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Transit agencies may need to bank on a bailout

Somewhere in a dimly lit room, the repo man is taking in instruction on how to be a train operator. Hot wiring on rails could become big business in the repossession game if banks hold up transit customers at gunpoint and the federal government hits the floor and prays it is not noticed.

How exactly would a repossession of a train car work anyway? Would the hired criminal slip into a train depot in the middle of the night and drive to the end of the line to a large crane, which would pick up the pieces and stack them on trailer beds?

Maybe the act has no future, but transit agencies may be looking at darker days ahead—and just when commuter tickets are being punched more than ever before.

The American International Group (AIG) has the transit agencies in major metropolitan areas across the U.S. watching their back, as well as their rail cars and buses, thanks to the loan-killing credit crisis of 2008. Before it temporarily collapsed, AIG had guaranteed deals between transit agencies and banks that worked like this: The banks made upfront payments that the agencies repaid over time. In return, the private businesses were allowed to shelter income from taxes based on the declining value of the rail cars and/or buses. The transit agencies sold their property to the banks, allowing the institutions to do the sheltering while “their” rail cars depreciated. The agencies then leased the cars back from the banks at a discounted price that split the value of the tax break with the bank.

The Metro, which runs stops in the Washington, D.C., area, used the bonus—totaling $100 million between 1997 and 2003—on capital improvements.

This whole transfer of money/tax breaks was encouraged by the Federal Transit Administration.

Sharpening the knife to this mugging is the IRS, which is offering amnesty to any company that gives up its tax shelters by the end of the year. The move has AIG licking its chapped lips, and the lender demanded its money in one lump sum back in late October.

The Big 3 automaker bailout offered a small ray of hope to transit operators. The $14 billion measure had a provision to keep the nation’s rail and bus systems on track. However, at press time the relief was facing a fat reject (See No giveaways, p 5). Even if it did eventually pass, several lawmakers, including Senate Finance Committee Chairman Max Baucus (D-Mont.) and Sen. Charles Grassley (R-Iowa) were demanding that the caboose of the deal that would benefit transit be derailed.

AIG has received a portion of the obnoxious and infamous $700 billion bailout. Since the whole idea of this financial second coming is to get the banks to lend again, I do not understand why those like AIG would not drop some of the stones it was looking at darker days ahead—and just when commuter...
Transit agencies across the U.S. were hoping the $14 billion bailout for the U.S. automakers would pass, but at press time the measure was rejected by the Senate.

The bailout plan included a provision to keep the nation’s rail and bus systems from financial panic. The legislation would have provided federal guarantees for complex financial transactions between major transit agencies and investors. Because of the credit crisis, many of these deals are in danger of defaulting.

With the collapse of the American International Group (AIG), Washington, D.C.’s Metro transit system was in danger of facing up to $400 million in payments. In November, leaders from the transit agencies warned that 31 of the nation’s largest transit systems could face at least $2 billion in payments in the coming months.

The IRS is urging the struggling banks to make a move, offering amnesty to any company that gives up its tax shelters by the end of the year. Tax shelters are a common practice among financial institutions and transit agencies.

Rail and bus services could face a crippling end result without federal backup, but the support from Congress was not there when the auto bailout was making its way through the Senate.

Senate Finance Committee Chairman Max Baucus (D-Mont.) was perhaps the most vocal dissenter of the measure.

“This provision aimed at protecting transit agencies really just helps the banks that entered into these sham transactions in their attempts to avoid taxes,” he told the Associated Press.

The transactions, called sale-in/lease out (SILO) and lease-in/lease out (LILLO), involve the transit agencies selling rail cars and other equipment to banks and then leasing them back at a discount. The transit agencies receive large infusions of capital for investment while the banks could write off taxes of the depreciating property (tax shelters).

Back in 2004, both Baucus and Sen. Charles Grassley (R-Iowa) led a move that denied the deduction of losses from these transactions, ending the tax benefits of SILO transactions.

Three months ago House Transportation Committee leaders, including chairman Jim Oberstar (D-Minn.), pleaded with the administration to assist transit agencies that were caught up in bad deals.

“These transit contracts, when in vogue, were touted as an inventive way to allow public transportation agencies to fund their payment obligations for rail and bus equipment purchases,” said the letter signed by Oberstar and others. “They could threaten their very existence and the financial stability of the state and local governments that fund them.”

**N.C. looks into taxing drivers by the mile**

Call it a copilot to Oregon’s pilot. The state of Oregon made news last year with the announcement of its road-use tax experiment, which would charge motorists by the mile.

North Carolina is thinking of implementing something similar in response to less gas receipts. In December the
U.S. DOT reported that Americans drove 100 billion fewer miles between November 2007 and October 2008—the largest continuous decline of its kind in history.

In North Carolina, revenue from the motor fuel tax of 29.9 cents per gallon was down 12% in 2008, and the state was expecting a three-year loss of $580 million, according to the Charlotte Observer.

“The status quo isn’t an option,” Mark Finlayson, a co-chairman of the transportation advocacy group N.C. Go!, told the Observer. “Cars are now using less fuel, but they are still putting wear and tear on the roads.”

If implemented, North Carolina’s road-user tax would be simple: The state would read odometers annually and tax motorists based on the number of miles driven. Future charges could be made based on when people drive in an effort to reduce congestion.

Studies are already being done in North Carolina. The University of Iowa is doing one covering six metropolitan areas using computers in cars. The amount of miles driven is uploaded to a central database.

Motorists would be billed and the money would then be distributed to the states where the travel took place. For example, if someone drove 200 miles in North Carolina then the NCDOT would receive payment.

**Small Group in Ariz. Questioning Effectiveness of Speed Cameras**

Speed-camera enforcement is being tested in the state of Arizona, where a group has announced its intention to put a measure on the state’s 2010 ballot that would ban speeding tickets issued by photo enforcement cameras unless the driver is caught exceeding the speed limit by 20 mph or more. Current law takes pictures of drivers if their car is 10 mph over the posted speed limit.

Dane Platt and William Knowles are working to gather the 153,365 voter signatures necessary to place the measure on the ballot.

“We decided we did not like the cameras on the [U.S.] 60 and we didn’t feel it served the purpose of making the streets safer,” Platt told the Arizona Republic. “We figured it was just a revenue source for the state.”

The measure would apply to all photo enforcement in the state and affect Arizona’s recent enactment of speed cameras on state highways.

Speed cameras in work zones are being scrutinized in Illinois. The Chicago Tribune revealed that a majority of the speeding tickets issued by cameras are being dismissed in Cook County court. Cook County prosecutors blamed poor photo quality as the reason many of the cases were dismissed—nearby 500 through Sept. 9. Of the cases that were not dismissed, fines were drastically reduced.

“We need to work with the judges, prosecutors and the state police to improve the program,” Priscilla Tobias, a safety engineer with the Illinois Department of Transportation, told the Tribune.

**Penalties Will Catch Up To Fla. Drivers**

Toll officials in central Florida are making up for lost time—six years to be exact. Florida law says a toll violation costs three points against a driver’s license. But between 2002 and 2008, those points were not being deducted, affecting 23,000 drivers.

“There was an error. We corrected it,” said Ann Nucatola of the Florida Department of Highway Safety.

Officials plan to address the penalties retroactively. According to the Department of Motor Vehicles, once points are on a driver’s license they cannot be removed.

