OFFICE OF INSPECTOR GENERAL
Department of Homeland Security

Washington, DC 20528 / www.oig.dhs.gov

June 5, 2017

MEMORANDUM FOR: Kevin K. McAleenan
Acting Commissioner
U.S. Customs and Border Protection

FROM: John Roth (b) (6) [redacted]
Inspector General

SUBJECT: *Acquisition Planning for the Southwest Border Wall*

We are initiating the second in our series of audits regarding U.S. Customs and Border Protection's security of the southern border of the United States.

On January 25, 2017, the President signed Executive Order No.13767 - *Border Security and Immigration Enforcement Improvements*. The Executive Order directed executive departments and agencies to deploy all lawful means to secure the Nation's southern border through the immediate construction of a wall, monitored and supported by adequate personnel so as to prevent illegal immigration, drug and human trafficking, and acts of terrorism. The objective of this audit is to evaluate the Analyze/Select phase of the acquisition of the barrier along the southwestern border.

We will contact your office to arrange an entrance conference. During the meeting, we will provide further details on our objectives and scope. Fieldwork is scheduled to begin immediately, and will be conducted in Washington, D.C. and other locations as necessary.

Please call me with any questions, or your staff may contact (b) (6) [redacted], Deputy Assistant Inspector General for Audits, at (b) (6) [redacted] (b) (6) [redacted], Audit Director, at (b) (6) [redacted], Audit Manager, at (b) (6) [redacted]

cc: (b) (6) [redacted], Director, GAO/OIG Liaison Office
(b) (6) [redacted] CBP Audit Liaison

West of Tecate A-2A Description

- [redacted] (b) (7)(E) [redacted] in the San Diego, California area.
  - [redacted] (b) (7)(E) [redacted]
  - [redacted] (b) (7)(E) [redacted]
- Persistent impedance requirement:
  - [redacted] (b) (7)(E) [redacted]
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

West of Tecate SDC (A2-A) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E)
  - (b) (7)(E); Bollard Design with anti-climb capability
  - Estimated total 3 yr cost is (b) (4)

- **Vehicle Fence** = Vehicle impedance
  - (b) (7)(E)
  - Not intended to deter illegal cross-border pedestrian traffic
  - Estimated total 3 yr cost is (b) (4)

- **Additional Agents** = Response
  - (b) (7)(E)
  - (b) (7)(E)
  - Cost is ~(b) (4) per agent (to include salary, benefits, equipment)
  - Estimated total 3 yr cost is (b) (4)

West of Tecate SDC (A2-A) Alternatives

Sensors = detection only

- (b) (7)(E) distributed over an area of (b) (7)(E)
- Estimated total 3 yr cost is (b) (4) to cover 70 sq ft)

Cameras = detection, identification and classification

- (b)(7) cameras over (b) (7)(E)
- terrain features requires at least (b)(7) units
- Estimated total 3 yr cost is (b) (4)

Mobile Surveillance Radars = detection, identification/classification, and tracking

- (b)(7) Radars deployed over (b) (7)(E)
- Cost is (b) (7)(E) k per unit - terrain features requires at least (b)(7) units
- Estimated total 3 yr cost is (b) (4)

Best Technology Combination = detection, identification/classification

- (b)(7) cameras and (b) (7)(E) sensors deployed over (b) (7)(E) miles
- Total 3yr cost of (b) (4)
- Does not address response nor persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

San Diego Sector West of Tecate

A-2A Fence Segment Area

(b) (7)(E)

[redacted]

San Diego West of Tecate

A-2A Fence Segment Area

(b) (7)(E)

[redacted]

West of Tecate SDC (A-2A) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents only are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets operational requirement.
  - Develop and deploy technology.
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity.

A2B - Cetis Hill (San Diego Sector) Description

- (b) (7)(E) segment of border located in the Tecate, California area.
  - Terrain: rugged, mountainous with large rock outcroppings, large ravines and high growth vegetation
  - Operational Environment: Rural
- Persistent impedance requirement:
  - Seconds is the time frame to respond before incursions can blend into chaparral brush and ravines to the north.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

A2B - Cetis Hill (San Diego Sector) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E)
  - (b) (7)(E) requirement; Bollard Design with anti-climb capability
  - Estimated total 3 yr cost is (b) (4)

- **Vehicle Fence** = Vehicle impedance
  - (b) (7)(E)
  - Not intended to deter illegal cross-border pedestrian traffic
  - Estimated total 3 yr cost is (b) (4)

- **Additional Agents** = Response
  - One agent every (b) (7)(E) (Total per shift: 17)
  - (b) (7)(E) total shifts ((b) (7)(E) total agents)
  - Cost is (b) (4) per agent (to include salary, benefits, equipment)
  - Estimated total 3 yr cost is (b) (4)

A2B - Cetis Hill (San Diego Sector) Alternatives

Sensors = detection only

- (b) (7)(E) sensors distributed over an area of (b) (7)(E)
- Estimated total 3 yr cost is (b) (4) to cover 100 ft, one sensor every 50 ft.)

Cameras = detection, identification and classification

- (b) (7) cameras over (b) (7)(E)
- terrain features requires at least (b) (7) units
- Estimated total 3 yr cost is (b) (4)

Mobile Surveillance Radars = detection, identification/classification, and tracking

- (b) (7) Radars deployed over (b) (7)(E)
- Cost is (b) (4) per unit - terrain features requires at least 4 units
- Estimated total 3 yr cost is (b) (4)

Best Technology Combination = detection, identification/classification

- (b) (7) cameras and (b) (7)(E) sensors deployed over (b) (7)(E)
- Total 3yr cost of (b) (4)
- Does not address response nor persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

A2B - Cetis Hill (San Diego Sector)

(El Cajon Station)

(b) (7)(E)

A2B - Cetis Hill (San Diego Sector)

(El Cajon Station)

(b) (7)(E)

[redacted]

A2B - Cetis Hill (San Diego Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents only are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets operational requirement.
  - Develop and deploy technology.
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity.

A2C - East Brickyard - Gun Sites (San Diego Sector) Description

- (b) (7)(E) segment of border located in the Tecate, California area.
  - Terrain: rugged, mountainous with large rock outcroppings, large ravines and high growth vegetation
  - Operational Environment: Rural
- Persistent impedance requirement:
  - Seconds is the time frame to respond before incursions can blend into chaparral brush and ravines to the north.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

A2C - East Brickyard - Gun Sites (San Diego Sector) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] miles
  - (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
  - Estimated total 3 yr cost is (b) (4) [redacted]

- **Vehicle Fence** = Vehicle impedance
  - (b) (7)(E) [redacted] miles
  - Not intended to deter illegal cross-border pedestrian traffic
  - Estimated total 3 yr cost is (b) (4) [redacted]

- **Additional Agents** = Response
  - One agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] (Total per shift: (b) (7)(E) [redacted])
  - (b) (7)(E) [redacted] total shifts (b) (7)(E) [redacted] total agents)
  - Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
  - Estimated total 3 yr cost is (b) (4) [redacted]

A2C - East Brickyard - Gun Sites (San Diego Sector) Alternatives

Sensors = detection only
- [redacted] sensors distributed over an area of (b) (7)(E)
- Estimated total 3 yr cost is (b) (4) [redacted] to cover 70 ft.)

Cameras = detection, identification and classification
- [redacted] cameras over (b) (7)(E)
- terrain features requires at least [redacted] units
- Estimated total 3 yr cost is (b) (4) [redacted]

Mobile Surveillance Radars = detection, identification/classification, and tracking
- [redacted] Radar units deployed over (b) (7)(E)
- Cost is (b) (4) [redacted] per unit - terrain features requires at least [redacted] units
- Estimated total 3 yr cost is (b) (4) [redacted]

Best Technology Combination = detection, identification/classification
- [redacted] cameras and [redacted] sensors deployed over (b) (7)(E)
- Total 3yr cost of (4) [redacted]
- Does not address response nor persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

A2C - East Brickyard - Gun Sites (San Diego Sector)

(El Cajon Station)

(b) (7)(E)

A2C - East Brickyard - Gun Sites (San Diego Sector)
(El Cajon Station)

(b) (7)(E)

A2C - East Brickyard - Gun Sites (San Diego Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents only are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets operational requirement.
  - Develop and deploy technology.
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity.

