



February 2017

# SOUTHWEST BORDER SECURITY

Additional Actions  
Needed to Better  
Assess Fencing's  
Contributions to  
Operations and Provide  
Guidance for Identifying  
Capability Gaps

Accessible Version

# GAO Highlights

Highlights of [GAO-17-331](#), a report to congressional requesters

## Why GAO Did This Study

In fiscal years 2013 through 2015, Border Patrol recorded a total of 2.1 million estimated known illegal entries between ports of entry along the southwest border. In an effort to secure the border between ports of entry, CBP spent approximately \$2.4 billion between fiscal years 2007 and 2015 to deploy TI — fencing, gates, roads, bridges, lighting, and drainage infrastructure—along the nearly 2,000 mile southwest border.

GAO was asked to review the use of border fencing along the southwest border. In this report, GAO examines (1) border fencing's intended contributions to border security operations and the extent to which CBP has assessed these contributions and (2) the extent that CBP has processes in place to ensure sustainment and deployment of TI along the southwest border and challenges in doing so. GAO reviewed CBP documentation and data and interviewed officials in headquarters and three southwest border locations. These locations were selected based on CBP's extensive investments in TI in such areas.

## What GAO Recommends

GAO recommends 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 TI assets for border security operations. DHS concurred with the recommendations.

View [GAO-17-331](#). For more information, contact Rebecca Gambler at (202) 512-8777 or [gambler@gao.gov](mailto:gambler@gao.gov).

February 2017

## SOUTHWEST BORDER SECURITY

### Additional Actions Needed to Better Assess Fencing's Contributions to Operations and Provide Guidance for Identifying Capability Gaps

## What GAO Found

Border fencing is intended to benefit border security operations in various ways, according to officials from the U.S. Border Patrol (Border Patrol), which is within the Department of Homeland Security's (DHS) U.S. Customs and Border Protection (CBP). For example, according to officials, border fencing supports Border Patrol agents' ability to execute essential tasks, such as identifying illicit-cross border activities. CBP collects data that could help provide insight into how border fencing contributes to border security operations, including the location of illegal entries. However, CBP has not developed metrics that systematically use these, among other data it collects, to assess the contributions of border fencing to its mission. For example, CBP could potentially use these data to determine the extent to which border fencing diverts illegal entrants into more rural and remote environments, and border fencing's impact, if any, on apprehension rates over time. Developing metrics to assess the contributions of fencing to border security operations could better position CBP to make resource allocation decisions with the best information available to inform competing mission priorities and investments.

Pedestrian Fencing in San Diego, California, April 2016



Source: GAO. | GAO-17-331

CBP is taking a number of steps to sustain tactical infrastructure (TI) along the southwest border; however, it continues to face certain challenges in maintaining this infrastructure, such as addressing maintenance of roads owned or operated by other public and private entities. In 2014, according to Border Patrol officials, Border Patrol began implementing the Requirements Management Process that is designed to facilitate planning for funding and deploying TI and other requirements. Border Patrol headquarters and sector officials told GAO that Border Patrol lacks adequate guidance for identifying, funding, and deploying TI needs as part of this process. In addition, officials reported experiencing some confusion about their roles and responsibilities in this process. Developing guidance on this process would be consistent with federal internal control standards and would provide more reasonable assurance that the process is consistently followed across Border Patrol. This is a public version of a For Official Use Only—Law Enforcement Sensitive report that GAO issued in December 2016. Information DHS deemed For Official Use Only—Law Enforcement Sensitive has been redacted.

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## Abbreviations

BPETS	Border Patrol Enforcement Tracking System
CBP	U.S. Customs and Border Protection
CGAP	Capability Gap Analysis Process
CTIMR	Comprehensive Tactical Infrastructure Maintenance and Repair
DHS	Department of Homeland Security
EID	Enforcement Integrated Database
FM&E	Facilities Management and Engineering
FOCs	Foundational Operational Capabilities
GPRA	Government Performance and Results Act of 1993
IIRIRA	Illegal Immigration Reform and Immigrant Responsibility Act of 1996
METs	Mission Essential Tasks
ORMD	Operational Requirements Management Division
SPA	Strategic Planning and Analysis Directorate
TI	Tactical Infrastructure
WMS	Work Management System



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February 16, 2017

Congressional Requesters

In fiscal years 2013 through 2015, U.S. Border Patrol (Border Patrol), within the Department of Homeland Security’s (DHS) U.S. Customs and Border Protection (CBP), recorded a total of 2.1 million estimated known illegal entries<sup>1</sup> between ports of entry along the southwest border.<sup>2</sup> As the agency responsible for securing U.S. borders to prevent acts of terrorism and the unlawful movement of people, illegal drugs, and other contraband across U.S. borders, CBP spent approximately \$2.4 billion between fiscal years 2007 and 2015 to deploy tactical infrastructure (TI)—fencing, gates, roads, bridges, lighting, and drainage infrastructure—along the nearly 2,000 mile southwest border.<sup>3</sup> CBP now has the responsibility of sustaining border TI over its lifetime—including 654 miles of primary pedestrian and vehicular fencing and approximately 5,000 miles of roads.<sup>4</sup> In 2009, CBP estimated that it would need to spend more than \$3.5 billion over the next 20 years on TI operations and maintenance to

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<sup>1</sup>Border Patrol defines estimated illegal entries as the total number of removable aliens who were apprehended, in addition to the number of entrants who illegally crossed the border but were not apprehended. We defined these illegal entries as estimated “known” illegal entries to clarify that the estimates do not include illegal entrants for which Border Patrol does not have reasonable indications of cross-border illegal activity.

<sup>2</sup>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 law.

<sup>3</sup>See 6 U.S.C. § 211(a) (establishing CBP within DHS), (c) (enumerating CBP’s duties).

<sup>4</sup>Pedestrian fencing is primarily intended to slow down and deter pedestrians from crossing the border. Vehicle fencing, which is intended to resist vehicles engaged in drug trafficking and alien smuggling operations, is typically used in rural or isolated locations that have a low occurrence of illegal pedestrian traffic. In March 2016 we reported that 652 miles of fencing were deployed on the southwest border. See GAO, *Southwest Border Security: Additional Actions Needed to Assess Resource Deployment and Progress*, [GAO-16-465T](#) (Washington, D.C.: Mar. 1, 2016). CBP has conducted an in depth review of geospatial data on fencing and adjusted its estimate of deployed primary border fencing to 654 miles.

sustain these investments and to ensure TI continues to support Border Patrol's mission.<sup>5</sup>

Our prior work on TI highlighted DHS's increased investment in TI and the challenges associated with increased construction and deployment of fencing on the southwest border. In September 2009, we found that CBP had not assessed TI's impact on border security operations or mission goals and had not measured the effectiveness of TI.<sup>6</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 TI on effective control of the border.<sup>7</sup>

You requested that we review the use of border fencing along the southwest border. In this report, we examine (1) border fencing's intended contributions to border security operations and the extent to which CBP has assessed these contributions and (2) the extent that CBP has processes in place to ensure sustainment<sup>8</sup> and deployment of TI along the southwest border and challenges in doing so. In addition, in Appendix

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<sup>5</sup>Cost information is based on CBP's 2009 Life Cycle Cost Estimate (LCCE) for all TI, which includes border fencing, roads, lighting, drainage, and vegetation control from 2009 to 2026. CBP officials stated that CPB is currently updating the LCCE and expects to complete it by the end of fiscal year 2017.

<sup>6</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). In response to our recommendation that CBP conduct an evaluation of the impact of TI, CBP developed interim metrics, and we closed the recommendation as implemented. However, in November 2015, CBP reported that it had not completed or implemented these interim metrics due to funding challenges. We discuss CBP's efforts to develop performance measures later in this report.

<sup>7</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.

<sup>8</sup>For the purposes of this report, sustainment refers to the maintenance, repair, and new construction of TI.

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I we provide analyses of border fencing and total estimated known illegal entries in each southwest border sector.<sup>9</sup>

This report is a public version of the prior sensitive report that we provided to you in December 2016.<sup>10</sup> DHS deemed some of the information in the prior report as For Official Use Only—Law Enforcement Sensitive, which must be protected from public disclosure. Therefore, this report omits sensitive information on sustainment of TI and our analysis of Border Patrol data on fencing and enforcement activities. Although the information in this report is more limited in scope, it addresses the same questions as the sensitive report. Also, the overall methodology used for both reports is the same.<sup>11</sup>

To examine border fencing’s intended contributions to border security operations and the extent to which CBP has assessed these contributions, we analyzed relevant documentation, including Border Patrol’s State of the Border Risk Methodology, which Border Patrol uses to assess risk across the southwest border, and documents identifying CBP mission goals and objectives and related performance measures. We also reviewed relevant acquisition documents that CBP developed during the construction of TI across the southwest border. We interviewed officials from Border Patrol’s Strategic Planning and Analysis (SPA) Directorate, which is responsible for identifying risk along the southwest border and the Operational Requirements Management Division (ORMD) which is responsible for deploying operational requirements, including TI, to mitigate these risks. During these interviews we focused on the intended and actual contributions of border fencing in providing Border Patrol agents with Foundational Operational Capabilities (FOC) and assisting Border Patrol agents in executing their Mission Essential Tasks

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<sup>9</sup>Border Patrol divides responsibility for border security operations geographically among nine sectors, each with its own headquarters. Each sector is further divided into varying numbers of stations.

<sup>10</sup>GAO, *Southwest Border Security: Additional Actions Needed to Assess Fencing’s Contributions to Operations and Provide Guidance for Identifying Capability Gaps*, GAO-17-167SU (Washington D.C.: Dec. 22, 2016).

<sup>11</sup> This work was conducted prior to the issuance of the Executive Order related to border security and immigration enforcement, which the President signed on January 25, 2017. See Border Security and Immigration Enforcement Improvements, Exec. Order No. 13767, 82 Fed.Reg. 8793 (Jan. 30, 2017).

(MET).<sup>12</sup> For this objective, we also analyzed fence breaches by fence design. To do this analysis, we obtained pedestrian fence breach data from Border Patrol Facilities and Tactical Infrastructure (BPFTI) for fiscal years 2010 through 2015. To assess the reliability of these data, we reviewed how CBP collects and maintains breach data and found that the data were sufficiently reliable for the purposes of our report. We then analyzed the occurrences of breaches in modern compared to legacy pedestrian fence designs.<sup>13</sup> We also discussed the limitations associated with border fencing, including the methods employed by illegal entrants in defeating border fencing, including breaches.

During our meetings with ORMD and SPA, we also focused on CBP's efforts to assess border fencing's contributions to border security operations, and the perceived challenges involved in conducting such an assessment. We compared these efforts against criteria established in our prior work on leading practices for performance management.<sup>14</sup> To identify border fencing's intended contributions to border security operations at the sector level, we visited the El Paso, San Diego, and Tucson Sectors. We selected these sectors for site visits due to CBP's extensive investments in TI in each sector over the years. Combined, these sectors contain approximately 52 percent of all miles of primary pedestrian fencing and 80 percent of all miles of vehicle fencing along the southwest border. During these site visits, we interviewed Border Patrol sector officials, agents selected by sector officials, and agents assigned

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<sup>12</sup>Border Patrol defines FOCs as the essential combinations of resources (personnel, training, equipment, technology, and infrastructure) that provide Border Patrol agents with the fundamental operational means by which to conduct their Mission Essential Tasks (METs). Border Patrol defines the METs as a sequential set of discrete or unique tasks in which Border Patrol agents must be proficient to execute their duties in the furtherance of border security operations.

<sup>13</sup>For the purposes of this report, we refer to any fencing designs used prior to CBP implementing requirements of the Secure Fence Act of 2006 (Pub. L. No. 109-367, 120 Stat.2638) as "legacy" fencing and any fencing deployed subsequently as "modern" fencing designs. In addition, all "landing mat" fencing—constructed of army surplus carbon steel landing mats which were used to create landing strips during the Vietnam War—is considered "legacy" fencing design, regardless of when it was constructed.

<sup>14</sup>GAO, *Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making*, [GAO-05-927](#) (Washington, D.C.: September 2009).

to various stations and zones within each sector.<sup>15</sup> Our interviews in each sector focused on agents' perspectives on border fencing's specific contributions to border security within each sector as well as the extent to which border fencing has provided Border Patrol agents with the capabilities border fencing was intended to provide, and the extent to which border fencing assists Border Patrol agents in executing their METs. We also collected information on other perceived benefits of border fencing, including agent safety, as well as perceived limitations of border fencing. While the information we obtained from our site visits cannot be generalized to all Border Patrol sectors, it provided us with insights about border fencing's contribution to border security operations.

