Protecting America’s Roads, Bridges, & Tunnels

The Role of State DOTs in Homeland Security
State DOTs - Guardians of Nation’s Transportation Network

- DOTs own & operate 1.8 million lane miles & 273,200 bridges
- 5 billion daily vehicle miles (DVMT) traveled on DOTs’ roads and bridges, or 65% of total DVMT
- $92 billion/yr needed just to preserve system without extra security
State DOTs’ Major Responsibilities

- Highways
- Transit
- Freight and passenger rail
- Ports and ferries
- General and commercial aviation facilities
- Bike/pedestrian
- Motor carrier/motor vehicle services
- State patrol
AASHTO

- Represents transportation agencies in 50 states + DC and Puerto Rico
- Fosters development, operation, maintenance of nationwide integrated transportation system
- Serves as national forum for its member departments
- Develops guides, standards, research, and educational activities
Transportation is Vital to Nation’s Economy

- $5.4 billion/yr in freight shipped on roads
- 89% of all US freight by value shipped on roads
- 8.2 million Americans employed in surface transportation

Projected Truck Traffic Volumes on US Highway Network in 2020
Transportation System Has Vulnerabilities

- Most of system is robust
- Busy travel "bottlenecks" could be targets
- 1,000 critical bridges nationwide (FHWA Blue Ribbon Panel)
- Potential $10 billion impact from losing a critical bridge or tunnel
U.S. Terror Incidents 1999-2004

TERROR INCIDENTS ON U.S. SOIL
1999–2004

Source: Mineta Institute Terrorism Knowledge Database,
Norman Y. Mineta International Institute for Surface Transportaion
Policy Studies, San José State University
DOTs Expanding Traditional Roles to Address Terrorism

Enhanced “all hazards” emergency management

Critical asset protection
Enhanced “All Hazards” Emergency Management

- 90% of DOTs have “all hazards” plans in place – not just for terrorism
- DOTs often have vital support roles in major incidents – e.g. hurricane evacuation, or earthquakes
- DOTs field personnel may sometimes be “initial responders”
DOTs’ Emergency Management Expertise

Traveler Information:
- Hwy Advisory Radio, 511, Variable Message Signs, etc.

Traffic Management:
- Sensors, cameras, ramp monitoring, etc.

Facilities, Personnel, Equipment:
- Trucks, aircraft, communications networks, garages, etc.

Reconstruction Capabilities:
- Equipment, and contacting resources & capabilities
DOTs’ Emergency Management Needs

1. Enhanced ITS capabilities
   - Only 25% of freeway network in 78 major cities has ITS (thru ’04)
     +

2. Improved emergency response
   - Capability to handle quarantine, evacuation, crime scene incidents, security restrictions etc.
     +

3. Better communications
   - Interoperability, training on ICS, etc.

= $8 billion over next 6 years
Critical Asset Protection

- Vulnerable transportation assets – e.g. those that span natural barriers or serve regional/national transportation & economic roles
- 84% of DOTs have conducted comprehensive vulnerability assessments to identify critical assets

A Guide to Highway Vulnerability Assessment for Critical Asset Identification and Protection
DOTs’ Critical Asset Protection Expertise

- **Deterrence & Detection:** e.g. alarms, CCTV, patrols, lighting
- **Defense:** e.g. barriers around approaches
- **(Re) Design:** e.g. protect key structural members from blast
DOTs’ Critical Asset Protection Needs

- Bridge retrofits
  - +
- Bridge reconstruction
  - +
- Tunnel protection

= $2.5 billion over next 6 years
# Costs of Highway-Related Security Measures

## Table 1: Annual and Six-Year Total Costs Summary for Highway-Related Security Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Program Elements</th>
<th>Capital Costs (in millions)</th>
<th>Six-Year Capital Costs (in millions)</th>
<th>Six-Year Operating Costs (in millions)</th>
<th>Average Annual O&amp;M Costs (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
</tr>
<tr>
<td>Protection of Critical Mobility Assets</td>
<td>Bridge retrofit</td>
<td>$245</td>
<td>$245</td>
<td>$245</td>
<td>$245</td>
</tr>
<tr>
<td></td>
<td>Bridge reconstruction</td>
<td>$70</td>
<td>$70</td>
<td>$70</td>
<td>$70</td>
</tr>
<tr>
<td></td>
<td>Tunnels</td>
<td>$30</td>
<td>$30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation management centers</td>
<td>$25</td>
<td>$25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancement of Traffic Management Capabilities</td>
<td>Detection, surveillance, messaging &amp; dynamic routing</td>
<td>$609</td>
<td>$609</td>
<td>$609</td>
<td>$609</td>
</tr>
<tr>
<td>Improvement of State DOT Emergency Response</td>
<td>Planning, training, communications</td>
<td>$156</td>
<td>$156</td>
<td>$156</td>
<td>$156</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$1,080</td>
<td>$1,135</td>
<td>$1,135</td>
<td>$1,080</td>
</tr>
</tbody>
</table>


Note: Table does not include required research funding
The Road Ahead - Cornerstones for Strong Partnership

- Recognize DOTs’ vital role in preparedness, response, recovery; & homeland security
- Responsiveness to road, bridge, & tunnel asset protection needs
- Additional resources for DOTs to meet homeland security challenges
- Support for transportation-related security research