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Planning for Emerging Technology

THE “TRANSPORTATION REVOLUTION” – HOW DO PLANNERS GRAPPLE WITH AN UNCERTAIN  
FUTURE?

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**First issue: VMT trends.** Early in 2015, the NYSAMPO Modeling Working Group was discussing how to address declining VMT, total and per capita, a trend that we had seen since the beginning of the recession in 2008. Discussions include the impact of different travel and auto ownership patterns of urban Millennials. Then this happened: FHWA published VMT figures for March and 1st quarter 2015; and then for April and four months of 2015. In each case, VMT was a record high. This has continued with each successive travel trends report into summer 2015.

Question for forecasters: Is the 2008-2014 downward trend an anomaly in an otherwise long term upward VMT trend, or is the 2015 upward trend an anomaly in the otherwise downward trend of the past 6 years?

Caveat for planners: While we need to pay attention to all sorts of trends, we should do so in a way that requires care about proclaiming them “accurate” versus proclaiming our methodology credible.

**Second issue: Technology.** Planners need to be thinking about the impact of disruptive technological advances ranging from connected and autonomous vehicles, to micro-manufacturing with 3D printers, to solar roads, self-healing pavements, and on-site 3-D printed bridge elements fabricated from non-metallic materials. The Connected Vehicle program has already generated a long list of safety benefits. Will V2V and V2I communications become commonplace enough to change MPO investments in safety projects? There are reasons AV might increase travel demand, including transport of non-drivers like seniors and children; and reasons it may reduce travel demand, like removing the need to hunt for parking. What is the ultimate impact, and how soon?

While there are limits on home-sized 3-D printers in terms of feedstocks and what can be fabricated, consider the idea of neighborhood fabrication sites with larger printers and lots of feedstocks. What does this do to urban goods movement/delivery?

How do changes in construction technology affect State and local transportation budgets, which are now heavily weighted in most parts of the country to system preservation/state of good repair?

**Third issue: Sustainability.** Looking at the NCHRP Report 750 Series: Informing Transportation’s Future, there are 6 volumes of really interesting stuff. As MPOs and state DOTs pay more attention to climate change adaptation (consider resiliency planning) and mitigation; and to creating sustainable transportation systems and sustainable communities, how does that change our thought processes in terms of what we include in short and long range plans to project designs? How will small MPOs in flood prone areas, for example, find the resources to plan and implement necessary system improvements? If MPOs place a high priority on sustainability, what does that actually mean? How do we both encourage and manage public expectations?