



July 2018

# SOUTHWEST BORDER SECURITY

## CBP Is Evaluating Designs and Locations for Border Barriers but Is Proceeding Without Key Information

Accessible Version

# GAO Highlights

Highlights of [GAO-18-614](#), a report to congressional requesters

## Why GAO Did This Study

In January 2017, the President issued Executive Order 13767, which directs the Secretary of Homeland Security to immediately plan, design, and construct a wall or other physical barriers along the southwest border. CBP's fiscal year 2018 appropriation provided funding for barrier planning and design, but limited use of funds for primary barrier construction to previously deployed fencing designs.

GAO was asked to review DHS's efforts to deploy barriers along the southwest border. This report examines (1) how CBP evaluated potential designs for barriers, (2) DHS's process for identifying and assessing locations for future deployments of barriers, and (3) how DHS is managing the acquisition of the Border Wall System Program, among other things.

GAO analyzed planning documents; interviewed DHS, CBP, and Border Patrol officials; and conducted a site visit to San Diego to observe CBP's testing of barrier prototypes. This is a public version of a sensitive report that GAO issued in June 2018. Information that DHS deemed sensitive has been omitted.

## What GAO Recommends

GAO recommends that DHS analyze the costs associated with future barrier segments and include that analysis in future planning, and document plans for the planned secondary barrier. View [GAO-18-614](#). For more information, contact Rebecca Gambler at (202) 512-8777 or [gamblierr@gao.gov](mailto:gamblierr@gao.gov).

July 2018

## SOUTHWEST BORDER SECURITY

### CBP Is Evaluating Designs and Locations for Border Barriers but Is Proceeding Without Key Information

## What GAO Found

In March 2017, U.S. Customs and Border Protection (CBP), within the Department of Homeland Security (DHS), issued two requests for proposals (RFP) for physical barrier prototype designs for the southwest border. One RFP was for prototypes made of reinforced concrete, the other was for prototypes made of other materials. CBP subsequently issued task orders, under contracts awarded to six companies, to design and construct eight prototypes, pictured below. From October to December 2017, CBP tested the prototypes, using a range of methods to attempt to climb and breach them. Based on the results, CBP identified design attributes it can use to customize future barrier designs for specific locations, depending on the terrain and other factors.

#### U.S. Customs and Border Protection's Barrier Prototype Designs

Prototypes constructed from solid concrete



Prototypes constructed from other materials



Source: GAO. | GAO-18-614

CBP and U.S. Border Patrol developed a methodology for prioritizing future barrier deployments along the entire southwest border, which included input from Border Patrol officials, data on illegal entry traffic, and analysis of operational and engineering feasibility for each potential location. However, the strategy did not include analysis of the costs associated with deploying barriers in each location or segment, which can vary depending on topography, land ownership, and other factors. Without assessing costs, consistent with leading practices for capital decision making, CBP does not have complete information for prioritizing locations to use its resources in the most cost-effective manner.

Acquisitions for the Border Wall System Program—DHS's program to deploy barriers and other assets along the southwest border—are required to follow the department's acquisition process. However, GAO found that for one of the two approved segments, DHS has not documented its plans as required. Specifically, GAO found that for the Rio Grande Valley segment, DHS leadership approved and documented plans in December 2017. In contrast, for the San Diego secondary barrier segment, CBP's plans have not yet been documented, which could hinder DHS's ability to monitor progress for the segment.

---

# Contents

---

Letter	1
Background	5
CBP Tested Prototypes to Inform Barrier Designs	14
DHS Selected Initial Locations for Barriers before Identifying Priorities across the Southwest Border or Assessing Costs	23
DHS Is Taking Steps to Manage the Acquisition, Technology Deployments, and Assessment of the Border Wall System Program, but Has Not Documented Plans for One Segment	27
Conclusions	36
Recommendations for Executive Action	36
Agency Comments and Our Evaluation	36
Appendix I: Objectives, Scope & Methodology	40
Appendix II: Comments from the Department of Homeland Security	43
Appendix III: GAO Contact and Staff Acknowledgments	49
Appendix IV: Accessible Data	50
Data Table	50
Agency Comment Letter	51
Tables	
Table 1: U.S. Customs and Border Protection's (CBP) Planned Funding for Southwest Border Barriers, Fiscal Years (FY) 2017 and 2018 Appropriations and 2019 Funding Request	11
Table 2: Examples of U.S. Customs and Border Protection (CBP) Requirements and Test Methods Used for Barrier Prototypes	18
Table 3: Summary of Selected Examples of U.S. Customs and Border Protection's (CBP) Barrier Prototype Test and Evaluation Results	19
Table 4: U.S. Customs and Border Protection's Impedance and Denial Prioritization Strategy Initial and Final Rankings	25

---

## Figures

Figure 1: Examples of Existing Barriers along the Southwest Border	7
Figure 2: Border Patrol Sectors along the Southwest Border and Border Stations and Zones in the Rio Grande Valley and San Diego Sectors	8
Figure 3: Department of Homeland Security's (DHS) Acquisition Life Cycle and Acquisition Decision Events	14
Figure 4: U.S. Customs and Border Protection Barrier Prototype Designs	16
Figure 5: U.S. Customs and Border Protection's (CBP) Process for Prioritizing Future Barrier Deployments	24
Accessible Data for Figure 5: U.S. Customs and Border Protection's (CBP) Process for Prioritizing Future Barrier Deployments	50

---

### Abbreviations

ADE	acquisition decision event
CBP	Customs and Border Protection
DHS	Department of Homeland Security
IIRIRA	Illegal Immigration Reform and Immigrant Responsibility Act
OFAM	Office of Facilities and Asset Management
RFP	request for proposal
RVSS	Remote Video Surveillance System
S&T	Science and Technology Directorate

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



July 30, 2018

The Honorable Claire McCaskill  
Ranking Member  
Committee on Homeland Security and Governmental Affairs  
United States Senate

The Honorable Bennie Thompson  
Ranking Member  
Committee on Homeland Security  
House of Representatives

The Honorable Filemon Vela  
Ranking Member  
Subcommittee on Border and Maritime Security  
Committee on Homeland Security  
House of Representatives

The southwest border of the United States has long been vulnerable to cross-border illegal activity. Within the Department of Homeland Security (DHS), U.S. Customs and Border Protection's (CBP) U.S. Border Patrol (Border Patrol) is the federal agency responsible for securing U.S. borders between ports of entry.<sup>1</sup> According to Border Patrol data, in fiscal year 2017, Border Patrol agents apprehended 304,000 illegal entrants, a decrease from 409,000 in fiscal year 2016.

CBP spent approximately \$2.3 billion between fiscal years 2007 and 2015 to deploy physical barriers along the nearly 2,000-mile southwest border and, as of March 2018, maintained 654 miles of primary pedestrian and

---

<sup>1</sup>See 6 U.S.C. § 211(a) (establishing CBP within DHS), (c) (enumerating CBP's duties), (e) (establishing and listing duties of U.S. Border Patrol within CBP). Ports of entry are facilities that provide for the controlled entry into or departure from the United States. Specifically, a port of entry is any officially designated location (seaport, airport, or land border location) where DHS officers or employees are assigned to clear passengers and merchandise, collect duties, and enforce customs laws, and where DHS officers inspect persons entering or applying for admission into, or departing the United States pursuant to U.S. immigration and travel controls.

vehicular barriers.<sup>2</sup> In January 2017, the President issued Executive Order 13767, which directs the Secretary of Homeland Security to immediately plan, design, and construct a wall or other physical barriers along the southwest border.<sup>3</sup> In response, CBP initiated the Border Wall System Program to plan and deploy new barriers and other assets.<sup>4</sup>

In prior work, we have reported on the progress DHS has made and challenges it has faced in implementing its border security efforts. In September 2009, we found that CBP had not assessed the impact of tactical infrastructure—fencing, gates, roads, bridges, lighting, and drainage infrastructure—on border security operations or mission goals.<sup>5</sup> Specifically, we found that CBP had not accounted for the impact of its investment in border fencing and infrastructure on border security. We recommended that CBP conduct an evaluation of the impact of tactical infrastructure on effective control of the border.<sup>6</sup> In February 2017, we found that CBP had not developed metrics that systematically used the data it collected to assess the contributions of border fencing to its

---

<sup>2</sup>For the purposes of this report, we generally use the term “barrier” to refer to a physical structure, such as a pedestrian fence, vehicle barrier, or wall, or any combination of these structures, that is intended to impede the movement of people or vehicles. The primary barrier, which may include pedestrian or vehicle barriers, is the first barrier encountered when moving into the United States from the border; the secondary barrier, located behind the primary barrier on the U.S. side of the border, consists solely of pedestrian barrier; and the third barrier, or tertiary barrier, is further set back from the border, and is primarily used to delineate property lines rather than deter illegal entries.

<sup>3</sup>Border Security and Immigration Enforcement Improvements, Exec. Order No. 13767, § 4, 82 Fed. Reg. 8793, 8794 (Jan. 30, 2017) (issued Jan. 25). Executive Order 13767 defines “wall” as a “contiguous, physical wall or other similarly secure, contiguous, and impassable physical barrier.” See *id.* § 3, 82 Fed. Reg. at 8794.

<sup>4</sup>CBP uses the term “wall system” to describe planned combinations of barriers, separated by an enforcement zone; lighting and surveillance technology for the barriers and enforcement zone; access roads; and interfaces for current or future technologies to support detection capabilities.

<sup>5</sup>GAO, *Secure Border Initiative: Technology Deployment Delays Persist and the Impact of Border Fencing Has Not Been Assessed*, [GAO-09-896](#) (Washington, D.C.: Sept. 9, 2009).

<sup>6</sup>Prior to 2011, DHS used the number of border miles under “operational control”—also referred to as effective control—as its goal and outcome measure for border security and to assess resource needs to accomplish this goal. In 2012, Border Patrol transitioned to achieving a “low risk border” as its goal and uses a variety of data to assess risk, including: threats of cross-border terrorism, drug smuggling, illegal migration across locations; integrating border security operations with those of other law enforcement partners; and developing rapid response capabilities to deploy the resources appropriate to changes in threat.

mission.<sup>7</sup> We recommended that Border Patrol develop metrics to assess the contributions of pedestrian and vehicle fencing to border security along the southwest border and develop guidance for its process for identifying, funding, and deploying tactical infrastructure assets for border security operations. CBP concurred with our recommendations and has taken action to address them, as discussed later in this report.

You requested that we review DHS's efforts to deploy barriers along the southwest border. In this report, we examine (1) how CBP evaluated potential designs for barriers, (2) DHS's process for identifying and assessing locations for future deployments of barriers, and (3) how DHS is managing the acquisition, incorporation of technology, and assessment of the Border Wall System Program.

This report is the public version of a prior sensitive report that we issued in June 2018.<sup>8</sup> DHS deemed some of the information in the prior report as For Official Use Only, Law Enforcement Sensitive, and Source Selection Information, which must be protected from public disclosure. Therefore, this report omits sensitive information about CBP's evaluations of potential designs for barriers and Border Patrol's specific technology capabilities. Although the information in this report is more limited in scope, the report addresses the same questions as the sensitive report and uses the same methodology.

For these objectives, we reviewed relevant documents and met with agency officials, including those from the Border Wall System Program within CBP's Office of Facilities and Asset Management (OFAM), Border Patrol's Operational Requirements Management Division, and DHS's Office of Program Accountability and Risk Management. To examine how CBP evaluated potential designs for barriers, we visited Border Patrol's San Diego sector, where CBP constructed and tested barrier prototypes. We observed prototype testing and toured Border Patrol stations where CBP plans to replace existing barriers. We met with Border Patrol officials from the San Diego and Rio Grande Valley sectors, where CBP plans to construct new barriers, to learn more about their experiences using

---

<sup>7</sup>GAO, *Southwest Border Security: Additional Actions Needed to Better Assess Fencing's Contributions to Operations and Provide Guidance for Identifying Capability Gaps*, [GAO-17-331](#) (Washington, D.C.: Feb. 16, 2017).

<sup>8</sup>GAO, *Southwest Border Security: CBP Is Evaluating Designs and Locations for Border Barriers but Is Proceeding Without Key Information*, [GAO-18-489SU](#) (Washington, D.C.: June 12, 2018).



