

## From the MTC Director

### A new use for transportation asset management systems: Homeland security

One of the most long-lasting effects of the terrible events of September 11, 2001, was the impact it had on our domestic transportation system. The domestic aviation system, which was used as a weapon of mass destruction, was found to be vulnerable to attack. The commercial aviation system was severely disrupted for months and remains impacted almost a year later. This has led to economic damage to the air carriers and tens of thousands of job losses. A new focus on transportation security was the result. This effort was given a high profile with the creation of the Transportation Security

Administration at the federal level.

Transportation security is all about risk management. Some basic questions that need to be asked are

- What threats do we face?
- Who can hurt us by attacking?
- How (and where) can they hurt us?
- What are all of the assets we need to protect?
- Which assets are most critical?
- What can we do to protect ourselves?
- How can we mitigate damage in the event of an attack?

Security is a process rather than an end state. There is no such thing as complete security in that threats keep changing. For instance, terrorists often change their methods of

[See MTC Director on p. 3](#)

## Homeland security: Summaries of spring 2002 transportation seminar presentations

Homeland security and transportation was the topic of several spring 2002 transportation seminars. Following are highlights.

### Homeland security and transportation after 9/11 *Ellen Gordon, Director of Homeland Security, State of Iowa*

- Iowa is working on two major homeland security initiatives related to transportation: inventorying and protecting critical assets and preventing electronic intrusion attacks.
- About 12,000 major assets have been evaluated for criticality and vulnerability. Focus is on about 1,000 assets due to factors like mass casualty risk, economic impact, and

symbolic value; in terms of transportation, bridges are a major concern.

- Preventing bio-terrorism against agriculture is also a major concern in Iowa.

### Information assurance and security and its relationship to transportation *Kenneth Peters, Chief Information Security Officer, State of Iowa*

- Transportation is increasingly an industry driven by information and information technology.
- Most information technology systems used in transportation systems are now networked (or soon will be). This makes them

[See Summaries on p. 3](#)

## Contents

- 2 Planning Ahead for Asset Management
- 4 2002 MTC Projects

## MTC Director . . . from p. 1

operation in response to perceived opportunities and perceived weaknesses.

A key element in securing our transportation system is the identification of assets that need protection followed by decisions about their criticality. Criticality may involve such considerations as how important the assets are to the economy, how many casualties would result from an attack on them, their symbolic value, and the difficulty and cost of replacement. After 9/11, a great deal of attention was focused on the protection of major bridges and tunnels, such as the Golden Gate Bridge in San Francisco, since they seemed to fit the notion of critical infrastructure assets. A terrorist attack on a major bridge or tunnel could cause mass casualties and economic chaos.

Asset management systems have been developed to assist transportation agencies in getting the most return on their investments in infrastructure, such as bridges, pavements, and rolling stock. These systems were developed with very basic goals in mind. However, the fact that transportation asset management systems contain detailed inventories of infrastructure makes them valuable tools for homeland security risk assessments.

Several state departments of transportation (DOTs), particularly Texas, have already used their asset management systems to assist in homeland security planning. The Texas DOT has used asset management data to develop a list of critical bridges and to set priorities for their protection from attack.

The potential connection between asset management systems and homeland security was highlighted in the Midwest Transportation Consortium's (MTC) recently completed spring transportation seminar series. Speakers from the American Concrete Paving Association, the Iowa Division of Emergency Management, the Iowa Department of Information Technology Services, the Michigan DOT, and the Texas DOT all contributed their perspectives on related issues such as risk assessment, attack damage mitigation, and the development and use of transportation infrastructure asset management systems. Current and future transportation professionals in the region served by the MTC are now aware of this new, if unfortunate, use for asset management systems.

## Summaries . . . from p. 1

vulnerable to attack from inside and outside.

- The United States is rich with targets. It has 42 percent of the world's information systems capacity, and many systems are highly networked.

### **Terrorism and the design of the built environment** *Jim LaFrenz, American Concrete Paving Association*

- Protection is important, but it is going to prove impossible to protect all buildings and major infrastructure systems from a determined attack by terrorists.
- The answer is to engineer the built environment so that deaths, injuries, damage, and disruption are minimized.
- Glass windows in buildings such as airport terminals ought to be a major concern when designing against terrorist attacks.

### **Aviation security: Past, present, and future** *Bill Flannery, Aviation Director, Des Moines International Airport*

- A series of events since the 1950s has led to continual changes in aviation security in the United States.
- 9/11 devastated the domestic aviation system. All major carriers lost huge amounts of money in 2001.
- The Aviation and Transportation Security Act

of 2001 is leading to wholesale changes in aviation security.

- Some of these changes will be very difficult for airports and airlines to implement on schedule.
- There are some largely unaddressed security areas, e.g., general aviation and air cargo.

### **Security activities at the Texas DOT related to bridges** *Tom Rummell, Bridge Engineer, Texas Department of Transportation*

- Like many states, Texas has tens of thousands of bridges. Not all of them can be watched or protected.
- Some bridges are extremely important to the functioning of the economy.
- Texas DOT is using its bridge management system and other asset management data to identify the most critical bridges and then to identify the best options for surveillance and protection.
- Texas's rating system incorporates some of the assumed goals of terrorists, i.e., targets that would cause large numbers of casualties and major economic impacts.

**Editor's note:** Many of these presentations are available online at [www.ctre.iastate.edu/educweb/scholars.htm](http://www.ctre.iastate.edu/educweb/scholars.htm)