BENCHMARKING CONNECTICUT’S TRANSPORTATION INFRASTRUCTURE CAPITAL PROGRAM WITH OTHER STATES

ON BEHALF OF

CONNECTICUT DEPARTMENT OF TRANSPORTATION

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Study Background

Introduction

- Decreasing state revenues from traditional funding sources (such as the gas tax), uncertainty in federal funding to states, and the increasing need to invest in aging infrastructure, has led ConnDOT and other state transportation agencies to reevaluate or adjust their planning and programming processes.

- As ConnDOT aims to meet the state’s long-term transportation goals in this constrained fiscal environment, they need to ensure that available funds are invested as effectively and efficiently as possible.
Study Background

Objectives

- Benchmark Connecticut’s performance in capital programming against other state DOTs
- Identify ways to improve the performance and efficiency of the capital programming process
- Create a tool—a “Transportation Investment Dashboard”—to communicate the performance of Connecticut’s capital program to the state’s transportation leadership
Current data suggests that Connecticut’s capital program may be more reliant on federal sources than the benchmark and best practice states reviewed in this study.

This finding may indicate that expanded state investment and/or alternative sources of revenue will be needed to keep pace with the state’s capital investment needs.
ConnDOT is currently involved in many initiatives that are intended to improve the efficiency of the state’s capital programming process and linkage to long-term transportation goals.

- These initiatives should be continued and progress should be tracked in a transportation investment dashboard using relevant financial data and performance measures.

- These performance measures should also be used to:
  - Formalize the linkage between long-term planning and capital programming
  - Ensure that resources are adequate to meet future travel demand
Study Approach

➤ Literature Scan
➤ State Survey
➤ Focus Group Sessions
➤ Active Participation of CASE Study Committee Members
Strengthening the planning-programming linkage

- Long-term goals
- Intermediate plans
- Capital program

Intermediate (8-12 years) financial plans: FL, WA, PA

Transportation Infrastructure Capital Plans (1-5 years): VT, MD, ME, NJ, NH, NY, CT
Format and detail vary significantly

- Connecticut and Maine clearly identify anticipated funding sources by federal versus state
- Maryland’s data are taken from its Statewide Capital Budget plan
- State funding sources available (i.e., tolls) varies from state to state
- New York considers funds not yet identified as part of their state funding percentage
New Hampshire includes credits from the operation of toll facilities for the state’s federal funding match

Rural states tend to have higher capital funding per capita than urban states, though their funding per route- or lane-mile tends to be lower than that of the urban states

Lane miles and route miles are presented using all public roadways, not just those administered by the state. This comparison is included to provide a comparison of network size.

<table>
<thead>
<tr>
<th></th>
<th>CT (Note 1)</th>
<th>VT (Note 2)</th>
<th>MD (Note 3)</th>
<th>ME (Note 4)</th>
<th>NJ (Note 5)</th>
<th>NH (Note 6)</th>
<th>NY (Note 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Total Capital Funding in Capital Plan ($ millions)</td>
<td>$823.4</td>
<td>$524.8</td>
<td>$712.6</td>
<td>$688.7</td>
<td>$1,486</td>
<td>$266</td>
<td>$18,711</td>
</tr>
<tr>
<td>Estimated Annual Capital Funding in capital plan ($ millions)</td>
<td>$823.4</td>
<td>$524.8</td>
<td>$712.6</td>
<td>$344.4</td>
<td>$1,486</td>
<td>$266</td>
<td>$3,742.2</td>
</tr>
<tr>
<td>Fiscal Years Included in Estimate</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Total Funding/per Year/per Capita</td>
<td>$230</td>
<td>$838</td>
<td>$122</td>
<td>$259</td>
<td>$168</td>
<td>$202</td>
<td>$192</td>
</tr>
<tr>
<td>Total Funding/per Year/ per Route-Mile State Roadway System*</td>
<td>$38,543</td>
<td>$36,391</td>
<td>$22,704</td>
<td>$15,085</td>
<td>$38,345</td>
<td>$16,620</td>
<td>$32,691</td>
</tr>
<tr>
<td>Total Funding/per Year/per Lane-Mile State Roadway system**</td>
<td>$18,076</td>
<td>$17,705</td>
<td>$10,344</td>
<td>$7,366</td>
<td>$17,631</td>
<td>$8,060</td>
<td>$15,415</td>
</tr>
<tr>
<td>% State Funds***</td>
<td>40.7%</td>
<td>30.1%</td>
<td>40.1%</td>
<td>43.4%</td>
<td>44.2%</td>
<td>50.5%</td>
<td>61.6%</td>
</tr>
</tbody>
</table>
Connecticut’s total funding per capita is 3rd highest among the referenced states.
Connecticut’s total funding per-route and per-lane mile funding is highest of the referenced states.
Connecticut’s percentage of state funds to support its capital program is 3rd lowest of the referenced states at 40.7%, with the range being 61.6% to 30.1%.
Benchmark states selected through a “suitability analysis”

