investment, programmatic and operational support, and technology innovation to provide biometric entry-exit capabilities at the top 20 airports.
- Deployment of exit capability to airports will require public and private partnerships.
- Airlines and airports will provide the front-end camera devices at departure gates and will rely upon their own business relationships with travelers to capture and submit biometrics to the CBP back-end system for verification.

V. Conclusion

Development of a biometric exit system has been a significant challenge because of funding and infrastructure limitations in all environments. U.S. ports of entry never were designed for any kind of departure control. Although biometric entry collection was implemented in 2004, only limited progress toward biometric exit implementation was made until this responsibility was transferred to CBP in 2013. Until very recently, there was significant private-sector opposition to deployment of biometric exit because of fears that it would hinder an already complicated and harried travel process.

CBP took a different approach to solving the challenges associated with biometric exit implementation and recognized that the path to successful implementation was through partnership and collaboration with airports and airlines. In partnership with airports and airlines, CBP devised a “tokenless” facial comparison solution, eliminating the step of having first to “read” or handle the passports physically. This resulted in an exit solution that is flexible and feasible with minimal hardware requirements. CBP also was able to leverage facial comparison technology while simultaneously running fingerprints against watchlists.

CBP has used the Biometric Entry-Exit H-1B and L-1 Fee authorized by Congress to build the back-end infrastructure and to provide programmatic and operational support to enable biometric entry-exit at the top 20 airports, which are used by greater than 97 percent of departing commercial air travelers. Beginning in FY 2018, CBP has enabled airlines and airport authorities to plug into the CBP back-end infrastructure. As airlines and airports deploy biometric capture devices, CBP intends to continue to provide CBP officers to respond to law enforcement alerts as well as to new exceptions generated by the biometric exit solution.

CBP will continue to explore opportunities to partner with airports and airlines to integrate facial comparison into travel processes to benefit both facilitation and national security. As CBP continues to look for efficiencies through partnerships and other transformation initiatives, CBP will consider other long-term solutions that would cover the cost of the biometric entry-exit program, including officer staff, O&M, and technology refresh of the solutions into the future.

VI. Appendices

Appendix A – List of Abbreviations

Abbreviation	Definition
CBP	U.S. Customs and Border Protection
COVID-19	Coronavirus Disease 2019
DHS	Department of Homeland Security
FY	Fiscal Year
IT	Information Technology
LCCE	Lifecycle Cost Estimate
O&M	Operations and Maintenance
OFO	Office of Field Operations
PoR	Program of Record
USCIS	U.S. Citizenship and Immigration Services

Appendix B – Top 20 U.S. International Airports by Volume

1	NEWARK (EWR)
2	CHICAGO O'HARE (ORD)
3	ATLANTA (ATL)
4	SAN FRANCISCO (SFO)
5	NEW YORK (JFK)
6	MIAMI (MIA)
7	LOS ANGELES (LAX)
8	HOUSTON (IAH)
9	WASHINGTON DULLES (IAD)
10	HONOLULU (HNL)
11	DALLAS FORT WORTH (DFW)
12	BOSTON (BOS)
13	PHILADELPHIA (PHL)
14	ORLANDO (MCO)
15	SEATTLE (SEA)
16	DETROIT (DTW)
17	LAS VEGAS (LAS)
18	MINNEAPOLIS ST.PAUL (MSP)
19	FORT LAUDERDALE (FLL)
20	CHARLOTTE (CDL)