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SECURE BORDER INITIATIVE

Observations on the Importance of Applying Lessons Learned to Future Projects

Statement of Richard M. Stana, Director
Homeland Security and Justice Issues

February 27, 2008

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Highlights

Highlights of GAO-08-508T, a testimony before the Subcommittee on Management, Investigations, and Oversight, and Border, Maritime and Global Counterterrorism, Committee on Homeland Security, House of Representatives

Why GAO Did This Study

In November 2005, the Department of Homeland Security (DHS) established the Secure Border Initiative (SBI), a multiyear, multibillion-dollar program to secure U.S. borders. One element of SBI is the U.S. Customs and Border Protection's (CBP) SBI program, which is responsible for developing a comprehensive border protection system through a mix of security infrastructure (e.g., fencing) and surveillance and communication technologies (e.g., radars, sensors, cameras, and satellite phones).

GAO was asked to monitor DHS progress in implementing CBP's SBI program. This testimony provides GAO's observations on (1) technology implementation; (2) the extent to which Border Patrol agents have been trained and are using SBI technology; (3) infrastructure implementation; and (4) how the CBP SBI program office has defined its human capital goals and the progress it has made to achieve these goals. GAO's observations are based on analysis of DHS documentation, such as program schedules, contracts, status, and reports. GAO also conducted interviews with DHS officials and contractors, and visits to sites in the southwest border where SBI deployment is under way. GAO performed the work from November 2007 through February 2008. DHS generally agreed with GAO's findings.

To view the full product, including the scope and methodology, click on GAO-08-508T. For more information, contact Richard M. Stana at (202) 512-8777 or stanar@gao.gov

What GAO Found

On February 22, 2008, DHS announced final acceptance of Project 28, a $20.6 million project to secure 28 miles along the southwest border, and is now gathering lessons learned to use in future technology development. The scope of the project, as described in the task order DHS issued to Boeing—the prime contractor DHS selected to acquire, deploy, and sustain systems of technology across the U.S. borders—was to provide a system with the capabilities required to control 28 miles of border in Arizona. CBP officials responsible for the program said that although Project 28 will not be replicated, they have learned lessons from their experience that they plan to integrate into future technology development. CBP has extended its timeline and approach for future projects and does not expect all of the first phase of its next technology project to be completed before the end of calendar year 2011.

Border Patrol agents began using Project 28 technologies in December 2007, and as of January 2008, 312 agents in the area had received updated training. According to Border Patrol agents, while Project 28 is not an optimal system to support their operations, it has provided greater technological capabilities than did their previous equipment. Not all of the Border Patrol agents in the Tucson sector have been trained on Project 28 because the system will be replaced with newer technologies.

Deployment of fencing along the southwest border is on schedule, but meeting CBP's goal to have 370 miles of pedestrian fence and 300 miles of vehicle fence in place by December 31, 2008, will be challenging and total costs are not yet known. As of February 21, 2008, the SBI program office reported that it had constructed 168 miles of pedestrian fence and 135 miles of vehicle fence. CBP officials reported that meeting deadlines has been difficult because of various factors including difficulties in acquiring rights to border lands. Moreover, CBP officials are unable to estimate the total cost of pedestrian and vehicle fencing because they do not yet know the type of terrain where the fencing is to be constructed, the materials to be used, and the cost to acquire the land. As CBP moves forward with construction, it is making modifications based on lessons learned from previous efforts. For example, CBP plans to buy construction items, such as steel, in bulk; use approved fence designs; and contract out the maintenance and repair.

CBP's SBI program office established a staffing goal of 470 employees for fiscal year 2008, made progress toward meeting this goal and published its human capital plan in December 2007; however, it is in the early stages of implementing the plan. As of February 1, 2008, the office reported having a total of 305 employees. SBI program officials said that they believe they will be able to meet their staffing goal of 470 staff by the end of the fiscal year. In December 2007, the SBI office published the first version of its *Strategic Human Capital Management Plan* and is now in the early implementation phase. The plan outlines seven main goals for the office and activities to accomplish those goals, which align with federal government best practices.

Chairman Sanchez, Mr. Souder, Chairman Carney, Mr. Rogers and Members of the Subcommittees:

I am pleased to be here today to discuss observations on selected aspects of the Secure Border Initiative (SBI) program implementation.

Securing the nation's borders from illegal entry of aliens and contraband, including terrorists and weapons of mass destruction, continues to be a major concern. Much of the United States' 6,000 miles of international borders with Canada and Mexico remains vulnerable to illegal entry. Although the Department of Homeland Security (DHS) apprehends hundreds of thousands of people entering the country illegally each year, several hundreds of thousands of individuals also enter the United States illegally and undetected. In November 2005, DHS announced the launch of SBI, a multiyear, multibillion-dollar program aimed at securing U.S. borders and reducing illegal immigration. Elements of SBI will be carried out by several organizations within DHS. One component is the U.S. Customs and Border Protection's (CBP) SBI program office[1] which is responsible for developing a comprehensive border protection system using people, technology, known as SBI*net*, and tactical infrastructure—fencing, roads, and lighting.