The Highway Safety Department has not said whether it will try to help the drivers and still allow them to go to traffic school to remove the points from their licenses.

**Using Cell Phones Quadruples The Risk**

Using a cell phone while driving greatly increases the chance of an accident, whether or not the driver is using a hands-free device.

The AAA Foundation for Traffic Safety released a report that using a cell phone quadruples the risk of getting in a crash. However, the study revealed that two-thirds of Americans believe it is safer to talk on the phone while driving if they are using a hands-free device.

The report also revealed that cell-phone use delays driver reactions to critical road events by an average of 0.23 seconds, and that half of the respondents to the study admit to using cell phones while driving.

**Amber Alert Suffers Complications In VT.**

The Amber alert system has yet to take off in the state of Vermont. Not that officials haven’t tried.

Vermont issued its first alert this past summer when Brooke Bennett was reported missing. However, miscommunication tainted the process and the Vermont Agency of Transportation was never notified.

A test was executed in early December to make sure all systems were a go, but technical issues again came to the surface, as some agencies did not receive e-mail alerts. State officials, however, are confident with their system.

“We have tools that can be an aid to the public and to state police,” John Zicconi, spokesman for the Agency, told FOX News 44. “We have since met and put a protocol in place so that an oversight like [the one during the summer] will not happen again.”

The Vermont Agency of Transportation notifies the public during an alert by using electronic highway signs and sending information to the 5-1-1 traveler information network.

The Vermont State Lottery also receives the information and prints it out on lottery tickets and displays it on signs.

The Vermont State Police was expected to do another full-scale test sometime before Christmas.

—edited by Bill Wilson
3M, St. Paul, Minn., has announced the availability of a new grant program to help U.S. government agencies replace underperforming traffic signs. Agencies working toward FHWA Minimum Retroreflectivity Ruling compliance, or those looking to upgrade signs as part of safety and other roadway infrastructure improvement programs, can apply for a 3M Sign Grant to significantly lower the cost of purchasing higher-performance prismatic reflective sheeting. The grant application period opens Jan. 5, 2009. For more information visit www.3msigngrants.com.

Econolite, Anaheim, Calif., has released its new Centracs advanced transportation management system software. Using Microsoft Presentation Foundation technology, Centracs delivers a modular graphical user interface and display “container” technology to provide the traffic professional with a full-featured suite of information and management tools to monitor and control a transportation system. The Oklahoma Department of Transportation has approved the Autoscope Solo Terra video detection system made by Econolite for use in intersections for vehicle detection.

Communication Networks (ComNet) of Danbury, Conn., a manufacturer of fiber-optic transmission and networking equipment, has hired John Nave to be the company’s technical support manager in North and South America. The company also has hired David Sinise to be the company’s eastern regional ITS sales manager and Victor Milani as vice president of product management.

Jamshid “JJ” Jahangiri has joined Arcadis’ Infrastructure Division as Texas transportation operations manager in the Dallas office.
As technological developments continue to mount, and with the arrival of the Obama administration and a new and more heavily dominant Democratic Congress, hopes are running high for increased spending on infrastructure—and a new surge of success within the ITS industry.

That feeling was described by observers as prominent in November at the recent 15th World Congress on Intelligent Transport Systems in New York, marked by numerous discussions and demonstrations of new or enhanced approaches to traffic management—everything from new wrinkles on congestion pricing schemes to advanced toll-collection methods to improved car-to-car and vehicle-to-roadway safety communication systems. Optimism was high despite the dire straits of much of the economy, especially the Big Three automakers themselves, some participants noted.

The World Congress featured “the largest fully integrated demonstration of deployed and marketable ITS technologies ever,” said show sponsors ITS America, Ertico (ITS Europe) and ITS Japan. Added Tyler Duvall, DOT acting
undersecretary for transportation policy: "An amazing number of companies are focused on transportation and technology innovations that were not focused five years ago."

Scott Belcher, president and CEO of ITS America, the U.S. industry group, told T&E, "We're at a point where we're poised" to take advantage of all the technology that has been developed so far. "Most of the technology we're talking about is mature."

Increasingly, with space for new highways limited, environmental concerns and funding constraints, "there's a limit to our ability to build our way out of the situation," so renovating roads, using ITS techniques for traffic control and safer motoring, is clearly the answer, Belcher said. "People are coming to expect information about traffic, problems and how to get to places"—information coming from other cars, public and satellite radios, handheld devices, phones and signage on roads, he said.

Despite the relative invisibility of much of the ITS technology that makes this possible, "I think the public is making the connection [between ITS and their own mobility], although they may not see it as 'ITS'—they just expect it," Belcher said.

"We finally have gotten people's attention about ITS. Before they didn't know what it was," said Rep. Mike Rogers (R-Mich.), co-chairman of the House ITS caucus. "It is looked at not as one of those ugly competitors for funds, but as a cost-efficient" way to deal with transportation challenges.

Adolescent behavior

But so far, ITS is still in many ways a gangling teenager, slowly moving into the mainstream of transportation but not yet established as an entrenched industry. In the nearly 20 years of ITS existence, some things have become commonplace, such as electronic toll collection (80% of U.S. collection facilities—over 160—have electronic capability), 5-1-1 (in half the country or so, to this point), General Motors' OnStar driver assistance and automatic crash notification system (GM said it will be standard equipment on 95% of its 2009-model vehicles) and state-run traffic management centers (about 150 nationwide).

Others are still in the trial stage or being developed, like high-occupancy toll (HOT) lanes, and other congestion pricing methods; or vehicle-infrastructure integration initiatives, which use wireless communication to let motorists know when there's a hazard such as another vehicle or a dangerous intersection looming ahead.

By 2006, there were 4,700 dynamic message signs (with some, but not many, giving travel times) in the U.S.; 53% of transit buses with safety and security audio or video surveillance technologies in the 108 largest metropolitan areas; 41 states with a traveler information website; and over 6,000 closed-circuit television (CCTV) cameras, providing 32% of freeway miles and 5% of arterial miles visible for incident detection, according to a new report by the Research and Innovative Technology Administration's (RITA) ITS Joint Program Office (JPO).

RITA’s new report also shows 30 states participating in the Commercial Vehicle Information System Network in 2006. Among emergency management technologies in the 108 largest metropolitan areas, emergency vehicle traffic pre-emption was installed at 31,000 signals, including more than 20% of intersections in metropolitan areas; emergency response agencies in 63 metropolitan areas and law enforcement agencies in 94 such areas used both automatic vehicle location and computer-aided dispatch. Law enforcement, emergency management and other agencies in 37 areas used regional multiagency communication networks to coordinate evacuations in 2006.

"ITS has come a long way, but it has a ways to go" before achieving its stated goals of safety, mobility and efficiency, said
Galen McGill, ITS manager for the Oregon Department of Transportation.

Paul Brubaker, RITA’s administrator, told TM&E recently that he has challenged his JPO to the “bold, very audacious goal” of achieving 90% reductions by 2030 or 2040 from the year 2000 totals from $230 billion in economic costs of highway crashes and fatalities of more than 40,000 annually during recent years. In 2002, ITS America had set more modest goals, but then, in 2004, announced at the World Congress in Nagoya, Japan, a new, extremely ambitious goal of zero fatalities and zero delays for transportation.

