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Infrastructure projects should not only be 'shovel-ready' but 'software-ready'

In 1962, Congress approved the request to make last week “National Transportation Week”, and over forty years later the title has been aptly changed to “Infrastructure Week 2014.” Coupled with President Obama’s stump speech last Wednesday about bolstering our highways and bridges, the week brought much needed attention to the dire need to invest in our nation’s failing infrastructure. And it couldn’t come at a better time.

Our country’s infrastructure grades have been near failing since 1998, averaging only Ds according to The American Society of Civil Engineers. This low grade is reflected in the frustrations that Americans experience with transportation on a daily basis as they drive on roads and bridges built in the 1950s, and ride on rail lines that were placed in the ground almost a century ago.

Improvements to these physical transportation systems are essential pieces of a larger solution, but they are only a partial answer to our current problems. There needs to be serious consideration to incorporate more intelligent technologies into our transportation systems, a true “software infrastructure”.

Significant improvements in mobility can be made, with minimal investment as compared with large-scale physical transportation projects, by utilizing intelligent transportation software in our cities and municipalities. Integrating the use of smart technology into a city transportation system can simplify modernization without requiring cities to completely rebuild.

We’re already seeing cities embrace intelligent traffic technologies – and it’s not only big systems or large urban areas that realize the impact software technology has on transportation:

- The Metropolitan Transportation Authority (MTA) in New York recently upgraded the world’s largest train control system that supports NYC subwayswith software that provides fully automated traffic control, wayside signaling, automatic vehicle identification and integrated voice and data communication. This is the largest project of its kind in the world controlling 172 stations, 108 miles of track and 220 simultaneous trains in rush hour.

- New electric locomotives recently purchased by Amtrak and a multi-state procurement will be utilizing new, state-of-the-art machines with more than 50 computers on-board to help control everything from computerized pressure braking to “distance monitors” which analyze and send all of the train’s data to a central source to ensure enough distance between trains for safe braking.

- The City of Tyler, Texas was experiencing growth in its commercial district, but citizens were frustrated with the increasing amount of traffic congestion created by the economic development. Instead of a “bricks and mortar” solution that may have resulted in construction and additional traffic delays, Tyler installed traffic control software into their existing infrastructure to coordinate traffic signals real-time based on current traffic patterns. Since the traffic control software was installed, the city has reduced travel time by 22 percent and delays by 49 percent. These improvements amount to over $1.6 million in savings for Tyler drivers.

The president’s transportation plan announced earlier this year, Transportation Secretary Foxx’s legislative proposal GROW AMERICA that was recently sent to the Hill, and the focus “Infrastructure Week” brings to the issue of transportation gives our country a unique opportunity to continue essential infrastructure improvements that support economic development in our cities and increase America’s competitiveness in an aggressive global marketplace. Enhancing roads and bridges and bolstering alternative methods of transportation are essential to support these goals, but intelligent technologies must play a key role in transportation funding decisions.

It’s hard to imagine a world in which we can gather information at the touch of a button, but our transportation infrastructure is operating on systems in place before the invention of the internet. Software can provide affordable, effective solutions that encourage economic growth, support city resiliency efforts, and help the U.S. transportation system finally move into the 21st century.

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