A2D - West Horseshoe Canyon (San Diego Sector) Description

- (b) (7)(E) [redacted] mile segment of border located in the Potrero, California area.
  - Terrain: Mountainous
  - Operational Environment: Remote
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions can reach SR 94.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

A2D - West Horseshoe Canyon (San Diego Sector) Alternatives

Pedestrian Fence = Pedestrian impedance

- (b) (7)(E) [redacted] miles
- (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
- Estimated total 3 year cost is (b) (4) [redacted]

Vehicle Fence = Vehicle impedance

- (b) (7)(E) [redacted] miles
- Not intended to deter illegal cross-border pedestrian traffic
- Estimated total 3 yr cost is (b) (4) [redacted]

Additional Agents = Response

- One agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] (estimated total per shift: (b) (7)(E) [redacted])
- Four total shifts (116 total agents)
- Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
- Estimated total 3 yr cost is (b) (4) [redacted]

A2D - West Horseshoe Canyon (San Diego Sector) Alternatives

Sensors = Detection

- [redacted] (b) (7)(E) sensors distributed over an area of [redacted] (b) (7)(E) miles
- Estimated total 3 yr cost is [redacted] (b) (4) to cover [redacted] (b) (7)(E) ft)

Cameras = Identification and classification

- [redacted] (b) (7)(E) cameras over [redacted] (b) (7)(E) miles – terrain features require [redacted] (b) (7)(E) units
- Estimated total 3 yr cost is [redacted] (b) (4)

Mobile Surveillance Radars = Detection, identification/classification and tracking

- [redacted] (b) (7) Radars deployed over [redacted] (b) (7)(E) miles
- Cost is [redacted] (b) (7)(E) per unit - terrain features require at least [redacted] (b) (7) units
- Estimated total 3 yr cost is [redacted] (b) (4)

Best Technology Combination = Detection, identification and classification

- [redacted] (b) (7)(E) cameras and [redacted] (b) (7)(E) sensors deployed over [redacted] (b) (7)(E) miles
- Total 3 year cost of [redacted] (b) (4)
- Does not address response or persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

A2D - West Horseshoe Canyon (San Diego Sector)
(El Cajon Station)
A-2D Fence Segment Area

(b) (7)(E)

A2D - West Horseshoe Canyon (San Diego Sector)
(El Cajon Station)
A-2D Fence Segment Area

(b) (7)(E)

A2D - West Horseshoe Canyon (San Diego Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

A2E - East Bell Valley (San Diego Sector) Description

- (b) (7)(E) [redacted] mile segment of border located in the Potrero, California area.
  - Terrain: Rugged, Mountainous with thick vegetation
  - Operational Environment: Remote
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions can reach SR 94.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

A2E - East Bell Valley (San Diego Sector) Alternatives

Pedestrian Fence = Pedestrian impedance

- (b) (7)(E) [redacted] miles
- (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
- Estimated total 3 year cost is (b) (4) [redacted]

Vehicle Fence = Vehicle impedance

- 0.12 miles
- Not intended to deter illegal cross-border pedestrian traffic
- Estimated total 3 yr cost is (b) (4) [redacted]

Additional Agents = Response

- One agent every (b) (7)(E) [redacted] yards over (b) (7)(E) (estimated total per shift: (b) (7) [redacted])
- Four total shifts (16 total agents)
- Cost is ~(b) (4) [redacted] per agent (to include salary, benefits, equipment)
- Estimated total 3 yr cost is (b) (4) [redacted]

A2E - East Bell Valley (San Diego Sector) Alternatives

Sensors = Detection

- [redacted] sensors distributed over an area of 0.12 miles
- Estimated total 3 yr cost is [redacted] to cover 70 ft)

Cameras = Identification and classification

- 3 cameras over 0.12 miles – terrain features require 3 units
- Estimated total 3 yr cost is [redacted]

Mobile Surveillance Radars = Detection, identification/classification and tracking

- 3 Radars deployed over [redacted]
- Cost is [redacted] er unit - terrain features require at least [redacted] units
- Estimated total 3 yr cost is [redacted]

Best Technology Combination = Detection, identification and classification

- [redacted] cameras and [redacted] sensors deployed over [redacted] miles
- Total 3 year cost of [redacted]
- Does not address response or persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

A2E - East Bell Valley (San Diego Sector)

(El Cajon Station)

(b) (7)(E)

A2E - East Bell Valley (San Diego Sector)

(El Cajon Station)

(b) (7)(E)

[redacted]

A2E - East Bell Valley (San Diego Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Ag Loop SDC (A-2F) Description

- (b)(7)(E) [redacted] mile segment of border located in the Tecate, California area.
  - Terrain: rugged, mountainous with large rock outcroppings and high growth vegetation
  - Operational Environment: Remote
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions can blend into surrounding area and be to State Route Hwy 94, a major smuggling route.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

Ag Loop SDC (A-2F) Alternatives

- **Sensors** = Detection
  - [redacted] sensors distributed over an area of [redacted] miles
  - Estimated total 3 year cost i [redacted] o cover [redacted] ft)

- **Cameras** = Identification and classification
  - [redacted] cameras over [redacted] miles
  - Estimated total 3 year cost is [redacted]

- **Mobile Surveillance Radars** = Detection, identification/classification, and tracking
  - [redacted] Radars deployed over [redacted] miles
  - Cost is [redacted] per unit – terrain features require at least [redacted] units
  - Estimated total 3 year cost is [redacted]

- **Best Technology Combination** = detection, identification/classification
  - [redacted] cameras and [redacted] sensors deployed over [redacted] miles
  - Total 3 year cost of [redacted]
  - Does not address response nor persistence of impedance

Ag Loop SDC (A-2F) Alternatives

Pedestrian Fence = Pedestrian impedance

- (b) (7)(E) [redacted] miles
- (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
- Estimated total 3 year cost is (b) (4) [redacted]

Vehicle Fence = Vehicle impedance

- (b) (7)(E) [redacted] miles
- Not intended to deter illegal cross-border pedestrian traffic
- Estimated total 3 year cost is (b) (4) [redacted]

Additional Agents = Response

- (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] (Total per shift: (b) (7)(E) [redacted])
- (b) (7)(E) [redacted] total shifts ((b) (7)(E) [redacted] agents)
- Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
- Estimated total 3 year cost is (b) (4) [redacted]

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

San Diego Ag Loop

A-2F Fence Segment Area

(b) (7)(E)

[redacted]

San Diego Ag Loop

A-2F Fence Segment Area

(b) (7)(E)

Ag Loop SDC (A-2F) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue deploy the Agents needed to respond to illegal cross border activity

La Gloria Canyon SDC (A-2G) Description

- (b) (7)(E) [redacted] mile segment of border located in the Campo, California area.
  - Terrain: rugged, mountainous with large rock outcroppings and high growth vegetation
  - Operational Environment: Remote
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions can blend into surrounding area and approximately (b) (7)(E) [redacted] hour to major housing developments and load up areas.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

La Gloria Canyon SDC (A-2G) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] miles
  - (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Vehicle Fence** = Vehicle impedance
  - (b) (7)(E) [redacted] miles
  - Not intended to deter illegal cross-border pedestrian traffic
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Additional Agents** = Response
  - (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] miles (Total per shift: (b) (7)(E) [redacted])
  - Four total shifts (64 agents)
  - Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
  - Estimated total 3 year cost is (b) (4) [redacted]

La Gloria Canyon SDC (A-2G) Alternatives

- **Sensors** = Detection
  - (b) (7)(E) [redacted] sensors distributed over an area of (b) (7)(E) [redacted] miles
  - Estimated total 3 year cost is (b) (4) [redacted] to cover (b) (7)(E) [redacted] ft)

- **Cameras** = Identification and classification
  - (b) (7) [redacted] cameras over (b) (7)(E) [redacted] miles
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Mobile Surveillance Radars** = Detection, identification/classification, and tracking
  - (b) (7)(E) [redacted] Radars deployed over (b) (7)(E) [redacted] miles
  - Cost is (b) (4) [redacted] per unit – terrain features require at least 2 units
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Best Technology Combination** = detection, identification/classification
  - (b) (7) [redacted] cameras and (b) (7)(E) [redacted] sensors deployed over (b) (7)(E) [redacted] miles
  - Total 3 year cost of (b) (4) [redacted]
  - Does not address response nor persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

La Gloria Canyon SDC (A-2G)

(b) (7)(E)

La Gloria Canyon SDC (A-2G)

(b) (7)(E)

[redacted]

La Gloria Canyon SDC (A-2G) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

West Rim of Smith Canyon SDC (A-2H) Description

- (b) (7)(E) [redacted] mile segment of border located in the Campo, California area.
  - Terrain: rugged, deep canyon surrounded by mountainous areas with large rock outcroppings and high growth vegetation
  - Operational Environment: Remote
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions can blend into surrounding area and approximately (b) (7) [redacted] hour to State Route 94, a major smuggling route
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

West Rim of Smith Canyon SDC (A-2H) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] miles
  - (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Vehicle Fence** = Vehicle impedance
  - (b) (7)(E) [redacted] miles
  - Not intended to deter illegal cross-border pedestrian traffic
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Additional Agents** = Response
  - (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] miles (Total per shift: [redacted])
  - (b) (7)(E) [redacted] total shifts ((b) (7)(E) [redacted] agents)
  - Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
  - Estimated total 3 year cost is (b) (4) [redacted]

West Rim of Smith Canyon SDC (A-2H) Alternatives

- **Sensors** = Detection
  - (b) (7)(E) [redacted] sensors distributed over an area of (b) (7)(E) [redacted] miles
  - Estimated total 3 year cost is (b) (4) [redacted] to cover 70 ft)

- **Cameras** = Identification and classification
  - (b) (7) [redacted] cameras over (b) (7)(E) [redacted] miles
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Mobile Surveillance Radars** = Detection, identification/classification, and tracking
  - (b) (7) [redacted] Radar deployed over (b) (7)(E) [redacted] miles
  - Cost is (b) (4) [redacted] per unit – terrain features require at least 1 unit
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Best Technology Combination** = detection, identification/classification
  - (b) (7) [redacted] camera and (b) (7)(E) [redacted] sensors deployed over (b) (7)(E) [redacted] miles
  - Total 3 year cost of (b) (4) [redacted]
  - Does not address response nor persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

West Rim of Smith Canyon SDC

(b) (7)(E)

West Rim of Smith Canyon SDC (A-2H) Segment Area

(b) (7)(E)

[redacted]

West Rim of Smith Canyon SDC (A-2H) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Rattlesnake Ridge SDC (A-2I) Description

- (b) (7)(E) [redacted] mile segment of border located in the Boulevard, California.
  - Terrain: rugged, mountainous with large rock outcroppings and high growth vegetation
  - Operational Environment: Remote
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions can blend into surrounding area.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

