

ADVANCED TRANSPORTATION AND CONGESTION MANAGEMENT TECHNOLOGIES DEPLOYMENT INITIATIVE

Funding Opportunity
Number 693JJ320NF00010

Pinellas County Smart Community



Connected Community for Safety and Mobility

Submitted by Pinellas County Department of Public Works in association with City of Clearwater, City of St. Petersburg, Forward Pinellas, Pinellas Suncoast Transit Authority, and the Florida Department of Transportation



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COVER PAGE

Project Name	Pinellas Connected Community
Eligible Entity Applying to Receive Federal Funding	Pinellas County Department of Public Works
Total Project Cost (from all sources)	\$ 10,911,880
ATCMTD Request	\$ 4,622,880
Are matching funds restricted to a specific project component? If so, which one?	Partially, St Petersburg ATMS/ ITS expansion and 49 th Street ATMS/ ITS Expansion
State(s) in which the project is located	Florida
Is the project currently programmed in the:	TIP = Yes
<ul style="list-style-type: none"> ▪ Transportation Improvement Program (TIP) ▪ Statewide Transportation Improvement Program (STIP) ▪ MPO Long Range Transportation Plan ▪ State Long Range Transportation Plan 	STIP = Yes MPO LRTP = Yes State LRTP = Yes
Technologies Proposed to Be Deployed (briefly list)	<ol style="list-style-type: none"> 1. Connected Vehicle Technologies 2. Demand Management 3. Decision Support 4. Work Zone Monitoring 5. Mobile Phone Based OBU App 6. Video Analytics
Is the project located in a rural area? A rural area is an area not in a Census-designated urbanized area (a Census-designated urban area 50,000 residents or more)	No
Is the project located in a qualified opportunity zone designated pursuant to 26 U.S.C § 1400Z-1?	Yes

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2. PROJECT NARRATIVE

2.1. Introduction

Pinellas County epitomizes the best that Florida offers: a culturally and economically diverse population, a vibrant employment base, and many local attractions and points of interest. Growth in the local population combined with a steady increase in seasonal tourism is stressing the multi-modal transportation network across the County resulting in degradation in mobility and safety being adversely affected. There are considerable increases in travel times and delays, vehicular crashes, and pedestrian and bicycle incidents.

Pinellas County experiences severe traffic pattern fluctuations from Tampa towards Clearwater Beach and St. Petersburg, especially during spring break months, and during regular commuter traffic. Visitors to Clearwater Beach have reached record numbers and continue to grow each year, resulting in an increase in traffic congestion and crashes. The Memorial Causeway Bridge (SR 60) is the only roadway connection between Downtown Clearwater and Clearwater Beach, which creates a bottleneck during peak travel periods. During spring break and some holiday weekends (e.g., Memorial Day and Labor Day), traffic often builds to the point of gridlock on the Causeway causing significant travel delays. Buses also find themselves impacted by this congestion. Despite the increase in trails, there is a shortage of safe biking and walking facilities. As a result, the need to manage demand and provide additional transportation options has become paramount.

Pinellas County and its partners recognize the need to leverage technology and innovation to

support the region's growing transportation needs. Improving safety and reliability requires cooperation between the agencies who operate and manage the regional transportation network and the residents, commuters, commercial vehicle operators, and tourists who want to benefit from all the area has to offer.

Over the past decade, Pinellas County has adopted a proactive approach to traffic management and has worked with its partners to develop a strong core framework of institutional coordination, standardized operational procedures, and technical integration.

To continue to maintain and grow the economic vitality and to improve the movement of people and goods, and ensure the safety of the increased volume of the traveling public, it is critically important to deploy the next-generation transportation management and operations platform. Providing a safe and reliable transportation network is an utmost priority for Pinellas County and the Advanced Transportation and Congestion Management Technologies Deployment Initiative (ATCMTD) will provide the opportunity to accelerate the County's vision to build this much-needed next-generation transportation network.

2.1.1. Approach

The Connected Community Project will deploy technologies to assist the region with multi-modal and multi-agency strategies to improve mobility and safety within the region. The project builds upon several platforms and technologies that have been deployed over the past several years.

Pinellas County developed a Smart City Concept of Operations in the summer of 2018 and began deployment of the Smart City Data Platform in January of 2020. The Smart City Data Platform integrates local transportation data sources to include Bluetooth travel times, traffic signal data, County 911 data, CCTV streams, and DMS data; 3rd Party data to include Waze and HERE; data from the FDOT SunGuide ATMS including events, speed, CCTV, and DMS data; and weather data from the National Weather Service. The platform provides real-time dashboards, and analysis for comparison to historical data.

In 2018, Pinellas County was selected by FDOT for a Signal Phase and Timing (SPaT) connected vehicle (CV) project along US19. The procurement of the system was completed in 2019, and the deployment of the system was completed in 2020. The CV network consists of dual-mode (both DSRC and CV2X) simultaneous Road Side Units (RSUs) installed at 23 intersections along US19, from Ulmerton Road (SR 688) northward to the Pasco County line.

The Connected Community Project will expand these projects by:

- Expanding the Smart City Data Platform to integrate data from an expanded connected vehicle environment, 3rd party providers (Nexar), and data from video analytics (Derq, Kapsch);
- Deploy connected vehicle roadside units to two managed corridors;
- Deploy predictive analytics for incident and congestion risk predictions;
- Deploy a demand management tool for load balancing the US19 and SR60 corridors; and
- Provide data interfaces for 3rd party app providers to disseminate CV data, load balance routing, and incentivization to drivers in the county.

This technology solution advances the state of the practice and achieves the objectives of the Federal Highway Administration (FHWA) for the ATCMTD program.

2.1.2. Stakeholder Team

Pinellas County will serve as the lead agency to enter into the agreement with FHWA and deliver the project. Our partners in this initiative include the Florida Department of Transportation; City of Clearwater; City of St. Petersburg; Forward Pinellas; and the Pinellas Suncoast Transit Authority.

2.2. Geographic Area

Pinellas County is located on the Gulf Coast of Florida. The county seat is the City of Clearwater and the largest city is St. Petersburg. Pinellas County is included in the Tampa-St. Petersburg-Clearwater Metropolitan Statistical Area (urban area) along with Hillsborough and Pasco Counties. The total population of the urban area is 3,091,399 (2016), 18th largest in the United States. Pinellas County is home to nearly one million residents, with an additional 15.5 million visitors (2017), including seasonal residents and tourists. The population density of Pinellas County is the highest of all counties in Florida at 3,347 persons per square mile.

2.2.1. City of Clearwater

The City of Clearwater is located northwest of Tampa and St. Petersburg in the Pinellas County. It is bounded by Gulf of Mexico to the west and Tampa Bay to the southeast. Clearwater is the county seat of Pinellas County, located on the highest coastal bluff in Florida, and is the smallest of the three principal cities in the Tampa-St. Petersburg-Clearwater metropolitan area (Tampa Bay Area). According to the U.S. Census Bureau, the City of Clearwater has a total area of 39.2 square miles and a population of approximately 115,513 residents (2017).



Figure 1: Pinellas County, FL

2.2.2. Downtown St. Petersburg

The City of St. Petersburg is located on a peninsula between Tampa Bay and the Gulf of Mexico and is connected to the Gulf of Florida to the north. St. Petersburg is the second-largest city in the Tampa Bay Area, after Tampa. Together with the City of Clearwater, it comprises the Tampa-St. Petersburg-Clearwater Metropolitan Statistical Area, the second-largest area in Florida with a population of 2.8 million. The 2015 census estimated the population in St. Petersburg to be 263,255 (2017), making it the fifth-most populous city in Florida and the largest in the state that is not a county seat. The city has a total area of 137.6 square miles, and is bordered by three bodies of water, the Old Tampa Bay, Middle Tampa Bay, and Lower Tampa Bay, which together form the Tampa Bay.

2.2.3. Highway Systems

The existing highway network within Pinellas County is comprised of several controlled access highways, including I-275 and US 19. Primary access from the City of Tampa into Pinellas County is through three major bridge crossings. These routes are the primary routes for Hurricane Evacuation in the area, and thus are critical to the region. Interstate highways are operated by the FDOT as part of their regional SunGuide Freeway Management System. I-275 is the primary route from Tampa into downtown St. Petersburg. SR 60/Gulf-to-Bay Boulevard is the northernmost east-west corridor and travels across Clearwater from Clearwater Beach in the west, connecting the city to Hillsborough County and the area around Tampa International Airport via the Courtney Campbell Causeway. Due to Pinellas County being densely populated, all traffic must travel on arterial roadways because the County consists of only small segments of controlled access highways. Therefore, additional funding is urgently required to invest in the area's arterial signal system to alleviate congestion and improve the movement of people and goods, and improve safety and mobility in the region.

2.2.4. Arterial Signal Systems

Currently, each arterial management agency operates and maintains their own signal systems, as shown in the table below. As Pinellas County implements the new Advanced Transportation Management System (ATMS), arterial signals are moved to the central system to be operated on a regional platform. Existing systems currently overlap jurisdictionally.

This project will enhance the operation of the traffic signal system by expanding the deployment of CV technologies, including Roadside Units (RSUs) at key intersections, which will improve the operation of the signalized intersections through use of SPaT messaging, Pedestrian Safety, and Transit Signal Priority (TSP).

2.2.5. Connected Vehicle Infrastructure

The County recently finished installing a 14-mile Connected Vehicle corridor. There are 23 signalized intersections (shown as green dots in Figure 2); 11 are at-grade (ground level) main and crossing road signals and 12 are frontage road (elevated main road) signals. Frontage road intersections require two RSUs working in tandem to supply the necessary coverage. This coverage is handled by central control from the connected mobility command center (CMCC) and the Roadside Control Unit (RCU) functionality. This corridor uses the Kapsch RIS-9260 Dual Band RSU which provides both CV2X and Dedicated Short Range Communications (DSRC) functionality simultaneously. Applications included with this project include Speed Warning, Intersection Warning (SPaT and MAP), Transit Vehicle Priority, Emergency Vehicle Preemption, and the eWalk Pedestrian Safety application discussed below.



Figure 2: Existing (green) and proposed (blue) RSU intersections

Speed Warning. Warns drivers when their vehicle is exceeding the speed limit in speed zones, around curves, in school zones, in construction zones, or wherever information is needed. Sample speed warnings are shown in Figure 3.



Figure 3: Speed Warning Application

Intersection Warning. Warns drivers when the vehicle may enter an intersection on a red or yellow light. It will also provide warnings about pedestrians in intersections. The intersection warning application is shown in Figure 4.

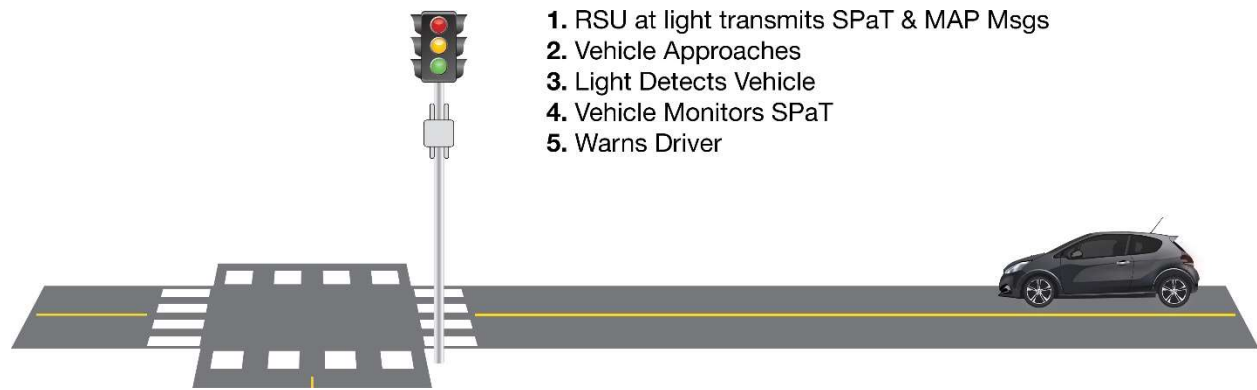


Figure 4: Intersection Warning concept

The Kapsch Assist application is an end-user, in-vehicle application designed to provide information to the driver when the DSRC unit inside the vehicle detects an issue. Warnings are prioritized, so the most important message is always displayed. Assist provides both audio and visual alerts. Capabilities include:

- **Speed Assist:** Displays the current speed when no warnings exist.
- **Vehicle Hazard Warnings:** Includes vehicle collision warnings and warnings of vehicles braking ahead that may not be in direct line-of-sight.
- **Intersection Information:** Includes red and yellow light warnings
- **Emergency Warnings:** Warns drivers about approaching emergency vehicles.
- **Speed Warnings Assist:** Warns drivers when they are exceeding the posted speed limit, including special speed limits in construction zones and around curves.