You requested that we monitor CBP's SBI program and provide periodic updates on the status of the program. My testimony today is the second in a series of interim reports[2] on SBI implementation and focuses on the following issues:

- SBI*net* technology implementation;
- the extent to which Border Patrol agents have been trained and are using SBI*net* technology;
- SBI tactical infrastructure implementation; and
- how the SBI program office has defined its human capital goals and the progress it has made to achieve these goals.

[1]The CBP SBI Program Executive Office, referred to in this testimony as the SBI program office, is responsible for overseeing all SBI activities; for acquisition and implementation, including establishing and meeting program goals, objectives, and schedules; for overseeing contractor performance; and for coordinating among DHS agencies.

[2]See GAO, *Secure Border Initiative: Observations on Selected Aspects of SBInet Program Implementation,* GAO-08-131T (Washington, D.C.: October 2007) for the first report.

To address these issues, we analyzed DHS documents, including program schedules and status reports, and workforce data. We determined that the data were sufficiently reliable for purposes of this testimony. We interviewed DHS and CBP headquarters and field officials, including representatives of the SBI program office, Border Patrol, CBP Air and Marine, CBP Office of Field Operations, and the DHS Science and Technology Directorate. We also visited the Tucson Border Patrol sector[3]—a site where SBI*net* technology and fencing deployment was under way at the time of our review. We performed our work from November 2007 through February 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the work to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our objectives.

We also have work under way to review other components of the SBI program. Specifically, we are conducting work for this committee to assess the development and deployment of SBI*net*'s command, control, and communications systems and surveillance and detection systems and expect to issue a report later this year. In addition, we are reviewing SBI*net* as part of a broader look at DHS's use of performance-based services acquisition, an acquisition method structured around the results to be achieved instead of the manner by which the service should be performed. We expect to issue a report on this effort in spring 2008. Finally, as mandated in the Consolidated Appropriations Act, 2008,[4] we are examining DHS's fiscal year 2008 expenditure plan for the SBI program and also expect to report to Congress in spring 2008.

Summary

On February 22, 2008, DHS announced its final acceptance of Project 28, a $20.6 million project to secure 28 miles along the southwest border, and is now gathering lessons learned to inform future border security technology development. The scope of the project, as described in the task order between DHS and Boeing—the prime contractor DHS selected to acquire,

[3]The U.S. Border Patrol has 20 sectors responsible for detecting, interdicting, and apprehending those who attempt illegal entry or smuggle people—including terrorists or contraband, including weapons of mass destruction—across U.S. borders between official ports of entry.

[4]Pub. L. No. 110-161, 121 Stat. 1844, 2047-2049.

deploy, and sustain the SBI*net* system across the U.S. borders—was to provide a system with the detection, identification, and classification capabilities required to control the border, at a minimum, along 28 miles in the Tucson sector. After working with Boeing to resolve problems identified with Project 28, DHS formally accepted the system, noting that it met contract requirements. Officials from the SBI*net* program office said that although Project 28 did not fully meet their expectations, they are continuing to develop SBInet with a revised approach and have identified areas for improvement based on their experience with Project 28. For example, both SBI*net* and Border Patrol officials reported that Project 28 was initially designed and developed by Boeing with limited input from the Border Patrol, whose agents are now operating Project 28 in the Tucson sector; however, they said that future SBI*net* development will include increased input from the intended operators. The schedule for future deployments of technology to the southwest border that are planned to replace most Project 28 capabilities has been extended and officials estimated that the first planned deployment of technology will occur in other areas of the Tucson sector by the end of calendar year 2008. The remaining deployments of the first phase of technology development planned for the Border Patrol's Tucson, Yuma, and El Paso sectors are expected to be completed by the end of calendar year 2011.

Border Patrol agents in the Project 28 location have been using the system as they conduct their border security activities since December 2007, and as of January 2008, 312 agents in the Project 28 location had received updated training. According to Border Patrol agents, while Project 28 is not an optimal system to support their operations, it has provided them with greater technological capabilities—such as improved cameras and radars—than the legacy equipment that preceded Project 28. Not all of the Border Patrol agents in the Project 28 location have been trained to use the system's equipment and capabilities, as it is expected to be replaced with updated technologies developed for SBI*net*.

Deployment of tactical infrastructure projects along the southwest border is on schedule, but meeting the SBI program office's goal to have 370 miles of pedestrian fence and 300 miles of vehicle fence in place by December 31, 2008, will be challenging and the total cost is not yet known. As of February 21, 2008, the SBI program office reported that it had constructed 168 miles of pedestrian fence and 135 miles of vehicle fence. Although the deployment is on schedule, SBI program office officials reported that keeping on schedule will be challenging because of various factors, including difficulties in acquiring rights to border lands. Furthermore, SBI program office officials are unable to estimate the total cost of pedestrian

and vehicle fencing because of various factors that are not yet known, such as the type of terrain where the fencing is to be constructed, the materials to be used, the cost to acquire the land. Furthermore, as the SBI program office moves forward with tactical infrastructure construction, it is making modifications based on lessons learned from previous fencing efforts. For example, for future fencing projects, the SBI program office plans to buy construction items, such as steel, in bulk; use approved fence designs; and contract out the maintenance and repair of the tactical infrastructure.

