Beyond Highway Construction

Alternative Uses for Transportation Funding from America's Recovery and Reinvestment Act

National Conference of State Legislatures

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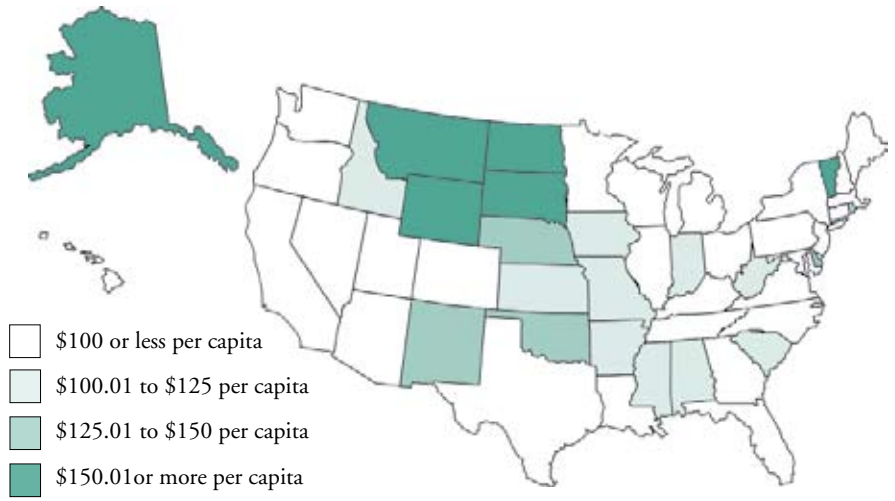
President Obama signed into law the **American Recovery and Reinvestment Act of 2009** (ARRA) on Tuesday, Feb. 17, 2009. An effort to blunt the effects of the current economic crisis, the act will constitute one of the largest single government expenditures in U.S. history, providing $789 billion in supplemental program funding, tax modifications, individual assistance and infrastructure investments.

States certainly can use the help as they face rapidly worsening fiscal problems. The cumulative gap in state budgets has risen to $47.4 billion for FY 2009, and the estimated shortfall for FY 2010 is $84.3 billion. Declining gas tax revenues mean that transportation investments have been especially hard hit, already forcing two dozen states to make or consider transportation program cuts in 2009.

The ARRA provides a significant transportation spending component. The "highway infrastructure investment" portion of the legislation provides a total of $27.5 billion for highway and bridge projects, as well as other surface transportation, passenger and freight rail, and port infrastructure investments. After set-asides, states have been apportioned $26.66 billion to spend over the next two years, of which 30 percent must be suballocated to local governments. (See Figure 1 on page 2 for a breakdown of the distribution of these funds.)

The "highway infrastructure investment" funding is being appropriated to states based on existing formulas: 50 percent by the surface transportation program (STP) formula in the current federal surface transportation act (SAFETEA-LU), and 50 percent according to the same ratio as the obligation limitation for fiscal year 2008. Based on these formulas, each state will receive between $121.8 million (Delaware) and $2.57 billion (California). Per capita apportionment per state is shown in Figure 2.[1]