“Five years ago, the OEMs would tell you that safety doesn’t sell,” Brubaker said. “We believe that not only does it sell, but there’s a pretty good business case from a public health and safety perspective.” Much of RITA’s emphasis is on Safe Trip-21, an initiative which will test various ITS technology applications designed to reduce gridlock, fatalities and injuries and improve public transportation.

**Electronic payments needed**

As usual, the name of the game is deployment and integration, but the game is far from over for many ITS initiatives.

“It’s still a bit more developmental than operational,” said Jim Wright, vehicle-infrastructure integration and 5-1-1 program manager for the American Association of State Highway & Transportation Officials (AASHTO).

Though the federal government has plowed $3.45 billion specifically into ITS between 1991 and 2009, with additional sums used by each state for ITS out of general highway/transit funding, ITS advocates insist that increased financing is necessary for their traffic-management objectives to be reached with enough speed.

“Funding in all of transportation is a big issue right now,” said the Oregon DOT’s McGill. The gasoline-tax-fueled Highway Trust Fund itself was recently depleted for the first time and had to be beefed up from the Treasury Department’s general revenues.

AASHTO has come up with a set of recommendations for revamping the federal highway/transit program, which would include a 35% increase in research outlays, to $150 million a year, plus $3 billion in annual operations funding and $2.6 billion a year for safety, both of which would include ITS deployment. That could mean a major rise in deployment money from previous years, when the budget called for a specific deployment amount—$122 million in FY 2005. Under the $286 billion Safe, Accountable, Flexible and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which expires on Sept. 30 of this year, earmarked ITS deployment funding ended, with state DOTs eligible to use as much or as little as they desired from core surface transportation financing.

“A more robust budget for ITS R&D is needed,” said Rep. Ellen Tauscher (D-Calif.). “For example, technical issues related to widespread tabulation of vehicle-miles traveled (VMT) and vehicle-infrastructure integration (VII) are not yet complete.” Also, “further deployment of ITS in our transportation infrastructure is important to maintain and continue the already-realized progress.”

President-elect Barack Obama and Congressional Democrats have been advocating a major economic stimulus program that would include sizable outlays on the nation’s deteriorating roads, bridges and other infrastructure components. ITS America’s Belcher, noting at the World Congress that lawmakers will be working this year on a new six-year surface transportation measure, declared, “For the sake of improved...
safety and mobility, economic productivity, a cleaner environment and a better quality of life, Congress and the new administration should make the deployment of intelligent transportation systems a centerpiece of the bill."

In the House, an ITS caucus that last year numbered 52 members champions ITS funding and projects. The caucus is co-chaired by Reps. Tauscher and Rogers, and leads the ITS charge, also championed by House leadership. Chairman James Oberstar (D-Minn.) of the House Transportation and Infrastructure Committee has been described by ITS America officials as “a huge supporter of ITS,” having strongly supported the potential ITS can play in improving mobility, reducing congestion and greenhouse gas emissions, and in reducing crashes and fatalities. In any event, Rick Capka, a former FHWA administrator, has said that ITS will be the story of the next multiyear highway bill.

Oberstar may advocate more ITS implementation and the use of technology to make the transportation infrastructure more effective instead of just building more of it, especially with the shortfall of available funds as compared with infrastructure needs. ITS, Congressional backers contend, also has the potential to significantly help create a performance-based highway program, ensuring that the goals of infrastructure investments are met.

While an escalating spending program for highway infrastructure is basically good news for ITS, it would contain some troublesome aspects as well. The trouble is that with all the emphasis on jobs, public officials will want to emphasize highly visible projects like new or repaved roads and bridges, and more sophisticated electronically controlled operating features will have to compete hard for the new money.

"In most people’s minds, capital projects transcend operational improvements," even though ITS can reduce maddening and wasteful congestion, said Jim Misener, executive director of California Partners for Advanced Transit and Highways (PATH), whose researchers are spread across the University of California and other colleges. "ITS itself should be invested more," he said, "because there is a whole bunch of inefficiency out there that needs to be squeezed out.

"But it is hard to convince someone by asking, ‘Did you see that a traffic jam was prevented by 5-1-1, or a metered ramp or variable message signs?’ in comparison with the allure of a shiny silver bridge," Misener said. Surface transportation operations are “significantly underfunded; there’s not enough data, not enough money, to make things as effective as they should be.”

Too many state DOTs want flexibility, but “when they get the money, they spend it on laying concrete and asphalt, and ITS suffers,” said Brent Bair, managing director of the Road Commission for Oakland County (Mich.). “Once they get involved in ITS, they see the value of it, and they stay with it. The problem is getting them involved.” And with states’ own financial problems, “we might be in the position where we can’t use all that federal money, because we won’t have the match.”

Added Rep. Tauscher: “I do not believe that most states and municipalities are making sufficient use of the technology that exists.”

And there’s lots of new technology arriving almost every day, many of it featured at the World Congress in November, including new wireless communications, traffic monitoring, video detection and other systems.

Here is a brief rundown on the mixed-bag of ITS progress on some of its major fronts:

**Congestion Relief**

Projects, basically involving monetary charges for reserved HOT lanes, including encouraging driver-only vehicles to pay for use of lanes normally reserved for multioccupant cars, which pay lower rates or none at all, are being tried in areas including southern California, Florida and Minneapolis, where congestion has been sharply reduced.

The U.S. DOT also has given special Urban Partnership grants as an inducement, involving congestion pricing plans in Minneapolis, Miami, San Francisco (including a program that prices parking based on whether space is scarce or plentiful, with motorists getting parking space information on cell phones, the Internet or changeable message signs), Chicago and Los Angeles.
“There is not a major urban area in the United States that is not pursuing a pricing project right now,” said Duvall.

One congestion-pricing project, the most ambitious one—charging motorists to enter the downtown area of large cities with the amounts varying according to the existing congestion—was proposed for traffic-choked New York City, modeled after successful programs in London, Stockholm and Singapore. But the New York state legislature didn't approve it, so the plan failed, despite vigorous support from Mayor Michael Bloomberg and various transportation, planning and environmental groups. Oregon has tested a pricing scheme involving per-mile charges and possible peak-period area or roadway fees, using GPS technologies on vehicle odometers, which might replace fuel taxes in the future.

The average yearly delay per U.S. traveler in the nation’s 437 urban areas was 38 hours in 2005, up from 34 hours in fewer such areas in 2000, Texas A&M University’s Texas Transportation Institute’s 2007 Urban Mobility Report showed.

In urban areas with more than 1 million population, the “rush hour” concept doesn’t apply. Congestion might occur for three hours in each peak, according to the report. The Los Angeles area led the list with 72 hours of delay, followed by a three-way tie at 60 hours by the San Francisco, Washington, D.C., and Atlanta areas. Despite numerous efforts at reducing congestion, increasing traffic—until last year’s big gas-price climb—has meant those efforts have continued to lag behind the problem.

“‘There is no magic technology or solution on the horizon because there is no single cause of congestion,” said Tim Lomax, TTI research engineer and the study’s co-author. But four strategies—freeway-incident management and entrance-ramp metering, traffic-signal coordination and arterial-street access management—have reduced delays by 10% in 85 urban areas. “If we fully deployed all four of these ITS treatments, the delay savings would double,” said David Schrank, TTI associate research engineer and Lomax’ co-author.