The SBI program office established a staffing goal of 470 employees for fiscal year 2008, made progress toward meeting this goal, and published its human capital plan in December 2007; however, the SBI program office is in the early stages of implementing this plan. As of February 1, 2008, SBI program office reported having 142 government staff and 163 contractor support staff for a total of 305 employees. SBI program office officials told us that they believe they will be able to meet their staffing goal of 470 staff by the end of September 2008. In December 2007, the SBI program office published the first version of its *Strategic Human Capital Management Plan* and is now in its early implementation phase. The plan outlines seven main goals for the office and activities to accomplish those goals, which align with federal government best practices.

Background

CBP's SBI program is responsible for identifying and deploying an appropriate mix of technology, known as SBI*net* (e.g., sensors, cameras, radars, communications systems, and mounted laptop computers for agent vehicles); tactical infrastructure (e.g., pedestrian and vehicle fencing, roads, and lighting); and personnel (e.g., program staff and Border Patrol agents) that are intended to enable CBP agents and officers to gain effective control[5] of U.S. borders. SBI*net* technology is also intended to include the development and deployment of a common operating picture (COP) that provides uniform data through a command center environment to Border Patrol agents in the field and all DHS agencies and to be interoperable with stakeholders external to DHS, such as local law enforcement. The current focus of SBI is on the southwest border areas between the ports of entry that CBP has designated as having the highest

[5]DHS defines effective control of U.S. borders as the ability to consistently: (1) detect illegal entries into the United States; (2) identify and classify these entries to determine the level of threat involved; (3) efficiently and effectively respond to these entries; and (4) bring events to a satisfactory law enforcement resolution.

need for enhanced border security because of serious vulnerabilities. The SBI program office and its offices of tactical infrastructure and SBI*net* are responsible for overall program implementation and oversight. Figure 1 is a map of the southwest border and the Border Patrol sectors.

Figure 1: Map of Border Patrol Sectors along the Southwest Border

Source: GAO analysis of CBP data.

In September 2006, CBP awarded a prime contract to the Boeing Company for 3 years, with three additional 1-year options. As the prime contractor, Boeing is responsible for acquiring, deploying, and sustaining selected SBI technology and tactical infrastructure projects. In this way, Boeing has extensive involvement in the SBI program requirements development, design, production, integration, testing, and maintenance and support of SBI projects. Moreover, Boeing is responsible for selecting and managing a

team of subcontractors that provide individual components for Boeing to integrate into the SBI*net* system. The SBI*net* contract is largely performance-based—that is, CBP has set requirements for the project and Boeing and CBP coordinate and collaborate to develop solutions to meet these requirements—and designed to maximize the use of commercial off-the-shelf technology.[6] CBP's SBI program office oversees the Boeing-led SBI contractor team.

CBP is executing part of SBI's activities through a series of task orders to Boeing for individual projects. As of February 15, 2008, CBP had awarded eight task orders to Boeing. Table 1 is a summary of the task orders awarded to Boeing for SBI projects.

Table 1: Task Orders Awarded to Boeing for SBI Projects as of February 15, 2008 (Dollars in millions)

Task order description	Date awarded	Task order obligation
Program Management: Related to mission engineering, facilities and infrastructure, systems engineering, test and evaluation, and program management services to develop and deploy the SBI*net* system.	09/21/2006	$135.9
Project 28: Boeing's pilot project and initial implementation of SBI*net* technology for 28 miles of the border in the Tucson sector.	10/20/2006	20.6
Fence Lab: Related to the testing of potential pedestrian and vehicle fence and barrier solutions.	02/16/2007	0.7
Barry M. Goldwater Range: Related to the construction of 32 miles of fencing in the Yuma sector; also knows as Project 37.	01/12/2007	122.2
Design: Related to the SBI*net* deployment design solution including design and locations for the SBI*net* technology solution in the Yuma, Tucson, and El Paso sectors.	08/01/2007	69.0
Project 28 Contractor Maintenance and Logistics Support: Provides Project 28 with the required maintenance and logistics support to operate the system.	12/07/2007	8.0
Command, Communications, Control and Intelligence (C3I) and Common Operating Picture: Related to the development of the next version of the SBI*net* operating software to design, develop, and demonstrate a functional SBI*net* C3I/COP system.	12/07/2007	64.5
Supply and Supply Chain Management: The development and implementation of a supply and supply chain management system solution to execute tactical infrastructure projects.	01/07/2008	733.3

Source: GAO analysis of CBP data.

In addition to deploying technology across the southwest border, the SBI program office plans to deploy 370 miles of single-layer pedestrian fencing and 300 miles of vehicle fencing by December 31, 2008. Pedestrian fencing is designed to prevent people on foot from crossing the border and vehicle

[6]Commercial off-the-shelf is a term for products that are available for sale, lease, or license to the general public.

fencing is physical barriers meant to stop the entry of vehicles. The SBI program office, through the tactical infrastructure program, is using the U.S. Army Corps of Engineers (USACE) to contract for fencing and supporting infrastructure (such as lights and roads), complete required environmental assessments, and acquire necessary real estate.[7] In addition, in January 2008, CBP issued Boeing a supply and supply chain management task order for the purchase of construction items, such as steel.