---

barriers and other assets in their enforcement activities. We also met with officials from the U.S. Army Corps of Engineers to learn about their role in evaluating the barrier prototypes. In addition, we reviewed key documents, including CBP's prototype test plans and results. To examine DHS's process for identifying and assessing locations for future deployments of barriers, we reviewed relevant agency documents such as the Border Security Improvement Plan, which includes Border Patrol's priorities for deploying barriers and other assets along the southwest border. We also met with DHS and Border Patrol officials and viewed the Impedance and Denial Prioritization Strategy that Border Patrol developed to inform how the agency prioritized the locations. We assessed this methodology against *Leading Practices for Capital Decision-Making*, as well as Border Patrol's risk assessments and the capability gaps Border Patrol identified through its Capability Gaps Analysis Process.<sup>9</sup> To examine how DHS is managing the acquisition, incorporation of technology, and assessment of the Border Wall System Program, we reviewed program and acquisition documents prepared for the Border Wall System Program and assessed them against DHS acquisition policy, implementation guidance, and findings from our previous work. Additional details on our scope and methodology are contained in appendix I.

We conducted this performance audit from October 2017 through June 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We subsequently worked with DHS from June 2018 through July 2018 to prepare this public version of the original sensitive report for public release. This public version was also prepared in accordance with these standards.

---

<sup>9</sup>GAO, *Executive Guide: Leading Practices in Capital Decision-Making*, [GAO/AIMD-99-32](#) (Washington, D.C.: Dec. 1, 1998).



---

## Background

---

### Barriers along the Southwest Border

The Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) of 1996, as amended, requires the Secretary of Homeland Security to take necessary actions to install physical barriers and roads in the vicinity of the border to deter illegal crossings in areas of high illegal entry.<sup>10</sup> As originally enacted, IIRIRA also required the completion of a triple-layer fence and road improvements along 14 miles of border near San Diego, where Border Patrol had begun installing fence in the 1990s.<sup>11</sup> The REAL ID Act of 2005 amended IIRIRA by expanding the authority of the Secretary of Homeland Security to waive all legal requirements, as determined to be necessary, in the Secretary's sole discretion, to ensure expeditious construction of barriers and roads along the border.<sup>12</sup>

The Secure Fence Act of 2006 amended IIRIRA to require DHS to construct at least two layers of reinforced fencing, as well as roads, lighting, cameras, and sensors, on certain segments of the southwest border in California, Arizona, New Mexico, and Texas.<sup>13</sup> The Secure Fence Act of 2006 also required that DHS achieve and maintain operational control over U.S. borders through surveillance activities and physical infrastructure enhancements to prevent unlawful entry by foreign nationals and facilitate CBP's access to the borders.<sup>14</sup> Subsequently, the DHS Appropriations Act, 2008, rewrote IIRIRA's border fencing section and replaced it with requirements for DHS to construct at least 700 miles of reinforced fencing where it would be most practical and effective; and to install additional physical barriers, roads, lighting, cameras, and

---

<sup>10</sup>Pub. L. No. 104-208, div. C, tit. I, subtit. A, § 102(a), 110 Stat. 3009, 3009-554 (classified, as amended, at 8 U.S.C. § 1103 note).

<sup>11</sup>IIRIRA § 102(b), 110 Stat. at 3009-554 to -555.

<sup>12</sup>Pub. L. No. 109-13, div. B, tit. I, § 102, 119 Stat. 231, 306.

<sup>13</sup>See Pub. L. No. 109-367, § 3, 120 Stat. 2638, 2638-2639.

<sup>14</sup>Pub. L. No. 109-367, § 2, 120 Stat. at 2638 (classified at 8 U.S.C. § 1701 note). Executive Order 13767 calls for DHS to obtain complete operational control of the southern border, defining operational control as the prevention of all unlawful entries into the United States, including entries by terrorists, other unlawful aliens, instruments of terrorism, narcotics, and other contraband.

sensors to gain operational control of the southwest border.<sup>15</sup> Under IIRIRA, as amended, installation of tactical infrastructure or technology in a particular location along the border is not required if the Secretary of Homeland Security determines that use or placement of such resources is not the most appropriate means to achieve and maintain operational control over the border at that location.<sup>16</sup>

To address these requirements, from fiscal year 2005 through fiscal year 2015, CBP increased the total miles of primary barriers on the southwest border from 119 miles to 654 miles—including 354 miles of primary pedestrian barriers and 300 miles of primary vehicle barriers.<sup>17</sup> CBP used various designs to construct the existing 654 miles of primary fencing. See figure 1 for examples of fencing designs currently deployed along the southwest border. According to Border Patrol officials, DHS focused its deployment of pedestrian barriers near urban areas to divert illegal entrants away from densely populated areas, where it is easier for them to quickly blend into the surrounding community. Vehicle fencing, which is meant to slow and prevent vehicles from crossing the border, is typically deployed in more rural environments where, according to Border Patrol officials, criminal organizations engaged in trafficking and smuggling use vehicles to avoid encountering Border Patrol agents.

---

<sup>15</sup>IIRIRA § 102(b), 110 Stat. at 3009-554 to -555, as amended by Pub. L. No. 110-161, div. E, tit. V, § 564(a)(2)(B)(ii), 121 Stat. 1844, 2090-91 (2007) (classified at 8 U.S.C. § 1103 note).

<sup>16</sup>Id.

<sup>17</sup>In addition to the 654 miles of primary fencing, CBP has also deployed additional layers of pedestrian fencing behind the primary border fencing, including 37 miles of secondary fencing and 14 miles of tertiary fencing. See [GAO-17-331](#).

**Figure 1: Examples of Existing Barriers along the Southwest Border**



Bollard-style pedestrian barrier



Levee wall topped with bollard barrier



Wire mesh-style barrier

Source: GAO. | GAO-18-614

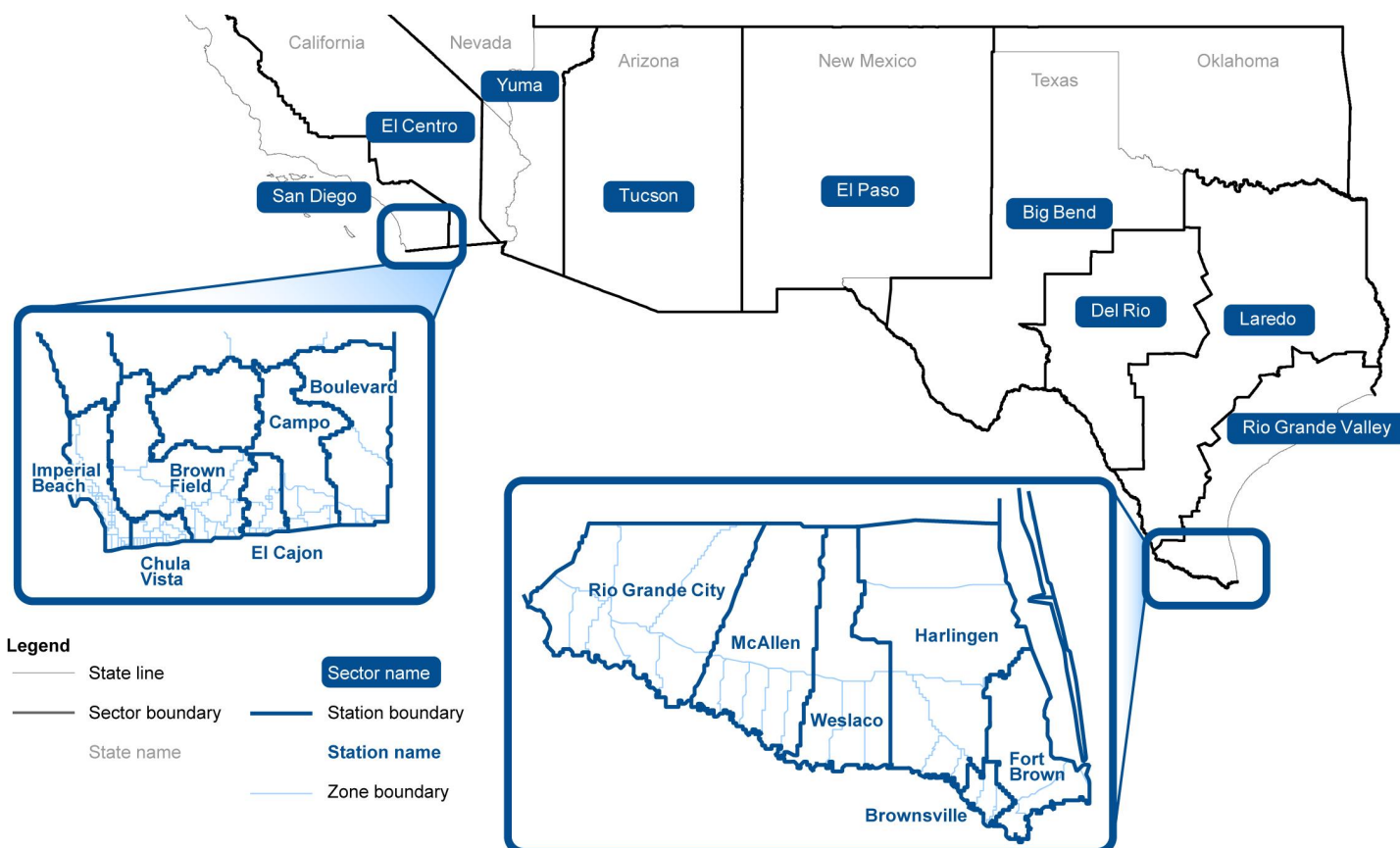


Bollard-style vehicle barrier

## Border Patrol Operations along the Southwest Border

Border Patrol divides responsibility for border security operations geographically among nine sectors along the southwest border, as shown in figure 2. Each sector is further divided into stations, with agents assigned to patrol defined geographic areas, or zones, within each station. At the end of fiscal year 2017, Border Patrol reported it had approximately 16,500 agents staffed to sectors along the southwest border.

**Figure 2: Border Patrol Sectors along the Southwest Border and Border Stations and Zones in the Rio Grande Valley and San Diego Sectors**



Source: U.S. Customs and Border Protection; MapInfo (map). | GAO-18-614

---

## Border Wall System Program

CBP's Office of Facilities and Asset Management (OFAM) created the Border Infrastructure Program Management Office in March 2017. OFAM is responsible for overseeing and managing the construction of CBP's tactical infrastructure, including barriers. Under the Border Infrastructure Program Management Office's Border Wall System Program, CBP plans to build or replace physical barriers and deploy other infrastructure and technology within defined segments along the southwest border.<sup>18</sup> CBP uses the term "wall system" to describe these planned combinations of primary and secondary barriers—separated by an enforcement zone—together with lighting and surveillance technology for the barriers and enforcement zone, access roads, and interfaces for current or future technologies to support detection capabilities. Deployments may differ by geographical area, due to factors such as variations in the terrain, existing resources in the area, and the types of threats present. For example, an enforcement zone could be created with the space between a natural feature, like a river, and a manmade barrier.

In response to CBP's fiscal year 2017 budget amendment and request for supplemental appropriations, CBP received additional funding in the Consolidated Appropriations Act, 2017, to replace existing primary pedestrian and vehicle fencing in high-priority areas.<sup>19</sup> The act provides that the replacement fencing should use previously deployed and operationally effective designs that prioritize agent safety.<sup>20</sup> CBP plans to use these funds for barrier replacement in the San Diego, El Centro, and El Paso sectors. In March 2018, the Consolidated Appropriations Act, 2018, provided CBP \$1.34 billion to build or replace primary and secondary fencing in the Rio Grande Valley and San Diego sectors, and other southwest border locations. The act provides that fiscal year 2018 funds for new or replacement primary pedestrian fencing are only available for operationally effective designs deployed as of May 5, 2017,

---

<sup>18</sup>Border Patrol officials stated that, as of June 2018, Border Patrol's Program Management Office Directorate was responsible for the Border Wall System Program.

<sup>19</sup>The March 2017 request for additional appropriations was made as part of an amendment to the President's fiscal year 2017 budget submitted under the prior administration.

<sup>20</sup>See Consolidated Appropriations Act, 2017, Pub. L. No. 115-31, div. F, tit. VI, 131 Stat. 135, 433-34, and accompanying Explanatory Statement, 163 Cong. Rec. H3327, H3823 (daily ed. May 3, 2017).

---

such as steel bollard fencing, that prioritize agent safety.<sup>21</sup> Table 1 shows CBP's appropriated and requested funding for the construction of new and replacement barriers along the southwest border through fiscal year 2019.

---

<sup>21</sup>See Pub. L. No. 115-141, div. F, tit. II, § 230; 164 Cong. Rec. H2045, H2550, H2557 (daily ed. March 22, 2018). With respect to secondary fencing, the Consolidated Appropriations Act, 2018, specifically required that funding for such fencing in the San Diego sector only be used on designs providing cross-barrier visual situational awareness.