Rattlesnake Ridge SDC (A-2I) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] miles
  - (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Vehicle Fence** = Vehicle impedance
  - (b) (7)(E) [redacted] miles
  - Not intended to deter illegal cross-border pedestrian traffic
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Additional Agents** = Response
  - (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] miles (Total per shift: (b) (7)(E) [redacted])
  - (b) (7)(E) [redacted] total shifts ((b) (7)(E) [redacted] agents)
  - Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
  - Estimated total 3 year cost is (b) (4) [redacted]

Rattlesnake Ridge SDC (A-2I) Alternatives

- **Sensors** = Detection
  - (b) (7)(E) [redacted] sensors distributed over an area of (b) (7)(E) [redacted] miles
  - Estimated total 3 year cost is (b) (4) [redacted] to cover (b) (7)(E) [redacted] ft)

- **Cameras** = Identification and classification
  - (b) (7)(E) [redacted] cameras over (b) (7)(E) [redacted] miles
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Mobile Surveillance Radars** = Detection, identification/classification, and tracking
  - (b) (7) [redacted] Radars deployed over (b) (7)(E) [redacted] miles
  - Cost is (b) (4) [redacted] per unit – terrain features require at least (b) (7) [redacted] units
  - Estimated total 3 year cost is (b) (4) [redacted]

- **Best Technology Combination** = detection, identification/classification
  - 2 cameras and 80 sensors deployed over 1.06 miles
  - Total 3 year cost of (b) (4) [redacted]
  - Does not address response nor persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

Rattlesnake Ridge SDC (A-2I) Segment Area

(b) (7)(E)

[redacted]

San Diego Sector Rattlesnake Ridge

(b) (7)(E)

Rattlesnake Ridge SDC (A-2I) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Boundary Peak SDC(A-2J) Description

- (b) (7)(E) [redacted] mile segment of border located in the Campo, California area.
  - Terrain: Valley and rugged mountainous terrain, containing steep peaks and thick vegetation
  - Operational Environment: Rural
- Persistent impedance requirement:
  - Minutes is the time frame before incursions can disappear into the heavy brush and deep ravines.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

Boundary Peak SDC Alternatives

Pedestrian Fence = Pedestrian impedance

- (b) (7)(E) [redacted] miles
- (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
- Estimated total 3 yr cost is (b) (4) [redacted]

Vehicle Fence = Vehicle impedance

- (b) (7)(E) [redacted] miles
- Not intended to deter illegal cross-border pedestrian traffic
- Estimated total 3 yr cost is (b) (4) [redacted]

Additional Agents = Pedestrian and vehicle impedance

- (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] miles (estimated total per shift: [redacted])
- (b) (7)(E) [redacted] total shifts (b) (7)(E) [redacted] total agents)
- Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
- Estimated total 3 yr cost is (b) (4) [redacted]

Boundary Peak SDC Alternatives

Sensors = Detection

- [redacted] sensors distributed over an area of [redacted] miles
- Estimated total 3 yr cost is [redacted] to cover 70 ft)

Cameras = Detection, identification and classification

- [redacted] camera over [redacted] miles
- Estimated total 3 yr cost is [redacted]

Mobile Surveillance Radars = Detection, identification/classification and tracking

- [redacted] Radar deployed over [redacted] miles
- Cost is [redacted] per unit - terrain features require at least [redacted] units
- Estimated total 3 yr cost is [redacted]

Best Technology Combination = Detection, identification and classification

- [redacted] Camera and 7 sensors deployed over [redacted] miles
- Total 3 year cost of [redacted]
- Does not address response nor persistence of impedance

U.S. Customs and

San Diego Sect

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

Boundary Peak SDC

A-2J Fence Segment Area

(b) (7)(E)

[redacted]

Boundary Peak SDC

A-2J Fence Segment Area

(b) (7)(E)

Boundary Peak (A2J) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Willows Access 1 SDC (A-2K) Description

- (b) (7)(E) [redacted] mile segment of border located in the Jacumba, California area.
  - Terrain: rugged, mountainous with large rock outcroppings and high growth vegetation
  - Operational Environment: Rural
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions reach load sites along Old Highway 80.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

Willows Access 1 SDC (A-2K) Alternatives

Pedestrian Fence = Pedestrian impedance

- (b) (7)(E) [redacted] Miles
- (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
- Estimated total 3 yr cost is (b) (4) [redacted]

Vehicle Fence = Vehicle impedance

- (b) (7)(E) [redacted] miles
- Not intended to deter illegal cross-border pedestrian traffic
- Estimated total 3 yr cost is (b) (4) [redacted]

Additional Agents = Response

- (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] over (b) (7)(E) [redacted] miles (estimated total per shift: 57)
- (b) (7)(E) [redacted] total shifts ((b) (7)(E) [redacted] total agents)
- Cost is ~(b) (4) [redacted] per agent (to include salary, benefits, equipment)
- Estimated total 3 yr cost is (b) (4) [redacted]

Willows Access 1 SDC (A-2K) Alternatives

Sensors = Detection

- (b) (7)(E) [redacted] sensors distributed over an area of (b) (7)(E) [redacted] miles
- Estimated total 3 yr cost is (b) (4) [redacted] o cover 70 ft)

Cameras = Detection, identification and classification

- (b) (7)(E) [redacted] cameras over (b) (7)(E) [redacted] miles - terrain features require (b) (7) [redacted] units.
- Estimated total 3 yr cost is (b) (4) [redacted]

Mobile Surveillance Radars = Detection, identification/classification and tracking

- (b) (7) [redacted] Radars deployed over (b) (7)(E) [redacted] miles
- Cost is (b) (4) [redacted] per unit - terrain features require at least (b) (7) [redacted] units
- Estimated total 3 yr cost is (b) (4) [redacted]

Best Technology Mix = Detection, identification and classification

- (b) (7) [redacted] Cameras and (b) (7)(E) [redacted] sensors deployed over (b) (7)(E) [redacted] miles
- Total 3 year cost of (b) (4) [redacted]
- Does not address response nor persistence of impedance

U.S. Customs and

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

San Diego Sector Willows Access 1

(b) (7)(E)

[redacted]

San Diego Sector Willows Access 1

(b) (7)(E)

[redacted]

Willows Access 1 A-2K Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Willows Access 2 SDC (A-2L) Description

- (b) (7)(E) [redacted] mile segment of border located in the Jacumba, California area.
  - Terrain: Rugged mesa and agricultural
  - Operational Environment: Rural
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions can reach Jacumba, CA or load sites along Old Highway 80
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

Willows Access 2 SDC (A-2L) Alternatives

Pedestrian Fence = Pedestrian impedance

- (b) (7)(E) [redacted] miles
- (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
- Estimated total 3 year cost is (b) (4) [redacted]

Vehicle Fence = Vehicle impedance

- (b) (7)(E) [redacted] miles
- Not intended to deter illegal cross-border pedestrian traffic
- Estimated total 3 yr cost is (b) (4) [redacted]

Additional Agents = Response

- (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] miles (estimated total per shift: (b) (7)(E) [redacted])
- (b) (7)(E) [redacted] total shifts (b) (7)(E) [redacted] total agents)
- Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
- Estimated total 3 yr cost is (b) (4) [redacted]

Willows Access 2 SDC (A-2L) Alternatives

Sensors = Detection

- (b) (7)(E) [redacted] sensors distributed over an area of (b) (7)(E) [redacted] miles
- Estimated total 3 yr cost is (b) (4) [redacted] to cover (b) (7)(E) [redacted] ft)

Cameras = Identification and classification

- (b) (7)(E) [redacted] cameras over (b) (7)(E) [redacted] miles – terrain features require (b) (7)(E) [redacted] units
- Estimated total 3 yr cost is (b) (4) [redacted]

Mobile Surveillance Radars = Detection, identification/classification and tracking

- (b) (7)(E) [redacted] Radars deployed over (b) (7)(E) [redacted] miles
- Cost is (b) (4) [redacted] per unit - terrain features require at least (b) (7)(E) [redacted] units
- Estimated total 3 yr cost is (b) (4) [redacted]

Best Technology Combination = Detection, identification and classification

- (b) (7)(E) [redacted] cameras and (b) (7)(E) [redacted] sensors deployed over (b) (7)(E) [redacted] miles
- Total 3 year cost of (b) (4) [redacted]
- Does not address response or persistence of impedance

(b) (7)(E)

(b) (7)(E)

San Diego Sector Willows Access 2

A-2L Fence Segment Area

(b) (7)(E)

[redacted]

San Diego Sector Willows Access 2

(b) (7)(E)

[redacted]

Willows Access 2 (A-2L) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Airport Mesa SDC (A-2M) Description

- (b) (7)(E) [redacted] mile segment of border located in a rural setting east of the town of Jacumba, Ca.
  - Terrain: steep rugged mountainous terrain. The mesa itself looms (b) (7)(E) in elevation over the surrounding territory.
  - Operational Environment: Rural to Remote
  - Provides elevation advantage to ASOs
- Persistent impedance requirement:
  - Seconds is the time frame to respond before incursions by smugglers to take advantage of the elevation and terrain.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

Airport Mesa SDC (A-2M) Alternatives

Pedestrian Fence = Pedestrian impedance

- (b) (7)(E) [redacted] miles
- (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
- Estimated total 3 yr cost is (b) (4) [redacted]

Vehicle Fence = Vehicle impedance

- (b) (7)(E) [redacted] miles
- Not intended to deter illegal cross-border pedestrian traffic
- Estimated total 3 yr cost is $(b) (4) [redacted]