In December 2006, DHS estimated that the total cost for completing the deployment along the southwest border will be $7.6 billion from fiscal years 2007 through 2011. DHS has not yet reported the estimated life cycle cost for the SBI program, which is the total cost to the government for a program over its full life, consisting of research and development, operations, maintenance, and disposal costs.[8] Since fiscal year 2007, Congress has appropriated more than $2.5 billion for SBI. DHS has requested an additional $775 million for SBI for fiscal year 2009.

First SBI*net* Technology Deployment Is Complete, but Lessons Have Been Learned

DHS announced its final acceptance of Project 28 from Boeing on February 22, 2008, completing its first efforts at implementing SBI*net*, and is now gathering lessons learned from the project that it plans to use for future technology development. The scope of the project, as described in the task order between Boeing and DHS, was to provide a system with the detection, identification, and classification capabilities required to control the border, at a minimum, along 28 miles within the Tucson sector. To do so, Boeing was to provide, among other things, mobile towers equipped with radar, cameras, and other features, a common operating picture (COP) that communicates comprehensive situational awareness, and secure-mounted laptop computers retrofitted in vehicles to provide agents in the field with COP information. As we previously reported,[9] Boeing delivered and deployed the individual technology components of Project

[7]The SBI program office contracted with Boeing to construct 32 miles of fencing in the Barry M. Goldwater Range. Deployment of this fencing has been completed, and the SBI program office plans to use USACE to contract for all remaining pedestrian fencing and vehicle barriers to be deployed through December 2008.

[8]See GAO, *Cost Assessment Guide: Best Practices for Estimating and Managing Program Costs—Exposure Draft*, GAO-07-1134SP (Washington, D.C: July 2007).

[9]GAO-08-131T.

28—such as the towers, cameras and radars—on schedule.[10] See figures 2 and 3 below for photographs of SBI*net* technology along the southwest border.

Figure 2: Project 28 Mobile Sensor Tower Deployed in Tucson Sector

Source: GAO.

[10]Project 28 components include nine mobile radar/sensor towers; four underground sensors, 70 small handheld satellite phones that allow for agents to communicate throughout the Tucson sector, and 50 CBP agent vehicles with secure-mounted laptop computers and communications capabilities.

Figure 3: At Left, Mounted Laptop Installed in Border Patrol Vehicle; at Right, Project 28 Command and Control Center

Source: GAO.

However, Boeing's inability to integrate these components with the COP software delayed the implementation of Project 28 over 5 months after the planned June 13, 2007, milestone when Border Patrol agents were to begin using Project 28 technology to support their activities. Specifically, SBI program office officials said that the software that Boeing selected for the COP was intended to be used as a law enforcement dispatch system and was not designed to process and distribute the type of information being collected by the cameras, radars, and sensors. However, SBI officials told us that Boeing selected the system based on initial conversations with Border Patrol officials, but when deployed to the field, Boeing found limitations with the system. As we reported in October 2007, among other technical problems reported were that it was taking too long for radar information to display in command centers and newly deployed radars were being activated by rain or other environmental factors, making the system unusable.[11] According to officials from the SBI program office, Boeing worked to correct these problems from July through November 2007. As one example of improvement, Border Patrol officials reported that Boeing added an auto focus mechanism on the cameras located on the nine towers.[12] However, SBI*net* and Border Patrol identified issues that

[11]GAO-08-131T.

[12]As part of Project 28, Boeing erected nine towers equipped with radar, cameras, communications systems, and underground sensors linked to a command and control center.

remain unresolved. For example, the Border Patrol reported that as of February 2008 problems remained with the resolution of the camera image at distances over 5 kilometers, while expectations were that the cameras would work at about twice that distance.

From June 26 through November 19, 2007, Boeing submitted three corrective action plans, documents that defined Boeing's technical approach for correcting the problems associated with Project 28 and the steps that needed to occur for DHS to conditionally accept the system. As we reported in October, DHS officially notified Boeing in August 2007 that it would not accept Project 28 until certain problems were corrected. DHS conditionally accepted Project 28 on December 7, 2007, but included a requirement for Boeing to analyze the quality of the project's video signals, radar data, and the timing of all components by January 11, 2008. Upon conditional acceptance, the government began operating Project 28, and SBI program office and Border Patrol officials told us that plans were under way to conduct additional testing of the system capabilities—including operational testing, which is used to determine that the system performs in the environment in which it is to operate. This testing was not scheduled to take place until after final acceptance of Project 28. According to SBI program office and Border Patrol officials, the results of this testing will not be used to make changes to Project 28, but will instead be used to guide future SBI*net* development. In addition, DHS announced its final acceptance of Project 28 on February 22, 2008 noting that Boeing met its contractual requirements. However, according to SBI program officials, the outcomes of future SBI*net* development will define the equipment that will replace most of Project 28 system components. Both SBI program office and Border Patrol officials stated that although Project 28 did not fully meet their expectations, they are gathering lessons learned and are ready to move forward with developing SBI*net* technologies that will better meet their needs. Table 2 summarizes key events for Project 28.

