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# Smart City Challenge Commonalities

February 12, 2018

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# USDOT Smart City Challenge

- $50 Million in Funding - $40M USDOT & $10M Vulcan Inc. & winning City's transit system gets Mobileye's Shield+ technology on its entire bus fleet
  - **Highest Priority**
    - **#1: Urban Automation**
    - **#2: Connected Vehicles**
    - **#3: Intelligent, Sensor-Based Infrastructure**
  - High Priority
    - #4: Urban Analytics
    - #5: User-Focused Mobility Services and Choices
    - #6: Urban Delivery and Logistics
    - #7: Strategic Business Models and Partnering Opportunities
    - #8: Smart Grid, Roadway Electrification and Electric Vehicles
    - #9: Connected, Involved Citizens
  - Priority
    - #10: Architecture and Standards
    - #11: Low-Cost, Efficient, Secure and Resilient Information and Communications Technology
    - #12: Smart Land Use


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# DOT Smart City Challenge

**1,400** local officials, companies, academics and non-profits joined our webinars

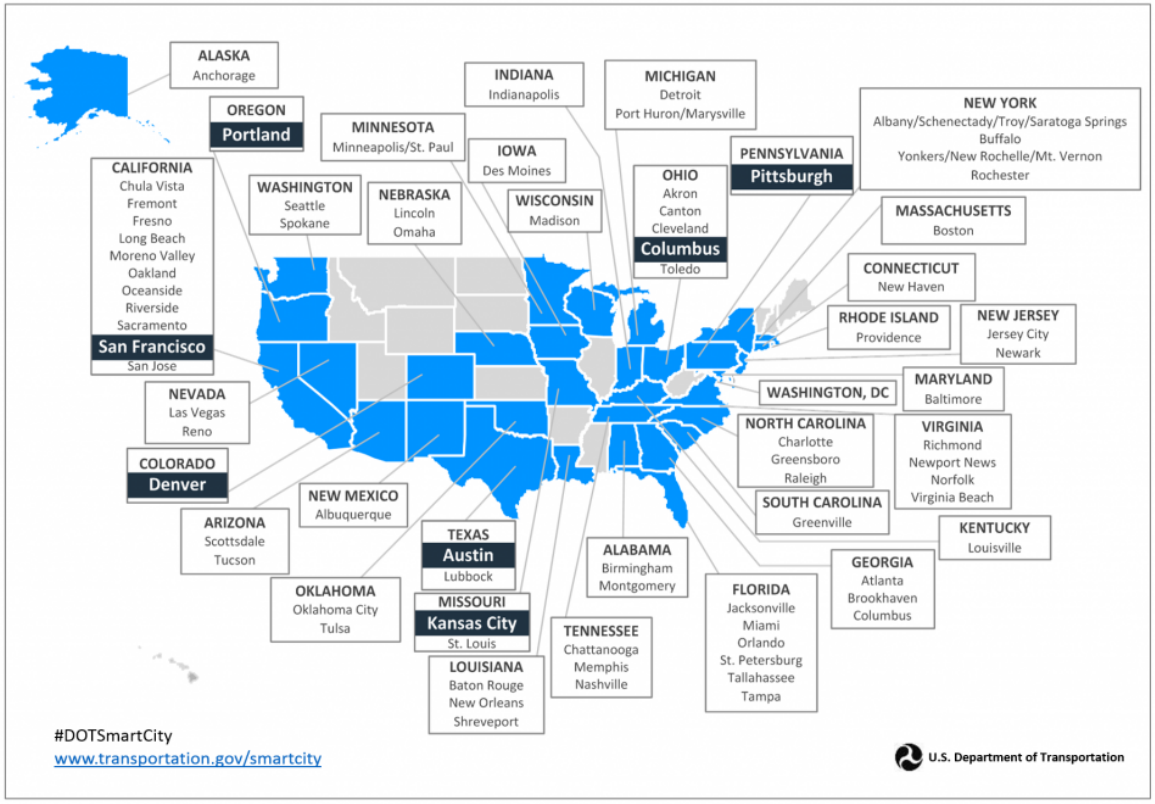
**800** people participated in our Smart City Forum