Additional Agents = Response

- (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] (Total per shift: (b) (7) [redacted])
- (b) (7)(E) [redacted] total shifts (b) (7)(E) [redacted] agents)
- Cost is ~(b) (7)(E), (b) (4) [redacted] per agent (to include salary, benefits, equipment)
- Estimated total 3 yr cost is $(b) (4) [redacted]

Airport Mesa SDC (A-2M) Alternatives

Sensors = Detection

- Estimated [redacted] sensors to cover an area of (b) (7)(E). An additional 6 sensors would be needed to distribute to this area due to terrain features endemic to this area. (Total of [redacted])
- Estimated total 3 yr cost is (b) (4) to cover [redacted] ft)

Cameras = Detection, identification/classification, and tracking

- Estimated [redacted] camera to cover (b) (7)(E). However, it would take an additional [redacted] cameras for coverage of the terrain that encompasses this area
- Estimated total 3 yr cost for [redacted] cameras is (b) (4)

Mobile Surveillance Radars = Detection, identification/classification, and tracking

- Estimated [redacted] Radar deployed over [redacted] miles
- Cost is (b) (4) k per unit - terrain features requires at least [redacted] units
- Estimated total 3 yr cost is $(b) (4)

Best Technology Combination = Detection, identification/classification

- [redacted] cameras and [redacted] sensors deployed over [redacted] miles
- Total 3yr cost of (b) (4)
- Does not address response nor persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

San Diego Sector Airport Mesa

A-2M Fence Segment Area

(b) (7)(E)

San Diego Sector Airport Mesa

(b) (7)(E)

[redacted]

Airport Mesa SDC (A-2M) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

O’Neil Valley SDC (A-2N) Description

- (b) (7)(E) [redacted] mile segment of border located in the Jacumba, California area.
  - Terrain: Valley and rugged mesa, containing washes and thick vegetation
  - Operational Environment: Rural
- Persistent impedance requirement:
  - Minutes is the time frame to respond before incursions reach load sites along Old Highway 80 and I-8.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

O'Neil Valley SDC (A-2N) Alternatives

Pedestrian Fence = Pedestrian impedance

- (b) (7)(E) [redacted] miles
- (b) (7)(E) [redacted] requirement; Bollard Design with anti-climb capability
- Estimated total 3 yr cost is (b) (4) [redacted]

Vehicle Fence = Vehicle impedance

- (b) (7)(E) [redacted] miles
- Not intended to deter illegal cross-border pedestrian traffic
- Estimated total 3 yr cost is (b) (4) [redacted]

Additional Agents = Pedestrian and vehicle impedance

- (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] miles (estimated total per shift: (b) (7)(E) [redacted] total shifts ((b) (7)(E) [redacted] total agents)
- Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment)
- Estimated total 3 yr cost i (b) (4) [redacted]

O'Neil Valley SDC (A-2N) Alternatives

Sensors = Detection

- (b) (7)(E) [redacted] sensors distributed over an area of (b) (7)(E) [redacted] miles
- Estimated total 3 yr cost is (b) (4) [redacted] to cover 70 ft)

Cameras = Identification and classification

- (b) (7)(E) [redacted] cameras over (b) (7)(E) [redacted] miles – terrain features require (b) (7)([redacted] units
- Estimated total 3 yr cost is (b) (4) [redacted]

Mobile Surveillance Radars = Detection, identification/classification and tracking

- (b) (7) [redacted] Radars deployed over (b) (7)(E) [redacted] miles
- Cost is (b) (4) [redacted] er unit - terrain features require at least (b) (7)([redacted] units
- Estimated total 3 yr cost is (b) (4) [redacted]

Best Technology Combination = Detection, identification and classification

- (b) (7) [redacted] cameras and (b) (7)(E) [redacted] sensors deployed over (b) (7)(E) [redacted] miles
- Total 3 year cost of (b) (4) [redacted]
- Does not address response or persistence of impedance

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

O’Neil Valley SDC

(b) (7)(E)

O’Neil Valley SDC

A-2N Fence Segment Area

(b) (7)(E)

[redacted]

O’Neil Valley (A-2N) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

U.S. DEPARTMENT OF HOMELAND SECURITY OFFICE OF INSPECTOR GENERAL

Inspector General
John Roth

Headquarters
Washington, D.C. 20005
Phone: (202) 254-4100

Office of Audits
Deputy Inspector General:
John V. Kelly

Deputy Assistant Inspector General for Audits:
Maureen Duddy

OIG Audit Team
(b) (7)(C) [redacted]

DHS OIG
AUDIT INITIATION CONFERENCE AGENDA
Acquisition Planning for the Southwest Border Wall
OIG Project No. 17-087-AUD-CBP
June 21, 2017 @ 1:00 P.M.
(b) (7)(C) [redacted]

INTRODUCTION AND PURPOSE OF THE MEETING

- Present audit objective, scope, and methodology;
- Introduce the audit team and process;
- Discuss administrative items.

BACKGROUND

On January 25, 2017, the President signed Executive Order No.13767 - Border Security and Immigration Enforcement Improvements. The Executive Order directed executive departments and agencies to deploy all lawful means to secure the Nation's southern border through the immediate construction of a wall, monitored and supported by adequate personnel so as to prevent illegal immigration, drug and human trafficking, and acts of terrorism.

We initiated the first in a series of audits using a lifecycle approach regarding CBP's physical security of the southern border of the United States. The purpose of the first review was to identify lessons learned from prior OIG, GAO, and Department reports on CBP's Secure Border Initiative and other relevant CBP acquisitions related to securing our borders.

The report also identified that CBP took immediate action in response to the President's Executive Order and on March 2017, the Acquisition Review Board granted permission for CBP to proceed to Acquisition Decision Event -1. In its approval memorandum, the Acquisition Review Board also granted CBP permission to develop a procurement solution that allows for the purchase and delivery wall prototypes in San Diego, California, to support Alternatives Analysis and to refine its requirements.

On March 20, 2017 CBP released two Requests for Proposal to award multiple Indefinite Delivery/Indefinite Quantity contracts to build a solid concrete border wall and other see-through capability to facilitate situational awareness. CBP's goal is to award a contract by June 12, 2017, and begin construction of up to eight prototypes by July 21, 2017.

AUDIT OBJECTIVE

The objective of our audit is to evaluate the Analyze/Select phase of the acquisition of the barrier along the southwestern border.

SCOPE AND METHODOLOGY

Our review will focus on evaluating the Analyze/Select phase of the acquisition of the barrier along the southwestern border. We will evaluate acquisition documents created for this phase to validate the requirements and the support for the acquisition of a barrier along the southern border. We will also meet with pertinent CBP and DHS staff involved in developing the requirements and other pertinent information for the southwest border wall.

OTHER ITEMS FOR DISCUSSION

- Main points of contact for coordinating meetings/document requests;
- Timeframes – Anticipated fieldwork and draft report completion date; and
- Initial Document Request List.

DOCUMENT REQUEST

Item	Description
1	Border Patrols Operational Assessment
2	Acquisition Plan
3	Acquisition Strategy
4	Integrated Master Schedule
5	Risk Management Plan
6	Funding Certification Memo
7	Source Selection Plan
8	Analysis of Alternatives

D2 - Lukeville POE (Tucson Sector) Description

- (b) (7)(E) [redacted] mile segment of border located in the Ajo, Arizona area.
  - Terrain: numerous washes, high growth vegetation, mountainous terrain
  - Operational Environment: Rural
- Persistent impedance requirement:
  - Seconds is the time frame to respond before incursions can blend into the terrain and hide in the washes and vegetation.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

D2 - Lukeville POE (Tucson Sector) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] miles
  - (b) (7)(E) [redacted]' requirement; Bollard Design with anti-climb capability
  - Estimated total 3 yr cost is (b) (4) [redacted]

- **Additional Agents** = Response
  - (b) (7)(E) [redacted] agent every (b) (7)(E) [redacted] yards over (b) (7)(E) [redacted] miles (Total per shift: (b) (7)(E) [redacted])
  - Four total shifts (732 total agents)
  - Cost is ~(b) (4) [redacted] per agent (to include salary, benefits, equipment)
  - Estimated total 3 yr cost is (b) (4) [redacted]

- **Sensors** = Detection
  - (b) (7)(E) [redacted] sensors distributed over an area of (b) (7)(E) [redacted] miles
  - Estimated total 3 yr cost is (b) (4) [redacted] to cover (b) (7)(E) [redacted]

- **Cameras** = Identification/Classification
  - (b) (7) [redacted] cameras over (b) (7)(E) [redacted] miles
  - Estimated total 3 yr cost is (b) (4) [redacted]

- **Mobile Surveillance Radars** = Detection, Identification/Classification, and Tracking
  - (b) (7)E [redacted] Radars deployed over (b) (7)(E) [redacted] miles
  - Cost is (b) (4) [redacted] er unit - terrain features requires at least (b) (7)E [redacted] units
  - Estimated total 3 yr cost is (b) (4) [redacted]

- **Best Technology Combination** = Detection, Identification/Classification, and Tracking
  - Sensors and Mobile Radar
  - Estimated total 3 yr cost is (b) (4) [redacted]

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

D2 - Lukeville POE (Tucson Sector)

D-2 Fence Segment Area

(b) (7)(E)

[redacted]

D2 - Lukeville POE (Tucson Sector)

D-2 Fence Segment Area

(b) (7)(E)

[redacted]