To determine the extent that CBP has processes in place to ensure sustainment and deployment of TI along the southwest border and challenges in doing so, we reviewed relevant documentation and interviewed headquarters officials from CBP. Documents we reviewed included contracts, which CBP uses to maintain and repair all TI assets across the southwest border. To assess how CBP manages the deployment of TI across the southwest border, we reviewed relevant documentation from ORMD, which is responsible for executing Border Patrol's requirements management process and deploying TI, among other assets, along the southwest border. These documents included Border Patrol's Capability Gap Analysis Process (CGAP) and the various outputs of this process. We compared these documents against criteria outlined in *Standards for Internal Control in the Federal Government*.<sup>16</sup> We also interviewed officials from BPFTI, which is responsible for sustaining TI along the southwest border, and ORMD. Our interviews with BPFTI officials focused on the program's contracts and work plans, oversight of contractors, the system that BPFTI uses to track and oversee all TI related maintenance and repair work, and any challenges BPFTI or contractors may face in sustaining TI along the southwest border. Our interview with ORMD focused on Border Patrol's process for identifying TI requirements in each sector, prioritizing TI requirements across all nine southwest border sectors, and allocating resources and deploying TI

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<sup>15</sup>Border Patrol has divided the southwest border into nine sectors. Each southwest border sector is divided into varying numbers of stations, with agents assigned to patrol defined geographic areas, or zones, within each station. Of these, zones that touch the international border are known as border zones, while zones that do not touch the international border are known as interior zones.

<sup>16</sup>GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 2014).

solutions. During our site visits, we interviewed relevant BPFTI and Border Patrol officials responsible for overseeing the sustainment of TI in the sector. In these meetings, we discussed past and ongoing TI projects—including fence replacement projects and other major repairs—as well as any challenges the sectors face in sustaining the TI deployed there. We also toured each sector’s TI inventory, which include pedestrian and vehicle fencing, gates, roads, bridges, grates, and lighting. In the El Paso and Tucson sectors, we visited segments of legacy pedestrian fencing slated for replacement with more modern pedestrian fencing.

To analyze the location of estimated illegal entries in conjunction with border fencing, we obtained Border Patrol data on estimated known illegal entries in border zones within each of the nine sectors along the southwest border for fiscal years 2013 through 2015.<sup>17</sup> We also obtained data on the location of CBP’s 654 miles of primary border fencing, by fencing type, and design in each sector, and combined these two data sets. Through this analysis, we were able to identify the (1) total estimated known illegal entries, (2) estimated turn backs and got aways, (3) estimated drive throughs and (4) apprehension rates for estimated illegal entries in southwest border zones with border fencing, by fence type, design, and zone coverage,<sup>18</sup> and in southwest border zones without border fencing. We then used these data to create data tables for each sector that visually display the results of our analysis. We assessed the reliability of these data by interviewing knowledgeable CBP officials on the limitations of these data and digital testing of these data. To

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<sup>17</sup>We obtained apprehension data for fiscal years 2013 through 2015 from the Enforcement Integrated Database—a DHS-shared common database repository for several DHS law enforcement and homeland security applications. We obtained data on entrants who illegally crossed the border but were not apprehended either because they crossed back to Mexico—“turn backs”—or continued traveling to the U.S. interior and Border Patrol was no longer actively pursuing them—“got aways”—from the Border Patrol Enforcement Tracking System. We obtained data on border crossings by motor vehicles—“drive throughs”—from the same database. (The individuals involved in a “drive through” are counted among apprehensions, turn backs, or got aways if agents are able to ascertain the number of individuals in the vehicle.) Apprehension, turn back, and got away data for fiscal years 2013 through 2015 were queried (i.e., obtained from relevant databases) as of February 2016. We selected these data for fiscal years 2013 through 2015 because beginning fiscal year 2013, Border Patrol standardized how it collects and records got aways and turn backs, which improved the reliability of these data.

<sup>18</sup>For the purposes of this document, the term “zone coverage” refers to the extent to which the border miles of a border zone are fenced. In our analysis, we classified border zone coverage as follows: complete (100 percent) border fence coverage, partial border fence coverage, or no border fence coverage.



assess the reliability of the sector fence data we collected, we reviewed the data for any inconsistencies in fence mileage in each sector, by type and design. As a result of our data reliability assessment, we determined that both CBP's estimated known illegal entry data and sector fence data were sufficiently reliable for our intended use. For more information on our scope and methodology for the sector data tables, see Appendix I. Appendix II provides further details on our scope and methodology.

We conducted this performance audit from October 2015 to February 2017 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.

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## Background

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### TI along the Southwest Border

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The Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) of 1996, as amended, states that the Secretary of Homeland Security shall take actions, as necessary, to install physical barriers and roads in the vicinity of the border to deter illegal crossings in areas of high illegal entry.<sup>19</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>20</sup> The Secure Fence Act of 2006 amended IIRIRA to require DHS to construct at least two layers of reinforced fencing as well as physical barriers, roads, lighting, cameras, and sensors on certain segments of the southwest border in California, Arizona, New Mexico, and Texas.<sup>21</sup>

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<sup>19</sup>Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) of 1996. 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>20</sup>IIRIRA § 102(b), 110 Stat. at 3009-554 to -555.

<sup>21</sup>See Pub. L. No. 109-367, § 3, 120 Stat. 2638, 2638-2639. Under the Secure Fence Act of 2006, the Secretary of Homeland Security is to achieve and maintain operational control over the borders of the United States through surveillance activities and physical infrastructure enhancements to prevent unlawful entry by aliens and facilitate CBP's access to the borders. See id. § 2, 120 Stat. at 2638 (classified at 8 U.S.C. § 1701 note).

Subsequently, the DHS Appropriations Act, 2008, rewrote the border fencing requirements section of IIRIRA to require that DHS construct not less than 700 miles of reinforced fencing along the southwest border where fencing would be most practical and effective, and to provide for the installation of additional physical barriers, roads, lighting, cameras, and sensors to gain operational control of the southwest border.<sup>22</sup> GAO has ongoing work on roads used by Border Patrol and plans to complete this work in 2017.

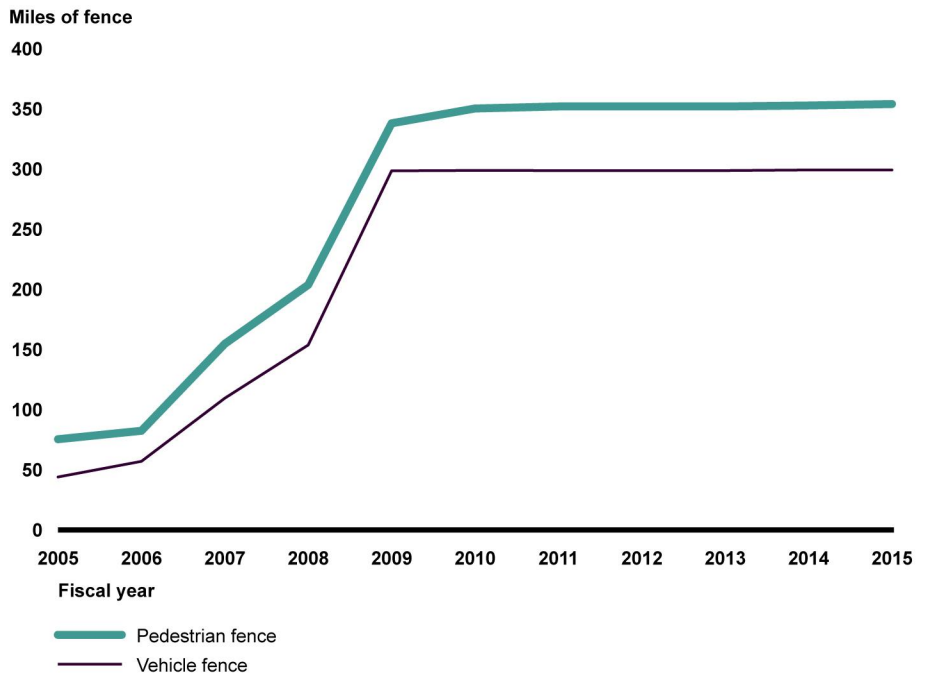
From fiscal years 2005 through 2015, CBP increased the total miles of primary border fencing on the southwest border from 119 miles to 654 miles—including 354 miles of primary pedestrian fencing and 300 miles of primary vehicle fencing. With 654 miles of primary fencing currently deployed, CBP officials have stated that CBP is in compliance with its legal requirements for the construction of southwest border fencing based on the substantial discretion provided to the Secretary of Homeland Security to determine the appropriate placement of fencing.<sup>23</sup> Figure 1 shows the increase in the total miles of primary fencing on the southwest border from fiscal years 2005 to 2015.

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<sup>22</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). IIRIRA § 102(b), as amended, also gives the Secretary of Homeland Security discretion to install TI in particular locations along the border, as deemed appropriate. *Id.*

<sup>23</sup>See 8 U.S.C. § 1103 note (notwithstanding fencing requirements, DHS is not required to install fencing or other resources in a particular location along the border, if the Secretary of Homeland Security determines that the use or placement of such resources is not the most appropriate means to achieve and maintain operational control over the border at that location). See also *United States v. Arizona*, No. 2:10-cv-10-01413-SRB, Order Granting Government's Motion to Dismiss Counterclaims (D. Ariz. Oct. 21, 2011).

**Figure 1: Total Miles of Primary Fencing on the Southwest Border, Fiscal Years 2005 to 2015**



Source: U.S. Customs and Border Protection. | GAO-17-331

CBP used various fencing designs to construct the 654 miles of primary pedestrian and vehicle border fencing including, for example, bollard, wire mesh, and chain link style fencing designs. Border fencing designs have developed over time from legacy designs used prior to CBP implementing requirements of the Secure Fence Act of 2006, to subsequent modern designs. 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.<sup>24</sup> CBP has also deployed other types of TI along the southwest border with various purposes. For example, lighting along the border is designed to further deter illegal activities. Roads and bridges provide Border Patrol agents access to the border to interdict and apprehend illegal entrants as well as supporting the maintenance and

<sup>24</sup>The first layer of fencing, the primary fence, may include both pedestrian and vehicle fencing and is the first fence encountered when moving north from the border; the secondary fence, located behind the primary fence, consists solely of pedestrian fencing; and the third layer, or tertiary fence, is primarily used to delineate property lines rather than deter illegal entries.

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construction of TI. Drainage systems and grates facilitate the maintenance of roads and fences and can provide additional border security. See figures 2 and 3 for examples of selected fencing types and designs as well as other types of TI deployed at the border.

Figure 2: Selected Designs of Pedestrian Fencing on the Southwest Border



Modern double steel mesh style pedestrian fence



Modern bollard style pedestrian fence



Legacy expanded metal style pedestrian fence



Legacy landing mat style pedestrian fence

Source: GAO. | GAO-17-331

Note: For the purposes of this report, we refer to any fencing constructed prior to Customs and Border Protection implementing requirements of the Secure Fence Act of 2006 as “legacy” fencing designs and any fencing deployed subsequently as having “modern” fencing designs. In addition, all “landing mat” fencing—constructed of army surplus carbon steel landing mats which were used to



create landing strips during the Vietnam War—is considered “legacy” fencing, regardless of when it was constructed.

**Figure 3: Selected Designs of Vehicle Fencing and Other Tactical Infrastructure on the Southwest Border**



Modern Normandy style vehicle fence



Modern bollard style vehicle fencing



Operational patrol road and lighting

Source: GAO. | GAO-17-331



Drainage grate

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Note: For the purposes of this report, we refer to any fencing constructed prior to Customs and Border Protection implementing requirements of the Secure Fence Act of 2006 as “legacy” fencing designs and any fencing deployed subsequently as having “modern” fencing designs.