**300** companies have expressed interest in partnering

**78** applications received for the Smart City Challenge

**7** Smart City Challenge Finalists announced in March at SXSW

**1** Smart City Challenge Winner announced in June





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# USDOT Smart City Challenge

The USDOT encouraged cities to put forward their **best and most creative ideas** to answer the questions raised in *Beyond Traffic 2045: Trends and Choices*

### How will we move?

More than **half of applicants** wanted to implement an autonomous low-speed shuttle or podcar by **2019**

### How will we move better?

Almost **half of applicants** proposed shared-use mobility (rideshare, carshare, or bikeshare)

### How will we move things?

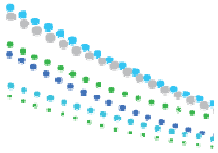
Almost **half of applicants** wanted to use data to dynamically improve freight movements

### How will we adapt?

Almost **half** of cities proposed installing **electric vehicle charging** infrastructure

### How will we align decisions and dollars?

New **sensors** will allow cities to monitor **vehicle traffic, parking availability**, and even **pedestrian and bicyclist counts** to make better decisions

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# USDOT Smart City Challenge

- 7 Finalists technical applications available at https://www.transportation.gov/smartcity/7-finalists-cities
- All 78 Vision Statements (30 page limit) available at https://www.transportation.gov/smartcity/visionstatements/index
- Florida Submittals from: Jacksonville; Miami; Orlando; St. Petersburg; Tallahassee; and Tampa
- Examined their Visions with a transportation focus, not existing Assets nor Plans
- Looked at Goals and Priority Vision Elements for unique items and common themes
- The following is not meant to be comprehensive, rather what would be of interest to this audience


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# Smart City Challenge Commonalities

- Address Congestion / Mobility
- Connected & Automated Vehicles
- Improve ATMS
- More AVL & Sensors
- More Analytics and Performance Measures
- Wireless Internet
- Address Freight Issues
- Safety & Security
- Include Emergency Services
- Services are Inclusive
- Update Transit – BRT, TSP, APC, etc.
- Transportation Sharing
- Smart Parking & Lighting
- Multiple Apps and Touchpoints – looking to consolidate
- Transportation Data Hub
- Open Data Portal
- Climate Change
- Sustainability
- USDOT tools – CVRIA, SET-IT, SCMS, BSM, MDSS, etc.


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# Jacksonville Smart City Vision

- Goals & Objectives: The primary goal of the demonstration is to improve ***mobility*** through management and operations of the Jacksonville transportation network.
  - ***Increase*** roadway miles under surveillance by ***sensors***
  - ***Reduce*** system wide ***delay*** for cars, trucks, transit and emergency vehicles
  - ***Reduce greenhouse gas emissions***
  - ***Increase connected intersections*** allowing for EVP and TSP
  - Improve ***real-time transit management***
  - ***Improve reliability*** and predictability of travel
  - Improve ***real-time traffic and transit information***


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# Jacksonville Smart City Vision

- Will complete their ITS foundation:
  - ***Replace*** dated ***fiber*** optic cable in urban core
  - ***Complete*** unconnected runs of ***fiber*** optic lines
  - Install nearly 1,000 additional ***Bluetooth traffic sensors***
  - Complete installation of ***GPS trackers*** in all public vehicles including police, fire and emergency vehicles, as well as, all public works vehicles, and any unconnected public transit vehicles
  - Develop agreements with and promote the use of ***mobile apps***, such as Waze, which will incorporate the data collected
  - Installation of ***wireless internet*** at each of our 1,000 intersections
  - Expand ***preemptive signaling*** plan for emergency and public transit vehicles
  - Expand network of 48 ***smart*** sensor enabled ***street lights*** to the entire urban core
  - Complete current plan for ***BRT***


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# Miami Smart City Vision

- To increase predictability and economic prosperity, enhance the quality of life, ***improve road user safety*** and experience, and ***move toward a sustainable future***.
- Provide ***smart urban mobility technologies*** that are efficient, cost-effective, scalable, replicable, intuitive, and transformational.
- Develop a ***central data repository***.
- ***Predictive planning*** that will inform decision making, enhance knowledge of assets, improve safety and mobility, and reduce congestion leading to a more vibrant community.
- ***Enhancement of transportation and mobility options*** are high priority objectives.