D2 - Lukeville POE (Tucson Sector) Conclusions

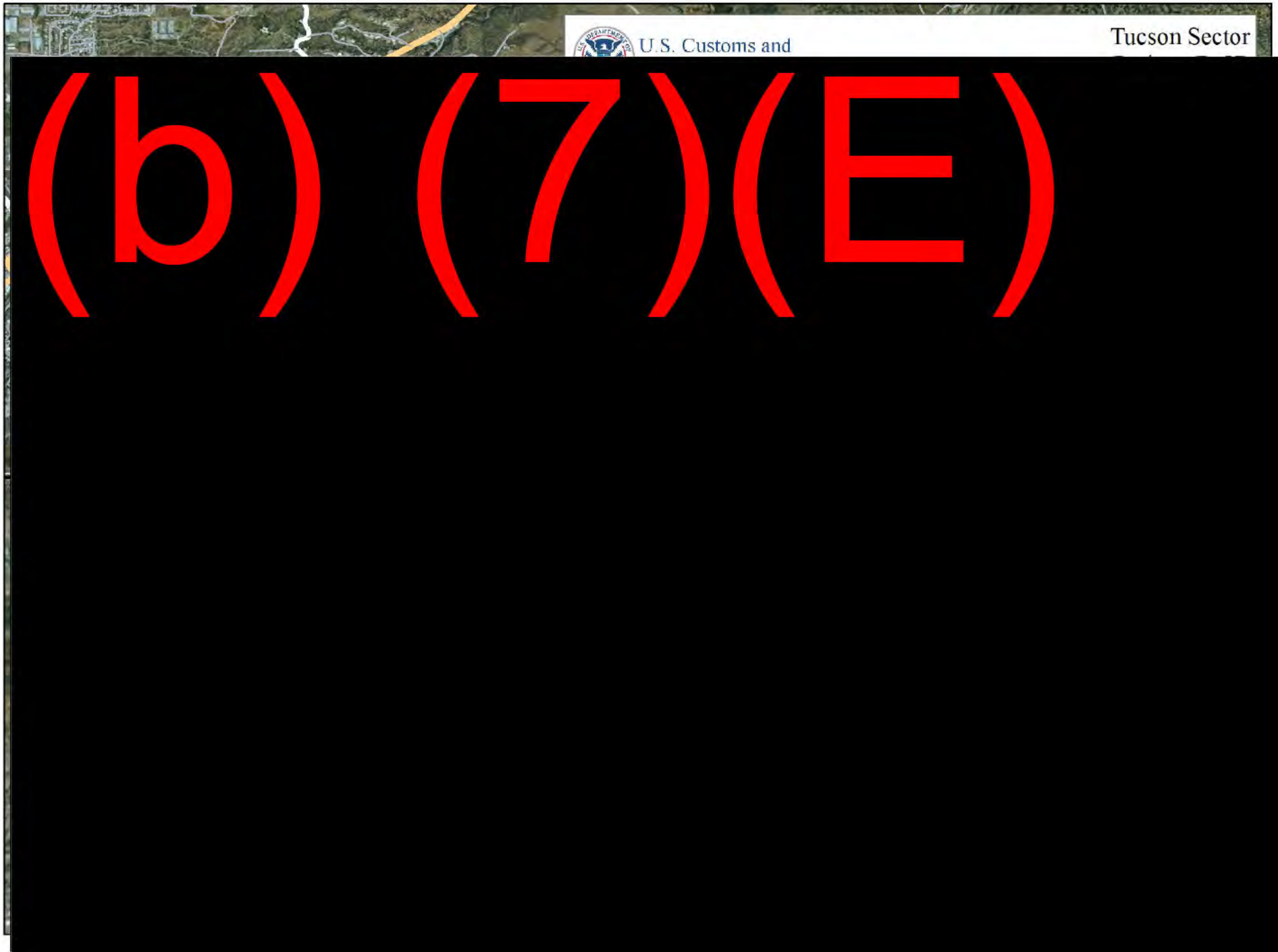
- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, and radars combinations are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

D5B - Nogales East (Tucson Sector) Description

- (b) (7)(E) [redacted] mile segment of border located in the Nogales, Arizona area.
  - Terrain: numerous washes, high growth vegetation, rugged mountains
  - Operational Environment: Rural, close proximity to urban
- Persistent impedance requirement:
  - Seconds to minutes is the time frame to respond before incursions can blend into terrain.
- Due to close proximity between U.S. and Mexican urban areas, physical barrier is required to deter and slow illegal cross-border activity.

D5B - Nogales East (Tucson Sector) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - [redacted] miles
  - Bollard (PV-1)
  - Estimated 3 yr cost is [redacted]
- **Vehicle Fence** = Vehicle impedance
  - Vehicle fence already exists in portions of this segment but does not meet current pedestrian impedance requirement and is in need of replacement/repair due to erosion and corrosion
  - Estimated 3 yr cost is [redacted]
- **Additional Agents** = response
  - [redacted]
  - [redacted])
  - Cost is [redacted] per agent (to include salary, benefits, equipment for 3 years)
  - Estimated 3 yr cost is [redacted]
- **Sensors** = detection
  - [redacted] sensors distributed over an area of [redacted] miles
  - Cost is [redacted] to cover [redacted]
  - Estimated 3 yr cost is [redacted]
- **Cameras** = identification and classification
  - [redacted]
  - Estimated 3 yr cost is [redacted]
- **Radars** = detection, identification/classification, and tracking
  - [redacted] Radar deployed over [redacted] miles
  - Cost is [redacted] per unit
  - Estimated 3 yr cost is [redacted]
- **Best Technology Combination** = detection, identification/classification, and/or tracking
  - Cameras and Sensors
  - Terrain requires [redacted] cameras and [redacted] sensors
  - Estimated total 3 yr cost is [redacted]


U.S. Customs and
Tucson Sector
(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

Nogales, AZ

(Nogales Station)

D-5B Fence Segment Area

(b) (7)(E)

Nogales, AZ

(Nogales Station)

(b) (7)(E)

D5B - Nogales East (Tucson Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance to both pedestrians and vehicles
- Vehicle fence is less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors and cameras combinations are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation:** Pedestrian fence with vehicle impedance incorporated (PV-1, bollard)
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

D6 - Nogales East Tucson Sector Description

- (b) (7)(E) [redacted] mile segment of border located in the Nogales, Arizona area. (Buena Vista Ranch, Kino Springs Village and Santa Cruz River Areas)
  - Terrain: rugged mountains, numerous washes, high growth vegetation, and the Santa Cruz River
  - Operational Environment: Rural within close proximity to urban
- Persistent impedance requirement:
  - Seconds is the time frame to respond before incursions can blend into the terrain and hide in the washes and vegetation.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

D6 - Nogales East Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) miles
  - (b) (7)(E) requirement; Bollard Design with anti-climb capability
  - Cost is (b) (4) per mile
  - Estimated total 3 yr cost is (b) (4)
- **Vehicle Fence** = Vehicle impedance
  - (b) (7)(E) miles
  - Not intended to deter illegal cross-border pedestrian traffic
  - Estimated total 3 yr cost is (b) (4)
- **Additional Agents** = Response
  - (b) (7)(E) agent every (b) (7)(E)
  - (b) (7)(E))
  - Cost is (b) (4) er agent (to include salary, benefits, equipment)
  - Estimated total 3 yr cost is (b) (4)
- **Sensors** = Detection
  - (b) (7)(E) distributed over an area of (b) (7)(E) miles
  - Estimated total 3 yr cost is (b) (4) to cover (b) (7)(E)
- **Cameras** = Identification & Classification
  - 4 cameras over 2.23 miles
  - Estimated total 3 yr cost is (b) (4)
- **Radars** = Detection, Identification/Classification and Tracking
  - (b)(7) Radars deployed over (b) (7)(E) miles
  - Cost is (b) (4) per unit - terrain features requires at least (b)(7) units
  - Estimated total 3 yr cost is (b) (4)
- **Best Technology Combination** = Detection, Identification/Classification, and/or Tracking
  - Sensors and Mobile Radar
  - Estimated total 3 yr cost is (b) (4)

(b) (7)(E)

(b) (7)(E)

Buena Vista Ranch, Kino Springs Village and Santa Cruz River Areas
(Tucson Sector Nogales Station)
D-6 Fence Segment Area

(b) (7)(E)

[redacted]

Buena Vista Ranch, Kino Springs Village and Santa Cruz River Areas
(Tucson Sector Nogales Station)
D-6 Fence Segment Area

(b) (7)(E)

[redacted]

D6 - Nogales East Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors, cameras, radars and combinations of these are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

E2A - Naco West (Tucson Sector) Description

- (b) (7)(E) [redacted] mile segment of border located in the Naco, Arizona area:
  - Terrain: rugged, numerous washes, high growth vegetation.
  - Operational Environment: Rural (close proximity to homes and businesses)
  - The San Pedro Riparian National Conservation Area is near this segment and brings an environmental concern
- Persistent impedance requirement:
  - Seconds is the time frame to respond before incursions can blend into the terrain and hide in the washes and vegetation.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of effective control.

