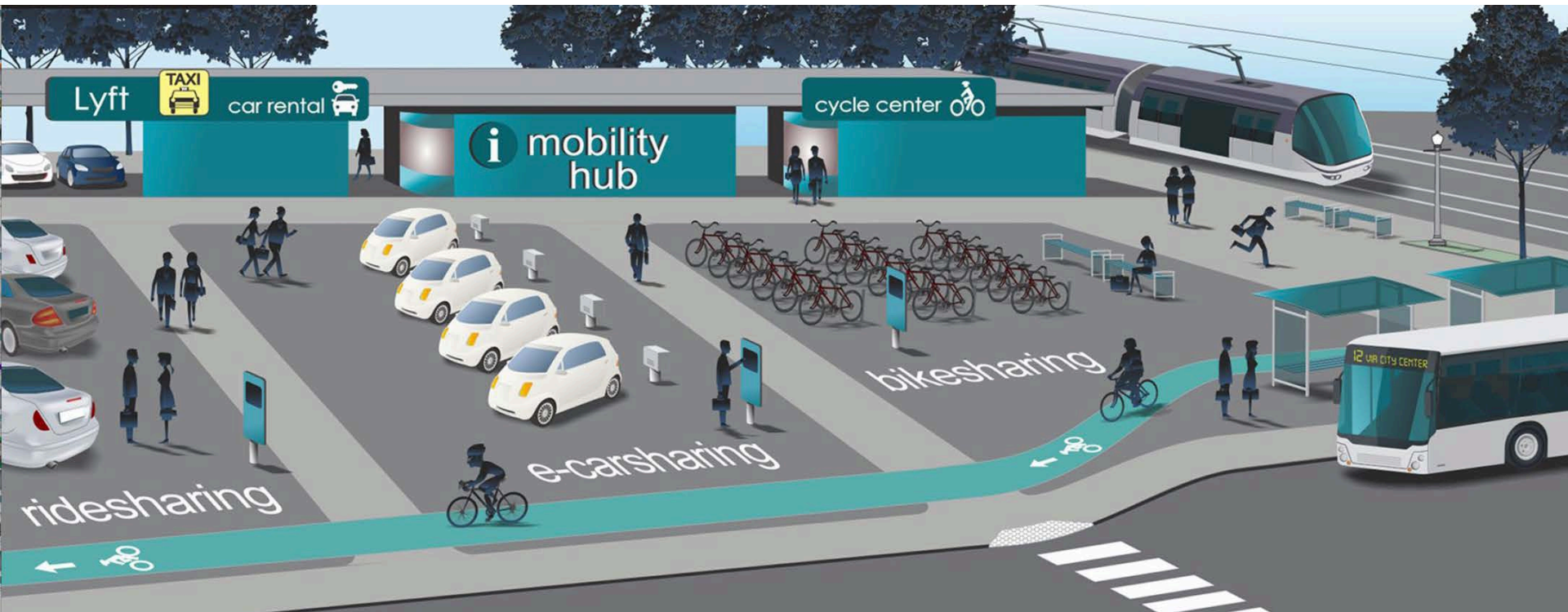


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The Smart Cities Challenge & “The Aftermath”



Adrian Pearmine, National Director for Smart Cities and Connected Vehicles,
DKS

June 21, 2017

Agenda

- USDOT Smart Cities Challenge
- Portland's Response to the Smart Cities Challenge
- What did the USDOT learn from the process?
- What did Portland Learn?
- "The Aftermath": What Portland is moving forward with after Columbus' win

Smart Cities & FAST Act

- New Transportation Bill **FAST Act** (Fixing America's Surface Transportation) has heavy emphasis on Smart Cities

DEC

7

Smart City Challenge seeks the best in integrated transportation technology for mid-sized cities

Posted by Anthony Foxx

“The city that develops the most innovative, most forward-thinking plan to harness technology and reimagine how people move will receive up to \$40 million to become the first city in the world to implement it...And that’s not all. Our partner in this, Vulcan, Inc., is offering an additional \$10 million to the winning city to incorporate electric vehicle infrastructure into the city of tomorrow. ”

Smart Cities Challenge Submittals

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

77

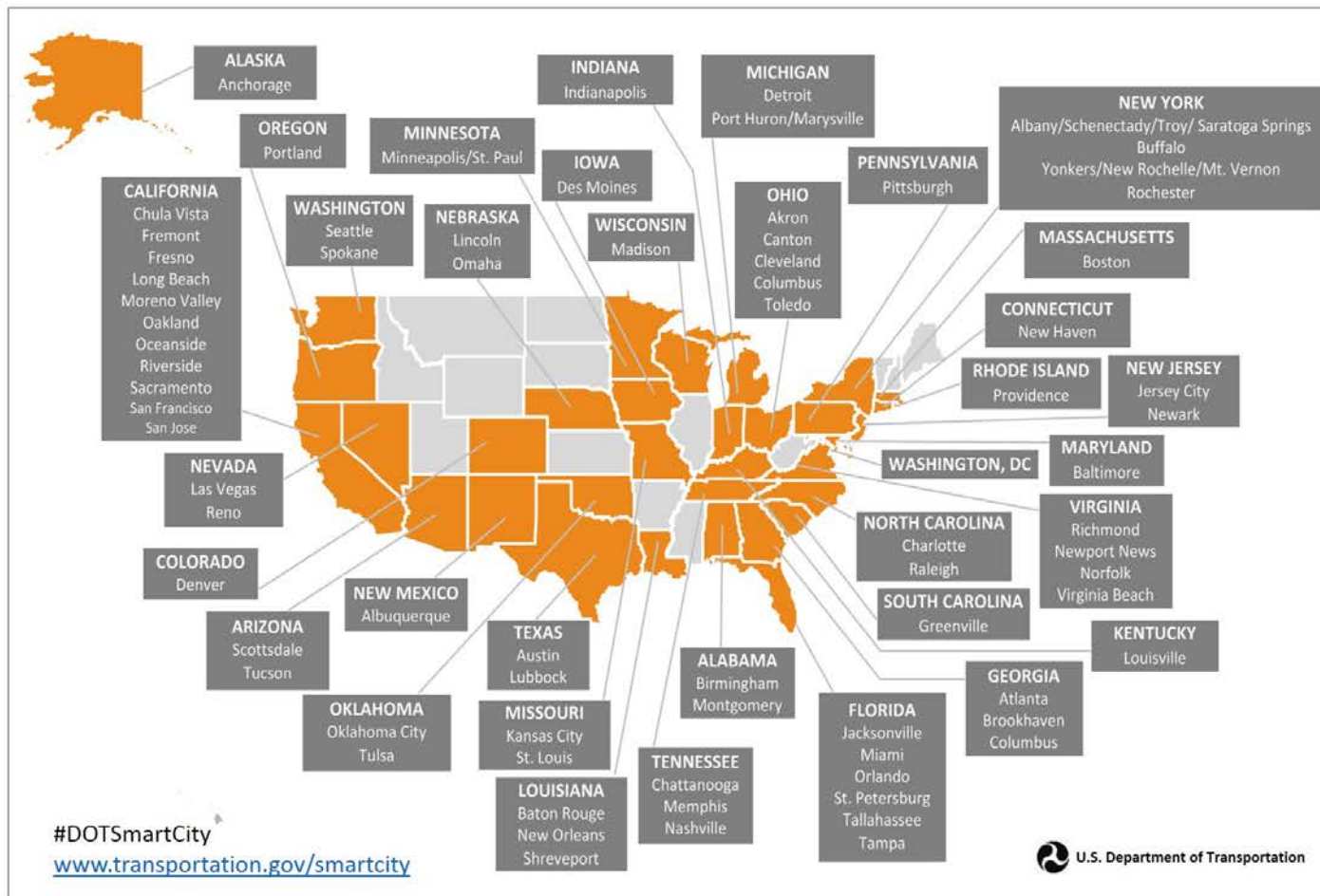
applications received for the Smart City Challenge