The Kapsch Insight application gives the County's staff the ability to monitor RSUs in the field in real time. Insight connects to a RSU and provides information on that unit as well as all the units around it.

Insight also provides both audio and visual alerts, and includes the following functionality:

- **Map Display:** Shows the position of each unit in real-time. Also shows the current state of traffic lights.
- **Message Display:** Shows the messages being processed as they are transmitted or received.
- **Settings:** Manages certain controls on the units as well as within the Insight application.
- **Logs:** Provides real-time log data from the unit.

For each application, the Android version can be downloaded from the Google Play store and can connect to the RSU via either Bluetooth or Wi-Fi. The Apple version can be downloaded from the App Store and can connect via Wi-Fi.

eWalk Pedestrian Safety App. The deployed CV solution also includes eWalk, a smartphone-based Pedestrian to Infrastructure to Vehicle (P2I2V) system that uses connected transportation technologies to improve pedestrian safety at signalized intersections. eWalk app, shown in Figure 5, is especially beneficial to pedestrians with visual impairments or special needs, who generally:

- Find it difficult to navigate intersection and find crosswalks
- Cannot find the pedestrian crossing actuation button

- Do not have any information about the status of the signal
- Have difficulty staying within the crosswalk

- Do not know when is safe to start walking



Transit Vehicle Priority. Allows a transit bus or other authorized vehicle to request priority as it approaches an intersection. The application uses Mobile Application Part (MAP) messages to determine vicinity to the intersection and determine when to make the priority request. The application can be connected to internal or external bus systems so additional criteria such as bus adherence to schedule or the number of riders can be used for deciding if priority should be requested.

Figure 5: eWalk Application

- Ability to connect directly to the traffic controller to provide at traffic lights for:
 - Transit Buses
 - Other Vehicles like Hearses
 - Others
- Can integrate with bus systems to ensure request is only made when needed
- Security integrated with industry standard SCMS security

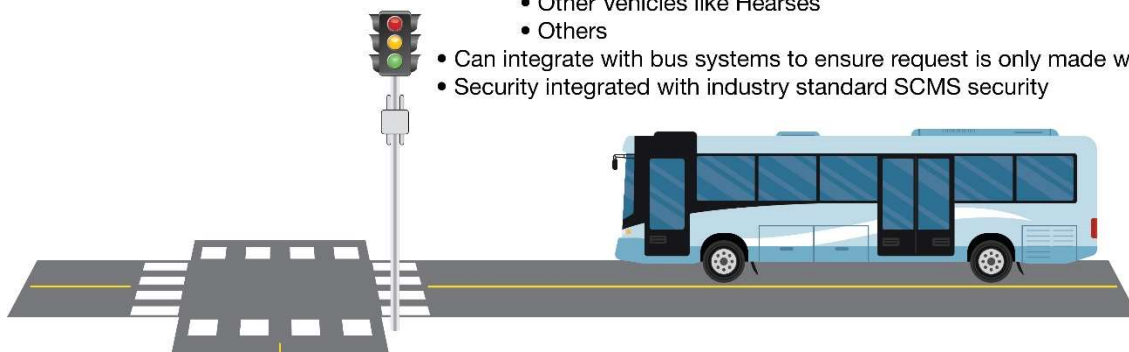


Figure 6: Transit Vehicle Priority

Emergency Vehicle Preemption. Allows emergency vehicles such as fire trucks, ambulances, and police vehicles to request preemption at upcoming intersections to

minimize delays for these vehicles at signalized intersections. Once the vehicle detects that it is in the proper location, it sends a request via the OBU to the RSU to request preemption. The sending of the request can be tied to additional external criteria such as the emergency lights being enabled.



Figure 7: Emergency Vehicle Preemption

2.2.6. Transit

The PSTA operates 210 buses servicing 4,752 bus stops on 43 routes across the county, with major stops at all commercial centers. Along the Gulf Beaches, PSTA operates the Suncoast Beach Trolley. PSTA also offers two express routes to downtown Tampa connecting with Tampa's Hillsborough Area Regional Transit (HART) Lines and the Pasco County Public Transportation (PCPT) Lines. The system's two main bus terminals are in downtown Clearwater and downtown St. Petersburg. PSTA provides public transportation to more than 12.1 million riders annually (39,000 daily).

2.2.7. Pedestrians

Concentrated pedestrian traffic occurs along the corridors of this project and at the coastal beaches, particularly Gulf Boulevard, which have high levels of tourism and daily pedestrian traffic. Crossing in these environments creates a dangerous situation for both pedestrians and drivers. Pinellas County ranks very high in accidents and fatalities associated with vulnerable roadway users. Walking is an important mode of travel in the county. Everyone is a pedestrian, and people make pedestrian trips daily, whether that means walking from the transit stop to work, walking from the parking lot to the store, or walking with children to school. Walking is also a great form of exercise. Pinellas County places a high



Figure 8: PSTA Bus System Map

value on walkability and Forward Pinellas is working with local, state, and federal government partners to ensure that walking is a safe, comfortable and viable transportation option.

2.2.8. Key Management Corridors

In order to have the most benefit to the region, the stakeholders have chosen two corridors for management and technology deployment, with two supporting corridors for the region. SR 60 is the primary east-west corridor in the county, and balancing demand on the north-south corridors centered around US 19 is a key to improving the efficiency and reducing congestion in the county.

2.2.8.1. State Route 60

SR 60 within Pinellas County is one of the most important transportation corridors, serving several destinations, communities, and mobility needs. The corridor is also a gateway from Hillsborough County, providing access to many residential and commercial uses and serves as the primary connection to activity centers such as Downtown Clearwater and Clearwater Beach.

The SR 60 corridor, like much of the Tampa Bay area, has been designed solely for moving automobiles, even in residential areas. Minimal consideration has been given to alternative modes such as biking, walking and transit, leading to fewer transportation options and increased safety risks for residents and visitors alike.

2.2.8.2. US 19

A 34-mile highway extending from Tarpon Springs to St. Petersburg, US 19 is the most heavily traveled arterial road in Pinellas County. It is part of the Florida Strategic Intermodal System (SIS), a statewide network of high-priority transportation facilities, and is served by PSTA Transit Route 19, which has the highest ridership of all routes.

Since the 1980s, substantial public investment has converted US 19 from an at-grade arterial

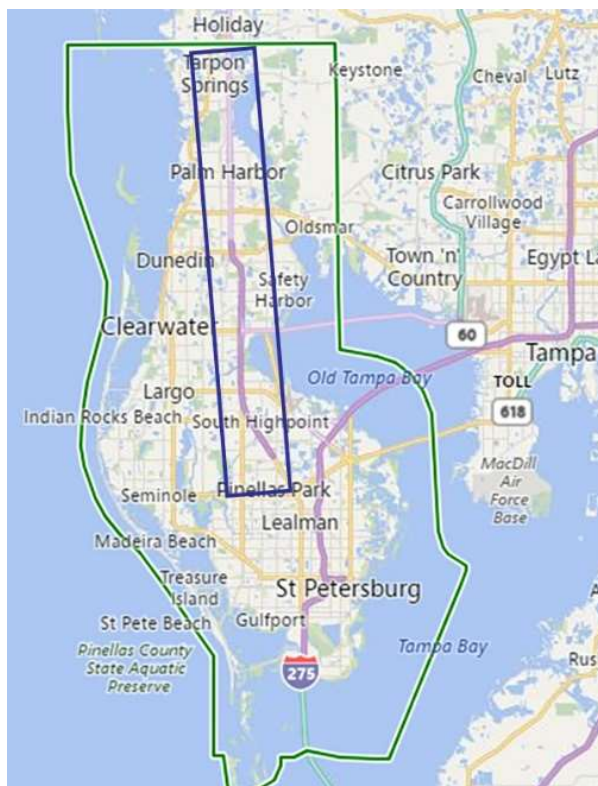


Figure 9: US 19 Corridor

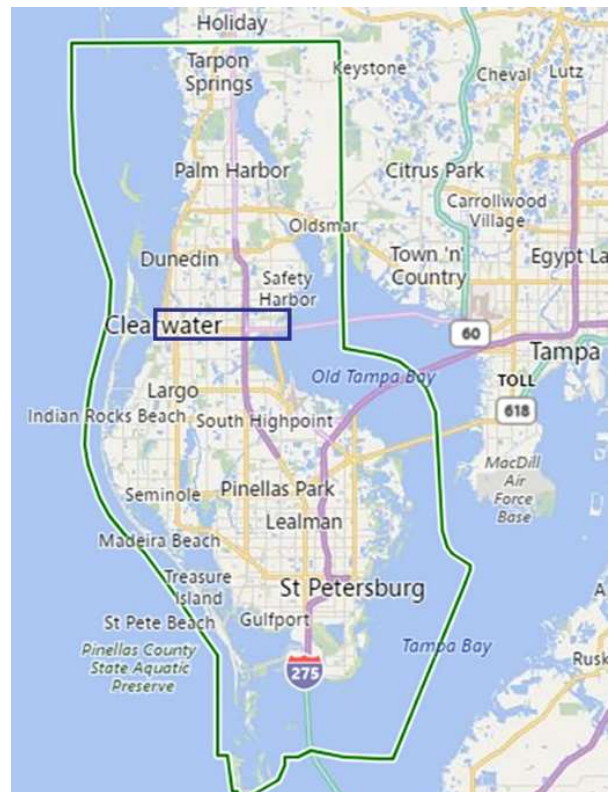


Figure 10: SR 60 Corridor

road to an uninterrupted partially controlled access facility, including overpasses and interchanges, from 49th Street in Pinellas Park to SR 580 in Clearwater.

There has also been substantial investment made toward improving the safety of the corridor, including crosswalk installations, sidewalk construction to close existing gaps along the roadway, median modifications, intersection improvements and wayfinding signs. Safety remains a serious concern, however, as the highest crash rates in the county continue to be reported at US 19 intersections. In addition to safety, other major issues afflicting the corridor include lack of accessibility afforded to vulnerable users (e.g., pedestrians, bicyclists and transit users), and the economic impact of the partially controlled access improvements on adjacent businesses.

2.2.9. Qualified Opportunity Zone

Several qualified opportunity zones are a part of the corridors that are proposed for this project. This includes the northern part of the US19 corridor, and the downtown City of Clearwater area as part of the SR60 corridor.

2.3. Issues and Challenges

With the high tourism activities, adverse weather conditions and major sport activities as well as a regional transportation network managed by multiple independent agencies, the County has realized the need for better coordination and management of the transportation network.