E2A - Naco West (Tucson Sector) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] miles
  - Bollard (PV-1)
  - Estimated 3 yr cost is (b) (4) [redacted]
- **Vehicle Fence** = Vehicle impedance
  - Vehicle fence already exists in portions of this segment but does not meet current pedestrian impedance requirement
  - Estimated 3 yr cost is (b) (4) [redacted]
- **Additional Agents** = response
  - (b) (7)(E) [redacted]
  - (b) (7)(E) [redacted] total agents)
  - Cost is [redacted] per agent (to include salary, benefits, equipment for 3 years)
  - Estimated 3 yr cost is (b) (4) [redacted]
- **Sensors** = detection
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) [redacted] to cover 90 sq ft
  - Estimated 3 yr cost is (b) (4) [redacted]
- **Cameras** = identification and classification
  - (b) (7)(E) [redacted] miles
  - Estimated 3 yr cost is (b) (4) [redacted]
- **Radars** = detection, identification/classification, and tracking
  - (b) (7)(E) [redacted] miles
  - Cost is (b) (4) [redacted] per unit
  - Estimated 3 yr cost is (b) (4) [redacted]
- **Best Technology Combination** = detection, identification/classification, and/or tracking
  - Sensors and Mobile Radar
  - Estimated total 3 yr cost is (b) (4) [redacted]

(b) (7)(E)


E2A - Naco Station (Tucson Sector)
Dense Vegetation

(b) (7)(E)

Tucson Sector

(b) (7)(E)

Tucson Sector
(Naco Station)

(b) (7)(E)

[redacted]

Naco Station (E-2A) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance to both pedestrians and vehicles
- Vehicle fence is less cost-effective and does not provide persistent impedance for heavy foot traffic in this area
- Sensors and cameras combinations are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location and environmental concerns makes this a highly unreasonable alternative
- **Recommendation:** Pedestrian fence with vehicle impedance incorporated (PV-1, bollard)
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

J1 – Santa Teresa, NM (El Paso Sector) Description

- (b) (7)(E) [redacted] mile segment of border located in the Santa Teresa, New Mexico area.
  - Terrain: urban/rural area both north and south of the border.
    - o (b) (7)(E) [redacted] to El Paso, TX
    - o (b) (7)(E) [redacted] to Juarez, Chihuahua, Mexico
  - Operational Environment: Urban (with new communities under construction)
- Persistent Impedance Requirement:
  - Seconds to minutes is the time frame to respond before incursions can blend into adjacent community or load into vehicles and reach major highways.
- Due to close proximity between U.S. and Mexican urban areas a physical barrier is required to deter and slow illegal cross-border activity.

J1 – Santa Teresa, NM (El Paso Sector) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E)
  - Post on Rail with 4 gauge double wire mesh (PV-2)
  - Estimated three year cost with maintenance is (b) (4)
- **Vehicle Fence** = Vehicle Impendence
  - Cost is approximately (b) (4) per mile
  - Total cost for three years with maintenance is (b) (4)
- **Additional Agents** = Response
  - (b) (7)(E) (b) (7)(E))
  - Cost is (b) (4) per agent (to include salary, benefits, equipment for 3 years)
  - Estimated cost is (b) (4)
- **Sensors** = Detection
  - (b) (7)(E)
  - Cost is (b) (4) to cover (b) (7)(E)
  - Estimated cost for a three year period with maintenance is ~(b) (4)
- **Cameras** = Identification and classification
  - (b) (7)(E)
  - Cost is per camera site
  - Estimated cost for a three year period with maintenance is ~(b) (4)
- **Mobile Surveillance Radar** = detection, identification, and tracking
  - (b) (7)(E) miles at (b) (4) per unit
  - Cost over a three year period with maintenance is (b) (4) million
- **Best Technology Combination** = Detection, identification/classification, and/or tracking
  - Cameras and mobile radar are identified as the best technology combination
  - The total cost of this alternative is approximately is (b) (4)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

J1 – Santa Teresa, NM (El Paso Sector)

(Santa Teresa Station)

(b) (7)(E)

J1 – Santa Teresa, NM (El Paso Sector)

(Santa Teresa Station)

(b) (7)(E)

J1 – Santa Teresa, NM (El Paso Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance to both pedestrians and vehicles (specific design by El Paso Sector to address needs)
- Vehicle fence is not practical in the project area and does not provide persistent impedance for heavy foot traffic in this area
- Sensors and cameras are cost-effective but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation:**
  - Pedestrian fence with a combination of ground based radar and cameras
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Santa Teresa (J-2) Description

- (b) (7)(E) [redacted] mile segment of border located in the Santa Teresa, New Mexico area.
  - Terrain: desert, scrub brush, no natural barriers
  - Operational Environment: Urban (new communities under construction)
- Persistent impedance requirement:
  - Seconds to minutes is the time frame to respond before incursions can blend into adjacent community.
- Due to close proximity between U.S. and Mexican urban areas, physical barrier is required to deter and slow illegal cross-border activity.

Santa Teresa (J-2) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - [redacted] miles
  - Post on Rail with 4 gauge double wire mesh (PV-2)
  - Estimated 3 yr cost is [redacted]
- **Vehicle Fence** = Vehicle impedance
  - Vehicle fence already exists in this segment but does not meet current pedestrian impedance requirement and is in need of replacement/repair due to erosion and corrosion
  - Estimated 3 yr cost is [redacted]
- **Additional Agents** = response
  - [redacted]
  - [redacted])
  - Cost is [redacted] per agent (to include salary, benefits, equipment for 3 years)
  - Estimated 3 yr cost is [redacted]
- **Sensors** = detection
  - [redacted]
  - Cost is [redacted] to cover [redacted]
  - Estimated 3 yr cost is [redacted]
- **Cameras** = identification and classification
  - [redacted]
  - Estimated 3 yr cost is [redacted]
- **Mobile Surveillance Radars** = detection, identification/classification, and tracking
  - [redacted]
  - Cost is [redacted] per unit
  - Estimated 3 yr cost is [redacted]

(b) (7)(E)

J2 - View of desert, brush terrain


Completed J-3 project
J2 - View to the east along border into project area
~~FOR OFFICIAL USE ONLY~~

Santa Teresa Station

(b) (7)(E)

Santa Teresa Station

(b) (7)(E)

[redacted]

Santa Teresa (J-2) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance to both pedestrians and vehicles (specific design by El Paso Sector to address needs)

- Vehicle fence is less cost-effective and does not provide persistent impedance for heavy foot traffic in this area

- Sensors, cameras, radars and combinations are cost-effective but do not provide persistent impedance for this area

- Agents are highly cost-ineffective to provide persistent impedance in this location

- **Recommendation:** Pedestrian fence with vehicle impedance incorporated
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

El Paso Sector (K-2A) Description

- (b) (7)(E) [redacted] mile segment of border located in the El Paso, Texas area.
  - Terrain: dense urban area both north and south of the border.
  - Operational Environment: Dense Urban (with new communities under construction)
- Persistent impedance requirement:
  - Seconds to minutes is the time frame to respond before incursions can blend into adjacent community or load into vehicles and reach major highways.
- Due to close proximity between U.S. and Mexican urban areas a physical barrier is required to deter and slow illegal cross-border activity.

K2A - El Paso, TX (El Paso Sector) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] miles
  - Post on Rail with 4 gauge double wire mesh (PV-2)
  - Estimated cost is (b) (4) [redacted]
- **Vehicle Fence** = Vehicle impedance
  - Vehicle fence is estimated to be (b) (4) [redacted] per mile .
  - Expected cost with maintenance for three years is $27.4 million
- **Additional Agents** = Response
  - (b) (7)(E) [redacted])
  - (b) (7)(E) [redacted])
  - Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment for 3 years)
  - Estimated cost is (b) (4) [redacted]
- **Sensors** = Detection
  - (b) (7)(E) [redacted]
  - Cost is [redacted] to cover (b) (7)(E) [redacted]
  - Estimated cost is (b) (4) [redacted]
- **Cameras** = Identification and Classification
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) [redacted] per mile of coverage
  - Estimated cost is (b) (4) [redacted]
- **Mobile Surveillance Radars** = Detection, Identification and Classification, and Tracking
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) [redacted] per (b) (7)(E) [redacted]
  - Estimated cost is (b) (4) [redacted]
- **Best Technology Combination** = Detection, Identification/Classification, and/or Tracking
  - Sensors and cameras, are identified as the best technology combination
  - The cost of this alternative is approximately is (b) (4) [redacted]

(b) (7)(E)

(b) (7)(E)

K2A - View to the east

K2A - View of chain link fence

K2A - El Paso, TX (El Paso Sector)

(El Paso Station)

(b) (7)(E)

K2A - El Paso, TX (El Paso Sector)

(El Paso Station)

(b) (7)(E)

K2A - El Paso, TX (El Paso Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance to both pedestrians and vehicles (specific design by El Paso Sector to address needs)

- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area

- Sensors and cameras are cost-effective but do not provide persistent impedance for this area

- Agents are highly cost-ineffective to provide persistent impedance in this location

- **Recommendation:** Pedestrian fence with a combination of sensors and cameras
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

K2B - El Paso, TX (El Paso Sector) Description

- (b) (7)(E) [redacted] mile segment of border located in the El Paso, Texas area.
  - Terrain: urban areas that are heavily populated with a large section of high brush wetlands that
  - Operational Environment: Urban (dense urban areas with new communities under construction and high brush)
- Persistent impedance requirement:
  - Seconds to minutes is the time frame to respond before illegal entrants can blend into the surrounding community and incursions can load into vehicles and reach major highways.
- Due to close proximity between U.S. and Mexican suburban areas, physical barrier is required to deter and slow illegal cross-border activity.

