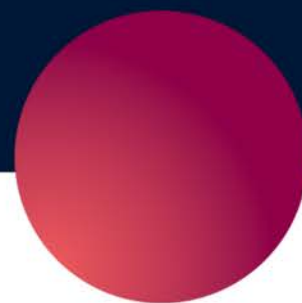




Connected Freight Corridors

A financially sustainable technology solution which improves safety, congestion and the air quality of freight corridors





America's Trucking Industry Is The Lifeblood Of The U.S. Economy

Nearly every good consumed in the U.S. is on board a truck at some point in its journey. Our national, regional, and local supply chain transportation infrastructure is critical to our economic prosperity. Until the recent supply chain system shocks, many of us forgot how important the flow of freight is to our communities - from sustaining local jobs to delivering our daily necessities.

However, challenges remain in our supply chains that negatively impact the flow of goods - including congestion in key freight corridors, unnecessary carbon emissions from inefficient traffic flow, and the difficulty that truck drivers have detecting and responding to safety risks in a timely manner.

The negative economic impact to a community can be significant. Experts estimate that a one hour supply chain delay for just one vehicle, can lead to thousands of dollars in economic losses. It is also more difficult for economic development agencies to recruit new businesses when they have to compete with other regions that have more favorable supply chain traffic flows.

Transportation agencies are beginning to recognize that there are tools which can be deployed today that can deliver an immediate impact to improve flow of goods, reduce emissions, and provide safer roads to all users. All these benefits can be achieved with a financially sustainable solution.

An Introduction to Connected Freight Corridors (CFCs)

Freight corridors are those road segments that carry high volumes of freight traffic. These include corridors that carry traffic between port and distribution facilities, between rail and distribution facilities, and those segments that connect distribution or manufacturing districts with commercial markets. Freight corridors can be found in urban, suburban, or rural markets and often include multi-modal corridors including arterials, secondary roads, and segments of our highways and interchanges.

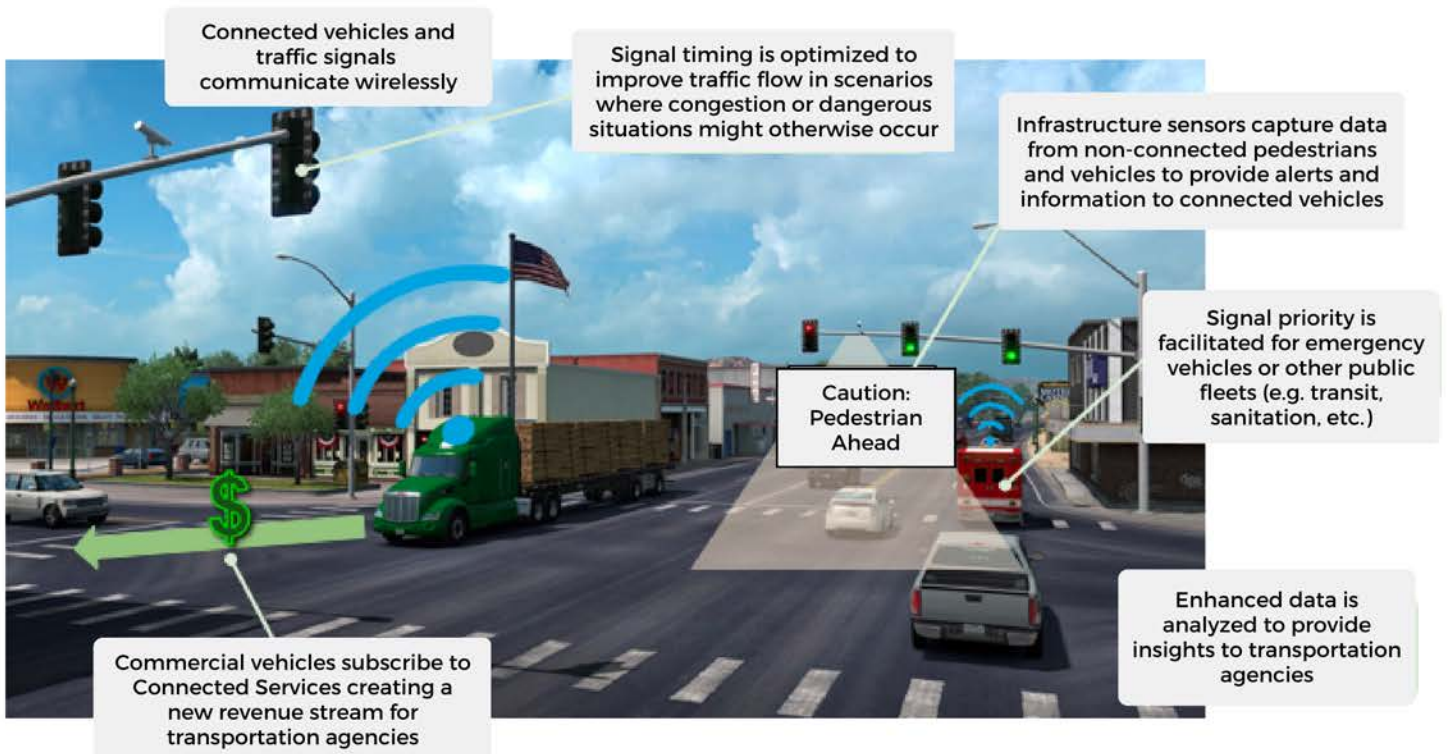
Connected Freight Corridors (CFCs) use intelligent transportation systems and enhanced connectivity to enable digital communications and coordinate signal timing to reduce freight traffic travel times and emissions, while also providing a safer environment for all road users.

