



Cities in the Driver's Seat: Automated Vehicles Today

NACTO Designing Cities 2017

November 1, 2017



@smartertranspo



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What is happening???



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AV REGULATORY UPDATE

- H.R. 3388 – “SELF DRIVE Act”
 - Passed House by voice vote on 9/6/17
- **S.1885 – “AV START Act”**
 - Passed out of Senate Commerce, Science, and Transportation Committee on 10/4/17
- NHTSA Automated Driving Systems 2.0: A Vision for Safety – ONLY Guidelines
 - **Public comments until 11/14/17**
- 4th Version of CA DMV AV Regulations Released
 - Public comments closed 10/25/17



BACK TO THE BASICS



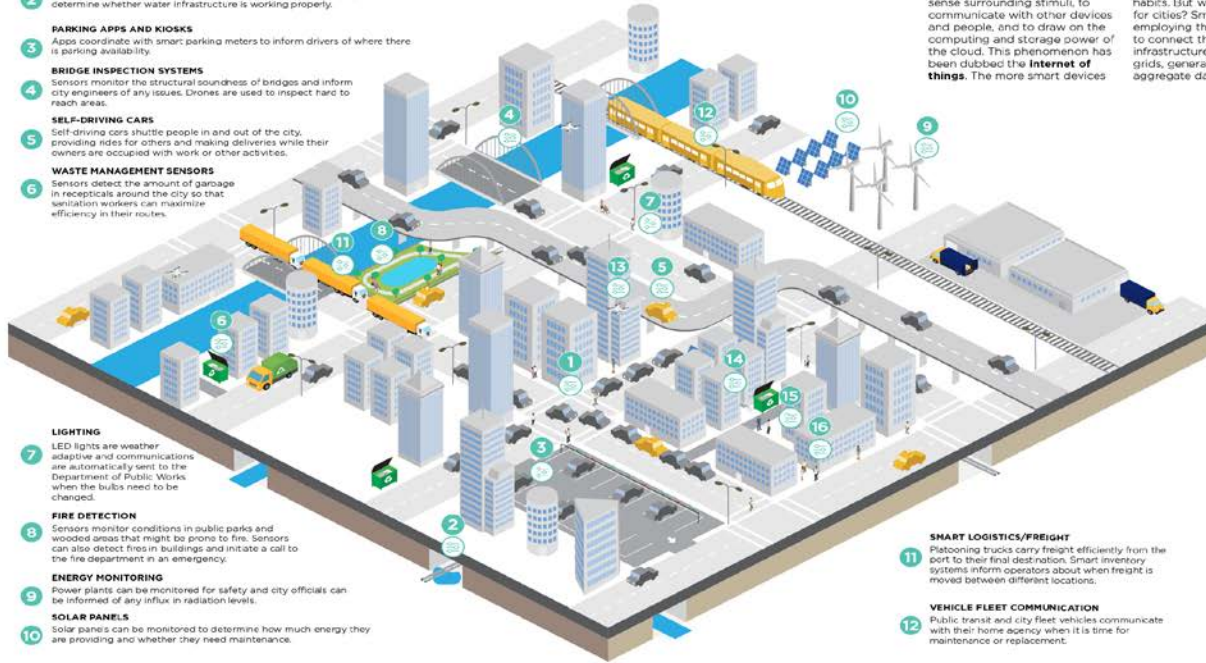
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LEGAL AND POLICY FOUNDATION

