Renewing the National Commitment to the US Interstate Highway System

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Fixing America's Surface Transportation Act of 2015 asked the Transportation Research Board to conduct “a study on the actions needed to upgrade and restore the Dwight D. Eisenhower National System of Interstate and Defense Highways to its role as a premier system that meets the growing and shifting demands of the 21st century.”

As Built Interstate

- 48,000 miles
- 3 Transcontinental East-West Routes, 7 North-South Routes
Interstate only a small portion of all roadways

<table>
<thead>
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<th>EXTENT</th>
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<tbody>
<tr>
<td></td>
<td>Miles</td>
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<tr>
<td>Interstate System</td>
<td>1%</td>
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<td>47,714</td>
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<tr>
<td>National Highway</td>
<td>5%</td>
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<td>System</td>
<td>223,257</td>
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<tr>
<td>Federal-aid</td>
<td>24%</td>
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<tr>
<td>Highways</td>
<td>1,005,378</td>
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<tr>
<td>Systemwide (All Roads)</td>
<td>100%</td>
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<td>4,109,418</td>
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Interstate Consequences

• Largest Public Works Project with huge long term economic and spatial impacts.
• Recurring and increasing congestion
• Lower crash rate than other roads
• Freeway revolt in many urban areas
• New processes and roles: Environmental Impact Statements, Public Hearings, Political Decision-Making
Looming challenges ahead

- Persistent and growing backlog of deficiencies ($149B)
- Challenges
  - Aging assets
  - Increasing demand
    - 160% vs 90% (1980-2015)
  - Demand for more geographic coverage
  - Transformation of vehicle fleet
  - Climate change impacts
  - Expectations for safety gains
  - Declining revenues
Bottom line

Unless a commitment is made to remedying the system’s deficiencies and preparing for the challenges that lie ahead, the system risks becoming

• increasingly unreliable and congested
• far more costly to operate, maintain, and repair
• vulnerable to the effects of a changing climate and extreme weather.
Renewing the National Commitment to the Interstate Highway System
A Foundation for the Future
Committee’s study process

• Met with over 100 experts and users
• Commissioned papers
  – Demographics
  – Economic projections
  – Travel demand
  – Climate change
  – Connected and Automated Vehicles
• Case studies
• Modeling
Analytical tools

• There are no modeling tools currently available that are able to:
  – Fully capture the alternatives available to enhance capacity or manage the systems
  – Model policy, capacity or management changes at the national network level
  – Model responses to prices or other system management strategies

• Available tools
  – Highway Economic Requirements System (HERS)
  – National Bridge Investment Analysis System (NBIAS)
  – Pavement Health Track (PHT)
Findings

• Current level of spending is not sufficient
  • Recent combined state and federal capital spending on the Interstates, approx. $20-25 billion per year

• Need for major re-investment
  • Mostly for rehabilitation and reconstruction
  • $45–$70 billion annually over the next 20 years will be needed to undertake the long-deferred rebuilding of pavements and bridges and to accommodate and manage growing user demand.
  • Additional funding needed to boost system’s resilience and expanding its geographic coverage.
Blueprint for Action

• 10 Recommendations that include
  – Program actions, including changes to law
  – Funding
  – Standards needs
  – Data and modeling needs

• Central to the blueprint for action is federal leadership, starting with the resolve of Congress to reestablish the Interstate Highway System’s premier status and to ensure that this status is no longer allowed to slip.
Recommendation #1
Legislate an Interstate Highway System Renewal and Modernization Program (RAMP)
Recommendation #2
Address Current/Emerging Demands to Extend Interstate System and Remediate Economic, Social and Environmental Disruptions
Recommendation #3
Assess Integrity of Pavements and Bridges to Identify Where Full Reconstruction is Needed
Recommendation #4
Increase & Index Federal Fuel Tax as a Bridge to Longer Term Funding

Federal motor fuel tax revenues adjusted to 2003 dollars using NHCCI
Recommendation #5

Allow States Flexibility to Impose Tolling on General-Purpose Interstate Highways
Recommendation #6
Prepare for Tolling & Per Mile Charges in Interstate System
Recommendation #7

Fund U.S. DOT to Develop Modeling Tools to Track Full Condition of Interstate Assets
Recommendation #8
Plan for Connected, Autonomous, Shared and Electric Vehicles
Recommendation #9
Assess Vulnerability and Resilience of Interstate System to Climate Change
Recommendation #10
Ascertain Intestate System’s Contribution to Carbon Emissions & Recommend Improvements
Implementing RAMP would...

- Restore forward looking vision for the Interstate
- Restore one of the nation’s most valuable infrastructure assets
- Reinforce federal/state partnership
- Reinforce reliance on user fees
- Prepare the US for the next generation transportation system
“Our unity as a nation is sustained by free communication of thought and by easy transportation of people and goods... Together the unifying forces of our communication and transportation systems are dynamic elements in the very name we bear — United States. Without them, we would be a mere alliance of many separate parts.”

— Dwight D. Eisenhower, 1955
Committee Members

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Thanks. Questions?