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# Miami Smart City Vision

- Transportation-related challenges:
  - ***Aging population***
  - Travel demand that stresses and ***exceeds peak period capacity***
  - Projections for ***continued significant growth*** in both population and employment
  - ***Limited by its geographic surroundings*** (ocean and Everglades)
  - Effects of ***climate change***
- ***Multi-jurisdictional*** nature of the City's transportation grid (eight distinct entities).
- ***Leverage crowd funding to tap the financial power of individual donors, and give them opportunities to donate small amounts of money to fund public works projects.***


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# Miami Smart City Vision

- Development and deployment of ***advanced electronic wayfinding systems*** that effectively disperse travelers in time, place, and mode
- Single point of ***information for parking***
- ***Smart***-grid through ***street lighting***
- ***Integrating all signal systems*** in the area, including ***drawbridge tender house***.
- ***Barrier-free access for emergency services*** is maintained, and the new technology is used to further ***boost response times***.
- ***All risks to the project are "minimal"***


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# Orlando Smart City Vision

- Investing in a holistic, integrated approach to advancing the ***safety, mobility and sustainability*** of our transportation infrastructure
- Ensuring of a broad range of ***safe, sustainable, convenient, mobility options***, which promote healthy lifestyles, vibrant neighborhoods, a thriving and inclusive economy, environmental preservation and the world's premier tourist destination
- ***"Last Mile" trip connectivity*** within the downtown Urban Core is a vital piece of the transportation network for employees and residents
- Provide ***better connections*** both locally and regionally


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# Orlando Smart City Vision

- Opportunities exist in implementing ***connected and automated vehicles bicycle and pedestrian infrastructure*** additions
- ***Build upon the existing intelligent, sensor-based infrastructure*** to make real time operational adjustments, monitor performance, track assets in the field and collect data
- Goal of having an ***organized data sharing system*** available to the public for information on best routes and current status of the transportation network
- ***Visitors to Orlando can leave with more than a tan and fond memories; they can leave with ideas on how to advance safety and mobility in their cities, towns and States.***


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# St. Petersburg Smart City Vision

- Centered on the development of the South St. Petersburg Community Redevelopment Area (CRA)
  - 7.4-square-miles
  - 34,000 population
  - ***One-third living in poverty***
- With the peninsular geography of St. Petersburg, it is critical to ***look skyward and utilize the airspace above existing rights-of-way***.


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# St. Petersburg Smart City Vision

- 4 Key Components:
  - ***Aerial Cable Propelled Transit (CPT) AKA gondolas*** for the movement of people and small goods. CPT as much as ***75% less than other fixed guideway systems*** including light rail technology.
  - ***Parking and Event Management System*** in Downtown using connected vehicle information, DMS signage, CCTV cameras and in-vehicle information systems
  - ***Citywide "Wi-Fi" grid and all-new lighting LED*** technology replacement
  - ***Automated, On-Demand Low-Speed Vehicles/Smart Cars***
- Significant Investments in ***Mobile Applications*** that enable citizens to connect online with numerous City databases
- Realize its vision through four strategic pathways: 1) Stewardship and Fiscal Responsibility; 2) Innovation; 3) Impactful Service; and 4) Community Engagement.