INTERNET OF THINGS IN CONNECTED CITIES

- 1 TRANSPORTATION CONGESTION SENSORS**
Smart transportation systems use sensors to detect congestion and bottlenecks in traffic patterns. They also rely on cameras to enforce speed and traffic infractions. In doing so, these tools gather real time information that can be used by city officials to make mobility networks safer and more efficient.
- 2 WATER AND WASTEWATER MONITORING**
Monitoring devices can detect leaks as well as changes in water pressure to determine whether water infrastructure is working properly.
- 3 PARKING APPS AND KIOSKS**
Apps coordinate with smart parking meters to inform drivers of where there is parking availability.
- 4 BRIDGE INSPECTION SYSTEMS**
Sensors monitor the structural soundness of bridges and inform city engineers of any issues. Drones are used to inspect hard to reach areas.
- 5 SELF-DRIVING CARS**
Self-driving cars shuttle people in and out of the city, providing rides for others and making deliveries while their owners are occupied with work or other activities.
- 6 WASTE MANAGEMENT SENSORS**
Sensors detect the amount of garbage in receptacles around the city so that sanitation workers can maximize efficiency in their routes.
- 7 LIGHTING**
LED lights are weather adaptive and communicators are automatically sent to the Department of Public Works when the bulbs need to be changed.
- 8 FIRE DETECTION**
Sensors monitor conditions in public parks and wooded areas that might be prone to fire. Sensors can also detect fires in buildings and make a call to the fire department in an emergency.
- 9 ENERGY MONITORING**
Power plants can be monitored for safety and city officials can be informed of any influx in radiation levels.
- 10 SOLAR PANELS**
Solar panels can be monitored to determine how much energy they are providing and whether they need maintenance.



Every consumer product and piece of infrastructure increasingly has the ability to sense surrounding stimuli, to communicate with other devices and people, and to draw on the computing and storage power of the cloud. This phenomenon has been dubbed the **Internet of things**. The more smart devices

and sharing platforms there are, the more data is generated about consumer's preferences and habits. But what does this mean for cities? Smart cities are employing the same technology to connect their disparate utility, infrastructure, and public service grids, generating real-time aggregate data. This, in turn, can

help cities manage their programs and services more effectively and gauge their impact immediately. The city of the future is an interconnected one, where devices communicate with one another in a constant stream of data that provides real-time information to the public and to the municipality.

- 13 DRONES**
Drones can be used for law enforcement and firefighting, as rural ambulances, for infrastructure inspections, and for environmental monitoring. Commercial uses include precision farming, aerial photography, and in the near future, package delivery.
- 14 SURVEILLANCE CAMERAS**
Cameras ensure security by monitoring activity in areas that are not frequented by public safety officers. Areas that are not open to public access can be monitored to keep unauthorized personnel out.
- 15 BODY CAMERAS**
Public safety officers can wear body cameras that capture footage of interactions between themselves and city residents to ensure safety for both parties.
- 16 WEARABLE DETECTION**
Cities can build in smartglasses and wearable detection sensors so that people can be an active part of the internet ecosystem, communicating with the city, and with each other.
- 17 BROADBAND INFRASTRUCTURE**
A reliable internet ecosystem is the glue that holds the internet of things together.

