SMART CITY FORUM OCTOBER 25, 2017

NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
CENTRAL OHIO CHAPTER

Presented by

DRK
DONALD R. KENNEY AND COMPANY

OHIO'S SMART CORRIDORS

Andrew Bremer, Deputy Director for Strategic Initiatives

OHIO DEPARTMENT OF TRANSPORTATION

SMART MOBILITY IN OHIO: THE CONCEPT

WHY?


We can’t build our way out of congestion


Serious injury crashes are on the rise

2016 CRASHES

305,959
Crashes

9,207
Serious injuries

112,276
Injuries

1,133
Fatalities

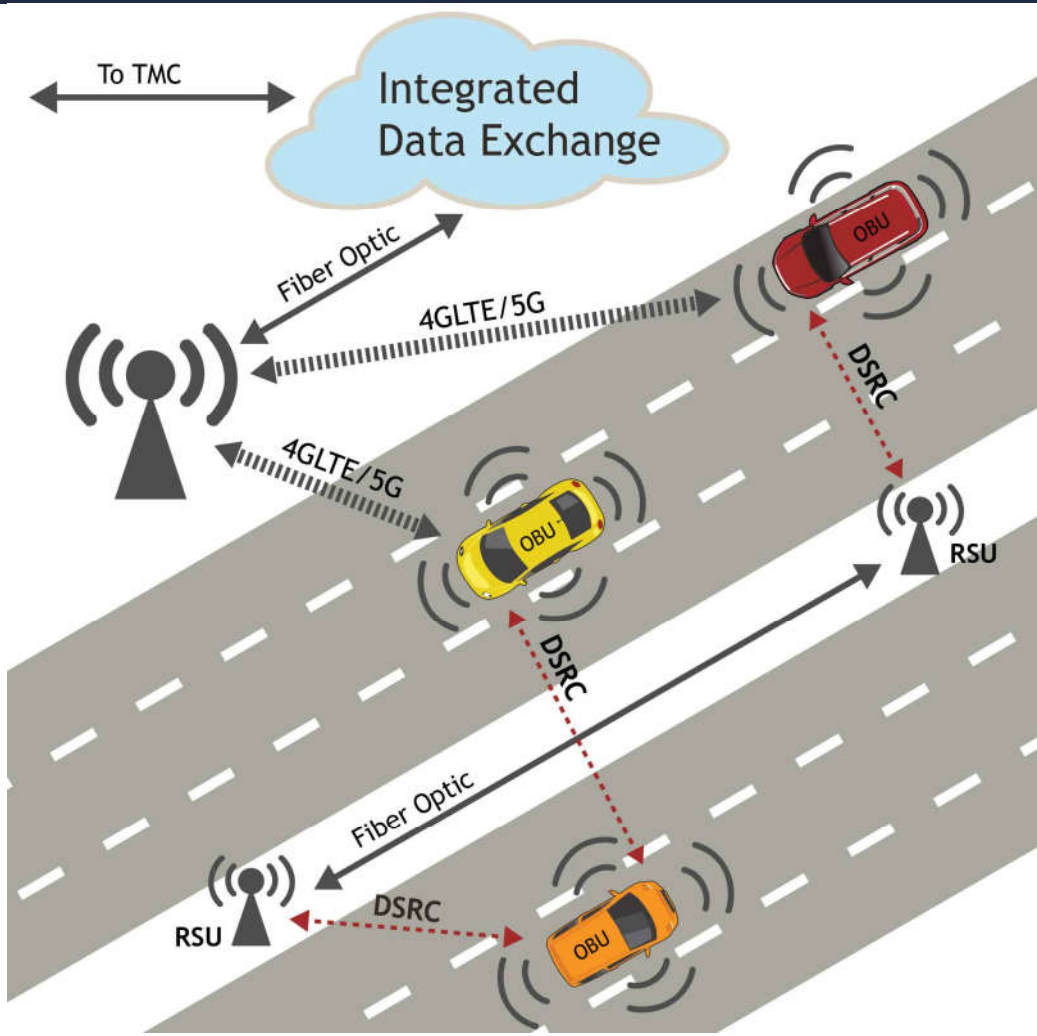

DATA:
MEASURE TO MANAGE

DATA COLLECTION POINTS

- **GPS/Cell phone app**
- **RWIS/WIMS**
- **Traffic signals/cameras**
- **Roadway & bridge deck sensors**

DATA COLLECTION

- **OBUs**
- **DSRC**
- **RSUs**
- **4G LTE/5G**
- **Fiber Optic Cable**
- **Integrated Data Exchange**



TYPES OF DATA

- SAE - J2735
- Traffic speed/volumes
- Vehicle trajectory, wheel adhesion
- Weather/Environment
- Public Safety Vehicle Notification
- Blind Spot/Vehicle Detection
- Advanced Curve Warning
- Roadway Surface Dynamics
- Roadway Surface Temperature
- Work Zone Information
- Vehicle Weight

REAL-TIME TRAFFIC MANAGEMENT

- Planning and Asset Management
- Hard shoulder running
- Traffic re-routing
- Emergency response
- Predictive traffic analytics
- Forward collision warning/avoidance
- Adverse weather conditions
- Enhanced traveler information
- Just-in-time delivery/commercial truck parking availability
- Work zone Identification

SMART MOBILITY IN OHIO: HAPPENING NOW

STATEWIDE INITIATIVES

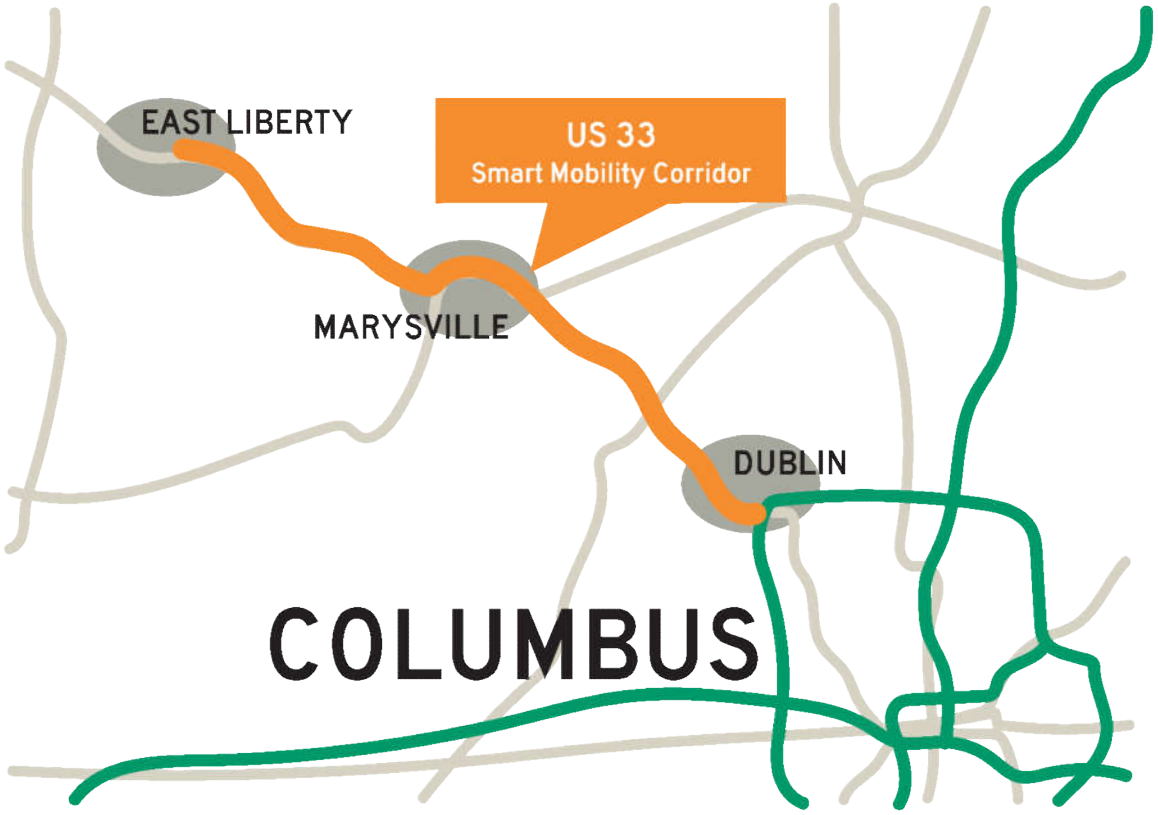
- US 33 Smart Mobility Corridor (ODOT)
- I 90 Lake Effect Corridor (ODOT)
- I 670 SmartLane (ODOT)
- I 270 Smart Freight Corridor (ODOT)
- I 80/I 90 Ohio Turnpike
- Smart Columbus
- Smart Marysville

US 33 SMART MOBILITY CORRIDOR

Status: *In Process*
Estimated Finish: Fall 2018
Estimate Cost: $18 million
Length: 35 Miles

Features & Benefits:

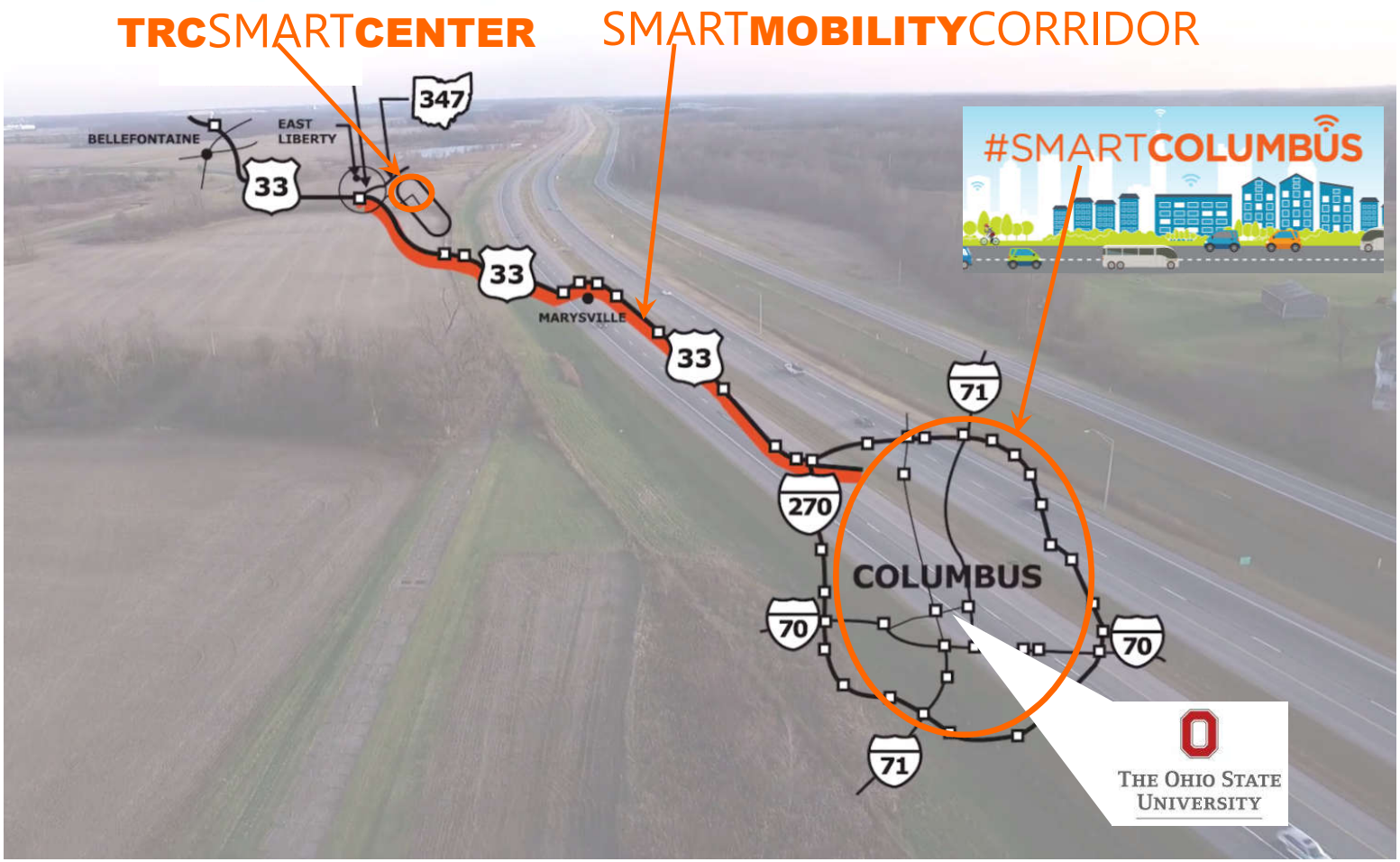
- Open-road and controlled testing environments
- Roadside units for connected vehicle testing
- Fiber optic connectivity with Ohio Supercomputer Center



US 33: TRANSPORTATION RESEARCH CENTER

Transportation Research Center Inc.

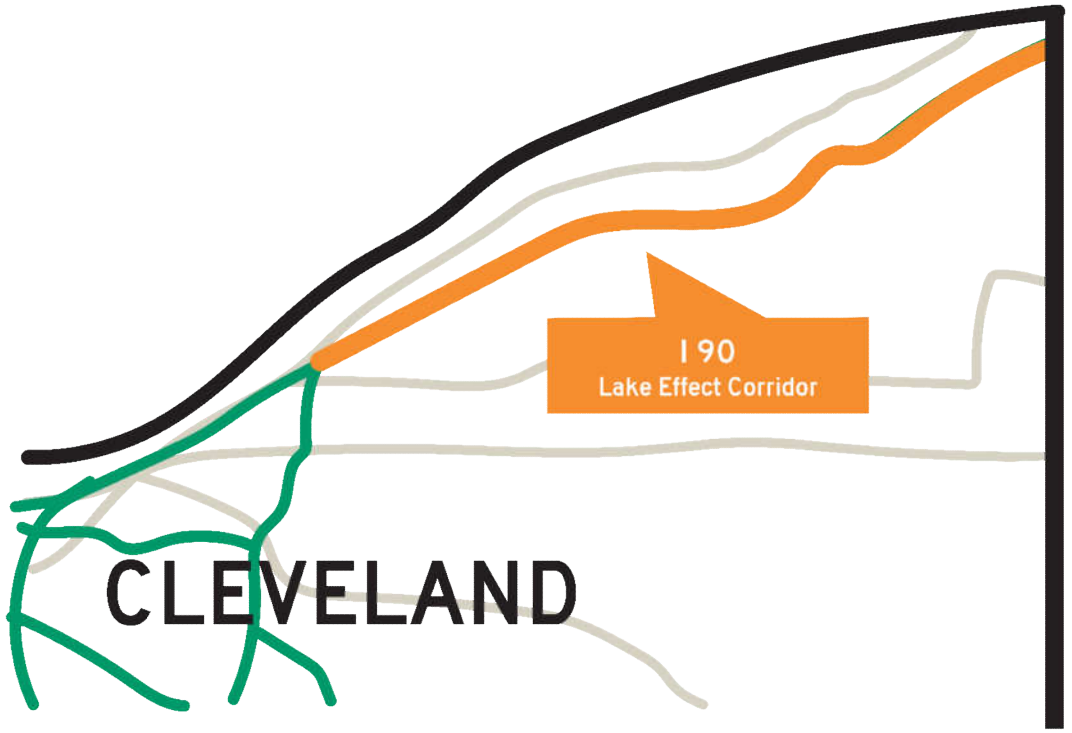
TRANSPORTATION RESEARCH CENTER



I 90 LAKE EFFECT CORRIDOR

Status: *In Process*
Estimated Finish: Spring 2019
Estimate Cost: $7.2 million
Length: 60 Miles
Features & Benefits:

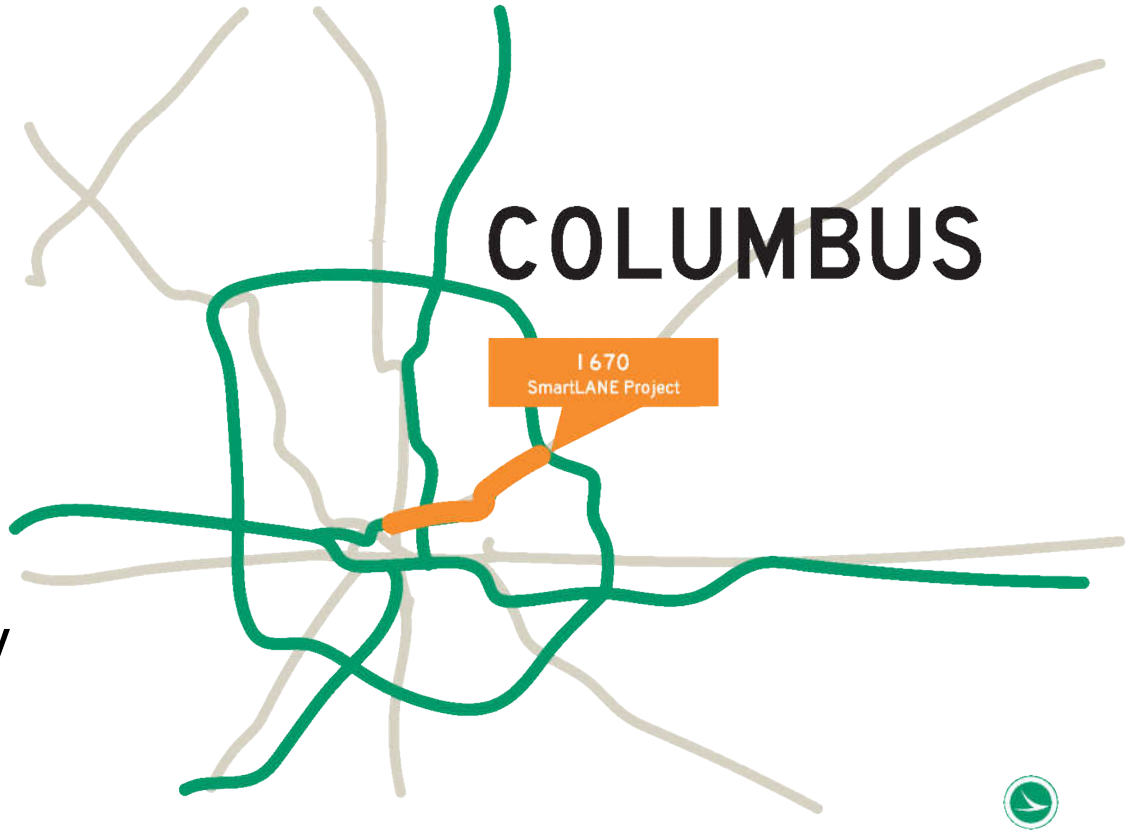
- 5G with fiber backhaul
- Roadside units and units on public service vehicles
- Additional dynamic message signs, traffic cameras & visibility sensors
- Variable speed limit during adverse weather



I 670 SMARTLANE

Status: *In Process*
Estimated Finish: Spring 2019
Estimate Cost: $56 million*
Length: 9 Miles
Features & Benefits:

- Motorists will use shoulder during designated hours
- Reduce traffic congestion
- Less expensive than separate lane
- Digital overhead signs every ¾ mile



**Includes interchange replacement*

MARYSVILLE CONNECTED CITY PILOT

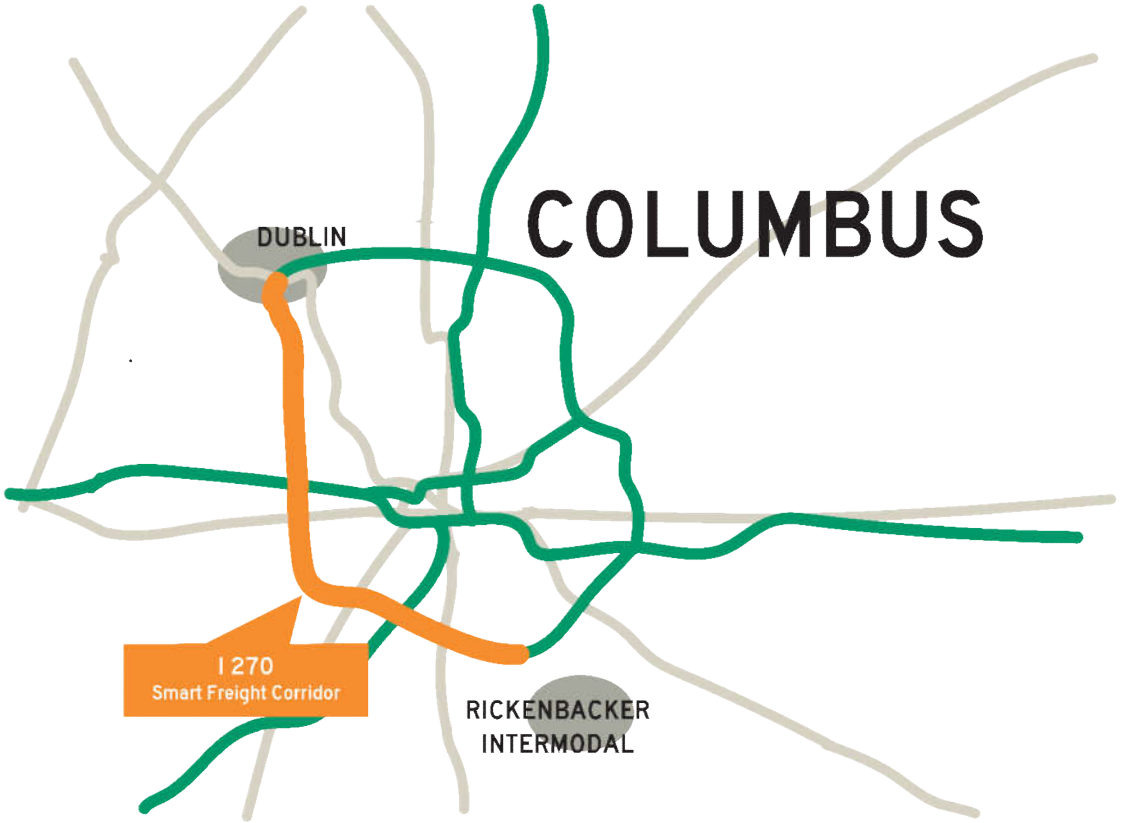
$5,997,500 USDOT Advanced Transportation and Congestion Management Technologies Deployment Grant

- Tie in Local Route DSRCs to US 33 Smart Mobility Corridor
  - Signalized Intersections
    - Signal Phase and Timing (SPaT)
    - Pedestrian Recognition, and
    - Collision Avoidance
  - Non-Signalized Intersections
    - "Bird's Eye" View for Collision Avoidance and Other Applications
    - Connected Roundabouts

I 270 SMART FREIGHT CORRIDOR

Status: *Concept*
Estimated Start: 2019
Estimated Cost: $1 million
Length: 24 Miles
Features & Benefits:

- Install road side units (DSRC)
- Positioned to augment Smart Columbus Initiative
- Autonomous testing and truck platooning from Rickenbacker to US 33



OHIO TURNPIKE

Status: *In Process*
Estimated Finish: 2019
Length: 60 Miles
Features & Benefits:

- Install roadside units (connected to existing fiber) and on-board units in public fleet vehicles
- Test V2I technology
- Provide data to traffic managers
- Ideal open road testing site

COLUMBUS SMART CITY

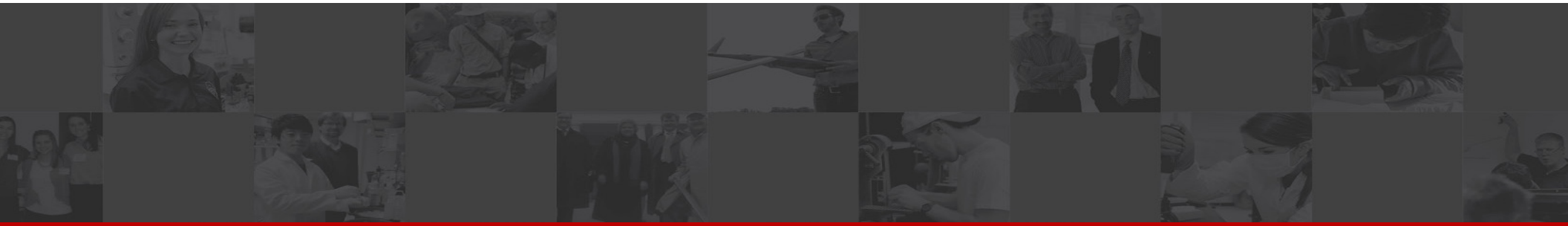
June 2016- City of Columbus Won the US DOT $40 Million Smart City Challenge

- Awarded Additional $10 Million Grant from Paul G. Allen's Vulcan Inc.
- $90 Million in Matching Pledges from Public and Private Sector Partners
- Outcome: A Safer, More Mobile and Sustainable City

SMARTCOLUMBUS

VISION

- ACCESS TO JOBS
- SMART LOGISTICS
- CONNECTED RESIDENTS
- CONNECTED VISITORS
- SUSTAINABLE TRANSPORTATION



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

THE CHALLENGE OF SMART CITIES

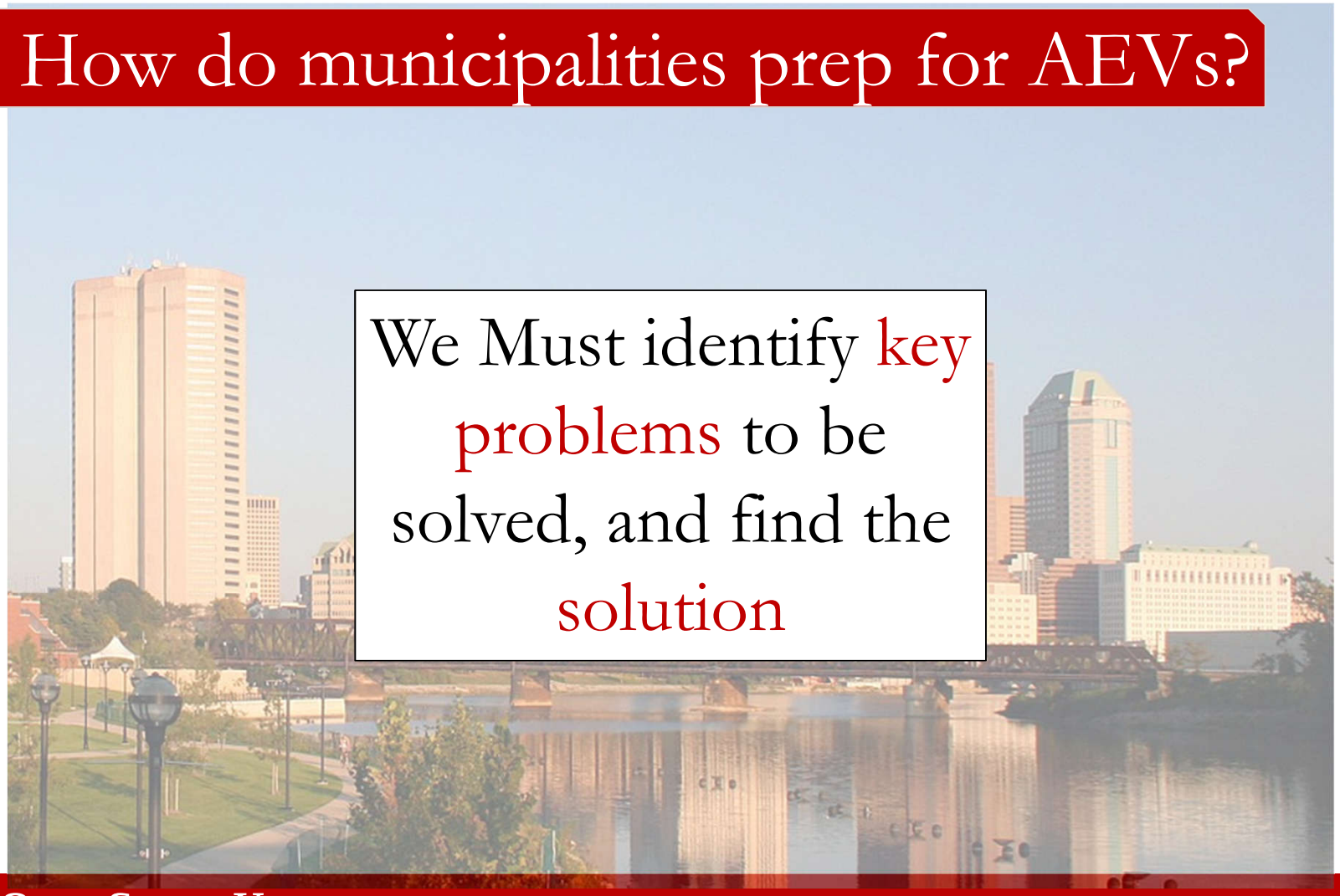
Maryn Weimer

Sr. Associate Director

Center for Automotive Research

The Ohio State University

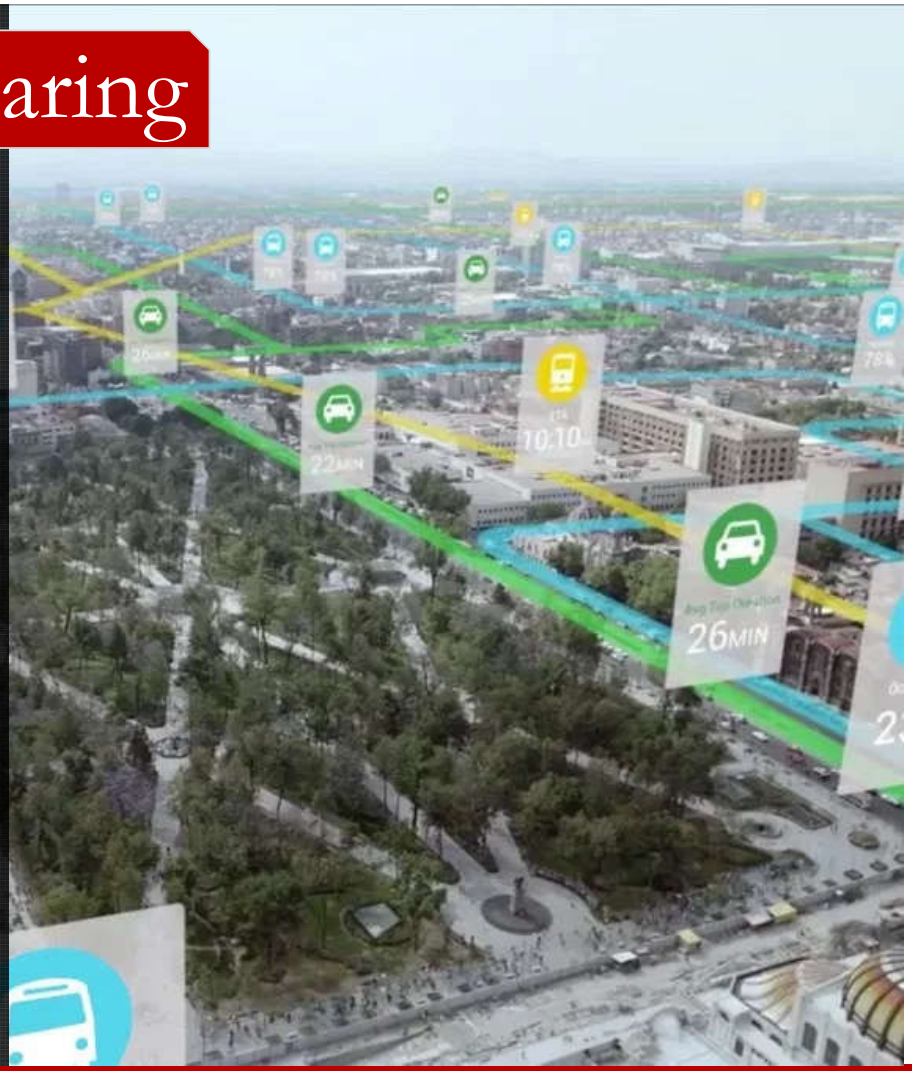
How do municipalities prep for AEVs?



We Must identify key problems to be solved, and find the solution

Improve Ride Sharing

- Erase cost of labor
- Turn vehicles into a commodity
- Optimize route planning automatically
- Remove “personal security blanket”



Make ownership easier

- Amortize Cost of Ownership
- Decrease parking and fueling costs
- Make driving less onerous

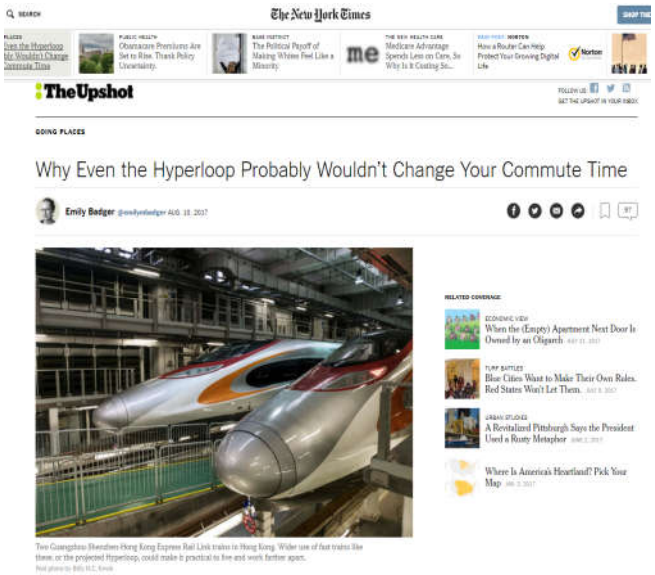

Smart cities sound wonderful!
What could possibly go wrong?

Longer Commutes?? Feasible, yes! Desirable, no!

