33 Smart Mobility Corridor - Automotive Cluster

The 33 Smart Mobility Corridor is home to more than 66 automotive companies.

April 2018
Approximate Locations. Map not drawn to scale.
FACILITY HIGHLIGHTS

- Skidpad
- VDA
- Main Campus
- North Campus
- 7.5 Mile Oval
- Handling Courses
NORTH CAMPUS HIGHLIGHTS

- Emissions Laboratory
- Impact Laboratory
- Resident Customer Buildings
- Conference Center
Collaborative Group Formed to Explore Development Issues along US-33
Collaborative Group Prioritizes Fiber Connectivity along US-33

Fiber Strategy Consultant
OSU Mobility Concept
Smart Project Introduced
ODOT Commits up to $15 M for Fiber Construction
NW 33 COG Formed
USDOT Awards $5.9 M Grant

Fiber Installation Completed along US-33 (ODOT)
Ohio Announces $45 M for TRC Expansion
**PROJECT GOALS**

- **Public Safety**
  - Improve Congestion, Safety, and Access to Employment
  - Installation of Smart Mobility Infrastructure and Systems Management
  - Data Collection & Commercialization

- **Smart Infrastructure**
  - AV/CV Testing
  - Contained Testing at TRC
  - On-road Testing on US-33
  - Truck Platooning
  - Urban Testing
  - UAS Testing

- **AV/CV Testing**
  - Installation of Fiber along US-33
  - Direct Connectivity to Educational Systems (OAR)
  - Public Access

- **Improve Connectivity**
  - Investment in Emerging Technologies
  - Industry Grows to $2+ Trillion Annually by 2025
  - Expansion of TRC and Automotive Assets
  - Attraction & Retention of Business
  - Global Partnerships

- **Economic Development**
  - AV/CV Testing
  - Contained Testing at TRC
  - On-road Testing on US-33
  - Truck Platooning
  - Urban Testing
  - UAS Testing
Nearly $100 MILLION has been pledged by public and private partners corridor.

Over $525 M of private automotive related investment has been made since 2015.

Another ~$125 M of private automotive related investment is planned in 2018-19.
NW 33 COG STRUCTURE

COG MEMBERS
Dublin, Marysville, Union County, Marysville-Union County Port Authority

COG PARTNERS
ODOT/Drive Ohio, FHWA, USDOT, Honda, Battelle, TRC, OSU, Logan County, Smart Columbus

COG BOARD

COG COMMITTEES
Executive Committee
Infrastructure Working Group
Vehicle Working Group
Smart Network Working Group
Engagement Working Group
Finance Working Group
Ohio’s 33 Smart Mobility Corridor Project
- 35-mile Smart Mobility Corridor
- 432 strand redundant fiber network
- 94 RSUs
  - 62 RSUs along US 33; 32 RSUs at various intersections
  - 1,200 OBUs
- Closed and open testing in all weather conditions in rural, exurban and urban environments
- Connected Marysville and Connected Dublin
- 540-acre SMART Center at TRC
- Smart Belt Coalition effort to connect OH, PA, and MI
REGIONAL CONNECTED VEHICLE ENVIRONMENT (CVE)

- **179 Intersections:**
  - 147 City of Columbus
  - 27 City of Marysville
  - 5 City of Dublin

- **3,000 cars, trucks, and buses** connected in the Columbus Region by 2020:
  - 1,800 City of Columbus
  - 1,200 Marysville/US-33

![Map of the 33 Smart Mobility Corridor](image-url)
CONNECTED DUBLIN

Avery-Muirfield Corridor
• ATCMTD Grant
• Traffic Signals outfitted with RSUs

SR 161/Riverside Drive Roundabout
• Multilane roundabout within 2 signalized corridors
• CV research and operations study
• Collect data of circulating vehicles in roundabout to inform approaching vehicle decision-making

Bridge Park East Smart Parking
• New parking inventory
• Increasing demand
• NO existing meter infrastructure
• Interesting opportunity
  o No capital investment
  o No clutter
  o Ample off-street parking alternatives
CONNECTED MARYSVILLE

- 27 Traffic Signals outfitted with RSUs
- 1,200 vehicles outfitted with OBUs
- Online repository for collected data from vehicles
- Future investments:
  - Signage
  - Striping
  - Street Lighting

Smaller Town, Lower Traffic Volumes
- 10% Penetration Rate with 1,200 vehicles.
- Connected vehicles won’t get lost in the crowd.