**Table 1: U.S. Customs and Border Protection's (CBP) Planned Funding for Southwest Border Barriers, Fiscal Years (FY) 2017 and 2018 Appropriations and 2019 Funding Request**

Category	Type of Barrier and Location	Planned Number of Border Miles	Amount Appropriated or Requested
FY 2017 Appropriation <sup>a</sup> (funded)	Replacement of primary pedestrian fencing in the San Diego sector (California)	14	\$146 million appropriated
FY 2017 Appropriation <sup>a</sup> (funded)	Replacement of primary pedestrian fencing in the El Centro sector (California)	2	
FY 2017 Appropriation <sup>a</sup> (funded)	Replacement of primary pedestrian fencing in the El Paso sector (Texas)	4	
FY 2017 Appropriation <sup>a</sup> (funded)	Replacement of primary vehicle fencing (to primary pedestrian barrier) in the El Paso sector (New Mexico)	20	\$146 million appropriated
FY 2018 Appropriation (funded) <sup>b</sup>	Construction of primary pedestrian levee fencing in the Rio Grande Valley sector (Texas)	25	\$445 million appropriated
FY 2018 Appropriation (funded) <sup>b</sup>	Construction of primary pedestrian fencing in the Rio Grande Valley sector (Texas)	To be determined	\$196 million appropriated
FY 2018 Appropriation (funded) <sup>b</sup>	Replacement of secondary pedestrian fencing in the San Diego sector (California)	14	\$251 million appropriated
FY 2018 Appropriation (funded) <sup>b</sup>	Replacement of existing primary pedestrian fencing along the southwest border	To be determined	\$445 million appropriated
FY 2019 Funding Request <sup>c</sup>	Construction of wall system in the Rio Grande Valley sector <sup>d</sup>	Approximately 65	\$1.6 billion requested

Source: GAO analysis of CBP data. | GAO-18-614

Note: Additional funds related to physical border security are not included in this table. For example, the Consolidated Appropriations Act, 2017, included \$78.8 million for the acquisition and deployment of border security technology and \$77.4 million for new border road construction. Additionally, the Consolidated Appropriations Act, 2018, included \$38 million for border barrier planning and design, \$196 million for the acquisition and deployment of border security technology, and \$49.7 million for new border road construction.

<sup>a</sup>The Consolidated Appropriations Act, 2017, provided funding for the replacement of primary pedestrian and vehicle fencing in high-priority areas, using previously deployed and operationally effective designs, such as currently deployed steel bollard designs, that prioritize agent safety; and to add gates to existing barriers. CBP selected the locations listed.

<sup>b</sup>The Consolidated Appropriations Act, 2018, provided funding for secondary fencing in the San Diego sector, primary pedestrian (including levee) fencing in the Rio Grande Valley sector, replacement of existing primary pedestrian fencing in any location along the southwest border, and border barrier planning and design.

<sup>c</sup>According to Department of Homeland Security (DHS) officials, the fiscal year 2019 request may be modified based on what DHS was appropriated in the Consolidated Appropriations Act, 2018.



---

<sup>d</sup>CBP uses the term "wall system" in reference to planned combinations of tactical infrastructure, including primary and secondary barriers separated by an enforcement zone, lighting and surveillance technology for the barriers and enforcement zone, access roads, and interfaces for current or future technologies to support detection capabilities.

---

## DHS's Acquisition Life Cycle

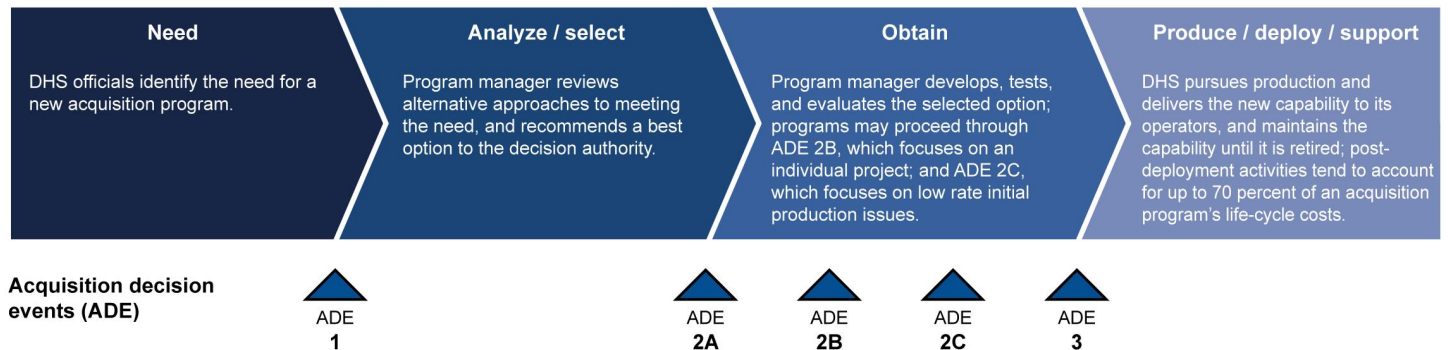
DHS's overall policy for acquisition management is outlined in Acquisition Management Directive 102-01 and its associated Instructional Manual 102-01-001.<sup>22</sup> DHS's Under Secretary for Management is currently designated as the department's Chief Acquisition Officer and, as such, is responsible for managing the implementation of the department's acquisition policies and acting as the acquisition decision authority for the department's largest acquisition programs.<sup>23</sup> The Under Secretary for Management is supported by the Office of Program Accountability and Risk Management, which is responsible for overseeing the acquisition process and assessing the status of acquisition programs through four phases of the acquisition life cycle. In addition, the Acquisition Review Board, which consists of DHS officials responsible for managing the department's mission objectives, resources, and contracts, provides oversight and supports the acquisition decision authority in assessing acquisition programs.

The acquisition life cycle includes a series of five acquisition decision events (ADE) that provide the acquisition decision authority an opportunity to assess whether the program is ready to proceed. DHS requires programs to complete certain acquisition documents—such as life-cycle cost estimates, test and evaluation master plans, and acquisition program baselines—throughout the acquisition life cycle. Figure 3 depicts the four phases of the acquisition life cycle and the associated ADEs.

---

<sup>22</sup>Department of Homeland Security, *Acquisition Management Directive 102-01, Revision 3* (July 28, 2015). *DHS Instruction 102-01-001, Revision 1* (March 9, 2016).

<sup>23</sup>DHS's Under Secretary for Management serves as the acquisition decision authority for programs with life-cycle cost estimates of \$300 million or greater. Component Acquisition Executives—the most senior acquisition management officials within each of DHS's component agencies—may be delegated acquisition decision authority for programs with cost estimates between \$300 million and less than \$1 billion and also serve as the acquisition decision authority for programs with cost estimates below \$300 million.

**Figure 3: Department of Homeland Security's (DHS) Acquisition Life Cycle and Acquisition Decision Events****Acquisition phases**

Source: GAO analysis of Department of Homeland Security (DHS) data. | GAO-18-614

## CBP Tested Prototypes to Inform Barrier Designs

### CBP Constructed and Tested Barrier Prototypes

After the issuance of Executive Order 13767 in January 2017, CBP took steps to test and evaluate prototypes of new barrier designs for the southwest border.<sup>24</sup> To fund the planning and design of barriers along the southwest border, including the construction and testing of barrier prototypes, DHS notified Congress in February 2017 of plans to reprogram \$20 million from other CBP programs funded in previous years.<sup>25</sup> In March 2017, CBP issued two requests for proposals (RFP) for barrier prototypes. One RFP solicited a prototype made of reinforced

<sup>24</sup>The Consolidated Appropriations Act, 2018, provided funding for border barrier planning and design, but limited the use of funds provided for construction of new and replacement primary pedestrian fencing to previously deployed fencing designs. Pub. L. No. 115-141, div. F, tit. II, § 230; 164 Cong. Rec. at H2550, H2557.

<sup>25</sup>These funds were available due to a contract bid protest and delays associated with the Mobile Video Surveillance System Program and contract savings from a fence replacement project. CBP reprogrammed \$15 million from funds originally requested for deployments of Mobile Video Surveillance Systems, a technology used by Border Patrol, and \$5 million from funds originally intended for a fence replacement project in Naco, Arizona, which will be completed within its original scope. Of the \$20 million in reprogrammed funds, approximately \$5 million was obligated for prototype construction and related support, such as testing and evaluation, site preparations, and security, according to CBP officials.

---

concrete; the second called for a prototype built with other materials, with the objective of having a “see-through capability” to facilitate Border Patrol agents’ situational awareness of the border.<sup>26</sup> CBP subsequently awarded task orders to six companies with a total value of over \$3 million to design and construct eight barrier prototypes.<sup>27</sup> The companies constructed the prototypes in the San Diego sector from September to October 2017. Four of the prototypes were constructed from reinforced concrete, while four included other materials, two of which included a see-through component, as shown in figure 4.

---

<sup>26</sup>Border Patrol defines situational awareness as the degree to which agents are able to perceive and process critical elements of information in the operational environment to make effective operational decisions. The RFP calling for the “other border wall prototype” required alternatives to reinforced solid concrete walls, which could include, for example, different materials or a design that is not entirely solid. The RFP also included threshold requirements (intended as minimum requirements) and objective requirements (features that CBP determined would substantially enhance the effectiveness of the barrier). One of the objective requirements in the RFP calling for a prototype built with other materials was to incorporate “a see-through component/capability to the wall that facilitates situational awareness”.

<sup>27</sup>These task orders were issued under an indefinite delivery indefinite quantity contract with the potential to compete for future task orders. The prototype task orders met the contracts’ minimum guarantee to the companies, so there is no certainty that the companies would be selected for potential future task orders.

**Figure 4: U.S. Customs and Border Protection Barrier Prototype Designs**

**Prototypes constructed from solid concrete**



**Prototypes constructed from other materials**



Source: GAO. | GAO-18-614

CBP included 13 requirements in each RFP to guide how the prototypes were designed. According to CBP and Border Patrol officials, CBP based the requirements on Border Patrol's approved design requirements for existing barriers, along with additional needs identified through operational experience. From October to December 2017, CBP's test team tested the prototypes to gather information about how well each met the requirements included in the RFPs, grouped into five categories—breaching, scaling, constructability, engineering design, and aesthetics.<sup>28</sup> As established in CBP's prototype test plan, the evaluation of the prototypes was not intended to select a single, winning prototype design, but rather to inform CBP as it developed new barrier designs. In

<sup>28</sup>CBP's test team consisted of personnel from CBP Office of Acquisition, CBP Operations Support, CBP OFAM, Border Patrol, U.S. Army Corps of Engineers, and breaching and scaling experts from the Border Patrol Tactical Unit and the U.S. Special Operations Command.

---

particular, officials from CBP's test team told us they were more focused on learning from industry's innovations than on identifying potential weaknesses in prototype designs, since CBP was not planning to select one prototype design to replicate.

As part of its evaluation, CBP's test team considered a range of common and sophisticated methods for attempting to climb and breach each prototype barrier. Next, the test team chose which methods would be most appropriate for each prototype, since the prototypes varied in design. For instance, one testing method was developed by climbing experts based on specific features of one of the prototypes, and it was not possible to use that particular testing method on the other prototypes.<sup>29</sup> CBP's prototype test plan established the approach and limitations of the tests, such as limiting scaling techniques to those that could be conducted safely and limiting breaching and scaling techniques to those prescribed in the RFP. Table 2 provides examples of the design requirements for the prototypes and describes examples of the types of testing and evaluation methods CBP used.

---

<sup>29</sup>DHS determined that specific details about the prototype tests are sensitive, so they were omitted from this report.

**Table 2: Examples of U.S. Customs and Border Protection (CBP) Requirements and Test Methods Used for Barrier Prototypes**

<b>Test Category</b>	<b>Design Requirements for the Prototypes (Summarized Examples)</b>	<b>Test and Evaluation Methods Used (Summarized Examples)</b>
Breaching	For concrete prototypes, the design should prevent the creation of a hole in the barrier larger than 12 inches in diameter using tools for a minimum of one hour. For prototypes constructed from other materials, the design should prevent the creation of a hole in the barrier larger than 12 inches in diameter using tools for a minimum of 30 minutes.	The CBP test team used various tools to attempt to breach prototype “mock-ups,” which were replicas of the bottom 10 feet of each prototype. CBP’s test team recorded whether they could create a 12-inch diameter hole through the prototypes using various tools and, if so, how long it took to do so.
Scaling	The design should prevent someone from “scaling,” or climbing to the top of the barrier from either side, without assistance.  The design should include anti-climbing features on the top of the barrier that would prevent climbing to the top using common and more sophisticated tools.	Climbers on CBP’s test team attempted to reach the top of the prototypes during timed tests, both unassisted (the climber did not use climbing aids), and assisted (the climber used various tools and techniques). CBP’s test team recorded whether the climber could reach the top of the prototypes in a variety of scenarios and, if applicable, how long it took to do so. In addition, the test team executed a “perch test” to assess whether the prototype’s features allowed someone to sit on top of the barrier once they climbed to the top.
Constructability	The design should prevent digging for a minimum of 6 feet below the lowest adjacent grade.  The barrier design should be physically imposing in height, and ideally 30 feet tall, but no less than 18 feet tall.	CBP engineers inspected the prototypes to determine if they met requirements related to appearance and construction. The engineers also assessed how feasible it would be to construct the prototypes in other environments, based on their observations during the construction of the prototypes.
Engineering Design	The design should be cost-effective to construct, maintain, and repair.  The barrier design should be constructible on slopes up to a 45 percent grade.	A team from the U.S. Army Corps of Engineers, which included civil and structural engineers, reviewed design plan documents for each prototype and gathered feedback from CBP engineers who observed the construction of the prototypes. The team conducted cost estimates for the prototypes and assessed how well the prototype designs met requirements.
Aesthetics	The north side of the barrier should be pleasing in color and texture to be consistent with the surrounding area.	CBP collected input from 76 personnel on the attractiveness and perceived effectiveness of each prototype. Engineers from Johns Hopkins University developed a test using photographs of the prototypes to gather test participants’ ordered preferences.