Climate, infrastructure, demographics and funding used to ID similar states

<table>
<thead>
<tr>
<th></th>
<th>Weight</th>
<th>Demographic Score</th>
<th>Climate Score</th>
<th>Infrastructure Score</th>
<th>Funding Score</th>
<th>Total Weighted Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utah</strong></td>
<td>0.25</td>
<td>0.36</td>
<td>0.50</td>
<td>0.46</td>
<td>0.06</td>
<td>0.34</td>
</tr>
<tr>
<td><strong>Massachusetts</strong></td>
<td>0.25</td>
<td>0.34</td>
<td>0.18</td>
<td>0.37</td>
<td>0.54</td>
<td>0.36</td>
</tr>
<tr>
<td><strong>Maryland</strong></td>
<td>0.25</td>
<td>0.36</td>
<td>0.28</td>
<td>0.57</td>
<td>0.36</td>
<td>0.39</td>
</tr>
<tr>
<td><strong>Colorado</strong></td>
<td>0.25</td>
<td>0.45</td>
<td>0.50</td>
<td>0.55</td>
<td>0.36</td>
<td>0.46</td>
</tr>
<tr>
<td><strong>Oregon</strong></td>
<td>0.25</td>
<td>0.51</td>
<td>0.78</td>
<td>0.40</td>
<td>0.24</td>
<td>0.48</td>
</tr>
<tr>
<td><strong>Delaware</strong></td>
<td>0.25</td>
<td>0.52</td>
<td>0.36</td>
<td>0.54</td>
<td>0.64</td>
<td>0.52</td>
</tr>
<tr>
<td><strong>Idaho</strong></td>
<td>0.25</td>
<td>1.00</td>
<td>0.24</td>
<td>0.44</td>
<td>0.51</td>
<td>0.55</td>
</tr>
<tr>
<td><strong>Rhode Island</strong></td>
<td>0.25</td>
<td>0.37</td>
<td>0.15</td>
<td>0.79</td>
<td>0.90</td>
<td>0.55</td>
</tr>
<tr>
<td><strong>Indiana</strong></td>
<td>0.25</td>
<td>0.88</td>
<td>0.36</td>
<td>0.80</td>
<td>0.27</td>
<td>0.58</td>
</tr>
<tr>
<td><strong>Nevada</strong></td>
<td>0.25</td>
<td>0.54</td>
<td>1.09</td>
<td>0.53</td>
<td>0.15</td>
<td>0.58</td>
</tr>
<tr>
<td><strong>New Jersey</strong></td>
<td>0.25</td>
<td>0.62</td>
<td>0.21</td>
<td>1.03</td>
<td>0.51</td>
<td>0.59</td>
</tr>
<tr>
<td><strong>Washington</strong></td>
<td>0.25</td>
<td>0.52</td>
<td>1.00</td>
<td>0.50</td>
<td>0.47</td>
<td>0.62</td>
</tr>
</tbody>
</table>
## Comparison States