5

Smart City Challenge Finalists to be announced in March at SXSW

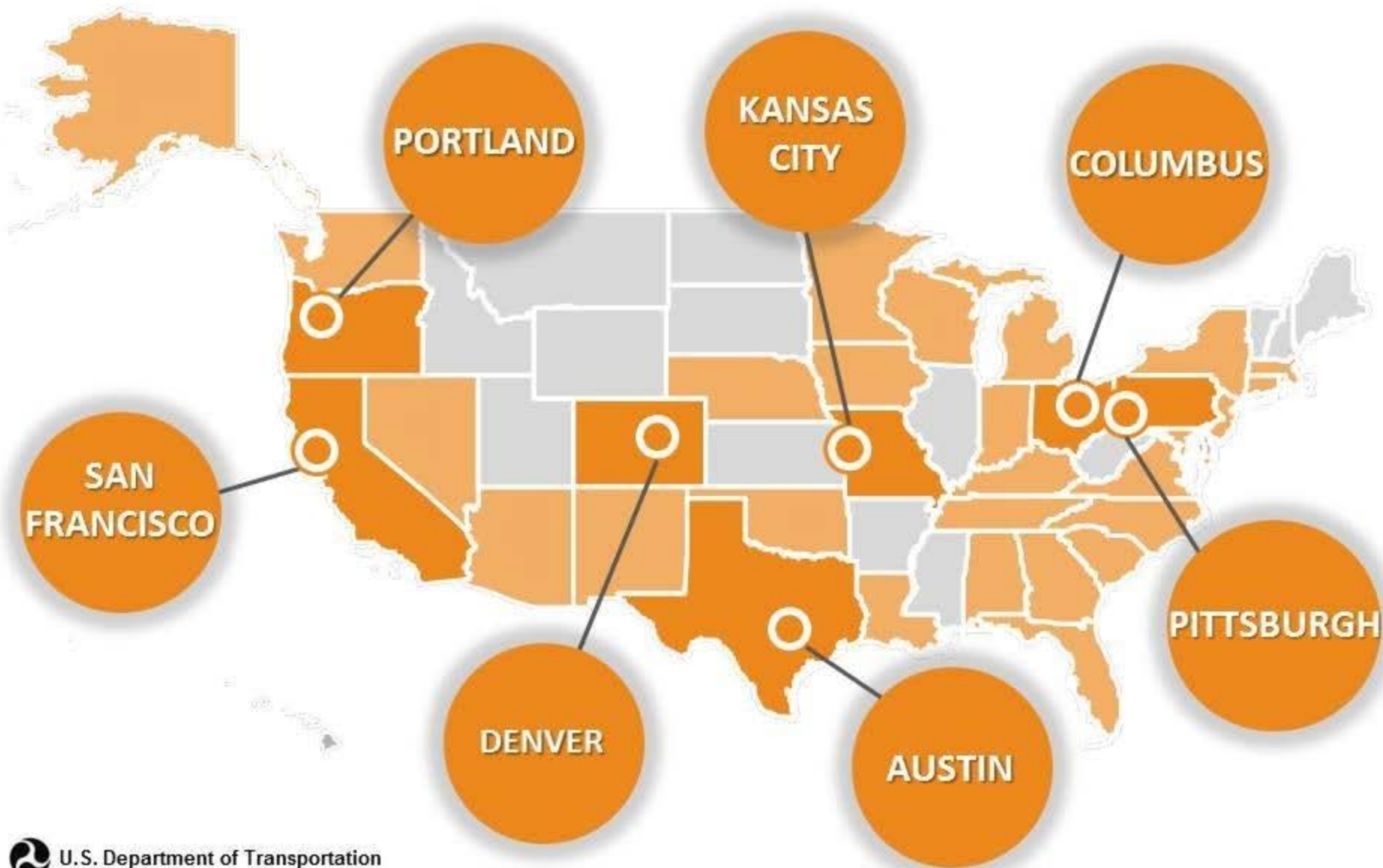
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Smart City Challenge Winner announced in June






Smart City Challenge Finalists



Definition of the “Aftermath”

af·ter·math

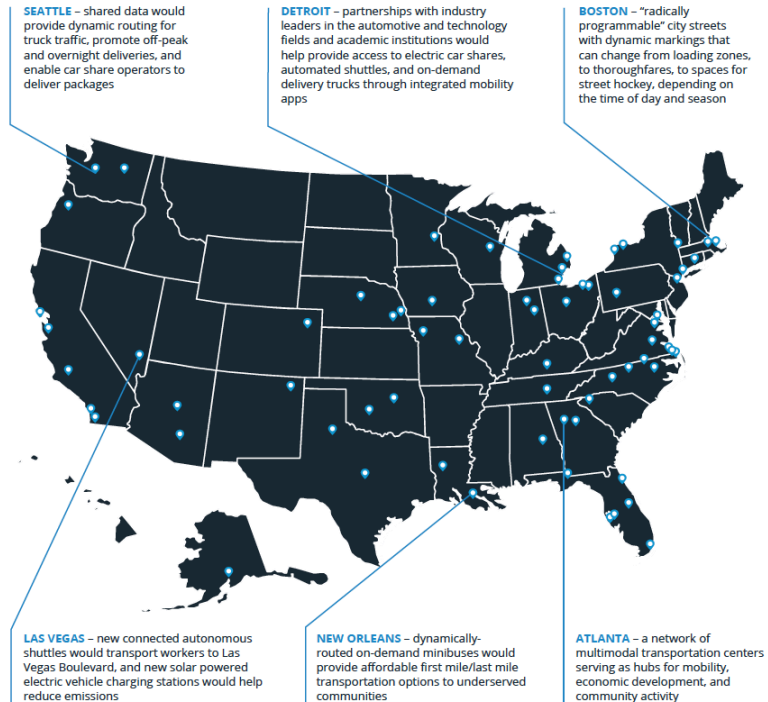
/ˈaftər, maTH/ 

noun

noun: **aftermath**; plural noun: **aftermaths**

1. the consequences or aftereffects of a significant unpleasant event.
"food prices soared **in the aftermath of** the drought"
synonyms: repercussions, aftereffects, consequences, effects, results, fruits; **wake**
"the Red Cross is a prominent presence in the aftermath of last week's earthquake"
2. **FARMING**
new grass growing after mowing or harvest.