Source: GAO analysis of CBP information. | GAO-18-614

Note: This table excludes specific details about test and evaluation methods that DHS deemed sensitive.

In February 2018, CBP issued a report describing the prototype test results. As intended, the report did not select a winning design or provide an overall ranking of the prototype designs. Rather, CBP’s final report included the test team’s detailed assessment of the specific strengths and weaknesses presented by each prototype within the five test categories.



For example, the final report included potential construction challenges, factors that facilitated or deterred the team's attempts to scale or breach the prototypes, and feedback from scaling and breaching experts.<sup>30</sup> Table 3 provides a summary of selected prototype test and evaluation results.

**Table 3: Summary of Selected Examples of U.S. Customs and Border Protection's (CBP) Barrier Prototype Test and Evaluation Results**

Test Category	Results As Reported by CBP
Constructability	The test team determined that all of the four concrete prototypes would present "extensive" construction challenges, especially in a sloping terrain. <sup>a</sup> Among the four prototypes constructed from other materials, CBP determined that two barrier prototypes would present "substantial" construction challenges and two would present "moderate" construction challenges. This assessment included factors such as whether the foundation would accommodate slope changes, distance from the border required during construction, weight of the construction materials, and the equipment—such as cranes or concrete trucks—needed during construction.
Engineering Design	<p>Six of the eight prototypes would require "substantial" or "extensive" design changes to meet the requirement to accommodate surface drainage, and two would require "minimal" changes.</p> <p>Six of the eight prototypes would require "substantial" or "extensive" design changes to accommodate gates needed to provide access to Border Patrol, as required in the request for proposal, and two of the prototypes would require "moderate" changes.</p> <p>Four of the eight prototypes could be constructed at slopes of up to 45 percent, with varying degrees of construction challenges. Three of the prototype designs would be impractical for slopes over 15 percent. One of the prototypes could not be constructed on any slope without a redesign.</p> <p>To assess cost-effectiveness, the U.S. Army Corps of Engineers developed cost estimates for the prototypes based on the design information submitted by the companies who constructed the prototypes. The current working estimate included the estimated contract cost, construction contingency, and supervision and administration costs.</p>
Aesthetics	CBP identified three prototypes that ranked highest in terms of attractiveness and participants' perception of effectiveness.

Source: GAO analysis of CBP information. | GAO-18-614

Note: DHS determined that specific details about the prototype test results are sensitive, so they are omitted from this report.

<sup>a</sup>CBP and the U.S. Army Corps of Engineers used the terms "extensive," "substantial," "moderate," and "minimal" to describe the degree of construction challenges or the changes that would need to be made to the design to meet requirements.

As CBP gained more information from test results, its plans for developing new barrier designs evolved. In December 2017, CBP officials stated that they did not plan to select any single prototype design for building new barrier segments. Rather, CBP officials stated they planned to identify characteristics that improved or weakened the performance of the prototypes, and use that information to create new design standards,

<sup>30</sup>The specific details of the prototype test results that DHS determined are sensitive have been excluded from this report.

---

which could include concrete or other materials. In January 2018, after viewing preliminary prototype test results, CBP officials told us they planned to select design attributes that Border Patrol could use to customize the barrier for each planned segment. For example, according to CBP and Border Patrol officials, Border Patrol will be able to select the materials for the bottom and top halves of the barrier, certain aspects of the façade, the height, anti-climb features, and other attributes. CBP and U.S. Army Corps of Engineers officials said that there could be limitations on how the barrier designs are customized to ensure cost-effectiveness or for structural or operational reasons. For example, according to the officials, Border Patrol does not plan to use solid concrete on the bottom half of a primary barrier, to ensure agents have a clear line of sight to the border. In addition, U.S. Army Corps of Engineers officials noted that the foundation selected for a barrier design would largely be dictated by the surrounding terrain to ensure the structural integrity of the design. Border Patrol approved the selected design attributes in February 2018, according to OFAM and Border Patrol officials.

While CBP has updated its options for barrier designs, CBP does not plan to use these designs for primary barriers to be constructed with fiscal year 2018 funds, as the appropriations act required that amounts for construction of new and replacement primary pedestrian fencing be used only for operationally effective designs deployed as of May 5, 2017, such as steel bollard fencing.<sup>31</sup> CBP officials stated they have always planned to use existing barrier designs (bollard-style barriers or levee walls topped with bollards) for planned segments in the Rio Grande Valley sector, but originally planned to replace about 14 miles of secondary barrier in the San Diego sector with a new or modified barrier design. However, in March 2018, CBP officials reported that CBP plans to use the existing bollard barrier design when constructing the planned secondary barrier in the San Diego sector, and that Border Patrol will be able to customize some attributes of the barrier informed by the prototype tests, such as the height and anti-climb features.

---

<sup>31</sup>See Pub. L. No. 115-141, div. F, tit. II, § 230; 164 Cong. Rec. at H2550, H2557.

---

## CBP Is Developing Test Plans for Future Barriers and Other Enforcement Zone Components

CBP is developing plans for how it will test and evaluate new barriers and other enforcement zone components planned for future deployments. CBP officials told us that engineers from CBP and the U.S. Army Corps of Engineers would assess any new barrier designs prior to construction to ensure the barrier is structurally sound. In December 2017, CBP issued a test and evaluation master plan for the Border Wall System Program, which describes how CBP plans to assess segments before, during, and after construction. CBP's test and evaluation activities are intended to gather information to help DHS and CBP officials identify and minimize program risks. Among other things, CBP plans to evaluate how well the barriers and other components of the enforcement zone—including lighting, access roads, gates, and technology—are expected to meet the operational requirements that Border Patrol developed for the Border Wall System Program. For example, CBP plans to conduct environmental testing designed to assess the performance of the enforcement zone components during exposure to adverse environmental conditions.<sup>32</sup>

CBP plans to develop annexes to the test and evaluation master plan that are specific to each planned barrier segment. CBP officials said that the annexes will help account for the unique circumstances in each geographical area, such as the terrain and proximity to urban settings. In January 2018, CBP issued an annex to the test and evaluation master plan for the segment planned in the Rio Grande Valley sector. According to CBP officials, as of April 2018, CBP continued to develop key components of the test and evaluation master plan and its Rio Grande Valley annex and was working to complete an annex for the planned secondary barrier replacement in San Diego. The test and evaluation master plan and Rio Grande Valley annex contain placeholders for a range of information, such as the limitations and risks associated with testing, criteria to assess reliability of equipment, and location for environmental testing. Further, the plans state that these documents are meant to evolve, and CBP officials told us they plan to continue to review and refine the information with updates expected in September 2018.

---

<sup>32</sup>DHS approved CBP's Land Systems Operational Test Agency as the Test and Evaluation Manager for CBP's Border Wall System Program. In that role, the Land Systems Operational Test Agency will manage cost, schedule, and resources for the overall test and evaluation events for the Border Wall System Program.



---

## DHS Selected Initial Locations for Barriers before Identifying Priorities across the Southwest Border or Assessing Costs

---

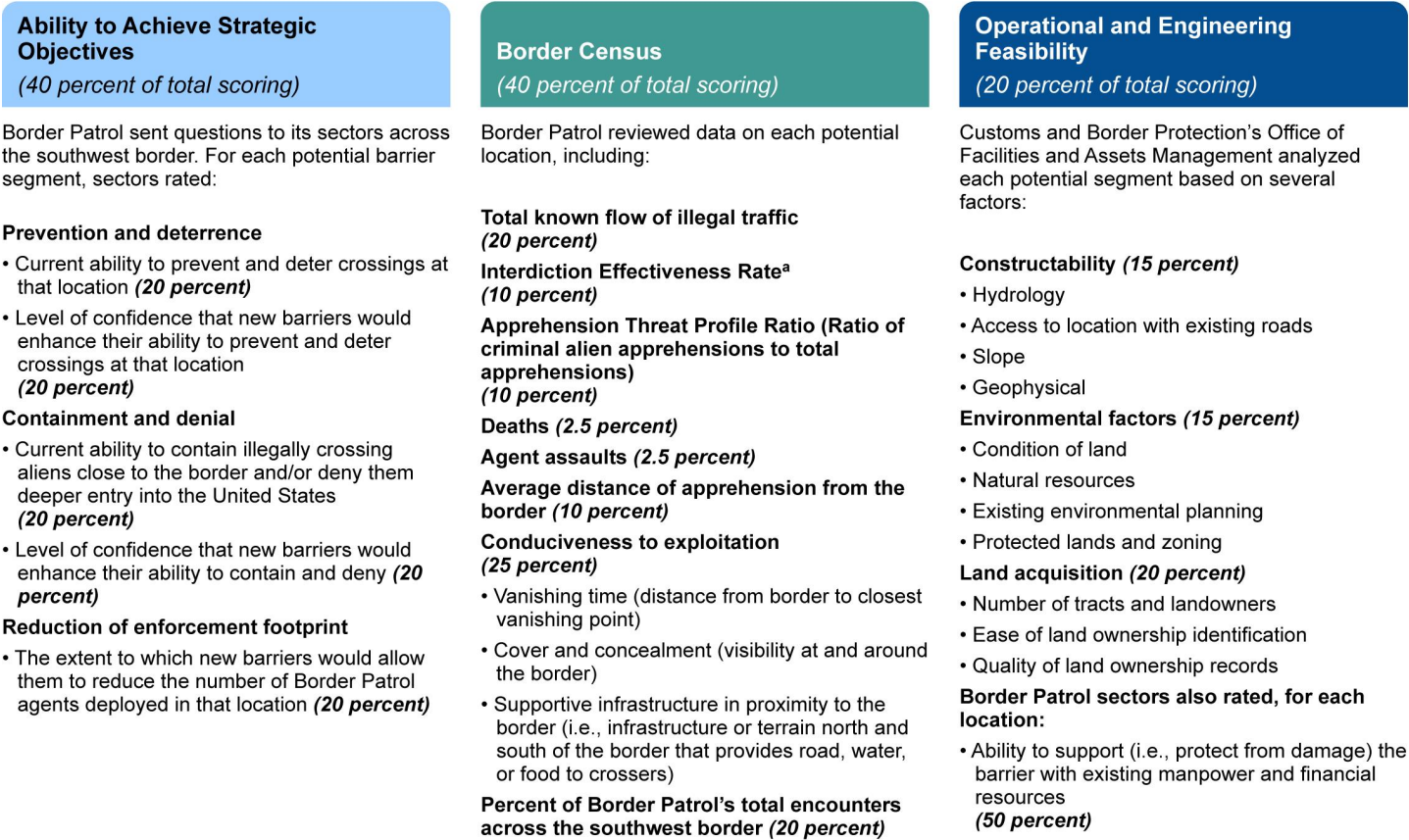
### DHS Selected Initial Locations for Barriers before Identifying Priorities across the Southwest Border

---

DHS selected initial locations for new barriers before assessing its priorities across the southwest border. In March 2017, CBP selected initial locations in the Rio Grande Valley and San Diego sectors for inclusion in the fiscal year 2018 budget request, and coordinated with DHS's Office of Program Analysis and Evaluation and the Office of Management and Budget as it did so. According to DHS officials, they developed the budget request under a condensed time frame, as is typical during a change in administration, and, as a result, needed to select locations quickly. Officials stated that they examined various factors, including information on Border Patrol's capability gaps, land ownership, geography, and data on border incursions. They also stated that the administration's priority was to proceed quickly in constructing physical barriers; therefore, land ownership was most important in selecting locations for the fiscal year 2018 budget request because difficulties in purchasing land could delay barrier construction.

Subsequently, in June and July 2017, OFAM and Border Patrol developed the Impedance and Denial Prioritization Strategy, a methodology for prioritizing future barrier deployments across the entire southwest border. Border Patrol identified a total of 197 segments of varying lengths across the southwest border, organized those segments into 33 groups, and ranked those groups based on three weighted assessments, as shown in figure 5.

