



TOLLING. MOVING SMARTER.

*Operations and Maintenance:
Charting the Future*

**2013 Operations and Maintenance
Workshop**

Thematic Report

**Portland, Maine
May 20-21, 2013**

Table of Contents

Executive Summary	ii
Introduction.....	1
Protecting Tollway Assets from Severe Weather.....	1
The Outlook: A Changing Climate	1
The Response: Preparing for the Next Storm	3
Roadway Safety and Incident Management.....	6
Roadway Operations and Maintenance	7
The Year Ahead	9

Executive Summary

Severe weather preparedness, safety and incident management, and routine operations and maintenance were the main focal points of IBTTA's *2013 Operations and Maintenance Workshop*, May 20-21, 2013 in Portland, Maine.

IBTTA President Rob Horr opened the conference by acknowledging the central role of front-line operations and maintenance staff in delivering the efficient, safe, reliable facilities on which tolling operations depend.

"As a bridge operator, I have a special kinship with the folks in this room," said Horr, Executive Director of the Thousand Islands Bridge Authority. More than anyone else in the world, professionals engaged in maintenance and roadway operations "understand the effects of deferred maintenance, and you know how challenging it is to recover from those effects."

Major sessions during the workshop focused on severe weather, climate change, and the day-to-day implications for tolling operations.

Maine State Climatologist Dr. George Jacobson noted that atmospheric concentrations of carbon dioxide (CO₂) ranged between 200 and 300 parts per million (ppm) for a couple of million years, but have been increasing since the dawn of the Industrial Revolution and reached 400 earlier in May. "The relationship between the emissions, the concentrations in the atmosphere, and ourselves is quite clear," Jacobson said. CO₂ has a long life cycle as a greenhouse gas, leading to changes in boundary conditions like ocean and land temperatures, sea ice, and the reflective or absorptive capacity of land surfaces that trigger significant shifts in local weather patterns.

He said the coastal United States could see sea level rise of one to two metres by 2100, and a warming ocean will lead to increased hurricane activity for New England.

Ed Regan of CDM Smith said any serious strategy to control GHGs would include switching personal mobility to electric or alternate fuel vehicles. "So there's a huge connection between the long-term implications of global climate change and the long-term viability of the motor fuel tax."

Participants heard about a variety of local responses to changing weather patterns, including:

- Well-established emergency preparedness and response procedures in Florida
- Front-line accounts of the impact of Hurricane Sandy in New York and New Jersey
- Snow and ice management in Indiana, along with innovative uses of salt brine solutions in West Des Moines, Iowa
- Effective use of private weather forecasting services to pinpoint the impacts of severe storms and allocate tollway equipment and staff more effectively
- Research in Maine on the ecosystem impacts of excessive use of road salt.

Panelists heard about the impacts and prevention of wrong-way crashes and roadway departures, with Chief Meeting Organizer Robert Reardon of the Tampa-Hillsborough

Expressway Authority (THEA) summarizing the particular challenge for tollway operators: “If our drivers do not feel safe, they will not pay the toll, so we have to maintain that integrity all the time.” Wildlife-vehicle collisions are also significant hazard in some jurisdictions, though a federal study identified animal fencing as a cost-effective option that can reduce collisions by 80%.

In day-to-day operations and maintenance, toll agencies address a full range of decisions and choices, from the trade-offs between asphalt and concrete paving, to the most practical design of tolling gantries. Participants heard that any road surface can be built on a sustainable, 50-year life cycle, and that gantry design specifications must fully account for details like mounting points, sensors, communications protocols, electrical systems and grounding, and proximity to other structures.

Tony Puntin of the American Society of Civil Engineers (ASCE) reported that the organization’s [2013 Report Card for America’s Infrastructure](#) assigned grades of C+ to the nation’s bridges and D to its roads. An additional \$846 billion in infrastructure investment will be needed to bring surface transportation up to a B grade by 2020.