Technologies that enable CFCs are proven, standardized, secure, and low touch. The underlying technology is “vehicle-to-everything” communication, or V2X. V2X enables communication between a vehicle and road infrastructure (V2I), between vehicles and vehicles (V2V), between vehicles and the vehicle network (V2N), between vehicles and pedestrians (V2P), and between vehicles and other connected devices (V2D).

In a CFC, trucks are connected to signal controllers, traffic cameras, and all V2X participants in the corridor. For example, signal timing can be dynamically adjusted in real-time, based on safety, speeds, queues, and other operating data. Participating freight vehicles may be provided green light extensions to shorten their travel times and reduce preventable emissions. Leveraging real-time sensor data also provides drivers with safety alerts to better manage their speed and braking decisions. Drivers can get notified of potential hazards such as pedestrians, cyclists, or objects in the roadway.

Why do we support Vehicle-to-Everything (V2X) technologies?

- ✓ Low latency communication over dedicated radio spectrum is more reliable than using cellular spectrum
- ✓ Established safety and mobility applications
- ✓ Built-in secure, private, and fraud-proof cybersecurity
- ✓ Interoperability from industry established standards
- ✓ Supports autonomous driving applications
- ✓ Generate revenue by providing Connected Services and Signal Prioritization



A Solution that Enables Connected Freight Corridors to be Financially Sustainable

While investments in signal improvements for public vehicle fleets, such as first responders, buses, and snowplows, are important to communities, transportation agencies are under financial pressure because of limited budgets.

The CFC model is unique in that it allows agencies to recover their investment and support costs for ongoing maintenance and operations. Participating freight fleets subscribe to the services offered on the CFC, thus providing a new source of revenues for agencies. Fleets benefit financially from reduced travel times and reduced fuel consumption. Most importantly, the CFC provides improved safety for all road users.

Designed to Make Freight Corridors Safer

Utilizing AI video analytics, edge-computing, and V2X safety messaging, our solution provides a greater level of safety for trucks, other vehicles, and vulnerable road users than other connected freight corridor solutions in the market.

Advanced Mobility Analytics Group uses low-latency detection from existing video or LiDAR sensors to classify road users, track their trajectories and identify near-miss conflict risks in milliseconds. Our technology continuously monitors traffic at intersections, mid-block crossings, and other sites along a CFC and provides critical data to P3Mobility's platform that can inform connected drivers of upcoming risks that are beyond their line-of-sight. For example, fleets can now acquire in-cab alerts that recommend applying brakes or slowing down for pedestrians that are "at risk" at upcoming crossings or when traffic queues suddenly develop at signalized intersections.

Benefits to Transportation Agencies, to Freight and Delivery Fleets, and to Communities

Value Proposition for Public Agencies and their Communities

- Improving safety
- Scalable and extensible
- Increasing traffic throughput and reducing travel times
- Improved efficiency for transit, emergency, first responders, and other public fleets
- Reducing congestion and emissions
- Reduced operating costs
- Enhanced anonymous data on road usage and risks for decision making
- Creating new sources of revenues (fleet subscriptions to signal prioritization) to help offset upfront investment and ongoing maintenance

Value Proposition for Fleets

- ✓ Reduced travel times
- ✓ Reduced operating and maintenance costs
- ✓ Lower environmental impact
- ✓ Improved safety

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Our models indicate a
\$10,000 + cost reduction
for each equipped freight
vehicle

The CFC Development and Support Model

Our team and partners have experience developing and implementing connected vehicle and infrastructure projects with transportation, economic development, and other government agencies.

We help a transportation agency navigate all elements that are required for a successful CFC:

- Community outreach and engagement
- Traffic analysis to identify and quantify problem areas
- Creating a blueprint for building and deploying the digital infrastructure
- Identifying and securing private sector engineering, technology, contractors, and fleet partners
- Developing a sustainable financial model
- Assisting agencies in securing the funds to cover the upfront investment
- Assisting the local communities with workforce development.
- Establishing a business model that covers ongoing maintenance and operations

How to Initiate and Fund Pilot Projects as a Next Step?

Our team will meet with you to discuss your transportation and economic pain points, and work with your team to identify corridor locations that would be ideal for pilot projects. As part of this planning process, we will help identify use cases, establish KPIs, plan deliverables, and create a roadmap for what expansion looks like after the pilot.

We can also discuss funding strategies, including those that utilize a combination of state funding, federal grants through the Bipartisan Infrastructure Law, private investments, and revenues generated through the CFC system. The USDOT's Strengthening Mobility and Revolutionizing Transportation (SMART) Grants Program, for example, is directly aligned with the technology and objectives of a CFC. Applications for this program will open in September 2023. We also have grant writing experience to support your teams' application efforts as necessary.

Who We Are



P3Mobility is a digital infrastructure project development firm which provides consulting services and a software platform that enables a sustainable commercial business model in the V2X ecosystem. The company is one of the leaders in the emerging Connected Freight Corridor market, and the only provider offering real-time safety data and notifications to drivers.

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Advanced Mobility Analytics Group (AMAG) builds technology solutions to help transportation agencies reduce fatalities and crashes by proactively identifying and responding to road user safety risks. The company's expertise is to use research-tested Machine Learning models and video analytics to detect, classify, track, analyze, and alert traffic engineering, operations, planning, and road-users of critical safety and operating risks. AMAG has integrated its real-time, continuous intersection monitoring solution with P3Mobility's CFC solution so that agencies, truck drivers, and other connected vehicles can acquire more timely and actionable information on road users.

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