Marchetti's constant

(Cesare Marchetti, 1994)

- The average time spent for commuting each day is one hour
- Historically constant
- Cities expand in response to faster modes


The New York Times

The Upshot

Why Even the Hyperloop Probably Wouldn't Change Your Commute Time

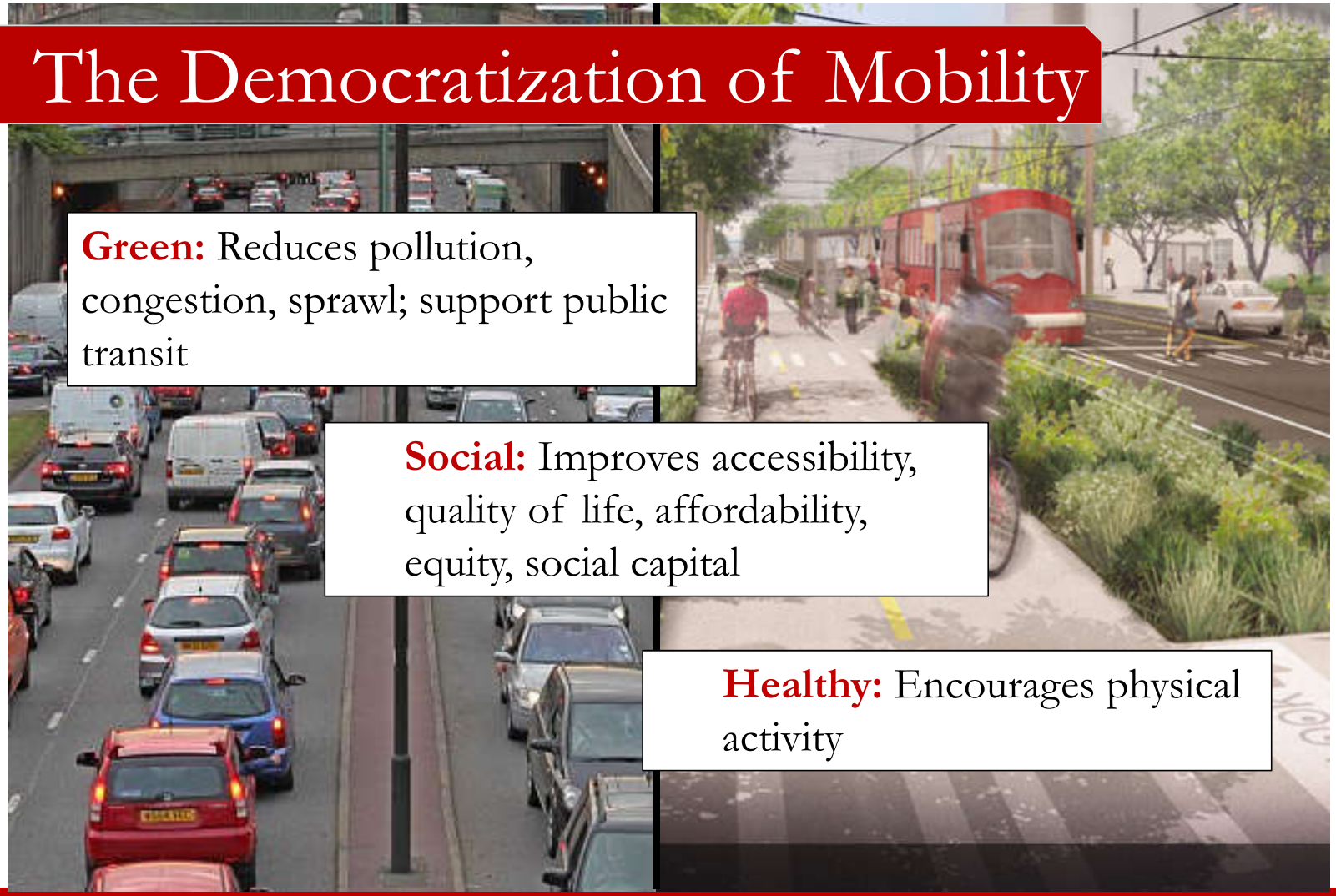
Emily Badger

"When you give people greater speed, they don't use it to save time; they use it to consume more space."

The Commute of the Future?

- Increasing VMT
- Pollution
- Urban Sprawl
- Inequity
- Segregated Roadways

The Democratization of Mobility

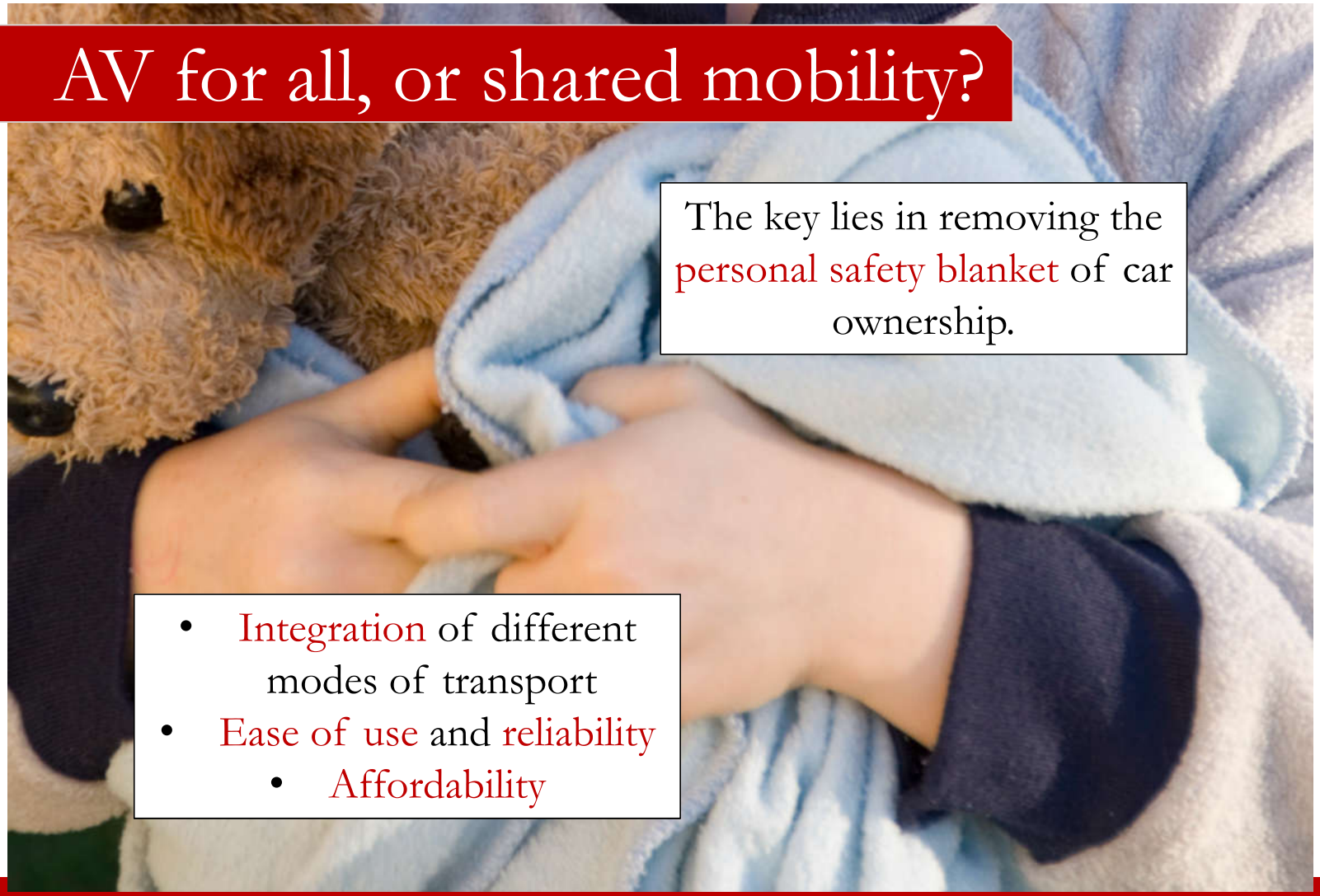


Green: Reduces pollution, congestion, sprawl; support public transit

Social: Improves accessibility, quality of life, affordability, equity, social capital

Healthy: Encourages physical activity

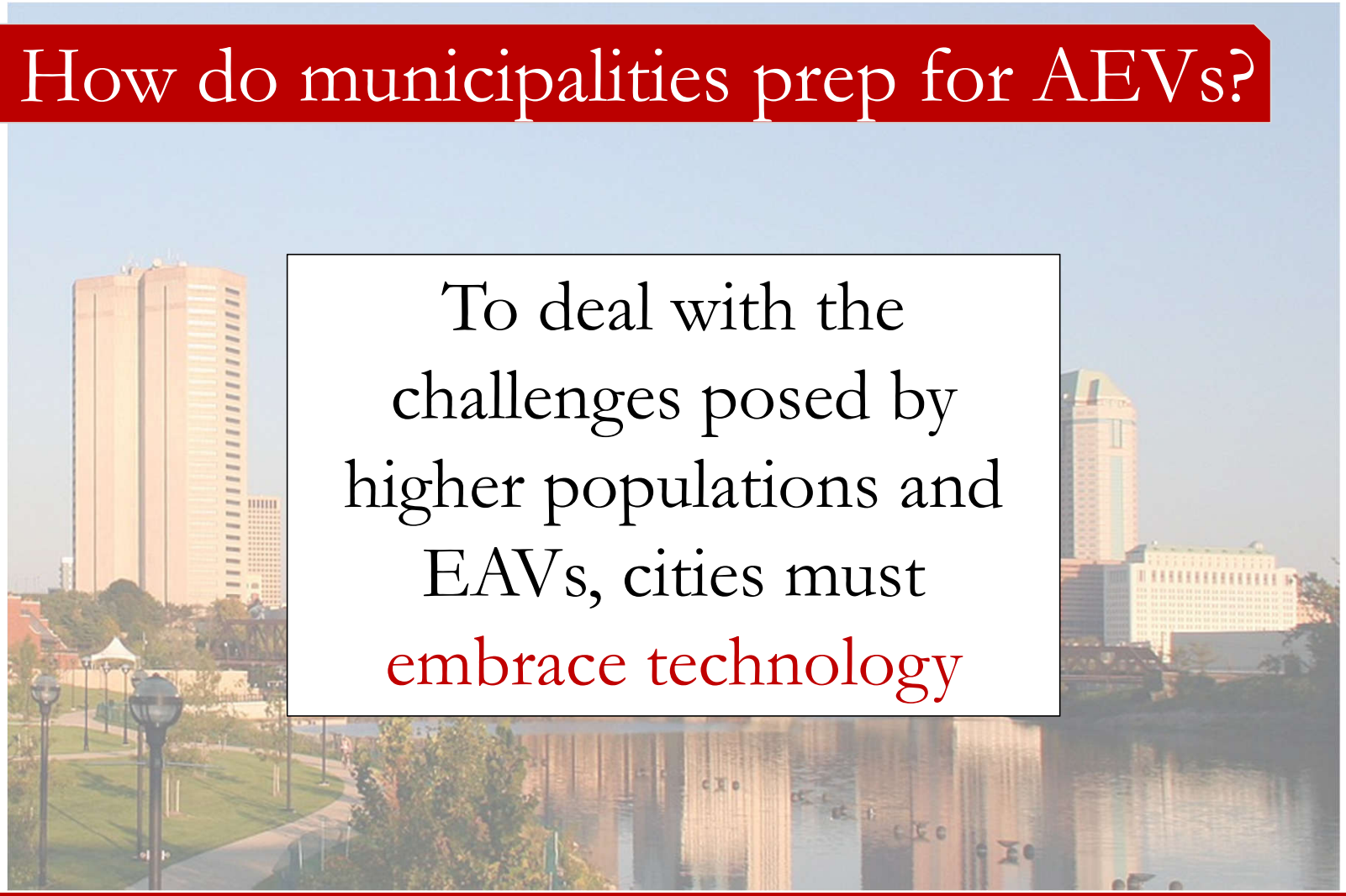
AV for all, or shared mobility?



The key lies in removing the personal safety blanket of car ownership.

- Integration of different modes of transport
- Ease of use and reliability
- Affordability

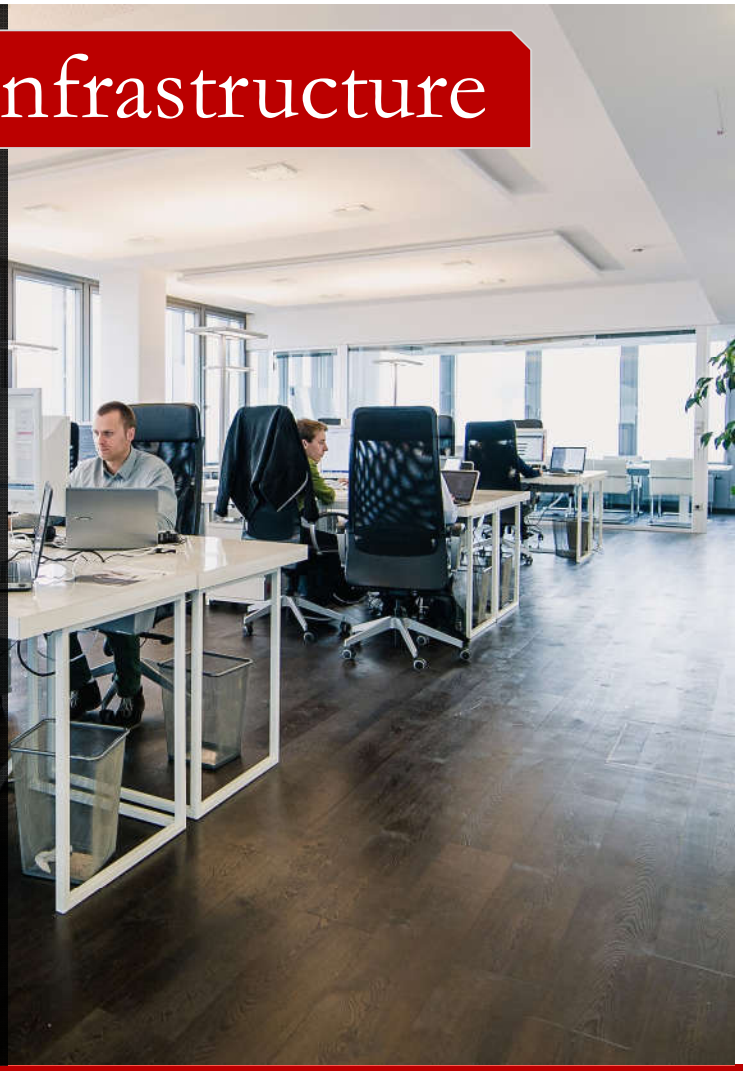
How do municipalities prep for AEVs?