IBTTA Executive Director and CEO Patrick Jones stressed the role IBTTA members can play in making the association’s *Moving America Forward* advocacy campaign a success. “As Congress considers funding options for surface transportation, tolling should be an option for state and local governments. States should have the flexibility to fund and finance America’s transportation system in ways that are most appropriate to them.”

Jones encouraged members to get involved with the campaign, since “this effort depends on you.”

Introduction

In his opening remarks to the association's 2013 *Operations and Maintenance Workshop*, IBTTA President Rob Horr focused on the day-to-day practicalities that enable toll agencies to deliver efficient, safe, reliable mobility.

"As a bridge operator, I have a special kinship with the folks in this room," said Horr, Executive Director of the Thousand Islands Bridge Authority. "Those who operate bridges and highways and tunnels certainly know that maintenance is just critically important, and can't be ignored."

More than anyone else in the world, professionals engaged in maintenance and roadway operations "understand the effects of deferred maintenance, and you know how challenging it is to recover from those effects," he said. The need to protect infrastructure and ensure safe operations was one of the main factors behind IBTTA's decision to launch its long-term public awareness campaign, *Moving America Forward*, to position tolling as an important tool in the infrastructure funding toolbox.

Peter Mills, Executive Director of the Maine Turnpike Authority, said engineering societies have worked hard to document the deterioration of physical infrastructure across the United States. "One of the greatest tragedies of this recession is that we did not put America to work to repair the highways and other infrastructure that our parents and grandparents had the foresight to build for us during the 20th century," he said.

"We could have put America to work, and the people in this room with access to tolling revenue did that," Mills said. "We did a lot of projects during the recession, and we will continue to do them based on a 30-year plan, because we have 30-year plans for revenue...but the rest of political America has failed us very, very badly."

Christopher Waszczuk, Administrator with the New Hampshire Department of Transportation, noted that the state's Bureau of Turnpikes was days away from opening its second open road tolling (ORT) facility. The first one began operations in 2010 and boosted efficiency, increased average speeds, reduced idling and fuel consumption, and saved a projected \$725,000 in toll collection costs for FY2013.

New Hampshire joined Maine and Massachusetts in the first violation reciprocity program in the U.S., and may introduce all-electronic tolling at three facilities in FY2015.

Protecting Tollway Assets from Severe Weather

The Outlook: A Changing Climate

Maine State Climatologist Dr. George Jacobson, Professor Emeritus of Biology, Ecology, and Climate Change at the University of Maine, described the research on ice core samples in Antarctica and Greenland that provides much of the historical baseline for atmospheric concentrations of carbon dioxide (CO₂). Concentrations ranged between 200

and 300 parts per million (ppm) for a couple of million years, but have been increasing since the dawn of the Industrial Revolution and reached 400 earlier in May.

A comparison of human population figures and atmospheric CO₂, nitrous oxide, and methane shows that “the relationship between the emissions, the concentrations in the atmosphere, and ourselves is quite clear,” Jacobson said. But “we’re adding people to the world at the rate of a new state of Maine every five days, and all these people want to live the way we do.” Since CO₂ has a long life cycle as a greenhouse gas (GHG), atmospheric levels would stay at 400 for at least a century, even if humanity somehow cut its emissions to zero today.

Climate and weather models depend on a series of related, mutually-reinforcing boundary conditions, including ocean and land temperatures, sea ice in the earth’s northern oceans, and the reflective or absorptive capacity of land surfaces. Jacobson noted that lakes in the northern part of Maine now become ice-free earlier in the year, spring run-off periods have shifted two weeks earlier from Maine to Massachusetts, and Connecticut only avoided the same trend because it no longer has any permanent snowpack.