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## Border Patrol Operations along the Southwest Border

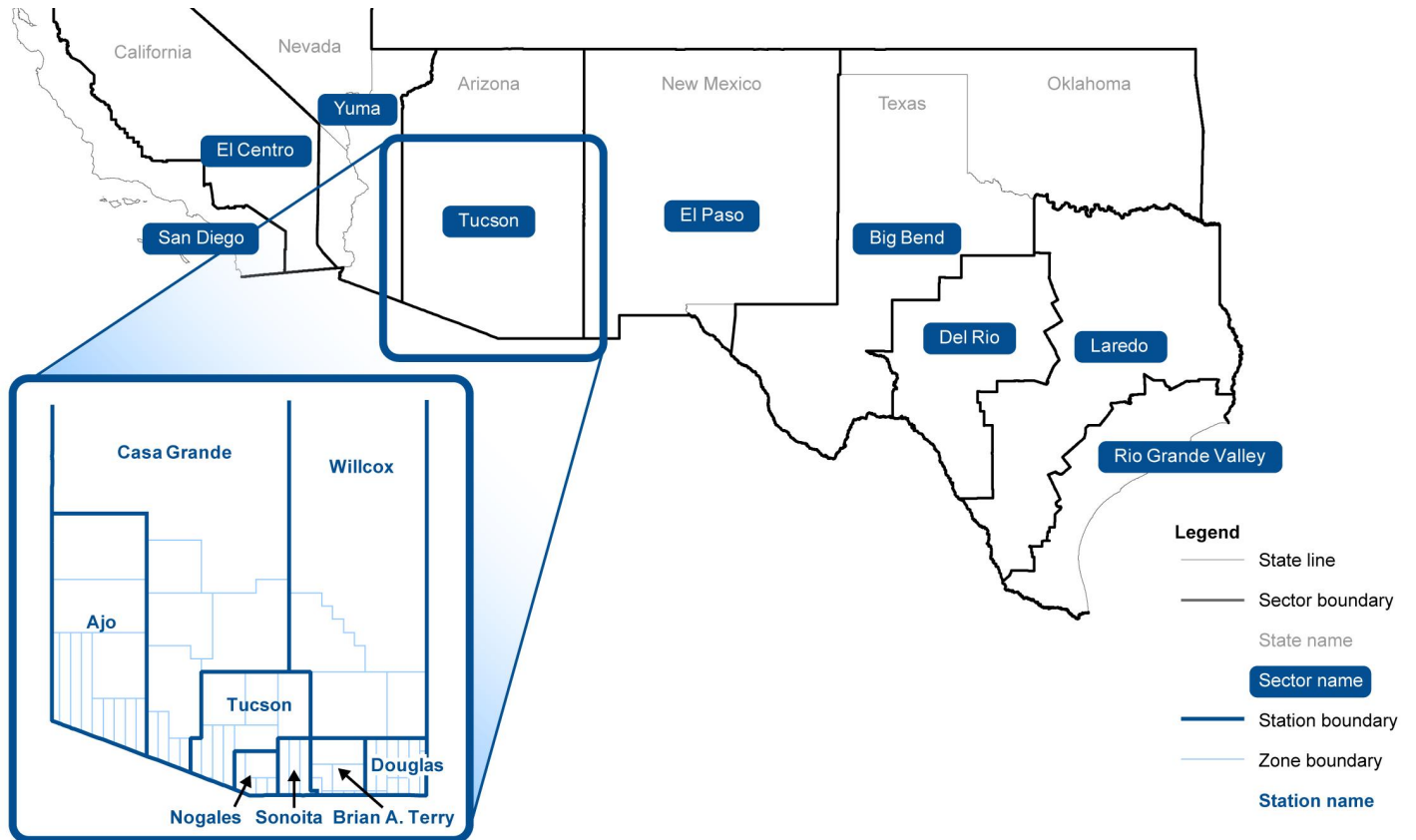
Border Patrol, within CBP, is the federal agency with primary responsibility for securing the national borders by detecting, interdicting, and disrupting illegal cross-border activities between the designated U.S. land border ports of entry.<sup>25</sup> To secure the nearly 2,000 mile southwest border, Border Patrol divides responsibility for border security operations geographically among nine sectors, as shown in figure 4. Each sector has its own headquarters and is further divided into varying numbers of stations, with agents assigned to patrol defined geographic areas, or zones, within each station. According to Border Patrol officials, zones allow sectors to more effectively analyze border conditions, including terrain, when planning how to deploy agents. Zone dimensions are largely determined by geography and topographical features, and zone size can vary significantly.

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<sup>25</sup>See 6 U.S.C. § 211(e) (establishing and listing duties of U.S. Border Patrol within CBP).



**Figure 4: Border Patrol Sectors along the Southwest Border and Border Stations and Zones in the Tucson Sector**



Source: U.S. Customs and Border Protection; MapInfo (map). | GAO-17-331

Within each sector, station, and zone, Border Patrol agents' primary mission is to prevent terrorists and terrorist weapons from entering the United States, and to detect, interdict, and apprehend those who attempt to enter illegally or smuggle any person or contraband across the nation's borders. To accomplish this mission, Border Patrol agents must be proficient in a sequential set of "Mission Essential Tasks" (METs) in order to execute their duties in the furtherance of border security operations (see table 1).

**Table 1: Border Patrol Mission Essential Tasks**

Predict	To anticipate and target illegal traffic actions prior to illegal entry
Detect	To discover the presence of a possible item of interest or suspected contraband
Identify	To determine whether an item of interest is human, animal, conveyance, or unknown
Classify	To determine the level of threat, risk, and/or intent of item of interest
Track	To follow the progress or movements of an item of interest
Respond	To dispatch or employ law enforcement resources to address a potential incursion
Resolve	To take final action, whether legal, administrative, or otherwise; capture data, and process information

Source: U.S. Border Patrol. | GAO-17-331

To assist agents in executing their METs, Border Patrol deploys various resources, including surveillance technology and TI, to sectors, stations, and zones. Each of these resources provides agents with the essential operational capabilities necessary to execute each MET. Border Patrol defines these capabilities as “Foundational Operational Capabilities” (FOC) (see table 2).

**Table 2: Border Patrol Foundational Operational Capabilities (FOC)**

Impedance and Denial	Capability to impede border incursions and deny the threat’s use of terrain to their advantage in conducting illegal activities or acts of terrorism.
Operational Mobility	Capability to gain and maintain access to Border Patrol areas of responsibility and rapidly move Border Patrol resources at any time.
Domain Awareness/Persistent Surveillance	Ability to continuously detect, identify, classify, and track all border incursions in targeted areas at all times.
Logistics and Manpower/ Support and Sustainment	Ability to maintain, mature, refine, and integrate various capabilities to meet Border Patrol mission and statutory requirements.
Command, Control, Communications, and Coordination	Capability to effectively use and coordinate Border Patrol resources during operations.
Intelligence and Counter-intelligence	Capability to produce and disseminate timely, well-formulated, and actionable intelligence concerning border security threats and prevent threat organizations from gathering intelligence against Border Patrol.
Security Partnerships	Capability to harness the political, social, economic, information, infrastructure, and technology assets of the border area to enhance national security.

Source: U.S. Border Patrol. | GAO-17-331

Note: FOCs are current as of May 2016. At the time of our review, Border Patrol officials told us they were in the process of updating the FOCs.

According to Border Patrol officials, TI facilitates the capabilities for “impedance and denial” and “operational mobility.” Border fencing, including pedestrian and vehicle fencing, is intended to facilitate the “impedance and denial” FOC by diverting and delaying illegal entries. Patrol roads and bridges are intended to facilitate the “operational mobility” FOC by enabling agents to efficiently traverse their areas of

responsibility. Other resources that Border Patrol deploys, including surveillance technology, facilitate domain awareness, and do so by providing persistent surveillance capabilities along the border. According to Border Patrol officials, agents require the appropriate combination of resources in each sector, station, and zone to facilitate each FOC and ensure agents can successfully execute their METs. Due to variations in terrain and local population density, among other factors, the appropriate combination of these resources may vary across sectors, stations, and zones.

To assess cross-border threats, Border Patrol collects and analyzes data on the number and types of entrants who illegally cross the southwest border between the land border ports of entry. These data include estimates of the total number of directly or indirectly observed—or “known”—illegal entries by sector, station, and zone. Estimated known illegal entries consist of the total number of illegal entrants who were apprehended, in addition to the number of entrants who illegally crossed the border but were not apprehended—“turn backs” and “got aways.”<sup>26</sup> Border Patrol also collects data on the number of vehicles that illegally cross the border, known as “drive throughs”.

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### Costs of Acquiring, Constructing, and Sustaining TI

From fiscal year 2007 to 2015, CBP spent approximately \$2.4 billion on TI on the southwestern border—about 95 percent, or \$2.3 billion was spent on constructing pedestrian and vehicle fencing.<sup>27</sup> In addition, CBP officials reported that TI operations and maintenance requirements totaled approximately \$450 million during this same period. We reported in 2009 that the average cost per mile for primary pedestrian fencing was \$6.5 million and \$1.8 million per mile for vehicular fencing; according to CBP’s

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<sup>26</sup>Border Patrol began mandating the collection of longitude and latitude coordinates for all apprehensions in May 2009, and in September 2012, Border Patrol standardized the collection of turn back and got away data.

<sup>27</sup>CBP officials stated CBP did not track funding for acquisition and sustainment for border fencing prior to implementation of the Secure Fence Act of 2006.

2016 rough order of magnitude estimate, these averages remain the same.<sup>28</sup>

CBP estimates that the cost for secondary fencing is approximately \$4.2 million per mile but CBP officials identified several limitations of this estimate. First, due to their limited experience in constructing secondary fencing, CBP officials noted that they have not constructed sufficient secondary fencing to use historic costs to estimate an average cost per mile of the fencing. Currently, around 37 miles, or six percent of the total 654 miles of primary fencing, are backed up by secondary pedestrian fencing. In addition, CBP officials stated that constructing secondary fencing in a location with existing primary fencing may result in additional costs not accounted for in their estimates, such as land acquisition, removing existing structures, and utility relocations.

### Border Patrol’s Requirements Management Process

According to Border Patrol officials, in 2014, Border Patrol began implementing the Requirements Management Process. This new process is designed to facilitate planning in order to fund and deploy TI and other operational requirements, such as surveillance technology for border security operations. The Requirements Management Process consists of six steps as shown in figure 5.

Figure 5: U.S. Border Patrol’s Requirements Management Process



Source: U.S. Border Patrol. | GAO-17-331

- The initial step requires Border Patrol to identify mission priorities and goals by analyzing relevant strategic DHS, CBP, and Border Patrol goals, missions, and objectives from applicable guidance and policies. In this initial step, the state of the threat is also assessed.

<sup>28</sup>GAO-09-896. Cost per mile estimates for primary and secondary fence construction includes labor, construction and supply chain, planning/oversight, environmental planning, design, and real estate planning, but does not include the cost of real estate acquisition including litigation costs, environmental mitigation costs, unforeseen site conditions, relocation of utilities, removal or retirement of existing structures, and market fluctuations (e.g. increased fuel costs, labor, raw materials) as well as any other costs not explicitly stated as included in the estimate.

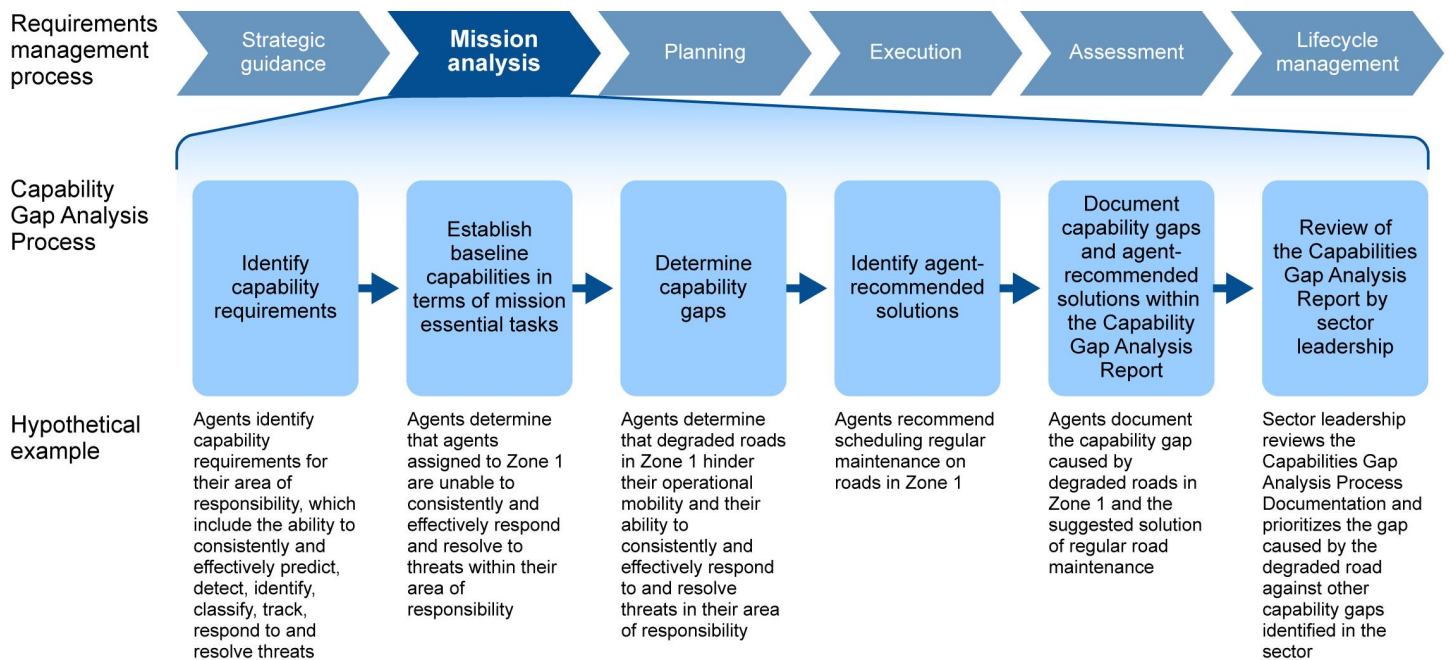
- The second step is Mission Analysis. This step is designed to assess the delta between Border Patrol's capabilities against currently known and anticipated threats in order to determine capability gaps in Border Patrol mission essential tasks. Border Patrol Agents are encouraged to participate in this step by recommending potential solutions—such as tactical infrastructure or technology—to mitigate capability gaps.
- The third step—Planning—involves, among other things, determining potential requirements that may address the identified capability gaps for funding consideration. To conduct this step, Border Patrol officials examine the identified capability gaps in detail and determine courses of action and initial capability requirements. These initial capability requirements are documented in a sector-specific Initial Requirements Document.
- The fourth step—Execution—involves Border Patrol executing courses of action. Border Patrol officials stated that courses of action are recommended options for Border Patrol commanders and executives to select and implement. Once implemented, these options are expected to resolve identified capability gaps in operations, according to Border Patrol officials.
- The fifth and sixth steps of the process—Assessment and Lifecycle Management—involve implementing and monitoring solutions to determine the ability of the requirement to resolve capability gaps and sectors providing feedback on how the solutions affect border security operations.