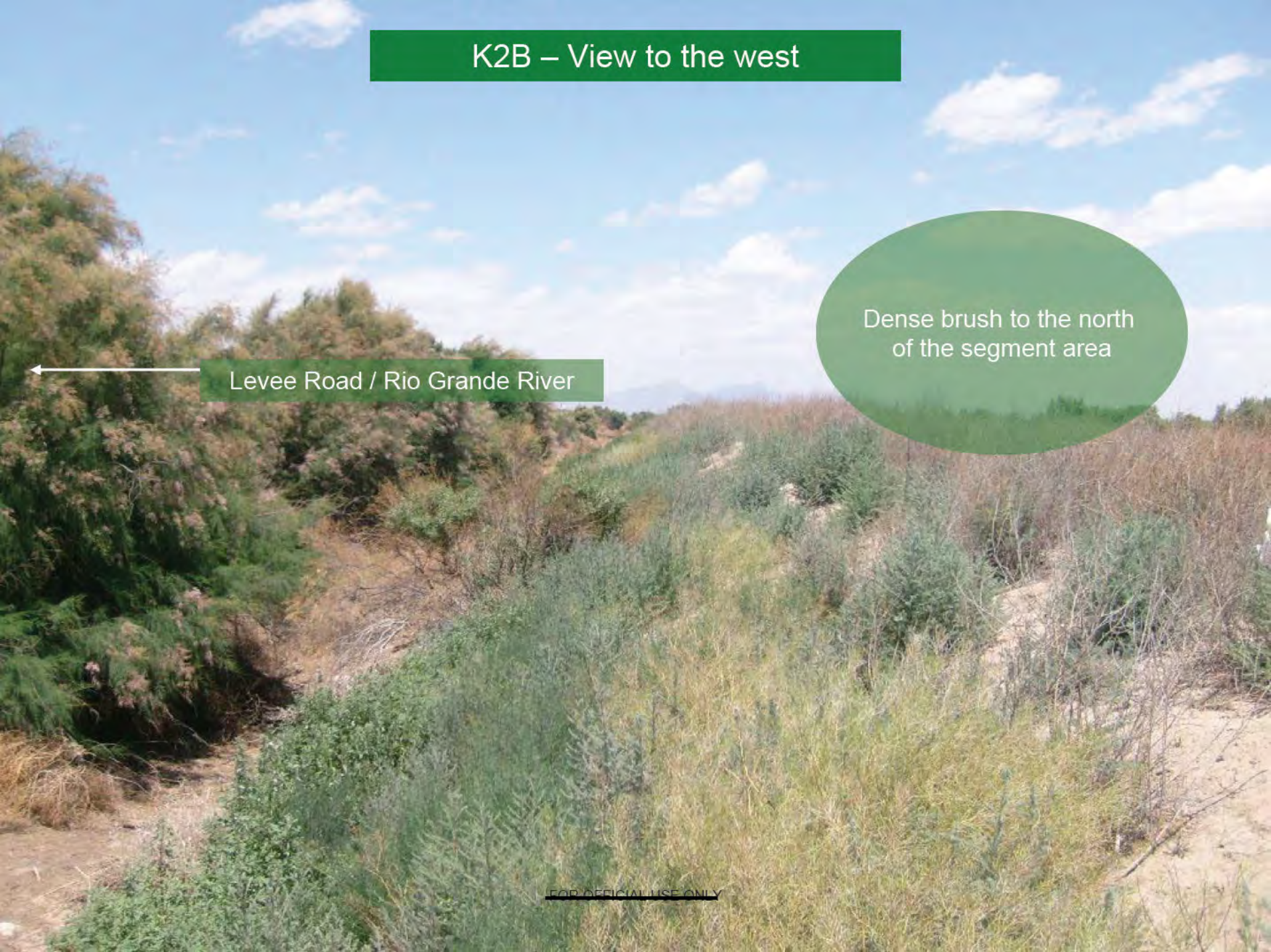
K2B - El Paso, TX (El Paso Sector) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E)
  - Post on Rail with 4 gauge double wire mesh (PV-2)
  - Estimated cost is (b) (4)
- **Vehicle Fence** = Vehicle impedance
  - Vehicle fence is estimated to be (b) (4) per mile
  - Expected cost with maintenance for three years is (b) (4)
- **Additional Agents** = Response
  - (b) (7)(E)
  -
  - Cost is (b) (4) per agent (to include salary, benefits, equipment for 3 years)
  - Estimated cost is (b) (4)
- **Sensors** = Detection
  - (b) (7)(E)
  - Cost is (b) (4) to cover (b) (7)(F)
  - Estimated cost with maintenance for 3 years is (b) (4)
- **Cameras** = Identification and classification
  - (b) (7)(E)
  - Cost is (b) (4) per mile of coverage
  - Estimated cost is with maintenance for 3 years is (b) (4)
- **Radars** = Detection, identification/classification, and tracking
  - Radar deployed over (b) (7)(E) miles
  - Cost is (b) (4) per (b) (7)(E) mile range
  - Estimated cost is (b) (4)
- **Best Technology Combination** = Detection, identification/classification, and/or tracking
  - Sensors, cameras, and mobile radar are identified as the best technology combination
  - The cost of this alternative is approximately is (b) (4)

(b) (7)(E)

K2B – View to the northeast

K2B – View to the west



K2B - El Paso, TX (El Paso Sector)
(Ysleta Station)

(b) (7)(E)

[redacted]

K2B - El Paso, TX (El Paso Sector)

(b) (7)(E)

K2B - El Paso, TX (El Paso Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance to both pedestrians and vehicles (specific design by El Paso Sector to address needs)

- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area

- Sensors, cameras, radars are cost-effective but do not provide persistent impedance for this area

- Agents are highly cost-ineffective to provide persistent impedance in this location

- **Recommendation:** Pedestrian fence with a combination of sensors, cameras, and radar
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

K3 – Fabens, TX (El Paso Sector) Description

- (b) (7)(E) [redacted] mile segment of border located in the Fabens, Texas area.
  - Terrain: dense pecan orchards, dense cotton fields, and suburban areas.
  - Operational Environment: Rural (new communities under construction)
- Persistent impedance requirement:
  - Seconds to minutes is the time frame to respond before incursions can load into vehicles and reach major highways.
- Due to close proximity between U.S. and Mexican suburban areas, physical barrier is required to deter and slow illegal cross-border activity.

K3 – Fabens, TX (El Paso Sector) Alternatives

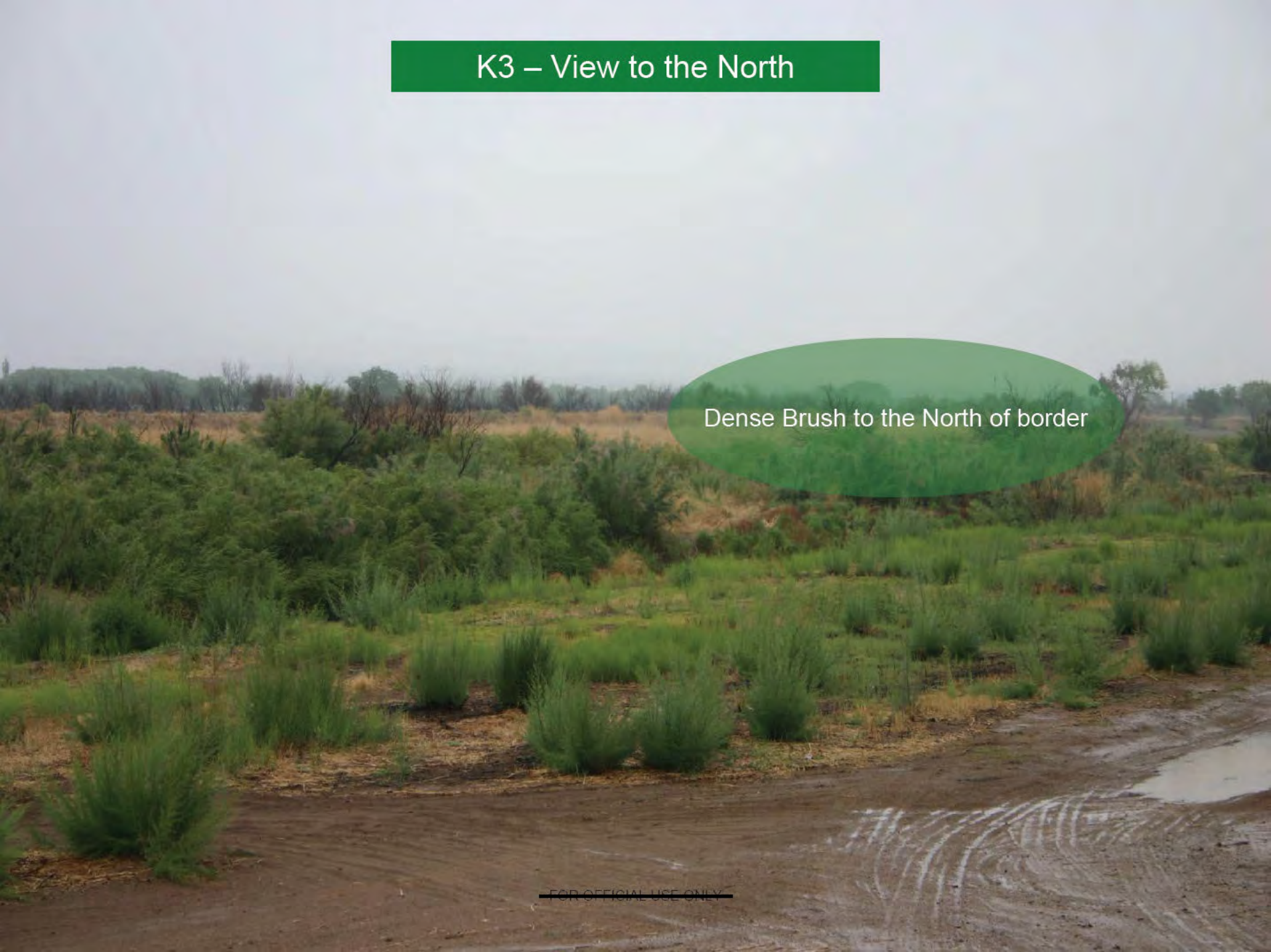
- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] miles
  - Post on Rail with 4 gauge double wire mesh (PV-2)
  - Estimated cost is (b) (4) [redacted]
- **Vehicle Fence** = Vehicle and pedestrian impedance
  - The cost is estimated to be (b) (4) [redacted] er mile which would bring the alternative to total of (b) (4) [redacted] million with maintenance for a three year period.
- **Additional Agents** = Response
  - (b) (7)(E) [redacted]
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment for 3 years)
  - Estimated cost is (b) (4) [redacted]
- **Sensors** = Detection
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) [redacted] to cover 90 sq ft
  - Estimated cost is ~(b) (4) [redacted]
- **Cameras** = Identification and Classification
  - (b) (7)(E) [redacted]
  - Cost is [redacted] per mile of coverage
  - Estimated cost is (b) (4) [redacted]
- **Mobile Surveillance Radars** = Detection, Identification/Classification, and tracking only
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) [redacted] per (b) (7)(E) [redacted] mile range
  - Estimated cost is (b) (4) [redacted]
- **Best Technology Combination** = Detection, identification/classification, and/or Tracking
  - Sensors, cameras, and radar are identified as the best technology combination
  - The cost of this alternative including the three year maintenance is approximately (b) (4) [redacted]