All of these factors tie in with the increase in extreme, one-day weather events reflected in the last 100 years of data from the U.S. National Oceanic and Atmospheric Administration (NOAA). “Storms come from water that’s evaporated from oceans,” he explained, and warmer conditions mean more evaporation. One worrying trend is the loss of 2,400 cubic miles of ice from the world’s glaciers over the last 50 years, mostly from Greenland and mountain glaciers. Arctic scientists recently realized that warm seawater flooding polar ice shelves “does an enormous amount of melting from the underside,” likely accelerating a trend that could lead to one to two metres of sea level rise by 2100.

Either of those outcomes “is a lot for purposes of any coastal infrastructure, and the navy is very concerned about it,” he said.

Jacobson said North America is now becoming familiar with the intensity of hurricanes produced when ocean water reaches about 80°F. With warmer water closer by, he said New England can expect an increase in hurricane activity.

Ed Regan of CDM Smith asked whether the emphasis had shifted from reducing greenhouse gas emissions to adapting infrastructure to withstand the impact of climate change. “That’s the question isn’t it?” Jacobson replied. “Reversing it is very hard to see,” and the engineering approaches to removing excess carbon from the atmosphere all require energy.

Regan noted that any serious strategy to control GHGs would include switching personal mobility to electric or alternate fuel vehicles. “So there’s a huge connection between the long-term implications of global climate change and the long-term viability of the motor fuel tax. We simply have a real problem with the basis for revenue” when it comes from a product societies are trying to phase out.

The Response: Preparing for the Next Storm

With the 2013 hurricane season about to begin, the *Operations and Maintenance Workshop* convened a special panel of operations directors who had responded to some of the worst coastal storms in highway history.

Paul Wai of Florida's Turnpike Enterprise (FTE) said his organization had been dealing with severe weather since 2004/2005. "Each storm will bring new challenges," he said, and "we can be better prepared today by sharing the lessons from each storm. Our overall goal is to keep Florida's Turnpike safe, open, and operational for those who need to evacuate."

Florida's hurricane season runs from June through November, but the search for roadway improvements and potential hazards is a year-round activity. FTE constantly reviews its emergency plans and vendor contracts, maintains and tests equipment, performs preventive maintenance on backup generators, and makes sure the units are topped up with fuel. Wai said open road and all-electronic tolling systems have helped eliminate bottlenecks along the road, but emergency staff still pay close attention to known "hot spots" across the system and move pro-actively to address any lane blockages that could impair an evacuation.

Wai and James Fortunato of Metropolitan Transportation Authority Bridges & Tunnels described similar preparations when a storm approaches. Employees are encouraged to take care of their homes and families early on, then return to work and support the evacuation effort. Contractors and equipment are staged just outside the areas of expected impact so they can move in immediately to begin assessments and repairs. In Florida, evacuations are phased, with low-lying coastal areas cleared first, to avoid backups along the road. Florida also has a toll suspension plan in place to support evacuations.

Wai said the Federal Highway Administration (FHWA) reimbursed Florida's Turnpike for hurricane damage from past storms, but guidelines have recently been tightened. Between 2004 and 2008, Florida's Turnpike documented \$51 million in lost revenues that it could not recover.

Fortunato said it would cost \$700 million to reverse the devastating damage to MTA's two tunnels. The two tubes took an estimated 60 million gallons of water, the majority of the light fixtures were damaged by salt water, pump control circuits were flooded, and radio coverage was lost. At the peak of the recovery, MTA and a variety of other agencies were pumping 10,000 gallons of water per minute out of the Brooklyn Battery Tunnel.

"We handle snowstorms and blizzards in the northeast, but nobody ever dreamed that anything like this would ever happen," he said. "It's something we haven't seen in two or three generations...it's something we've maybe never experienced."

As the magnitude of the storm became clear, "we realized no one was coming to help us, because whatever was going on in our agency was going on in the other agencies," he

said. Constant communication was essential, and Fortunato said MTA relied heavily on Transcom, a coalition of 16 transportation and public safety operations that coordinated conference calls with 30 affected agencies in New York, New Jersey, and Connecticut.