The initial activity to complete step two of the Requirements Management Process is the Capabilities Gap Analysis Process (CGAP). The CGAP is intended to identify each station's capability gaps by determining the difference between a station's baseline capabilities and a station's required set of capabilities needed to perform mission essential tasks. The identified shortfall in required capability is a capability gap.

After identifying capability gaps, Border Patrol agents assigned to each sector are to identify potential solutions to solve or mitigate each gap. For example, in 2015, as part of the CGAP, agents identified additional maintenance and repair as a solution where patrol roads were in poor condition and negatively affected agents' ability to respond and resolve illicit activity. Other solutions to capability gaps may include adjustments to the technologies or personnel deployed in a specific area. For fiscal year 2015, Border Patrol conducted the CGAP and identified potential solutions in all nine southwest sectors, according to Border Patrol officials. Identified solutions and their corresponding capability gaps are to

be documented in Station Capability Gaps Analysis Reports. Figure 6 outlines the steps of the CGAP, and describes an example using the steps of the CGAP to identify a capability gap and solution.

**Figure 6: U.S. Border Patrol's Capability Gap Analysis Process**



Source: GAO analysis of U.S. Border Patrol information. | GAO-17-331

Border Patrol officials stated that sectors may request additional TI and other requirements for border security operations to address capability gaps not included in the documented CGAP. Officials stated that additional capability gaps may be identified by sectors or stations during the course of border security operations that were not captured at the time a station conducted the process. Border Patrol officials stated that when stations identify these capability gaps and a need exists for a requirement to address the capability gap, the station is required to submit documentation to Border Patrol Headquarters in order for the requirement to be approved, funded, and subsequently deployed. According to Border Patrol officials, this documentation should include (1) the identified capability gap and (2) the new or additional TI or other requirement and how it addresses the identified capability gap.

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## Fencing Is Intended to Assist Agents in Performing Their Duties, but Its Contributions to Border Security Operations Have Not Been Assessed

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### CBP Has Identified the Intended Benefits of Pedestrian and Vehicle Fencing to Border Security Operations

According to CBP officials, pedestrian and vehicle fencing have benefited border security operations in various ways as intended, by (1) supporting Border Patrol agents' ability to execute essential tasks; (2) improving agent safety; and (3) reducing vehicle incursions.

#### **Supporting Agents' Ability to Execute Mission Essential Tasks.**

According to Border Patrol officials, pedestrian fencing is intended to divert illegal entrants—which include migrants and criminal organizations that engage in illicit cross-border activities—to areas of the border where agents can execute their METs and interdict illicit-cross border activities more effectively.<sup>29</sup> Border Patrol officials told us that populated urban environments offer an advantageous setting for illegal entrants because they require only seconds to minutes to blend in with the local U.S. community after crossing the border. By constructing pedestrian fencing in more populated urban environments, Border Patrol officials stated that DHS intended to divert illicit cross-border activities into more remote or rural environments, where illegal entrants may require hours or days to reach the nearest U.S. community. For example, Border Patrol officials in the San Diego sector told us that from 1994 to present, pedestrian fencing, along with investments in manpower and surveillance technology, assisted in diverting a large share of illicit cross-border activity away from the densely populated urban areas near San Diego and into more rural and remote environments east of the city. Officials told us that these rural and remote environments east of San Diego provide an advantage to agents assigned there since they have more time to detect, identify, classify, track, respond and resolve the illicit cross-border activities that occur there. Similarly, Border Patrol officials in the Tucson sector told us that bollard pedestrian fencing in urban areas

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<sup>29</sup>For the purposes of this report, illicit cross-border activity refers to any activity in which people or goods, such as narcotics, money, or weapons, illegally enter the United States.



has helped divert much of the illicit cross-border activities that occurred there into more rural and remote environments where agents are better able to interdict these activities.

Agents assigned to the Nogales station—within the Tucson sector—told us that bollard pedestrian fencing has helped divert illicit cross-border activities away from the City of Nogales and into more rural and remote areas.

In addition to diverting illicit cross-border activities into more rural and remote environments, pedestrian fencing is intended to serve as a physical barrier that impedes and slows the progress of illegal entrants who attempt to cross the border, and in doing so, provides Border Patrol agents assigned to these areas additional time and opportunities to execute their METs, which include detecting, responding, and resolving illicit cross-border activities. Border Patrol agents in the El Paso sector told us that pedestrian fencing deployed in the sector's urban border environments has assisted in improving agents' ability to execute their METs, resulting in higher apprehension rates in these areas. These agents told us that urban border environments, such as the border between downtown El Paso from Ciudad Juarez, offer an ideal crossing point for illegal entrants because they can quickly blend in with the local U.S. population, reach a safe house, or obtain transportation after crossing the border. However, these agents told us that the primary, secondary, and tertiary pedestrian fencing that separate downtown El Paso and Ciudad Juarez have been effective in slowing the progress of illegal entrants who attempt to cross in this area and providing agents with additional time to detect, respond, and resolve the illicit cross-border activities that occur there.

**Improving Agent Safety.** Border Patrol officials we spoke with in the El Paso, Tucson, and San Diego sectors stated that modern pedestrian fencing, including bollard style fencing, improves agent safety during operations. Specifically, San Diego sector officials told us that modern style pedestrian fencing reduces illegal entrants' ability to stage mass crossings, which can overwhelm agents and jeopardize agents' safety. According to Border Patrol officials in the Tucson sector, bollard fencing has helped reduce agent assaults because this fencing provides agents with a clear line of sight into Mexico and makes it more difficult for illegal entrants to ambush agents. These officials told us that older fence designs, including landing mat fencing, obstruct agents' line of sight into Mexico and provided illegal entrants and other individuals in Mexico with cover and the ability to conceal their location along the border. They

explained that individuals on the Mexican side of the border would regularly use the landing mat fence to launch surprise assaults on agents by hurling projectiles, including rocks, from behind it. Border Patrol officials reported that after replacing legacy landing mat fencing with bollard pedestrian fencing in the Nogales station, ambushes and assaults declined. Specifically, Border Patrol officials told us they recorded 376 assaults on agents in the Nogales station in 2010 and 2011, two years prior to constructing modern bollard pedestrian fencing. In 2012 and 2013, two years following construction, assaults on agents in the Nogales station dropped to 71, a decline of 81 percent.

**Reducing Illicit Vehicular Border Incursions.** Vehicle fencing is intended to serve as a physical barrier that slows and prevents vehicles engaged in drug trafficking and human smuggling operations from crossing the border, also known as drive throughs. Vehicle fencing is typically deployed in more rural and remote environments where criminal organizations engaged in trafficking and smuggling are more likely to use vehicles to shorten the time they are at risk of being encountered by Border Patrol agents. Border Patrol officials in the El Paso and Tucson sectors told us that they experienced significant decreases in drive throughs following the deployment of vehicle fencing. Officials in the Tucson sector reported that vehicle fencing deployed improved Border Patrol agents' ability to impede and deny the entry of large amounts of illegal narcotics transported by motorized vehicles. Officials reported that rural land tracts within the sector provided criminal organizations with large areas to traffic narcotics and engage in other illicit cross-border activities. Border Patrol officials reported that after deploying vehicle fencing in these areas, drive throughs dropped by an average of 73 percent. Although Tucson sector officials stated vehicle fencing has been effective in slowing and prohibiting drive throughs, vehicle fencing is not designed to slow or deter illegal entrants from entering or smuggling contraband into the United States on foot.

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## Border Patrol Agents Identified Various Limitations with Border Fencing

In addition to citing the benefits of pedestrian and vehicle fencing, Border Patrol officials and agents also identified the various methods used by illegal entrants to exploit border fencing's limitations in their attempts to defeat it. Agents we spoke with in the El Paso and Tucson sectors explained that one of the most common methods employed by illegal entrants involves cutting openings, or breaches, in pedestrian and vehicle

fencing. Once breached, illegal entrants can cross through the fence or smuggle people and contraband into the United States. Between fiscal years 2010 and 2015, CBP recorded a total of 9,287 breaches in pedestrian fencing. According to our analysis of these data, illegal entrants breached legacy pedestrian fencing at an average rate of 82 breaches per fence mile, compared to an average of 14 breaches per fence mile of modern pedestrian fencing.<sup>30</sup>

Agents we spoke with in the El Paso sector explained that creating breaches in legacy pedestrian fencing requires less effort compared to modern designs, and can be done using bolt or pipe cutters. In addition, these agents also described observing illegal entrants cutting and dragging sections of vehicle fencing off the border and illegally entering the United States in vehicles. Agents we spoke with in the Tucson sector also told us that while pedestrian fencing is generally easier to breach, they have also observed breaches in more modern fence designs, including bollard fence, which agents stated were cut using portable power tools.

Agents we spoke with in these sectors also described witnessing illegal entrants defeating border fencing through other methods. For example, agents we spoke with in the Tucson sector told us they have witnessed illegal entrants attempting to use ramps to drive vehicles up and over vehicle fencing in the sector as well as burrowing under legacy pedestrian fencing, as shown in figure 7. In addition, agents in the Tucson sector stated that illegal entrants scale the taller pedestrian fencing designs, such as bollard fencing. In contrast, agents we spoke with in the San Diego sector stated that some segments of legacy fencing are low and that they have witnessed illegal entrants jumping over the fence. Other methods used to defeat border fencing described to us by Border Patrol agents include using small aircraft to transport contraband over pedestrian fencing and into the United States and building subterranean tunnels from Mexico into the United States.<sup>31</sup>

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<sup>30</sup>DHS deemed that specific details about the number of breaches for pedestrian fencing to be sensitive; therefore, we did not include this information in this report.

<sup>31</sup>We have ongoing work on selected smuggling threats along the southwest border, which include subterranean, aerial, and maritime methods used to smuggle contraband into the United States. We plan to report on the results of our work in 2017.

Figure 7: Select Methods used by Illegal Entrants to Defeat Border Fencing on the Southwest Border



Truck attempting to defeat vehicle fencing with ramps



Burrowing activity beneath legacy landing mat pedestrian fence



Breach in modern mesh pedestrian fencing

Source: U.S. Customs and Border Protection. | GAO-17-331



Breach in modern bollard pedestrian fencing

CBP takes steps to identify intentional destruction or exploitation of border fencing, including breaches, burrows, and tunnels, and addresses them when they occur. For example, Border Patrol officials we met with in

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the El Paso sector told us that agents regularly identify breaches in border fencing during patrols. Once identified, agents notify the appropriate Border Patrol officials at the station and sector level, who in turn schedule the necessary repair work through one of CBP's maintenance and repair contracts, which we discuss later in this report.

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### CBP Has Not Assessed Pedestrian or Vehicle Fencing's Contributions to Border Security Operations Along the Southwest Border

CBP collects data that could be useful to assessing the contributions of border fencing to border security operations at the sector level, but has not conducted such an assessment. According to CBP, from fiscal year 2007 through 2015, it spent approximately \$2.3 billion to deploy border fencing along the southwest border, and CBP will need to spend a substantial amount to sustain these investments over their lifetimes. CBP did not provide a current life-cycle costs estimate to maintain pedestrian and vehicle fencing, however, in 2009 CBP estimated that maintaining fencing would cost more than \$1 billion over 20 years.<sup>32</sup> Despite these investments, CBP cannot measure the contribution of fencing to border security operations along the southwest border because it has not developed metrics for this assessment. According to CBP officials, CBP suspended its efforts to measure the contributions of border fencing to border security in 2013 due to sequestration related funding shortfalls. CBP officials also stated that border fencing is a part of a system of capabilities, including Border Patrol agents, surveillance technology, and other TI, and as a result, developing metrics for a single element of this system is challenging.