Another approach, called the Mobile Millennium, is being explored under the Safe Trip-21 program by California PATH, the California DOT (Caltrans) and Nokia’s Navteq unit, using GPS-enabled cell phones in vehicles as traffic/travel-time probes.

Traffic Management

A major weapon against congestion and crashes alike is the metered ramp, which uses stop lights to pace the flow of traffic onto major routes. RITA said there were more than 4,000 ramp meters in the U.S. in 2006, in more than 30 metropolitan areas, boosting freeway speeds by up to 26% and capacity by up to 30%, with crashes reduced by as much as 50%. After the Minnesota legislature ordered some 420 ramp meters turned off to gauge the public’s reaction, crashes rose, speeds fell and travel times increased, said Ray Starr, assistant state traffic engineer. The meters were later turned on again, with the support of more than 85% of the public, RITA said.

Washington state and Minnesota are developing another approach to controlling traffic: using spans over freeways with signs that control traffic lane by lane and provide messages about trouble ahead, building on successful European pro-
grams, where crashes were lowered by 30%. Washington hopes to start building in 2010, putting the spans about every half mile along a 6.5-mile stretch of I-5 into Seattle, the scene of numerous rear-end collisions, said Ted Trepanier, state traffic engineer. On any lane, speeds can be controlled, lanes closed because of crashes up ahead or for sole use by emergency vehicles, and HOT charges can be applied to some lanes.

Traffic management centers respond to communications about incidents, helping to reduce congestion and save lives, but they do not blanket the nation. And keeping the existing ones in repair has proved difficult. “Though [the states] have invested in ITS, they don’t have the money to maintain it,” ITS America’s Belcher said. Future centers will be much different: smaller, more efficient using more device-to-device communication, RITAs Brubaker said.

Traveler Information

Radio traffic advisories, variable message signs and private- or state-DOT-offered Internet traffic maps, often showing live action, are proliferating. Cell phones and other handheld devices are not only frequent recipients of such information, but as noted earlier may be used to provide probes that relay traffic conditions back to the receiver.

Meanwhile, the student newspaper Exponent reported that Purdue University engineering students tracked the fastest routes to fight traffic after the Oct. 4 Purdue vs. Penn State football game, finding the best route as shown by signals from stations along major routes.

Another major source of traffic information involves 5-1-1 phone systems, but while about 35 states have full 5-1-1 operations, recent expansion has been slow. New York state started up a new 5-1-1 system in November, and a few states including Pennsylvania, Wisconsin and South Carolina are expected to be up and running this year.

“5-1-1 isn’t expanding as fast as it should,” said Oakland County’s Bair. And in some states, like Minnesota, Internet versions of the 5-1-1 system are getting more hits than the phone version.

Safety

All the traffic managing, congestion fighting and traveler information activity is designed to improve highway safety as well as mobility. In addition, vehicle and road technology designed to save lives and prevent injuries is developing apace. World Congress organizers built two test beds—one on a 5-mile loop in west Manhattan and the other along 50 miles of the Long Expressway—both demonstrating sensors and probes that send data to a traffic management center, including travel times and other information that can be relayed to vehicles. A major aim is to respond to crashes quickly, as well as managing traffic. Technology companies and other groups also demonstrated developing VII systems along the test beds, which will remain in place for future research.

Meanwhile, automakers keep coming up with new VII-related and other safety-oriented features, including cars that communicate with others or roadside devices to show looming hazards such as a vehicle that has suddenly stopped ahead or is coming fast at an intersection, and even to bring one’s car to a stop if the driver fails to do so.

At the World Congress, GM announced a portable device that enables motorists, roadways, bicyclists and pedestrians to “speak” to each other; Mercedes Benz showed a vehicle that automatically stops at a red light; and Honda unveiled one that warns of impending collisions. Other systems can detect vehicles or persons while one’s car is in reverse, avoid adjacent vehicles, aid in steering a vehicle that has left the road to get back on it or avoid lane-change and merge crashes.

Electronic Toll Collection

Neil Gray, government affairs director at the International Bridge, Tunnel & Turnpike Association, told TM&E that ETC, using credit-card-size windshield tags that are read by overhead cameras, “is the single biggest use of ITS in the country,” with electronic mapping running a strong second. The Ohio Turnpike is a recent addition; as much as 70% of vehicles plying toll roads have the tags, “and its use is growing,” he said.

About 80% of all U.S. toll-collection facilities have electronic capability, according to the RITA report. Open-road tolling eliminates toll booths altogether and allows motorists to drive through at full highway speeds; Orlando’s deployment of open tolling reduced crashes by 25% and delays by more than 50%, RITA said.

“A more robust budget for ITS R&D is needed. For example, technical issues related to widespread tabulation of VMT and VII are not yet complete.”

—Rep. Ellen Tauscher (D-Calif.)

Karr is a freelance writer with an office in Bethesda, Md.

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A NEW APPROACH PRESENTS A RATIONAL, NATIONAL ROADMAP TO VII ADOPTION

VEHICLE-INFRASTRUCTURE INTEGRATION

JIM BARBARESSO

PLUS-FILLED model

 Vehicle-infrastructure integration (VII) has the potential to save thousands of lives each year and dramatically improve mobility on our nation’s highways, and it offers an alternative to outmoded fuel taxes as the primary revenue source for highway transportation. Given these potential benefits, why hasn’t America made more progress toward deployment of VII?

CRITICAL FOR BUSINESS

Numerous factors are necessary in a business model for VII, but three factors are critical:

- Who is selling VII?
- What are they selling? and
- To whom are they selling?

These three questions make up the “value proposition” for VII. If consumers of the transportation network do not value the benefits provided by VII, they will not be willing to pay for it.

WHO IS SELLING VII

So far, the value proposition has the U.S. DOT providing VII infrastructure and automakers supplying vehicle-based systems. Under this scenario, the U.S. DOT would pay for VII infrastructure as it would any other highway project. The concept calls for up to 250,000 roadside units communicating with vehicles in all speed ranges and an initial investment of $3 billion to $5 billion in public funds. With the Highway Trust Fund in the red, this level of investment, along with the costs to operate and maintain a national VII network, poses a huge barrier to national deployment.

On the vehicle side of the proposition, the auto industry is reluctant to invest large sums of money in VII until the U.S. DOT has committed to building the national infrastructure or other incentives or regulatory mandates are implemented. Additionally, the financial health of the auto industry is restricting investments in such technology, and the U.S. DOT is reluctant to impose new, unfunded mandates on the struggling industry.

Both the public cost of the program and the health of the auto industry will impede VII deployment schedules and create further delays in realizing the benefits of widespread deployment.

So, are we trying to sell something for which there is no market, or are we selling the wrong things?

WHAT ARE THEY SELLING?

The promise of VII has been to enhance mobility and reduce congestion while also improving transportation safety. But are
consumers willing to buy these things?

Selling Good Transportation

Transportation systems and services are operated by government agencies (for the most part) because the consumers of these systems and services historically have not perceived their full value.

During the past four decades, congestion levels have increased, and economic growth has required expanded transportation infrastructure across all market sectors, from highways to ports. During that time, it has become apparent that consumers are willing to pay for good transportation and improved mobility. The toll industry is reaping the benefits of this growing realization.