What did the USDOT learn from SCC?



ADDRESSING THE CHALLENGES OF TODAY AND TOMORROW

“Transportation is not just about concrete and steel. It’s about how people want to live.”

– Secretary Anthony Foxx

What did the USDOT learn from SCC?

How We Move

44

cities proposed projects to test the use of automated shared use vehicles to help travelers connect to their destinations.



How We Move Things

11

cities envisioned improving urban freight delivery by implementing smarter curb space management (through sensors, dynamic reservations, and other technologies) to speed loading and unloading.



How We Adapt

17

cities proposed using inductive wireless charging to charge electric vehicles, buses, or shuttles.



What did the USDOT learn from SCC?

How We Move Better

53 cities proposed implementing Dedicated Short Range Communication (DSRC) to connect vehicles to infrastructure and each other.



How We Grow Opportunity

9 cities proposed providing free public WiFi on buses, taxis, and public spaces. The seven Smart City Challenge finalists proposed over 60 unique strategies to increase access to jobs, provide training, reach underserved areas, and ensure connectivity for all.



How We Align Decisions and Dollars

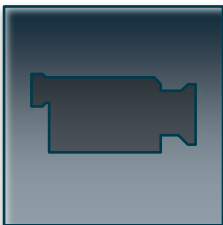
45 cities proposed implementing a unified traffic or transportation data analytics platform, which would help them make better decisions with their limited resources.



Portland's Smart Cities Challenge Response



**It began with a question:
what do you need?**



Smart City Challenge: Ubiquitous Mobility for Portland.

Proposal: <https://www.portlandoregon.gov/transportation/69999>

Video: <https://youtu.be/JyiuPiLrM48>

Community Outreach & Partnerships

- Community Cycling Center
- Asian Pacific American Network of Oregon
- Girls Inc.
- National Association of Minority Contractors of Oregon
- Ride Connection
- Self Enhancement, Inc.
- Verde
- Worksystems, Inc.