To deal with the challenges posed by higher populations and EAVs, cities must embrace technology

Revolutionizing City Infrastructure

- Parking - Malls of the Future
- Congestion - Nighttime Deliveries
- Air Control - Drones in the Sky
- Data - Medical Data Security
- Human Resources



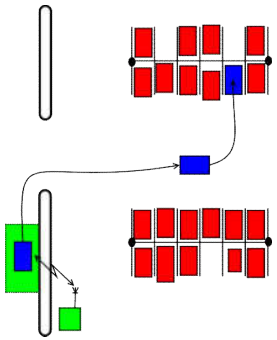

ECOSYSTEM OF EXPERTISE
CLEAN AND EFFICIENT MOBILITY
MODELING, SIMULATION, CONTROL AND DIAGNOSTICS
SMART MOBILITY
CROSS CUTTING CAPABILITIES

Automated Valet

Fully autonomous navigation in parking lot

Automated head-in, tail-in and parallel parking

Vehicle DBW conversion, path planning, sensor-based localization, vehicle control



Lane Change/Merge

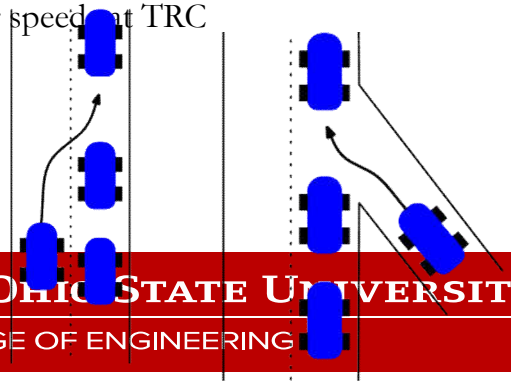
Multiple autonomous and semi-autonomous scenarios

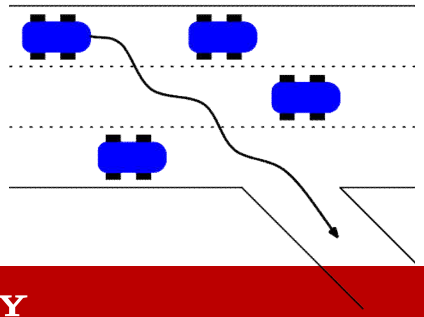
Requirements for inter-vehicle communication

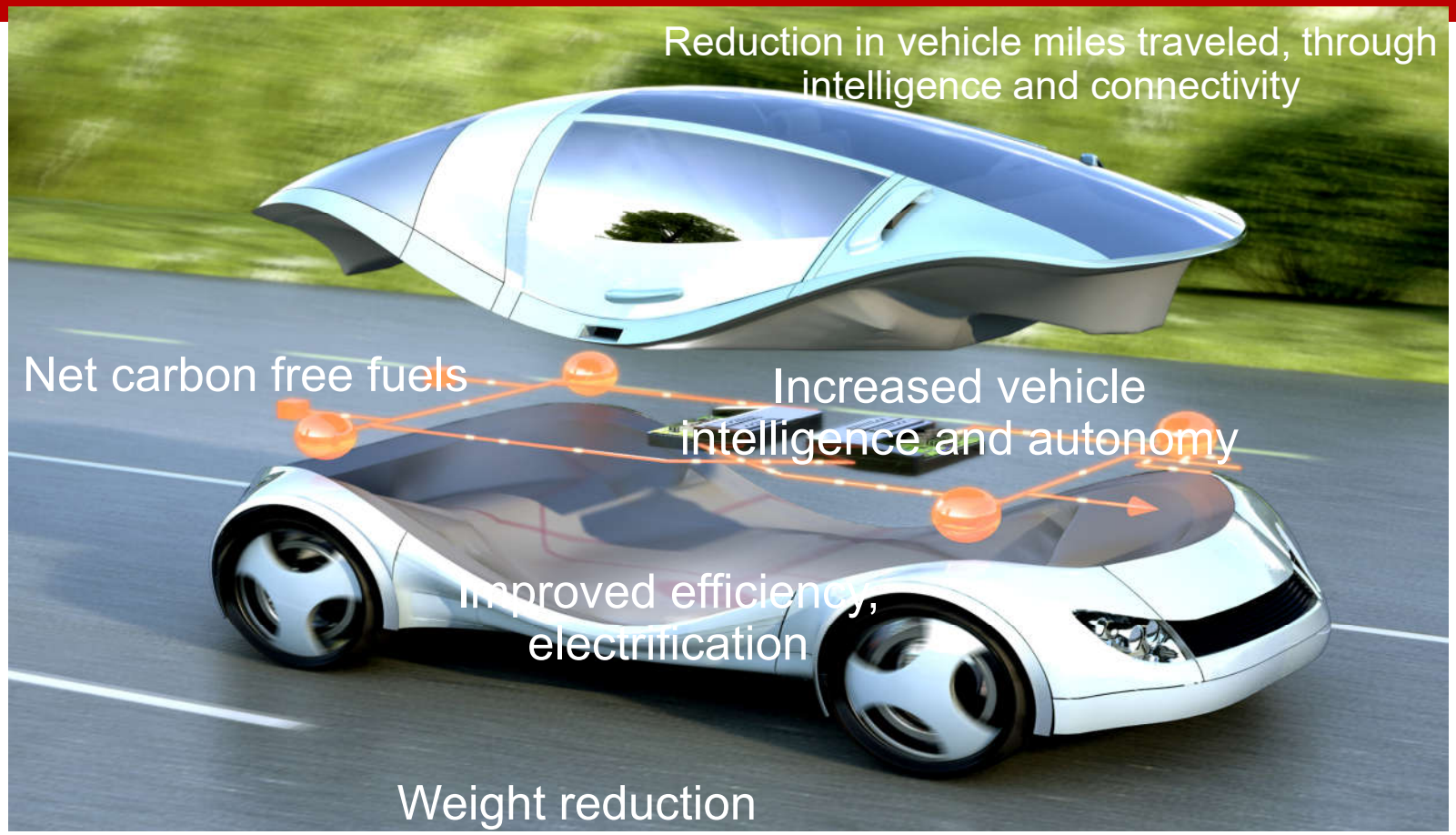
Exploring platoon/convoy configuration and control

Experimental testing

- Low speeds initially at OSU
- Higher speed at TRC







credit: www.siemens.com/press


TRC
Transportation
Research Center Inc.
The Ohio State University
What is TRC?
Better Vehicles. Better Drivers. Better Roads.

TRC Transportation Research Center Inc.

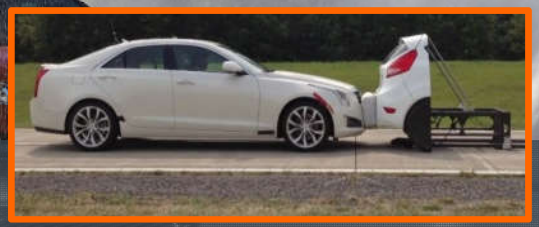
The Ohio State University

4,500 acres

24/7 operation

800+ customers

450+ employees



Fun Facts – TRC Today

Better Vehicles. Better Drivers. Better Roads.

THE OHIO STATE UNIVERSITY

James A. Rhodes Conference Center @ TRC

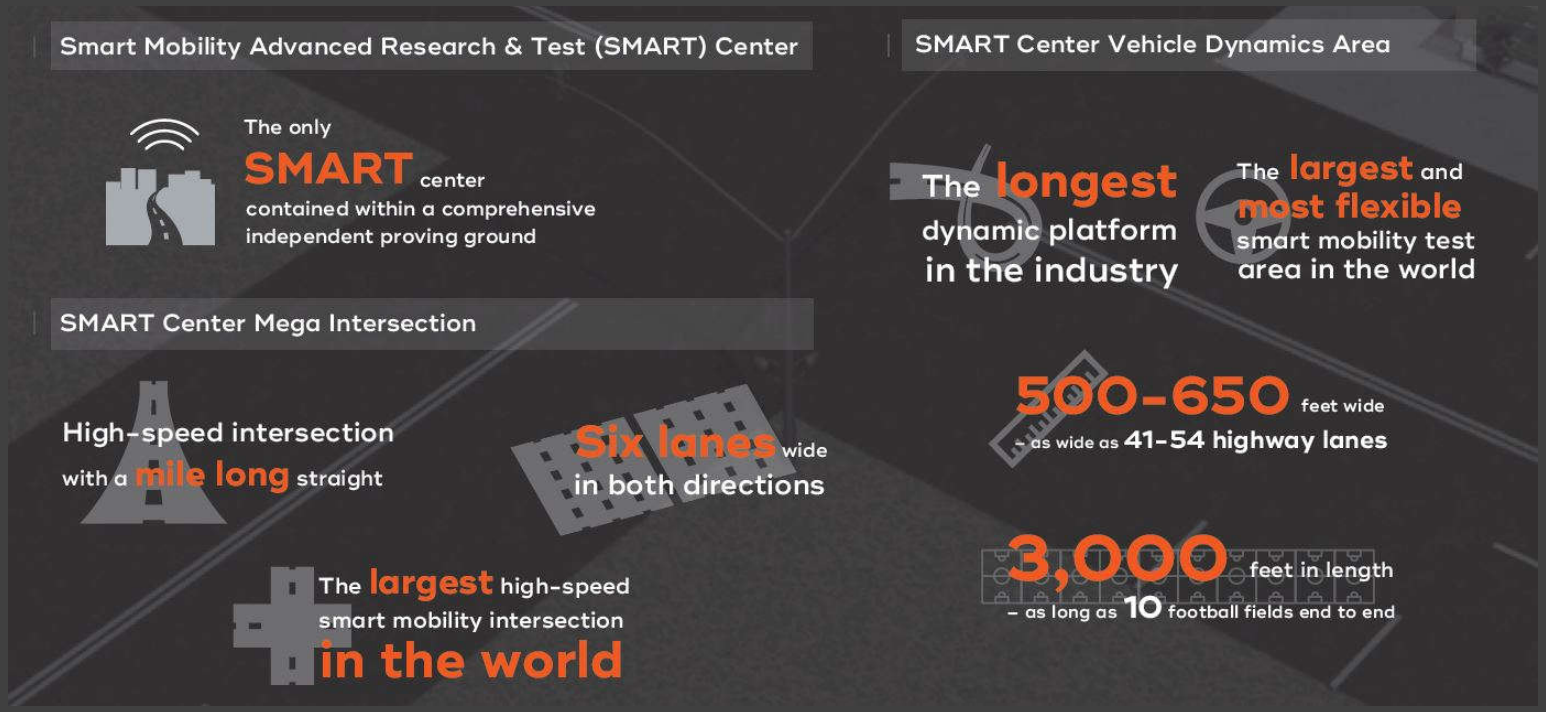
- **Conference Center** including Main Security enhancements
- **Event and Product Review Center** for up to 300 people
- **Ohio State Distance Learning Center** including faculty student, and lab accommodations for The Ohio State University
- **Regional Planning Office** for Logan Union Champaign counties
  Shared multi-purpose conference rooms with flexible workspace
- **Opened October 5, 2017**

TRC

Better Vehicles. Better Drivers. Better Roads.

THE OHIO STATE UNIVERSITY

Fun Facts – TRC Tomorrow



Better Vehicles. Better Drivers. Better Roads.

THE OHIO STATE UNIVERSITY

THANK YOU!!!

Acknowledgements

Harvey Miller - Director, Center for Urban and Regional Analysis (miller.81@osu.edu)

Jinhyung Lee – Center for Urban and Regional Analysis

SMART COLUMBUS UPDATE

10.19.17

“Mobility is the great equalizer of the twenty-first century.”
-Mayor Andrew J. Ginther

SMRT COLUMBUS

MISSION

To empower our residents to live their best lives through citizen-centric, innovative and safe mobility solutions.

SMRT COLUMBUS

VISION

To demonstrate how an intelligent transportation system and equitable access to transportation can have positive impacts on everyday challenges faced by urban cities.

