

# BEYOND TRAFFIC: THE SMART CITY CHALLENGE



SAFETY



MOBILITY



ENVIRONMENT

*Beyond Traffic 2045: Trends and Choices* examines the long-term and emerging trends affecting our nation's transportation system and the implications of those trends. It outlines choices that will require cities to think differently about how we move, how we move things, how we move better, how we adapt, and how we align decisions and dollars.

The Smart City Challenge was designed to help cities begin to address the challenges the trends identified in the Beyond Traffic report. The U.S. Department of Transportation (USDOT) launched its Smart City Challenge by asking medium-sized cities to put forward their best and most creative ideas for innovatively addressing the challenges they face. By asking American cities to use emerging transportation technologies to address their most pressing problems, the Smart City Challenge aimed to spark and spread innovation through a mixture of competition, collaboration, and experimentation. The Department committed \$40 million for one city to 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.

## USDOT's Vision for a Smart City

The USDOT recognized that each city has unique attributes and challenges. To assist applicants in tailoring their visions for a smart city, the USDOT identified its high-level vision and goals for the Smart City Challenge without making each item a requirement for award. These 12 vision elements were designed to provide a framework for applicants to consider in the development of a city's proposed demonstration.

### TECHNOLOGY ELEMENTS



**Vision Element #1**  
Urban Automation



**Vision Element #2**  
Connected Vehicles



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

### INNOVATIVE APPROACHES TO URBAN TRANSPORTATION ELEMENTS



**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



**Vision Element #10**  
Architecture and Standards



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



**Vision Element #12**  
Smart Land Use

## Expected Outcomes of the Smart City Challenge

- **Improve Safety:** By using advanced technologies, including connected vehicle technologies, to reduce the number of collisions, fatalities, and injuries for both vehicle occupants and non-vehicle occupants.
- **Enhance Mobility:** By providing real-time traveler information and emerging mobility services to improve personal mobility for all citizens including people with lower incomes, people with disabilities, and older adults.
- **Enhance Ladders of Opportunity:** By providing access to advanced technology and its benefits for underserved areas and residents, increasing connectivity to employment, education, and other services, and contributing to revitalization by incentivized reinvestment in underserved communities.
- **Address Climate Change:** By implementing advanced technologies and policies that support a more sustainable and cost-effective relationship between transportation and the environment through more efficient fuel use and emissions reductions.



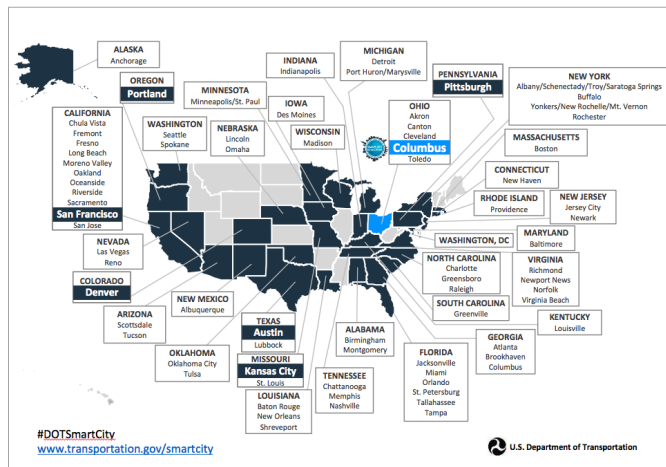
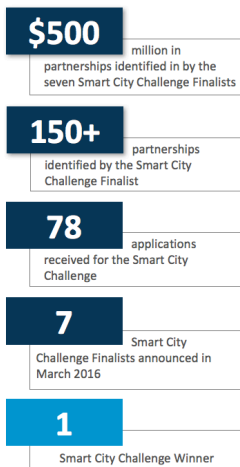
U.S. Department of Transportation

# Overwhelming Response to Smart City Challenge

The Smart City Challenge generated a significant amount of excitement and interest among cities. The USDOT received 78 applications in total—one from nearly every mid-sized city in America. The Challenge called on cities to do more than merely introduce new technologies onto city streets, requiring them to boldly envision new solutions that would change the face of transportation in our cities by closing the gap between rich and poor; capturing the needs of both young and old; and bridging the digital divide through smart design so that the future of transportation meets the needs of all city residents.

In Phase 2, seven cities—Austin TX, Columbus OH, Denver CO, Kansas City MO, Pittsburgh PA, Portland OR, and San Francisco CA—were selected as Smart City Challenge Finalists.

These cities rose to the Challenge in an extraordinary way and presented innovative concepts, proposing to create new first-of-a-kind corridors for automated vehicles to move city residents, electrify city fleets, and equip vehicles with connected vehicle technologies.

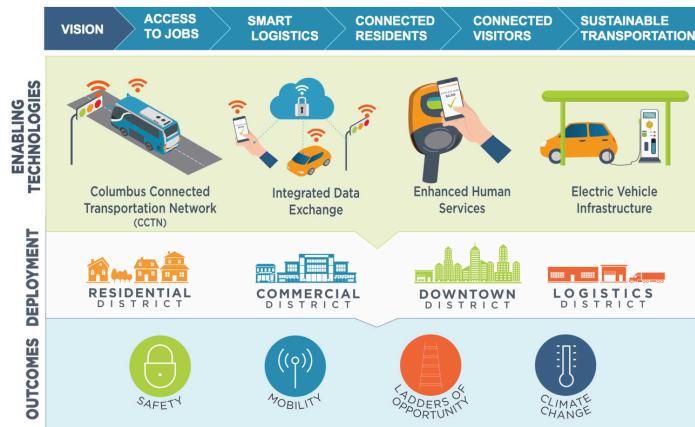


## The Smart Columbus Program

In June 2016, Columbus was selected as the winner of the Smart City Challenge. Columbus will work to reshape its transportation system to become part of a fully-integrated city that harnesses the power and potential of data, technology, and creativity to reimagine how people and goods move throughout their city.

The Smart Columbus Program will demonstrate projects in four distinct types of districts (residential, commercial, downtown, and logistics). Each district has challenges unique to its type, yet universal to similar districts across Columbus and the nation. To tackle the challenges the community faces, the Smart Columbus Program created a menu of smart solutions built on four core-enabling technologies:

- The **Connected Columbus Transportation Network** consisting of underlying sensors and connected infrastructure.
- The **Integrated Data Exchange** open data environment will contain data from many different sources.
- A suite of applications and processes will deliver **Enhanced Human Services** to residents and visitors.
- An expanded Smart Grid program and that will increase **Electric Vehicle Infrastructure**.



Smart Columbus will use data to measure progress toward improved safety, enhanced mobility, and enhanced ladders of opportunity, and address climate change so they can make adjustments and replicate their success.

To learn about other resources available to help pursue Smart City projects, visit:  
<https://www.transportation.gov/smartcity/otherfunding>.

### For More Information

For more information on the Smart City Challenge, including presentations and recordings from information sessions, visit: [www.transportation.gov/smartcity](http://www.transportation.gov/smartcity).

For questions, please contact:

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