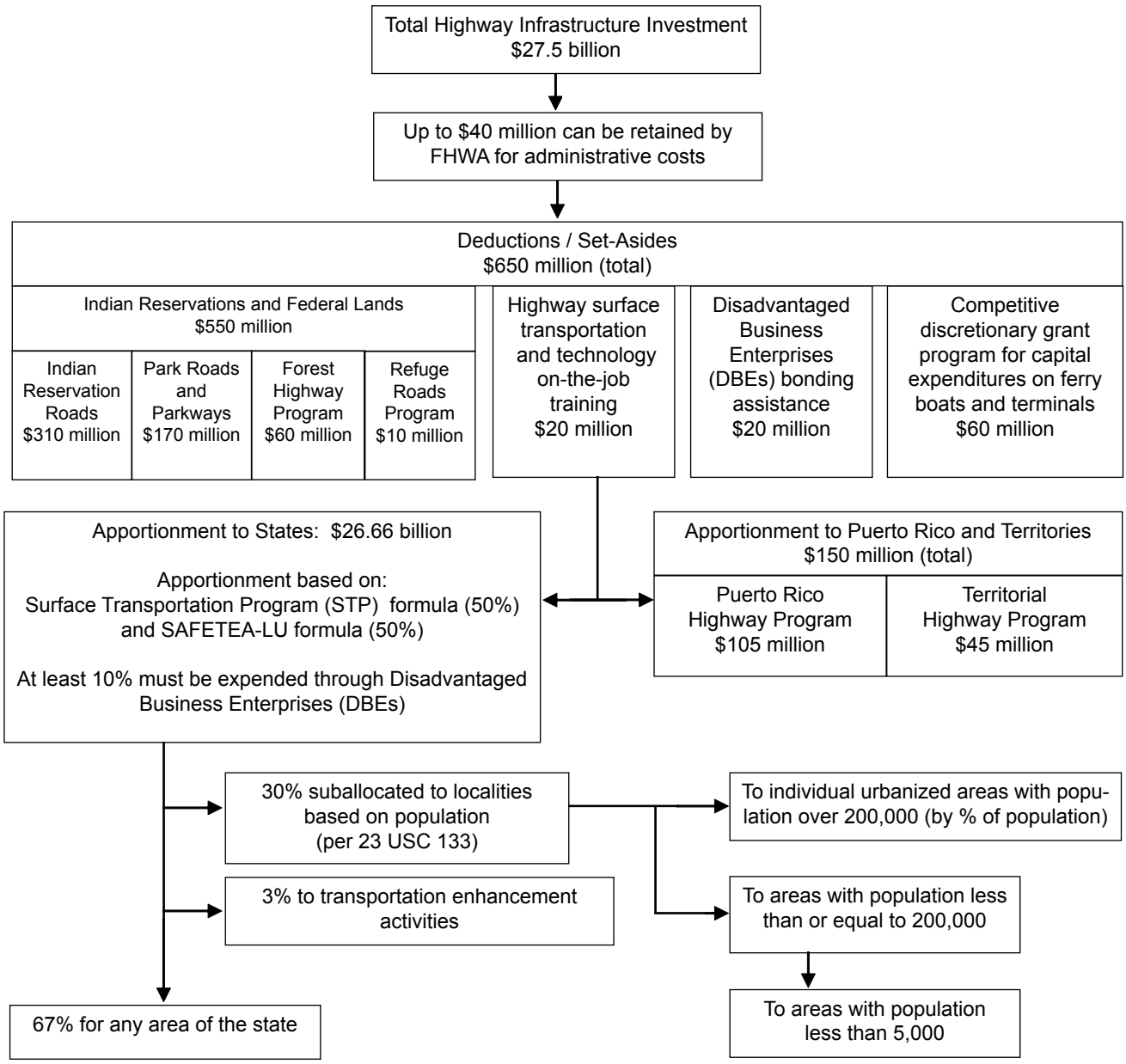
Figure 2. Per Capita Highway Infrastructure Investment Funding by State



Sources: Federal Highway Administration, 2009; U.S. Census Bureau, 2008.

The act also contains a "use it or lose it" provision; states must obligate half the money by 11:59 p.m. on June 29, 2009 (120 days after apportionment) and the rest by March 2, 2010 (one year after apportionment) or it will be withdrawn and redistributed to other states. Funding priority for the money must be given to projects

Figure 1. Distribution of ARRA-Apportioned Highway Infrastructure Investment Funds



Source: Federal Highway Administration, 2009; National Conference of State Legislatures, 2009.

that can be completed within three years, are in economically distressed areas, and maximize job creation and economic benefit. Priority also must be given to ready-to-go ("shovel-ready") projects—those for which planning is complete and approvals are secured, and on which work could start immediately.

The ARRA also establishes a new competitive grant program that provides supplemental, discretionary grants for a national surface transportation system. This program has been allocated a total of $1.5 billion, which will remain available through September 2011; no more than 20 percent can be granted to a single state. Up to $200 million of this funding can be used for projects that are eligible for federal credit assistance through the Transportation Infrastructure Finance and Innovation Act (TIFIA).

Grants awarded from this program will range from $20 million to $300 million each (although the minimum may be waived for projects in smaller cities, regions or states), and priority will be given to projects that can be completed within three years of enactment. These grants, available to state and local governments or transit agencies, can be used for a range of projects that focus on highways and bridges, passenger and freight rail, public transportation or port infrastructure. Criteria for the grants will be published on or before May 18, 2009, and applications are due no later than 180 days after that.

Since ARRA funds cannot be used simply to replace state funding for previously scheduled transportation projects, they cannot fill immediate state budget shortfalls. Still, the funds will allow states to do much-needed repairs, upgrades, and construction that otherwise would be further deferred or unfunded altogether. It can also be used to accelerate or improve ongoing projects.