Chip Eibel of the New Jersey Turnpike Authority (NJTA) stressed the central role of a statewide traffic management center, with supervisors from multiple jurisdictions who work side by side to address major emergencies. "We can't build more roadways, but we can better manage the ones we've got," he said.

As Hurricane Sandy approached, NJTA used a graduated series of messages on roadway signage to keep drivers informed and support the evacuation order when it was issued. Eibel said state politicians were forceful enough about the need to evacuate that "we actually had great compliance."

The worst of the storm hit on the Monday evening and Tuesday, and with no structural damage on the Garden State Parkway, the closed sections of the road reopened by mid-day Tuesday. The New Jersey Turnpike opened Tuesday where possible, and damaged sections were back in operation the following Friday.

From its experience with Hurricane Sandy, NJTA learned to plan for extended power loss and design traffic management systems for a Category 2 storm surge. "We had millions of dollars worth of VMS signs, and we couldn't power them up because there was a power failure," Eibel said. During the emergency, electricians hot-wired light towers and moved generators around to keep key signage in operation.

(For more detail on emergency preparedness for tollway operators, download a copy of *Adaptation and Resilience*, the report of the IBTTA Forum on Super Storm Sandy, www.ibtta.org/Events/content.cfm?ItemNumber=6694.)

While coastal superstorms are among the more obvious impacts of a changing climate, maintenance managers like Michael Lowrey and Patrick Condon of the Indiana Toll Road Concession Company (ITRCC) cope with a wider range of front-line impacts: in their case, an average of 88 inches of snow per year, blowing in on heavy winds from the southeastern tip of Lake Michigan. Condon said the ITR consists of 156.7 center lane miles of highway and 100 miles of ramps, "all providing quite a challenge when you're trying to remove snow." Condon said the 2013 snow season started out with light coverage through the end of January, but ended with four snowstorms in April.

"Did it accumulate? No. Did we have to have people out and ready? Yes, because we still had bridges that had to be treated."

Storms in northern Indiana used to be easier predict, and they were usually limited to a 30-mile area, enabling highway operators to concentrate resources where they were needed. "This has changed over the years," Condon said. "Winter is coming later and lasting longer, it doesn't seem it's going to be as bad, then it can be. It's a prediction nightmare, and trying to budget can be a real nightmare. Now these storms average about 80 miles wide," making it much more difficult to allocate equipment.

Bret Hodne of the City of West Des Moines, Iowa discussed the uses of salt brine as an effective, economical tool for pre-wetting and ice control. The product is only effective down to 15 or 20°F, but that's the temperature range for most Iowa storms. A 23% solution of rock salt and water costs \$0.07 per gallon, and in 2012/13, the state DOT used almost 20 million gallons. Maintenance teams have begun blending the brine with sugar beet juice and calcium chloride, and Hodne said a 20% sugar beet solution formed a residue that lasted four or five days instead of one.

Chief Meeting Organizer Robert Reardon of the Tampa-Hillsborough Expressway Authority said the blends have "come a long, long way" from the early to mid-1990s, when operators wanted to get away from sand but still saw salt brine as a witch's brew. Hodne said mixes have shifted from 12 gallons per ton to 60, and the higher proportion of water to salt reduces environmental impacts. "We've cut our salt usage very significantly with this practice," he said. Road treatments are guided by an application decision flow chart that helps operators and supervisors decide what chemicals and strategies to use.

Brenda Zollitsch of the Margaret Chase Smith Policy Center, University of Maine, said state and federal concerns about the environmental impact of chlorides had led Maine to host a salt roundtable in 2010, as a first step toward regulations or adoption of best management practices. Research in Maine concluded that chloride concentrations above Environmental Protection Agency (EPA) limits can shift lake patterns, contaminate groundwater, change soil structure, damage or kill vegetation or favor salt-tolerant species, harm fish and amphibian development, and damage steel and concrete infrastructure.