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# St. Petersburg Smart City Vision

- Expecting a service using ***Low Speed Vehicles (LSV)*** to launch in early 2016
- Ferry Service Pilot Project to demonstrate the ***feasibility of water-borne transportation*** with a high-speed ferry connecting Downtown St. Petersburg to Downtown Tampa with an estimated start of service in October 2016
- Project Goals and Outcomes:
  - ***Reduce Congestion***
  - ***Improve Traveler Safety***
  - ***Environmental Improvements***
  - ***Connect Underserved Transportation Communities***
  - ***Support Economic Vitality***


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# Tallahassee Smart City Vision

- Encourage sustainable transportation by using technology to provide commuters, residents, and visitors ***more information about the transportation network so they can make smart travel choices***.
- ***Expand the sensor-based infrastructure*** to include automatic passenger counters (***APCs***) and track ***parking*** space usage.
- Expand the use of ***urban analytics to better track parking*** usage in the downtown.
- Make ***information*** about parking, traffic conditions, and location of buses available to all customers ***through one mobile and web application***.


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# Tampa Smart City Vision

- Deployment of bold and innovative concepts involving ***advanced technologies, data, and applications to help improve safety, increase mobility, enhance security, boost productivity, and protect the environment***.
- Focusing specifically on empowering ***vulnerable populations***, making more efficient use of existing infrastructure through innovation, fostering a ***sharing economy***, and improving ***resilience to climate events***.
- Create a Smart Tampa Board, stand up a Program Management Office for day-to-day oversight, apply the ***PMBOK principles*** and ***establish clear lines of communication***.


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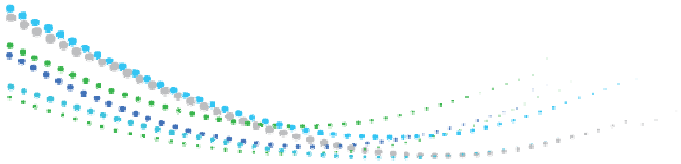
# Tampa Smart City Vision

- One of the key proposed initiatives is ***data integration*** to bring together data from multiple agencies within the same platform. Thus, data from Tampa's transportation infrastructure, county and city-run transit, taxi and other ***shared-use services***, and bike-share, as well as other ***multi-modal data*** will be integrated into ***one single data hub***.

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# Canada Smart Cities Challenge

- The $300 million Smart Cities Challenge is a pan-Canadian competition open to communities of all sizes, including municipalities, regional governments and Indigenous communities (First Nations, Métis and Inuit)
- Submission application deadline is April 24, 2018
- Each round will include:
  - One prize of up to $50 million open to all communities, regardless of population
  - Two prizes of up to $10 million open to all communities with populations under 500,000 people
  - One prize of up to $5 million open to all communities with populations under 30,000 people
- Source: http://www.infrastructure.gc.ca/plan/cities-villes-eng.html


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# The 3 Imperatives of a Smart City Solution

3 Citizen Centricity

2 Intelligent Infrastructure

1 Digital Backbone

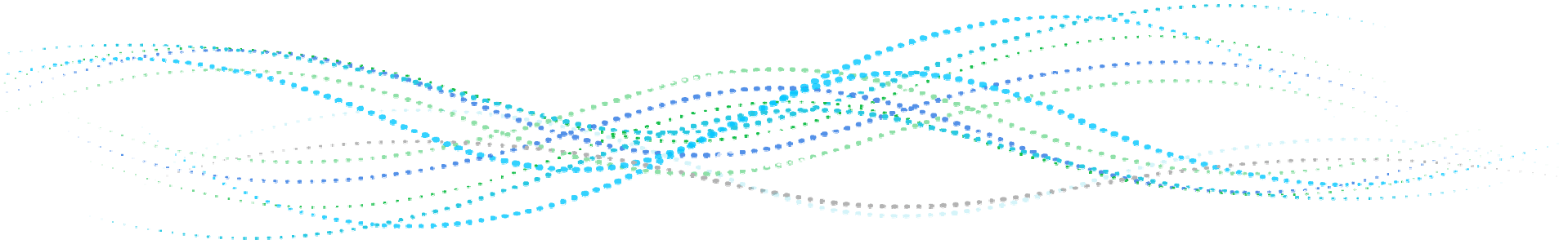
# Thank You!

Pete Costello

mobile (202) 550-5795

pfc@iteris.com

www.linkedin.com/in/petecostello





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