Contrary to what many hoped, the stimulus package won’t solve our nation’s infrastructure woes, but it may pave the way to a better future.

The $787 billion bill signed by President Obama on Feb. 17, 2009, provides $27.5 billion for highway construction and $18.8 billion for clean water, flood control and environmental restoration investments.

Sounds like — and is — a lot of money, but put in perspective of the need for improvements, it barely scratches the surface.

In January 2008, the National Surface Transportation Policy and Revenue Study Commission reported that conditions called for an annual investment of $225 billion in transportation infrastructure.

And in terms of infrastructure needs, crumbling bridges and smog-generating traffic jams are just the tip of the iceberg.

The American Society of Civil Engineers (ASCE) gave the nation’s infrastructure a grade of D on its 2009 annual report card.

The ASCE estimates that $2.2 trillion in repairs are needed in the next five years for roads, bridges, water infrastructure and other civil works.

Waterworks Crisis

In early January 2009, a 66-inch underground water main in Potomac, Md., suddenly burst, stranding motorists in a nearly 150,000-gallon-per-minute torrent. Such incidents are far from rare — and, experts say, are increasing.

According to the U.S. Environmental Protection Agency’s Steve Allbee, Tom Curtis of the American Water Works Association and other experts, lack of investment in the nation’s water, wastewater and stormwater infrastructure is reaching crisis levels.

Burns & McDonnell helped the city of Kansas City, Mo., develop an overflow control plan that includes green solutions on an unprecedented scale. (See story, page 12.)

But for Kansas City and hundreds of cities across the nation, the challenge of paying for the unfunded federal mandate regarding overflows is daunting. All infrastructure has to be funded, either by taxes or by user fees, Foil says. “It doesn’t just magically appear. The fundamental issue is, how are we going to pay for it?”

The debate over allocating stimulus funds should spark a national discussion about infrastructure. The decisions we make in the next 10 to 15 years will have a profound effect on future generations. What happens to public infrastructure after the stimulus funds are gone?

At the Ready

After months of listing shovel-ready projects that lacked only the funding to go forward, transportation officials expressed disappointment in the funds allocated for roads and bridges. With highway funds in short supply for years as a federal highway bill was repeatedly delayed, many planned projects were shelved — and some engineering firms trimmed their transportation staffs. In contrast, Burns & McDonnell expanded its ranks of transportation specialists.

Burns & McDonnell managed 51 separate contracts totaling more than $117 million for reconstruction of the Chicago’s Dan Ryan Expressway.
While the stimulus funds won’t pay for infrastructure renewal on the scale that many anticipated, fast-tracking the projects that are funded will be important.

**Managing for Cost and Schedule Success**

Burns & McDonnell Associate Vice President Mike Folta has managed projects creating solutions for urban arterials in the Chicago area, including upgrades of the Dan Ryan Expressway and the intersection of Roosevelt and Clark. Performance on those and other roadway projects netted an Illinois Department of Transportation Exceptional Service Award for Burns & McDonnell — and a growing roster of successful transportation projects, including upgrades to Chicago Metra facilities.

Folta also provided program management services to the Illinois Tollway for its Open Road Tolling Program, a successful, multi-project effort to integrate technology and relieve congestion. He understands the challenges project managers face working in a congested urban area, including coordinating utility relocations and recouping traffic during construction. As a program manager, he also understands the big picture.

"Part of a program manager’s job is to know and understand the specific market and the capacity of available contracting resources," Folta says. "You have to be aware of the volume of work and how it can drive up the costs. When a large program hits the market, it can exceed the capacity of the contracting pool. Sometimes you have to decide whether you are going to pay higher costs to meet the schedule."

**Program Management for Power Delivery**

Burns & McDonnell was the first to bring program management to the power delivery industry as program manager for Northeast Utilities’ $1.1 billion Middletown Norwalk bulk transmission project. End-to-end responsibilities included community relations, safety, scheduling, budgeting, procurement, discipline engineering, environmental field monitoring, document control, and overall and construction management for the addition of 69 miles of new 345 kV and 115 kV transmission line, including 24 miles of underground cable along a coastal highway in southwest Connecticut.

The project was completed in 2008, a year ahead of schedule and $100 million under budget. The Burns & McDonnell project team found a way to meet every challenge — including development of a tool, OneTouchPM, to organize multiple layers of information related to each segment of construction. This innovation made it possible to demonstrate extraordinary accountability to landowners whose land the project crossed. (For more, see page 15.)

**GREEN INFRASTRUCTURE FOR COMBINED SEWER OVERFLOW CONTROL**

Cities throughout the United States are being required to submit plans to the Environmental Protection Agency for reducing combined sewer overflows. Burns & McDonnell helped the city of Kansas City, Mo., submit a plan that incorporates green infrastructure on an unprecedented scale.

Based on innovative watershed management practices, the proposed $2.1 billion, 25-year overflow control plan focuses on efforts to restore the natural hydrologic cycle before heavy investment in more conventional structural controls.

**Measure and Evaluate**

One of the plan’s first steps is installing additional flow meters and level sensors in both separate sanitary sewers and combined stormwater/wastewater sewers. As the effectiveness of improvements is measured and evaluated, the results will be used to guide implementation of future steps.

The plan includes funding for a pilot project in the city’s Marlborough neighborhood, an area of combined stormwater/sanitary sewers in the Middle Blue River Basin. The 100-acre pilot will test the effectiveness of green infrastructure such as rain gardens, bioswales planted with native plants, modified curb inlets, permeable pavement and green roofs at reducing well weather flows in the combined sewers.

**More to Come**

The 100-acre pilot is a small part of the area in and around Marlborough where the use of green infrastructure looks very promising,” says Burns & McDonnell Associate Vice President Gailen Miller, who helped develop the overflow control plan. ‘Depending on pilot results, green infrastructure done could be used to achieve combined sewer overflow performance goals in a 744-acre area of the basin — the largest implementation of its kind to date.”

Burns & McDonnell is also testing the use of green infrastructure components at its world headquarters campus.