<table>
<thead>
<tr>
<th>Key Factors</th>
<th>CT</th>
<th>Benchmark States</th>
<th>Best Practice States</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MD</td>
<td>MA</td>
</tr>
<tr>
<td>Total Population (in 1000s)</td>
<td>3,406</td>
<td>5,296</td>
<td>6,349</td>
</tr>
<tr>
<td>Population Density (per sq. mi.)</td>
<td>703</td>
<td>542</td>
<td>810</td>
</tr>
<tr>
<td>Rural/Urban Population Ratio</td>
<td>0.14</td>
<td>0.16</td>
<td>0.09</td>
</tr>
<tr>
<td>% Population Below Poverty Line</td>
<td>9</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Miles of Road (State owned)</td>
<td>3,717</td>
<td>5,148</td>
<td>2,834</td>
</tr>
<tr>
<td>Number of Bridges (State owned)</td>
<td>2,800</td>
<td>2,846</td>
<td>3,464</td>
</tr>
<tr>
<td>% Roads in Poor Condition</td>
<td>4</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>% Bridges Structurally Deficient</td>
<td>9</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Bus Route Mileage</td>
<td>3,436</td>
<td>6,131</td>
<td>6,196</td>
</tr>
</tbody>
</table>

**Note 1:** Demographic Data Source: User generated tables from the US Census Bureau’s American Factfinder Website, [http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml](http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml)

State Transportation Revenue Sources (2009)

Benchmark States                          Best Practice States

- Local Funding
- Other State Funding
- State Motor Vehicle Tax
- State Motor Fuel Tax
- Tolls
- Bond Proceeds
- Federal Funding

Percent of State Revenue

State Transportation Revenue Sources (2009)
State DOT Disbursements (2009)

- Local Government grants
- Bond Retirement
- Interest
- Administration
- Maintenance
- Capital Expenditures

Benchmark States:
- CT
- MD
- MA
- NJ

Best Practice States:
- MO
- VT
- WA
Percentage of State Revenues from Federal Sources

Benchmark States (1992-2009)

Year

Percentage Revenues from Federal Sources

Percentage of State Revenues from Federal Sources

*Best Practice States (1992-2009)*


States:
- CT
- MO
- VT
- WA
Ratio of Federal Funding to Capital Expenditures

Benchmark States (1992-2009)
Ratio of Federal Funding to Capital Expenditures

*Best Practice States (1992-2009)*

Federal Fiscal Year

CT

MO

VT

WA
Focus Group Sessions

The sessions were designed to focus on three primary topics:

1. Existing linkage between LRTP and capital programming
2. Funding uncertainty and capital programming impacts
3. Metrics and measures for efficient capital programming
Focus Group Session Takeaways

- ConnDOT’s current capital plan and recently developed performance measures are not perfectly aligned with the department’s current LRTP.

- The goals of the LRTP are not given equal priority – consensus was that currently preservation and maintenance are given highest priority.

- Uncertainties in funding and constrained budgets are changing ConnDOT’s planning process.

- Deliverability concerns play a major role in project selection and capital programming.
  - ConnDOT can leverage existing monthly updates.
  - Very quantitative tools also exist to gauge the risk of projects being delayed.
**ConnDOT** is moving toward a process that has the Capital Plan playing an important role linking long-range planning to capital programming.
## State Survey

### Selected Survey Questions

(See Note)

<table>
<thead>
<tr>
<th>Question</th>
<th>CT</th>
<th>Benchmark States</th>
<th>Best Practice States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(a) Does your state maintain a document or process within which short-term capital programming projects are planned in detail?</td>
<td>Yes</td>
<td>Yes, No, Yes</td>
<td>Yes, Yes, Yes</td>
</tr>
<tr>
<td>1(b) Does this document/process identify the funding amounts and sources of funding for the projects?</td>
<td>Yes</td>
<td>Yes, - Yes</td>
<td>Yes, Yes, Yes</td>
</tr>
<tr>
<td>1(c(i)) Is there any specific link between the capital programming document/process and the high-level goals of the long-range transportation plan?</td>
<td>No, Yes, required by state law</td>
<td>Yes, Capital Investment Strategy</td>
<td>Yes, required by federal law, Yes, VTrans LRT Business Plan</td>
</tr>
<tr>
<td>1(c(ii)) Is there any specific link between the capital program and performance metrics?</td>
<td>No</td>
<td>Yes, No, Yes</td>
<td>Yes, Yes, Yes</td>
</tr>
<tr>
<td>3(a) Identify, or provide links to the performance measures used and maintained by your state?</td>
<td>Refer to ConnDOT Website, Attainment Report</td>
<td>- NJ Centerline</td>
<td>MO Tracker, See Table A.1, WA Gray notebook</td>
</tr>
</tbody>
</table>