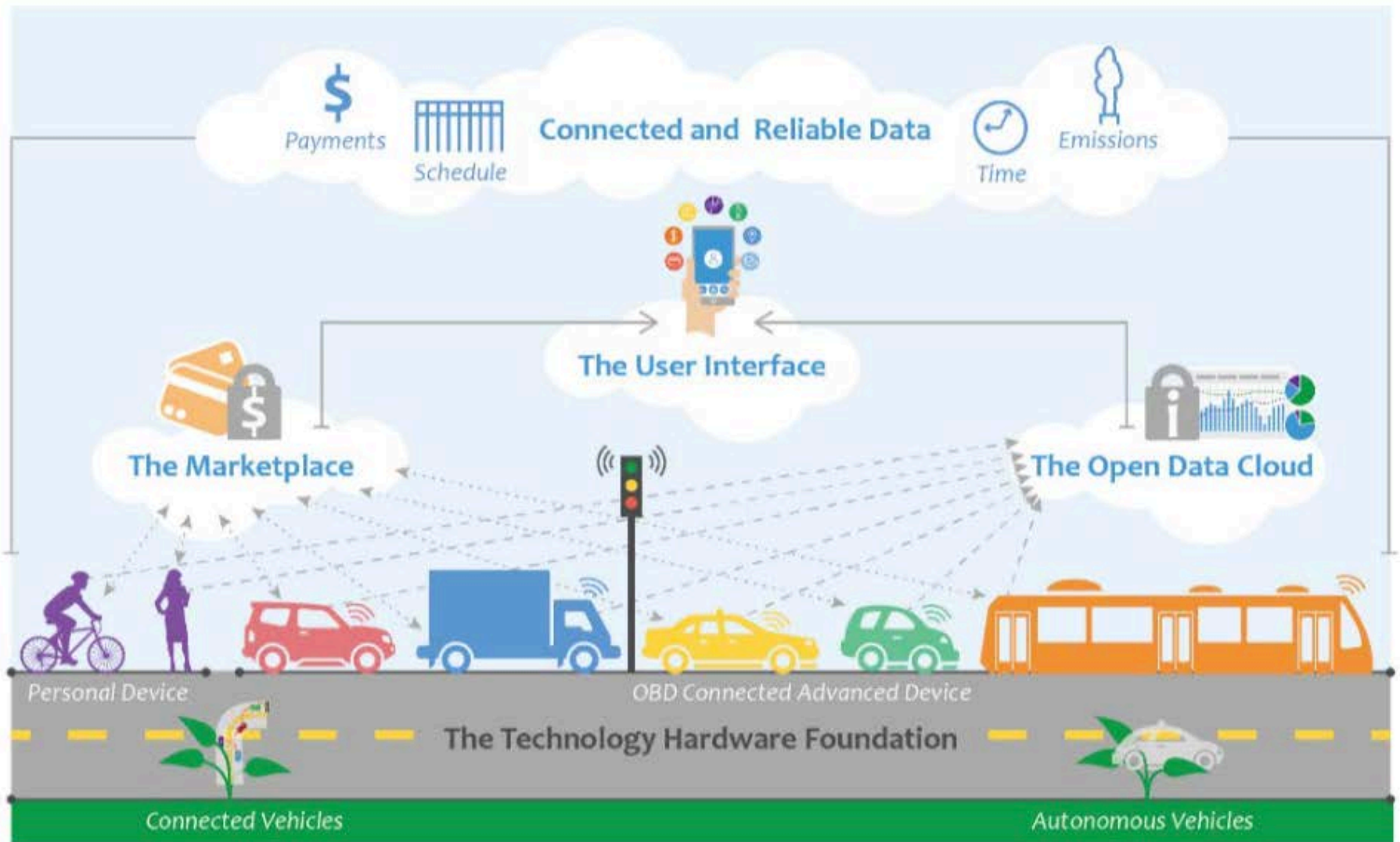


Students describe Smart Cities

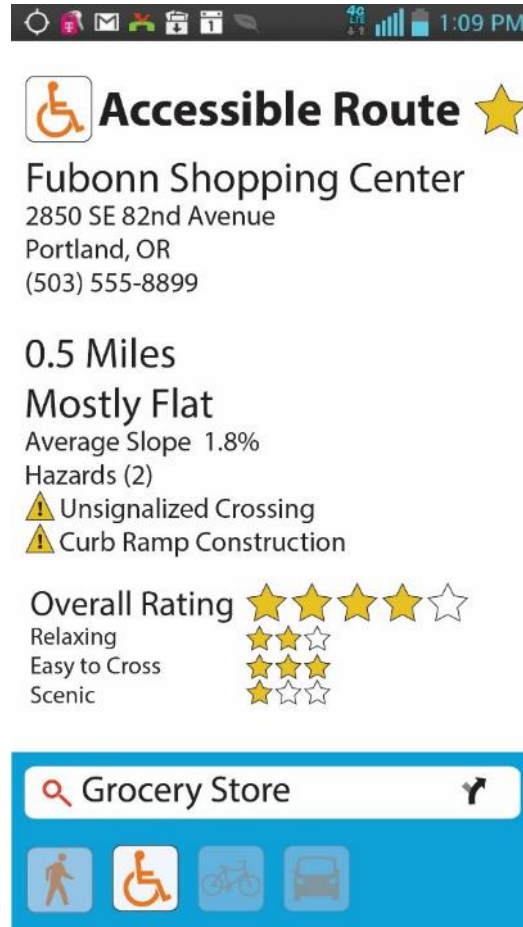
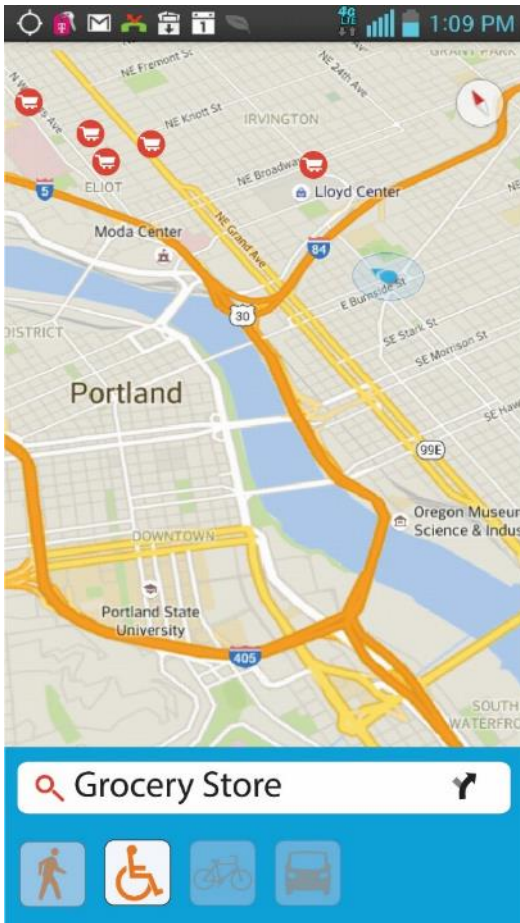


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UB Mobile PDX: Mobility Marketplace



UB Mobile PDX: User Interface



Go LA & Go Denver Examples

Verizon 7:20 PM

128 S Central Ave
Los Angeles International Airport
Leave now

Sooner **Cheaper** Greener

7:19pm-7:45pm (26mins) Ride motorbike **\$1.94** 1.4kg CO₂ 33 calories

7:19pm-8:55pm (1h 36mins) Cycle **FREE** 0kg CO₂ 324 calories

7:19pm-7:45pm (26mins) Drive car **\$3.88** 3.3kg CO₂ 26 calories

7:38pm-8:15pm (37mins) Board 53 bus and Zipcar **\$18.00** 3.1kg CO₂ 48 calories

Transport Report an issue

Verizon 7:20 PM

128 S Central Ave
Los Angeles International Airport
Leave now

Sooner **Cheaper** Greener

7:19pm-7:33pm (14mins) Take Lyft **\$27.31** 3.1kg CO₂ 0 calories

7:19pm-7:45pm (25mins) Catch a taxi **\$37.35** 3.2kg CO₂ 0 calories

Walking longer than 20mins

7:49pm-9:09pm (1h 20mins) Board 53 bus, Green tram and 232 bus **\$1.75** 0.1kg CO₂ 102 calories

7:49pm-9:22pm (1h 33mins) Board 53 bus and 117 bus **\$1.75** 0.1kg CO₂ 102 calories

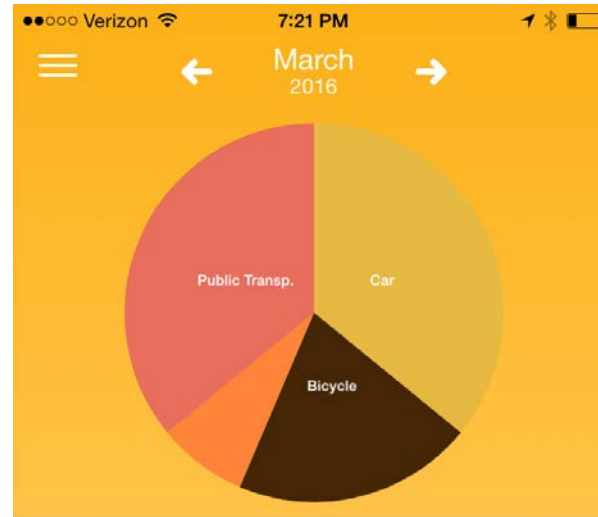
Transport Report an issue

LA Go: Gamification



this month

1. Tom, 22 miles by bike 4600 cal
2. Linda, 6.7 miles walking 2200 cal
- 3. Me, 2.2 miles walking 900 cal**
4. Esther, no walking 0 cal