Table 2: Key Events for Project 28

Event	Date
DHS awarded the Project 28 task order to Boeing	October 2006
Boeing deployed the individual technology components of Project 28 on time, but missed its initial deadline to deliver the fully integrated system to the government	June 2007
Boeing submitted first corrective action plan	June 2007
CBP officials officially notified Boeing that CBP would not accept Project 28 until certain problems were corrected	August 2007
Boeing submitted second corrective action plan	September 2007
Boeing submitted third corrective action plan	November 2007
DHS conditionally accepted the Project 28 system delivered by Boeing	December 2007
DHS announced its final acceptance of Project 28	February 2008

Source: GAO presentation of SBI*net* data.

The SBI program office reported that it is moving forward with SBI*net* development beyond Project 28; however, it has revised its approach and timeline for doing so. As noted earlier in this statement, in addition to the $20.6 million task order awarded for Project 28, Boeing has also received other task orders as part of its overall contract with CBP. For example, in August 2007 DHS awarded a $69 million task order to Boeing to design the technical, engineering, and management services it would perform to plan and deploy SBI*net* system components within the Border Patrol's Tucson, Yuma, and El Paso sectors. In addition, the SBI program office reported that on December 7, 2007, DHS awarded a 14-month task order worth approximately $64.5 million to Boeing to design, develop, and test, among other things, an upgraded COP software system for CBP command centers and agent vehicles, known as COP version 0.5. According to the SBI program office, planned SBI*net* development, such as the work being conducted by Boeing under these task orders, will eventually replace and improve upon Project 28. These officials stated that in light of the difficulties that DHS encountered during Boeing's deployment of Project 28, the Secretary requested and CBP has proposed a revised strategy that is more deliberative. As two SBInet program managers put it, they want to develop SBInet "right, not fast". We reported in October 2007 that SBI program office officials expected to complete all of the first phase of technology projects by the end of calendar year 2008.[13] However, in February 2008, the SBI program office estimated that the first planned

[13]GAO-08-131T.

deployment of technology—including components linked to the updated COP—will occur in two geographic areas within the Tucson sector by the end of calendar year 2008, with the remainder of the deployments to the Tucson, Yuma, and El Paso sectors completed by the end of calendar year 2011. Officials from the SBI program office said that the Project 28 location is one of the two areas where the planned first deployments will occur. An official from the SBI program office noted that this schedule reflects DHS's revised approach to developing SBI*net* technology and that meeting this timeline depends, in part, on the availability of funding. At this time, the SBI program office is still in the process of defining life cycle costs for SBI*net* development.

SBI program office and Border Patrol officials told us they have learned lessons during the development of Project 28 that will influence future SBI*net* development, including the technology that is planned to be deployed along the southwest border. For example, testing to ensure the components—such as radar and cameras—were integrated correctly before being deployed to the field at the Tucson sector did not occur given the constraints of the original 8-month timeline of the firm-fixed-price task order with Boeing, according to officials from the SBI program office.[14] As a result, incompatibilities between individual components were not discovered in time to be corrected by the planned Project 28 deployment deadline. To address this issue moving forward with SBI*net* development, Boeing has established a network of laboratories to test how well the integration of the system works, and according to the SBI program office, deployment will not occur until the technology meets specific performance specifications.

Another lesson learned involved how the Project 28 system requirements were developed by Boeing. SBI program office and Border Patrol officials told us that the requirements for how the Project 28 system was to operate were designed and developed by Boeing with minimal input from the intended operators of the system, including Border Patrol agents. Instead, Boeing based the requirements for how Project 28 was to be designed and developed on information in the contract task order. The lack of user involvement resulted in a system that does not fully address or satisfy user

[14]A firm-fixed-price contract provides for a price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract. This contract type places maximum risk upon the contractor and full responsibility for all costs and resulting profit or loss. The period of performance for the original Project 28 contract spanned 8 months, from October 13, 2006 through June 12, 2007.

needs. In February 2008, SBI program officials reported that Project 28 was designed to be a demonstration project, rather than a fully operating system, and there was not enough time built into the contract to obtain feedback from all of the intended users of the system during its design and development. While Border Patrol agents in the Tucson sector agreed with Boeing's conceptual design of Project 28, they said the final system might have been more useful if they and others had been given an opportunity to provide feedback throughout the process. For example, Border Patrol agents told us they would have found the laptops mounted into agent vehicles safer and easier to use if they were larger and manipulated by a touch screen rather than with a pencil-shaped stylus, as using a stylus to manipulate the screen while driving is impractical. In addition, the laptops were not mounted securely enough to prevent significant rattling when driving on rough terrain, making the laptops difficult to use and prone to needing repair.

