Beyond Traffic: The Smart City Challenge

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“Beyond Traffic 2045”

The USDOT’s new 30 Year Framework for the Future addresses many of the issues around Smart Cities and provides additional food for thought

- How will we move?
- How will we move things?
- How will we move better?
- How will we adapt?
- How will we align decisions and dollars, and invest the trillions of dollars our transportation system needs in the smartest way possible?

Source: USDOT

http://www.dot.gov/BeyondTraffic
In 30 years, our population is expected to grow by about 70 million

Source: USDOT
Older Americans are Redefining Longevity

Source: USDOT
Millennials – Shaped by Technology

Source: USDOT
Real-Time Travelers

90% of American adults own a mobile phone

Source: USDOT
On average, Americans spend over 40 hours stuck in traffic each year

Source: USDOT
The Cost of Congestion

Truck congestion wastes $27 billion in time and fuel annually.

Source: USDOT
The transportation sector is the second biggest source of greenhouse gases (GHGs)

Source: USDOT
Estimates indicate that 30% of traffic in business districts is attributable to drivers looking for parking.

Source: USDOT
Opportunities exist to use big data and analytics to drive decision making

Source: USDOT
The Sharing Economy

Car sharing, bike sharing, ridesharing, and pop-up bus services

Source: USDOT
Automated transportation offers tremendous possibilities for enhancing safety, mobility, accessibility, equity, and the environment.

Opportunities for automation include:

- Self-driving vehicles coupled with smart infrastructure;
- Self-driving shuttles could operate at low speeds enabling new mobility options for services such as first/last mile travel to local destinations and access to public transportation; and
- Fully automated trucks and buses may also be used in intermodal facilities, such as ports, depots, and maintenance facilities.
The Potential of Connected Vehicles
Vehicle-to-Vehicle and Vehicle-to-Infrastructure Communications

Source: USDOT
Smart City
“A city that uses information and communications technology (ICT) to enhance its livability, workability, and sustainability.”

The Smart Cities Council
Technology convergence will revolutionize transportation, dramatically improving safety and mobility while reducing costs and environmental impacts.

Benefits
- Order of magnitude safety improvements
- Reduced congestion
- Reduced emissions and use of fossil fuels
- Improved access to jobs and services
- Reduced transportation costs for gov’t and users
- Improved accessibility and mobility
Encourage cities to put forward their **best and most creative ideas for innovatively addressing the challenges** they are facing.

The Smart City Challenge will **address how emerging transportation data, technologies, and applications can be integrated with existing systems** in a city to address transportation challenges.

Demonstrate how advanced data and intelligent transportation systems (ITS) technologies and **applications can be used to reduce congestion, keep travelers safe, protect the environment, respond to climate change, connect underserved communities, and support economic vitality.**
Phase 1 (Deadline February 4, 2016):
- Support concept development and planning activities
- Estimated five Smart City Challenge Finalists
- $100K each

Phase 2 (Solicitation and Deadline TBD):
- Smart City Challenge Finalists
- Support implementation of their proposed demonstration
- $50 Million+
  - U.S. Department of Transportation: $40 Million
  - Vulcan Foundation: $10 Million
  - Mobileye: Installation of Mobileye’s Shield +™ on every bus
Attributes of the Ideal Candidate

- Mid-sized city with a population between approximately 200,000 and 850,000 people;
- A population density typical of a mid-sized city;
- Represents a significant portion (more than 15%) of the overall population of its urban area;
- An established public transportation system;
- An environment that is conducive to demonstrating proposed strategies; and
- Leadership and capacity to carry out the demonstration;
- A commitment to integrating with the sharing economy; and
- A clear commitment to making data open to fuel entrepreneurship and innovation.
The USDOT recognizes that each city has unique attributes, and each city’s proposed demonstration will be tailored to their vision and goals.

The USDOT’s vision for a Smart City Challenge is “to identify an urbanized area where advanced technologies are integrated into the aspects of a city and play a critical role in helping cities and their citizens address challenges in safety, mobility, sustainability, economic vitality, and address climate change.”

To assist cities, the USDOT identified twelve vision elements that are intended to provide a framework for Applicants to consider in the development of a city’s proposed demonstration without making each item a requirement for award.
Beyond Traffic: The Smart City Challenge

Technology Elements *(Highest Priority)*

- **Vision Element #1**
  Urban Automation

- **Vision Element #2**
  Connected Vehicles

- **Vision Element #3**
  Intelligent, Sensor-Based Infrastructure

Innovative Approaches to Urban Transportation Elements *(High Priority)*

- **Vision Element #4**
  User-Focused Mobility Services and Choices

- **Vision Element #5**
  Urban Analytics

- **Vision Element #6**
  Urban Delivery and Logistics

- **Vision Element #7**
  Strategic Business Models & Partnering

- **Vision Element #8**
  Smart Grid, Roadway Electrification, & EVs

- **Vision Element #9**
  Connected, Involved Citizens

Smart City Elements *(Priority)*

- **Vision Element #10**
  Architecture and Standards

- **Vision Element #11**
  Low-Cost, Efficient, Secure, & Resilient ICT

- **Vision Element #12**
  Smart Land Use
# Beyond Traffic: The Smart City Challenge

## Past Information Sessions

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<td>Data, Architecture, and Standards (Virtual)</td>
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<td>Connected Vehicles and Automation (Virtual)</td>
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<td>Sharing Economy, User-Focused Mobility, and Accessible Transportation (Virtual)</td>
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<td>Urban Freight Delivery and Logistics (Virtual)</td>
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To access presentations and recordings, visit: [https://www.transportation.gov/smartcity/infosessions](https://www.transportation.gov/smartcity/infosessions)
Beyond Traffic: The Smart City Challenge
Upcoming Information Sessions

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<td>Smart City Challenge Application Homestretch – An Open Q&amp;A Session (Virtual)</td>
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<td>Understanding Dedicated Short Range Communications (DSRC) (Virtual)</td>
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For More Information and RSVP Information on upcoming webinars, visit: [https://www.transportation.gov/smartcity/infosessions](https://www.transportation.gov/smartcity/infosessions)
For More Information and Questions

Department of Transportation
https://www.transportation.gov/

Smart City Challenge
www.transportation.gov/smartcity

Questions?
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