In general, the County and its partner agencies handle their typical recurring traffic and congestion and manage their facilities as expected without much coordination of operations with others. Given the current situation, the County is not ready to deal with unexpected events in the most efficient manner, utilize the available alternative routes,

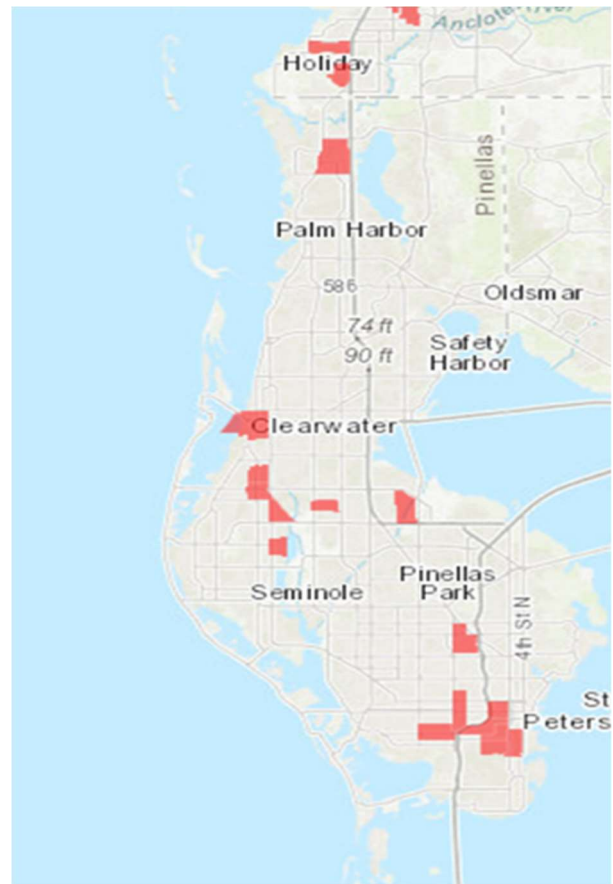


Figure 11: Qualified Opportunity Zones in Pinellas County

coordinate operations, and work as a team to manage the event as efficiently as possible.

2.3.1. Crashes

Reducing the number of traffic crashes remains a challenge given increases in population, Vehicle Miles Traveled (VMT), the number of licensed drivers and the declining price in the cost of a gallon of gasoline. As these numbers steadily increase, Pinellas County continues to face challenges in reducing the number and severity of traffic crashes.

Historically, traffic crash frequency has been the preferred approach to analyze and measure the safety of an intersection and/or road segment in Pinellas County. While crash frequency is one of the simplest forms of crash

data analysis, it does have limitations when comparing roadways that carry high volumes of traffic to roadways that have much less capacity, and thus smaller numbers of crashes

An average, 32% of all traffic fatalities in Pinellas County involved aggressive driving (up from last year's average of 30%). That's an average of 36 deaths per year involving aggressive driving. It's noteworthy that the intersection of US Highway 19 and Curlew Road continues to have the highest number of crashes involving aggressive drivers.

- The number of crashes involving aggressive drivers increased 5%.
- 24% of all crashes involved aggressive driving (up from 23%).
- Fatal crashes involving aggressive driving are up 12% from an average of 32 to an average of 36 fatal crashes per year.
- Serious injury crashes involving aggressive driving are down 6%.
- Distractions resulting from a driver's cell phone, navigation device, external distraction, general inattentiveness or other activity are responsible for an average of 3,314 crashes per year (up 10% from last year's average of 3,011).
- More than 11% of all crashes involved distracted driving.
- An average of 7 fatal crashes per year involve distracted driving (up from 5).
- An average of 6% of all fatal crashes involve distracted driving.

2.3.2. Pedestrian Safety

Seven of the top 10 most dangerous metro communities for pedestrians were all in the

Sunshine State, according to the annual Dangerous by Design report released by Smart Growth America. That included the Tampa-St. Petersburg-Clearwater area, which was ranked tenth in the nation with 900 pedestrians killed over a 10-year period through 2017 which is an average of 3.07 annual pedestrian fatalities per 100,000 people. Based on 2019 data:

- On average, 593 crashes per year involve pedestrians.
- Injury crashes involving pedestrians increased .24%
- An average of 40 fatal crashes per year involved pedestrians, which is 35% of all traffic fatalities. This is more than twice the national average.

2.3.3. Congestion on Corridors

Each year, Annual Average Daily Traffic (AADT) volumes are collected from counters by the Florida Department of Transportation (FDOT) and local governments. Travel Times along the key corridors vary by time of day, day of week, and month due to the fluctuations due to daily commuter and tourism traffic.

2.3.3.1. US Highway 19

US19 is a primary commuter route between Pasco County into Pinellas County. This route was selected for the SPaT challenge, and this project due to the potential for balancing loads along US19, Belcher Road, and County Road 611. The following figure shows the congestion issues during the morning commute for southbound US19. There is available capacity along the parallel routes that this project will try to balance.

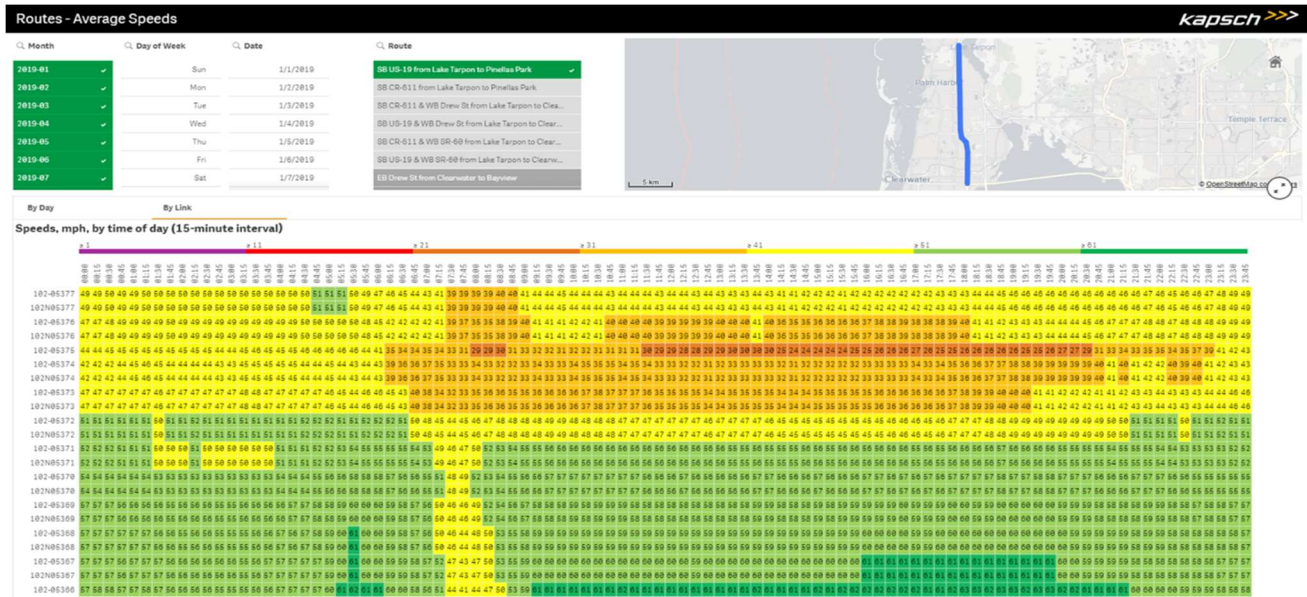


Figure 12: US19 Southbound Average Speeds for 2019 by Link and time of day

2.3.3.2. SR60

State Route 60 is the primary route from Tampa to Clearwater Beach and becomes very congested with traffic heading towards the beach. Drew Street is a parallel route with available capacity. As shown in the diagram below, there is a potential for significant travel time savings if we can balance the load between SR60 and Drew Street at specific times of day. The red line shows the travel time savings along Drew Street (red bars) versus SR60 (blue bars) for each link along the route.

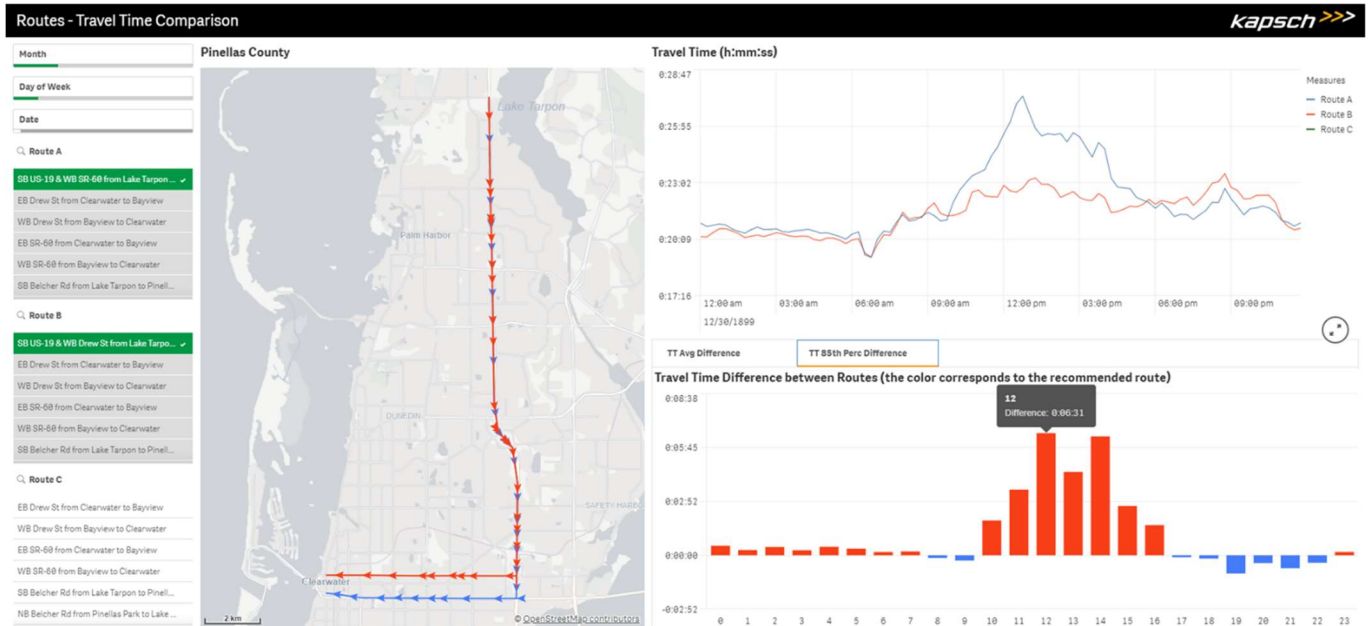


Figure 13: Travel Time differences along SR60 Westbound during Spring Break months

2.3.4. Impact of Tourism

Tourism is one of Pinellas County’s most important industries, and arguably its most visible. Pinellas County has experienced significant growth in visitors in recent years. Visit St. Pete/Clearwater, the Convention and Visitors Bureau for Pinellas County, reported approximately 6.6 million overnight visitors in 2018, up from 6.3 million in 2016 (about 4% growth). Even with the COVID-19 pandemic, beach traffic has still been significant, with local sheriff deputies activity managing traffic and parking to ensure social distancing at beach locations.

The increase in out-of-county and out-of-state cars, as well as rental cars, places additional demands on the area’s roadway network. Peak impact is seen during the annual occurrence of Easter and spring break for schools and colleges. Traffic congestion on routes between the mainland and barrier islands, a popular draw for tourists, is particularly visible during these periods.

2.3.5. Connected Vehicle Infrastructure

One of the major challenges our industry faces is the limited deployment of on-board CV technologies within vehicles. As part of the SPaT project, we have deployed on-board units on many public vehicles – but this does not

benefit the majority of the public using these roads. By using a small number of mobile app vendors, our approach is to increase the public’s access to CV data and assist in the mobility and safety of our citizens through an expanded OBU network using cellular phones.

2.3.6. Performance of the Transportation System

The Fixing America’s Surface Transportation (FAST) Act became law in 2015, and requires performance-based, multimodal planning processes to address the safety challenges of the U.S. transportation system. The FAST Act authorizes FHWA to establish safety performance measures. Forward Pinellas began reporting on these safety performance measures in its Traffic Crash Trends and Conditions Report (October 2016), and this section of the Countywide Trends and Conditions Report (October 2017), continues to report on these same safety performance measures, which are summarized in the tables below.