this month

- 22 trips by car 2.3 CO2
- 2.6 miles walking 430 cal
- 12 trips by bike 0.3 CO2

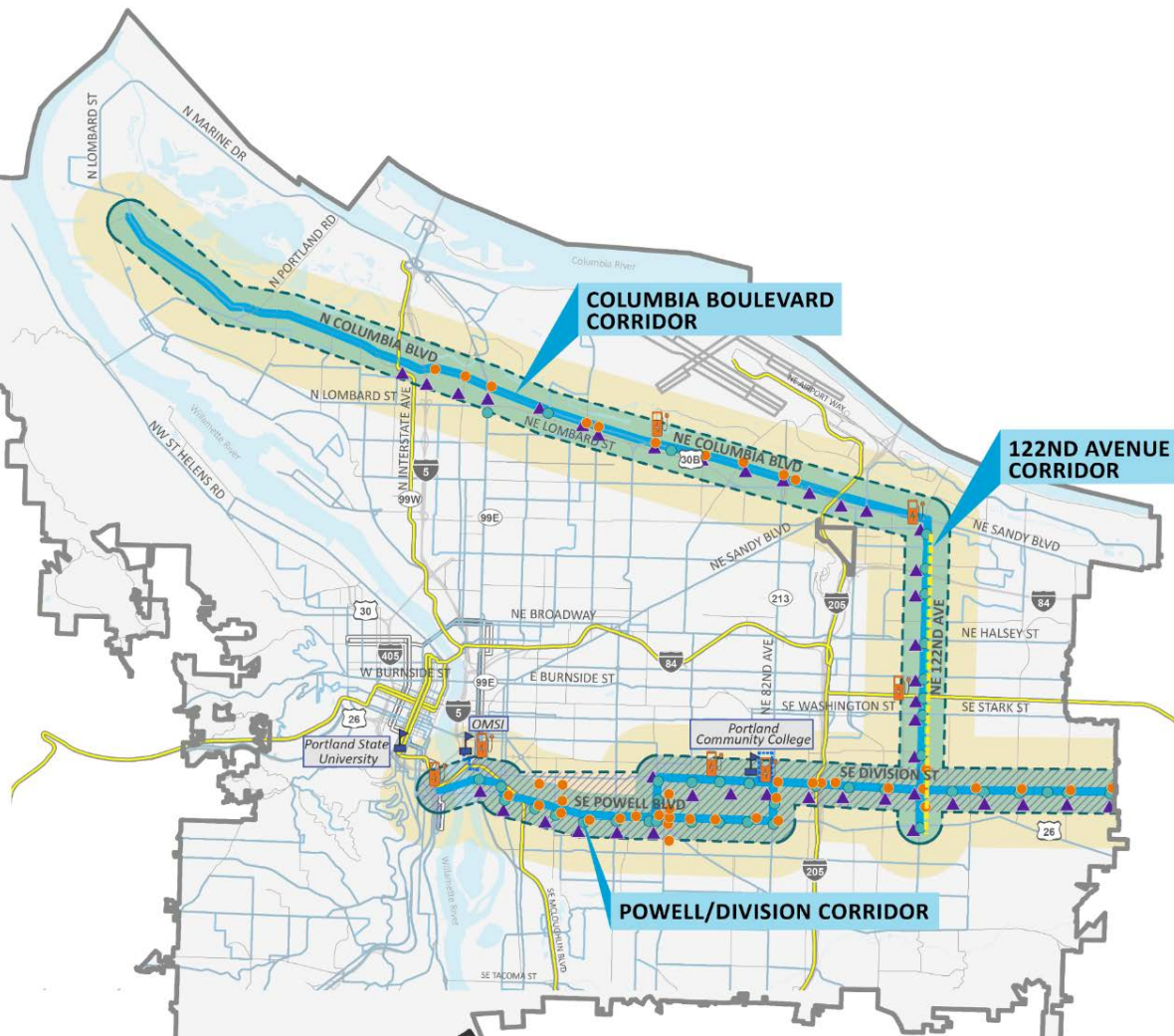
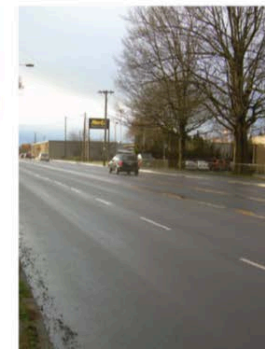
you relied too much on car trips

did you know:
you could have reduced your CO2 impact and improve your fitness by participating to the Metro program "FitMobility".
[Click here to learn how.](#)