Note: Table does not include all survey questions. See Appendix A for state responses to all questions.
State Survey Summary

- A dependence on federal funds does not inherently limit the ability to link long-range plans and capital programming
  - Though all states interviewed indicated a desire to lessen dependence on federal funds

- Incorporating customer satisfaction in decision making is important
  - Missouri conducts annual survey of citizens using a consultant, and survey of planning partners internally

- All of the states surveyed are currently looking for ways to utilize their limited funding resources more efficiently
  - New revenue sources
  - Innovative contracting techniques
Study Recommendations

- Establish performance measures to track project deliverability and innovative contracting methods
  - Cause(s) of delay for project delivery
  - Variance between project budget and actual cost
  - Measures for projects undertaken using alternative innovative contracting methodologies

- Under-program (under-commit) the capital project plan while maintaining a bin of fully-designed, non-programmed projects

- Develop and maintain a Transportation Investment Dashboard to monitor Connecticut’s transportation investment performance as compared to that of selected states

- Administer periodically a customer survey to provide insight into user preferences and to gauge customer satisfaction
Capital Program Investment Dashboard: Connecticut


<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Latest Reporting Period</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities per 100 M VMT</td>
<td>0.71 (CY 2009)</td>
<td>Improving</td>
</tr>
<tr>
<td>Fatalities per 100,000 population</td>
<td>6.34 (CY 2009)</td>
<td>Improving</td>
</tr>
<tr>
<td>Pavements with Good Ride Quality (% with IRI &lt; 95)</td>
<td>20 (CY 2010)</td>
<td>No Change</td>
</tr>
<tr>
<td>State Roadway Bridges in Good Condition (%)</td>
<td>32 (CY 2010)</td>
<td>Improving</td>
</tr>
<tr>
<td>Road Network with Traffic Volumes &gt; Capacity (%)</td>
<td>8.67 (CY 2010)</td>
<td>Improving</td>
</tr>
<tr>
<td>Rail Passenger Trips</td>
<td>9,847,219 (CY 2011-Q3)</td>
<td>Declining</td>
</tr>
<tr>
<td>Bus Passenger Trips</td>
<td>6,856,175 (CY 2011-Q3)</td>
<td>Improving</td>
</tr>
</tbody>
</table>

Rural to Urban Ratio (2010) | 0.14
Miles of State Owned Roads (2010) | 3,717
Number of State Owned Bridges (2010) | 2,800
Total Expenditures ($M) (2009) | 1,370
Capital Expenditures ($M) (2009) | 554
Approx. Capital Exp. from State (%) (2012) | 40.7
Approx. Capital Exp. on Transit (%) (2012) | 45.8
Summary Dashboard (Highways and Bridges)
Benchmark and Best Practice States

State Transportation Revenue Sources (2009)

Benchmark States
Best Practice States

Percent of State Revenue

State DOT Disbursements (2009)

Benchmark States
Best Practice States

Percent of State DOT Disbursements

Ratio of Federal Funding to Capital Expenditures (1992-2009)
Concluding Remarks

- Recommendations provide a framework for continually reviewing and assessing ConnDOT’s capital planning/programming process and project deliverability performance, as well as linkage with the goals of the state’s LRTP.

- Dashboard performance measures should align with LRTP and the Transportation Infrastructure Capital Plan (TICP) – providing formal linkage and meaningful tracking.

- Involving the public in this process requires increasing public awareness and measuring customer satisfaction.

- Multi-state collaboration of benchmark and best practice states could provide the department with opportunities to share its experience and to learn about innovative solutions to improve the efficiency and effectiveness of its capital program investments.
Thank You

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To access the study report online go to www.ctcase.org