Selling Traveler Information

Another outcome of increasing traffic congestion has been the growth and mainstreaming of traveler-information services. During the dot-com boom of the 1990s, companies were hoping to capitalize on the data generated by intelligent transportation systems (ITS) on our nation’s freeways. Their hopes were somewhat premature; the market for such data had not yet emerged. Now it appears that the market is coming around due in part to new methods and models for providing such services. Navigation systems and other in-vehicle services, traffic websites and handheld devices, like cell phones and PDAs, are providing the channels for access to this information, and people are more willing to pay to get it.

Selling Transportation Safety

Transportation safety is a hard sell. It might be easy to sell vehicle safety features to certain consumer groups, such as new parents. Citizens may successfully plead with their city council to make roads safer, but the general public has not fully grasped the value of safer roads and vehicles. While VII may promise to help reduce traffic crashes and provide advance warnings of potentially unsafe highway or vehicle conditions, apathy seems to rule.

Selling Vehicle Quality

The auto industry views VII as a means of monitoring and improving vehicle quality. VII will generate rich vehicle-diagnostic data. VII also can provide more efficient mechanisms for vehicle software upgrades and the installation of software patches. Improved customer service and vehicle quality are commodities that can be sold.

Selling the Environment

Concern is growing over the environment and energy conservation for obvious reasons. The U.S. auto industry is reacting to these trends, albeit too slowly, by seeking improved propulsion systems and alternative fuels. More efficient transportation systems can certainly help reduce emissions and fuel consumption. Also, greater modal balance can help reduce the number of vehicles on the road. One way to achieve our environmental objectives is through road-pricing strategies.

To whom are they selling?

The thrust of the VII program has been to sell the general public on the benefits of the program for congestion relief and safety. The automakers will attempt to sell VII to consumers of vehicles based on safety, quality and improved customer service.

While these consumers are key to the success of VII, they may not be the initial consumers or early adopters of VII. If not the individual consumer, then whom?

Fill in the gap

So far, it is difficult to make a compelling case for VII deployment because the sellers do not have sufficient resources for the necessary investment and consumers may not place sufficient value on what is being sold. In order to make the value proposition work, it will be necessary to:

• Obtain the investment needed or reduce the investment required;
• Increase the value for consumers by diversifying what is offered; and
• Find other consumers who are willing to pay for VII products and services.

The gap between good idea and large-scale deployment will be filled, but it cannot wait until the economy is healthy, the technology is fully mature and accepted and the Highway Trust Fund is whole. The gap will be filled by entrepreneurs
who understand the value proposition and can apply the necessary leadership. The U.S. DOT and the auto industry should act as enablers to make this happen.

**Toll beginnings**

VII infrastructure investment requirements are sizable, but more manageable if you reduce the number of locations for VII deployment and phase the deployment as resources allow. Rather than the current focus on the Interstate Highway System, it would make more sense to start with toll and parking facilities. These facilities already have robust, redundant communications networks, back-room data processing plants and mechanisms in place to operate similar systems. Toll-equipment providers are now moving toward dual-frequency platforms, and toll authorities are migrating to dual-frequency readers that subscribe to dedicated short-range communications standards. This will allow electronic payment transactions, as well as the exchange of other data from the vehicle to roadside equipment.

Toll-equipment functionality would be increased to tap and transmit on-board data and to retrieve information from the roadside units. Vehicles that do not have upgraded on-board equipment will be able to get enhanced traveler information via roadside ITS infrastructure and other media. Like current toll tags, the new on-board units would be portable or mildly embedded in the vehicles. Access to the OBDII port might be an added benefit, but would not be necessary. Under this scenario, auto industry investment in on-board equipment would be minimal (at least initially, until the return on investment gives them sufficient incentive to integrate such devices into vehicles).

VII deployment on toll facilities would be self-supporting, requiring less investment from federal sources. This deployment also would stimulate new investment in VII on other facilities and increase momentum away from reliance on fuel taxes toward mileage-based user fees and congestion pricing. It is under this longer-term scenario that VII deployment, operations and maintenance would pay for itself by gradually supplanting current transportation funding mechanisms.

Another way to reduce the level of investment is to leverage existing communications infrastructure along our nation’s roads. Many of our highways are equipped with fiber-optic communications that can provide the backbone needed for the VII network. Partnerships with communications-service providers can help fill gaps in the networks, especially in rural areas.

We also should learn from other innovative financing mechanisms like design-build and public-private partnerships. These contract mechanisms can help expedite the deployment of VII infrastructure, especially when funding is tight. However, the current credit crunch will decrease available investment funding from the private sector for these projects.

The Interstate Highway System certainly cannot be ignored as VII is rolled out. The conversion of portions of the Interstate Highway System to VII-tolled facilities should occur gradually. In the meantime, federal focus on urban interstates, in particular, for VII deployment should be evaluated during re-authorization discussions.

The downside of this phased approach is that most state, local and rural roads will be lower priorities for deployment. Safety is the primary concern on these facilities. A data-driven approach based on highway safety for VII deployment on non-interstate and untolled highways should be established under the next highway reauthorization. The U.S. DOT should provide the structure and standards to enable this approach. Federal funding will be critical to take VII beyond toll roads and interstate highways to our state and local road networks. The safety benefits of this approach should justify the federal investment required.

Reducing and phasing in the investment in VII infrastructure by leveraging existing infrastructure and partnerships will jumpstart VII deployment, and benefits can be realized sooner.

**Entertain the entrepreneurs**

One way to increase the value of VII is to diversify the product. Already, hundreds of potential applications have been conceived, including VII tolling. Instead of trying to sell good transportation, transportation safety, vehicle quality and the environment to an unenthusiastic group of consumers, we should consider selling access to the network and to the data generated by VII to entrepreneurs who will dream up all sorts of new services and applications.

The aftermarket already is finding its way into vehicles, as demonstrated by the growth in the portable navigation system market. Now, imagine a dedicated short-range communication (DSRC) toll radio with an integrated navigation system, advance safety warnings and the ability to purchase a variety of services, such as parking, fuel or food. Conversely, think about adding DSRC to your Garmin or TomTom to provide tolling and a variety of other applications in a stand-alone unit in the vehicle.

This opportunity extends beyond the vehicle and into our traffic management centers (TMC) and data centers, where enhanced data can be provided for improved commercial vehicle operations, weather reporting and traffic reporting. Partnerships with the private sector for use of TMC data are already commonplace, but can be taken to a whole new level with the types and volume of data that will be available.

Another way to diversify the product is to provide the...
means to communicate between vehicles and the infrastructure through multiple channels. While this may promote more consumer-driven applications, it also can be a problem without standards that support interoperability. For example, the effort is doomed to fail if the interagency group or other similar organizations must support an unlimited number of flavors of on-board and roadside equipment, protocols and standards for VII tolling.

A more rational approach is to focus on a single standard for initial deployment. Other protocols and standards can be added as the industry grows and the diversity of applications expands. A completely consumer-driven approach is not the answer. A more phased, controlled approach makes more sense.

**CONSUMER CONFIDENCE**

VII consumers would include drivers and vehicle owners, but other consumers of VII infrastructure and services offer opportunities to move forward more quickly with deployment.