The hard work and dedication of safety partners in implementing the Strategic Highway Safety Plan continues to pay off in that Pinellas County’s fatal crashes due to driver impairment dropped 12%, fatal intersection crashes dropped 12% and fatal crashes due to aggressive driving dropped 10%. Only fatal

Table 1: Pinellas County Performance Measures

Pinellas County Safety Performance Measure	2011	2012	2013	2014	2015	2016	2017	2018	2013-2017 Average	2014-2018 Average	Percent Change
Number of Motor Vehicle Crash-Related Serious Injuries	999	925	879	911	982	1008	799	954	916	931	1.60%
Number of Motor Vehicle Crash-Related Fatalities	114	101	80	117	101	111	110	104	104	109	4.80%
Number of Serious Injury Crashes of Bicycle/ Pedestrian	162	199	162	169	153	188	173	184	169	173	2.40%
Number of Bicycle/ Pedestrian Fatalities	40	41	34	47	36	48	42	46	41	44	7.30%
Number of Serious Injury Crashes per Vehicle Miles	47	43.4	41.07	41.6	43.6	43.85	33.96	40.82	40.82	40.77	0.10%
Number of Fatalities per Vehicle Miles Traveled (VMT)	5.4	4.7	3.7	5.3	4.5	4.83	4.68	4.43	4.6	4.75	3.30%



crashes involving at-risk drivers increased (by 6%) while fatal crashes due to distracted driving remains steady with an average of five fatalities per year.

2.4. Transportation Systems and Services

The following summarizes the transportation systems and services that are proposed for the project, as shown in Figure 14. It also details the purpose of the system/service and the specific technology/system to be deployed to support that system/service. Traffic data is collected and processed, and made available to the operators on various platforms, our proposed system will:

- Continue to consolidate the various data sources into one single, centralized data warehouse and make it available to the operators through a multi-layered dynamic map and integration with their operational systems.
- Expand the real-time performance measures platform to dynamically monitor and operate the regional transportation network based on performance measures.
- Expand the deployment of Connected Vehicle technologies for Signal Phase and

Timing (SPaT), Transit Signal Priority (TSP) and Pedestrian Safety.

- Deploy Video Analytics/ Machine Learning along two pilot areas of the SR60 corridor
- Share the fused data with Regional partners through one Data Mart, and through an Information Exchange Network.
- Deploy a Predictive Analytics system to predict and respond proactively to incidents and non-recurring congestion
- Provide mobile video analytics for work zone monitoring, incidents and
- Provide data to 3rd party developers for creation of an incentivization application for corridor load balancing and demand management.
- Work with 3rd party developers to provide cellular based CV data applications.

The implementation of these coordinated strategies requires the development of a new and potentially complex set of inter-jurisdictional agreements and operating procedures. The following table provides an overview of the goals for the project and the proposed solutions.

Table 2: Solutions to meet the Goals of the Project

Goal	Solution Description	Proposed Technologies
Improve Safety of Pedestrian and Intersections within the Region	<ul style="list-style-type: none"> ▪ Deploy Camera-based pedestrian detection system and interface to traffic signal controllers and RSUs ▪ Expand the RSU network ▪ Provide data interface to 3rd party mobile app developers, and obtain agreement from them to support the project 	<ul style="list-style-type: none"> ▪ Video Analytics Pedestrian detection ▪ Mobile App
Accelerated Deployment of V2X and other Advanced Technologies	<ul style="list-style-type: none"> ▪ Provide timely, accurate and actionable real-time and dynamic traffic information to CVs via existing mobile apps. ▪ Deploy Roadside Units (RSU) along intersections within the key corridors, Deploy On-board Units within public transit, and fleet vehicles 	<ul style="list-style-type: none"> ▪ Deployment of additional RSUs on managed corridors ▪ Pedestrian and Intersection safety applications ▪ Deployment of OBUs and Mobile Apps
Reduce Congestion through Corridor Load Balancing Techniques	<ul style="list-style-type: none"> ▪ Deploy DMS at key decision points within the management corridors ▪ Deploy ▪ Work with incentivization providers to deploy an incentivization strategy for the county 	<ul style="list-style-type: none"> ▪ Incentivization Engine ▪ Dynamic Message Signs ▪ Demand Management Algorithms
Reduction in the Number and Severity of Traffic Crashes and Increase in Driver, Passenger, and Pedestrian Safety	<ul style="list-style-type: none"> ▪ Provide timely, accurate and actionable real-time and dynamic traffic information to CVs via existing mobile apps. ▪ Expand Signal Phase & Timing (SPaT) messaging at signalized intersections 	<ul style="list-style-type: none"> ▪ Deployment of RSUs within corridors ▪ Pedestrian and Intersection safety applications
Improve Mobility within the Region	<ul style="list-style-type: none"> ▪ Provide a Data Mart for 3rd Party app developers 	<ul style="list-style-type: none"> ▪ Connected Mobility Platform

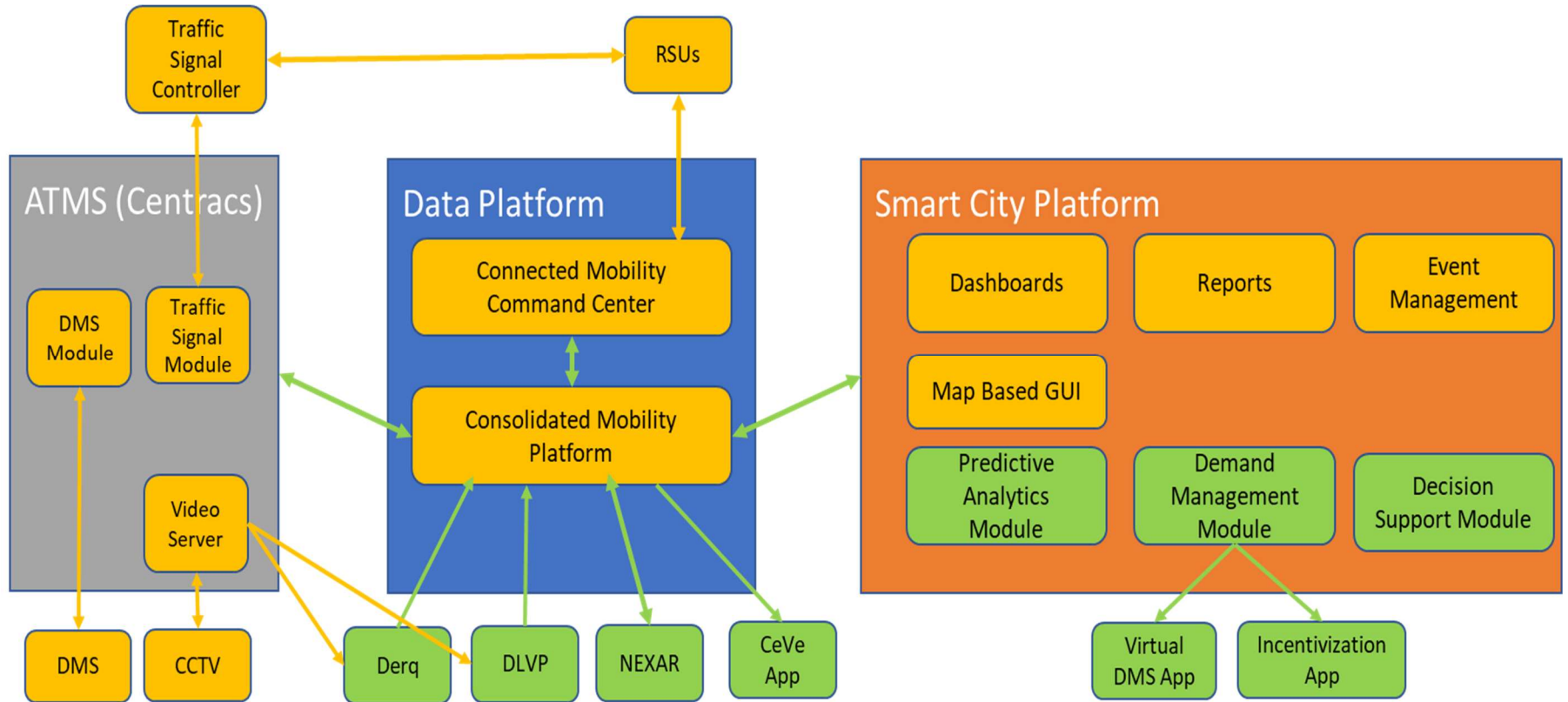


Figure 14: Pinellas Smart City Logical Architecture (Yellow = existing, Green = New)

2.4.1. Expand Smart City Data Platform

As discussed in section 2.1.1, Pinellas County has deployed a Smart City Data Platform, through a multi-phase project. The first phase was completed in July 2020.

As shown in Figure 15 the platform is integrating several external data sources, fusing that data with operational data from the ATMS and using this data to manage events and providing a data driven approach to operating the County’s transportation network.

PSM, SPaT) and generates TIM, RSM, and MAP messages to be broadcast by one or more RSUs. CMCC also provides dashboards and visualizations to inform operators of an RSU’s status and messaging activities.

Connected Mobility Platform

The CMP is a transportation data aggregation, warehousing, and processing platform that enables data sharing, advanced analytics, and application development in support of the connected mobility ecosystem. CMP is built on

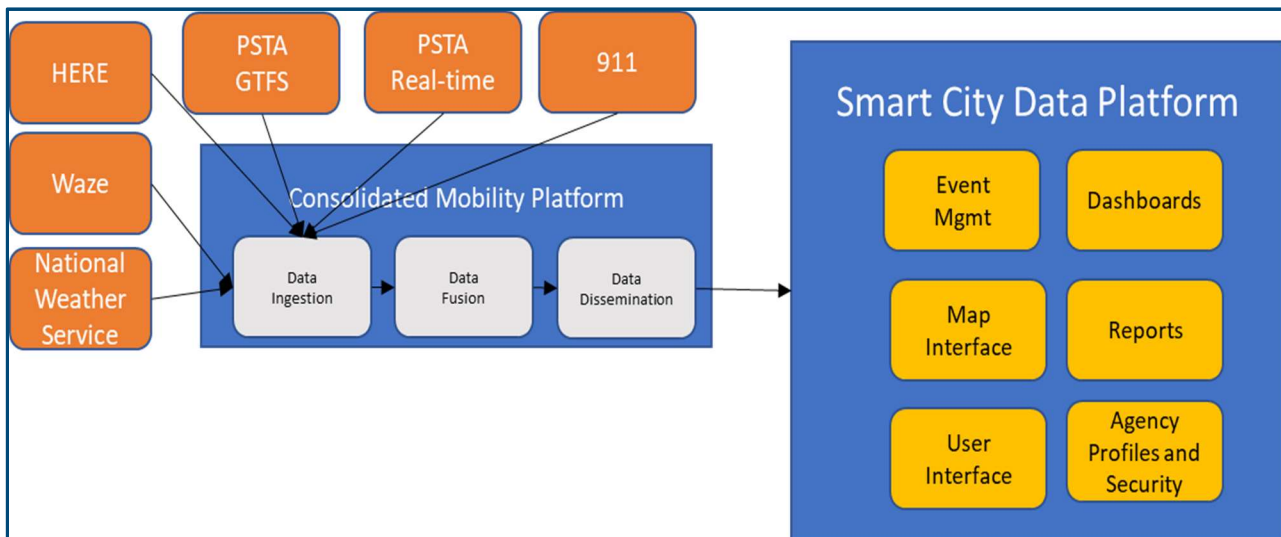


Figure 15: Smart City Platform

2.4.1.1. Integrated Connected Vehicle Data

The connected vehicle management and data platforms are already deployed within the County’s hosting environment. With the additional RSUs, and other data, these systems will be updated and integrated with the Pinellas Smart City Platform to provide the CV data for additional data analysis and analytics.

Connected Mobility Command Center

CMCC enables two way communication between all of the RSUs in the network. It provides a map-centric graphical user interface for displaying the location and status of each RSU, receives standard messages (e.g., BSM,

an open architecture based on the Apache® big data stack. The CMP is specifically designed to ingest, fuse, and correlate transportation of various types (traffic, weather, construction, event, transit, weather, etc.) from disparate data sources to provide both real time (streaming) analysis, situational awareness, historical analysis and data queries.

2.4.1.2. Integrate 3rd Party Mobile Video Platform

NEXAR

NEXAR will deploy their CityStream platform, which will be integrated with the Smart City Data Platform to provide stakeholders in the region with additional functionality and data.