Figure 5: U.S. Customs and Border Protection’s (CBP) Process for Prioritizing Future Barrier Deployments



Source: GAO analysis of Border Patrol data. | GAO-18-614

<sup>a</sup>CBP calculates the “Interdiction Effectiveness Rate” by dividing apprehensions + “turn backs” (the number of illegal entrants who crossed the border but were not apprehended because they crossed back to Mexico) by apprehensions + “turn backs” + “got aways” (the number of entrants who crossed illegally and continued traveling to the U.S. interior).

Next, an Operational Review Board composed of Border Patrol subject matter experts reviewed and edited the rankings. Border Patrol officials stated that the Operational Review Board reviewed law enforcement and intelligence information, operational priorities, and Border Patrol strategic guidance. According to Border Patrol officials, the Impedance and Denial Prioritization methodology prioritized the same segments in the Rio Grande Valley and San Diego sectors that DHS had already selected. However, our review of the Impedance and Denial Prioritization methodology found that it initially identified segments in El Centro, Yuma, and Laredo sectors as Border Patrol’s highest priorities for new barriers. Table 4 lists the final rankings as published in the strategy and the rankings of those segments based solely on the methodology, prior to

review by the Operational Review Board. As a result of the board's review, the strategy lists segments in the Rio Grande Valley and San Diego sectors as DHS's highest priorities.

**Table 4: U.S. Customs and Border Protection's Impedance and Denial Prioritization Strategy Initial and Final Rankings**

Impedance and Denial Prioritization Strategy Final Ranking Based on Prioritization Methodology and Operational Review Board	Initial Ranking Based on Prioritization Methodology	Segment Name	Budget Request
1	4	Rio Grande Valley, Group C	Fiscal Year 2018
2	5	Rio Grande Valley, Group B	Fiscal Year 2018
3	9	Rio Grande Valley, Group A	Fiscal Year 2019
4	12	San Diego, Group D	Fiscal Year 2018
5	1	El Centro, Group X	Not applicable
6	2	Yuma, Group X	Not applicable
7	3	Laredo, Group A	Not applicable

Source: GAO analysis of Border Patrol data. | GAO-18-614

Border Patrol officials stated that the methodology was intended to serve as a starting point for the Operational Review Board's evaluation, not as the sole source for identifying Border Patrol's priorities. According to Border Patrol officials, CBP plans to follow this same process for identifying future priorities for border segments. Border Patrol officials also told us that they plan to refine the prioritization methodology going forward to, for example, account for changes in illegal traffic patterns as CBP constructs new barriers.

## DHS Did Not Analyze Cost When Prioritizing Border Segments

CBP's Impedance and Denial Prioritization Strategy did not include an analysis of the costs associated with deploying barrier segments. The "Operational and Engineering Feasibility" score, which accounted for 20 percent of total scoring, included an analysis of constructability factors, such as hydrology, access, slope, and geophysics, and land acquisition details, such as number of tracts and ease of land ownership identification. In January 2009, we found that the costs of previous barrier deployments along the southwest border varied considerably across different locations because of topography and land acquisition costs,



---

among other factors.<sup>33</sup> Further, the U.S. Army Corps of Engineers' engineering design review of the prototypes found that construction costs for the prototype designs would increase as the slope of the terrain increased. However, Border Patrol did not assess those costs when prioritizing future locations for barrier deployments. The strategy included an overall estimate of the cost to construct barriers at Border Patrol's top 17 priority locations—an estimate of \$18 billion for 722 miles of barriers. However, according to CBP officials, that estimate was based on an average cost per mile and is not intended to reflect the costs of individual construction projects. According to DHS officials, the prioritization methodology was not intended to assess costs but rather to identify Border Patrol's operational priorities. DHS plans to assess costs as it develops future budget requests. *Leading Practices in Capital Decision Making* states that, when evaluating where to make capital investments, organizations should conduct financial analyses in order to prioritize investments that allow the organization to obtain the greatest benefits for the least cost.<sup>34</sup> Without assessing costs as part of the prioritization process, CBP does not have complete information to know whether it is prioritizing locations that will use its limited resources in the most cost-effective manner.

---

<sup>33</sup>GAO, *Secure Border Initiative Fence Construction Costs*, [GAO-09-244R](#) (Washington, D.C.: Jan. 29, 2009).

<sup>34</sup>[GAO/AIMD-99-32](#).

---

## DHS Is Taking Steps to Manage the Acquisition, Technology Deployments, and Assessment of the Border Wall System Program, but Has Not Documented Plans for One Segment

---

### The Border Wall System Program Is Required to Follow DHS Acquisition Policy

As noted previously, DHS acquisition policy establishes that major programs, such as the Border Wall System Program, are subject to review by the program's decision authority at ADEs. These events provide the department's acquisition decision authority an opportunity to assess whether the program is ready to proceed, and DHS requires the completion of certain documents, such as life-cycle cost estimates, at ADEs. For example, under DHS's acquisition policy, at ADE 1, the department is to review the need for the acquisition program. At ADE 2A, programs establish an acquisition program baseline that outlines the program's overall schedule, costs, and performance parameters, and programs may expand this baseline at ADE 2B, which focuses on approval of supporting projects and contracts. As noted below, DHS has approved ADE 1 for the overall Border Wall System Program and approved ADE 2A/B for one planned segment in the Rio Grande Valley sector—one of the two initial planned segments identified by CBP. However, DHS has not yet documented its plan for requiring ADE 2A/B for the San Diego secondary barrier segment.

- **Border Wall System Program.** In April 2017, DHS's acquisition decision authority approved the overall Border Wall System Program for ADE 1, granting CBP permission to procure the barrier prototypes. The approval memorandum also stated that the program would deploy new barriers in segments, as prioritized by CBP, and that the DHS Acquisition Review Board must assess each segment for a combined ADE 2A/B decision to establish baselines and determine affordability. Further, DHS officials stated that status updates on the Border Wall System Program are provided to the DHS Undersecretary for Management in bi-weekly meetings and to the DHS executive steering committee during monthly meetings.
- **Rio Grande Valley segment.** In December 2017, the Acquisition Review Board reviewed the program's Rio Grande Valley segment and in January 2018, the acquisition decision authority approved and

documented the acquisition program baseline and granted ADE 2A/B approval.

- **San Diego secondary barrier segment.** Over the course of our review, DHS has changed its position on whether CBP needs to seek ADE 2A/B approval for the planned replacement of 14 miles of secondary barrier in the San Diego sector. Specifically, in February 2018, DHS officials told us that this segment did not need an ADE 2A/B approval because construction for that segment had been approved as part of the ADE 1 approval.<sup>35</sup> Subsequently, in April 2018, DHS officials changed their position and told us that the segment should follow DHS's acquisition process and that ADE 2A/B approval would be sought within the coming months. As of July 2018, DHS had not yet documented its decision to require ADE 2A/B approval and follow the DHS acquisition process for the San Diego secondary barrier segment. CBP officials stated that DHS planned to hold an Acquisition Review Board meeting to review the segment, but DHS had not yet scheduled that meeting.

Further, DHS has not yet completed an updated life-cycle cost estimate for the San Diego secondary barrier. Consistent with acquisition best practices, DHS acquisition policy requires major acquisition programs to develop a life-cycle cost estimate at ADE 2A, which is used to establish the cost goals in the program's acquisition program baseline and to determine affordability.<sup>36</sup> This life-cycle cost estimate should represent the design, performance, and schedule of the system and be updated at subsequent ADEs. In July 2017, in response to direction from the House Committee on Appropriations, DHS's Cost Analysis Division initiated an independent cost estimate for the barrier construction included in the fiscal year 2018 budget request—specifically, the Rio Grande Valley segment and San Diego secondary barrier. In October 2017, OFAM reviewed the independent cost estimate and adopted it as the program's

<sup>35</sup>In April 2018, DHS officials also stated that they do not believe that an ADE 2A/B review is required because they intend for the San Diego secondary barrier segment to serve as a demonstration of how the selected barrier design attributes tested in the barrier prototypes would work in border security operations, to assist with refining Border Patrol's requirements and concept of operations for future segments. However, CBP plans to use the San Diego secondary barrier in its border security operations, not solely as a demonstration.

<sup>36</sup>GAO, *Homeland Security: DHS Requires More Disciplined Investment Management to Help Meet Mission Needs*, [GAO-12-833](#) (Washington, D.C.: Sept. 18, 2012). DHS's criteria for assessing cost estimates are based on GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009).

---

life-cycle cost estimate, which was used to inform the ADE 2A/B decision for the Rio Grande Valley segment. However, the cost estimate for the San Diego segment assumes that CBP will replace the secondary barrier with a 30-foot concrete barrier. As previously discussed, CBP does not plan to deploy a concrete barrier because it would not provide cross-barrier visual situational awareness. CBP officials stated that they plan to update the cost estimate to reflect Border Patrol's design, but as of July 2018, CBP officials had not finalized the document.

We have previously reported on the importance of DHS's acquisition programs following the department's acquisition policy. In September 2012, we found that DHS's acquisition policy is generally sound because it reflects many key program management practices that could help mitigate program risks.<sup>37</sup> This policy requires programs to develop documents—including acquisition program baselines—that help leaders make better informed investment decisions when managing individual programs. However, at that time, we also found that DHS was not consistently implementing its policy. We recommended that DHS ensure all major acquisitions fully comply with the acquisition policy by obtaining department-level approval for key acquisition documents before approving their movement through the acquisition life cycle. DHS concurred with the recommendation, and, in February 2017, we found that DHS had approved the required acquisition documentation, including acquisition program baselines, for all of its major acquisition programs.<sup>38</sup> Requiring that CBP establish an acquisition program baseline and obtain ADE 2A/B approval before starting construction for the San Diego segment would be consistent with this approach and ensure that DHS continues to follow its policy for acquisition programs. Given that the department recently changed its plans to require CBP to follow the DHS acquisition process for the San Diego secondary barrier segment, documenting its plans for ADE 2A/B for the San Diego secondary barrier segment, including the development of all acquisition documents, would help strengthen oversight of the segment going forward and reduce the risk of schedule slips and cost growth.

---

<sup>37</sup>[GAO-12-833](#).

<sup>38</sup>GAO, *High-Risk Series: Progress on Many High-Risk Areas, While Substantial Efforts Needed on Others*, [GAO-17-317](#) (Washington, D.C.: Feb. 15, 2017).

---

## CBP Is Planning for Technology Deployments in Border Wall System Program Enforcement Zones

CBP has taken steps to plan for the deployment of technologies to enforcement zones that are a part of the Border Wall System Program. DHS, CBP, and Border Patrol have emphasized the importance of including technology in enforcement zones along with planned barriers. For example, in a February 2017 policy memo, the Secretary of Homeland Security called for CBP to include technology to support barriers as the agency implements Executive Order 13767.<sup>39</sup> CBP has also reported that technology enhances the effectiveness of barriers by improving Border Patrol's situational awareness and increasing agents' ability to respond to people approaching the barriers.<sup>40</sup> Further, we have previously reported that CBP recorded almost 9,300 breaches to existing barriers between 2010 and 2015, and Border Patrol has reported that the early detection of attempts to cross or breach barriers is critical to minimizing damage to barriers and the resulting repair costs.<sup>41</sup> In November 2017, Border Patrol developed operational requirements stating that any barrier design must account for future enhancements of technology to support surveillance and detection capabilities.<sup>42</sup> In addition, Border Patrol's key performance parameters—the requirements CBP will use to assess the performance of the Border Wall System Program—include requirements related to technology.<sup>43</sup> Specifically, one

---

<sup>39</sup>Department of Homeland Security, Secretary of Homeland Security, *Implementing the President's Border Security and Immigration Enforcement Improvements Policies* (Washington, DC, Feb. 20, 2017).

<sup>40</sup>Department of Homeland Security, Customs and Border Protection, *Border Security Improvement Plan*, Fiscal Year 2017 Report to Congress (Washington, DC, Jan. 4, 2018). We have previously used the term "surveillance technology" to refer to the technologies—including cameras, sensors, and radar—CBP has deployed on the southwest border to support its domain awareness capability. Border Patrol describes domain awareness as ability to continuously detect, identify, classify, and track all border incursions in targeted areas at all times. See GAO, *Southwest Border Security: Border Patrol Is Deploying Surveillance Technologies but Needs to Improve Data Quality and Assess Effectiveness*, [GAO-18-119](#) (Washington, D.C.: Nov. 30, 2017).

<sup>41</sup>[GAO-17-331](#), and U.S. Border Patrol, *Capability Analysis Report for Customs and Border Protection U.S. Border Patrol Impedance and Denial* (Washington, D.C.: March 2017).