Partnerships with communications companies should be expanded in order to share infrastructure. Entrepreneurs would be suppliers of VII to the U.S. DOT and to the consumer. Within this group of entrepreneurs are cell-phone and PDA providers, like Nokia and Blackberry, and the navigation system providers, like Garmin and TomTom. The toll industry offers tremendous opportunity as a consumer of VII, and commercial-vehicle operators are generally pioneers with such technologies. We need to leverage opportunities to expand our consumer base and to increase the value proposition for this group of consumers.

**A CONCESSION STAND**

With the U.S. DOT and the auto industry as enablers, toll authorities can become the first VII franchises in the U.S. Authorizing legislation would not be required for existing authorities, and additional investment, while not insignificant, would be minimized. Subscribers to existing toll services could be offered expanded services and enhanced equipment for a surcharge.

As the benefits of VII are demonstrated on toll facilities, the phased deployment of VII infrastructure can begin on untolled highways. This can be accomplished through concession agreements or through public-private partnerships on a state-by-state basis. The concession agreement would include regulatory language related to the use of the infrastructure and data. National standards already are being developed and adopted for this purpose to protect the privacy of individuals and ensure a secure network. The concessionaires would be regulated by the state and federal government, much like public utilities.

The ability for toll authorities to obtain concessions should be authorized as part of this model. Concessions will allow them to expand their networks to other highways on a case-by-case basis. Ultimately, toll-authority concessions would allow greater use of highway pricing options for revenue generation, with the ultimate goal of replacing the fuel tax.

**GIVE IT VALUE**

A viable and sustainable business model is needed to realize the substantial benefits of VII deployment. However, the value proposition is not in place to make this happen. In order to make the value proposition work, it will be necessary to:

- Obtain the investment needed or reduce the investment requirements for VII deployment;
- Increase the value of VII for consumers by diversifying what is offered; and
- Find other consumers who are willing to pay for VII products and services.

A phased infrastructure deployment driven largely by the consumer market is needed. The best way to stimulate the market is to open it up to entrepreneurs. However, complete reliance on the consumer market is a recipe for disaster. Structure, standards and a logical starting point are needed for a rational, national VII business model. A good starting point is the toll industry. Others will soon follow.

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Barbaresso is the vice president and national director of ITS for HNTB Corp. He can be reached at 313/961-3330 or jbarbaresso@hntb.com.
The prototype system, which makes driving through work zones on rainy nights easier and safer, is ready for tests on real-life construction projects. A grant from FHWA’s Technology Partnerships Program is helping 3M Co. of St. Paul, Minn., conduct the research necessary to refine and evaluate the system.

The Technology Partnerships Program provides federal funds to advance development of technologies at the prototype stage. FHWA has awarded five grants so far and expects to name more grant recipients in February 2009. The program is part of Highways for LIFE, FHWA’s initiative to accelerate innovation in the highway industry. The initiative’s focus is on improving safety and quality while cutting construction-related congestion.

One of the chief goals of the agency is encouraging deployment of innovation that improves safety performance on the nation’s highways. By supporting transportation community in refining innovations and getting them to the marketplace faster, we can enhance safety for both drivers and workers.

**Magic beads**

The safe and efficient flow of traffic through work zones continues to be a major concern for FHWA. The agency is actively pursuing improved work-zone safety and mobility through a multifaceted approach that includes regulation, engineering, education, enforcement and coordination with other organizations interested in work-zone safety.

As one facet of that approach, the all-weather pavement marking system project funded by the FHWA Technology Partnerships Program is designed to refine a work-zone system that is highly reflective in both dry and rainy conditions, making it more visible than conventional marking systems. That will improve work-zone safety for both travelers and construction workers.

The system consists of high-build waterborne paint and glass beads, which provide good visibility in dry weather but can be hard to see in the rain. It also includes optical elements made of a ceramic core surrounded by tiny, high-refractive-index beads. It’s this second set of beads that provides visibility in wet conditions.

3M is using its Technology Partnerships grant to develop a version of the pavement marking system suitable for work zones. The most critical property, according to the company, is visibility—even during heavy rainfall, when drivers particularly need pavement marking guidance. For efficient application of the system in a work zone, drying time also is important. Thinner paint dries faster but is less able to hold onto the optical elements, so researchers are seeking a balance between visibility and durability.
In the first round of tests, researchers formulated about two dozen samples of the pavement marking system by changing variables such as bead mixture, bead and element size and paint thickness.

They applied the samples to a New Orleans, La., test deck at locations where they would receive the maximum number of tire hits from passing traffic. To assess durability, they compared the samples’ retroreflectivity—or ability to reflect light back to the source—in dry, wet and rainy conditions at the beginning of the experiment and after exposure to traffic.

After analyzing the data, researchers chose three samples that retained the greatest degree of retroreflectivity to use in a human factors field evaluation developed and conducted by the Texas Transportation Institute. The institute designed the study to simulate nighttime driving in a work zone and assess the visibility of the prototype pavement markings under dry, wet and rainy conditions.

The three prototypes and two conventional marking systems were applied to a closed course at Texas A&M University that includes a section where artificial rain can be generated. As study participants, accompanied by a researcher, drove an experimental vehicle with low-beam headlights through the course, they were asked to identify the earliest point at which they could detect a change in delineation in each marking.

Thirty people participated in the study over the course of several nights. Each participant spent about an hour making several trips through the course so that he or she could evaluate the visibility of the marking systems repeatedly under dry, wet and rainy conditions. After reviewing the results, researchers determined that all three prototypes performed equivalently under all conditions and significantly outperformed the conventional markings under wet and rainy conditions.

The next round of tests will be conducted in three work
zones. For that evaluation, researchers will use one of the thinner prototypes for a faster drying time and a high wet-reflective element drop rate for increased durability. Because frequent rain is critical to the success of data collection, two test sites will be in Washington state. The other will be in North Carolina.

The goal of the evaluation process, according to 3M’s Traffic Safety Systems Division, is refinement of a cost-effective pavement marking system that maintains optimal visibility and enhances driver safety in all types of weather, as well as meets work-zone requirements such as faster application and drying times.

A paper describing the 3M research project will be presented at the January 2009 annual meeting of the Transportation Research Board. It’s also scheduled for publication in Transportation Research Record: Journal of the Transportation Research Board.

In addition to the all-weather pavement marking system for work zones, other Technology Partnerships grant projects include an automated pavement marker placement system, an intelligent asphalt compaction analyzer, an aggregate imaging system and an asphalt binder cracking device. For more information, visit www fhwa dot gov/hfl/tech.cfm. To learn more about FHWAs work-zone safety efforts, go to http://safety fhwa dot gov/wz/index.htm.
Executive of Chicago Skyway and Indiana Toll Road leases talks about progress

n less than a two-year span, the Spanish investment firm CINTRA-Macquarie took command of the private-partnership landscape in the U.S. behind the leasing of the Chicago Skyway and the Indiana Toll Road. Both agreements are in full swing, but what has happened since the initial purchase?

Industry author Dan McNichol, who recently completed a three-part series titled Funding Forward for Roads & Bridges magazine, sat down with Fernando Redondo, CEO with the Skyway Concession Co. LLC, to find out how the relationship between the firm, state DOTs and the public is shaping up.

Dan McNichol: Are the Chicago Skyway and Indiana Toll Road better managed now that CINTRA owns them?