Demonstration Corridors: Tale of two cities

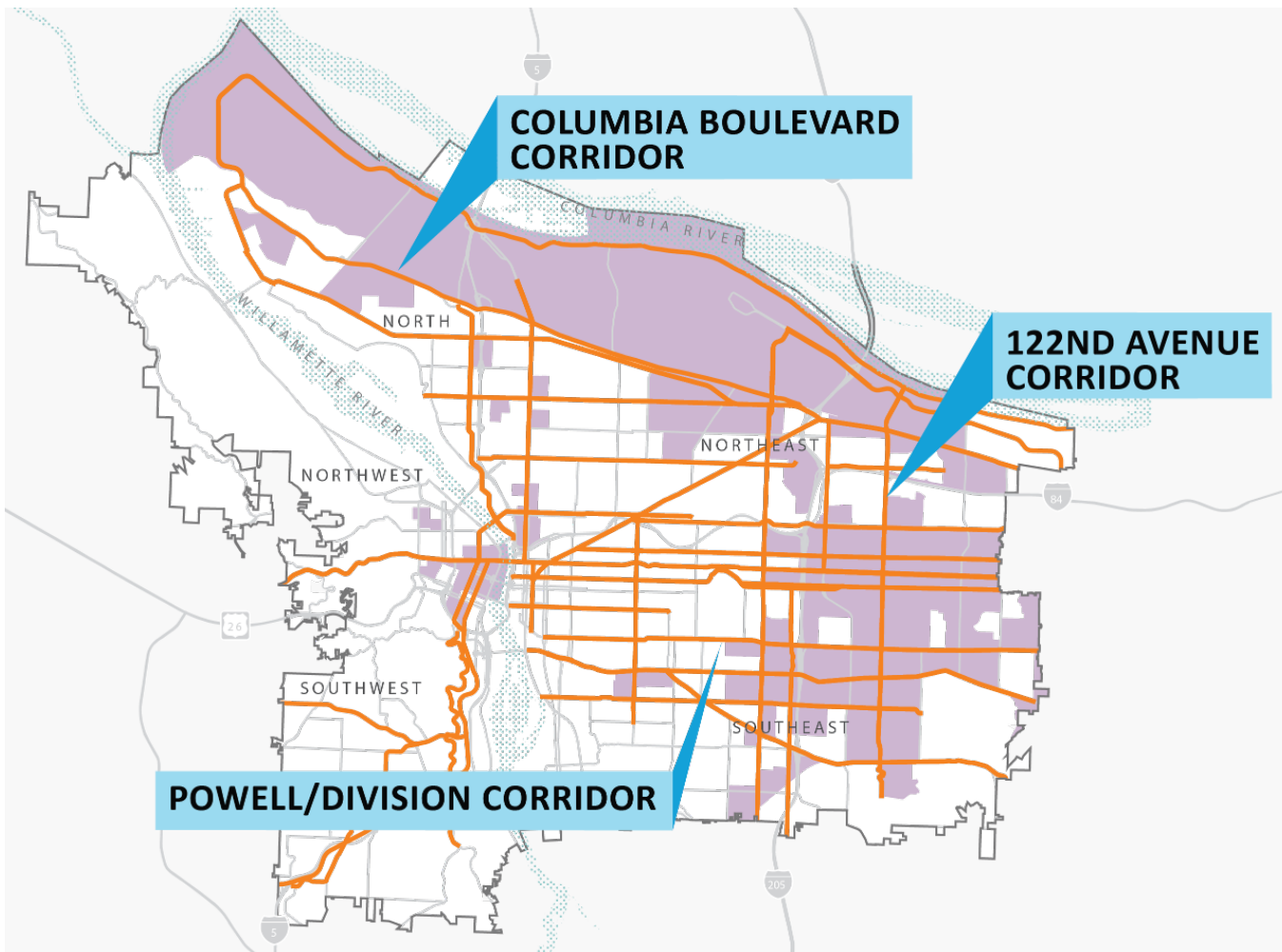
Priority Demonstration Zones

Powell-Division Corridor
 Columbia Corridor

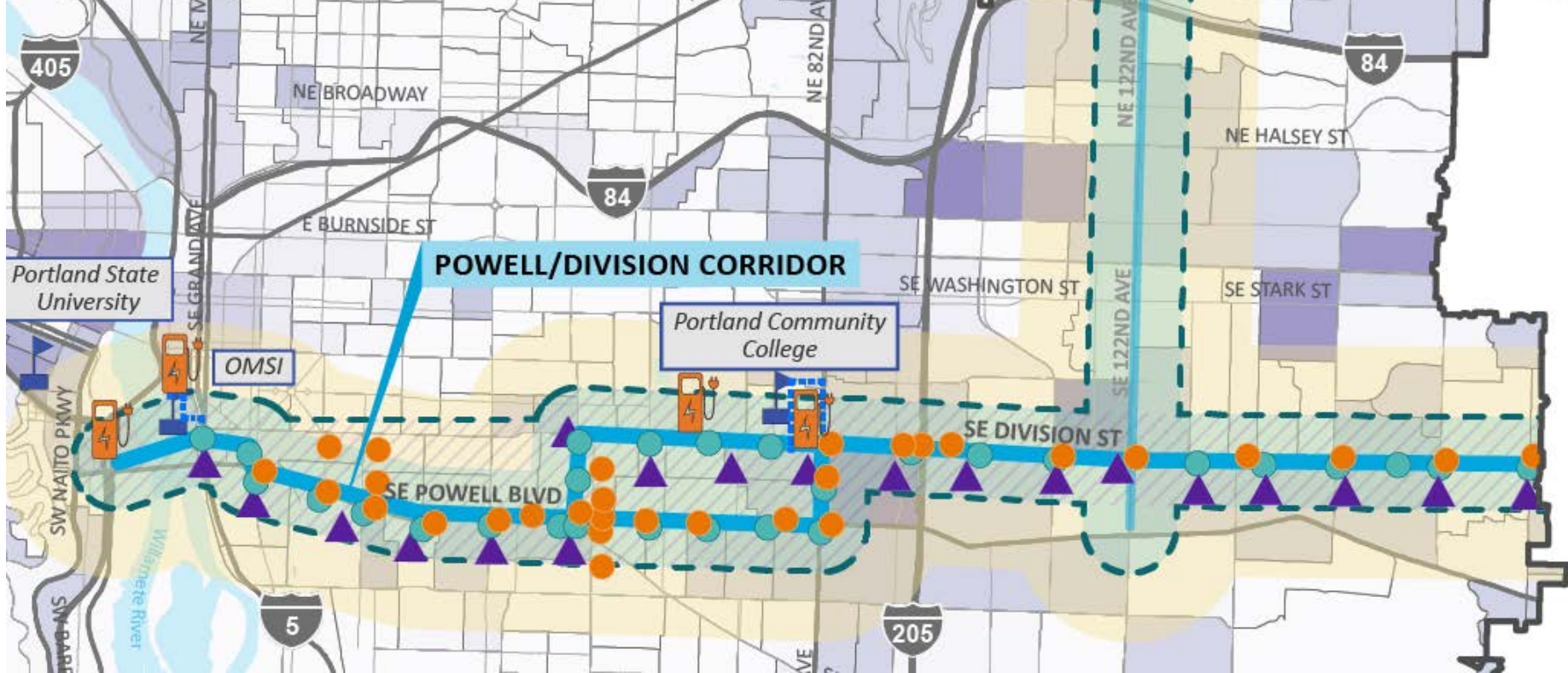


- | | |
|--|--|
| <ul style="list-style-type: none"> Freight Priority Zone Enhanced Mobility Downtown Innovation Quadrant Columbia Boulevard Light Rail Corridor Bus Corridor Street Car Line Light Rail Line Bus Line | <ul style="list-style-type: none"> Dedicated Short Range Communications (DSRC) at each corridor signal Electric Vehicle Charging Location Copper and Fiber Optic Communication Network Future Wireless Systems to Expand Communication Car & Ridesharing Focus Traffic Control Center Major Educational Institutions & Partnering Opportunities |
|--|--|

Why these corridors?










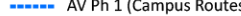
-  High Crash Corridors
-  Community of Concern