While user feedback was limited for Project 28, SBI program office officials have recognized the need to involve the intended operators when defining requirements and have efforts underway to do so for future SBI*net* development. For example, officials from the Border Patrol, CBP Air and Marine, and the CBP Office of Field Operations reported that representatives from their offices were involved in the development of requirements for SBI*net* technology as early as October 2006 and on an ongoing basis since then. Specifically, SBI program officials stated that Border Patrol users participated in requirements workshops with Boeing held in October 2006 at CBP headquarters and then at various field locations from December 2006 through June 2007, from which the SBI*net* operational requirements were derived (a process separate from Project 28). According to the SBI program office, users from other CBP offices such as the Office of Field Operations and Air and Marine have been involved in meetings as the SBI program office updates these requirements in preparation for the next development efforts. Additionally, SBI program officials stated that Boeing held meetings in January and February 2008 specifically designed to integrate user input to the development of the COP version 0.5.

Local Border Patrol Users Report that Project 28 is Not an Optimal System, but Those Trained on the System Will Operate it Until It Is Replaced

Since DHS conditionally accepted the task order from Boeing on December 7, 2007, those Border Patrol agents in the Tucson sector that have received updated training on Project 28 have been using the technologies as they conduct their border security activities. Border Patrol agents reported that they would have liked to have been involved sooner with the design and development of Project 28, since they are the ones who operate the system. Border Patrol officials stated that it is not an optimal system. Border Patrol agents from the Tucson sector provided examples of Project 28 capabilities that do not adequately support Border Patrol operations because of their design. As noted earlier in this statement, Border Patrol agents have had difficulties using the laptops mounted into agent vehicles to provide them with COP information. However, according to Border Patrol agents, Project 28 has provided them with improved capabilities over their previous equipment, which included items such as cameras and unattended ground sensors that were only linked to nearby Border Patrol units, not into a centralized command and control center. In addition, Border Patrol officials we spoke with at the Tucson sector noted that Project 28 has helped its agents become more familiar with the types of technological capabilities they are integrating into their operations now and in the future. As we reported in October 2007, the Border Patrol's Tucson sector was developing a plan to integrate SBI*net* into its operating procedures.[15] However, in February 2008 a senior official from the Border Patrol's Tucson sector told us that the plan is still in draft form because of the delays in the deployment of Project 28.

In October 2007 we reported that the 22 trainers and 333 operators who were initially trained on the Project 28 system were to be retrained with revised curriculum because of deployment delays and changes to the COP software.[16] As of January 2008, 312 Border Patrol operators and 18 trainers had been retrained on Project 28.[17] According to Border Patrol agents we spoke with at the Tucson sector, a group of Border Patrol agents provided significant input into the revisions that the Boeing subcontractor made to the Project 28 training curriculum. Officials from the SBI*net* Training Division and Border Patrol agents reported that originally there were plans to train 728 Border Patrol operators located in the Project 28 area by

[15]GAO-08-131T.

[16]GAO-08-131T.

[17]According to the *SBInet* Training Division, the reason some staff received the initial Project 28 training but did not receive the updated training was because the staff were either transferred or because of changed job responsibilities.

January 2008. However, now no additional training will be conducted on Project 28, as they are expecting that future SBI*net* development will eventually replace Project 28. For example, according to the SBI*net* Training Division, the COP version 0.5 currently under development by Boeing will replace the Project 28 COP, and this will require new training.

Tactical Infrastructure Deployment on Schedule, but Further Deployment Will Be Challenging and Total Costs Are Not Yet Known

Deployment of tactical infrastructure projects along the southwest border is on schedule, but meeting the SBI program office's goal to have 370 miles of pedestrian fence and 300 miles of vehicle fencing in place by December 31, 2008, will be challenging and total costs are not yet known.[18] As of February 21, 2008, the SBI program office reported that it had constructed 168 miles of pedestrian fence and 135 miles of vehicle fence (see table 3).

Table 3: Tactical Infrastructure Deployment Progress as of February 21, 2008

Infrastructure type	Miles in place before SBI	Miles deployed through SBI	Total miles in place as of 2/21/08	Target for 12/31/08	Miles remaining to meet 12/31/08 target
Pedestrian fencing	78	90	168	370	202
Vehicle fencing	57	78	135	300	165

Source: GAO analysis of SBI data.

According to SBI program office officials, the deployment of tactical infrastructure projects is on schedule, but these officials reported that keeping on schedule will be challenging because of various factors, including difficulties in acquiring rights to border lands.[19] Unlike prior fencing projects that were primarily located on federal land,

[18]The Consolidated Appropriations Act of 2008, requires DHS to complete construction by December 31, 2008 of 370 miles (or other mileage determined by the Secretary) of reinforced fencing along the southwest border wherever the Secretary determines it would be most practical and effective in deterring smugglers and aliens attempting illegal entry.