Fernando Redondo: Are the roads operating better today than they were before the lease? Yes, primarily due to the long-term capital investments that we have made. The greatest example and the most impactful to our patrons is the introduction of the electronic tolling. Nearly $50 million was spent installing an electronic toll collection (ETC) system and an entirely new manual toll collection system on the Skyway and the Indiana Toll Road. The roads are also members of the E-ZPass group of toll facilities. E-ZPass allows the Indiana Toll Road and the Chicago Skyway to offer its patrons a fully compatible ETC system with Illinois and states throughout the Mid-Atlantic and Northeast regions of the U.S. More than 17 million E-ZPass customers are able to enjoy the efficiency and convenience of paying their tolls electronically on the Skyway and Indiana Toll Road.

McNichol: Will upgrades to the Skyway's or Indiana Toll Road's travel capacity be brought about faster now that CINTRA owns them?

Redondo: Skyway Concession has invested nearly $80 million in improvements and general maintenance during the first years of operation. We are committed to investing more than $550 million in improvements during the life of the lease. Investments have been made at the Skyway to utilize reversible lanes, resulting in more lanes being available at peak times. More lanes can be dedicated inbound to the city of Chicago in the morning and more lanes can be dedicated to the outbound traffic at night. This, along with the efficiencies of ETC, have resulted in a more than 60% overall improvement of the Skyway plaza throughput. Also, approaches to the plaza has been widened so our patrons have a safe transition into and out of the plaza area. On the Indiana Toll Road, ITR Concession Co. has awarded more than $300 million in contracts since taking over operations in 2006, and more than $4 billion is committed for improvements during the life of the lease. Millions have been invested in efforts to expand all mainline plazas, which will offer more lanes and ultimately more capacity. In addition, millions have been spent on adding travel lanes in the busiest portion of the road and on the rehabilitation of bridges and pavement throughout the roadway.

McNichol: According to your lease terms of the Indiana Toll Road, what happens if the state chooses to put a high-speed rail line down the median? Will Illinois or Indiana state officials be allowed to use the median for rail under the current terms?

Redondo: As with most maintenance aspects of the Indiana Toll Road lease and the Chicago Skyway lease are determined by ever-changing department of transportation requirements, some, like the removal of animal carcasses or the filling of potholes, far exceed the timeframes placed on government agencies performing similar tasks. That said, our focus is the customer, and if we can provide the customer a better service by doing road construction at night or plowing our roads to bare pavement, then that’s what we will do, no requirement needed.
streets or highways adjacent to the Indiana Toll Road. However, these rights are limited and prohibit construction of a new highway consisting of a road of 20 continuous miles within 10 miles of the Indiana Toll Road. This contract provision is not in question today for the simple fact that the Indiana Toll Road has enormous capacity for future traffic growth in most areas, and in the busiest section we are currently investing $250 million to expand to three lanes of travel in each direction.

Furthermore, the state requires annual traffic studies of the Indiana Toll Road to ensure that customers are receiving an acceptable level of service.

If in the end the independent traffic consultant determines that the road needs to be expanded to meet the requirements of the traffic it will be, and it will be done at our expense, not the taxpayers of Indiana. Hypothetically speaking, if in the future capacity of the Indiana Toll Road and the Chicago Skyway were at a maximum level and we were unable to expand the roadways to properly accommodate the traveling public, and the only relevant option at the time was the construction of the high-speed rail in the toll road right-of-way, we would work with our partners to ensure the needs of the traveling public were met.

**ALL-ACCESS PASS**

The Magnum Power over Ethernet PES42P Power Source Edge Switch is designed to support up to four surveillance or access-control devices as well as a fiber trunk back to a central control point. This makes the product ideal for applications such as traffic monitoring and control where up to four cameras at an intersection can be hooked to a single PES42P switch. This unmanaged PoE edge switch has no outboard AC box and is capable of deployment in small spaces in harsh environments. The Magnum IPS42 chassis brings big-switch internal power supplies to compact unmanaged industrial edge switches. The IPS42 offers integrated AC/DC, 125 VDC dual-source, 48 VDC dual-source, 24 VDC dual-source or integrated AC power input.

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**CAMERA COMPANION**

Transportable cameras come with benefits

Managing multiple infrastructure projects brings with it the challenge of costly travel to each destination. Webcam-based project management saves the time, the money and the travel. Additional benefits come with the flexible deployment of cameras.

Ideally, uncomplicated transport of cameras as well as the ability to easily move from location to location provide the maximum cost efficiency for monitoring traffic activity or highway- and bridge-building projects.

EarthCam leads the way in transportable variations of webcams. Two examples are the company's modular new Solar TrailerPod and EarthCam's popular wireless, solar-powered TrailerCam.

The new modular Solar TrailerPod can be customized easily using interchangeable components and cameras. It is quickly adaptable for analytic, license plate reading, traffic, OEM and surveillance cameras, among others. The compact system delivers an efficient transportable unit for rapid deployment and easy relocation.

The TrailerCam has proven itself in fast emergency deployments and setup. It is wireless and self-powering, with the camera located atop a 30-ft telescoping tower. The camera includes robotic pan, tilt and a 300X zoom.

Both systems are powered by EarthCam's exclusive Control Center Seven Software. Control Center Seven software delivers solutions for managing, monitoring and marketing projects. Features include satellite and aerial photography, detailed local weather conditions and auto-generated PowerPoint presentations for customers and government agencies.
Transportation engineering design projects sometimes need to take into account for more than just standard vehicles. Transoft Solutions, developers of software for the architectural and engineering communities, announces the launch of AutoTURN Extended Vehicle Libraries. Available as a purchased download from www.transoftsolutions.com/extendedlibrary.aspx, these vehicles supplement AutoTURN 6.0’s extensive libraries in order to ensure users have the right types of vehicles they need for their projects.

“Our users have shared with us numerous stories of projects where they had to design vehicles that are not included in the standard design libraries, like AASHTO and TAC for example,” said Johann Flores, Transoft Solutions technologist. “With the AutoTURN Extended Vehicle Libraries, we are saving our users time by making available vehicles they would have to otherwise custom-create.”

The AutoTURN 6.0 Extended Vehicle Libraries are a compiled set of the most commonly requested vehicles. AutoTURN 6.0 users are able to search for vehicle libraries according to type. Included are three collections of emergency, two compilations of refuse collection and one library of mining vehicles. As a result of the thorough research and development, every vehicle type includes plan/realistic view; lock-to-lock time; profile view; track width; tire size; steering type; articulating angle; wheelbase; steering lock angle; and front- and rear-axle group, as well as the vehicle length. Downloading any or all vehicle types requires users to have a valid AutoTURN 6.0 license number.

Pricing for the Extended Vehicle Libraries is based on both single and network license configurations. Special pricing for users who buy multiple vehicle libraries with discounts ranging from 10-35% depending on the quantity purchased and 45% for the entire set. Additionally, AutoTURN MAP (Maintenance Assurance Plan) clients will receive an additional 10% off any AutoTURN Extended Vehicle Library purchase.

Designing the highway infrastructure that will revitalize the American economy requires the right software. Nebraska Department of Roads (NDOR) has switched from a competing application to join the growing number of departments of transportation using AutoTURN 6.0 for their vehicle swept-path maneuver simulation, analysis and design needs.