Legend

-  City Boundary
-  Educational Institution Partner
-  Corridor

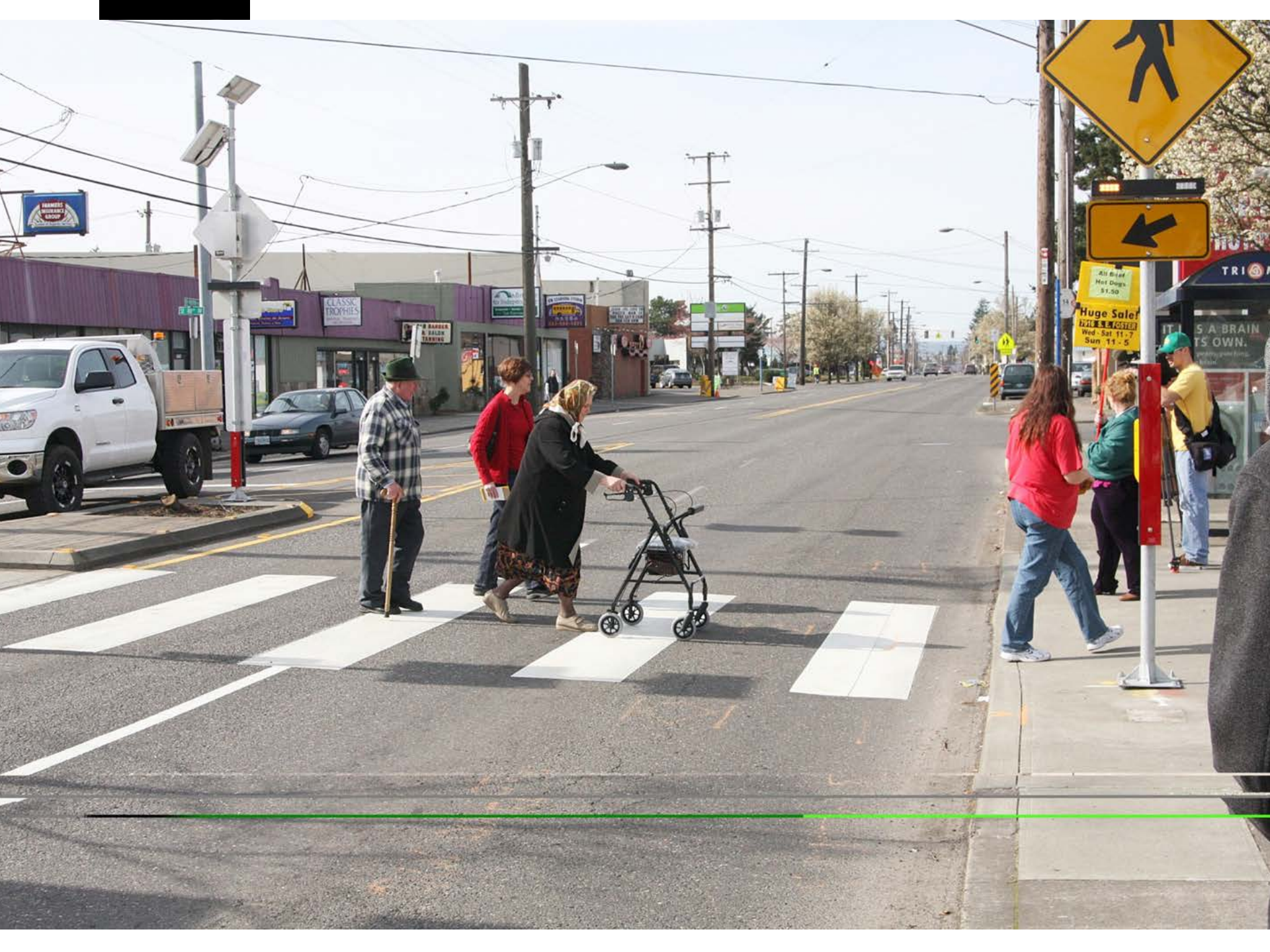
UB Mobile Investments

-  DSRC Road Side Unit
-  EV Charging
-  Air Quality Sensor Location
-  Smart Transit Station (w/Kiosk)
-  AV Ph 2 (Neighborhood Shuttle)
-  Connected Vehicle Zone
-  Powell-Division Small Starts Investment Project
-  AV Ph 1 (Campus Routes)



376 HCG

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ing
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NCA



All Beef
Hot Dogs
\$1.50
Huge Sale!
WEDNESDAY THROUGH SUNDAY
Wed - Sat 11 - 7
Sun 11 - 5



CLASSIC TROPHIES

BARBER & BALDWIN TANNING

SAVING

TRIO

IT'S A BRAIN
IT'S OWN.

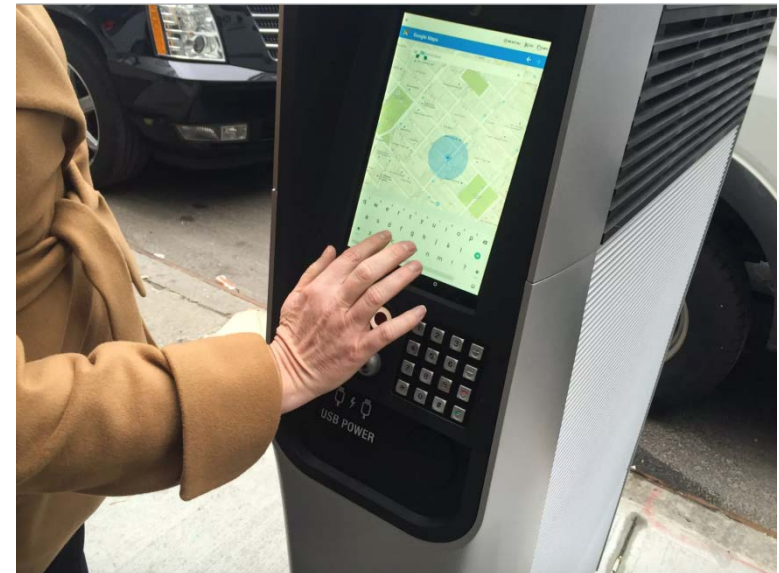


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Sidewalk Labs & Intersection