SMRT COLUMBUS

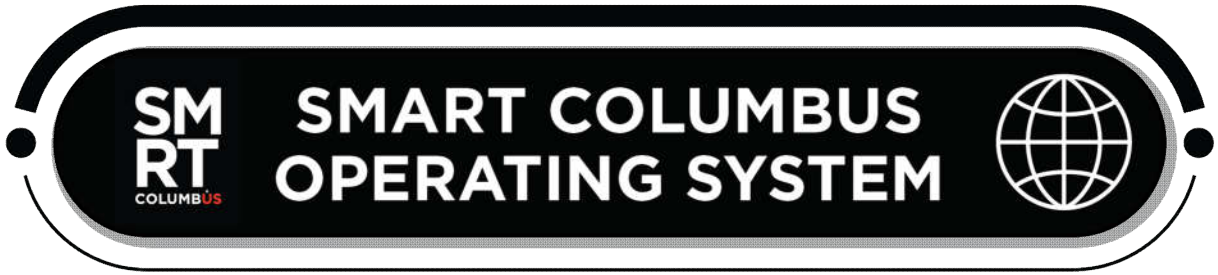
OUTCOMES

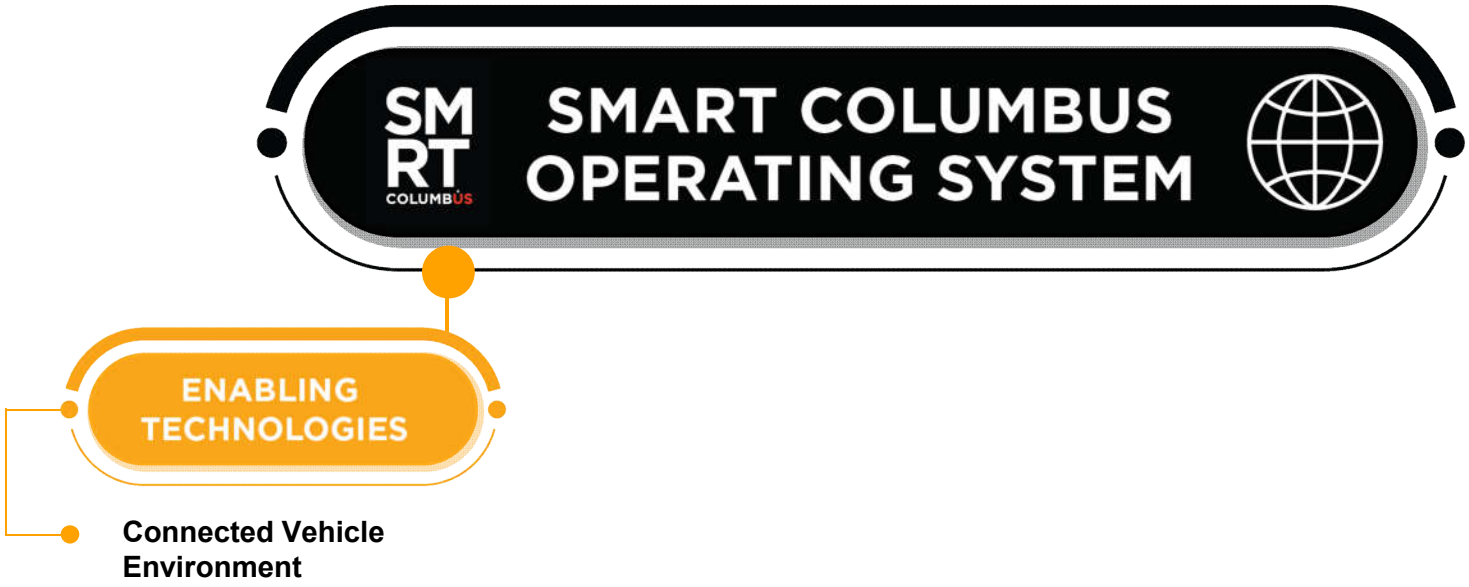
Improve safety

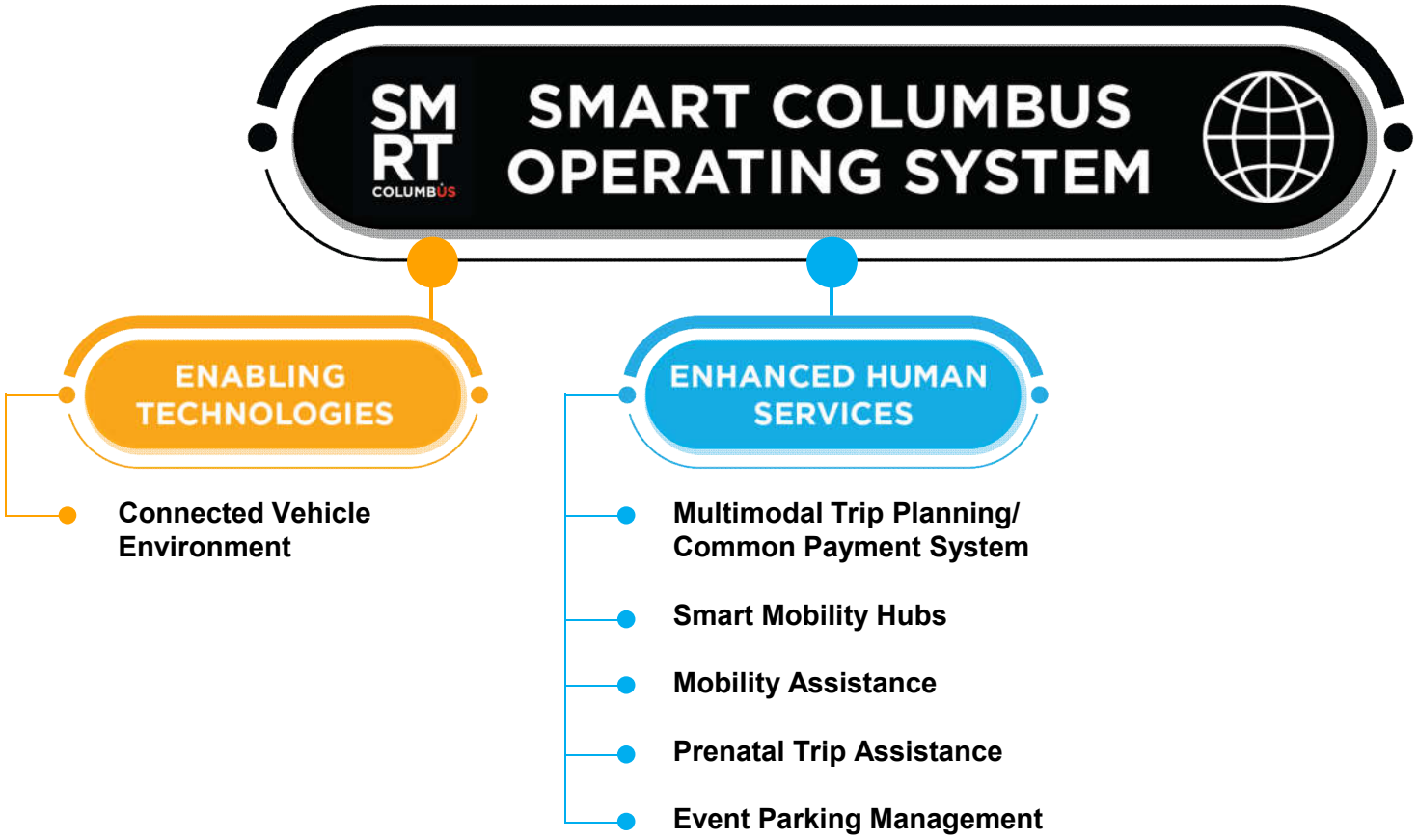
Enhance Mobility

Enhance Access to Opportunities & Services

Reduce Environmental Impact


SM
RT
COLUMBUS
SMART COLUMBUS
OPERATING SYSTEM


SMART COLUMBUS OPERATING SYSTEM
ENABLING TECHNOLOGIES
Connected Vehicle Environment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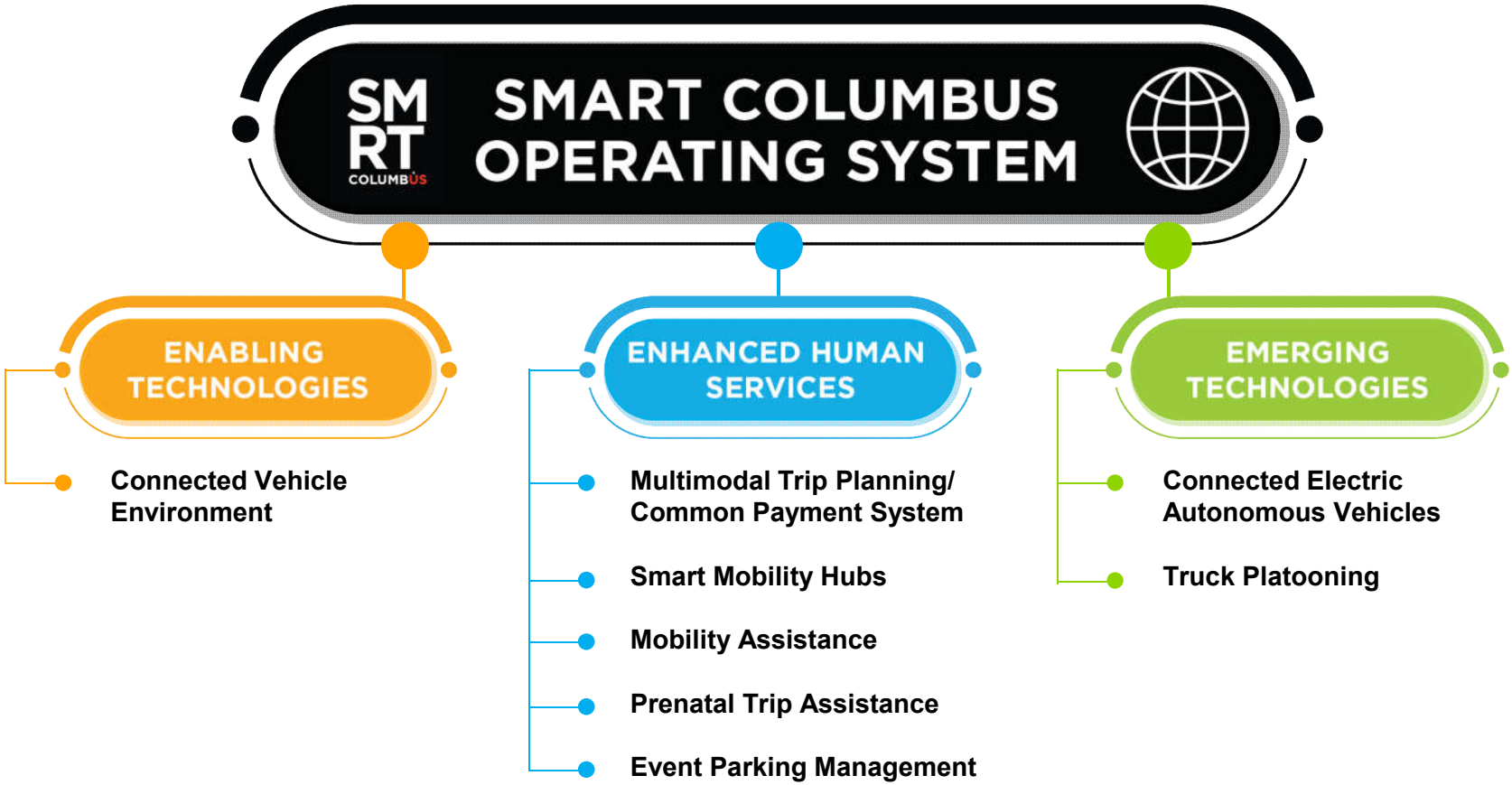
Smart Mobility Hubs
Mobility Assistance
Prenatal Trip Assistance
Event Parking Management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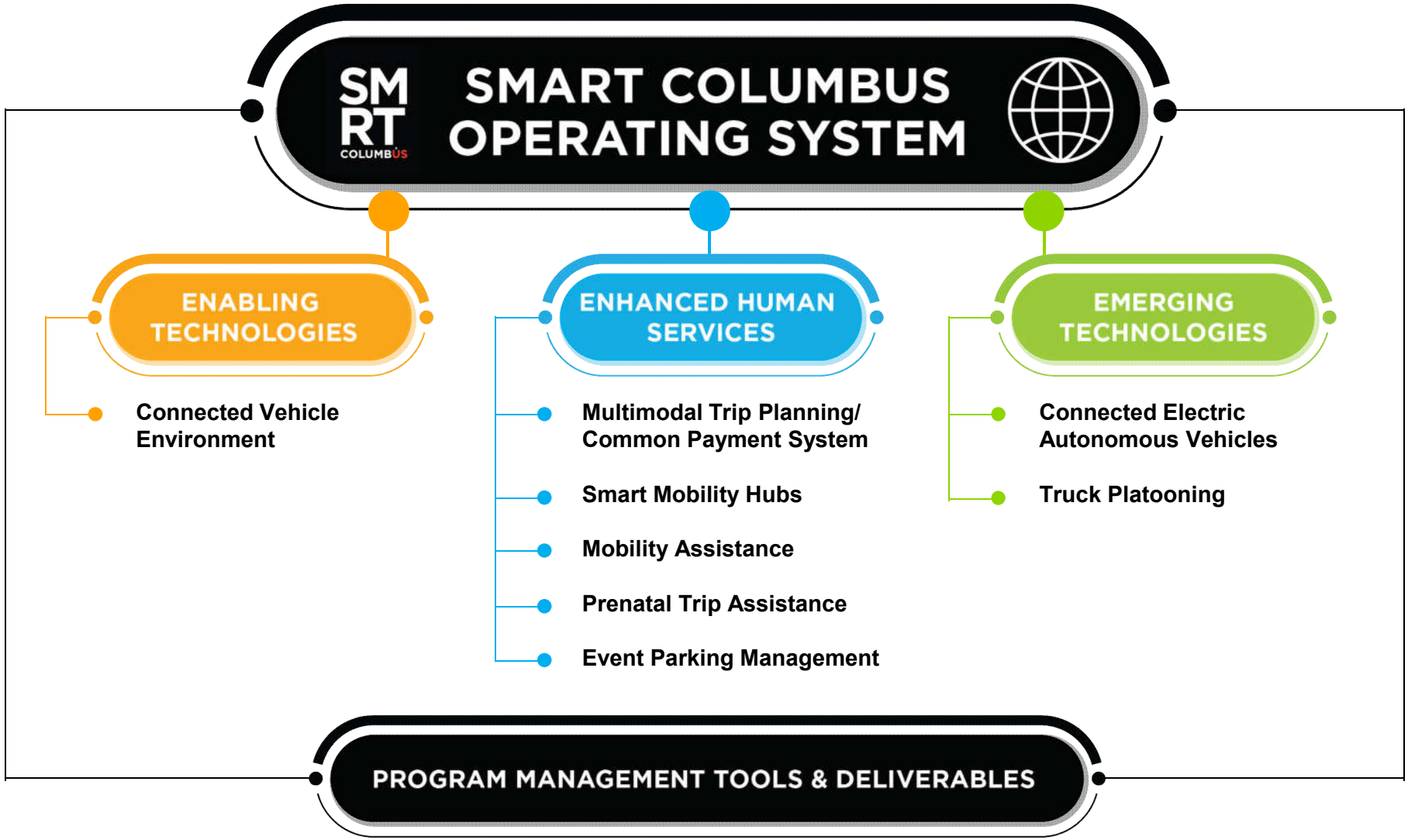
EMERGING TECHNOLOGIES
Connected Electric Autonomous Vehicles
Truck Platooning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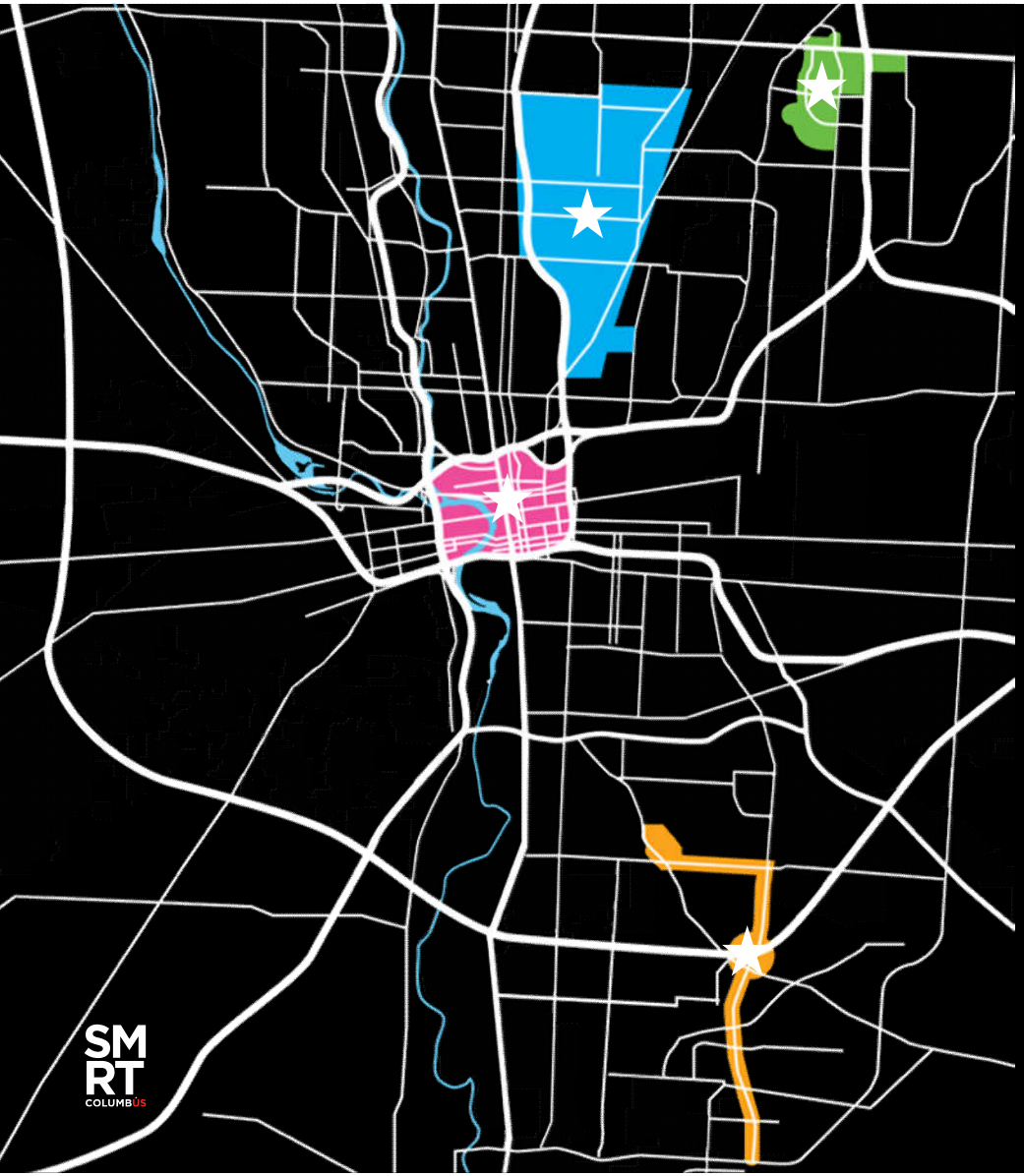
Truck Platooning
PROGRAM MANAGEMENT TOOLS & DELIVERABLES