Although CBP does not have metrics to assess the contributions of border fencing, it does collect data on the location of illegal entries that can provide insight into where these illegal activities occurred in relation to the various designs of pedestrian and vehicle fencing at the zone level. For example, CBP collects data on apprehensions, turn backs, got aways, and drive throughs, and border fencing, by type and design. CBP could potentially use these data to develop metrics that compare estimated known illegal entries before and after fence construction. CBP could also use these data to help determine the extent to which border

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<sup>32</sup>CBP's 2009 Life Cycle Cost Estimate (LCCE) estimated operations and maintenance costs for fencing would be approximately \$1.4 billion from 2009 to 2029.



fencing contributes to diverting illegal entrants into more rural and remote environments as well as border fencing's impact on apprehension rates over time. However, CBP has not developed metrics that systematically use these data, or other available information, to assess the contributions of border fencing to border security operations along the southwest border. We used these data to conduct a descriptive analysis on (1) the total estimated known illegal entries, (2) estimated drive throughs, (3) estimated turn backs and got aways, and (4) apprehension rates of estimated illegal entries in southwest border zones with border fencing, by fence type, design, and zone coverage, and in southwest border zones without border fencing. See Appendix I for more detailed information on our analysis.

These data, in combination with information on other factors that affect the location of illegal entries and agents' ability to predict, detect, identify, classify, and resolve illicit cross-border activities, could help CBP gain insight into the contributions of pedestrian and vehicle fencing to border security operations. For example, the locations of apprehensions, turn backs, got aways, and drive throughs with the various types and designs of fencing at the sector and zone level in conjunction with information on geography, demographics, staffing, technology, and other TI, could help CBP assess the contributions of border fencing to border security operations as well as current and future fencing deployments and replacement projects in light of other resource allocation priorities.

Past GAO reports on leading practices for performance management have noted that agencies can use performance information to make decisions that affect future strategies, planning and budgeting, identifying priorities, and allocating resources.<sup>33</sup> These leading practices also note that outcome-based performance information should be used for the allocation of resources and in deciding among competing priorities in a results oriented management system. We have also found that linking cost with performance information infuses performance concerns into planning and budgetary deliberations, prompting agencies to reassess their performance goals and strategies to more clearly understand the cost of performance. Performance information also allows program managers to compare results with goals and thus determine where to target resources to improve performance.

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<sup>33</sup>GAO, *Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making*, [GAO-05-927](#) (Washington, D.C.: September 2009).

Developing metrics that can help CBP measure the contributions of fencing to border security operations along the southwest border, could better position CBP to make these and other resource allocation decisions without the best available information to inform competing mission priorities and investments, such as additional manpower and surveillance technologies. An assessment of border fencing's contributions to border security operations could help position CBP to identify the cost effectiveness of border fencing compared to other assets the agency deploys, including Border Patrol agents and various surveillance technologies. This information would also help position CBP to justify continued investments in border fencing and, if needed, help CBP identify future investment priorities, and more effectively target public resources.

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## CBP Manages TI Sustainment but Border Patrol Has Not Provided Guidance on its Process for Identifying and Deploying TI

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### CBP Manages the Sustainment of TI and Has Taken Steps to Mitigate Challenges

CBP contracts with private contractors who provide sustainment services— maintenance, repair, and new construction—for TI in the nine southwest border sectors, which are subdivided into four maintenance and repair work areas. In providing these sustainment services, contractors are tasked with identifying and performing routine TI maintenance and repair requirements, which are classified in five general categories – (1) fences and gates, (2) roads and bridges, (3) drainage and grates, (4) lighting and electrical, and (5) vegetation control and debris removal. Contractors record these requirements in work plans and submit them to Border Patrol for approval. Once Border Patrol approves the work plan, the contractors complete the approved TI maintenance and repair requirements, such as blading a degraded road or clearing and removing vegetation.

CBP and contractors are to classify maintenance and repair requirements in each category as urgent or routine. Routine maintenance and repair includes work that is required due to normal wear and tear, deterioration



due to age, and other damage to TI assets not caused by severe weather events or intentional sabotage. For example, TI contractors may reposition and upgrade lighting used to illuminate operational areas along the southwest border. In addition, contractors are to perform routine maintenance on patrol roads that erode and degrade over time due to weather and wear and tear caused by the Border Patrol agents who use them. However, Border Patrol agents from sectors we visited identified several challenges in sustaining TI, including:

**Addressing Maintenance and Repair of Roads on Other Public or Private Lands.** Border Patrol has authority to use public roads owned or operated by federal, state or local, and tribal entities, as well as certain privately owned roads, for border security operations.<sup>34</sup> However, sector officials stated that they face challenges in addressing maintenance and repair of these roads. Specifically, sector officials in two sectors we visited told us that it may take time to secure an agreement providing for maintenance of some roads needed to conduct border security operations. In addition, sector officials stated that in instances where portions of a single road have different owners, CBP must enter into separate agreements with each owner. Officials in one sector stated that these challenges may hinder CBP's ability to address maintenance of roads in a timely manner for use in border security operations.

**Funding for TI Sustainment Requirements.** CBP has funding allocated for addressing TI sustainment requirements; however, CBP must prioritize its requirements to make best use of available funding, and it can take time to address all requirements. For example, officials in one sector we visited stated that an increase in its inventory of surveillance technology has been accompanied by the construction of new roads, which adds to the sector's TI inventory. In order to address this increase in TI inventory, CBP and sector officials stated that they prioritize maintenance and repair of roads and other requirements in each work plan based on funding availability and how these requirements affect border security operations. CBP officials told us that the contractor and CBP develop and communicate the work plan to sector officials. Sector

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<sup>34</sup>See 23 U.S.C. § 101(a)(22), which defines a "public road" as any road or street under the jurisdiction of and maintained by a public authority and open to public travel. In addition, Border Patrol is statutorily authorized to, without a warrant, access private lands (but not dwellings) within 25 miles of the border, for the purpose of patrolling the border to prevent illegal entry of aliens (see 8 U.S.C. § 1357(a)(3)); and CBP may seek to establish agreements with private landowners to use, and in certain instances address maintenance and repair of, their property in furtherance of border security operations.

officials then review the work plan and prioritize maintenance and repair that are critical to border security operations and communicate these updates to CBP officials for execution. Sector officials in one sector stated that in general, roads that are critical to border security operations are prioritized over roads that are less used by agents. Sector officials in this sector also stated that continually prioritizing the maintenance and repair of certain roads over others can result in degraded roads in the sector. Officials in this sector also stated that the use of degraded roads in border security operations increases the wear and tear on patrol vehicles and increases the cost of maintaining these vehicles.

While CBP and Border Patrol officials stated they prioritize routine maintenance requirements that are most critical to border security operations, contractors are also required to address urgent repair requirements. Urgent repair requirements are typically the result of severe weather events or intentional damage to TI assets. CBP requires contractors to address these requirements within a 24-hour period to mitigate any negative effects on border security operations. For example, CBP classifies breaches to fencing, gates, or gates as urgent and requires immediate repair because, according to Border Patrol officials, breaches increase illegal entrants' ability to enter the country unimpeded. According to Border Patrol officials, the majority of urgent TI repairs on the southwest border are fence breaches. From fiscal year 2010 through fiscal year 2015 CBP recorded a total of 9,287 breaches in pedestrian fencing at an average cost of \$784 per breach to repair. Figure 8 shows an example of a fence breach and subsequent repair.

**Figure 8: Fence Breach Due To Drive-Through Entry and Subsequent Repair**



Source: U.S. Customs and Border Protection. | GAO-17-331

While contractors provide routine maintenance and address urgent repairs on TI, certain TI assets used by Border Patrol become degraded beyond repair and must be replaced. For example, in the Yuma sector, Border Patrol officials identified portions of primary legacy pedestrian fencing that had become so degraded by illegal entrants digging underneath the fencing and land erosion in the area that it required additional support to remain erect. In addition, Border Patrol officials in the El Paso sector stated that while CBP provides routine maintenance and repair services to the primary legacy pedestrian fencing in Sunland Park, New Mexico, significant weather events have eroded the foundation of the fencing. In addition, the erosion in the area has caused damage to nearby roads used by agents to conduct border security operations. Sector officials identified, and we observed, primary legacy pedestrian fencing that leans toward Mexican territory and that required additional support to prevent the fencing from collapsing. Sector officials noted that that due to the erosion and terrain in the area, they have been limited in their repair efforts. See figure 9.

**Figure 9: Legacy Pedestrian Fencing in Sunland Park, New Mexico, March 2016**



Source: GAO. | GAO-17-331

In addition, sector officials identified, and we observed, other primary legacy pedestrian fencing in Sunland Park, New Mexico, where debris had accumulated on the Mexican side of the border, reducing the overall height of the fencing to approximately two feet in certain areas. Officials told us that the fencing is located three feet from the official U.S. border and that conducting maintenance on the fencing would require debris removal machinery that would encroach into Mexican territory. See figure 10.



**Figure 10: Legacy Pedestrian Fencing in Sunland Park, New Mexico, March 2016**



Source: GAO. | GAO-17-331

Sector officials stated that the condition of the fencing in Sunland Park, New Mexico, negatively affects border security operations due to its proximity to populated urban areas on both sides of the border, among other factors. Border Patrol officials in the El Paso sector stated that the degraded fencing is located approximately one quarter of a mile from an urban area on the U.S. side of the border where illegal entrants can quickly obtain transportation and blend in with the local U.S. population. While in general, agents stated they have seconds to minutes to interdict illegal entrants in urban areas, sector officials and agents stated that the condition of the fencing reduces the time agents have to interdict illicit cross-border activity because the degraded fencing does not slow down the progress of illegal entrants. As a result, sector officials stated the sector deploys additional manpower in the area in order to conduct effective border security operations.

In addition, sector officials stated that modern pedestrian fencing in downtown El Paso, Texas, had diverted illegal entrant activity to Sunland Park, New Mexico, where the primary legacy pedestrian fencing is compromised. El Paso sector officials stated that while the Sunland Park, New Mexico, area of operations has the greatest amount of illegal activity in the El Paso sector, the condition of the primary legacy pedestrian fencing does not achieve its intended purpose of slowing the progress of illegal entrants. In addition to the fencing in Sunland Park, Border Patrol has identified other degraded primary legacy fencing along the southwest border, such as the Yuma and Tucson sectors.

To address degraded legacy pedestrian fencing, CBP is replacing this fencing with more modern, bollard style fencing. For example, in fiscal year 2015, CBP began the process of replacing 1.4 miles of existing primary pedestrian fencing in Sunland Park, New Mexico—within the El Paso sector—with new bollard style pedestrian fencing. The fence replacement project also entails constructing a widened and elevated patrol road adjacent to the fence and the installation of culverts designed to mitigate the effects of severe weather events in the area. CBP estimates the fence replacement project will cost approximately \$13.41 million with a planned completion date in May 2017.<sup>35</sup> In addition, in fiscal year 2016, CBP began removing and replacing an estimated 7.5 miles of legacy primary pedestrian fencing with modern bollard style fencing in Naco, Arizona, within the Tucson sector. CBP estimates this fence replacement project will cost \$44.7 million, at an estimated cost of approximately \$6 million per mile of replacement fencing.

In addition to the ongoing fence replacement projects, from fiscal years 2011 through 2016, CBP completed four fence replacement projects that replaced 14.1 miles of primary pedestrian legacy fencing in the Tucson and Yuma sectors with modern bollard style pedestrian fencing, at a total cost of approximately \$68.26 million and an average cost of \$4.84 million per mile of replacement fencing. See table 4.

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<sup>35</sup>CBP noted that the estimated completion date is tentative, due to a contract protest.



**Table 3: Average Cost per Mile of Completed Southwest Border Fence Replacement Projects, Fiscal Years 2011-2016**

Name of Fence Replacement Project	Sector <sup>a</sup>	Miles Replaced	Total Cost (millions)	Average Cost Per Mile (millions)
Nogales	Tucson	2.8	\$19.19	\$6.85
Douglas I	Tucson	6.1	\$25.41	\$4.16
Douglas II	Tucson	3.4	\$15.86	\$4.61
San Luis	Yuma	1.8	\$7.80	\$4.33
<b>Total</b>		<b>14.1</b>	<b>\$68.26</b>	<b>\$4.84</b>

Source: U.S. Customs and Border Protection. | GAO-17-331

<sup>a</sup>Border Patrol divides responsibility for border security operations geographically among nine sectors, each with its own headquarters.

## Border Patrol Lacks Documented Guidance on the Requirements Management Process

Prior to 2014, Border Patrol headquarters and sector officials stated that Border Patrol’s process for identifying, funding, and deploying TI requirements entailed Border Patrol stations and sectors identifying TI requirements and providing written justification to Border Patrol headquarters for review. Border Patrol Headquarters officials reviewed the justification. If approved, the TI requirement was funded and deployed by CBP. For example, El Paso sector officials stated that sector officials provided Border Patrol headquarters written justification documenting the need for a fence replacement project in the Sunland Park, New Mexico, for seven years. Border Patrol approved the identified need and in fiscal year 2015 CBP began implementing the Sunland Park fence replacement project.