Autonomous Shuttles



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Ladders of Opportunity

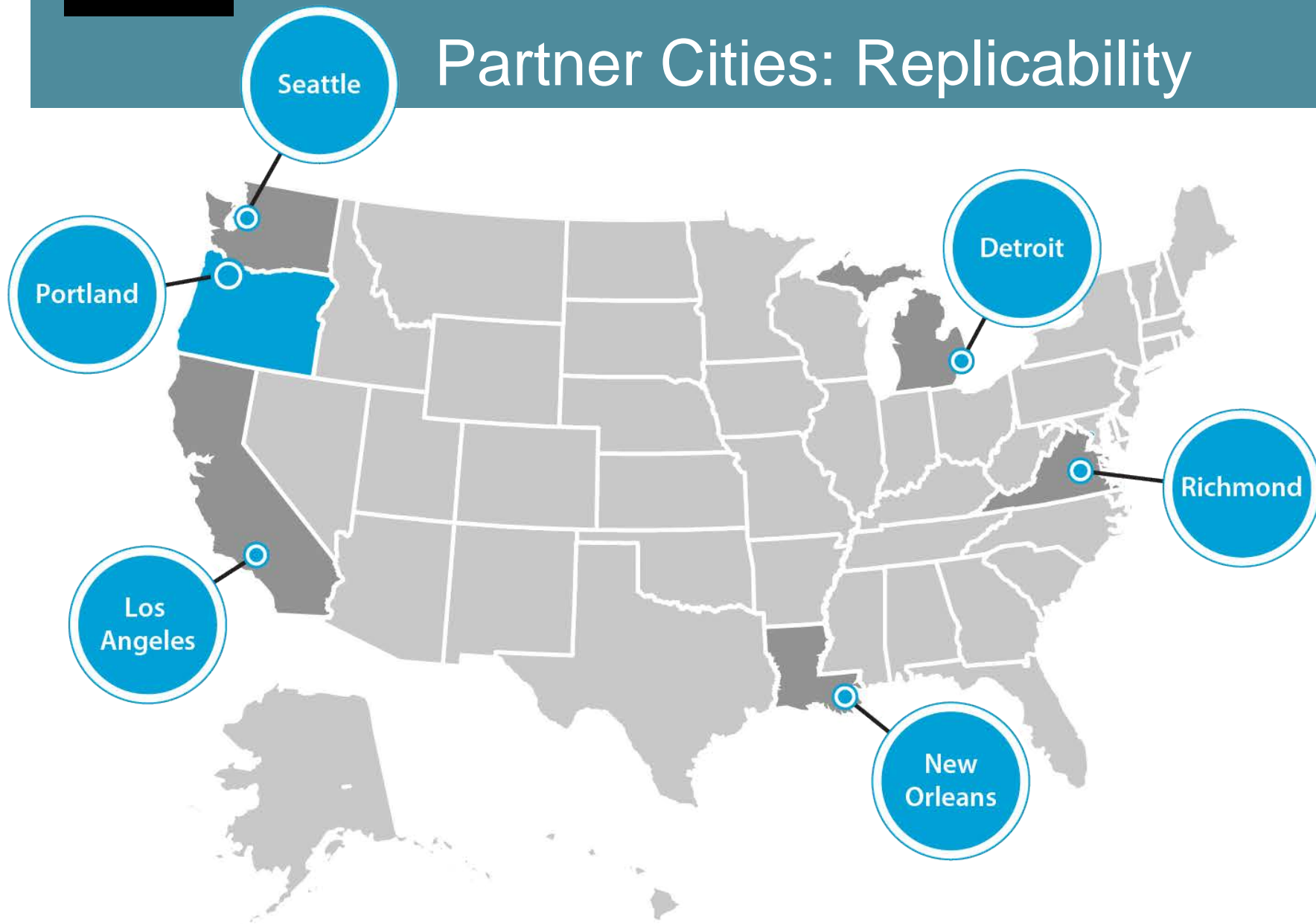
TNF TECH NEWS
TODAY
.COM

GM



lyft

Partner Cities: Replicability



The Aftermath

- **Big Question: What is Portland still moving forward with after the Smart Cities Challenge?**
- PBOT launches SAVI (Safe Autonomous Vehicle Initiative)
- TriMet: Mobility on Demand Sandbox
- Portland State University: Award of Transportation Center with focus on Smart Cities & Regional Smart City Action Plan
- Kiosk Pilot Demonstration & potential implementation
- NSF/NIST Air Quality & Transportation: continuing further expansion T4 America participation: best practices with partner cities
- Global Cities Teams Challenge (NIST run program):

SAVI: RFI and Draft Policy & Application

Smart Autonomous Vehicles Initiative (SAVI)



Portland Launches Smart Autonomous Vehicles Initiative (SAVI)



TriMet's MOD Proposal

Existing Infrastructure and Applications

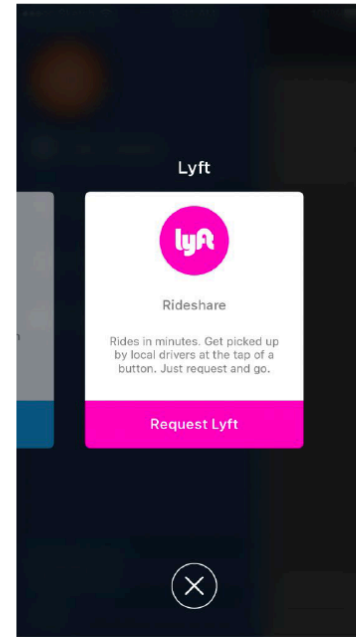
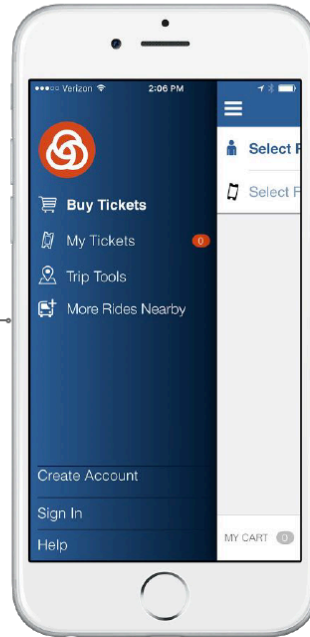
VTA OTP Responsive Web App

TriMet OTP Web App

TriMet Mobile Ticket App: moovel RideTap

US & Worldwide OTP Implementations

OTP Transportation Tools



moovel's RideTap is a feature in TriMet's mobile ticket app. It enables riders to easily access nearby transportation to help with the first or last mile of their trips.

RideTap includes ride-sharing service Lyft and car-sharing service car2go with more options expected in the future, including bike sharing.

The booking and payment features are planned for moovel's RideTap SDK (Software Development Kit). As a partner on this project, moovel will participate to design OTP to facilitate this future feature and potentially develop the necessary hooks compatible with their SDK.

PSU's TREC/NITC



National Institute for Transportation
and Communities

Google Custom

NEWS

EVENTS

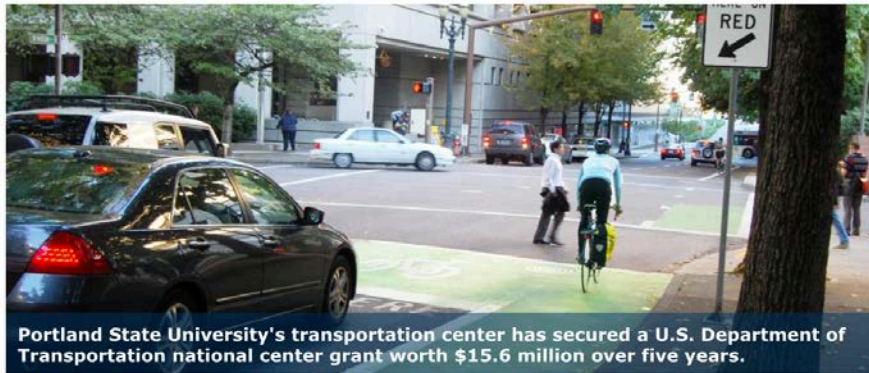
RESEARCH

PROFESSIONAL DEVELOPMENT

EDUCATION

FOR RESEA

NITC in the News



Portland State University's transportation center has secured a U.S. Department of Transportation national center grant worth \$15.6 million over five years.

Transportation center earns \$15 million federal research grant, national designation

posted on Monday, December 5, 2016, 6:00am PST

Portland State University has secured a five-year grant from the U.S. Department of Transportation for transportation research, education and outreach. Portland State's Transportation Research and Education Center, TREC, will administer the grant, which is expected to total \$15.6 million.

PSU national designation application had a major focus on Smart Cities. Now PSU is leading the development of regional Smart City Action Plan.

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Pilot Project & possible deployment of kiosks





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H. Division

60th St

rainshine COFFEE HOUSE
drink eat gather

CHRISTINE GERHARDT OD
OPTICAL SHOP

Get Ready for Super Fast Free Wi-Fi

rainshine eat rainshine gather rainshine

rainshine eat rainshine drink rainshine gather

Other Initiatives

- National Institute for Standards and Technology (NIST) Global Cities Teams Challenge (GCTC)
 - Selected Portland as GCTC Project of the Year and
 - Hosted the Transportation Super Action Cluster Conference Feb 1 & 2
- Portland Bureau of Transportation
 - Grants for upgrading central signal system and limited CV demonstration
 - AT&T and GE Smart Cities Spotlight Cities focusing on 122nd Ave Implementation

Adrian Pearmine, National Director for Smart Cities and Connected Vehicles
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Email: adrian.pearmine@dksassociates.com

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transportation
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