DISTRICTS

RESIDENTIAL DISTRICT

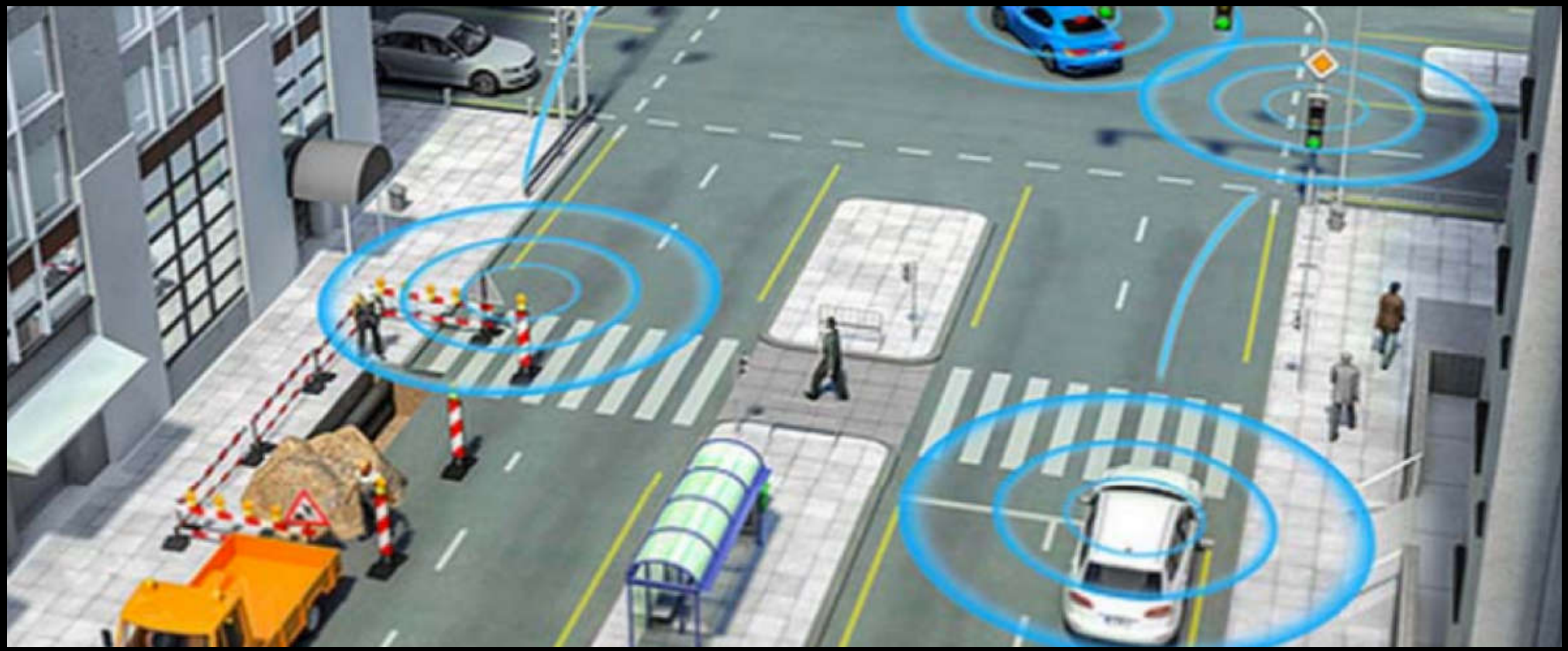
COMMERCIAL DISTRICT

DOWNTOWN DISTRICT

LOGISTICS DISTRICT

ENABLING TECHNOLOGIES | CCTN

Connected Vehicle Environment

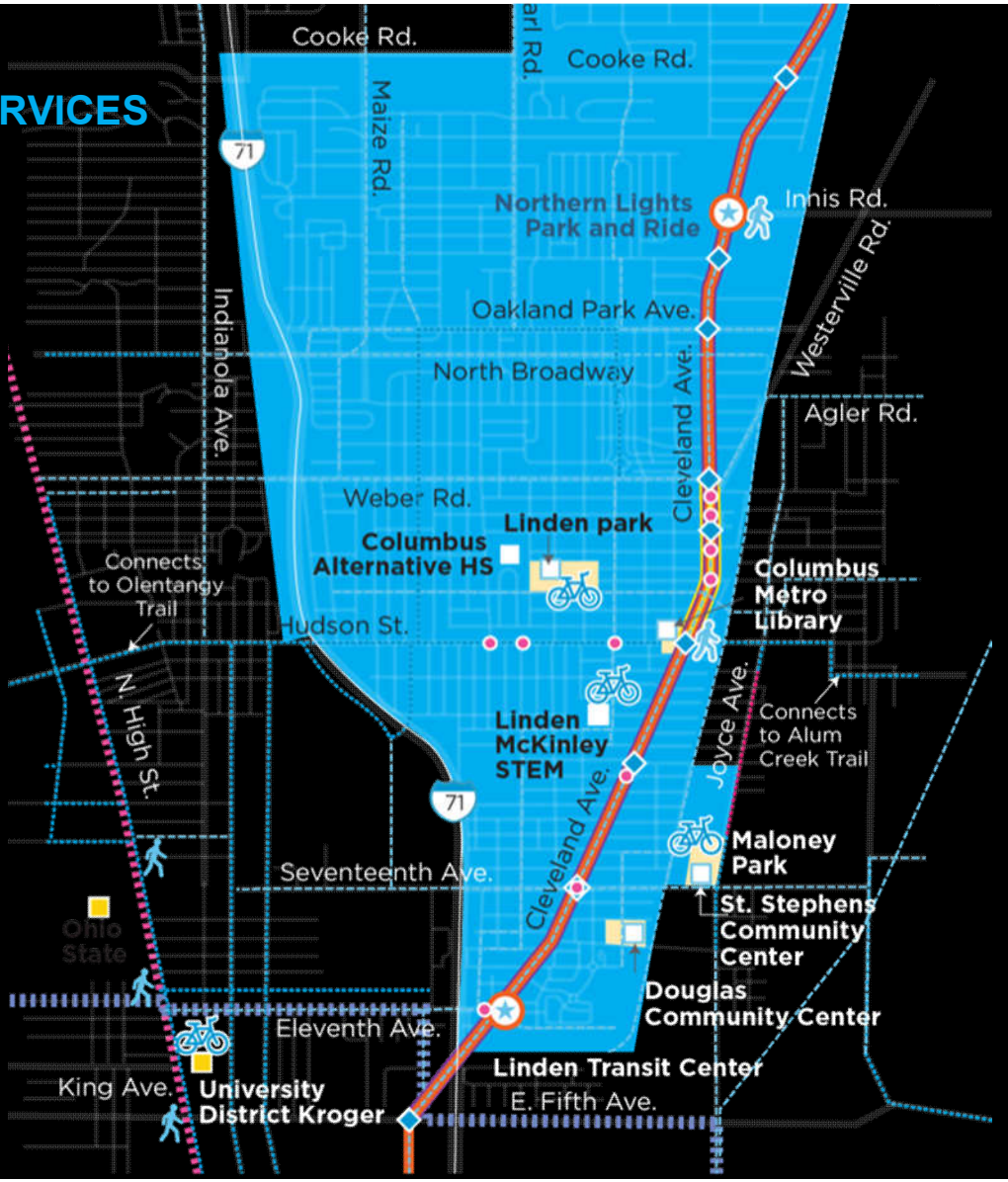


SMRT COLUMBUS

RESIDENTIAL DISTRICT

ENHANCED HUMAN SERVICES

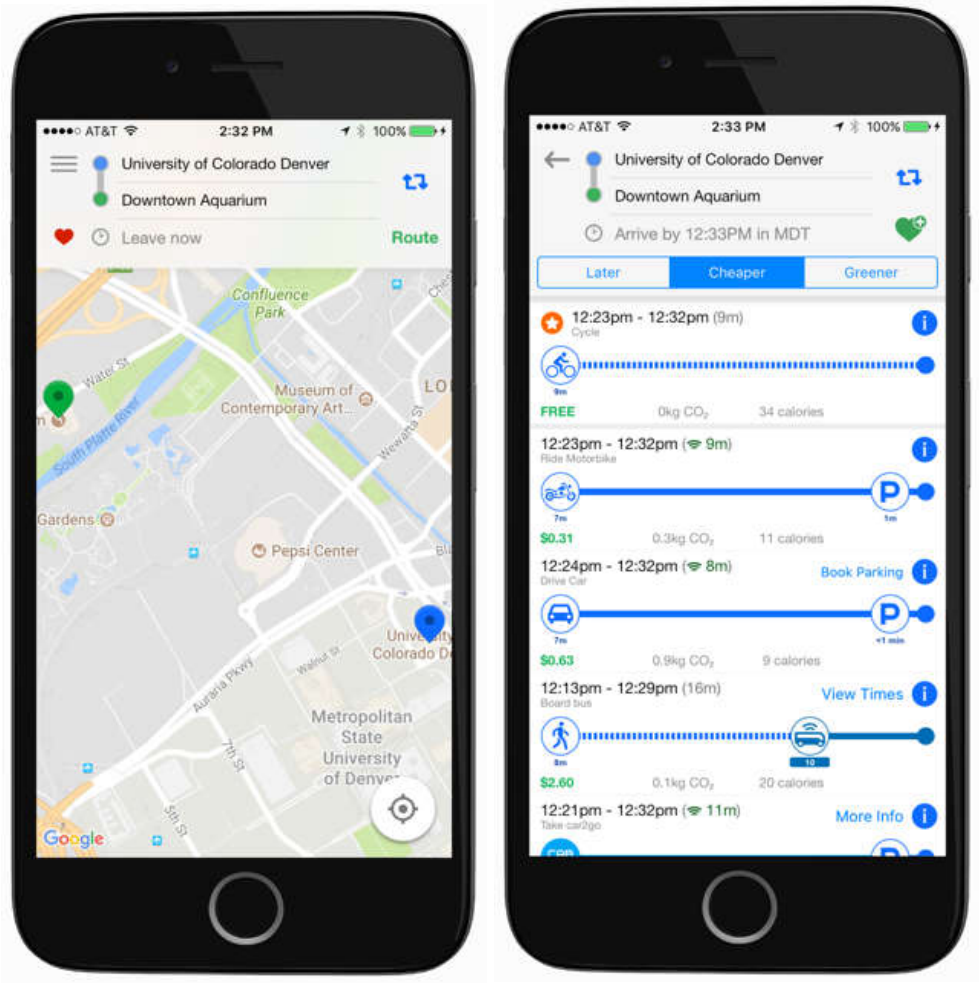
- Multimodal Trip Planning/ Common Payment System
- Smart Mobility Hubs
- Mobility Assistance
- Prenatal Trip Assistance