[19]In October 2007, we reported that according to CBP officials, other factors that continue to pose a risk to meeting deployment targets include conducting outreach necessary to address border community resistance and devoting time to identify and complete steps necessary to comply with environmental regulations. See GAO-08-131T.

approximately 54 percent of planned projects are scheduled to be constructed on private property. We previously reported that as of July 2007, CBP anticipated community resistance to deployment for 130 of its 370 miles of pedestrian fencing miles. CBP officials told us that, of 480 owners of private property along the relevant segments of the border, all but 148 gave CBP access to survey their land prior to December 2007. In December, CBP, working in conjunction with the Department of Justice (DOJ), sent letters to most of the 148 remaining land owners reiterating the request for access and notifying them of the government's intent to pursue court-ordered access if necessary. As of February 16, 2008, approximately 50 per cent of the land owners who received these letters had given CBP access to their land to do surveys. In some cases where access has not been granted, DOJ has begun the legal process known as "eminent domain" to obtain court-ordered access to the property.[20] SBI program office officials state that they are working to acquire rights to border lands; however, until the land access issues are resolved, this factor will continue to pose a risk to meeting the deployment targets.

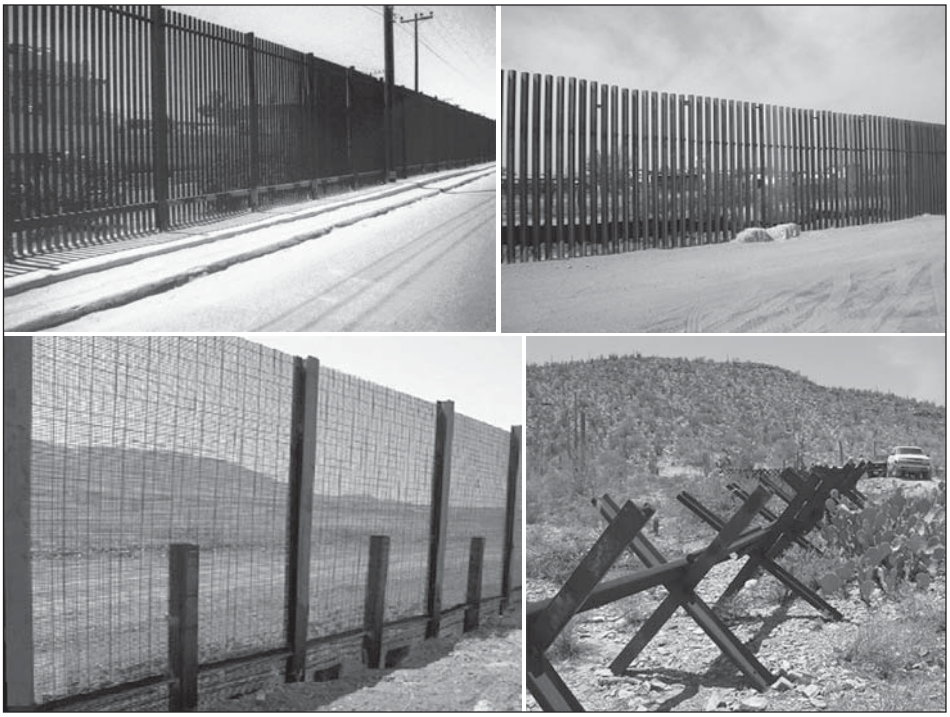
SBI program office officials are unable to estimate the total cost of pedestrian and vehicle fencing because they do not yet know the type of terrain where the fencing is to be constructed, the materials to be used, or the cost to acquire the land. In addition, in October 2007, we reported that to minimize one of the many factors that add to the cost, CBP has previously drawn upon its Border Patrol agents and Department of Defense military personnel to assist in such efforts.[21] However, SBI program office officials reported that they plan to use more costly commercial labor for future infrastructure projects to meet their deadlines. In February 2008, SBI program office officials told us that they estimate construction costs for pedestrian fencing will be about $4 million per mile and vehicle fencing costs will be about $2 million per mile. However, total costs will be higher because this estimate does not include other expenses, such as contract management, contract incentives to meet an expedited schedule, higher-than-expected property acquisition costs, and unforeseen costs associated with working in remote areas.

[20]Eminent domain refers to the power of a government entity to take privately owned property, especially land, and convert it to public use, subject to reasonable compensation of the owner.

[21]GAO-08-131T.

As the SBI program office moves forward with tactical infrastructure construction, it is making modifications based on lessons learned from previous fencing efforts. For example, for future fencing projects, the SBI program office plans to buy construction items, such as steel, in bulk; use approved fence designs; and contract out the maintenance and repair of the tactical infrastructure. SBI program office officials estimate that buying essential items in bulk will make fencing deployment more economical and will reduce the likelihood of shortages and delays of critical equipment. SBI program office officials also believe that using pre-approved and tested fence designs (see fig. 4) will expedite preconstruction planning and will allow for more efficient maintenance and repair. In addition, the SBI program office plans to award a contract to maintain and service all initial, current, and future tactical infrastructure deployed through SBI because it believes that it will be more efficient than relying on Border Patrol agents and military personnel who also have other duties.

Figure 4: Examples of Approved Pedestrian and Vehicle Fencing Solutions



Source: CBP.

The Picket Fence (upper left), Bollard Fence (upper right) and Post & Rail with wire mesh (lower left) are examples of pedestrian fencing; the Normandy Vehicle Fence (lower right) is an example of vehicle fencing.