<sup>42</sup>U.S. Border Patrol, *Operational Requirements Document for the Impedance and Denial (I&D) Wall System* (Washington, D.C.: November 2, 2017).

<sup>43</sup>U.S. Border Patrol, *Operational Requirements Document for the Impedance and Denial (I&D) Wall System*.

of Border Patrol's five key performance parameters for the program measures the reliability of technology used to support Border Patrol's detection capability within the enforcement zones.<sup>44</sup>

CBP is coordinating the activities of the Border Wall System Program with those of Border Patrol's Program Management Office Directorate to incorporate technology into enforcement zones. Specifically, as part of the Border Wall System Program, CBP plans to construct infrastructure to support technology deployments, such as concrete pads on which a tower with surveillance cameras could be mounted, while deploying barriers in the Rio Grande Valley and San Diego sectors, according to CBP officials. Meanwhile, CBP officials stated that CBP has separate acquisition program offices for the specific technologies, which will be responsible for procuring and deploying the technologies to support surveillance and detection capabilities around barriers.<sup>45</sup>

For example, in April 2018, DHS, CBP, and Border Patrol officials stated that CBP plans to deploy Remote Video Surveillance Systems (RVSS) in the Rio Grande Valley sector, beginning with 40 Relocatable RVSS that were funded with fiscal year 2017 funds and that will be deployed prior to barrier construction.<sup>46</sup> Border Patrol officials responsible for the RVSS program said they began adjusting their existing deployment plans in the Rio Grande Valley sector in June 2017 to coordinate with planned barrier deployments, once locations in the sector were prioritized for the Border Wall System Program. CBP officials stated that they have synchronized the schedules for all of the relevant acquisition programs for the Rio

---

<sup>44</sup>Specifically, CBP's acquisition program baseline for the program requires that a wall system's detection capability be operational 95 percent of the time over a 1-year period. CBP's detection systems are considered operational as long as any point within the enforcement zone is being monitored by a working detector.

<sup>45</sup>DHS determined that specific details about planned technology deployments are sensitive, so they are omitted from this report.

<sup>46</sup>An RVSS system consists of multiple daylight and infrared cameras and a laser mounted on poles, towers, or buildings. There are also relocatable versions of the system that are mounted on an 80-foot tower, which is mounted on a steel platform trailer and can be relocated to other sites. Border Patrol plans to deploy 83 RVSS on fixed towers in the Rio Grande Valley sector. Once the fixed RVSS are deployed, CBP plans to move the Relocatable RVSS to the next highest priority area. The design and construction of the fixed towers received fiscal year 2018 funding, and CBP plans to fund the technology, such as cameras and lasers, attached to the towers with fiscal year 2019 and 2020 funding. In November 2017, we reported on CBP's progress on deploying RVSS and Relocatable RVSS to Texas and other locations. See [GAO-18-119](#).

---

Grande Valley sector, but are still working on plans for how they will work together operationally. The officials told us that CBP intends that Relocatable RVSS will be deployed by the time barriers are constructed, with the intent that Border Patrol agents will be able to monitor the information collected from the deployed technologies, such as video feeds from the RVSS cameras. For the secondary barrier planned in the San Diego sector, officials told us CBP plans to use the existing 16 RVSS already deployed in the San Diego sector.

CBP's efforts to incorporate technology are in the planning stages, and CBP is still determining specific technology needs and how it will integrate the technology with future barrier segments. For example, as part of the DHS acquisition process, DHS's Science and Technology Directorate (S&T) assessed the program from August through November 2017 to provide information to the acquisition decision authority, such as the technical maturity of the planned technology and overall technical risk. Specifically, S&T assessed CBP's plans to integrate the planned technologies in the Rio Grande Valley sector and to transmit the data collected from the technologies to Border Patrol agents engaged in monitoring activities. S&T found that CBP had not clearly defined or planned for the integration and operation of technologies, such as enforcement zone cameras and video displays. Among other things, S&T recommended establishing the activities and timeline needed for integrating camera sensors, video displays, and supporting capabilities for the first planned segment in the Rio Grande Valley sector. In April 2018, CBP officials told us that they have efforts under way that will address S&T's recommendations and are still considering options for how they will integrate the planned technologies.

In addition, DHS has requested \$1.6 billion for fiscal year 2019 to deploy 65 miles of new barriers in the Rio Grande Valley sector. CBP officials stated they are still determining the specific technology needed to support these planned barriers and how it will be funded. Given that CBP is currently determining specific technology needs for future barrier segments and considering options for integrating that technology, it is too early to assess the extent to which CBP's plans will effectively use and integrate technology with barriers planned for the Border Wall System Program.



---

## CBP Has Plans to Assess the Border Wall System Program, and Is Taking Steps to Assess Previous Investments in Barriers and Technology

According to CBP officials, the agency plans to review barriers constructed under the Border Wall System Program, and is taking steps to assess the results of previous investments in barriers and surveillance technology, which could inform future deployments. DHS's systems engineering life cycle framework, which supports the department's acquisition process, is meant to ensure the efficient and effective delivery of the capabilities in which DHS has invested.<sup>47</sup> Among other things, the framework requires that all DHS programs conduct a post-implementation review 6 to 18 months after a program has reached initial operating capability. The post-implementation review is designed to determine how well investments are meeting their baseline performance, cost, and schedule goals. In addition, a post-implementation review is meant to identify and document deployment problems, how they were resolved, and how the issues could be prevented in the future. However, according to OFAM and Border Patrol officials, the requirement to conduct a post-implementation review was not established until 2009 when the systems engineering life cycle framework was established, so CBP was not required to conduct the reviews for previous tactical infrastructure deployments, including barriers. OFAM and Border Patrol officials stated they captured some lessons learned in 2007 and 2008 during previous deployments of barriers. For example, they assessed how well access gates installed in barriers were performing and identified deployment issues for both the barriers and gates. However, their assessments of the barrier projects did not capture how the barriers were meeting the Border Patrol's specific operational needs and addressing capability gaps, as post-implementation reviews are designed to do. CBP officials stated that they plan to conduct post-implementation reviews for barriers constructed under the Border Wall System Program, as required in the systems engineering life cycle framework.

---

<sup>47</sup>Department of Homeland Security, *Systems Engineering Life Cycle 102-01-103* (November 5, 2015). *Systems Engineering Life Cycle Guidebook 102-01-103-01* (April 18, 2016). The DHS systems engineering life cycle framework identifies the activities that constitute a structured, disciplined, and quality technical effort and establishes a series of activities and technical reviews, such as the post-implementation reviews, to assess the technical readiness of the program to proceed beyond its current activity.

Further, our previous work on barriers and surveillance technology included recommendations intended to strengthen CBP's ability to assess the results of previous investments. In February 2017, we recommended that Border Patrol develop metrics to assess the contributions of pedestrian and vehicle fencing to border security along the southwest border using the data Border Patrol already collects and apply this information, as appropriate, when making investment and resource allocation decisions.<sup>48</sup> The agency concurred with our recommendation, and officials reported that CBP plans to finalize metrics in January 2019. With respect to surveillance technology, in March 2014, we recommended that CBP (1) require data on technology contributions to apprehensions or seizures to be tracked and recorded within its database and (2) subsequently analyze available data on apprehensions and technological assists—in combination with other relevant performance metrics or indicators, as appropriate—to determine the contribution of surveillance technologies.<sup>49</sup> CBP concurred with our recommendations, and in November 2017, we reported that Border Patrol had made progress identifying performance metrics for the technologies deployed along the southwest border.<sup>50</sup> Specifically, Border Patrol agents collected and reported data on the instances in which technologies contributed to an apprehension or seizure. In addition, Border Patrol reported it is developing the Tracking, Sign Cutting, and Modeling system to allow for more comprehensive analysis of the contributions of surveillance technologies to Border Patrol's mission.<sup>51</sup> However, in February 2018, Border Patrol officials stated they are not yet able to fully assess surveillance technologies and their impact on border security operations. We continue to believe that by fully implementing our prior recommendations, Border Patrol will be able to better assess the contributions of existing barriers and technologies deployed along the

---

<sup>48</sup>[GAO-17-331](#).

<sup>49</sup>GAO, *Arizona Border Surveillance Technology Plan: Additional Actions Needed to Strengthen Management and Assess Effectiveness*, [GAO-14-368](#) (Washington, D.C.: Mar. 3, 2014). For the purposes of this report, apprehensions include individuals arrested and identified as potentially removable aliens by Border Patrol. Seizures include Border Patrol apprehensions of drugs, currency, and weapons, among other things. A technological assist occurs when a technological asset, such as a remote video surveillance system, contributes to apprehensions or seizures.

<sup>50</sup>[GAO-18-119](#).

<sup>51</sup>CBP officials said that the system is intended to use data collected by Border Patrol to draw connections between agents' actions (such as identification of a subject with a camera) and results (such as an apprehension).

---

southwest border and consider this information when making future border security investments.

---

## Conclusions

DHS plans to spend billions of dollars developing and deploying new barriers along the southwest border. However, by proceeding without key information on cost, acquisition baselines, and the contributions of previous barrier and technology deployments, DHS faces an increased risk that the Border Wall System Program will cost more than projected, take longer than planned, or not fully perform as expected. Without assessing costs when prioritizing locations for future barriers, CBP does not have complete information to determine whether it is using its limited resources in the most cost-effective manner and does not have important cost information that would help it develop future budget requests. Without documenting plans to require CBP to follow the DHS acquisition process for the San Diego barrier segment, DHS may not establish cost, schedule, and performance goals by which it can measure the program's progress. In addition, Border Patrol should continue to implement our prior recommendations to assess the contributions of existing barriers and technologies deployed along the southwest border and consider this information when making future border security investments.

---

## Recommendations for Executive Action

We are making the following two recommendations to DHS:

The Commissioner of CBP should analyze the costs associated with future barrier segments and include cost as a factor in the Impedance and Denial Prioritization Strategy. (Recommendation 1)

The Under Secretary for Management should document plans to require CBP to follow the DHS acquisition life cycle, including the completion of all acquisition documentation requirements, for the planned secondary barrier deployment in the San Diego sector. (Recommendation 2)

---

## Agency Comments and Our Evaluation

We provided a draft of this report to DHS for review and comment. In its written comments, which are reproduced in full in appendix II, DHS concurred with the two recommendations and described actions planned to address them. DHS also provided technical comments that we

---

incorporated, as appropriate. We also provided a draft of this report to the Department of Defense, which declined to comment.

DHS concurred with our first recommendation to analyze the costs associated with future barrier segments and include cost as a factor in the Impedance and Denial Prioritization Strategy. DHS stated that it has been and will continue to include cost as part of the capital investment process for the Border Wall System Program. Specifically, DHS stated that CBP will first select locations for new barrier segments based on operational priorities, then assess cost to determine a design configuration for those segments. For example, DHS stated that CBP developed a life-cycle cost estimate for planned barrier segments in the Rio Grande Valley sector and is developing a life-cycle cost estimate for the planned barrier segment in the San Diego sector. DHS also stated that it balances resource requests across components as part of the annual budget process. We agree that it is important for DHS to develop life-cycle cost estimates for planned barrier segments as part of the acquisition process. However, *Leading Practices in Capital Decision-Making*, which are intended to enhance the effectiveness of federal investments in capital assets, states that, when evaluating where to make capital investments, organizations should conduct financial analyses in order to prioritize investments that allow the organization to obtain the greatest benefits for the least cost. In order to fully address our recommendation, CBP needs to ensure that it analyzes costs as part of the prioritization process when evaluating potential barrier segments. DHS also stated that our report suggests that CBP should base its priorities on a budget, rather than on what users determine are operationally high-risk areas. Our report does not state that CBP should base its priorities on a budget. Rather, we believe that evaluating cost as part of the prioritization process, in accordance with *Leading Practices in Capital Decision-Making*, would provide DHS more complete information to develop future budget requests that address operational needs while using resources in the most cost-effective manner.

DHS also concurred with our second recommendation to document its plans to require CBP to follow the DHS acquisition life cycle, including the completion of all acquisition documentation requirements, for the planned secondary barrier deployment in the San Diego sector. However, DHS asserted that our report states that CBP is not following DHS acquisition policy, with which DHS disagreed. Our report does not state that CBP is not following DHS acquisition policy; rather, the report states that DHS is following DHS acquisition policy but has not yet documented its plan for requiring ADE 2A/B for the planned secondary barrier segment in the San Diego sector. With respect to our recommendation, DHS stated it plans to complete all DHS acquisition policy requirements and documentation before returning to the DHS Acquisition Review Board for ADE 2A/B

---

approval for all barrier segments under the Border Wall System Program, including the planned secondary barrier in the San Diego sector. DHS plans to complete these activities for the San Diego barrier segment by September 30, 2018. These actions, if implemented effectively, should address the intent of our recommendations.