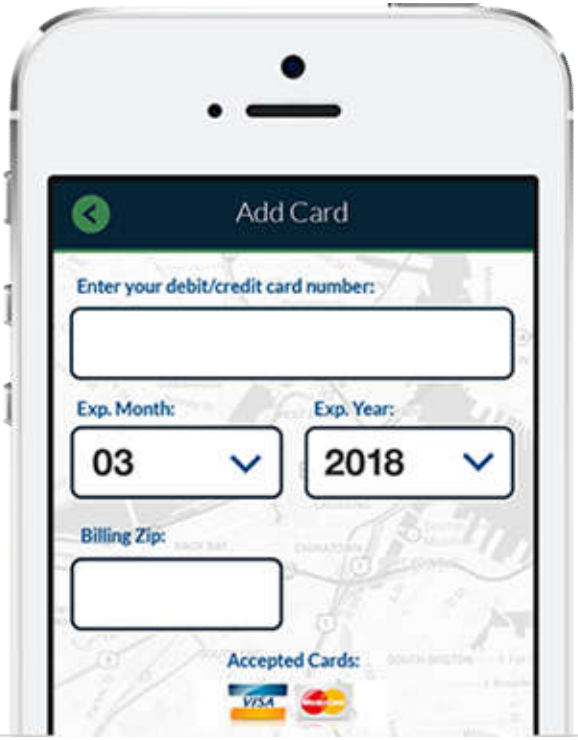


RESIDENTIAL DISTRICT

ENHANCED HUMAN SERVICES

Multimodal Trip Planning/Common Payment System





SMRT COLUMBUS

RESIDENTIAL DISTRICT

ENHANCED HUMAN SERVICES

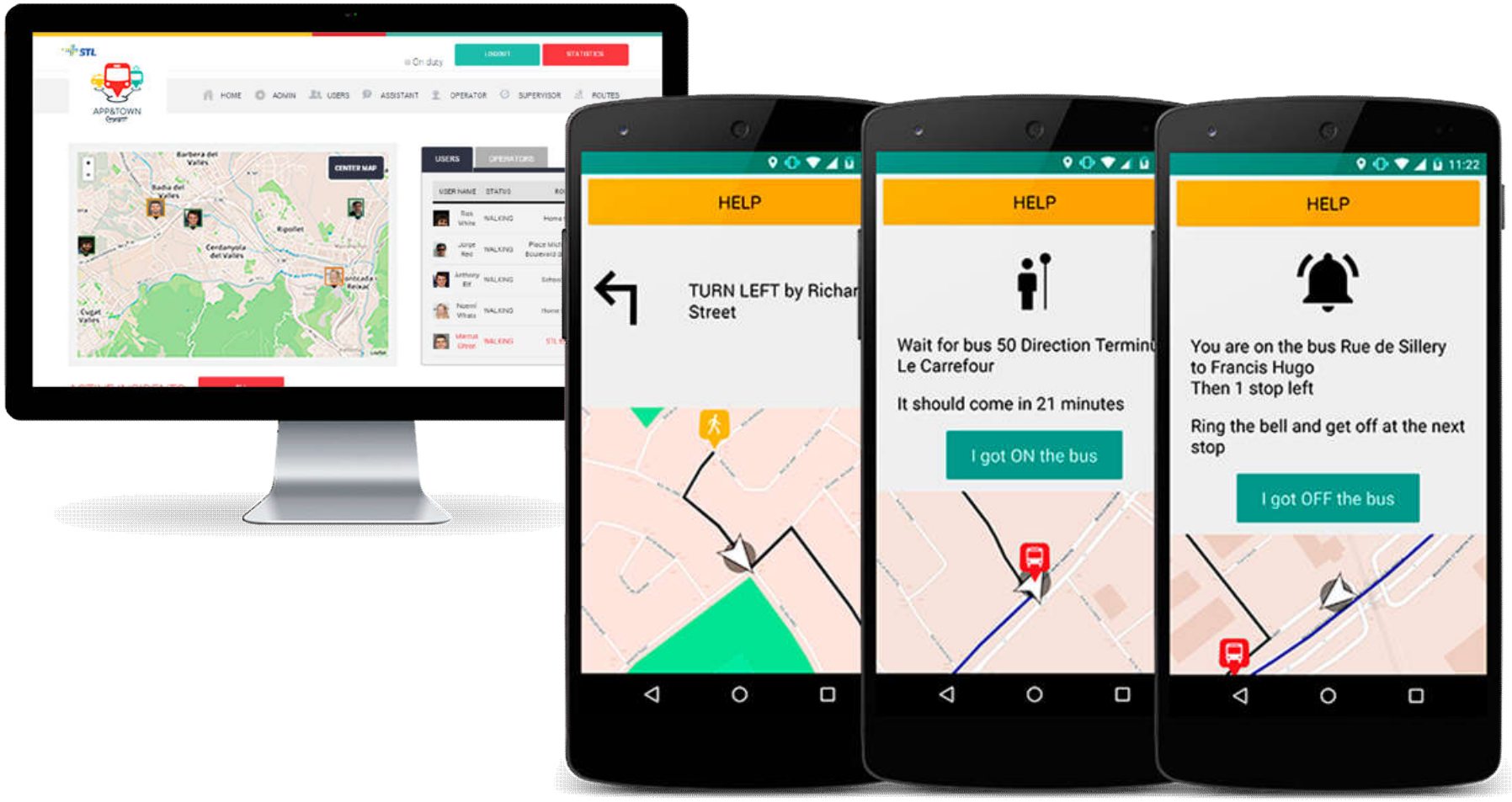
Smart Mobility Hubs

- Transit
- Car share
- Bike share
- Wi-Fi

RESIDENTIAL DISTRICT

ENHANCED HUMAN SERVICES

Mobility Assistance



SMRT COLUMBUS

RESIDENTIAL DISTRICT

ENHANCED HUMAN SERVICES

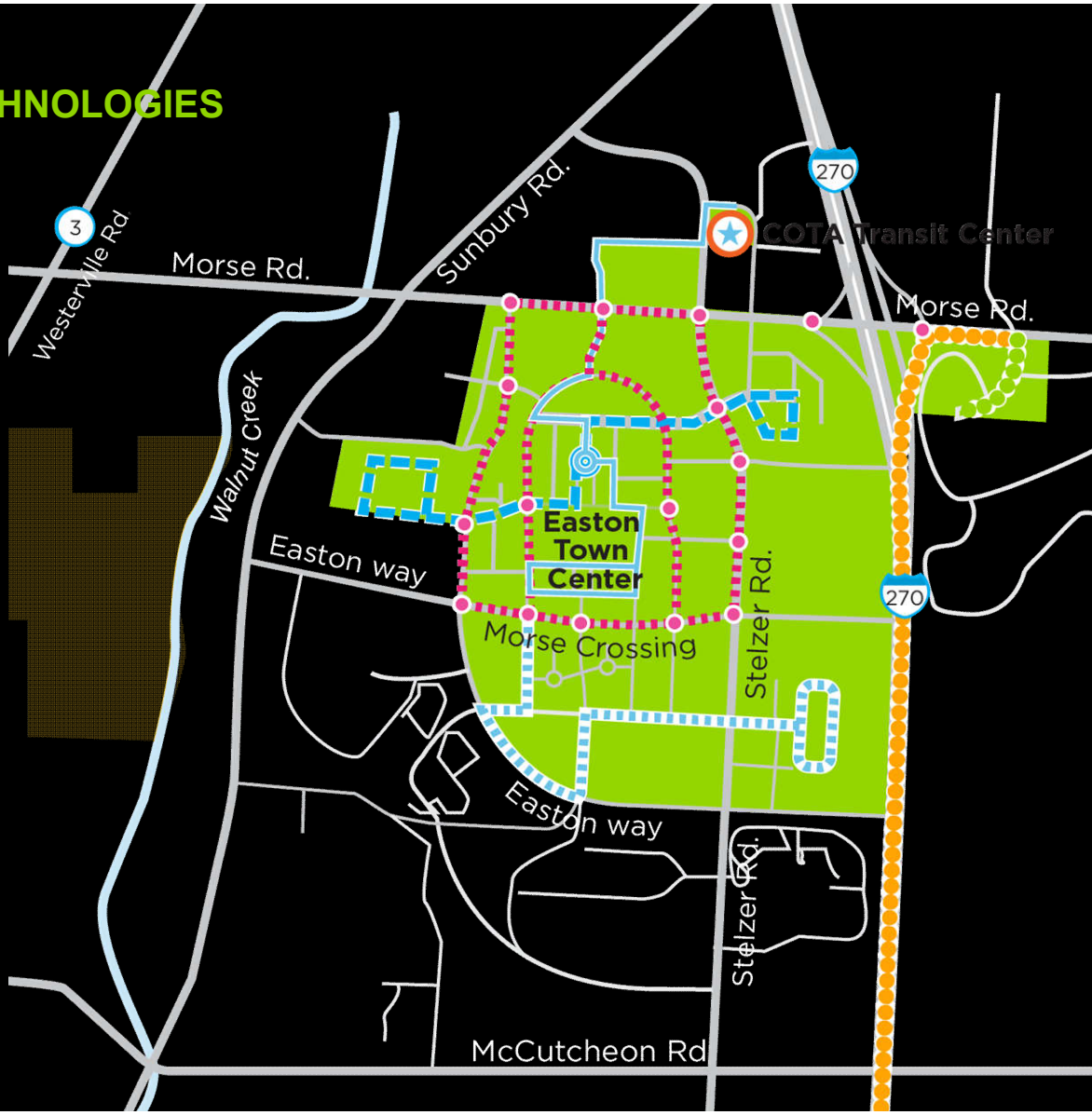
Prenatal Trip Assistance

SMRT COLUMBUS

COMMERCIAL DISTRICT

EMERGING TECHNOLOGIES

- **Connected Electric Autonomous Vehicles**



SMART COLUMBUS

COMMERCIAL DISTRICT

EMERGING TECHNOLOGIES

Connected Electric Autonomous Vehicles

SMRT COLUMBUS

DOWNTOWN DISTRICT

ENHANCED HUMAN SERVICES

- Event Parking Management

SMART COLUMBUS

DOWNTOWN DISTRICT

ENHANCED HUMAN SERVICES

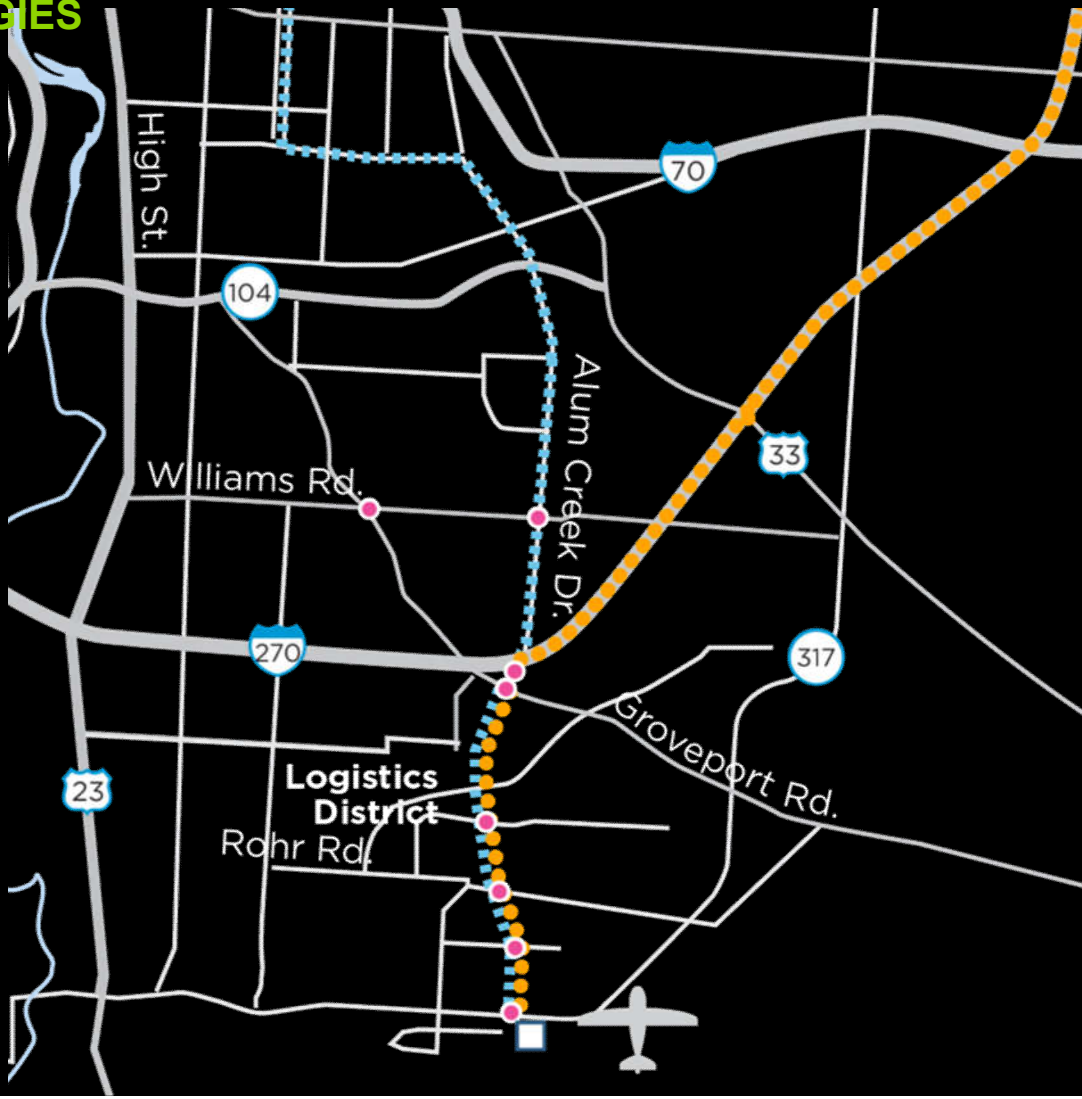
Event Parking Management

SMART COLUMBUS

LOGISTICS DISTRICT

EMERGING TECHNOLOGIES

- **Truck Platooning**

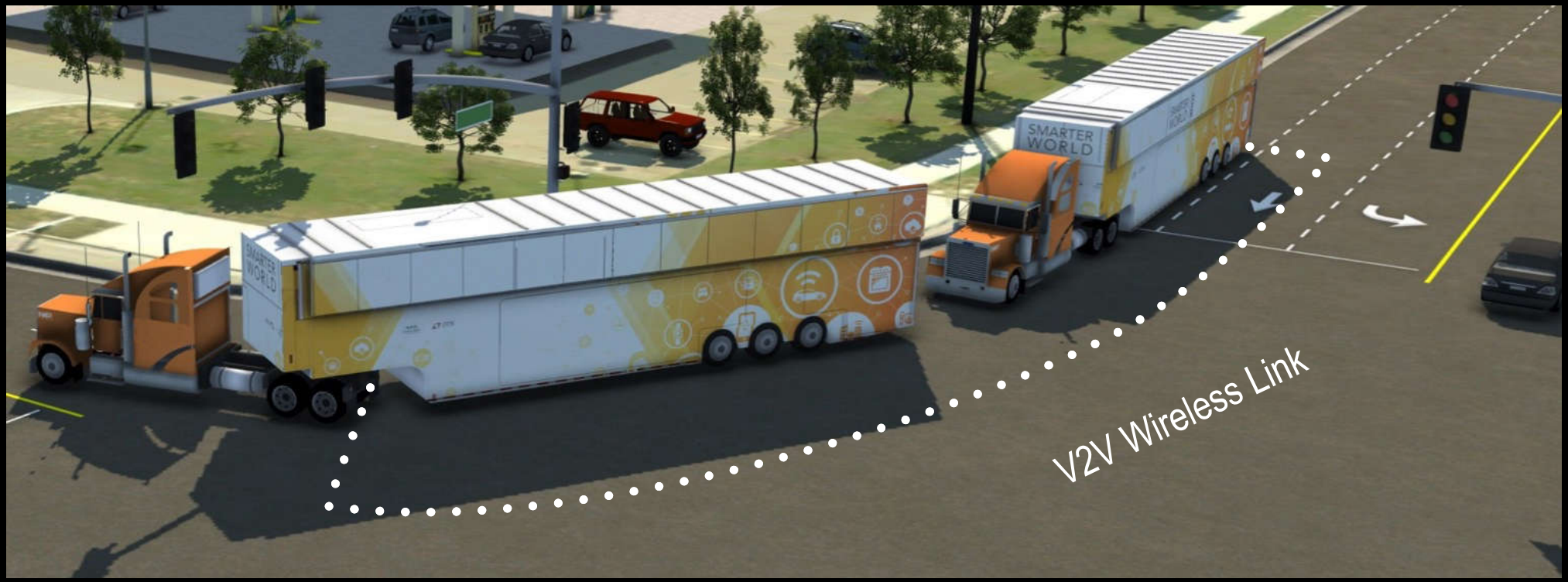


SMART COLUMBUS

LOGISTICS DISTRICT

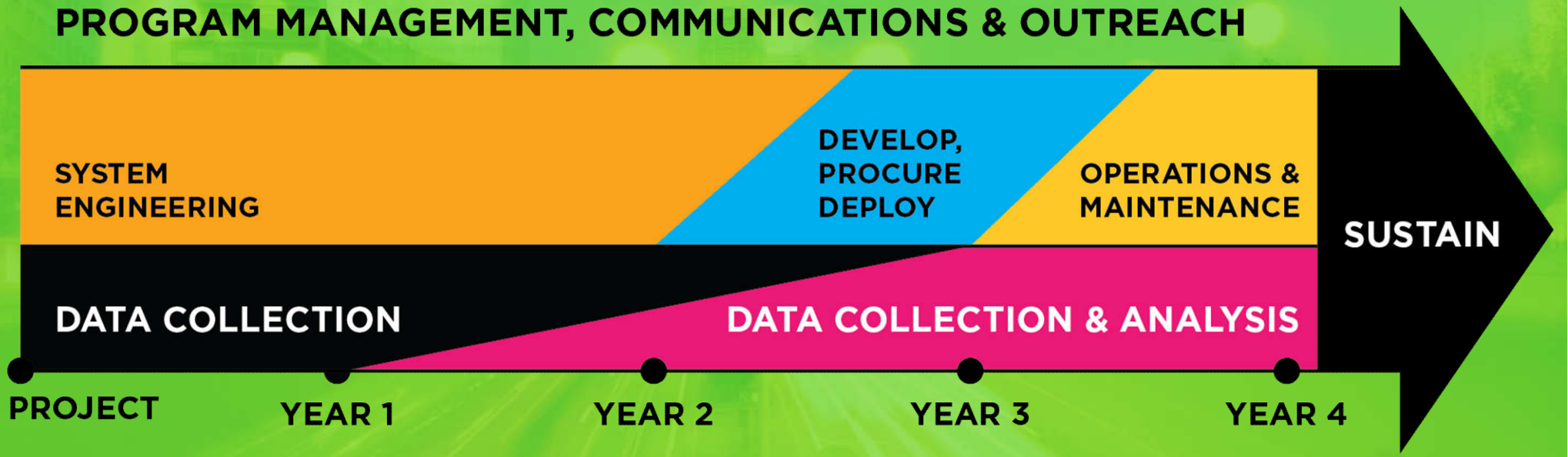
EMERGING TECHNOLOGIES

Truck Platooning



SMRT COLUMBUS

PROGRAM TIMELINE



5 VULCAN PRIORITIES

SMRT COLUMBUS

PRIORITY 1:
Decarbonization

Reduce regional greenhouse gas emissions

PRIORITY 2:

Vehicle Fleet Adoption

Improve the Midwest's lagging position in electric vehicle (EV) deployment

PRIORITY 3:

Transit, Autonomous, & Multi-modal Systems in the City

Connected Electric Automated Transit Vehicles

SMART COLUMBUS

PRIORITY 4:
Consumer Electric Vehicle Adoption

Advance a Replicable Electrification Model

PRIORITY 5:
Charging Infrastructure

Accelerate EV adoption with more charging facilities

THANK YOU

bjbraun@columbus.gov
mkbishop@columbus.gov

SMART CITY FORUM OCTOBER 25, 2017

NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
CENTRAL OHIO CHAPTER

Matt McCollister, Senior Vice President,

COLUMBUS 2020

SMART CITY FORUM OCTOBER 25, 2017

NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
CENTRAL OHIO CHAPTER

Bob White, Jr., President

DAIMLER
Development • Leasing • Construction • Sales

SMART CITY FORUM OCTOBER 25, 2017

NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
CENTRAL OHIO CHAPTER

Tre' Giller, President and Chief Executive Officer

VILLAGE COMMUNITIES

DRK
DONALD R. KENNEY AND COMPANY


NAIOP
Central Ohio
Chapter Smart City
Forum
October 2017
VanTrust

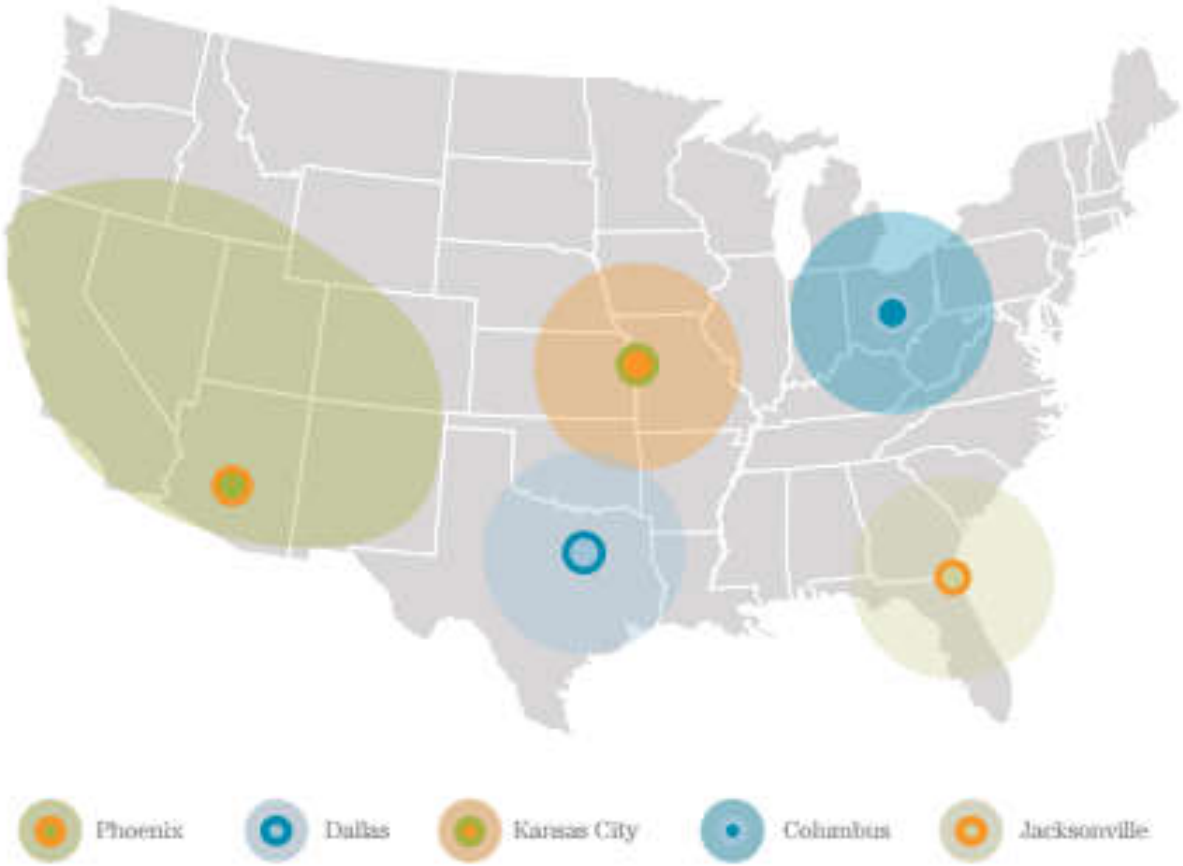
VanTrust

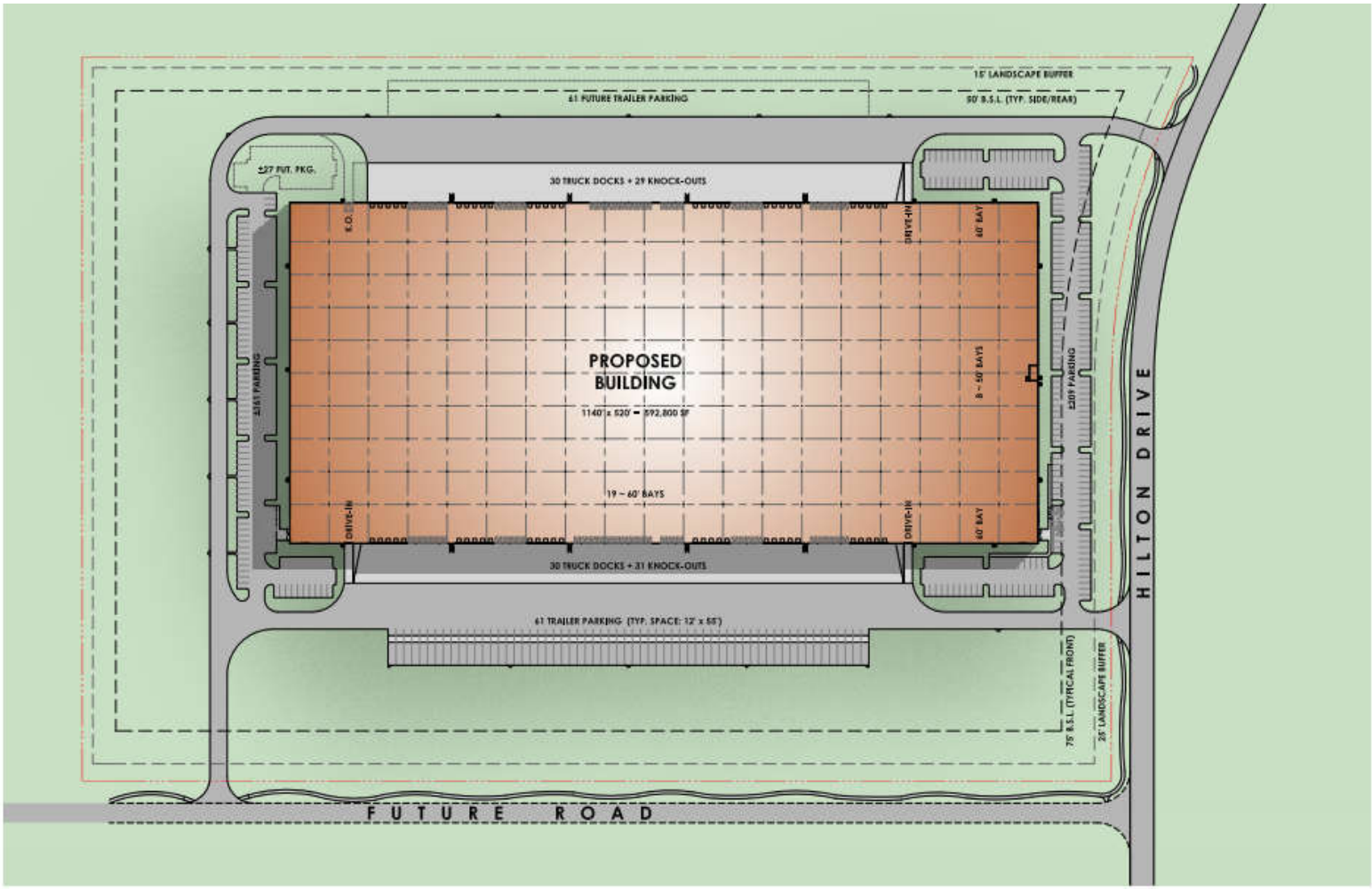
We deliver real real estate solutions.

2010	Formed May 2010 as Caymus Real Estate, LLC.
2015	Full-service real estate development firm with regional focus and national scope; Headquartered in Kansas City, MO with regional offices in Columbus, Dallas, Phoenix and Jacksonville, Florida.
$1.8B+	More than $1.8 Billion in development and acquisitions.
VTRE	Privately held company - Larry Van Tuyl Family.
TYPE	Product types - office, industrial, multifamily, retail, land, and hospitality.
RISK	Development risk separated from construction risk by utilizing all third-party contractors.

