**Transportation Issues in Major Cities Committee (ABE30)
2015 TRB Annual Meeting**

January 12, 2015

## Welcome and Introductions

* 1. See sign-in sheets

## Presentation on Autonomous Vehicles, Shannon McDonald (AV15 Organizer)

### Connected and Automated Vehicle Systems: State of the Art and TRB Activities

The basic lay of the land in connected and automated vehicles is that traditional transportation technologies have matured to the point of diminishing returns while basic intelligent transportation systems (ITS) have been in development gradually for 25 years.

There is a distinction between autonomous (self-driving) and cooperative (connected vehicles talking) ITS. Anything you can do unconnected you can do better connected – safety, vehicle movements provided to infrastructure operations (vehicle to infrastructure - V2I), better information and guidance about traffic and road conditions (infrastructure to vehicle - I2V), conditions (vehicle to vehicle - V2V)

This is not a new idea, but Google (and DARPA Challenges) have really pushed this forward. As a result, this has been getting a lot of attention in the last few years

Vocabulary is in motion – “driverless,” “autonomous,” “self-driving,” deciding on what the levels are. SAE Automation Levels seem to be the ones we are settling on.

Automation is a tool for solving transportation problems: congestion, energy use and emissions, safety

Automated Vehicle Symposia – have had for 3 years, bring together everyone who is involved/affected – legal, insurance industry, vehicle industry, government, researchers…

Many committees have been active in this work and on Friday they had the first workshop on what this might do to our built environment – formed groups with engineer, planner, architect, etc. to get a diversity of opinions, envision the future scenarios

**Questions:**

Q: How do you see Google’s efforts, and the government’s efforts, and the car manufacturer’s efforts coming together?
A: Car manufacturers are telling us something about what they are doing, be we (government) know they are doing more. The diversity has been very useful thus far, developing a diversity of options. She expects to see the Google shuttles become self-driving. She is interested in the transit applications.

Q: Does it come together into one product eventually?
A: There are a lot of manufacturers on our roads anyway, so many people prefer to see this as a space

Q: On the policy tipping point where if we go for a shared vehicles approach, this could be the way to swap out parking for other transportation. Don’t want to see this become a huge VMT generator as people want their cupcake delivered to them. Need to do this switch deftly.
A: This is certainly something we are thinking about, and the transit side is being represented

Rina: this committee has expressed a huge interest in this topic. State DOTs have very different interests in these vehicles on Interstates. We want to make sure cities have a voice at the table since these cars in our urban environment is another story. Of interest to our committee, Philadelphia had a contest last year on the impact of automated vehicles in the city.

## NACTO Update – Linda Bailey

This has been a great year for the National Association of City Transportation Officials (NACTO). The organization went through a big fundraising push. Focusing on street design for the last few years, the next generation of street design to work for everyone and the future we want.

In 2015, they will be expanding the training series on the two guides they have put out. Email nacto@nacto.org to get on the distribution list to find out more.

The 4th Designing Cities conference will be in Austin, TX. Great conference last year, another good conference ahead

Upcoming activities:

* Publication on designing streets for transit
* Bikeshare and social equity – working with city of Philadelphia
* Kicking off work on green infrastructure
* New growth of mid-level leadership for city transportation – new program, keep an eye out for that
* Global Street Design Program has launched – same ideas in an international context.

Policy: federal policy, met with Secretary today, want to work on project delivery and transit funding at the federal level

Autonomous vehicles – have been working on this as well – see the listserve for updates.

## TRB Update

On behalf of Monica Starnes, our TRB committee liaison, Ema gave the update.

Bob Skinner is retiring, Neil Pederson will be the new executive director of TRB.

New strategic plan for technical activities – the model for committees

The committee is rotating 1/3 (9 members). If you want to be considered, please fill out the survey that is being sent to all who sign in (and has been posted to the list)

## Sub-committee Reports

### Strategic Plan – Steve Buckley

Throughout the year we put together the Strategic Plan and submitted it to TRB. We are awaiting approval; the draft is available online

### Paper Review – Eric Sundquist

We got a lot of papers – 50 received, 28 accepted for presentation, 8 accepted for revision and review and possible publication. 219 reviews were completed – a big thank you to all who did them!

Opportunities going forward:

* Surveyed people beforehand about their areas of expertise, but those areas did not line up with the papers we got
* Had a fairly hard time getting people to review the more technical/quantitative papers – if you are good at stats, tell us for next time! Not all reviewers on a paper need to understand the methodology – also want to look at the big picture of the paper.
* Make our paper calls a bit more specific. E.g. we wanted papers about big data, not necessarily ones using big data

Rina: it is her expectation that committee members will do reviews. If you are not going to review papers, you are not going to get a coveted slot on the committee. If you want to be on the committee, review!

