

Border Fence 'Very Doable,' Engineers Say

CNSNews.com
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September 06, 2007

(CNSNews.com) - Building a fence across the entire 1,952-mile border of the United States and Mexico can be done, with only two requirements needed, according to engineers.

"All it takes is time and money," said Brian Damkroger, senior manager for border security and exploratory systems at the New Mexico-based Sandia National Laboratories.

Sandia is working with the federal government in securing the border through a border fence and other measures. Sandia also helped design the 15-foot-high, 14-mile-long, double layer security fence in San Diego, viewed by fence proponents as a model of what works in deterring illegal immigration.

A border wall could be constructed across the southern border probably in less than five years if the federal government devoted multiple crews to the project to work on different sections of the wall concurrently, said David Hunley, vice president of Connico, Inc. a Nashville-based engineering firm.

"It's a large-scale project, but it's not high tech," Hunley said. "You just have to have the people to throw at it. You would also need the political will to do it."

At present, the federal government doesn't plan on fencing off half of the entire border. Rather, Congress approved and President Bush signed a bill last year authorizing the construction of 854 miles of fencing to strategically seal 700 miles of the border.

Actual cost estimates for the 700 miles of secure border vary widely, between \$3 million per mile initially estimated by the Congressional Budget Office to the far larger potential of \$70 million per mile to build and maintain, according to a December 2006 Congressional Research Service [report](#).

The high estimate for the entire wall is partially based on the past cost of litigation during the construction of the San Diego fence, said a spokesman for Rep. Duncan Hunter (R-Calif.).

That should not be an issue now, spokesman Joe Kasper told **Cybercast News Service**, because those issues were settled in court while Congress has granted the Department of Homeland Security broad powers to construct a border-wall.

Since that Secure Fence Act was signed, fewer than 20 miles of fencing have been built.

That prompted Hunter to write a letter to the White House last month, in which the Republican presidential candidate called the "lack of progress unacceptable, especially when adequate funding is available to earnestly proceed with fence construction."

Specifically, Hunter pointed to a 392-mile stretch of fence that is supposed to be completed from Calexico, Calif., to Douglas, Ariz., by May 30, 2008, and another 30 miles of fencing that is

supposed to be completed in Laredo, Texas, by the end of 2008.

"Unfortunately, these scheduled mandates will be missed unless fence construction commences immediately in these locations," Hunter wrote.

Counting infrastructure built prior to the 2006 Secure Fence Act, the southern border already has more than 100 miles of fencing, said Laura Keehner, a spokeswoman for the Department of Homeland Security.

By the end of 2008, the department expects to have a total of 370 miles of fencing constructed, Keehner told **Cybercast News Service**.

The timeline for the entire 700 miles of fencing is tentative, she said. But, it is likely that some of that would come from a "virtual fence" - a large area protected through various electronic security measures.

The "virtual fence" concept has its critics in Congress, including Hunter, who believes the concept is unproven. Hunter argues that the Secure Fence Act specified that a physical fence be built.

What the experts say

Damkroger, head of border patrol projects for Sandia National Laboratories, doesn't discount "virtual fences." His firm has designed fences that use a combination of sensors, such as infrared, seismic, radar and over-flights.

The goal of this technology, he said, is to detect and identify the intruder, characterize the threat, and respond.

"In urban areas, we need a physical fence," Damkroger told **Cybercast News Service**, because there is a great chance of an intruder eluding law enforcement. "Out in the desert, there is the ability through surveillance to see someone before he reaches the border, and more time to respond."

Also designed by Sandia, was the anti-climb material on the San Diego fence. This material is made of high-strength steel mesh, said Damkroger.

"The holes are very small so it would be difficult to get toe and hand holds," he said.

Should a climber reach the top, the fence is designed in such a way the intruder would have to climb upside down to get over the top, he said.

In the early 1990s, Sandia designed the concept of a three-layered security fence. The primary layer would be solid steel. The second layer would be the anti-climb fence, and the third would be a more conventional fence.

Each layer would have a road between it for the U.S. Border Patrol to access, Damkroger said.