These technologies will be focused on the downtown core area of the City of St. Petersburg. The 3 modules within the CityStream platform will be deployed to include: Road Inventory; Road Work Zones; and, Virtual Camera.

The **Road Inventory** platform will be integrated with the Smart City data platform to detect, monitor, and map traffic signs & signals. Nexar automatically detects traffic signs using Artificial Intelligence in the dash cams and applications installed within vehicles. Recent images of these detections are then aggregated, localized and mapped.

The **Road Work Zones** will detect, monitor, and map Road Work Zones on county roads and within the downtown St. Petersburg core. Nexar automatically detects barricade elements in work zones using Artificial Intelligence in the dash cams and application. Recent images of these barricade elements are then aggregated, localized and mapped to be viewable through the Smart City Data Platform.

The **Virtual Camera** platform provides video frames from the Nexar network which are made accessible on a map within the Smart City Data

Platform which provides a “virtual camera” around it so you can monitor it remotely.

2.4.1.3. Pilot Video Analytics Platform

Video Analytics uses highly flexible deep learning frameworks to detect and classify road users (vehicles of all kinds, pedestrians and persons with personal mobility devices). The platform can be customized with virtual segments to detect specific images, such as zones to look for stopped vehicles, driving directions and specific vehicle classes. In addition to the virtual segments, the platform can be customized with virtual lines count the number of passing vehicles / road users, compare entry and exit points, trigger actions and many more.

For the proposed project, two areas of the SR60 corridor (as shown in Figure 18 and Figure 19) will be supplemented with Video Analytics for several use cases and will utilize existing cameras that have been installed by the County. This includes pedestrian detection, vehicle classifications, and detection of various elements in order to optimize traffic flows to reduce congestion, optimize travel times, and reduce pollution.

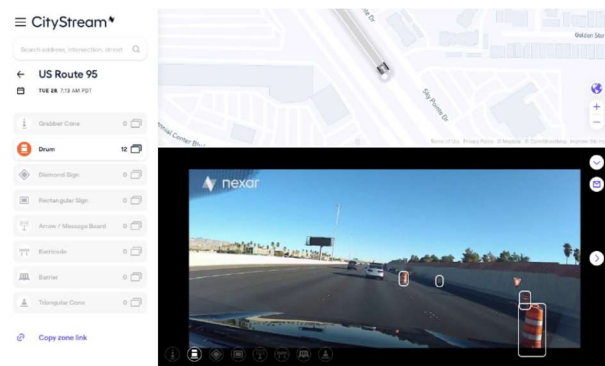


Figure 17: NEXAR Dash Cam View

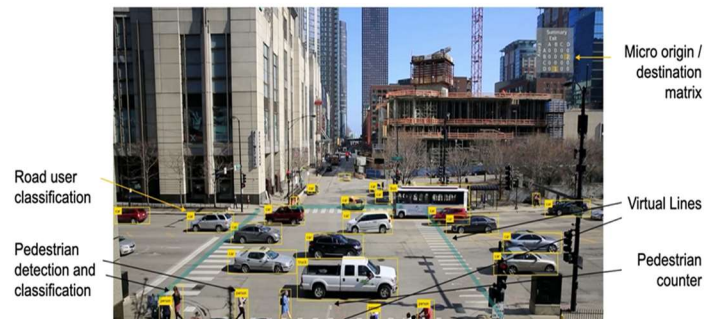


Figure 16: Example Video Intersection Video Analytics

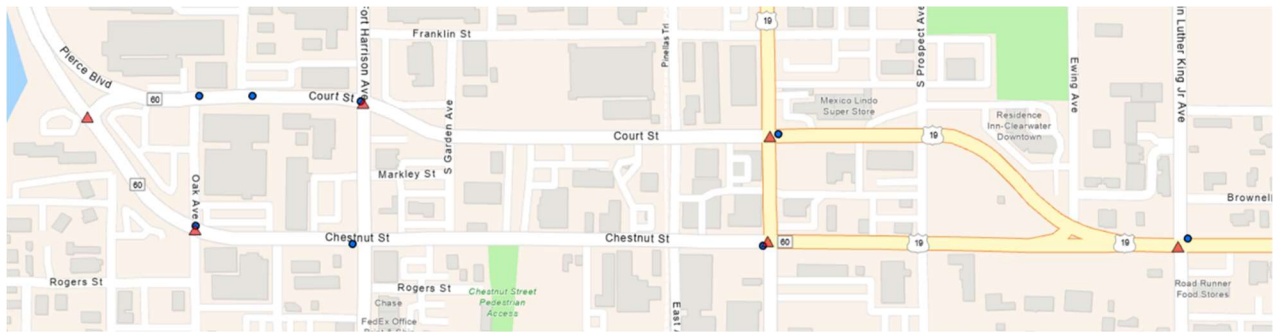


Figure 18: Video Analytics deployment in downtown Clearwater (red triangles)

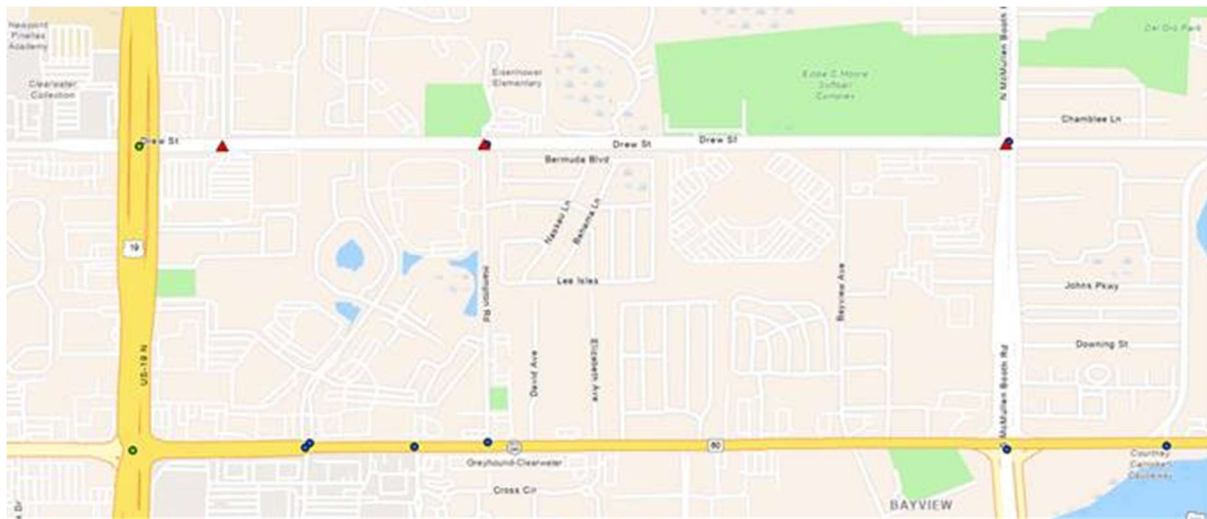


Figure 19: Video Analytics deployment along Drew Street near US19 (red triangles)

2.4.1.4. Deploy Decision Support

The DSS will optimally distribute trips across the available network capacity based on speeds, travel times and current signal timings. It will leverage predictive analytical models to anticipate congestion before it happens, and then provide drivers with personalized routing and departure information to distribute them optimally across the roadway network.

2.4.1.5. Integrate Predictive Analytics Module

The traditional way to analyze risk in a roadway network is to look at crash data. Although crash data can provide a lot of useful insights on where and when collisions have happened in the past, historical crash data alone is

insufficient to predict future crashes. Other factors that may make crashes more likely to happen include levels of congestion, traffic in adjacent roadways, active construction and weather conditions. The Predictive Analytics Module uses machine learning algorithms to allow for these factors to be considered and subsequently recommends where to act to prevent new crashes in the roadway network.

2.4.1.6. Deploy Demand Management Module

Unmanaged distribution of vehicles across our roadway networks results in greater traffic congestion, energy consumption, environmental impacts, and frustrated travelers. Studies have shown that influencing routing choices by a mere 3-5% can lead to dramatic

improvements in overall system performance while reducing emissions.

Most vehicle routing applications and services focus on the individual driver by determining the optimal route through the network for that driver. By developing a load balancing algorithm using a deterministic model, Kapsch will develop a pilot system to distribute trips across the available network capacity based on speeds, travel times and current signal timings. This algorithm will be documented and Kapsch will provide recommendations on potential uses for additional system work via a white paper. The Load Balancing Algorithm will be integrated into the Smart City Platform to use and analyze all necessary data.

The pilot system will use the predictive analytical models to anticipate congestion before it happens, then leveraging the DSS will optimally distribute trips across the available network capacity based on speeds, travel times and current signal timings.

2.4.2. Connected Vehicle Technologies

The expansion of the RSU network and associated applications will be deployed, as discussed and shown in Section 2.2.5, and will include an additional ~80 intersections along the parallel routes to US19, and the SR60 corridor to include Drew Street.

Signal Phase and Timing, Transit Signal Priority, Emergency Vehicle Pre-emption, and Pedestrian Safety applications will be expanded to these additional intersections. All data and devices will be integrated into the existing Connected Mobility Command Center (CMCC) , and Consolidated Mobility Platform(CMP), as discussed in Section 2.4.1.1.

2.4.3. Mobile Applications

As previously discussed, the lack of connected vehicles provides a major risk to the effectiveness of traffic management, safety, and

mobility strategies proposed for this project. Working with 3rd party mobile application providers, we will pilot and test the use of commercially available applications to supplement the CV OBU devices deployed on county-owned vehicles.

2.4.3.1. NEXAR

NEXAR sells Dash Cams and an associated mobile app for both iOS and Android. The Dash-Cam records video and stores the images on the Cloud. The Videos are live-streamed to the app and important events, like hard brakes and accidents, are immediately saved to the phone app and backed up to the Nexar cloud, which can then be made available to the connected vehicle infrastructure to supplement data from CV vehicles. NEXAR application users are notified of events and provide alerts when incidents occur. The project will work with NEXAR to expand the capabilities of their mobile application to include load-balancing requests, and additional CV related safety and traveler information messages. The mobile application will be utilized similarly to an OBU for CV applications.

2.4.3.2. CeVe

CeVe is an Apple iOS mobile application which provides routing and CV information. The application currently receives J2735 messages through some of it partners to provide SPaT information to drivers. CeVe is a Tampa based

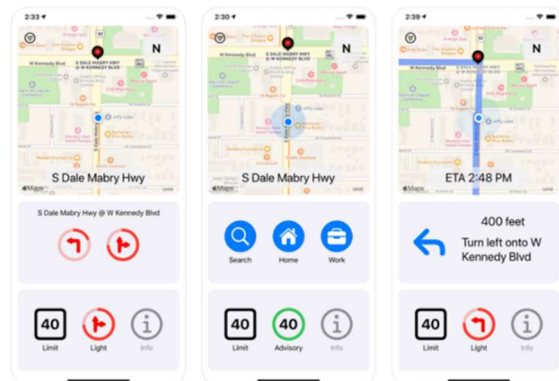


Figure 20: CeVe Mobile App

company that will integrate the data from the Smart City Data Platform to provide its users with additional real-time routing and CV data.

2.4.4. Load Balancing Concept

By using the DSS to distribute trips across the available network capacity based on speeds, travel times and current signal timings, Pinellas County will inform travelers through a variety of methods to try and impact their route and trip choices. By inducing some drivers to take alternative paths that might be personally sub-optimal but better for overall system performance, this platform will allocate vehicles more optimally to available network capacity over time and space. This will improve roadway network utilization when implemented across a metropolitan area and reduce fuel consumption.

Pinellas County will deploy some dynamic messages signs (DMS) to inform drivers at key decision locations to influence their routes. These DMS will provide congestion levels, not travel times. With this information provided to the drivers, we believe some drivers will choose a less congested route instead of sitting in a congested route to their destination. Additionally, we have begun to work with 3rd Party app providers to distribute the load balance requests through traveler information applications and through incentivization applications.