In 2014, Border Patrol began implementing the Requirements Management Process that, among other things, is intended to identify capability gaps in border security operations and identify solutions to those capability gaps, including TI. In addition, the process also identifies maintenance and repair solutions such as road improvements that may improve Border Patrol’s operational mobility. Border Patrol has documented the process, including the steps involved in the process. However, Border Patrol has not developed written guidance on this process, including how officials are to use the information and analyses resulting from the process when requesting TI for deployment purposes. For example, following the implementation of the Process in fiscal year 2015, Border Patrol provided the sectors with the Capability Gap Analysis Report that contained the identified capability gaps in the sector and the

agent identified solutions for resource and planning purposes, according to Border Patrol Headquarter officials.

However, sector officials we visited varied in their understanding of the process documentation, including how to use the documentation to inform sector planning. For example, using the analyses recorded in the Capability Gap Analysis Report, the Tucson sector identified a capability gap in its operations—a seasonal river bed in the San Pedro River in Naco, Arizona—that impeded Border Patrol’s capability to gain access to the area after heavy rains. In addition, sector officials used the analyses to identify solutions to the capability gap and began researching options to improve agents’ access to the area. In contrast, Border Patrol officials at another sector we visited were unaware of the analysis included in the Capabilities Gap Analysis Report or how to use the analyses to inform sector planning. Officials in another sector we visited noted that while they received the Capabilities Gap Analysis Report and stated that capability gaps identified in the report would help stations better understand where limitations in border security operations exist, agents need more guidance about how to use the analyses in the report for resource allocation decisions. Further, officials in two sectors we visited noted that guidance on the process would be helpful in terms of how to use the capability gap documentation to identify TI requirements for deployment purposes.

In addition to the confusion with the process cited by sector officials, Border Patrol headquarters officials in the Law Enforcement Operations Directorate—the office within Border Patrol responsible for making TI resource decisions, according to Border Patrol officials—were not aware of their roles and responsibilities in the process. Officials within the Directorate told us that as of March 2016 they had not received documentation of the process and cited the Operational Requirements Based Budget Process, and not the Requirements Management Process, as the current process for Border Patrol sectors and stations to use when identifying TI and other requirements for funding and deployment purposes.<sup>36</sup>

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<sup>36</sup>The Operational Requirements Based Budget Process is Border Patrol’s standardized national planning process that links sector- and station-level planning, operations, and budgets. This process documents how sectors identify and justify their requests to achieve effective control of the border in their area of responsibility, and enables Border Patrol to determine how the deployment of resources, such as technology, infrastructure, and personnel, can be used to secure the border.

According to the *Standards for Internal Control in the Federal Government*, program managers should document responsibilities through policies and procedures and communicate these policies and procedures so that personnel can implement control activities for their assigned responsibilities.<sup>37</sup> Border Patrol headquarters officials confirmed that in 2014, when Border Patrol transitioned to the new Requirements Management Process, they prioritized implementing the new process ahead of developing relevant guidance on roles and responsibilities for headquarters and sector staff responsible for executing each step in the process. While Border Patrol officials noted that the process is new and they plan to take steps to improve it, such as developing an online module that will host policy and guidance on the process, one sector we visited has already used the outputs of the process for decision making and planning purposes. In addition, two of the three sectors we visited noted that guidance would improve sector and station understanding of the process as well as how to use the outputs for planning purposes. As Border Patrol continues to take steps to implement its process for identifying TI and other assets for border security operations, providing guidance to the appropriate officials within Border Patrol would help provide reasonable assurance that steps within the process are followed. In addition, developing and implementing written guidance on the remaining steps of the process reduces the risk of relevant agency officials lacking the information to perform their appropriate role in the process.

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## Conclusion

According to CBP, from fiscal year 2007 to 2015, CBP spent approximately \$2.3 billion to deploy border fencing along the southwest border, and CBP will need to spend a substantial amount to sustain these investments over their lifetimes. Given these costs, developing metrics that measure the contributions of pedestrian and vehicular fencing to border security operations as part of a system of capabilities along the southwest border would provide Border Patrol with the best information available to inform and justify future investments in these assets against competing priorities and other investment opportunities. Further, as Border Patrol continues to take steps to implement its requirements management process for identifying TI and other operational

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<sup>37</sup>GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

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requirements for border security operations, providing guidance to the appropriate officials within Border Patrol would help ensure that steps within the requirements process are followed by Border Patrol officials, and that they are clear about their roles and responsibilities in the process.

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## Recommendations for Executive Action

To ensure Border Patrol has the best available information to inform future investments in TI and resource allocation decisions among TI and other assets Border Patrol deploys in the furtherance of border security operations, and to ensure that key parties within Border Patrol's Requirements Management Process are aware of their roles and responsibilities within the process, we recommend that the Chief of the 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; and
- Develop and implement written guidance to include roles and responsibilities for the steps within its requirements process for identifying, funding, and deploying tactical infrastructure assets for border security operations.

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## 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 III, DHS concurred with the two recommendations and described actions planned to address them. DHS also provided technical comments that we incorporated, as appropriate.

With regard to the first recommendation to 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, DHS concurred and stated that it planned to develop and incorporate metrics into Border Patrol's Requirements Management Process. According to DHS, it plans to develop metrics by December 2017 and update the Requirements Management Process to include these metrics by March

2018. With regard to the second recommendation to develop and implement written guidance to include roles and responsibilities within the Requirements Management Process, DHS concurred and stated that it plans to update the Requirements Management Process and, as part of that update, plans to add communication and training methods and tools to better implement the Process. DHS plans to complete these efforts by September 2019. These actions, if implemented effectively, should address the intent of our recommendations.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Homeland Security, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions, 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 who made significant contributions to this report are listed in appendix IV.



Rebecca Gambler Director, Homeland Security and Justice

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*List of Requesters*

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

The Honorable Thomas R. Carper  
Ranking Member  
Permanent Subcommittee on Investigations  
Committee on Homeland Security and Governmental Affairs  
United States Senate

The Honorable John Cornyn  
United States Senate

The Honorable Michael T. McCaul  
Chairman  
The Honorable Bennie G. Thompson  
Ranking Member  
Committee on Homeland Security  
House of Representatives

The Honorable Martha McSally  
Chairwoman  
Subcommittee on Border and Security  
Committee on Homeland Security House of Representatives



# Appendix I: Descriptive Analysis of Selected Tactical Infrastructure (TI) and Estimated Known Illegal Entries in Southwest Border Zones from Fiscal Years 2013 Through 2015

To provide a concise descriptive overview of border fencing and other tactical infrastructure (TI) in each border sector, we developed a profile for each sector along the southwest border and for the border as a whole. These profiles contain information about TI in each sector with a focus on border fencing as well as other data, such as geographic information and an analysis of estimated known illegal entries in the sector from fiscal years 2013 through 2015.

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## Overview

As part of its border security operations, U.S. Customs and Border Protection (CBP) deploys border fencing across nine sectors along the southwest border. Each border sector has its own headquarters and is further divided into varying numbers of stations, with agents assigned to patrol defined geographic areas, or zones, within each station. Of these, zones that touch the international border are known as border zones, while zones that do not touch the international border are known as interior zones. Zone dimensions are largely determined by geography and topographical features, and zone size can vary significantly.

Each border zone has a unique combination of border fencing types, designs, and coverage. Border fencing types include pedestrian fencing, which is primarily intended to slow down and deter pedestrians from crossing the border, and vehicle fencing, which is intended to resist vehicles engaged in drug trafficking and alien smuggling operations and is typically used in rural or isolated locations that have a low occurrence

of illegal pedestrian traffic. For the purposes of this report, we refer to any fencing designs used prior to CBP implementing requirements of the Secure Fence Act of 2006 as “legacy” fencing designs and any fencing designs deployed subsequently as “modern” fencing designs.<sup>1</sup> In addition, all “landing mat” fencing—constructed of army surplus carbon steel landing mats which were used to create landing strips during the Vietnam War—is considered a “legacy” fencing design, regardless of when it was constructed. Zone “coverage” refers to the presence and extent of border fencing in a border zone. In our analysis, we classified border zone coverage as follows: complete (100 percent) border fence coverage, partial border fence coverage, or no border fence coverage.

Border Patrol collects data on the number of entrants who illegally cross the southwest border between the land border ports of entry. These data include estimates on the total number of directly or indirectly observed—or “known”—illegal entries by sector and zone.<sup>2</sup> Estimated known illegal entries consist of the total number of illegal entrants who were apprehended, in addition to the number of entrants who illegally crossed the border but were not apprehended either because they crossed back to Mexico—“turn backs”—or continued traveling to the U.S. interior and Border Patrol was no longer actively pursuing them—“got aways.” Border Patrol also collects data on the number of vehicles that illegally cross the border, known as “drive throughs.”<sup>3</sup> To show each border zone’s unique combination of border fencing in conjunction with estimated known illegal entries, we analyzed Border Patrol data to determine, for each border zone, the (1) total estimated known illegal entries, (2) total estimated drive throughs, (3) estimated turn backs and got aways, and (4) apprehension rates for estimated known illegal entries.

The following profiles of each southwest border sector and the southwest border as a whole are meant to provide a concise descriptive overview of border fencing and TI in each border sector. Each profile presents sector-specific data on geography, border zones, miles of fencing and patrol

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<sup>1</sup> Pub. L. No. 109-367, 120 Stat. 2638.

<sup>2</sup>We defined these illegal entries as estimated “known” illegal entries to clarify that the estimates do not include illegal entrants for which Border Patrol does not have reasonable indications of cross-border illegal activity.

<sup>3</sup>“Drive throughs” are border crossings by a motor vehicle, often carrying drugs. The individuals involved in a “drive through” are counted among apprehensions, turn backs, or got aways if agents are able to ascertain the number of individuals in the vehicle.

roads, staffing levels, spending on fencing operations and maintenance, and relative number of estimated known illegal entries in border zones; a map highlighting sector boundaries and urban areas; and a chart illustrating fencing layers as of September 2016. Each profile includes a table, based on CBP data, showing estimated known illegal entries, drive throughs, turn backs and got aways, and apprehension rates for fiscal years 2013 through 2015 by the type of primary fencing (pedestrian or vehicle), design of primary fencing (legacy or modern), and coverage of primary fencing (complete, partial, or none) in the border zone where Border Patrol agents recorded the apprehension or observation. A brief narrative describing the data in the table is also included.

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## Methodology for Developing Sector Profiles

The descriptive information in the following sector profiles was compiled from a variety of CBP sources. We obtained information on the number of agents assigned to each sector from the U.S. Border Patrol (Border Patrol) as of September 25, 2015. We obtained information on patrol roads and on the extent of primary, secondary, and tertiary fencing in each sector as of fiscal year 2016 from CBP's Facilities Maintenance and Engineering office (FM&E). To assess the reliability of CBP's road and fencing data, we reviewed how CBP collects and maintains these data and found them sufficiently reliable for our intended use. Finally, we obtained information on the number of sector zones and geographic information included in sector maps from Border Patrol and located the data geographically using Mapinfo.

To analyze estimated known illegal entries in border zones in relation to border fencing, we obtained apprehension, turn back, got away, and drive through data by sector and zone for fiscal years 2013 through 2015 from DHS and Border Patrol databases—apprehension data came from the Enforcement Integrated Database (EID) and turn back, got away, and drive through data came from the Border Patrol Enforcement Tracking System (BPETS).<sup>4</sup> In addition, we also obtained sector map data identifying the border zones in each sector from Border Patrol and data identifying the location of legacy and modern pedestrian and vehicle fencing along the border from the Border Patrol Facilities and Tactical

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<sup>4</sup>EID is a Department of Homeland Security-shared common database repository for several DHS law enforcement and homeland security applications. Data on apprehensions are held in the EID; data on turn backs, got aways, drive throughs are held in BPETS.

Infrastructure (BPFTI) Office. Merging data on the location of border zones in each sector and the location of fencing allowed us to categorize each border zone according to the design, type, and coverage of fencing in the border zone, including “mixed” categories for border zones where CBP deployed a mixture of legacy and modern fencing or a mixture of pedestrian and vehicle fencing. We then combined this border zone fencing data with the estimated known illegal entry data for border zones to determine the (1) total estimated number of known illegal entries, (2) drive throughs, (3) turn-backs and got-aways in border zones, and (4) apprehension rates in border zones with border fencing, by fence design, type and zone coverage, and in border zones without border fencing. We focus our analysis on border zones rather than interior zones. (For a more detailed description of our scope and methodology, see Appendix II.)

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### Scope and Data Limitations of Sector Profiles

The data in the tables included in the following profiles is descriptive and do not establish or suggest causation between border fencing and the total estimated known illegal entries, estimated drive throughs, estimated turn backs and got aways, or apprehension rates of estimated illegal entries. Conclusions regarding the contributions of fencing to Border Patrol’s efforts to secure the border cannot be formed solely on the basis of the location of apprehensions, turn backs, got aways, and drive throughs relative to the location of various types and designs of fencing. For example, at the sector level, the data displayed in the following profiles show differences in estimated known illegal entries, turn backs and got aways, and estimated apprehension rates for border zones with the same types and design of fencing, indicating that other factors affected the number of known illegal entries and apprehension rates recorded in those zones. In fiscal years 2013 through 2015, for example, agents in the Yuma sector had an apprehension rate of 81 percent in border zones that were completely covered by modern pedestrian fencing, while agents in the El Paso sector had an apprehension rate of 17 percent in border zones that were completely covered by modern pedestrian fencing. Within the Tucson sector, agents recorded 169 known drive throughs in border zones with vehicle fencing, whereas in the El Centro sector, agents recorded 25 drive throughs in border zones with vehicle fencing. Furthermore, despite no change in the miles of primary pedestrian fencing on the southwest border between fiscal years 2011-2015, total southwest border apprehensions ranged from approximately 328,000 to 479,000.