Maine's highway contractors "have been very interested in figuring out how to reduce the impact of salt," she said, since a failure to address the chloride issue would inhibit broader solutions to stormwater pollution. To achieve voluntary adoption of best management practices, it was essential to address local concerns and conditions, while paying close attention to safety, service levels, liability, and resource issues. A participant recalled the new sandbars and silt areas that once formed in Lake George due to sand runoff from Adirondack Park, and Zollitsch acknowledged that road sand brings its own environmental problems.

Bill Gile of Boston-based Precision Weather Forecasting (PWF) said private weather services provide an added level of local detail that enables highway operators to prepare for severe weather. "All climate change is local, but operational forecasts have to be done on a local scale, as well." Toll authorities can experience and must respond to a variety of weather conditions and consequences at different points along a road, including:

- Differences in snowfall between coastal and inland zones
- Higher tides
- Storm surges that make coastal drainage systems less effective
- More frequent freezing and thawing of road beds due to warmer winters

- More frequent evacuations due to severe weather.

Over time, this extended response to severe weather can stress an organization's resources. It can also affect service levels and public perception, since "everybody reacts to what you do, and you react to what the meteorologist is telling you." With the right meteorological information, he said a tolling authority can save tens of thousands of dollars by adjusting its response to a single event.

The U.S. National Weather Service provides regionalized seven-day forecasts, but "these broad-based forecasts make it difficult to plan for your infrastructure," Gile said. The ability to groundtruth [gain first-hand confirmation of] radar imagery is particularly important in tracking a storm like Hurricane Sandy, or breaking down a prediction of two to five inches of accumulated snow when an agency's service standard sets a three-inch threshold for plowing. A private weather service would provide localized, six-hour forecasts across a 48-hour period, with details that help agencies determine whether they'll be dealing with snow, rain, or freezing rain.

PWF's Matt Sanders said the ultimate goal of precision forecasting is to help agencies control costs and maintain service levels. Forecasts vary among models, and they change every time a model is run. But a private meteorologist can smooth out the differences for specific locations and deliver "really good detail 48 to 72 hours ahead of an event," enabling toll authorities to accurately deploy equipment and response teams.

After a major weather event, private forecasters supply wrap-up information to help agencies recap their spending and improve their response to future storms. Gile said a certified weather statement from a private meteorologist can be used in court, to help an agency account for its actions during a weather emergency.

A participant said his previous agency had made extensive use of private weather forecasting over a 13-year period. "This is like game planning, and I couldn't go into it without having precise forecasts like these people do," he said.

Another participant asked whether a private forecaster would share the risk if a maintenance contractor incurred a non-performance penalty after relying on faulty data. Gile said forecasters offer 96% accuracy in their 36-hour forecasts, but no risk-sharing. "We give you information that you can make best use of so you can plan whatever you need to do as an agency," he said, and "that certified weather statement helps back up your actions."

Roadway Safety and Incident Management

In a session devoted to the prevention of wrong-way crashes, Chief Meeting Organizer Robert Reardon of the Tampa-Hillsborough Expressway Authority (THEA) pointed to the particular challenge of operating a tolled reversible road: "If our drivers do not feel safe, they will not pay the toll, so we have to maintain that integrity all the time." He described the gate system, banners, VMS signage, daily scheduling, and constant vigilance required to ensure safe operation of THEA's reversible lane.

But drivers do make mistakes. Reardon described the one episode since 2007 when a driver used a lane in the wrong direction, crashing through a gate at 2:30 AM before driving home in a vehicle with burst tires and a smashed windshield. Afterwards, “he called the police to tell them he owed some toll money.”

Maine State Trooper Doug Cropper recalled the July 2012 incident that earned him a national Office of the Month award. Cropper’s dashboard camera recorded the chain of events from the moment he learned that an elderly motorist was headed the wrong way along I-295 in Portland. With no time to deploy a spike mat, Cropper used his cruiser to block the other vehicle. “My brake kicked in, and all I got was my front end ripped off,” he told participants. “I did what I thought was best, and I’m lucky to be here today.”