---

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 7 days from its issue date. At that time, we will send copies to the appropriate congressional committees, the Secretary of Homeland Security, and the Secretary of Defense. In addition, the report will be available at no charge on the GAO website at <http://www.gao.gov>.

Should you or your staff have questions about this report, please contact me at (202) 512-8777 or [gablerr@gao.gov](mailto:gablerr@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff that made key contributions to this report are listed in appendix III.

A handwritten signature in black ink that reads "Rebecca Gambler". The script is cursive and fluid.

Rebecca Gambler  
Director  
Homeland Security and Justice

# Appendix I: Objectives, Scope & Methodology

This report examines (1) how U.S. Customs and Border Protection (CBP) evaluated potential designs for barriers along the southwest border, (2) the Department of Homeland Security's (DHS) process for identifying and assessing locations for future deployments of barriers, and (3) how DHS is managing the acquisition, incorporation of technology, and assessment of the Border Wall System Program.

This report is the public version of a prior sensitive report that we issued in June 2018.<sup>1</sup> DHS deemed some of the information in the prior report as For Official Use Only, Law Enforcement Sensitive, and Source Selection Information, which must be protected from public disclosure. Therefore, this report omits sensitive information about CBP's evaluations of potential designs for barriers and Border Patrol's specific technology capabilities. Although the information in this report is more limited in scope, it addresses the same questions as the sensitive report. The overall methodology used for both reports is the same.

To examine how CBP evaluated potential designs for barriers, we visited U.S. Border Patrol's San Diego sector, where CBP constructed and tested barrier prototypes. We viewed the barrier prototypes, observed CBP's breaching tests on prototype mock-ups, and met with CBP officials responsible for the construction and testing of the prototypes to learn about how the tests were developed and their plans for evaluating the test results. During the site visit, we also met with Border Patrol officials from the San Diego sector headquarters and the Chula Vista and Imperial Beach stations to learn more about their experiences deploying and using barriers and other assets to conduct their enforcement activities. We also toured about 14 miles of the southwest border in Chula Vista and Imperial Beach stations, where CBP plans to replace primary and secondary pedestrian barriers. We also met with Border Patrol officials in the Rio Grande Valley sector headquarters and the Rio Grande City, McAllen, and Weslaco stations, where CBP plans to construct barriers, to discuss

---

<sup>1</sup>GAO, *Southwest Border Security: CBP Is Evaluating Designs and Locations for Border Barriers but Is Proceeding Without Key Information*, [GAO-18-489SU](#) (Washington, D.C.: June 12, 2018).



their experiences using barriers and other assets to support enforcement activities. We reviewed relevant documents, including the requests for proposals CBP issued for the prototypes, the resulting task order contracts, CBP's prototype test plan and test results, and CBP's test and evaluation master plan, and assessed the information against DHS acquisition policy and guidance. We met with officials from CBP's Office of Facilities and Asset Management, including the program manager for the Border Wall System Program to discuss how the prototype test results influenced CBP's decisions about the designs of barriers planned to be constructed along the border and how CBP will continue to evaluate the barriers and supporting assets prior to, during, and after construction. We also viewed CBP's video recordings of the climbing tests used to evaluate the prototypes. We met with officials from Border Patrol's Operational Requirements Management Division and the U.S. Army Corps of Engineers to learn about their roles in the development and evaluation of the prototypes.

To examine DHS's process for identifying and assessing locations for future deployments of barriers, we reviewed relevant documents, such as the Border Security Improvement Plan, which includes Border Patrol's priorities for deploying barriers and other assets along the southwest border. During meetings with Border Patrol, we also viewed the Impedance and Denial Prioritization Strategy that Border Patrol developed to prioritize locations, to learn more about the criteria Border Patrol used and how the information was weighted to provide rankings of locations along the southwest border. We assessed this methodology against Leading Practices for Capital Decision-Making, as well as Border Patrol's risk assessments and documentation of Border Patrol's Capability Gaps Analysis Process.<sup>2</sup> In addition to those offices already noted, we also spoke with officials from DHS's Budget Office, Cost Analysis Division, and Office of Program Analysis and Evaluation to learn more about how initial locations were selected when CBP made fiscal year 2018 funding requests for planned segments.

To examine how DHS is managing the acquisition, incorporation of technology, and assessment of the Border Wall System Program, we reviewed relevant program and acquisition documents for the Border Wall System Program, including CBP's budget requests and program cost

---

<sup>2</sup>GAO, *Executive Guide: Leading Practices in Capital Decision-Making*, [GAO/AIMD-99-32](#) (Washington, D.C.: Dec. 1, 1998).

estimates, DHS' Science and Technology Directorate's letter of technical assessment, and Border Patrol's operational requirements document. During our meetings with CBP and Border Patrol officials, we discussed updates on program funding, cost estimates, and how the deployment of barriers and other assets would be coordinated to meet program objectives. In addition to those offices already described, we also met with officials from DHS's Office of Program Accountability and Risk Management and Science and Technology Directorate to learn more about their roles in performing acquisition and program management oversight. We compared DHS and its components' efforts against documented CBP and Border Wall System Program objectives, DHS acquisition policy and implementation guidance, and findings from our previous work.

We conducted this performance audit from October 2017 through June 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We subsequently worked with DHS from June 2018 through July 2018 to prepare this public version of the original sensitive report for public release. This public version was also prepared in accordance with these standards.

---

## Appendix II: Comments from the Department of Homeland Security

U.S. Department of Homeland Security  
Washington, DC 20528



**Homeland  
Security**

July 17, 2018

Rebecca Gambler  
Director, Homeland Security and Justice  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Re: Management Response to Draft Report GAO-18-614, "SOUTHWEST BORDER  
SECURITY: CBP Is Evaluating Designs and Locations for Border Barriers, but  
Is Proceeding Without Key Information"

Dear Ms. Gambler:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's recognition of challenges faced and progress made in implementing border security efforts, such as the work performed in awarding contracts and the construction and testing of barrier prototype designs for the southwest border. In particular, we noted GAO's recognition of the progress Customs and Border Protection (CBP) has made in addressing previous recommendations for:

- (1) developing metrics to assess the contributions of pedestrian and vehicle fencing to border security along the southwest border, and
- (2) developing guidance for identifying, funding, and deploying tactical infrastructure assets for border security operations.

DHS remains committed to ensuring that acquisition and deployment of border security technology investments are effective and that procurement processes are efficient, transparent, and compliant with Federal law and DHS policy.

The report highlights the importance of disciplined acquisition governance and decision-making, to which DHS is committed. With respect to the Border Wall System Program, CBP engaged the DHS acquisition governance process from the very start. The report states, however, that CBP is not following DHS acquisition policy. We disagree, and believe CBP is executing, and will continue to execute, the program in accordance with DHS policy. GAO asserts that CBP plans for the San Diego secondary barrier segment have not yet been documented, which could hinder DHS's ability to monitor the progress for the segment. It is misleading and inaccurate for GAO to say that progress is not being documented or to imply that progress is not being tracked.

As CBP has indicated in previous discussions with the GAO, the San Diego effort was included in the first acquisition decision event (ADE-1) approval for the Wall program as an extension of the prototype activities. Moreover, the status is provided to the DHS Under Secretary for Management (USM) as part of bi-weekly status meetings on the overall Wall program, as well as in monthly executive steering committee meetings. DHS was involved with and reviewed the formal prototype evaluation and assessment process. Additionally, since the ADE-1,<sup>1</sup> the USM has requested the San Diego Sector come in for an ADE-2A/2B<sup>2</sup> decision, which is planned for completion before September 30, 2018. This further contradicts the assertion that CBP is not following the Department's acquisition process.

GAO also implies that CBP did not follow best practices when it did not perform a cost analysis as part of its prioritization strategy for determining barrier locations. CBP is following best practices in evaluating costs, budget, and financial impact of border segments. The reference cited in the draft report, "Leading Practices in Capital Decision Making,"<sup>3</sup> is guidance – not policy – and states that:

"when evaluating where to make capital investments, organizations should conduct financial analyses in order to prioritize investments that allow the organization to obtain the greatest benefits for the least cost."

Whenever practicable, CBP follows this guidance. The initial prioritization for developing barriers in each location or segment was based on an operational assessment of priorities, which was followed by a resource analysis that factored in cost. The report suggests that priorities should be based on a budget versus what the user determines are the more operationally high-risk areas. We disagree. There is nothing in the guidance prohibiting an approach that first looks at the operational priorities based on risks/threats,

<sup>1</sup> The phase after the need is identified.

<sup>2</sup> 2A is after an analysis is completed and a recommendation to the decision authority has been made and 2B is where the Program manager is developing, testing and evaluating the selected options.

<sup>3</sup> GAO, "Executive Guide: Leading Practices in Capital Decision-Making," AMD-99-32 (Washington, D.C.: Dec.1, 1998).

and then conducts a financial analysis to optimize a solution within an area. As the report states, CBP plans to do this financial analysis for future segments.

It is also important to note that DHS acquisition governance processes allow for tailoring as appropriate to the nature of the effort and the risk. The DHS acquisition governance process is not an inflexible and arbitrary bureaucratic process. Instead, it is a process that ensures key analysis is completed, risks are identified, and senior leaders make explicit decisions armed with adequate knowledge. The goal is not necessarily to eliminate all risk—that is generally not possible, absent infinite resources. Rather, the goal is to ensure that the acceptance of risk is witting, rather than unwitting.

Again, DHS is pleased to note GAO's recognition of the challenges the Department faces in satisfying the requirements of Presidential Executive Order No.13767, "Border Security and Immigration Enforcement Improvements," dated January 25, 2017. We are prepared for these challenges and better postured now for success largely because of lessons learned from other acquisition programs. Despite an aggressive schedule and intense pressure to quickly yield results, we are committed to following sound acquisition practices and are focused on deliberative analysis to support our plans with appropriate governance and oversight while protecting the taxpayer's investment and ensuring the best possible solutions are implemented in a timely manner and at a reasonable cost.

The draft report contained two recommendations with which DHS concurs. Attached find our detailed response to the recommendations. Technical comments were previously provided under separate cover.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,



JM H. CRUMPACKER, CIA, CFE  
Director  
Departmental GAO-OIG Liaison Office

Attachment



**Attachment: Management Response to Recommendations  
Contained in Contained in GAO-18-614**

GAO recommended that:

**Recommendation 1:** The Commissioner of CBP should analyze the costs associated with future barrier segments and include cost as a factor in the Impedance and Denial Prioritization Strategy.

**Response:** Concur. In accordance with DHS acquisition policy, CBP has been and will continue to include cost as part of the ongoing analysis and capital investment process for the Wall program. Specifically, the process flow for how this is accomplished is outlined below:

1. CBP's U.S. Border Patrol (USBP) maintains an operational priority list;
2. As part of the Alternatives Analysis process, cost is used to determine a design configuration for segment(s);
3. Following the CBP Planning, Programming, Budgeting and Accountability (PPBA) framework, USBP balances all resources across its portfolio;
4. The PPBA framework balances all resources across component; and
5. DHS submits agency resource requests as part of annual budget process.

Many of these steps are iterative as information is reviewed and trade-offs are made. CBP has analyzed the costs on current border segments and will continue to analyze costs on future border wall segments. The Life Cycle Cost Estimate (LCCE) for the FY 2018 Rio Grande Valley Sector has already been completed. Appendix B of the San Diego Sector (SDC) LCCE is being finalized. The Acquisition Review Team meeting for the SDC was held on June 21, 2018, and the program was given approval to proceed to the Acquisition Review Board (ARB). The ARB has not yet been scheduled. The LCCE for the FY 2019 portion of the wall segment will be completed by September 30, 2018. The future barrier segments will be completed in concert with the fiscal year budget allocation and identification of operational requirements. These will be ongoing efforts as more segments are funded.

**Estimated Completion Date (ECD):** September 30, 2018

**Recommendation 2:** The Under Secretary for Management should document plans to require CBP to follow the DHS acquisition life cycle, including the completion of all acquisition documentation requirements, for the planned secondary barrier deployment in the San Diego sector.

**Response:** Concur. DHS agrees that CBP is required to follow, and is following, the DHS acquisition life cycle. In accordance with DHS Directive 102-01, "Acquisition Management," dated July 28, 2015, DHS's Office of Program Accountability and Risk Management (PARM) requires CBP to complete all requirements and acquisition documentation prior to granting ADE-2A/B approval for the secondary San Diego segment. CBP will be returning to the ARB for an ADE-2A/B for all segments including the secondary barrier replacement in the San Diego sector. The PARM and CBP are actively working the required documents to determine when the ARB will occur. ECD: September 30, 2018.