Other factors, including terrain, geography, demographics, Border Patrol agent manpower, and surveillance technology along the southwest border, may affect the location of illegal entries and agents' ability to predict, detect, identify, classify, track, respond, and resolve illicit cross-border activities. For example, according to Border Patrol officials, entrants in some border zones may be apprehended before reaching any border fencing in zones where primary border fencing is not located on the border. In the Rio Grande sector, for example, about 30 percent of all primary border fencing miles in the sector are located more than half a mile from the border. In other cases, entrants may make no attempt to evade Border Patrol, choosing to turn themselves in to Border Patrol agents, according to officials. For example, according to CBP officials, while the Rio Grande Valley sector had an apprehension rate of 56 percent in fiscal years 2013 through 2015, in fiscal year 2014 the sector experienced a spike in illegal entries consisting largely of unaccompanied children and adults with children, many of whom turned themselves in to Border Patrol agents without attempting to evade security or defeat fencing.

We determined that there were no significant data reliability issues with CBP apprehension data that affect our use for the purposes of this report. However, CBP has identified some potential limitations concerning drive through, turn back, and got away data. To identify and report estimated known illegal entries, Border Patrol agents use various sources of information, including direct agent observation, referrals from credible sources (such as local residents), camera monitoring, and detection of physical evidence left by migrants (such as footprints). Border Patrol's estimate of illegal entries does not include estimates of illegal entries for which Border Patrol does not have reasonable support, such as the number of illegal entries conducted through illicit cross-border tunnels. As a result, the estimated illegal entry data reported by Border Patrol for fiscal years 2013 through 2015 may not represent all illegal entries across the southwest border during that period. Furthermore, according to Border Patrol officials, agents' ability to obtain accurate or consistent data using these identification sources depends on various factors, such as terrain and weather. For example, data on turn backs and got aways may be understated in areas with rugged mountains and steep canyons that can hinder detection of illegal entries. In other cases, data may be over or understated—for example, in cases where the same turn-back identified by a camera is also identified by footprints.

We determined the data were sufficiently reliable for the purposes of our descriptive analysis. Border Patrol uses these data, among other data, to

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**Appendix I: Descriptive Analysis of Selected  
Tactical Infrastructure (TI) and Estimated  
Known Illegal Entries in Southwest Border  
Zones from Fiscal Years 2013 Through 2015**

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assign risk scores to each sector, which informs resource deployments. Border Patrol also uses these data to calculate the “Interdiction Effectiveness Rate,” which is a performance metric used by the agency to evaluate progress toward meeting its border security goal(s) consistent with the Government Performance and Results Act (GPRA) of 1993, as updated by the GPRA Modernization Act of 2010.<sup>5</sup> Nonetheless, CBP officials said that they did not consider the data sufficiently reliable to compare results from one sector to another due to various challenges in estimating known entries such as differences in local demographics, geography, staffing, and technology in each sector. However, according to CPB, the data were sufficiently reliable to compare zones within each sector, and to compare sectors against a border-wide summation of these data.

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<sup>5</sup>GPRA, Pub. L. No. 103-62, 107 Stat. 285 (1993), was updated by the GPRA Modernization Act of 2010, Pub. L. No. 111-352, 124 Stat. 3866 (2011). CBP reports the “Interdiction Effectiveness Rate” as a GPRA measure, and calculates this figure by dividing apprehensions + turn backs, by apprehensions + turn backs + got aways. While GPRA is applicable to the department or agency level, performance goals and measures are important management tools applicable to all levels of an agency, including the program, project, or activity level, consistent with leading practices and internal controls related to performance monitoring.



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## Appendix II: Objectives, Scope and Methodology

This report examines U.S. Customs and Border Protection's (CBP) tactical infrastructure (TI) along the southwest border. Our objectives were to review (1) border fencing's intended contributions to border security operations and the extent to which CBP has assessed these contributions and (2) the extent that CBP has processes in place to ensure sustainment<sup>1</sup> and deployment of TI along the southwest border and challenges in doing so.

To examine border fencing's intended contributions on border security operations, and the extent to which CBP has assessed these contributions, we analyzed relevant documentation, including Border Patrol's State of the Border Risk Methodology, which Border Patrol uses to assess risk across the southwest border, and documents identifying CBP mission goals and objectives, and related performance measures. We also reviewed relevant acquisition documents that CBP developed for the construction of TI across the southwest border. We interviewed officials from Border Patrol's Strategic Planning and Analysis (SPA) Directorate, which is responsible for assessing risk along the southwest border, and the Operational Requirements Management Division (ORMD), which is responsible for deploying operational requirements, including TI, to mitigate these risks. During these interviews we focused on the intended contributions of TI in providing Border Patrol agents with Foundational Operational Capabilities (FOC) and assisting Border Patrol agents in executing their Mission Essential Tasks (METs).<sup>2</sup> We also discussed the limitations associated with border fencing, including the methods employed by illegal entrants in defeating border fencing, including breaches. To analyze breaches by fence design, we obtained

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<sup>1</sup>For the purposes of this report, sustainment refers to the maintenance, repair, and new construction of TI.

<sup>2</sup>Border Patrol defines FOCs as the essential combinations of resources (personnel, training, equipment, technology, and infrastructure) that provide Border Patrol agents with the fundamental operational means by which to conduct their Mission Essential Tasks (METs). Border Patrol defines the METs as a sequential set of discreet or unique tasks in which Border Patrol agents must be proficient to execute their duties in the furtherance of border security operations.

pedestrian fence breach data from Border Patrol Facilities and Tactical Infrastructure (BPFTI) for fiscal years 2010 through 2015.<sup>3</sup> To assess the reliability of these data, we reviewed how CBP collects and maintains breach data, and found the data to be sufficiently reliable for the purposes of our report. We then analyzed the occurrences of breaches in modern compared to legacy pedestrian fence designs. During our meetings with ORMD and SPA, we also focused on CBP's efforts to assess TI's contributions to border security operations, and the perceived challenges involved in conducting such an assessment. We then compared these efforts against criteria established in GAO's past reporting on leading practices for performance management.<sup>4</sup>

To identify border fencing's intended contributions to border security operations at the sector level, we visited the El Paso, San Diego, and Tucson sectors. We selected these sectors for site visits due to CBP's extensive investments in TI in each sector over the years. Combined, these sectors contain approximately 65 percent of all primary pedestrian and vehicle fencing along the southwest border. These three sectors also contain 66 percent of all secondary and tertiary fencing across the southwest border. During these site visits, we interviewed Border Patrol sector headquarters officials and agents, as well as agents assigned to various stations and zones within each sector.<sup>5</sup> Our interviews in each sector focused on border fencing's specific contributions within each sector as well as the extent to which border fencing has provided Border Patrol agents with the FOCs border fencing was intended to provide, and the extent to which border fencing assists Border Patrol agents in executing their METs. We also collected information on other perceived benefits of border fencing not associated with the FOC or METs, including agent safety, as well as perceived limitations of border fencing. While the

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<sup>3</sup>For the purposes of this report, we refer to any fencing designs used prior to CBP implementing requirements of the Secure Fence Act of 2006 (Pub. L. No. 109-367, 120 Stat. 2638) as "legacy" fencing and any fencing deployed subsequently as "modern" fencing designs. In addition, all "landing mat" fencing—constructed of army surplus carbon steel landing mats which were used to create landing strips during the Vietnam War—is considered "legacy" fencing design, regardless of when it was constructed.

<sup>4</sup>GAO, *Managing for Results: Enhancing Agency Use of Performance Information for Decision Making*, [GAO-05-927](#) (Washington, D.C.: Sept. 2009).

<sup>5</sup>Each southwest border sector is divided into varying numbers of stations, with agents assigned to patrol defined geographic areas, or zones, within each station. Of these, zones that touch the international border are known as border zones, while zones that do not touch the international border are known as interior zones.

information we obtained from our visits cannot be generalized to all Border Patrol sectors, it provided us with insights about border fencing's contribution to border security operations.

To examine the extent that CBP has processes in place to ensure sustainment and deployment of TI along the southwest border and challenges in doing so, we reviewed relevant documentation and interviewed headquarters officials from BPFTI, which is responsible for sustaining TI along the southwest border. These documents included CBP's Comprehensive Tactical Infrastructure Maintenance and Repair (CTIMR) contracts, which CBP uses to maintain and repair TI assets across the southwest border. To assess how CBP manages the deployment of TI across the southwest border, we reviewed relevant documentation from Border Patrol's ORMD, which is responsible for executing Border Patrol's requirements management process and deploying TI, among other assets. These documents included Border Patrol's Capability Gap Analysis Process (CGAP) and the various outputs of this process, including capability gaps and agent identified solutions. We compared these documents against criteria outlined in *Standards for Internal Control in the Federal Government*.<sup>6</sup>

We also interviewed officials from BPFTI and ORMD. Our interviews with BPFTI officials focused on the program's CTIMR contracts and work plans, BPFTI's oversight of CTIMR contractors, the Work Management System that BPFTI uses to track and oversee all TI related maintenance and repair work, and any challenges BPFTI or contractors may face in sustaining TI along the southwest border. Our interviews with ORMD focused on Border Patrol's process for identifying TI requirements, prioritizing TI requirements, and ultimately allocating resources. During our site visits, we interviewed relevant BPFTI and Border Patrol officials responsible for overseeing the sustainment – maintenance and repair–of CBP's TI in the sector. In these meetings, we discussed fence replacement projects and other TI repairs—as well as any challenges the sector faces in sustaining the TI deployed there. We also toured each sector's TI inventory, which include pedestrian and vehicle fencing, gates, roads, bridges, grates, and lighting. In the El Paso and Tucson sectors, we also visited segments of legacy pedestrian fencing slated for replacement with more modern pedestrian fencing within the coming months.

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<sup>6</sup> GAO-14-704G.

The descriptive information in the sector profiles in Appendix I was compiled from a variety of CBP sources. We obtained information on the number of agents assigned to each sector from Border Patrol as of September 2015. We obtained information on roads in each sector as of November 2015 and on the extent of primary, secondary, and tertiary fencing<sup>7</sup> in each sector as of September 2016 from CBP's Facilities Management and Engineering office (FM&E). Finally, we obtained the geographic information on the number of sector zones and geographic information included in sector maps from Border Patrol and located the data geographically using Mapinfo.

To analyze the location of illegal entries in conjunction with border fencing, we reviewed the types of data Border Patrol already collects, including apprehension data from the Enforcement Integrated Database (EID) and turn back, got away, and drive through data from the Border Patrol Enforcement Tracking System (BPETS).<sup>8</sup> We assessed the reliability of these data through interviews with knowledgeable Border Patrol officials on the limitations of these data and digital testing of these data. As a result of our data reliability assessment, we determined that Border Patrol's data were sufficiently reliable for our intended use. However, Border Patrol has identified some limitations concerning drive through, turn back, and got away data. To identify and report estimated known illegal entries, Border Patrol agents use various sources of information, including direct agent observation, referrals from credible sources (such as local residents), camera monitoring, and detection of

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<sup>7</sup>Up to three layers of fencing may run parallel to the border to support border operations. The first layer, the primary fence, may include both pedestrian and vehicle fencing and is the first fence encountered when moving north from the border; the secondary fence, located behind the primary fence; and the third layer, or tertiary fence, is primarily used to delineate property lines rather than deter pedestrian traffic.

<sup>8</sup>EID is a DHS-shared common database repository for several DHS law enforcement and homeland security applications. Data on apprehensions are held in the EID; data on turn backs, got aw ays, drive throughs are held in BPETS.

physical evidence left by migrants (such as footprints).<sup>9</sup> Border Patrol's estimate of illegal entries does not include estimates of illegal entries for which Border Patrol does not have reasonable support. As a result, the estimated illegal entry data for a given period of time may not represent all illegal entries across the southwest border during that period. Furthermore, according to Border Patrol officials, agents' ability to obtain accurate or consistent data using these identification sources depends on various factors, such as terrain and weather. For example, data on turn backs and got aways may be understated in areas with rugged mountains and steep canyons that can hinder detection of illegal entries. In other cases, data may be over or understated—for example, in cases where the same turn-back identified by a camera is also identified by footprints.