Home of Honda’s largest manufacturing and R&D facilities in North America
- End user feedback allows for “right size” design
On October 4th, Governor Kasich joined Honda officials in Marysville to unveil a “smart intersection” at Main and Fifth Streets in Uptown Marysville. Cameras and sensors can warn drivers about oncoming hazards, such as approaching emergency vehicles, red light runners, and pedestrians.

The technology in which the intersection can communicate with drivers is the first step in perfecting driverless cars. Fully autonomous vehicles available for consumer purchase are anticipated by 2025.
UAS Testing Program

- Three year partnership DriveOhio’s UAS Center and The Ohio State University College of Engineering.

- Monitor traffic and roadway conditions from the air along the corridor in conjunction with the state’s current fixed-location traffic camera system.

- Will also use sensors and communication devices to ensure the unmanned aircraft will not collide with each other or with manned aircraft.
PLANNED CVE APPLICATIONS

- Pedestrian Crosswalk Warning
- Road Weather Sensor System
- Curve Speed Warning at Interchange Ramps
- Reduce Speed Zone Warning/Lane Closure
- Red Light Violation Warning
- Ramp Wrong Way Warning
- Signal Phasing & Timing
- Railroad (potential)
Nationwide, total of 37,461 people died in motor vehicle crashes in 2016. These deaths occurred in 34,439 crashes involving 52,231 motor vehicles. This was a 6 percent increase in deaths compared with 2015 and the highest number of traffic deaths since 2007.

94% of serious crashes are due to human error.
ERAS OF VEHICLE SAFETY IMPROVEMENT

1950 – 2000
- Safety/Convenience Features
- Cruise Control
- Seat Belts
- Antilock Brakes

2000 – 2010
- Advanced Safety Features
- Electronic Stability Control
- Blind Spot Detection
- Forward Collision Warning
- Lane Departure Warning

2010 – 2016
- Advanced Driver Assistance Features
- Rearview Video Systems
- Automatic Emergency Braking
- Pedestrian Automatic Emerg. Braking
- Rear Automatic Emerg. Braking
- Rear Cross Traffic Alert
- Lane Centering Assist
HOW DO WE MAKE MOBILITY SAFER?

✓ V2V and V2I vehicle technology could address **80%** of the crash scenarios.

✓ V2I technology alone could reduce **26%** of all target crashes annually.

✓ Left Turn Assist (LTA) and Intersection Movement Assist (IMA) could prevent 592,000 crashes and **save 1,083 lives** per year.
**FUTURE PROJECT TIMELINE**

**2018**
- Phase II Fiber Installation along Industrial Parkway and Northwest Parkway for Redundant Loop
- System Engineering Completed
- TRC Begins Construction of SMART Center
- Corridor Named as Proving Ground for UAT

**2019**
- DriveOhio Established by State of Ohio
- NW 33 COG Hires Project Manager
- Executive Order Establishes Statewide AV/CV Testing Protocol
- DSRCs with RSUs are Installed
- OBUs Installed in Vehicles
- Statewide Data Exchange Implemented

**2020**
- 33 Smart Mobility Ecosystem Operational
- CV Application Fully Operational

**2021**
- DSRCs are Required in all New Vehicles
SMART REGION TASKFORCE

• Vision: Convene thought leaders within Central Ohio to develop a shared vision for what it means to be a Smart Region

• Questions we’re seeking to answer
  • What is a “Smart Region?”
  • What are mutually beneficial “smart” policies that can guide investment decisions for our local communities?
  • What resources can MORPC provide to help?

• Structure
  • Duration: 18-24 months
  • Representation: 2/3 local governments, 1/3 technical experts
  • Membership appointed by MORPC Executive Director

Proposed Purpose
Prepare and guide local governments on smart city investments.
SMART REGION TASKFORCE - DELIVERABLES

Intended to address all aspects of MORPC’s work:

- **MORPC Funds**
  - Helping guide investments with regional smart priorities

- **Smart Region Policy Playbook**
  - Defining our regional goals and serving as a robust guide for MORPC’s work

- **MORPC Work**
  - Helping communities with best practices, policies & funding opportunities

- **MORPC Members**

- **Smart Region Resource Guide**
Counties and Smart Mobility Initiatives

- Incorporate smart infrastructure with road projects
- Understand your companies – any involved with smart mobility?
- Share resources (other counties, municipalities, ODOT, DriveOhio)
- Work closely ODOT and DriveOhio
- Tie transportation projects closer with your economic development goals
- Collaborate, Collaborate, Collaborate
THANK YOU / QUESTIONS?

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