The Case for ITS

The ARRA funds can be used for a wide range of transportation investments. Although traditional road and bridge construction projects are key elements of improving the nation's highways, states can go beyond construction by funding innovative, cost-effective alternatives that focus on enhancing the capacity and performance of existing infrastructure. Investments in operations management and the integration of advanced technologies (known as "Intelligent Transportation Systems," or ITS) effectively reduce congestion and meet stimulus objectives because they are quick to implement, have high benefit-cost ratios, and provide short- and long-term benefits. Further, these kinds of projects create jobs, and about 50 percent of spending goes to direct labor, compared to 20 percent on new highway construction.

Investment options include traffic signal upgrades and optimization, traffic adaptive signal control, ramp metering, dynamic message signs, parking management systems, high-occupancy vehicle (HOV) and high-occupancy toll (HOT) lanes, real-time traffic monitoring and information delivery, electronic tolling systems such as open road tolling (ORT), and traffic incident management programs. These projects can significantly improve transportation flow, mitigate congestion, and reduce fuel consumption and emissions with less disruption than full-scale construction. Figure 3 identifies and describes several intelligent transportation systems (ITS) projects that can be stand-alone projects or incorporated as elements of other projects. Included is benefit-cost information and whether positive effects on safety, mobility or energy/environment are estimated to be high, medium or low.

Figure 3. Intelligent Transportation Systems (ITS) Investments

Category/Project	Description	Benefit-Cost Ratio or Other Metrics	Safety	Mobility	Energy/ Environment
Traffic Signal Optimization/ Retiming	Proactively designs, operates, maintains and coordinates traffic signals to reduce congestion and improve traffic flow.	17:1 to 62:1	High	High	High
Traffic Adaptive Signal Control Systems	Adjust the length of traffic signal phases based on real-time information about traffic conditions, demand and system capacity.	Improved travel time 6% to 11%	Medium	High	High
Ramp Metering Systems	Use traffic signals at on-ramps to control the rate of vehicles entering the freeway. Signals can be set for different rates, or can use real-time data.	15:1	Low	High	Medium
Traveler Information/ Dynamic Message Signs	Provide real-time, traffic-related information to drivers and are used for traffic warning, regulation, routing and management.	3% decrease in crashes	Low	High	Low
Parking Management Systems	Monitor the availability of parking and disseminate the information to drivers, reducing traffic congestion associated with looking for parking spaces.	Travel times reduced by 5% to 9%	Medium	Medium	Low
High-Occupancy Toll (HOT)/ High-Occupancy Vehicle (HOV) Facilities	HOV facilities manage traffic volume by restricting some lanes to transit vehicles, vanpools and carpools; HOT facilities use electronic toll systems to charge single-occupancy vehicles for use of an HOV lane (which remains free of charge for high-occupancy vehicles).	23% would pay $2 to save 10 minutes 59% would pay $2 to save 20 minutes	Medium	High	Medium
Road Weather Information Systems (RWIS)	Mitigate effects of weather conditions by using technology to detect and share information about hazardous road conditions.	2:1 to 10:1	High	High	Medium
Electronic Toll Systems	Use technology such as open road tolling (ORT) to process toll transactions at freeway speeds.	2:1 to 3:1 ORT reduces crash rates by up to 49% and increases speed by up to 57%	Medium ORT: High	High	High
Traffic Incident Management	Uses a variety of ITS technologies to reduce congestion and secondary accidents by successfully detecting, managing and clearing traffic incidents and providing information to travelers.	Incident duration reduced 30% to 40%	High	High	High

Figure 3. Intelligent Transportation Systems (ITS) Investments (continued)

Category/Project	Description	Benefit-Cost Ratio or Other Metrics	Safety	Mobility	Energy/ Environment
Surveillance/ Detection	Use sensors, cameras and other technologies to monitor traffic flow and detect incidents for the purpose of arterial, freeway or incident management.	6:1	High	Medium	Medium
Electronic Border Crossing Systems	Enhance communication between commercial vehicles and regulatory agencies—especially during interstate freight movement—using information systems, networks, weigh-in-motion sensor systems, brake testing equipment, and components of the intelligent commercial vehicle.	85:1 to 718:1	Medium	Medium	Medium
Commercial Vehicle Information System and Networks (CVISN) Program	Uses technologies such as electronic credentialing and electronic screening to allow states, motor carriers and stakeholders to electronically conduct business transactions and safety checks.	3:1 to 5:1 Electronic credentialing: 1:1 to 50:1 Electronic screening: 2:1 to 12:1	Medium	Medium	Medium
Work Zone Management Systems	Use a variety of technologies to mitigate the effects of work zones. Applications can include "smart work zones," traveler information systems, dynamic lane merge systems, variable speed limit systems, or portable traffic management systems that include surveillance and detection components. Technology also can be used to manage traffic along detour routes during full road closures due to reconstruction.	2:1 to 42:1 Can reduce total delay by 41% to 75%	High	Medium	Medium

Source: U.S. Department of Transportation, Intelligent Transportation Systems Joint Program Office, 2009.