VANTRUST OFFICES

VanTrust





Overall Site

Project Data

Site Area :	1,742,316 SF
Site Acreage :	40.0 Acres
Building Area :	592,800 SF
Car Parking :	370
Future Car Parking :	27
Dock Doors :	60
Drive-ins :	3
Trailer Parking :	61
Future Trailer Parking :	61
Truck Court Depth :	130'

Site Plan

Scale: 1" = 80'-0" (24" x 36")

NORTH

PLAN NORTH

VanTrust REAL ESTATE LLC

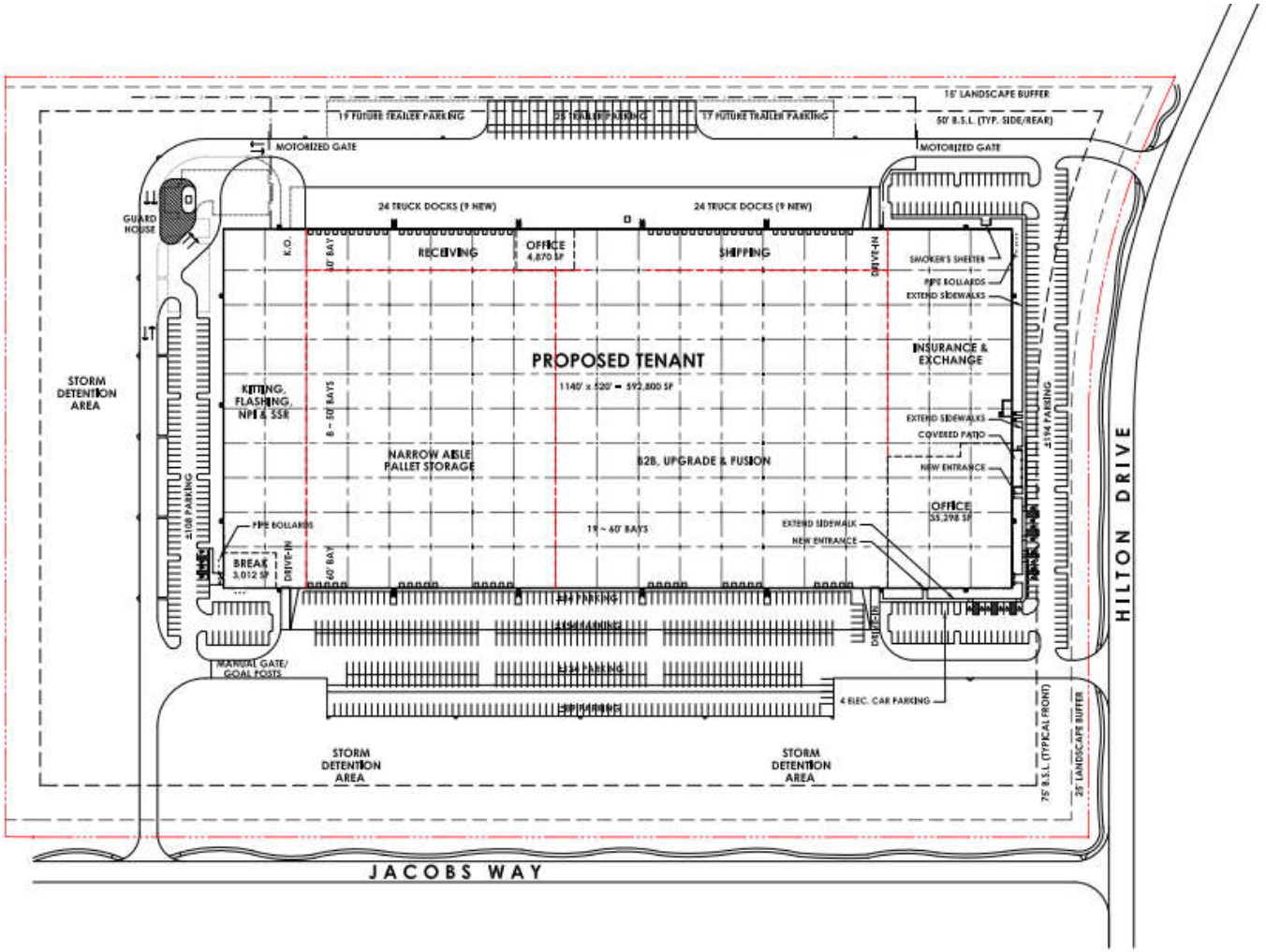
HEMMER

Gateway 600

250 HILTON DRIVE - JEFFERSONVILLE, INDIANA

14 JUNE 2016

ARCHITECTURE JRA
7222 North Shadeland Avenue, #200
Indianapolis, Indiana 46250
317.806.1060
FAX 317.806.1061
#15285-Y



Project Data

Building Area :	592,800 SF
Car Parking :	±763
Dock Doors :	56
Drive-ins :	3
Trailer Parking :	25
Future Trailer Parking :	36
Truck Court Depth :	130'

Site Plan

Scale: 1" = 80'-0" (24" x 36")

NORTH

PLAN NORTH

VanTrust REAL ESTATE LLC

Gateway 600

250 HILTON DRIVE - JEFFERSONVILLE, INDIANA

21 MARCH 2017

ARCHITECTURE
7222 North Shadeland Avenue, #200
Indianapolis, Indiana 46250
317.806.1060
FAX 317.806.1061

Rickenbacker 567

3219 Rohr Road, Groveport, Ohio 43125

LOCATION:	Groveport, OH
AVAILABLE SPACE:	567,350 Sq. Ft.
OFFICE SIZE:	BTS
WAREHOUSE SIZE:	567,350 Sq. Ft.
DIVISIBLE:	250,000± Sq. Ft.
TOTAL BUILDING SIZE:	567,350 Sq. Ft.
LAND:	31.924 Acres
ZONING:	PIP - "Planned Industrial Park" City of Groveport, OH
ACCESS TO EXPRESSWAYS:	2.5 Miles to I-270 and close to I-71 and I-70
PUBLIC TRANSIT:	COTA Stop #7525
YEAR BUILT:	2016

CONSTRUCTION:	Pre-Cast Concrete Panels; 10" insulated panels with R-value of 10.0
ROOF:	45 mil Mechanically Fastened TPO Membrane Roof; R-value of 21.0
BUILDING DIMENSIONS:	450' x 1,260'
COLUMN SPACING:	60' Wide x 55' Deep ; 60' x 60' Staging Bays
BAY SIZE:	27,000 Sq. Ft. (60' x 450')
FLOOR:	7" Unreinforced Concrete Slab (4,000 PSI); Staging Bay Reinforced with Wire Welded Mesh; FF 55, FL 33
CEILING HEIGHT:	36' clear
DRIVE-IN DOORS:	3 - 12' x 14'

LOADING FACILITIES:	60 Docks (9' x 10') - Up to 73 Additional Doors can be Added Sixty 40,000 lb Capacity levelers (6' x 8') - Bumpers, Seals, Lights and Track Guards
TRUCK COURT:	130' Depth (60' Concrete Pad)
PARKING:	231 Cars (42 Additional Spaces can be Added); 83 Trailer Parking Spaces
RESTROOMS:	To-Suit
FIRE SUPPRESSION:	ESFR - K22
HEATING:	Four (4) Direct Fired Gas Air Make-Up Units Mounted on Roof; 60° Inside at 0° Outside
VENTILATION FANS:	Exhaust Fans and Intake Louvers Provide Ventilation to Code

LIGHTING:	T-5; 4' long, 6 lamps, with sensors
OUTSIDE SECURITY LIGHTING:	LED wall pack and site lighting
WINDOWS:	Office Entrance and clerestory
ELECTRICAL SERVICE:	Two (2) 800 Amp 277/480 Volt, 3 Phase Services; South Central Power
GAS:	Columbia Gas
SEWER:	City of Groveport
WATER:	City of Groveport
AVAILABLE:	Immediate Occupancy
ANNUAL RENTAL RATE:	$3.50/Sq. Ft. NNN
ANNUAL OPERATING EXPENSES:	Estimated at $0.40/Sq. Ft.

Rick Trott SIOR, CCIM
CBRE
First Vice President

Kevin McGrath SIOR, CCIM
CBRE
First Vice President

Bill Baumgardner
VanTrust Real Estate
Vice President

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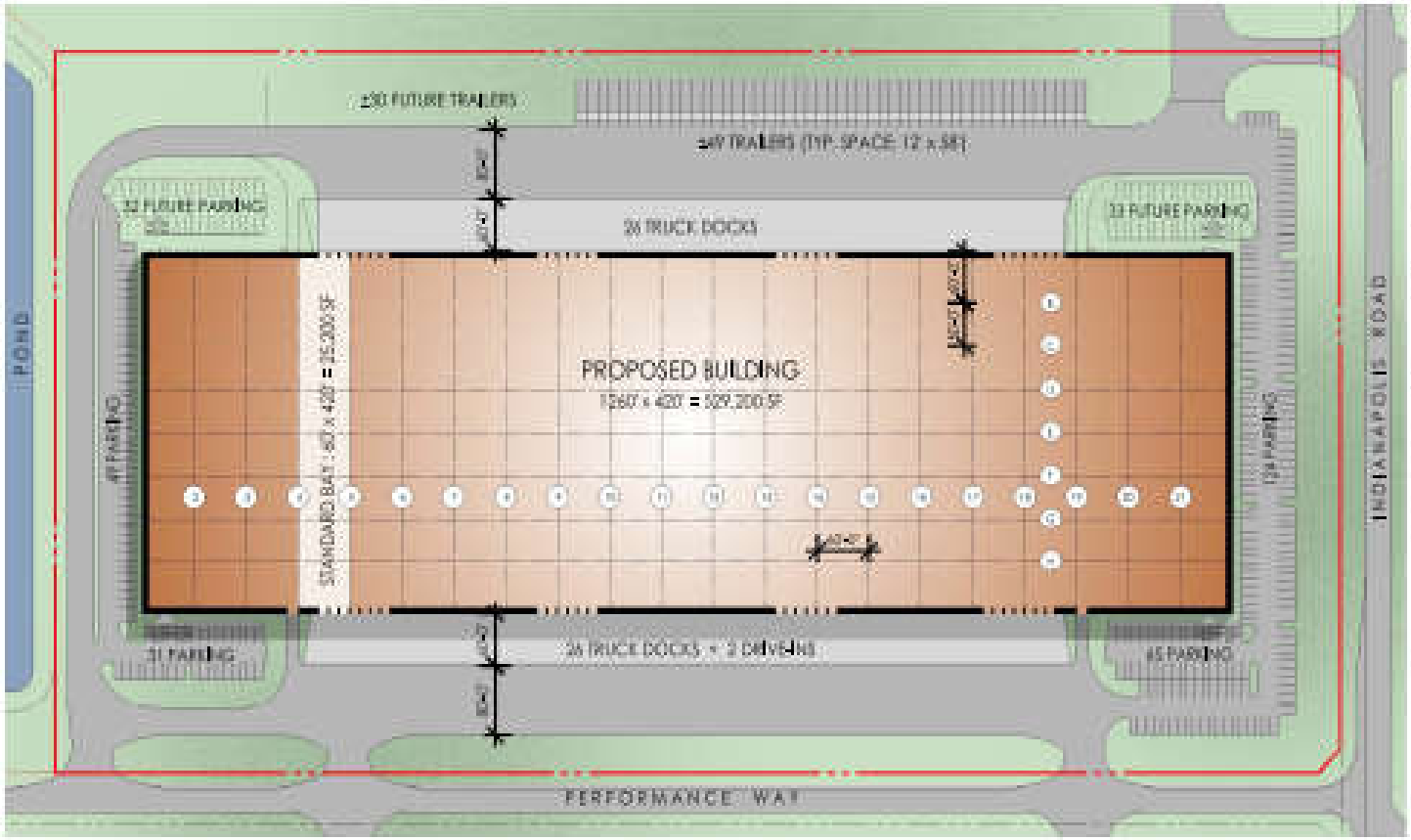
RD-1

NORTHWEST BUILDING RENDERING

VanTrust



Location Plan

Project Data

Site Area:	1,207,987 S.F.
Site Acreage:	28.4 Acres
Building Area:	529,200 SF
Car Parking:	258
Future Car Parking:	32
Dock Doors:	52
Drive-Ins:	2
Trailer Parking:	49
Future Trailer Parking:	30
Truck Court Depth:	140'

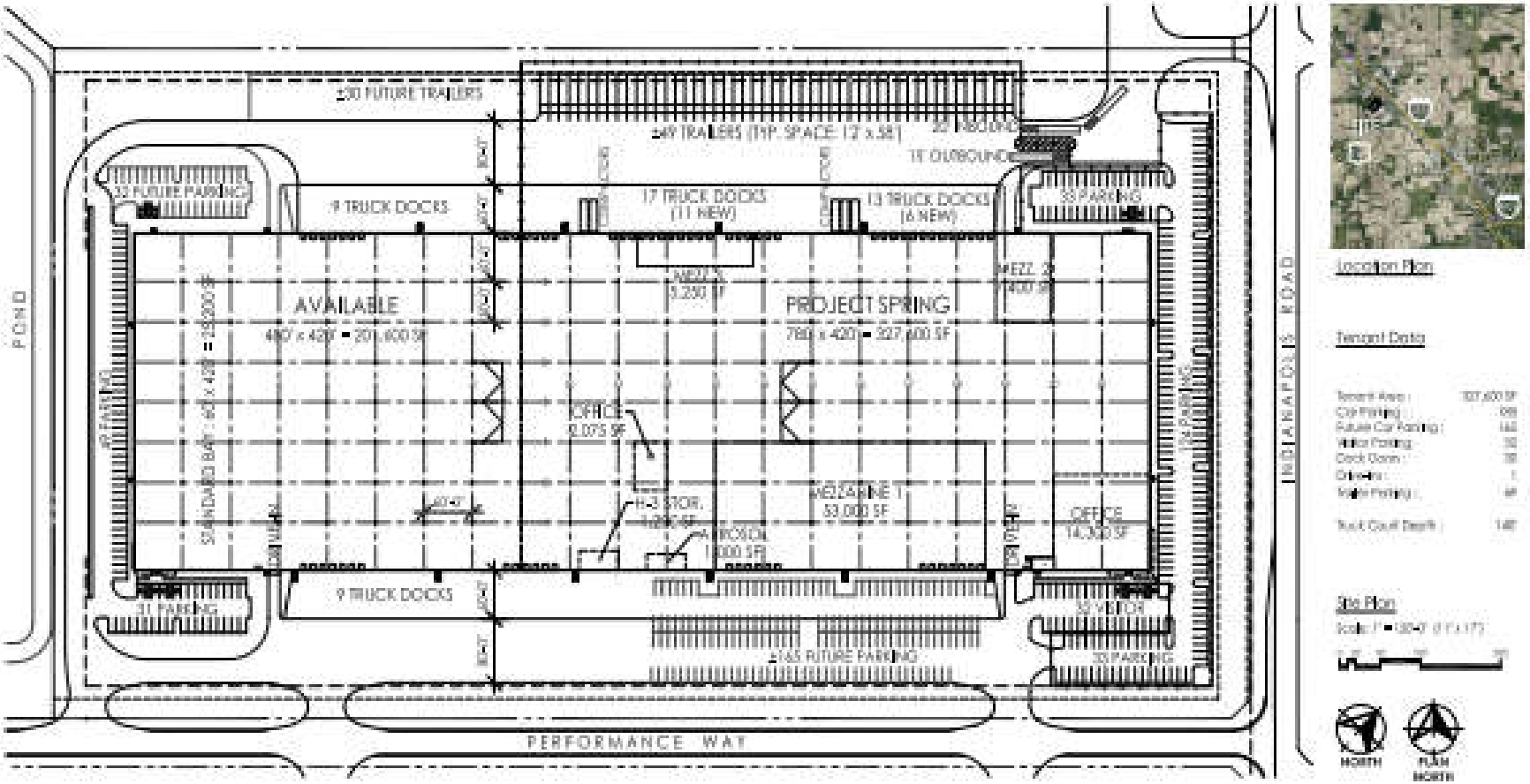
Site Plan

Scale: 1" = 120'-0" (11" x 17")

VanTrust Real Estate LLC

Project I-65 INDIANAPOLIS ROAD & PERFORMANCE WAY - WHITESTOWN, INDIANA

JRA ARCHITECTS



Location Plan

Tenant Data

Tenant Area:	327,600 SF
Car Parking:	555
Future Car Parking:	165
Trailer Parking:	30
Dock Doors:	39
Drive-ins:	1
Trailer Parking:	49
Truck Court Depth:	140'

Site Plan

Scale: 1" = 120'-0" (1:1,117)

NORTH

PLAN NORTH

VanTrust

Project I-65 4860 S. INDIANAPOLIS ROAD – WHITESTOWN, INDIANA

08 MARCH 2024

JRA

VanTrust

Project I-65 INDIANAPOLIS ROAD & PERFORMANCE WAY - WHITESTOWN, INDIANA

JRA


THANK YOU.
VanTrust
REAL ESTATE LLC