Progress Made to Meet Staffing Goals and a Human Capital Plan Published, but Implementation Is in the Early Stages

The SBI program office established a staffing goal of 470 employees for fiscal year 2008, made progress toward meeting this goal and published a human capital plan in December 2007; however, the SBI program office is in the early stages of implementing this plan. As of February 1, 2008, the SBI program office reported having 142 government staff and 163 contractor support staff for a total of 305 employees, up from 247 staff on September 30, 2007. In addition, SBI program office officials reported that they had selected an additional 39 staff that the program office is in the process of bringing onboard. These officials also told us that they believe they will be able to meet their staffing goal by the end of September 2008 and will have 261 government staff and 209 contractor support staff on board (see table 4). In addition, according to SBI program office officials, they would like to bring the ratio of government employees to contractor staff closer to 1:1 because their office has determined that that ratio provides the right mix of personnel with the skills necessary to ensure appropriate government oversight. The targeted ratio, based on the staffing goal for fiscal year 2008, would result in a better than 1:1 ratio of government to contract support staff.

Table 4: Actual and Planned SBI Program Office Staff

Number of SBI staff	Actual, September 30, 2007	Actual, February 1, 2008	Planned, September 30, 2008
Government employees	113	142	261
Contractor support staff	134	163	209
Total	**247**	**305**	**470**

Source: GAO analysis of CBP data.

In December 2007, the SBI program office published the first version of its *Strategic Human Capital Management Plan* and is now in the early implementation phase. As we have previously reported, a strategic human capital plan is a key component used to define the critical skills and competencies that will be needed to achieve programmatic goals and outline ways an organization can fill gaps in knowledge, skills, and

abilities.[23] The SBI program office's plan outlines seven main goals for the office and includes planned activities to accomplish those goals, which align with federal government best practices.[24] However, the activities are in the early stages of implementation. We have previously reported that a properly designed and implemented human capital program can contribute to achieving an agency's mission and strategic goals.[25] Until the SBI program office fully implements its plan, it will lack a baseline and metrics by which to judge the program. Table 5 summarizes the seven human capital goals, the SBI program office's planned activities and steps taken to accomplish these activities, as of February 20, 2008.

[23]See GAO, *Human Capital: Key Principles for Effective Strategic Workforce Planning*, GAO-04-39 (Washington, D.C.: December 2003), and *Framework for Accessing the Acquisition Function at Federal Agencies,* GAO-05-218G (Washington, D.C.: September 2005).

[24]These best practices are contained in the governmentwide Human Capital Assessment and Accountability Framework which was developed by Office of Management and Budget, the Office of Personnel Management, and the GAO.

[25]GAO-04-39.

Table 5: Human Capital Goals, Planned Activities, and Steps Taken as of February 20, 2008

SBI human capital goals	Planned activities	Steps taken as of February 2008
1) Develop a coherent framework of human capital policies, programs, and practices to achieve a shared vision integrated with SBI's strategic plan	Complete the SBI human capital plan	• Completed the first draft of the human capital plan • Prepared the fiscal year 2008 staffing plan
2) Prepare leaders to lead and manage the workforce 3) Create and instill within the organization a value-driven organization	(1) Identify key leaders' skills and competencies, develop and deliver a leadership/management workshop focused on equipping SBI leaders with these skills (2) Identify key organization values and create an SBI Value Statement	• Planning SBI leadership off-site meeting in early April, which will include discussions of leadership needs • Planning to conduct 360° assessments for SBI leadership in late spring/early summer
4) Develop and implement a succession management plan	Develop a succession strategy for mission critical positions	• Not yet started
5) Define the performance culture (reward excellence)	Based on the CBP Awards and Recognition Program, create an SBI policy and practice on rewards and recognition	• Designed but not yet implemented a program to recognize high performers • Drafted a recognition program
6) Hire, recruit, develop, and retain employees with the skills for mission accomplishment	Fill vacancies with qualified professionals and create a Supervisors' Onboarding Guide and retention interview process	• Developed an orientation course for new employees • Drafted, but not yet finalized the Supervisors' Onboarding Guide • Recruitment efforts under way to fill open SBI positions in all programs
7) Establish leadership accountability for human capital management	Clarify key leadership responsibilities and metrics of success	• Not yet started

Source: GAO analysis of CBP data.

Concluding Observations

Securing the nation's borders is a daunting task. Project 28, an early technology project, resulted in a product that did not fully meet user needs and the project's design will not be used as the basis for future SBI*net* development. To ensure that future SBI*net* development efforts deliver an operational capability that meets user needs and delivers technology that can be used in additional projects, it is important that the lessons learned on Project 28 continue to be applied and that user input continues to be sought so that future technology projects are successful. In the tactical infrastructure area, although fencing projects are currently on schedule, meeting future deadlines will be challenging because of various factors, including difficulties in acquiring rights to border land. Furthermore, future tactical infrastructure costs are not yet known because issues regarding land acquisition have not been resolved and other decisions, such as the materials to be used, have not been made. These issues underscore Congress' need to stay closely attuned to DHS's progress in the SBI program to make sure that performance, schedule, and cost estimates are achieved and the nation's border security needs are fully addressed.

This concludes my prepared testimony. I would be happy to respond to any questions that members of the subcommittees may have.

Contacts and Acknowledgments

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