Nonetheless, Border Patrol uses these data, among other data, to assign risk scores to each sector, which informs resource deployments. Border Patrol also uses these data to calculate the "Interdiction Effectiveness Rate," which is a performance metric used by the agency to evaluate progress toward meeting its border security goal(s) consistent with the Government Performance and Results Act (GPRA) of 1993, as updated by the GPRA Modernization Act of 2010.<sup>10</sup> Border Patrol officials said that they did not consider the data sufficiently reliable to compare results across sectors due to various challenges in estimating known entries such as differences in local demographics, geography, staffing, and technology. However, according to Border Patrol, the data were sufficiently reliable to compare zones within each sector, and to compare sectors against a border-wide summation. Therefore, after interviewing

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<sup>9</sup>Border Patrol defines estimated illegal entries as the total number of aliens who were apprehended, in addition to the number of entrants who illegally crossed the border but were not apprehended either because they crossed back to Mexico—"turn backs"—or continued traveling to the U.S. interior and Border Patrol was no longer actively pursuing them—"got aways." "Drive throughs" are border crossings by a motor vehicle, often carrying drugs. The individuals involved in a "drive through" are counted among apprehensions, turn backs, or got aways if agents are able to ascertain the number of individuals in the vehicle. We defined these illegal entries as estimated "known" illegal entries to clarify that the estimates do not include illegal entrants for which Border Patrol does not have reasonable indications of cross-border illegal activity.

<sup>10</sup>GPRA, Pub. L. No. 103-62, 107 Stat. 285 (1993), was updated by the GPRA Modernization Act of 2010, Pub. L. No. 111-352, 124 Stat. 3866 (2011). CBP reports the "Interdiction Effectiveness Rate" as a GPRA measure, and calculates this figure by dividing apprehensions + turn backs, by apprehensions + turn backs + got aways. While GPRA is applicable to the department or agency level, performance goals and measures are important management tools applicable to all levels of an agency, including the program, project, or activity level, consistent with leading practices and internal controls related to performance monitoring.

Border Patrol officials about these data and their possible limitations, we determined the data were sufficiently reliable for the purposes of our descriptive analysis.

We obtained data for fiscal years 2013 through 2015 for all southwest border zones and developed four indicators.<sup>11</sup> These indicators specifically focus on pedestrian and vehicle fencing, and do not analyze other types of TI, including: roads, lighting, boat launches, gates, grates, culverts and drainage ditches. These indicators also do not account for other assets that CBP deploys as part of its border security operations, including manpower and surveillance technology, including integrated fixed towers or remote video surveillance systems. The indicators are:

- Total estimated known illegal entries in southwest border zones with varying coverage, types, and designs of border fencing and border zones with no border fencing (apprehensions + turn backs + got aways)
- Total estimated turn backs and got aways in southwest border zones with varying coverage, types and designs of border fencing and border zones with no border fencing (turn backs + got aways)
- Total estimated drive throughs in southwest border zones with varying coverage, types, and designs of border fencing and border zones with non-border fencing (drive throughs)
- Apprehension rates of estimated known illegal entries in southwest border zones with varying coverage, types, and designs of border fencing and border zones with no border fencing (apprehensions / apprehensions + turn backs + got aways)

We then obtained sector data for the southwest border, current as of December 2015, identifying the border zones in each sector from the Office of Border Patrol and data identifying the location of legacy and modern pedestrian and vehicle fencing along the border from BPFTI. To

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<sup>11</sup>We obtained apprehension data for fiscal years 2013 through 2015 from the Enforcement Integrated Database - a DHS-shared common database repository for several DHS law enforcement and homeland security applications. We obtained data on turn backs, got aways, drive throughs from the Border Patrol Enforcement Tracking System. Apprehension, turn back, and got away data for fiscal years 2013 through 2015 were queried (i.e. obtained from relevant databases) as of February 2016. We selected these data for fiscal years 2013 through 2015 because beginning fiscal year 2013, Border Patrol standardized how it collects and records got aways and turn backs, which improved the reliability of these data.



assess the reliability of the sector fence data we obtained, we reviewed for any inconsistencies in fence mileage in each sector, by type and design. As a result of our data reliability assessment, we determined that CBP's sector fence data were sufficiently reliable for our intended use. To identify the presence and extent of border fencing, by design and type, in each border zone within the nine Border Patrol sectors along the southwest border, we combined Border Patrol sector and border zone data with data provided by BPFTI identifying the location of fence, by design (pedestrian or vehicle) and type (legacy or modern), across the southern border.<sup>12</sup> After combining these data, we created a single dataset identifying border zones by the presence of border fencing, by type, design, and coverage.<sup>13</sup> To further classify each border zone based off of the presence and extent of border fencing, by design and type, we developed the following categories:

- Border zones with No Fence
- Border zones with Modern Pedestrian Fence Complete Coverage
- Border zones with Modern Pedestrian Fence Partial Coverage
- Border zones with Legacy Pedestrian Fence Complete Coverage
- Border zones with Legacy Pedestrian Fence Partial Coverage
- Border zones with Mixed Modern/ Legacy Pedestrian Fence Complete Coverage
- Border zones with Mixed Modern/ Legacy Pedestrian Fence Partial Coverage
- Border zones with Modern Vehicle Fence Complete Coverage

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<sup>12</sup>Pedestrian fencing is primarily intended to slow down and deter pedestrians from crossing the border, while vehicle fencing is intended to resist vehicles engaged in drug trafficking and alien smuggling operations. "Legacy" pedestrian fencing refers to fencing constructed prior to the implementation of the Secure Fence Act of 2006 as well as any "landing mat" fencing—constructed of army surplus carbon steel landing mats which were used to create landing strips during the Vietnam War—deployed in any year; and "modern" fencing refers to fencing first deployed as part of implementation of the Secure Fence Act of 2006. For the purposes of this report, the term "zone coverage" refers to the extent to which the border miles of a border zone are fenced. In our analysis, we classified border zones as follows: Complete (100 percent) border fence coverage, partial border fence coverage (less than 100 percent), or no border fence coverage.

<sup>13</sup>For the purposes of this document, the term "zone coverage" refers to the extent to which the border miles of a border zone are fenced. In our analysis, we classified border zones as follows: Complete (100 percent) border fence coverage, partial border fence coverage (less than 100 percent), or no border fence coverage.

- Border zones with Modern Vehicle Fence Partial Coverage
- Border zones with Legacy Vehicle Fence Complete Coverage
- Border zones with Legacy Vehicle Fence Partial Coverage
- Border zones with Mixed Modern/ Legacy Pedestrian/ Vehicle Fence Complete Coverage
- Border zones with Mixed Modern/ Legacy Pedestrian/ Vehicle Fence Partial Coverage

After grouping each border zone within each sector along the southwest border into the appropriate fence category listed above, we then combined these data with data we received from Border Patrol identifying total known illegal entries in southwest border zones for fiscal years 2013 through 2015, by sector and calculated each indicator for each fence category grouping within each sector. The results of this analysis are available in Appendix I. Because Border Patrol occasionally adjusts the geometric shapes of zones, we requested map data as of January 2013, December 2013, December 2014, and December 2015. We then identified and measured the extent of each border zone modification over these years. In instances where Border Patrol had modified within this date range, we measured the percentage of each modification and re-distributed border zone level apprehension, turn back, and got away data to the appropriate adjacent zone, in equal proportion.

We conducted this audit from October 2015 to February 2017 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.

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# Appendix III: Comments from the Department of Homeland Security

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



**Homeland  
Security**

February 9, 2017

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

Re: Management's Response to Draft Report GAO-17-331, "SOUTHWEST  
BORDER SECURITY: Additional Actions Needed to Better Assess Fencing's  
Contributions to Operations and Provide Guidance for Identifying Capability  
Gaps"

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.

As a result of CBP's tactical infrastructure and technology investments between the ports of entry, U.S. Border Patrol (Border Patrol), within the U.S. Customs and Border Protection (CBP), can detect and interdict illegal activity, monitor evolving threat patterns, and strategically deploy assets. Tactical infrastructure is a critical element in CBP's threat-based approach to border security. Tactical infrastructure, including physical barriers, access roads, lighting, and other investments, can persistently impede illegal entry and can influence flow patterns, allowing the Border Patrol to use resources for enforcement purposes more effectively.

In accordance with the *Secure Fence Act of 2006* (P.L. 109-367), CBP has deployed several different types and layers of pedestrian and vehicle fencing in locations along the Southwest border based on a risk and vulnerabilities assessment to deter and prevent unlawful border entry. Tactical fencing provides a persistent method to impede illegal cross-border activity, which offers Border Patrol agents additional time to respond to and resolve threats. The physical stature of the fence can afford agents additional cover, while preserving their ability to see potential adversaries, making physical assaults against them more difficult to carry out.

The Department is pleased to note GAO's positive recognition of the Border Patrol's Requirements Management Process (RMP). The ability to achieve border security across the entire U.S. border requires a very diverse set of people, processes, technology, and

infrastructure. The diversity of solutions is necessary because of a number of varied localized border zone challenges with specific threats, topology, weather, local law enforcement interactions, state laws including those related to environmental protection, regional policies, land ownership, as well as tribal and community cultures.

In the midst of this very challenging and assorted set of drivers, the Border Patrol has developed a consistent set of Mission Essential Tasks (METs) and a Master Capability Lists (MCL) that helps Border Patrol Headquarters, sectors, and stations parse the border security mission into actionable and achievable activities, operationally, analytically, and from an acquisition perspective. However, as different material solutions (technology and tactical infrastructure) are realized, there is the need to better coordinate and integrate our capabilities to show the overall benefit of all material solutions and how each contributes to show the overall border security.

The draft report contained two recommendations with which the Department concurs. Attached find our detailed response to each recommendation.

Again, thank you for the opportunity to review and comment on this draft report. Technical comments were previously provided under separate cover. Please feel free to contact me if you have any questions. We look forward to working with you in the future.

Sincerely,



Jim H. Crumacker, CIA, CFE  
Director  
Departmental GAO-OIG Liaison Office

Attachment

**Attachment: DHS Management Response to Recommendations Contained in  
Draft Report GAO-17-331**

GAO recommended that the Chief of the Border Patrol:

**Recommendation 1:** 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.

**Response:** Concur. In the CBP Border Patrol's RMP document, there are six major stages to help establish requirements: Strategic Guidance, Mission Analysis, Planning, Execution, Assessment, and Lifecycle Management. Within the construct, there is the ability to include people, technology, information, and infrastructure to help with mission success. It is through this RMP approach that overall border security metrics will be included, taking into account all types of material solutions, more integrated assessments and solutions can be accomplished.

Estimated Milestones:

- June 30, 2017: Define and baseline Border Patrol material solution space to provide the ability to consider all solutions for comprehensive border security analysis.
- September 20, 2017: Map METs/MCLs to material solutions space to ensure assessment methodology for material solutions.
- December 31, 2017: Develop metrics rubric from task-capability-material mapping to provide quantifiable attributes for all material solutions.
- March 31, 2018: Update RMP to include comprehensive metrics rubric to provide a formal means to communicate material assessment and operational impacts.

Estimated Completion Date (ECD): March 31, 2018.

**Recommendation 2:** Develop and implement written guidance to include roles and responsibilities for the steps within its requirements process for identifying, funding, and deploying tactical infrastructure assets for border security operations.

**Response:** Concur. As outlined above in Recommendation 1, there will be an update to the RMP to better include all material solutions, as well as a documented means to communicate this approach. Leveraging the updated RMP, Border Patrol will use this opportunity to add formal communication and training methods and tools to better implement the updated methodology.

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Estimated Milestones:

- September 30, 2017: Interview Sectors for communication and training needs for RMP and Capability Gap Analysis Process (CGAP) to ensure current training and communication gaps are identified.
- December 31, 2017: Develop training framework to address Sector needs to provide a communication framework to include updated RMP analytical approach.
- March 31, 2018: Develop RMP and CGAP training and implementation means to ensure comprehensive training tools for RMP and CGAP.
- September 30, 2019: Systematically pilot training and implementation methods for an implementation validation for comprehensive and closed-loop RMP and CGAP approach.

ECD: September 30, 2019.

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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

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

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## Staff Acknowledgments

In addition to the contact named above, Jeanette Espinola (Assistant Director); Bruce Crise, Eric Hauswirth, Brandon Jones, Krista Mantsch, John Mingus, Sasan J. “Jon” Najmi, and Adam Vogt made contributions to this report.

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# Appendix V: Accessible Data

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## Data Tables

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**Data Table for Figure 1: Total Miles of Primary Fencing on the Southwest Border, Fiscal Years 2005 to 2015**

Year	Pedestrian fence	Vehicle fence
2005	75.4	44
2006	82.4	57
2007	154.7	109.5
2008	203.7	153.7
2009	338	298.5
2010	350.3	298.8
2011	352	298.7
2012	352	298.7
2013	352	298.7
2014	352.8	299.2
2015	354	299.2

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## Agency Comment Letters

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### Text of Appendix III: Comments from the Department of Homeland Security

Page 1

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Washington, DC 20548

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

### Page 2

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Director

Departmental GAO-OIG Liaison Office

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

### Page 3

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

### Page 4

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