Mark: get on the myTRB website and update your profile to reflect your interests, this will help paper review coordinator

TRB sponsors a paper award each year for policy papers – the Wutan Award. We should nominate if we have one that is particularly good in the policy area

### Research – Wes Marshall

We had 4 paper calls – big data, urban freight, the gender gap in cycling, and livable arterials. Next year we want to get our calls out earlier so people could actually do research if they want, rather than just report on what they are already researching.

Research Needs – we have 9 statements in the database now. The next step is to start bringing these ideas to NCHRP and TCRP – looking for state DOTs to help support this

Had a meeting with Corinne of NACTO to talk about how to get urban research funded in a faster fashion, linking NACTO to the research needs and cities to universities

### Annual Meeting Organizers – Fred Dock, Jamie Parks, Aimee Jefferson

We worked with a lot of other committees and put together 3 workshops –

* The Art of Urban Street Performance Metrics
* Funding and Financing Vital Corridors: A Workshop on the What, Why, and How of Value Capture Methods (this will likely to lead to webinars)
* The Urgent Need for Improved Pedestrian Infrastructure and Options: Issues, Solutions, and Gaps

TRB changed the way that session credits are assigned, which allowed us a lot more flexibility. We partnered with many other committees – go look at who we are working with for their interesting topics. In total we had 5 lectern sessions and 5 poster sessions, in addition to the workshops.

### Communications – Stephanie Dock

Everyone who signed in at the meeting will be added to the ABE30 distribution list.

We are having a logo contest for the committee, to give ourselves a bit of visual identity. Posted on the wall in the rom were the logo submissions Stephanie received. Voting is coming soon!

TRB has created a new portal for managing committee friends and members, called My TRB. Please create a profile and self-nominate as a friend of the committee. An email will be coming soon reminding current friends to do this.

### Rina’s updates from the Chair

Rina recognized the executive committee – they have done yeoman’s work in helping to share the burdens of the committee – and her staff at MOTU for working on this committee above and beyond their normal duties.

## Research Presentations

### How Big Travel Data Can Help Big Cities – Steve Buckley

The challenge for the City of Toronto: Congestion is our number one problem, in the headlines daily, the current mayor thinks he was elected to “solve” congestion.

As a result they have had a whole bunch of initiatives, but now people want to know if they worked. Data is a challenge in this though, as anyone who has worked in this area knows. There is tons of data, but not always something useful and actionable.

**Data sources**

* Historically: tube counts, people sitting in cars doing counts for hours, floating car runs
	+ All expensive in terms of time and staff
* Now: GPS based, Bluetooth, EZ Pass readers
	+ Have to put out infrastructure and maintain it

The evolution of this – started from buses with automatic vehicle locators (AVL), I-95 corridor coalition. But the game changer has been that all mobile phones have GPS this gives you millions and millions of data points from smartphones. Toronto has been using this for cycling data, for which they got volunteers to provide data. Strava is getting ped data.

Uses for GPS data:

* Descriptive (understanding)
* Evaluative (measuring)
* Operational (responding)
* Predictive (forecasting)

What is Toronto doing? Using data from TTC vehicles (transit), using Inrix, cycling app from SF (go use it too!).

For transit, they can track every run and evaluate where they are having reliability issues in their system/network. This data can be hard to slice and dice, but it is where you can see the impacts.

Currently, they are building out their camera network to cover their arterial network a bit better. But can’t monitor everything – rely instead on Google data and deviation from the norm.

Long term plan: drones! Unmanned, unarmed, with cameras that can be deployed to where there are deviations from the norm.

Challenges for the Public Sector:

* Understanding what exists
* Understanding what we can use
* Understanding what to ask for

Toronto is going to be advertising for its first data scientist to address some of these gaps

### Small Travel Data Collection for Big Cities – Stephanie Dock

At the other end of the data collection spectrum, the District of Columbia has been looking to get a better handle on multimodal trip generation in urban environments, relying on a much more “small data” approach. This study was a result of a need for establishment-level data on trip generation by mode for the development review process, as well as to inform policy-making. Most existing data is suburban-oriented (ITE) and so needs adjustment. DC has some local data sources but they are not complete enough to replace the national data sources.

The study’s approach was to develop a methodology for counting person trips by mode in a way that was site-specific, replicable, simple, and could address complexity and variability in the urban, multimodal environment. A pilot was conducted in 2013/2014 to test the methodology and compare the outcomes to existing models. In the pilot, 16 sites were counted, clustered in 4 growing neighborhoods outside of DC’s downtown.