Jeffrey Wolff of Kapsch TrafficCom IVHS said wrong-way crashes led to 1,753 deaths and a \$19 billion economic impact between 1996 and 2000. Across multiple studies, DUI/DWI drivers are involved in 50 to 75% of the crashes, while old age accounts for about 29%. Common preventive measures include warning signs and arrows, raised pavement markers, and edge lines or barriers on exit ramps.

Dave Nyberg of 3M Roadway Maintenance Services said roadway departures in the United States accounted for a highway death every 29 minutes, and 53% of fatal crashes, in a 2009 survey. Countermeasures like cable barriers, safety edges, high-friction surface treatments, and rumble strips and stripes should translate into “vastly improved” numbers in the next survey. “A lot of these are relatively low-cost, with very high cost-benefit ratios for crash fatality reductions on your roadways.” He said procurement methods can be optimized to save money, streamline design, and fast-track construction: “If your purpose is to save lives, the faster you implement the programs, the more lives you’re going to save.”

In some jurisdictions, wildlife-vehicle collisions (WVCs) are significant hazard. Walter Arnason of the E-470 Public Highway Authority cited a 2008 study by the Federal Highway Administration (FHWA) that calculated an annual total of one to two million incidents in the U.S., leading to 200 deaths and an annual cost of \$8.3 billion. After comparing 34 techniques for reducing WVCs, FHWA identified four leading options: culling herds, modifying driver behavior, using fences to modify animals’ behavior, and planning roads to avoid key habitat and allow space for wildlife movement. Although the best choice depends on location, the study pointed to fencing as a cost-effective option that can reduce WVCs by 80%.

Roadway Operations and Maintenance

From pavement to gantries, the *Operations and Maintenance Workshop* featured a series of presentations on the practicalities of safe, cost-effective highway management.

In a session on the relative merits of asphalt and concrete paving, Thomas Van Dam of CTLGroup refused to choose one option over the other, arguing that either type of road can be built and maintained on a sustainable, 50-year life cycle. “It’s simply good engineering,” he said. “It entails working with limited resources to achieve your design

objectives.” It’s not about perfection,” but more a matter of balancing competing, often contradictory interests on a project.

Asphalt and concrete each have their advantages, but either type of road can be built to last if engineers “purposely design sustainable features into the pavement” and take a “cradle to cradle” approach to their projects in which a system is not only efficient, but essentially waste-free. Van Dam said sustainable material choices maximize the use of recycled materials without sacrificing the lifespan of the road, maximize the use of local materials, balance cost with environmental performance, and recognize that transportation efficiency is one of the factors that determine energy use and emissions. These and other issues are most effectively addressed through rigorous consideration of the life cycle, through both economic life cycle cost analysis and environmental life cycle assessment.

Another kind of balance, this time between aesthetics and operational effectiveness, ran through the session on gantry design. Debbie Meyer of Florida’s Turnpike Enterprise said there are wide variations in structure types, costs, and maintenance requirements. Tri-chord gantries are a favorite with maintenance engineers, but “it’s not a work of art. There’s very little consideration, let’s face it, no consideration of aesthetics.”

While safety is the first consideration for any highway structure, Meyer and colleague Aran Lessard listed a series of operations and maintenance factors that determine gantry choices, including reliability, accessibility and worker access, maintainability of structure and coating, emergency response and mitigation of costly down time, aesthetics, and cost-effectiveness.

Bob Landry of TransCore Inc. urged agencies to consult with integrators, individually or as a group, before issuing RFPs for gantry design and construction. “We’re going to bid your RFP. You can always trust that, and we’re going to bid to win.” But with advance guidance on technical details like mounting points, sensors, communications protocols, electrical systems and grounding, and proximity to other structures, “you get what we think is best for you. Otherwise, you’re going to tie our hands.”

