Asset Management and the Two Faces of Automated Vehicles

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North Central Texas Council of Governments
Public Works Round Up

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The Two Faces
Society-Changing Innovation

- New vehicle form factors
- New road types and geometries
- Safer and more efficient transportation
- Mobility-as-a-Service (MaaS) versus ownership
- Transportation opportunity cost approaches zero
- Digital cites built through vehicle sensing
- Major reduction in VMT and emissions
- Less parking assets and more urban infill+greenspace
Today is Tomorrow

- AVs are high-maintenance versions of today’s drivers
- What’s good for drivers today, is good for AVs later
- Better and consistent striping
- Accurate signage
- Access to signal data
- Early warning for hazards
- Pinpointing workzones and other asset management activities
- Curbspace management
Philosophy of Asset Management
Standard Philosophy

Smart Roads talk to Dumb Cars.

Vehicles and drivers rely on IOO’s to collect data and distribute information.

Infrastructure, rather than cars, viewed as the sensing technology.

Condition of roadway assets and furniture is detected and managed by IOO’s.
Emerging Philosophy

Smart Cars talk to Dumb Roads.

Connected and automated vehicles are rolling sensors producing massive amounts of rich data.

Digital infrastructure becoming as important as real infrastructure.

Leveraging new technologies and services to get comprehensive picture of roadway assets.
Open Source Tools
Traffic Signal Data Sharing/Connected Vehicles

Allen
Arlington
Frisco
Grapevine
McKinney
Plano
Dashcam Tools
In-Car Data Collection
Next-Gen TMS

1. **Waycare** alerts of required action
   - I-15 at Russell Preventative
   - 7.1 mi (11 min)

2. **DMS** updated with preliminary warning

3. **Police** proactively positioned

4. **DMS** updated with preliminary warning
Volunteers for AV Road Rules?

How the INRIX AV Road Rules™ Platform Works

The INRIX AV Road Rules™ Platform enables cities to easily digitize local rules such as speed limits, school zones, stop signs, and more, and by doing so influence the areas where HAVs are deployed and ensure operation in accordance with local rules of the road. Once these rules and restrictions are digitized, vehicle operators can leverage this data to ensure safety and compliance. The system also allows vehicles in operation to report infrastructure needs (potholes, inadequate lane striping or signage) for attention and review by the road authority.
Texas Triangle Challenges

- Texas Triangle contains ¾ of Texas’ 27 million population – growing to 39 million people in 2040
- Seven of top 25 national freight bottlenecks
- Eleven of top 20 most congested roadway sections in Texas
- Doubling of freight tonnage from 2010 to 2040 (2/3rd by truck)
- More cross border trade value than CA, MI, ND, and AZ combined
## Proposed CV Deployment Locations

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