The methodology uses a combination of person counts by door and an extremely short intercept survey to determine mode for as many people as possible. The data are then combined (at the door level) to determine overall mode split. This methodology counts ALL trips, even just people taking their dog for a walk because those are pedestrian trips and from a safety and space perspective, need to be counted. This methodology does not gather trip-chaining – just the most immediate mode after walking out the door (walking is the mode if the whole trip is on foot).

A series of site and area data are also collected to give the contextual variables that will allow comparison between sites, including the uses and their sizes, parking spaces, and a few other variables that cannot be gleaned from other data sources after the fact.

The pilot found that in general, there were a lot more total trips than your standard ITE rates would predict. The mode share varied but in almost all cases, person trips in vehicles were less than 50% and walk was often the dominant modes (though with higher transit shares in some cases). Even within the sample sites, buildings had very different travel behavior.

DC’s takeaways from the pilot was that the combination of high non-auto mode splits and the higher number of trips made means that the volume of non-auto trips is much higher than they previously knew. In particular, there were high volumes of pedestrian trips. When considering that all site trips other than those that involve on-site parking are pedestrian trips at some point, there are many, many more walk trips than previously thought or than would be predicted from traditional data sources. This has obvious implications for what kinds of mitigations the District asks for, how planners communicate project impacts to stakeholders, and overall planning and policy for District-wide efforts.

The District alone cannot address the gaps in data knowledge – they are looking for other cities to adopt this methodology (or a variation on it) and collect their own data. If we all collect some, together we can build the robust database we will need to more accurately predict transportation impacts from development and system changes. DDOT is embarking on more data collection this spring and other cities are also beginning similar efforts – San Francisco has already started with a slightly modified version of the survey. More partners wanted!

### How LOS Contravenes Smart Growth, and California’s Transition to VMT – Chris Ganson

This presentation describes the transition in California from level of service (LOS) to vehicle miles traveled (VMT) as a measure of transportation impact

The issue with LOS: Infill development adds relatively little vehicle travel to the network, but it causes numerous LOS impacts because the network is already busy. Non-infill development looks like it creates less LOS issues even though it adds more trips to the network – death by a thousand cuts

Problems with LOS

1. Punishes last-in, inhibits infill, pushes development outward
2. “Solves” local congestion, exacerbates regional congestion
3. Inhibits transit (vehicles vs. people)
4. Inhibits active transportation
5. Measures mobility, not access; shows failure when we succeed
6. Measures mobility poorly; fails to optimize network even for autos
7. Forces more road construction than we can afford to maintain
8. Hard to calculate and inaccurate
9. Leads to costly, unhelpful solutions

Benefits of VMT

1. Removes barriers to infill
2. Easier to model
3. Already calculated (for GHGs)
4. More accurate
5. Sees the big picture
6. Measures mobility, not access; shows failure when we succeed
7. Measures mobility poorly; fails to optimize network even for autos
8. Forces more road construction than we can afford to maintain

Impacts

* Environment: emissions, energy use (transportation and building), water (use, runoff), consumption of open space
* Health: collisions, physical activity, emissions, mental health
* Cost: increased cost to state and local government (roads, other infrastructure, schools, services), increased private transportation costs, increased building costs (due to parking costs), reduced productivity per acre due to parking, housing supply/demand mismatch leads to future blight.

Where?

* Urban: streamlines infill, streamline transit and active transportation projects, lots of mitigation options, greatest *percent* VMT reduction
* Suburban: problems with LOS, benefits of VMT apply here too, many mitigation options, greatest *absolute* reduction
* Rural: Again, problems with LOS, benefits of VMT apply here too; many mitigation options at the plan level, some at the project level, VMT mitigation helps maintain small town character, equity
* All: Benefits to environment, health, public cost, private expenditures

Transportation Impact Fees – some preliminary advice on using LOS. LOS is not going away totally, just removing it from the environmental impact analysis, cities can still use it for their analyses. Just better not to use it for ad-hoc LOS-triggered transportation impact fees, better to use LOS to size your roadway capacity but base your fees on VMT.

## Open Floor for Announcements

Recognition that Matt Kroenberger, a committee member, is absent because he is receiving the Fred Burgraff Award at the Thomas Deen lecture right now. Congrats to Matt!

Eric Sundquist announced that the new edition out today on the Innovative DOT

Stan Caldwell of Carnegie Mellon – two new centers, one on connected and autonomous vehicle policy, one on the Mobility Analytics Center; if you provide the data, their students and researchers will provide data analytics

Andrew Stoeber – if your city is involved in a bikeshare program, please look up betterbikeshare.org - there are grants to advance social equity in bikeshare