2.5. Deployment Plan

This section describes some of the high-level tasks and considerations that will be addressed during the deployment of the connected community project.

2.5.1. Deployment Sequencing

Once the planning and design phase of the project is completed, the deployment of the components/subsystems of the solution are expected to be deployed in a logical and consistent manner. Based on previous experience, the Solutions described in Section 2.4 are expected to be deployed in the order shown on the schedule in section 2.11.

2.5.2. Operations and Maintenance

It is anticipated that each agency will be tasked to operate and maintain the systems that are deployed within their jurisdiction, however the majority will be within the Pinellas County’s responsibility. The team will examine areas where it may be necessary for specific vendors to operate and maintain their systems for at least a start-up/shake down period. The County and its regional transportation partners will work to ensure that any needed O&M funds are programmed onto the TIP as this project advances. The following table provides additional detail.

Table 3: System Maintainers

System	Proposed Maintainer
Data Platform	Pinellas County Department of Public Works
Data Interfaces	Pinellas County Department of Public Works
Dual-mode RSUs	Pinellas County Department of Public Works
Video Analytics Software	Pinellas County Department of Public Works
Corridor Congestions Signs	Pinellas County Department of Public Works
Mobile Applications	Vendors



2.6. Challenges

There are no significant obstacles to deployment and certainly no insurmountable ones. The Regional Stakeholders support the connected community project. The 2006 County Interlocal Agreement for Advanced Traffic Management System/Intelligent Transportation System (ATMS/ITS) / Signals gives Pinellas County authority to deploy the connected community Project. The Pinellas County share of the funding is in place through the TIP, STIP, MPO Long Range Plan, and Florida Long Range Plan. Connected and automated vehicle technology is supported in Florida by several statutes.

Pinellas County has passed one regulatory hurdle in CV application by securing the 5.9GHz FCC licensing for both the DSRC and V2X spectrums from the FCC through application by FDOT. Anticipated institutional/other challenges include:

- FCC licensing of additional RSUs
- Overall coordination of the large set of agency stakeholders;
- Development and implementation of an explicit O&M Plan acceptable to all members;
- Approval of Corridor Congestion Signs through the MUTCD process;
- Technology system changes/advancement during the life of the project; and
- Maintaining a realistic schedule.

2.7. Quantifiable Performance Improvement

System performance is a result of the various projects that support the goals of the study. The following system performance improvements are expected because of the project elements identified in the proposal.

Table 4: System Performance Benefit Targets

Performance Area	Description	Key Performance Measures (Targets)
connected community will provide the following System Performance benefits:		
Improve Corridor Performance	Optimizing networks at the corridor level will result in an improvement to multi-modal corridor performance, particularly in high travel demand and/or reduced capacity periods.	Increased Person throughput on connected corridors (2%)
Reduce Congestion	Providing improved mobility information, especially route congestion information and incentivization.	Reduction in congestion along managed corridors (3%)

2.8. Quantifiable Safety, Mobility, and Environmental Benefits

Based on the expected system performance measurements, the following key outcome performance indicators are identified for our project. These measures will be further defined as part of the evaluation task along with the data collection and management approach. Other input, output-related performance measures will also be defined. For example, the team will assess the improvements to situational awareness, the use of the DSS and the effectiveness of the CV

applications that are proposed as part of the project. However, measures of effectiveness for input and outputs are not presented in the table below due to page limit restrictions.

Table 5: Key Performance Targets

Performance Area	Description	Key Performance Measures (Targets)
connected community will provide the following Safety benefits:		
Safety	The Region will realize an improved overall safety outcome, through better incident management and utilizing connected vehicle technologies and pedestrian detection.	Reduction of Pedestrian-Related Crashes across the Region (3%) Reduction in Pedestrian fatalities in the Region (5%)
connected community will provide the following Mobility benefits:		
Better Inform Travelers	Travelers will have actionable multi-modal (highway, arterial, transit, parking, etc.) information resulting in more personally efficient mode, time of trip start, and route decisions especially during high-demand and capacity constrained times.	Improvement in planning time index and buffer time index for key facilities (Target 3%)
Improve Corridor Performance	Optimizing networks at the corridor level will result in an improvement to multi-modal corridor performance, particularly in high travel demand and/or reduced capacity periods.	Increased Person throughput on ICM corridors (2%)
Reduce Congestion	Providing improved mobility information, especially route congestion information and incentivization.	Reduction in congestion along managed corridors (3%)

2.9. Vision, Goals and Objectives

With the high tourism activities, adverse weather conditions and major sport activities as well as a regional transportation network managed by multiple independent agencies, the County has realized the need for better coordination and management of the transportation network.

In general, the County and its partner agencies handle their typical recurring traffic and congestion and manage their facilities as expected without much coordination of operations with others. Given the current situation, the County is not ready to deal with unexpected events in the most efficient manner, utilize the available alternative routes, coordinate operations, and work as a team to manage the event as efficiently as possible.

2.9.1. Vision

The connected community Project is a collaborative effort between Pinellas County Department of Public Works, Florida Department of Transportation, the City of Clearwater, Pinellas Suncoast Transit Authority, and Forward Pinellas with support from the City of Tampa, and Hillsborough County. The Vision for Pinellas connected community is:

“The connected community project will measure and improve the operational performance of the Pinellas County transportation network by reducing the number and severity of traffic crashes and increase driver, passenger, and pedestrian safety. The connected community project will collect, disseminate, and use real time transportation-related information to improve the mobility of citizens, tourists, and travelers; reduce congestion; and provide for more efficient and accessible transportation. The connected community project will provide improved communication to our citizens regarding the status of the transportation network’s operation”

2.9.2. Goals

The primary regional transportation mobility goals are:

1. Improve Safety of Pedestrian and Intersections within the Region
2. Improve Mobility within the region
3. Accelerated deployment of V2X technologies
4. Reduction in the number and severity of traffic crashes and an increase in driver, passenger, and pedestrian safety

2.10. Leveraging Existing Investments

The County has many investments by the local, state, and federal government to ensure travelers move efficiently and reliably. Pinellas County agencies have extensive investment in ATMS/ITS/ATIS incident management and advanced traffic control, as partially shown in Figure 21 and discussed in sections 2.2.3, 2.2.4, and 2.2.5. The County has invested significant resources, and time to deploy a transportation management system which leverages technology to improve the management, safety, reliability, and mobility of its citizens.

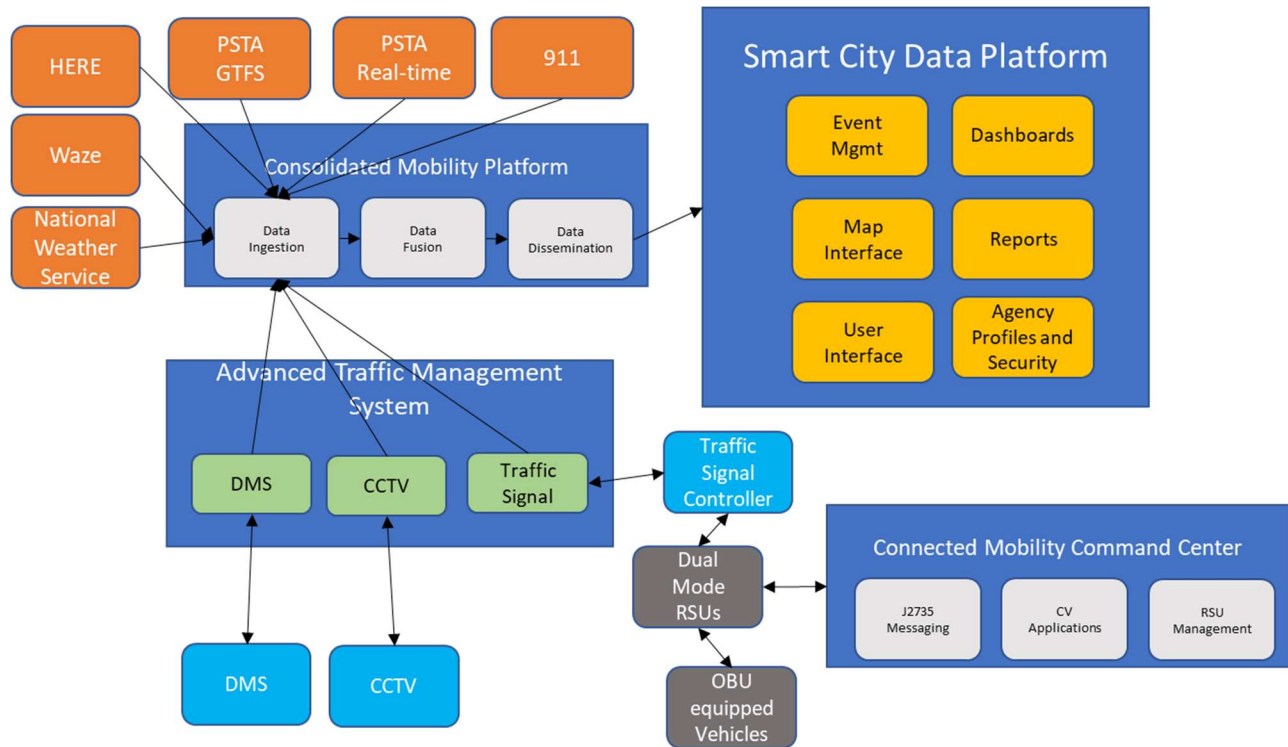


Figure 21: Existing Systems Deployed in the Pinellas County Region

2.11. Schedule

We are proposing a 3-year schedule, with a 12-month planning/design/build phase followed by a 24-month Operations and Maintenance phase. The schedule does not show the Iterative Software development process, but just the overall schedule for the build and deployment phase.