NLC CENTER FOR CITY SOLUTIONS AND APPLIED RESEARCH

NLC NATIONAL LEAGUE OF CITIES



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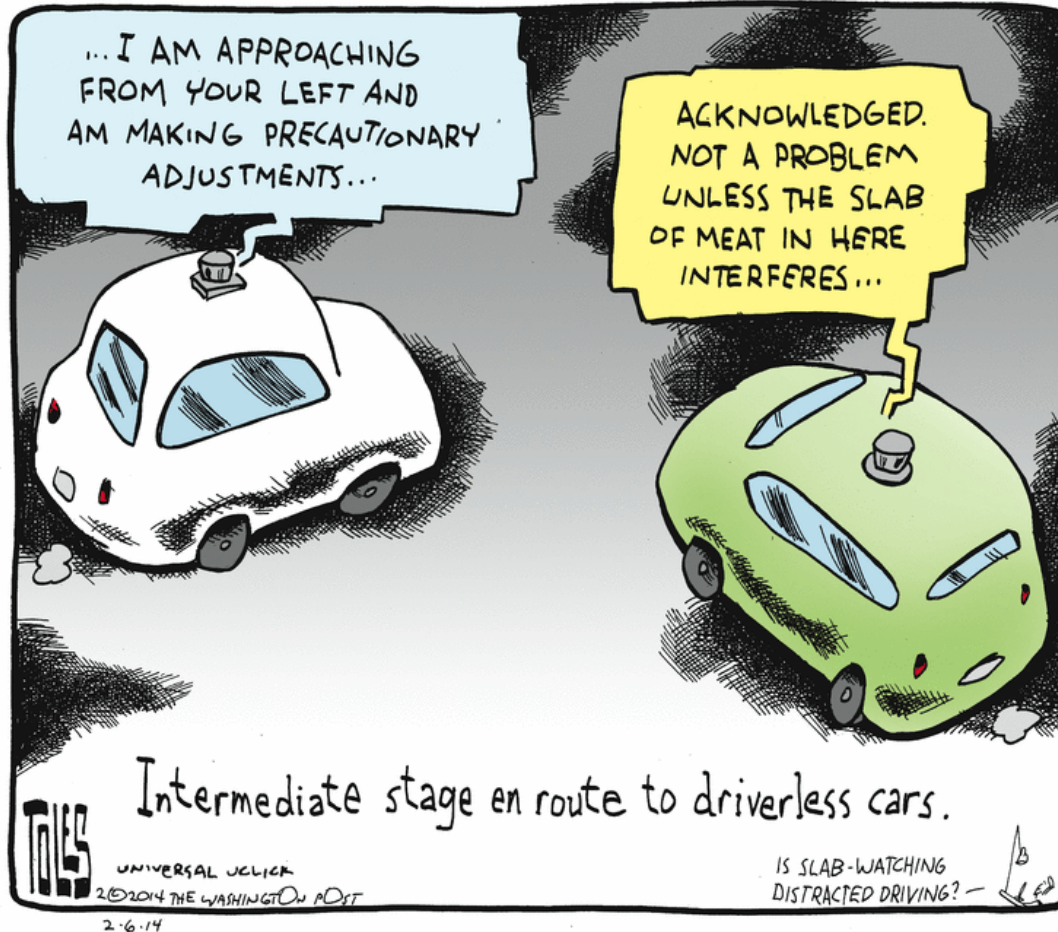
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NOT GETTING OUT “SMART” ED

- Data Sharing
- Privacy
- Cybersecurity
- Land Use
- Health and Safety
 - Disposal
- Resiliency

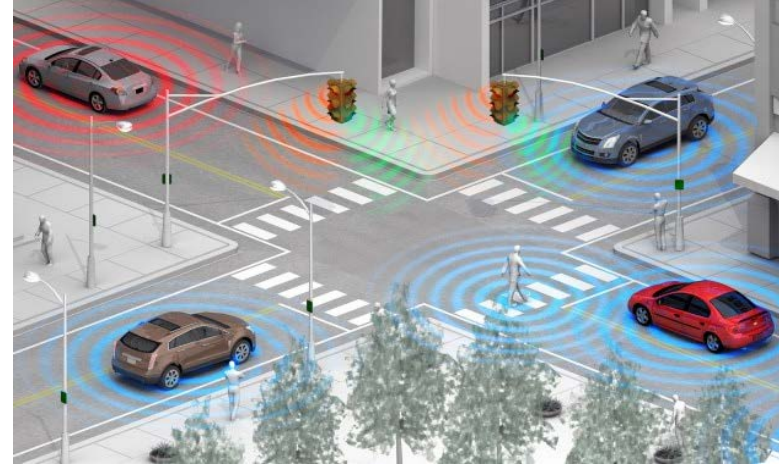


Are WE the problem?



“SMART” INFRASTRUCTURE

- What is going to be needed?
 - Sensors?
 - Antennas?
 - V2X?
- Local control of ROW
- What is technology of the future?



SUGGESTIONS FOR MOVING FORWARD



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STAY INFORMED AND BE PROACTIVE, NOT REACTIVE



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The Daily Journal of the United States Government



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Upcoming Opportunity

From October DOT Significant Rulemaking Report:

- Removing Automated Safety Technologies Barriers
- **Publication date is expected to be November 30, 2017 with comments due January 31, 2018**
- Where have we seen this recently?
- Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment



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A Potential Message

- Safety
- Transparency
- Obligate
Funding
- Partnerships
and Pilots



PROPOSED RECIPE – TWO WAY STREETS



True **Partnership**

+

Balanced Agreements

+

Information Sharing /
Shared Analysis

=

SUCCESS! (Or, steps
to make **SUCCESS**)



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STAFFING FOR THE FUTURE

- Monitor code for cyber threats?
 - Partnership opportunity?
- App development
- Communications / Public Outreach
- Programmers
 - Another partnership opportunity
- AV Fleet Managers



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