---

# Appendix III: GAO Contact and Staff Acknowledgments

---

## GAO Contact

Rebecca Gambler, [gambler@gao.gov](mailto:gambler@gao.gov), (202) 512-8777

---

## Staff Acknowledgments

In addition to the contact named above, Jeanette Henriquez (Assistant Director), Ashley Davis, Aryn Ehlow, Eric Hauswirth, Sasan J. “Jon” Najmi, Alexis Olson, Claire Peachey, and Leslie Sarapu made key contributions to this report.

# Appendix IV: Accessible Data

## Data Table

Accessible Data for Figure 5: U.S. Customs and Border Protection's (CBP) Process for Prioritizing Future Barrier Deployments

Ability to Achieve Strategic Objectives (40 percent of total scoring)	Border Census (40 percent of total scoring)	Operational and Engineering Feasibility (20 percent of total scoring)
<p>Border Patrol sent questions to its sectors across the southwest border. For each potential barrier segment, sectors rated:</p> <p><b>Prevention and deterrence</b></p> <ul style="list-style-type: none"> <li>Current ability to prevent and deter crossings at that location <b>(20 percent)</b></li> <li>Level of confidence that new barriers would enhance their ability to prevent and deter crossings at that location <b>(20 percent)</b></li> </ul> <p><b>Containment and denial</b></p> <ul style="list-style-type: none"> <li>Current ability to contain illegally crossing aliens close to the border and/or deny them deeper entry into the United States <b>(20 percent)</b></li> <li>Level of confidence that new barriers would enhance their ability to contain and deny <b>(20 percent)</b></li> </ul> <p><b>Reduction of enforcement footprint</b></p> <ul style="list-style-type: none"> <li>The extent to which new barriers would allow them to reduce the number of Border Patrol agents deployed in that location <b>(20 percent)</b></li> </ul>	<p>Border Patrol reviewed data on each potential location, including:</p> <p><b>Total known flow of illegal traffic (20 percent)</b></p> <p><b>Interdiction Effectiveness Rate<sup>a</sup> (10 percent)</b></p> <p><b>Apprehension Threat Profile Ratio (Ratio of criminal alien apprehensions to total apprehensions) (10 percent)</b></p> <p><b>Deaths (2.5 percent)</b></p> <p><b>Agent assaults (2.5 percent)</b></p> <p><b>Average distance of apprehension from the border (10 percent)</b></p> <p><b>Conduciveness to exploitation (25 percent)</b></p> <ul style="list-style-type: none"> <li>Vanishing time (distance from border to closest vanishing point)</li> <li>Cover and concealment (visibility at and around the border)</li> <li>Supportive infrastructure in proximity to the border (i.e., infrastructure or terrain north and south of the border that provides road, water, or food to crossers)</li> </ul> <p><b>Percent of Border Patrol's total encounters across the southwest border (20 percent)</b></p>	<p>Customs and Border Protection's Office of Facilities and Assets Management analyzed each potential segment based on several factors:</p> <p><b>Constructability (15 percent)</b></p> <ul style="list-style-type: none"> <li>Hydrology</li> <li>Access to location with existing roads</li> <li>Slope</li> <li>Geophysical</li> </ul> <p><b>Environmental factors (15 percent)</b></p> <ul style="list-style-type: none"> <li>Condition of land</li> <li>Natural resources</li> <li>Existing environmental planning</li> <li>Protected lands and zoning</li> </ul> <p><b>Land acquisition (20 percent)</b></p> <ul style="list-style-type: none"> <li>Number of tracts and landowners</li> <li>Ease of land ownership identification</li> <li>Quality of land ownership records</li> </ul> <p><b>Border Patrol sectors also rated, for each location:</b></p> <ul style="list-style-type: none"> <li>Ability to support (i.e., protect from damage) the barrier with existing manpower and financial resources <b>(50 percent)</b></li> </ul>

Source: GAO analysis of Border Patrol data. | GAO-18-614

---

## Agency Comment Letter

---

### Accessible Text for Appendix II: Comments from the Department of Homeland Security

#### Page 1

July 17, 2018

Rebecca Gambler

Director, Homeland Security and Justice

U.S. Government Accountability Office

441 G Street, NW

Washington, DC 20548

Re: Management Response to Draft Report GAO-18-614, "SOUTHWEST BORDER SECURITY: CBP Is Evaluating Designs and Locations for Border Barriers, but Is Proceeding Without Key Information"

Dear Ms. Gambler:

Thank you for the opportunity to review and comment on this draft report. The U.S. Department of Homeland Security (DHS) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's recognition of challenges faced and progress made in implementing border security efforts, such as the work performed in awarding contracts and the construction and testing of barrier prototype designs for the southwest border. In particular, we noted GAO's recognition of the progress Customs and Border Protection (CBP) has made in addressing previous recommendations for:

(1) developing metrics to assess the contributions of pedestrian and vehicle fencing to border security along the southwest border, and

---

(2) developing guidance for identifying, funding, and deploying tactical infrastructure assets for border security operations.

DHS remains committed to ensuring that acquisition and deployment of border security technology investments are effective and that procurement processes are efficient, transparent, and compliant with Federal law and DHS policy.

## Page 2

The report highlights the importance of disciplined acquisition governance and decision-making, to which DHS is committed. With respect to the Border Wall System Program, CBP engaged the DHS acquisition governance process from the very start. The report states, however, that CBP is not following DHS acquisition policy. We disagree, and believe CBP is executing, and will continue to execute, the program in accordance with DHS policy. GAO asserts that CBP plans for the San Diego secondary balTier segment have not yet been documented, which could hinder DHS's ability to monitor the progress for the segment. It is misleading and inaccurate for GAO to say that progress is not being documented or to imply that progress is not being tracked.

As CBP has indicated in previous discussions with the GAO, the San Diego effort was included in the first acquisition decision event (ADE-1) approval for the Wall program as an extension of the prototype activities. Moreover, the status is provided to the DHS Under Secretary for Management (USM) as part of bi-weekly status meetings on the overall Wall program, as well as in monthly executive steering committee meetings. DHS was involved with and reviewed the formal prototype evaluation and assessment process. Additionally, since the ADE-1, the USM has requested the San Diego Sector come in for an ADE-2A/2B2 decision, which is planned for completion before September 30, 2018. This further contradicts the assertion that CBP is not following the Department's acquisition process.

GAO also implies that CBP did not follow best practices when it did not perform a cost analysis as part of its prioritization strategy for determining balTier locations. CBP is following best practices in evaluating costs, budget, and financial impact of border segments. The reference cited in the draft report, "Leading Practices in Capital Decision Making," 3 is guidance - not policy - and states that:

---

"when evaluating where to make capital investments, organizations should conduct financial analyses in order to prioritize investments that allow the organization to obtain the greatest benefits for the least cost."

Whenever practicable, CBP follows this guidance. The initial prioritization for developing barriers in each location or segment was based on an operational assessment of priorities, which was followed by a resource analysis that factored in cost. The report suggests that priorities should be based on a budget versus what the user determines are the more operationally high-risk areas. We disagree. There is nothing in the guidance prohibiting an approach that first looks at the operational priorities based on risks/threats,

<sup>1</sup> The phase after the need is identified.

<sup>2</sup> 2A is after an analysis is completed and a recommendation to the decision authority has been made and 2B is where the Program manager is developing, testing and evaluating the selected options.

<sup>3</sup> GAO, "Executive Guide: Leading Practices in Capital Decision-Making," AMD-99-32 (Washington, D.C.: Dec. 1, 1998).

### Page 3

and then conducts a financial analysis to optimize a solution within an area. As the report states, CBP plans to do this financial analysis for future segments.

It is also important to note that DHS acquisition governance processes allow for tailoring as appropriate to the nature of the effort and the risk. The DHS acquisition governance process is not an inflexible and arbitrary bureaucratic process. Instead, it is a process that ensures key analysis is completed, risks are identified, and senior leaders make explicit decisions armed with adequate knowledge. The goal is not necessarily to eliminate all risk—that is generally not possible, absent infinite resources. Rather, the goal is to ensure that the acceptance of risk is witting, rather than unwitting.

Again, DHS is pleased to note GAO's recognition of the challenges the Department faces in satisfying the requirements of Presidential Executive Order No.13767, "Border Security and Immigration Enforcement Improvements," dated January 25, 2017. We are prepared for these challenges and better postured now for success largely because of lessons learned from other acquisition programs. Despite an aggressive schedule and intense pressure to quickly yield results, we are committed to following sound acquisition practices and are focused on deliberative analysis to support our plans with appropriate governance and oversight

---

while protecting the taxpayer's investment and ensuring the best possible solutions are implemented in a timely manner and at a reasonable cost.

The draft report contained two recommendations with which DHS concurs. Attached find our detailed response to the recommendations. Technical comments were previously provided under separate cover.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

JIM H. CRUMPACKER, CIA, CFE Director

Departmental GAO-OIG Liaison Office

Attachment

Page 4

Attachment: Management Response to Recommendations Contained in Contained in GA0-18-614

GAO recommended that:

Recommendation 1: The Commissioner of CBP should analyze the costs associated with future barrier segments and include cost as a factor in the Impedance and Denial Prioritization Strategy.

Response: Concur. In accordance with DHS acquisition policy, CBP has been and will continue to include cost as part of the ongoing analysis and capital investment process for the Wall program. Specifically, the process flow for how this is accomplished is outlined below:

1. CBP 's U.S. Border Patrol (USBP) maintains an operational priority list;
2. As part of the Alternatives Analysis process, cost is used to determine a design configuration for segment(s);

- 
3. Following the CBP Planning, Programming, Budgeting and Accountability (PPBA) framework, USBP balances all resources across its portfolio;
  4. The PPBA framework balances all resources across component; and
  5. DHS submits agency resource requests as part of annual budget process.

Many of these steps are iterative as information is reviewed and trade-offs are made. CBP has analyzed the costs on current border segments and will continue to analyze costs on future border wall segments. The Life Cycle Cost Estimate (LCCE) for the FY 2018 Rio Grande Valley Sector has already been completed. Appendix B of the San Diego Sector (SDC) LCCE is being finalized. The Acquisition Review Team meeting for the SDC was held on June 21, 2018, and the program was given approval to proceed to the Acquisition Review Board (ARB). The ARB has not yet been scheduled. The LCCE for the FY 2019 portion of the wall segment will be completed by September 30, 2018. The future barrier segments will be completed in concert with the fiscal year budget allocation and identification of operational requirements. These will be ongoing efforts as more segments are funded.

Estimated Completion Date (ECD): September 30, 2018

Recommendation 2: The Under Secretary for Management should document plans to require CBP to follow the DHS acquisition life cycle, including the completion of all acquisition documentation requirements, for the planned secondary barrier deployment in the San Diego sector.

#### Page 5

Response: Concur. DHS agrees that CBP is required to follow, and is following, the DHS acquisition life cycle. In accordance with DHS Directive 102-01, "Acquisition Management," dated July 28, 2015, DHS's Office of Program Accountability and Risk Management (PARM) requires CBP to complete all requirements and acquisition documentation prior to granting ADE-2A/B approval for the secondary San Diego segment. CBP will be returning to the ARB for an ADE-2A/B for all segments including the secondary barrier replacement in the San Diego sector. The PARM and CBP are actively working the required documents to determine when the ARB will occur. ECD: September 30, 2018.

---

## GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

---

## Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's website (<https://www.gao.gov>). Each weekday afternoon, GAO posts on its website newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to <https://www.gao.gov> and select "E-mail Updates."

---

## Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's website, <https://www.gao.gov/ordering.htm>.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

---

## Connect with GAO

Connect with GAO on [Facebook](#), [Flickr](#), [Twitter](#), and [YouTube](#).  
Subscribe to our [RSS Feeds](#) or [E-mail Updates](#). Listen to our [Podcasts](#).  
Visit GAO on the web at <https://www.gao.gov>.

---

## To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Website: <https://www.gao.gov/fraudnet/fraudnet.htm>



---

Automated answering system: (800) 424-5454 or (202) 512-7700

---

## Congressional Relations

Orice Williams Brown, Managing Director, [WilliamsO@gao.gov](mailto:WilliamsO@gao.gov), (202) 512-4400,  
U.S. Government Accountability Office, 441 G Street NW, Room 7125,  
Washington, DC 20548

---

## Public Affairs

Chuck Young, Managing Director, [youngc1@gao.gov](mailto:youngc1@gao.gov), (202) 512-4800  
U.S. Government Accountability Office, 441 G Street NW, Room 7149  
Washington, DC 20548

---

## Strategic Planning and External Liaison

James-Christian Blockwood, Managing Director, [spel@gao.gov](mailto:spel@gao.gov), (202) 512-4707  
U.S. Government Accountability Office, 441 G Street NW, Room 7814,  
Washington, DC 20548