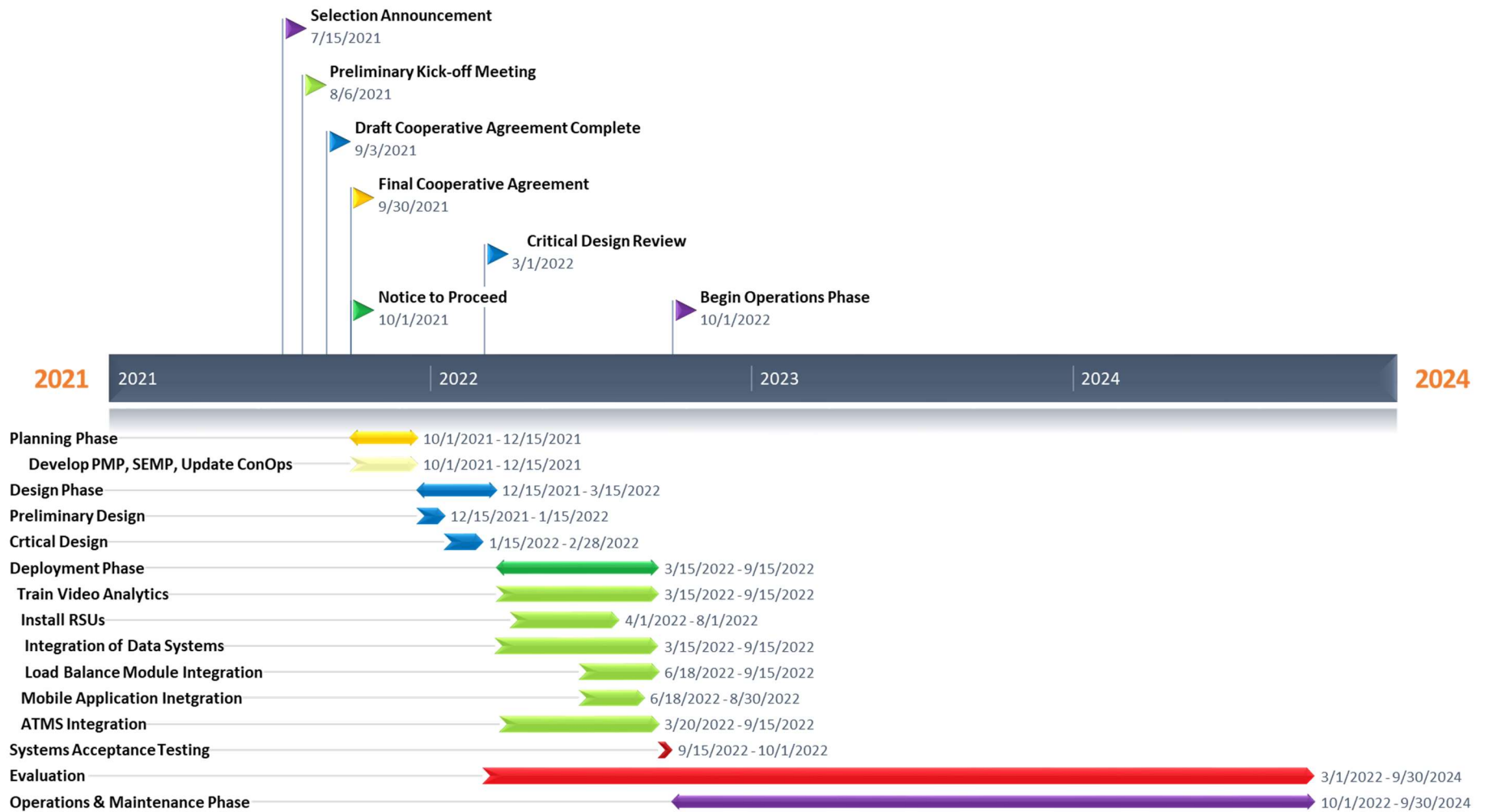


Figure 22: High-Level Schedule

2.11.1. Phase 1: Planning Phase

For the planning phase of the project, a Concept of Operations document and Requirements document will be the primary deliverables. The Concept of Operations was already completed, but will be reviewed and updated. Following the FHWA Systems Engineering process, a Project Management Plan (PMP) and Systems Engineering Management Plan (SEMP) will be provided.

2.11.2. Phase 2: Design Phase

Experience has shown that a hybrid waterfall and agile process is appropriate for projects which have well-known elements and less known elements. For this phase, the well-defined elements, which the Systems Integrator has previous experience deploying will be identified and designed. This phase will also identify the elements which will be designed and developed during the Agile Deployment phase. All elements designed during the Design Phase 1 will be developed during the Phase 3 integration build.

2.11.3. Phase 3: Design-Build Phase (Agile Deployment)

Since some of the data and systems used for the project will use new technologies, an agile development process will be followed. Monthly sprints with three iterations of the build to be designed is expected, prior to a final Integration build which will be used for the Systems Acceptance Test (SAT). The overall goal is to have an operational system within 12 months after notice to proceed.

2.11.4. Phase 4: Testing and System Acceptance

Testing is an activity embedded as an integral part of our software and system development methodology as well as final deployment and start of operations. Implementation includes unit coding, unit testing, unit integration, and integration testing. The final step in testing, once the Unit and Integration testing is complete is the SAT. The SAT plan and scripts will be developed by the consultant team, and reviewed and approved by the stakeholders. The SAT will be completed by a group identified by the stakeholders to test the system and “accept” it for operations.

2.11.5. Phase 5: Operations and Maintenance Phase

The County will take over the on-going O&M funding of the systems for a 2 year operational testing phase. Lessons learned and operational performance will be documented. Evaluation of the project will be completed and provided to USDOT during this phase.

2.12. Support of USDOT ITS Initiatives

The connected community project will support the USDOT ITS Joint Program Office’s (JPO) mission to conduct an ongoing intelligent transportation system program to research, develop, and operationally test intelligent transportation systems and to provide technical assistance in the nationwide application of those systems.

Table 6: Support of USDOT Initiatives

● Primary Relationship ○ Secondary Relationship	
ATCMTD Technologies	PCC Initiatives
Advanced traveler information systems	●
Advanced transportation management technologies	●
Infrastructure maintenance, monitoring, and condition assessment	●
Advanced public transportation systems	○
Transportation system performance data collection, analysis, and dissemination systems	●
Advanced safety systems	●
Integration of intelligent transportation systems with the Smart Grid and other energy distribution and charging systems	○
Electronic pricing and payment systems	○
Advanced mobility and access technologies	○
ATCMTD Goals	PCC Initiatives
Reduced costs and improved return on investments, including through the enhanced use of existing transportation capacity	●
Delivery of environmental benefits that alleviate congestion and streamline traffic flow	●
Measurement and improvement of the operational performance of the applicable transportation network	●
Reduction in the number and severity of traffic crashes and an increase in driver, passenger, and pedestrian safety	●
Collection, dissemination, and use of real time transportation related information to improve mobility, reduce congestion, and provide for more efficient and accessible transportation, including access to safe, reliable, and affordable connections to employment, education, healthcare, freight facilities, and other services	●
Monitoring transportation assets to improve infrastructure management, reduce maintenance costs, prioritize investment decisions, and ensure a state of good repair.	●
Delivery of economic benefits by reducing delays, improving system performance and throughput, and providing for the efficient and reliable movement of people, goods, and services	●
Integration of advanced technologies into transportation system management	●
Demonstration, quantification, and evaluation of the impact of these advanced technologies, strategies, and applications towards improved safety, efficiency, and sustainable movement of people and goods	●
Reproducibility of successful systems and services for technology and knowledge transfer to other locations facing similar challenges	●
USDOT Focus Areas	PCC Initiatives
Multimodal Integrated Corridor Management (ICM)	●
Technologies to support connected communities	●
Infrastructure Maintenance, Monitoring, and Condition Assessment	●
Rural technology deployments (Fredericksburg and Environs)	○
USDOT Objectives	PCC Initiatives
Supporting economic vitality at the national and regional level	●
Leveraging Federal funding to attract other, non-Federal sources of infrastructure investment, as well as accounting for the life-cycle costs of the project	●
Using innovative approaches to improve safety and expedite project delivery	●
Holding grant recipients accountable for their performance and achieving specific, measurable outcomes identified by grant applicants	○

3. MANAGEMENT STRUCTURE

3.1. Organization

Pinellas County will serve as the lead agency to enter into the agreement with FHWA and deliver the project. Our partners in this initiative include the Florida Department of Transportation; City of Clearwater; Forward Pinellas; and the Pinellas Suncoast Transit Authority. Additionally, we have regional support from the City of Tampa and Hillsborough County.

3.2. Partnering with the private sector and public agencies

Pinellas County currently partners with several private sector companies through an on-call general engineering contract, which will be leveraged for this project. Additionally, Pinellas County has long term relationships with several transportation technology companies which currently provide traffic signal systems, ITS operations software, and traveler information systems that will be leveraged for specific technologies.

Pinellas County also has a strong relationship with the public agencies within the county, and include the stakeholder agencies that are a part of this application, along with neighboring jurisdictions to include Hillsborough County, and the City of Tampa among others.

3.3. Proposed Sub-Recipients

All funding will be provided to Pinellas County. Contract agreements with private companies will be created for planning, design, systems integration, and operations & maintenance.

3.4. Organization Chart

The organization for the connected community project is a partnership between Pinellas County, and its local stakeholders.

The management team which will oversee and manage the day to day project, include key personnel from each of these agencies, along with responsible departments within the Pinellas County Department of Public Works, including:

- **Bridge and Roadway Maintenance** - Maintains county bridges and roadways, curbs, fences, handrail, guardrail, and sidewalks, and the Pinellas Trail. Operations include: nonstandard drainage structures, retaining walls, and items requiring structural design.
- **Traffic Maintenance** - Responsible for ITS, construction, network support, sign and signal shop operations, including emergency signals, mast arms, school zone flashers, and traffic control devices.
- **Operations** - Responsible for ATMS/ITS Operations, traffic studies, residential traffic management, rights-of-way permitting, and pavement preservation.
- **Planning** – Responsible for Data management, interagency transportation coordination, and multi-modal transportation planning and safety for bike, pedestrian, and schools.

- Transportation/Roadway Engineering** - Provides planning, design, engineering, project management, consultant management, administration, oversight, and execution of programmed Capital Improvement Program (CIP) transportation/roadway projects. Conducts public outreach and collaboration on projects with local and state stakeholders.

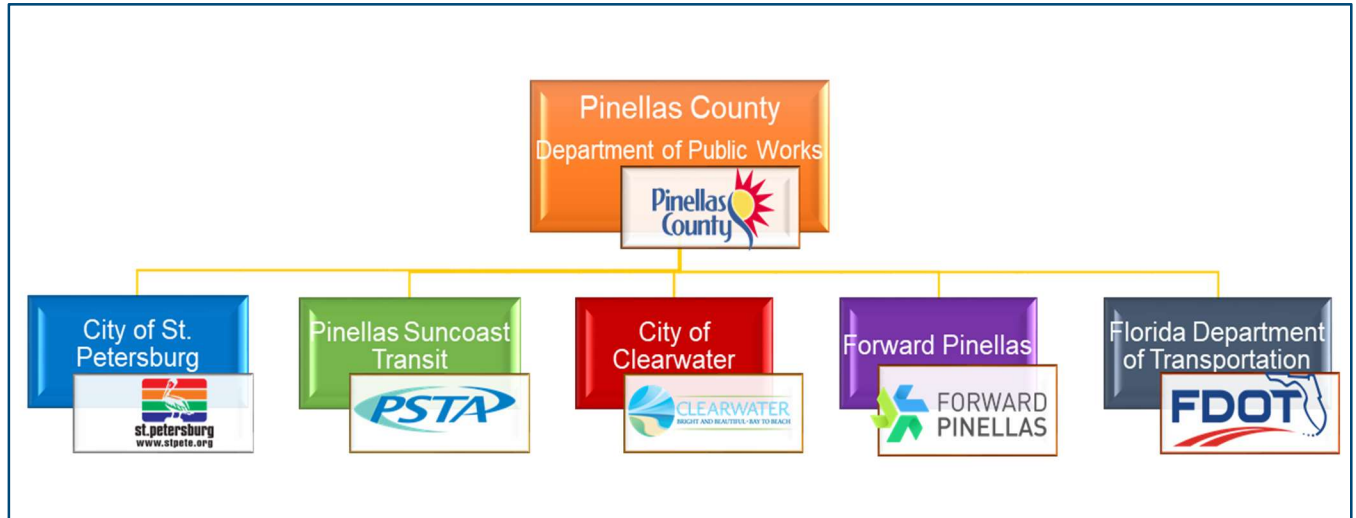


Figure 23: Project Organization

3.5. Cooperative Agreement

The 2006 County Interlocal Agreement for ATMS/ITS / Signals gives Pinellas County authority to deploy the connected community Project. The Pinellas County share of the funding is in place through the TIP, STIP, MPO Long Range Plan, and Florida Long Range Plan. Connected and automated vehicle technology is supported in Florida by several statutes.

4. STAFFING DESCRIPTION

4.1. Organization and Key Personnel

The organization provides a high-level structure for the management and implementation of this project, as shown in Figure 23 and Figure 24. Participating stakeholder agencies on the steering committee for this project include the four primary stakeholder agencies, and interested agencies who are outside the project boundaries.

