

Raising the Grade in Massachusetts

2013 PROGRESS REPORT

In March of 2013, the American Society of Civil Engineers (ASCE) issued its *2013 Report Card for America's Infrastructure*. The Report Card depicts the condition and performance of the nation's infrastructure in the familiar form of a school report card—assigning letter grades that are based on physical condition and needed fiscal investments for improvement. Since ASCE's last Report Card in 2009, the overall cumulative grade improved, but only from a D to a D+, which is still unacceptable.

The 2013 Report Card shows that where investments were made in both the public and private sectors, grades improved and the Report Card highlights several success stories. The Report Card also contains a detailed breakdown of infrastructure needs for each state. To see the 2013 ASCE Report Card or to download the new app, visit www.infrastructurereportcard.org.

ASCE determined that \$3.6 trillion is needed by 2020 to bring the nation's infrastructure to an acceptable level, leaving a funding shortfall of \$1.6 trillion. In response to ASCE's assessment, the Boston Society of Civil Engineers Section of ASCE (BSCES) developed six Action Steps to *Raise the Grade in Massachusetts*. Positive steps to improve infrastructure in Massachusetts have been taken by state agencies, regional authorities, municipalities and the legislature, such as dedicating \$3 billion for the Accelerated Bridge Program and increased investments in water infrastructure. Thanks to those efforts, progress is being made in some areas, but there is still much more that needs to be done. Investing in the Commonwealth's infrastructure will create new jobs, ensure our economic prosperity, protect the environment and, most importantly, protect the health and safety of our citizens.

The following is a Progress Report on the BSCES Action Steps that were developed in 2012:

Infrastructure Maintenance and Sustainability	MINIMAL	FAIR / GOOD	VERY GOOD	EXCELLENT
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The need to design, construct and finance our infrastructure in a more sustainable way is clear. MassDOT has launched GreenDOT, a comprehensive sustainability initiative that will make MassDOT a national leader in "greening" the state's transportation system. The City of Boston's Greenovate program encourages residents and businesses to reduce greenhouse gas emissions. However, maintenance funding levels are still too low.

Dams	MINIMAL	FAIR	GOOD	VERY GOOD	EXCELLENT
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The Massachusetts Legislature passed important Dam legislation last year and in January, 2013, Governor Patrick signed into law, *An Act Further Regulating Dam Safety, Repair and Removal* (Chapter 448 of the Acts of 2012). The new law strengthens dam safety regulations and provides funding for dam repair and removal, as well as funding to address seawalls, but the funding levels still do not meet the need.

Transportation	MINIMAL	FAIR / GOOD	VERY GOOD	EXCELLENT
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Massachusetts roads, bridges, and transit systems have been neglected for many years due to insufficient funding. However, recent initiatives like the Accelerated Bridge Program and new transportation funding efforts in the legislature that dedicate new revenue sources for transportation infrastructure are positive steps that will help the economy and address safety concerns. These positive efforts must be sustained.

Water Infrastructure	MINIMAL	FAIR	GOOD	VERY GOOD	EXCELLENT
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The American Recovery and Reinvestment Act of 2009 (ARRA) increased much needed investment in water infrastructure in Massachusetts, but the program has ended and investments could return to unacceptable levels again. In 2012, the Massachusetts Water Infrastructure Finance Commission released its report: *Toward Financial Sustainability*, which states a total water infrastructure funding gap of \$39 billion over 20 years.

Energy	MINIMAL	FAIR / GOOD	VERY GOOD	EXCELLENT
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Power generation and transmission capacity have been improving over the past decade and new sources of domestic energy (especially renewable sources) are being developed. The Department of Public Utilities (DPU) is forming a Working Group to address DPU's grid modernization vision and a discussion of electric distribution companies' current and planned grid modernization efforts, such as smart grid.

Qualification Based Selection	MINIMAL	FAIR	GOOD	VERY GOOD	EXCELLENT
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Engineering costs account for 1% of the total life-cycle cost of a project and better design leads to lower life-cycle costs. Still many agencies and municipalities continue to procure professional design services using the lowest bid, which means the best design may not be implemented.

What Kind of Commonwealth Do We Want to Live In?

One with adequately funded infrastructure that ensures a safe and clean environment, economic growth and competitiveness, and a good quality of life? Or, one with a higher cost of living, unsafe transportation and water systems, increased pollution, more delays, increased aggravation, and less productivity?

Raising the Grade in Massachusetts Action Steps

In order to succeed in **Raising the Grade in Massachusetts**, actions must be taken to change the current mindset in the planning, design, and funding of our infrastructure. Undertaking the action steps outlined below is the responsibility of engineers, constructors, policy makers, and users of the Commonwealth's infrastructure networks.

Infrastructure Maintenance and Sustainability

- Utilize life-cycle cost and benefit-cost analyses during project planning
- Consider future maintenance costs when planning/funding projects
- Establish dedicated maintenance accounts for infrastructure projects
- Institute proactive asset management programs
- Account for future climate change in design of new projects
- Develop infrastructure networks utilizing a holistic approach that accounts for regional impacts and needs

Dams

- Support passage of Senate Bill 1985 in order to implement a low-interest loan program for dam rehabilitation/repair/removal
- Strengthen dam safety regulations
- Streamline the process for the removal of obsolete, unsafe dams which pose a threat to public safety

Transportation

- Develop a comprehensive cost savings, efficiencies, and new revenue sources to close the funding gap cited in the 2007 Transportation Finance Commission study
- Explore all potential sources of revenue, including a gas tax increase, tolls, VMT, fare increases, Public-Private Partnerships and a State Infrastructure Bank
- Address the MBTA funding deficit by considering impacts to other transportation systems and the state's economy from inadequately funding the "T"
- Develop a comprehensive regional, multi-modal transportation plan

Water Infrastructure

- Adopt the recommendations of the 2012 Water Infrastructure Finance Commission report and develop new sources of revenue
- Increase funding for the Massachusetts Drinking Water State Revolving Fund (SRF) and the Massachusetts Water Pollution Abatement Trust (MWPAT)
- Dedicate funds for water conservation and source water protection initiatives, and encourage Enterprise accounts for communities that don't have them
- Make engineering costs eligible for SRF funding
- Implement the USEPA's Integrated Planning Framework approach to ensure compliance with NPDES stormwater and clean water requirements in a cost-effective, sustainable manner
- Encourage watershed-based water infrastructure solutions

Energy

- Develop additional redundancy within the transmission grid
- Increase routine maintenance required to increase reliability and to reduce weather related failures
- Increase development of local renewable energy sources

Qualification Based Selection

- Require Qualification Based Selection (QBS) of design professionals for all state and municipal funded engineering projects
- Educate state and local Procurement offices about the long term benefits of QBS



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