For the Nebraska Department of Roads, interest began to build momentum after Transoft Solutions’ EIT Billy Chan and National Sales Manager Adam Spear conducted an AutoTURN presentation at the Nebraska Users Group (NeUG), hosted by NDOR, on March 18, 2008. After an extensive two-month evaluation and comparison, members of NDOR’s Engineering Support and Business Technology Support divisions concluded that AutoTURN 6.0 was a stronger program than the application they were running at the time. In a follow-up conversation with Spear, the members of the evaluation team remarked that the Transoft Solutions application was more user-friendly and had better integration with the CAD platform they use.

With AutoTURN 6.0 being utilized by upwards of 75 people in three offices, NDOR joins the 34 other state DOTs currently using Transoft Solutions’ vehicle swept-path simulation and design application.
NuGard-31, a W-beam guardrail strong post system that combines NCHRP 350 (TL-3 and TL-4) and MASH (TL-3) compliance with a design that makes installation and repairs simple, fast and inexpensive.

Specially designed 5 lb/ft Rib-Bak U-channel steel posts allow a standard W-beam guardrail to rise during impact, dissipating energy and resulting in a smoother, more predictable vehicle redirection. The posts, which are available galvanized or powder-coated to prohibit rust and promote longer life, are designed to work with standard W-beam guardrails (AASHTO M-180, Class A or B, Type II).

Nu-Guard-31 eliminates the need for heavy, expensive Thrie-beam guardrail. No offset blocks are needed, either. A standard bolt assembly attaches a standard W-beam guardrail to Nu-Guard-31 posts.

The system is uncomplicated, making it much faster, easier and less costly to install than traditional wood or I-beam post systems. The Rib-Bak U-channel steel posts are 6½ ft in length and are quickly and easily direct-driven into the ground, even through asphalt, to a height of 31 in. Recommended spacing is every 6.5 ft.

The FHWA-accepted Nu-Guard-31 system can be used in strong post applications, along roads or in medians with design speeds up to 65 mph (Ref. B-162).

With lives at stake and infrastructure budgets getting squeezed, the FHWA-accepted Nu-Guard-31 is the right guardrail strong post system at the right time.
The SPEEDsentry Shield is the ideal radar speed sign when portability is paramount. Weighing only 15 lb—including battery—the Shield is compact. Each fits snuggly inside a padded carrying case and several can be transported in the trunk of a car.

The Shield sets up quickly onto the back of a mounting plate, which can be installed onto a pole, post, vehicle hitch or trailer. Programming is accomplished easily via onboard buttons or wireless PDA. Lithium ion batteries allow for a running time of up to two weeks between charges, depending on road conditions and sign settings. High-intensity LEDs combine with glare-resistant, UV-protected Lexan to increase contrast and digit visibility.

Despite its sleek design, the Shield remains tough with a welded aluminum enclosure, shatterproof shield, impact-absorbing corners and a graffiti-resistant powder coat.

The Shield delivers on the data side, too. The display can be turned off so true, unaffected information can be collected before and after traffic-calming efforts. Data is quickly downloaded and all key performance data is presented on one screen. Users can identify peak travel times, see days and times with the worst violations, determine when and if problems exist, reveal patterns and more.

Colorado, Fresh Air and Fond Memories Served Daily,” is the slogan on the Colorado travel and tourism website. The state of Colorado attracts thousands of visitors who like to hike, fish, play golf and ski each year. Along with the thousands of visitors, there are thousands of vehicles that enter the major cities of Colorado. How does a major city control all that traffic? That’s where the Colorado Department of Traffic Signaling comes into play; they provide traffic-signal controllers, like models 332, 333 and 332D to help traffic stop and go in an orderly fashion.

What would drivers do without traffic-signal controllers? And, what would traffic-signal equipment do without a firm fiberglass platform to mount to? Jeff Lancaster, traffic-signal supervisor for the Colorado Department of Transportation, said they have been using fiberglass ground sleeves from Nordic Fiberglass Inc. for the past 12-13 years. He said that the fiberglass ground sleeves enable his crews to install these units in three to four hours compared with two or three days for concrete bases. They also like the large fiberglass base to walk on.

“Most of our controllers are out of the way of traffic,” said Lancaster, “some are located at the edge of a field, and our guys like standing on a clean, firm surface instead of mud.”

Whether you need a base to stand on or a mounting surface for a traffic controller, fiberglass makes it easy.
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Plato might have discovered this sooner if there had been a dual-ring, eight-phase controller at the intersection next to his home, but it would be another 2,450 years before NEMA came along. The constant cycling from green to yellow to red of traffic lights is the true heartbeat of America. Without it, our world would grind to a halt. The cycling of traffic light allows for an orderly and safe progression. Human beings accept traffic lights, because without them there would be chaos. Traffic signals impose a kind of fairness and promote rules of observance that people must accept to travel safely. To a traffic engineer, change is good. Change is ever present and necessary in our way of life.

What about political, social and economic change? Most of us see change as a positive thing only if we choose it and a negative thing if it is thrust upon us. “Change or be changed” is a phrase that has found recent circulation in the business world as a warning that we are in a crisis and it is not business as usual. Each of us lives under the threat of “change or be changed.” In last year’s U.S. presidential election, both candidates ran on platforms promising change, and victory may have been attributable to widespread support for the one who represented the greatest departure from the status quo.

The new administration of President Obama has an idea that investment in domestic, public infrastructure will stimulate our economy. Does this mean that good times are ahead for traffic-management and engineering professionals? When asked what change would most benefit our industry, most of us would immediately reply that we simply need more money. Unfortunately for us, we have a long and distinguished career of doing more with less. We tend to be passive. We will take the money if it comes. We will not demand more money for necessary repairs, replacement, upgrades, interconnect, coordination, software, retiming and ITS features, because coming on strong is against our nature.

How can we stimulate our traffic engineering ranks to raise their voices and demand change? The general public only sees red, yellow or green and has little awareness of the effort that goes into making signals change. We are victims of our own success. Each time legislatures have cut our budgets, we have found new and better ways to get the job done with what we are given. We have essentially trained our public officials to keep cutting. We have adapted to change. We have not driven change.

If infrastructure stimulus money comes our way, will we squander it? History shows that we have used any new funds wisely. In a few instances where politicians have advocated programs and received additional funds to alleviate traffic congestion, traffic engineers have made worthwhile changes. Some of the most dramatic changes in the last 25 years have been the result of temporary increases in funding.

In October 2008, the American Association of State Highway & Transportation Officials (AASHTO) proposed a $545 billion reauthorization for transportation. No one really expects to get it, but if President Obama wants a blueprint, it is already there. One change in the request is that there is a marked increase in the percentage of operations funding, as opposed to traditional capital funding, identified in the plan.

Traffic engineers need to be ready to change by demanding a larger piece of the infrastructure pie. Since there is no scenario where massive new highway construction will be funded, economic stimulus in the area of operations is a change we need.

If infrastructure stimulus money comes our way, will we squander it? History shows we have used new funds wisely.
Driving productivity through innovation

Our solutions make it so much easier. When it comes to your transportation and civil design projects, hard work and great ideas aren’t the only things you need. You need the right solutions to get you ahead. Our easy-to-use roadway and parking layout software provide the functionality to realize your designs.

**AutoTURN** - analyze and confirm all types of vehicle maneuvering capabilities by simply dragging it through a path. Test different site plan scenarios right up to your final design for road access and loading situations. Includes national standard design vehicle libraries (AASHTO, CalTrans, TAC, etc).

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