The [Secure Border Initiative](#) of 2005 already has long-range plans in the works for securing 6,500 miles along both the Mexican and Canadian border that involves physical fences and technology.

The materials used for the border fence as well as the size of the fence, are still undetermined, said Judy Marsicano, spokeswoman for the Fort Worth, Texas, district office of the U.S. Army Corps of Engineers, which is overseeing the 700-mile fencing project.

"It will depend on terrain; whether it's urban, rural or mountainous," Marsicano told **Cybercast News Service**. "We don't have that."

But Marsicano said the material in most areas of the physical fence would be made of either steel or concrete. She also said it could include multiple different contractors - so different sections of the fence could be made of different material. The government is working to get input from stakeholders, including landowners who will be asked to sell.

She also said the government is conducting an environmental and engineering assessment, which will determine a more precise cost for the project.

Such a security fence could run into environmental problems, said Hunley of Connico, which has been involved in constructing security fences for 25 years, mostly at airports.

At the bottom of the fence, for example, holes are usually small to keep both people and animals out. That can lead to small-scale flooding, he said.

"It can keep people and animals out, but it keeps trash out as well," Hunley told **Cybercast News Service**. "That can lead to drainage problems. A puddle around it can become huge."

Problems could also emerge concerning issues of waterways, habitat accustomed to crossing the border uninterrupted, and Native American burial grounds located along the border, said Hunley.

Security fences typically go eight to 10 inches into the ground to deter people from digging under, said Hunley, while security cameras could be installed on the fence, along with large lights for further deterrence.

Ultimately, Hunley said, a fence would help, but it is far from a guaranteed solution to protecting the border.

"It will only be as effective as the people who patrol it," he said.

Will a real border fence work?

Critics of the fence say illegal aliens will simply climb the fence, or the fence would just reroute illegal aliens to enter the country elsewhere.

"A border fence is one part of the strategy," Kasper told **Cybercast News Service**. "It's not a silver bullet. It has to be accompanied by technology. Just look at the success of the San Diego fence. If someone does attempt to get round the wall, Border Patrol agents have more of an opportunity to apprehend them."

In 1996, Congress approved a double-layered fence - with a steel fence as the primary layer, and an anti-climb fence as the second layer - for [14 miles](#) along the border of San Diego and Tijuana, Mexico.

The fence has produced some improvement in the area, according to a Congressional Research

Service report in 2005 that said illegal alien apprehensions along the fence region dropped from 202,000 in 1992 to 9,000 in 2004.

Meanwhile, vehicle drive-throughs in the region have fallen from between six to 10 per day before the construction of the fence to four drive-throughs for the entire year of 2004. Crime in San Diego dropped 56.3 percent between 1989 and 2000, according to the FBI Crime Index.

However, a separate Congressional Research Service report from last December said that although illegal immigration is down in San Diego, "the flow of illegal immigration has adapted" and "shifted to the more remote areas of the Arizona desert."

Critics and some proponents of a border fence have referenced the Berlin Wall - used to prevent emigration from communist East Germany to West Germany during the Cold War - which used draconian tactics, such as mines and shooting on sight.

However, a more appropriate comparison might be the Israeli West Bank Barrier, which measured 436 miles long and was used to keep out terrorists.

According to an Israeli government report, the wall was successful.

Between April and December of 2002 - before the wall - 17 suicide attacks were committed within Israel by terrorists who infiltrated from Samaria. Yet in 2003, after the construction of the Samaria section of the wall, there were only five attacks. In Judea, where no fence was built, suicide attacks remained the constant, according to the report.

One group that isn't waiting on the federal government is the Minutemen Civil Defense Corps, a citizen anti-illegal immigration group based in Arizona. Through volunteer work and donations, the group is constructing a double-layered fence on ranch land donated in Bisbee, Ariz., with material similar to the San Diego fence. They began two years ago, and now have 10 miles of fencing.

"It's not a virtual fence, it's a real fence," Minutemen Executive Director Al Garza told **Cybercast News Service**. "Our objective is to show the federal government it is not virtually impossible to stop the flow of illegal immigrants."