(b) (7)(E)

K3 - View to the west

K3 – View to the east

K3 – View to the North



K3 – Fabens, TX (El Paso Sector)

(Fabens Station)

K-3 Fence Segment Area

(b) (7)(E)

[redacted]

K3 – Fabens, TX (El Paso Sector)

(Fabens Station)

(b) (7)(E)

[redacted]

K3 – Fabens, TX (El Paso Sector) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance to both pedestrians and vehicles (specific design by El Paso Sector to address needs)

- Vehicle fence is much less cost-effective and does not provide persistent impedance for heavy foot traffic in this area

- Sensors, cameras, radars are cost-effective but do not provide persistent impedance for this area

- Agents are highly cost-ineffective to provide persistent impedance in this location

- **Recommendation:** Pedestrian fence with a combination of sensors, cameras, and radar
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Del Rio (M-1) Description

- (b) (7)(E) [redacted] mile segment of border located in the Del Rio, Texas area.
  - Terrain: Moderate to heavy vegetation with mesquite, scrub brush and thick stands of Carrizo cane up to a half mile inland from riverbank.
  - Operational Environment: Urban
- Persistent impedance requirement:
  - Seconds to minutes to respond before incursions can reach existing roads with residential housing, flee markets and commercial warehouses.
- Due to the extremely limited tolerance to depth of intrusion, physical barrier and supporting infrastructure is required to establish acceptable levels of operational control.

Del Rio (M-1) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E)
  - Ameristar Style, Aesthetic slat fence
  - Estimated total cost is ~(b) (4) over 3 years
- **Vehicle Fence** = Vehicle impedance
  - [redacted]
  - (b) (7)(E) River Consideration (river provides natural barrier for vehicle incursions)
  - Estimated total cost is ~(b) (4) (to include 15% per year maintenance over 3 years)
- **Additional Agents** = Response
  - (b) (7)(E) [redacted]
  - (b) (7)(E) [redacted])
  - Cost is ~(b) (4) er agent (to include salary, benefits, equipment for 3 years)
  - Estimated total cost is ~(b) (4)
- **Sensors** = Detection
  - (b) (7)(E) [redacted] t along the Del Rio POE Bridge)
  - Cost is (b) (4) o cover (b) (7)(E) [redacted] maintenance over 3 years)
  - Estimated total cost is ~(b) (4)
- **Cameras** = Identification and Classification
  - (b) (7)(E) [redacted] along the Del Rio POE Bridge)
  - Estimated total cost is [redacted] maintenance over 3 years)
- **Mobile Surveillance Systems (Radar)** = Detection, identification/classification, tracking
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) mile range radar unit - terrain features requires at least 2 units (to include 15% per year maintenance over 3 years)
  - Estimated total cost is (b) (4)
- **Boats** = response
  - [redacted]
  - (b) (7)(E) Cost is [redacted] – 3 boat per mile for sufficient coverage (to include 2 agent operators, fuel and maintenance for each shift, over 4 shifts, over 3 years)
  - Estimated total cost is (b) (4)
- **Dredging** = Limited pedestrian impedance
  - River Dredging over (b) (7)(E)
- **Cane Eradication** = Enhances ability to identify and classify
  - (b) (7)(E) [redacted] the POE fence) of cane eradication
  - Cost is [redacted] (to include 15% per year maintenance over 3 years)
  - Estimated total cost is (b) (4)
- **Best Technology Combination** = Detection, identification/classification, and/or tracking
  - Sensors and cameras have been identified as the best technology combination for this specific area
  - Estimated total cost is (b) (4) [redacted]

(b) (7)(E)

M1 – view to the west, along Rio Grande Road


RVS Cameras
POE Bridge
Weir Dam
M1 – view to the east - looking downriver

M1 - International Bridge looking into Ciudad Acuna, Mexico

Del Rio Sector

M-1 Fence Segment Area

(b) (7)(E)

[redacted]

Del Rio

(b) (7)(E)

[redacted]

Del Rio (M-1) Conclusions

- Pedestrian Fence is most cost-effective and provides adequate persistent impedance
- Sensors, cameras, radars are cost-effective, but do not provide persistent impedance for this area
- Agents are highly cost-ineffective to provide persistent impedance in this location
- **Recommendation**: Pedestrian fence
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity

Eagle Pass (M-2a) Description

- (b) (7)(E) [redacted] mile segment of border located in the Eagle Pass, Texas area.
  - Terrain: Heavy vegetation with mesquite, scrub brush and thick stands of tall Carrizo cane.
  - Operational Environment: Urban with residential housing, business and elementary school.
- Persistent impedance requirement:
  - Seconds to minutes is the time frame to respond before incursions can blend into adjacent community.
- Due to close proximity between U.S. and Mexican urban areas, physical barrier is required to deter and slow illegal cross-border activity.

Eagle Pass (M-2a) Alternatives

- **Pedestrian Fence** = Pedestrian impedance
  - (b) (7)(E) [redacted] Ameristar Style Fence)
  - Ameristar Style Aesthetic Slat Fence and Retaining Wall
  - Estimated cost is (b) (4) [redacted] over 3 years
- **Vehicle Fence** = Vehicle impedance
  - (b) (7)(E) [redacted]
  - River Consideration (river provides a natural vehicle barrier)
  - Estimated total cost is (b) (4) [redacted] (to include 15% per year maintenance over 3 years)
- **Additional Agents** = Response
  - [redacted]
  - [redacted] (b) (7)(E)
  - Cost is (b) (4) [redacted] per agent (to include salary, benefits, equipment for 3 years)
  - Estimated cost is (b) (4) [redacted]
- **Sensors** = Detection
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) [redacted] to cover (b) (7)(E) [redacted] (to include 15% per year maintenance over 3 years)
  - Estimated cost is (b) (4) [redacted]
- **Cameras** = Identification and Classification
  - (b) (7)(E) [redacted] are needed)
  - Cost is (b) (4) [redacted] per camera (to include 15% per year maintenance over 3 years)
  - Estimated cost is ~(b) (4) [redacted]
- **Mobile Surveillance Systems (Radar)** = Detection, identification/classification, tracking
  - (b) (7)(E) [redacted]
  - Cost is (b) (3) (B) [redacted] per unit – (to include 15% per year maintenance over 3 years)
  - Estimated cost is (b) (4) [redacted]
- **Boats** = Response
  - (b) (7)(E) [redacted]
  - Cost is (b) (4) [redacted] per 1 mile range – (b) (7)(E) [redacted] over 3 years
  - Estimated total cost is (b) (4) [redacted]
- **Dredging** = Limited pedestrian impedance
  - River Dredging over (b) (7)(E) [redacted]
- **Cane Eradication** = Enhances ability to identify and classify
  - (b) (7)(E) [redacted] f cane eradication
  - Cost is (b) (4) [redacted] per 1 mile (to include 15% per year maintenance over 3 years)
  - Estimated total cost is (b) (4) [redacted]
- **Best Technology Combination** = Detection, identification/classification, and/or tracking
  - Sensors/Cameras
  - Estimated total cost is (b) (4) [redacted] (to include 15% per year maintenance over 3 years)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

(b) (7)(E)

Del Rio Sector

M-2a Fence Segment Area

(b) (7)(E)

[redacted]

Del Rio-Eagle Pass

(b) (7)(E)

[redacted]

Eagle Pass (M-2a) Conclusions

- Pedestrian Fence/Retaining Wall is most cost-effective and provides adequate persistent impedance to pedestrians (specific design by Del Rio Sector to address needs)

- Sensors, cameras, radars are cost-effective but do not provide persistent impedance for this area

- Agents are highly cost-ineffective to provide persistent impedance in this location

- **Recommendation:** Pedestrian Fence/Retaining Wall
  - Most cost-effective and meets foundational requirement
  - Continue to develop and deploy technology
  - Continue to train and deploy the Agents needed to respond to illegal cross border activity