With multiple sensors on a structure, Landry said placement is critical. “They require algorithms of timing and speed, so the height of that gantry, the location of the gantry, the mounting opportunities, the geometry, and the length of road around the gantry all mean something to me.”

He said a box frame or a three-gantry solution is preferred for ease of integration and performance. Dual-gantry solutions are reasonably easy to optimize, while single gantries are the most challenging. Most agencies opt for dual or single structures. Most of important of all, a gantry must be accessible enough to permit cost-effective maintenance that doesn’t require a highway to be shut down.

For many agencies, effective roadway operations are about customer service and satisfaction. Anthony Yacobucci of the Ohio Turnpike Commission said his agency sought to maintain satisfactory service levels while reducing costs by looking for flexibility in day-to-day operations, emphasizing incident response, making its “on the

road presence” more visible and effective, and continuing to require disabled vehicle service (DVS) contractors to provide 24/7 coverage in their work zones.

Dennis Kelly of Halifax Harbour Bridges (HHB) described a three-pronged response to collisions and breakdowns that combined traffic control, incident management, and public education and awareness. To improve communication and boost customer satisfaction, the agency used frequent 511 updates, dynamic message signs, and Twitter to keep commuters informed of any changes or obstructions along their routes. After identifying speeding, tailgating, and inattentive driving as its three main enforcement issues, HHB invested \$50,000 in a public service announcement that reached an estimated 300,000 to 400,000 listeners, generated significant media coverage, and resonated with customers who saw the agency dealing with issues that mattered to them.

The Year Ahead

Tony Puntin of the American Society of Civil Engineers (ASCE) placed transportation funding in the context of a wider infrastructure crisis that extends across the United States and around the world. “There are 16 categories of infrastructure that we deal with throughout the country and throughout the world, and they have an impact on our quality of life and what we do every day,” he said. In its [2013 Report Card for America’s Infrastructure](#), ASCE reported that America’s grade point average for infrastructure had improved, to D+, with grades of C+ for the nation’s bridges and D for its roads.

“Where we saw a concerted investment, where we saw leadership, and where some of the stimulus funds were invested, we saw some great improvement,” Puntin said. The association estimated that an additional \$846 billion will be needed to bring surface transportation up to a B grade by 2020. If the U.S. fails to close the infrastructure gap by then, it stands to lose \$3.1 trillion in gross domestic product (GDP), \$1.1 trillion in trade, \$3,100 per year in personal disposable income per household, and 3.5 million jobs.

IBTTA Government Affairs Director Neil Gray said the association’s annual industry survey had documented nearly \$4.5 billion in capital investment in 2010, \$3.8 billion in 2011, and \$3.6 billion in 2012. “For my purposes, going to [Capitol] Hill, this is a nice number to have,” showing legislators that tolling is an established, effective way to fund highway construction, operations, and maintenance. “We’re not asking for money,” Gray said.

IBTTA Executive Director and CEO Patrick Jones stressed the role IBTTA members can play in making the *Moving America Forward* advocacy campaign a success. “I’m very excited about this campaign and this period in our industry’s history,” he said. “As Congress considers funding options for surface transportation, tolling should be an option for state and local governments. States should have the flexibility to fund and finance America’s transportation system in ways that are most appropriate to them, because the gas tax alone is no longer sufficient to fund surface transportation projects and maintain existing roads.”

Jones encouraged members to get involved with the campaign, since “this effort depends on you.”

IBTTA President Rob Horr said people had been asking him what his first five months in office had been like. “It’s a blast,” he said. “IBTTA is on the move,” and “we’re moving aggressively to inform the media, public officials, and the general public that tolling is a powerful and effective tool in the transportation funding toolbox.” *Moving America Forward* was made possible by a major dues increase, “and this investment really has made it possible to see the successes we’re now having in the campaign. In my opinion, seeing the progress, it is definitely money well spent.”