ITS and operations investments can be stand-alone projects or incorporated as elements within new infrastructure projects. They also can be used to mitigate the effects on traffic of work zones, which will be a concern as new recovery-funded construction and renovation get under way—not only on highways and bridges, but also on hospitals, educational facilities, broadband networks, transit and rail systems, and other public works.

State Action

Innovative uses of ARRA funding. To help expedite selected projects and meet the obligation deadlines once funding became available, many states were identifying possible shovel-ready projects long before the act was signed. Some states—such as Arizona, Kansas, Maryland, Michigan, New York, North Carolina, Pennsylvania, Rhode Island, Texas and Washington—have already included capacity-enhancing ITS investments on their lists,

but most proposed projects nationwide are for traditional road and bridge construction. As project selection moves forward, states can continue to consider alternative congestion management techniques as candidates for ARRA funds—for both highway infrastructure money and the competitive grant program.

Budgeting for ITS. Despite funding shortfalls, at least seven states—Alaska, Hawaii, Massachusetts, Michigan, New Jersey, Ohio and Pennsylvania—have included or are considering intelligent transportation systems in this year's expenditures. States can continue to consider innovative traffic management solutions in their ongoing transportation programs.

Alternative transportation funding strategies. Although this one-time stimulus can help fund much-needed transportation projects in the short-term, it cannot remedy structural deficit problems, nor can it fill the funding gap as states continue to respond to the recession. States are continuing to consider alternative transportation funding strategies such as raising the gas tax, using general sales tax revenue, continuing tolls, implementing congestion pricing, creating user fees such as the Vehicle Miles Traveled fee (VMT), and entering into public-private partnerships.

Federal Action

Reauthorization. SAFETEA-LU, the current federal surface transportation act—which provided $286.5 billion for highways, public transportation, and highway safety programs for fiscal years 2004 through 2009—expires Sept. 30, 2009. If it is not reauthorized with sufficient additional funding, the Highway Trust Fund is likely to run out of money soon after that date, if not before. Some have expressed concerns that the large transportation component in the stimulus plan could ease the pressure to complete the new authorization on time. For now, Representative James L. Oberstar, chair of the House Transportation and Infrastructure Committee, has stated his goal is to have a reauthorization measure on the floor by the end of May 2009. While recovery funds are expected to deal mainly with deferred maintenance, the authorization bill will address new capacity.

Note

1. Total apportionments per state are available at www.fhwa.dot.gov/legsregs/directives/notices/n4510705.htm. For per capita apportionment numbers, contact Jaime Rall at (303) 364-7700, ext. 1417, or jaime.rall@ncsl.org.

Resources

National Conference of State Legislatures. "Transportation Funding Outlook 2009." *LegisBrief* 17, no. 10. Denver: NCSL, 2009.

National Conference of State Legislatures. *Update on State Budget Gaps: FY 2009 and FY 2010.* Denver: NCSL, 2009; www.ncsl.org/programs/fiscal/StateBudgetUpdate0109.htm.

U.S. Department of Transportation, Intelligent Transportation Systems Joint Program Office. *Investment Opportunities for Managing Transportation Performance through Technology.* Washington, D.C.: USDOT, 2009; www.ntoctalks.com/articles/ITS_StimulusSummaryv12.pdf?PHPSESSID=de0d84abbb06ad817a93bcef273a4da3.

U.S. Department of Transportation, Federal Highway Administration. *American Recovery and Reinvestment Act of 2009 Implementing Guidance.* Washington, D.C.: FHWA, 2009; http://www.fhwa.dot.gov/economicrecovery/guidance.htm.

Contacts for More Information

American Association of State Highway and Transportation Officials (AASHTO)
www.transportation.org

Federal Highway Administration Economic Recovery Web Page
www.fhwa.dot.gov/economicrecovery/index.htm

Federal Highway Administration Office of Operations
ops.fhwa.dot.gov

NCSL Transportation Web Page
www.ncsl.org/programs/transportation/transp2.htm

NCSL Economic Stimulus Web Page
www.ncsl.org/statefed/2009economicstimulus.htm#Transportation

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