4.1.1. Key Personnel

- **Ken Jacobs, PE** – Project Manager, Pinellas County Department of Public Works
- **Ronald Chin, PE** – District 7 Traffic Operations Engineer, FDOT
- **Paul Bertels** – Traffic Operations Manager, City of Clearwater
- **Cheryl Stacks, PE, PTOE** - Transportation Manager, Transportation & Parking Management, City of St. Petersburg

- **Chelsea Favero, AICP** - Principal Planner, Forward Pinellas

4.2. Primary Point of Contact

The primary point-of-contact for the connected community proposal is:

Ken Jacobs

Transportation Division Director
 Pinellas County Department of Public Works
 22211 U.S. 19 N.
 Clearwater, FL 33765
 (727) 464-8928
Kjacobs@pinellascounty.org

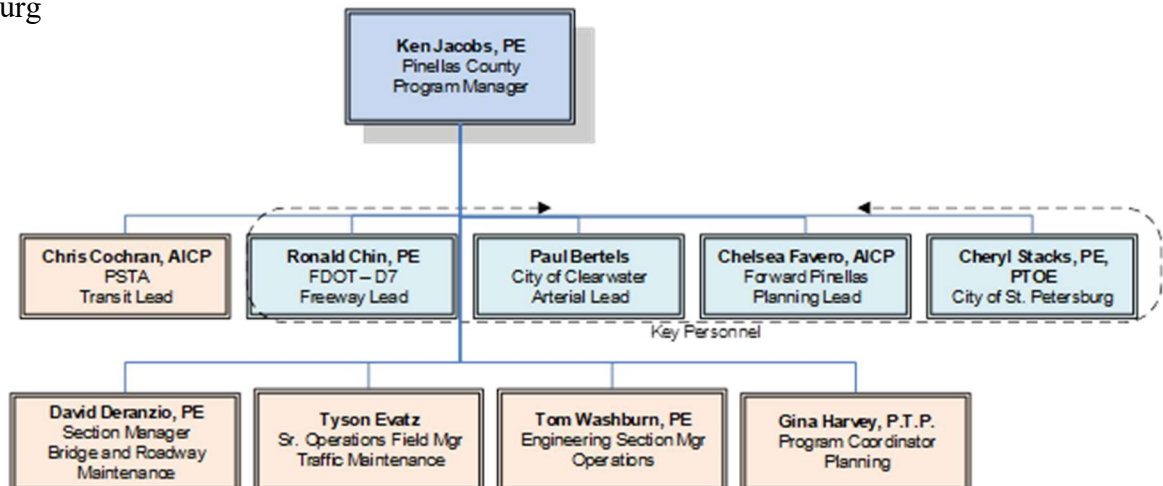


Figure 24: Project Management Structure

APPENDIX A - RESUMES

Kenneth A Jacobs, PE

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kjacobs111@msn.com



Relevant Experience

Goal oriented senior manager with more than 35 years of progressively responsible experience in Public Works Transportation and Engineering processes. Concentrated experience directing all phases of Public Works activities including project planning, programming, design, construction, operations, and maintenance functions. Strategic leader with a successful track record of advancements in the transportation field, developing strong intergovernmental partnerships, and driving business and technology change initiatives. Highly regarded by local, state and federal transportation professionals as a leader and innovator in the Transportation field.

Professional Accomplishments

- Initiated Public Works Grant Program for transportation projects by developing the funding plan, approach, candidate projects, and grant opportunities. Applied for and received over \$60 million in federal and state grants since program inception.
- Developed the plan and oversaw the implementation of Pinellas County's Advanced Traffic Management Systems (ATMS) and Intelligent Transportation Systems (ITS). This award winning system is often considered the model for arterial traffic management systems in the United States.
- Developed and negotiated interlocal agreements with 19 municipalities for the funding, management, operation, and maintenance of the countywide ATMS/ITS.
- Developed the funding alternatives for the countywide ATMS/ITS, including utilizing the ninth cent local option gas tax as a dedicated funding source.
- Built a dedicated team of engineering, operations, and maintenance staff in the Transportation Division, with strong customer service focus and a near zero turnover rate.

Employment History**Director of Transportation – Pinellas County, Florida**

1/2016 – Present

- Oversee all transportation related functions including engineering, design, access management, right-of-way utilization permitting, transportation planning, traffic safety, Parks CIP design, sidewalk and ADA program, ATMS/ITS, traffic operations, traffic and roadway maintenance sections. Manage staff of 110 employees.
- Develop annual operating and capital improvement program budgets, administer purchasing contracts, various municipal maintenance contracts and interlocal agreements. Oversee a \$17 million operating budget and a \$44 million CIP budget for FY 17.
- Respond to citizen requests and complaints, speak on behalf of programs and projects at County Commission meetings, and represent the County and Department in professional organizations, public meetings, media, and traffic related litigation.

Section Manager 3, Traffic Engineering – Pinellas County, Florida

1/2012 – 1/2016

- Leading, directing, planning, project programming; supervision of the Traffic Engineering Division including all aspects of Traffic including Traffic Engineering, Traffic Signal and ATMS/ITS Design, Traffic Management, Intelligent Transportation Systems, Access Management, ROW permitting, Traffic Signal and Signs and Markings Maintenance, Sidewalk and ADA program, Trails Planning and Design, and Grants Program management. Manage a staff of 55 employees.
- Develop annual operating and capital improvement program budgets, administer purchasing contracts, manage projects, seek grant funding, and administer state and federal grants; administer various municipal contracts and interlocal agreements.

Division Manager, Traffic Management – Pinellas County, Florida

11/2004 – 1/2012

- Leading, directing, planning, project programming; supervision of Traffic Signal related units including Traffic Engineering, Traffic Signal and ATMS/ITS Design, Traffic Management, Intelligent Transportation Systems, Traffic Signal Maintenance, and Grants Program management. Manage a staff of 36 employees.
- Provide section-wide planning, organization, annual operating budget preparation; develop short and long-term goals, facilitate training and effective utilization of the overall workforce.
- Determination of traffic control regulations, corrective measures, signal designs, roadway and intersection improvement designs, timing plan development, signal operation analysis, in-house signal construction and maintenance. Develop annual operating and capital improvement program budgets, administer purchasing contracts, manage projects, seek grant funding, and administer state and federal grants; administer various municipal contracts and interlocal agreements.

Public Works Engineering Supervisor – Pinellas County, Florida

11/1994 – 11/2004

- Manage engineering, technical, contract and business support, computerized traffic signal system, and traffic signal construction/maintenance functions of the Traffic Engineering Division. Provide section-wide planning, organization, annual operating budget preparation; develop short and long term goals. Manage a staff ranging from 7-37 employees
- Determination of traffic control regulations, corrective measures, signal designs, roadway and intersection improvement designs, timing plan development, signal operation analysis, in-house signal construction and maintenance.
- Respond to citizen concerns; represent the County and Department at various public and professional meetings and traffic-related litigation.

Public Works Engineering Specialist 2 – Pinellas County, Florida

4/1990 – 11/1994

- Project Manager of the County's initial computerized traffic signal system facilitating and managing the installation and integration process; managed the system that controlled over 300 city, county, and state intersections. Manage a staff of 2 employees.
- Extensive contract management during the original traffic control center installation, multiple signal system software/hardware upgrades, maintenance contracts; facilitate design and implementation of 3 City traffic control centers.

- Responded to citizen requests and complaints.

Senior Transportation Analyst – Kimley-Horn and Associates, Tampa, Florida 3/1988 – 4/1990

- System Manager for the City of St. Petersburg computerized signal system design project, managed a technical staff in the production of a complex set of field construction plans and traffic signal timing plans for more than 300 signalized intersections.
- Develop FDOT traffic signal designs, timing plans, and evaluation tasks; develop technical specifications and testing requirements for specialized field equipment.

Signal System Engineer – City of Clearwater, Clearwater, Florida 7/1986 – 3/1988

- Manage the City of Clearwater traffic signal section, including operation of the computerized traffic signal system with 130 intersections and a staff of 11 employees.
- Develop recommendations for signal controls, signal timing and phasing, and progression timing plan development; assign and schedule signal construction and maintenance work, and response to citizen concerns.

Professional Licenses or Certificates

- APWA Public Works Executive (PWE) – 12/2016, Awarded by American Public Works Association
- Traffic Signal Operations Specialist (TSOS) – 9/2006, Awarded by Institute of Transportation Engineers Professional Certification Board

Professional Organizations

- Institute of Transportation Engineers (ITE)
 - American Public Works Association (APWA)
 - Intelligent Transportation Society of America (ITSA)
 - International Municipal Signal Assoc. (IMSA)
 - ITSA, Florida Chapter President, 2009 and 2015
 - ITSA State Chapter Council Representative, 2010 – 2014
-

RONALD ANDRE CHIN



4612 Gentrice Drive
Valrico, Florida 33594
(813) 654-0622
Email: rnlchin88@netzero.net

EDUCATION: College of Engineering, University of South Florida;
Tampa, Florida 33620
Civil Engineering, B.S., May, 1986
Civil Engineering, M.C.E., May, 1997 (Major: Transportation, GPA: 4.0)

WORK EXPERIENCE:

6/2014 – Present **District Traffic Operations Engineer**, District Traffic Operations Office
Florida Department of Transportation, District VII, Tampa

Administer the District Seven Traffic Operations Program in accordance with the policies, procedures and rules of the Florida Department of Transportation. Lead and direct staff to ensure accomplishment of departmental duties and continuous organizational improvement. Manage the overall training and human resources development program for Traffic Operations. Develop and manage the annual operating budget for the Traffic Operations Cost Center. Direct and manage the development and implementation of the Traffic Operations and Safety portion of the Department's Work Program to solve traffic operational and safety problems using State and Federal funds utilizing Department Standards and the Manual on Uniform Traffic Control Devices. Direct the development of traffic engineering studies, analyses, and reports regarding traffic operational problems, including crash investigations, signal warrants, and access management. Direct the development, implementation and operation of an Intelligent Transportation System (ITS), and Automated Traveler Information System (ATIS), a Traffic Incident Management System (TIMS) and a freeway service patrol program (Road Rangers). Direct activities related to traffic signal systems optimizations, signal timing, highway signing and markings, traffic regulations, traffic signal maintenance agreements and traffic data collection. Oversee the selection and management of traffic engineering consultants which support Traffic Operations programs and activities. Serve on District Consultant Selection Committees and Access Management Review Committees as required. Represent the Department in public meetings, workshops, and hearings in technical forums with other agencies and stakeholders regarding Traffic Operations programs and issues.

7/2008 – 6/2014 **District Design Engineer**, District Design Office
Florida Department of Transportation, District VII, Tampa

Manages and directs the activities of the District Design section which includes the subsections of Roadway Design, Structures Design, Surveying & Mapping, Drainage Design, Traffic Design, Utilities, Environmental Permitting, and Consultant Project Management. Establishes a working environment to enhance productivity and efficiency; promotes the department's business model; and contributes to the success of the department's goals, mission and vision. Provides design guidance that is consistent with FDOT policies and procedures. Supervises and directs the development of all plans prepared by the District Design section for letting. This includes, but is not limited to, all roadway plans, structural plans, signing and pavement marking plans, signalization plans, lighting plans, landscape plans, utility work by highway contractor plans, mitigation plans and architectural plans. (Plans may be prepared by in-house forces or by consultants hired by the Department.) Ensures all designs and contract plans are developed with a high level of quality, with an emphasis on cost effective and economical products that are in accordance with applicable federal regulations, state laws, and FDOT policy, criteria and standards. Incorporates technological improvements and innovations into designs and plans production to increase efficiency and effectiveness.

RONALD ANDRE CHIN

WORK EXPERIENCE:

4/05 – 7/2008

District Construction Support Manager, District Construction Office
Florida Department of Transportation, District VII, Tampa

Direct and supervise a staff of engineers, surveyors, administrative managers and support personnel in management of the District Construction Office policies and procedures. Such staff and policies include: the District Contracts Manager in charge of plans routing, construction contract changes and final estimates; the District Construction Services Administrator in management of all plans production requirements, the District Construction Survey Crew Chief, the District Construction Training Administrator and the District Equal Employment Opportunity Compliance Manager. Develop policies and procedures for operation of the District Construction Office programs and functions. Review the evaluations and recommendations made by the Resident Engineers for settlement of contract time extensions, supplemental agreements, specification changes, Engineering Analysis Reports, claims and recommend approval to the District Construction Engineer. Provide oversight and administration of Local Agency Program (LAP) projects during their construction phases.

1/99 – 4/05

District Roadway Design Engineer, District Design Administration
Florida Department of Transportation, District VII, Tampa

Responsible to oversee, direct, and supervise all production activities for in-house produced roadway construction plans. Oversee and facilitate the production activities associated with the preparation of Plans, Specifications and Estimates Packages for all projects let via both Class 1 and 7 contracts types. Oversee the management of a CADD Systems Support Staff responsible for the budget, maintenance and update for over seventy district-wide CADD workstations. Responsible for providing, guiding and directing consultants with technical information associated with all facets of roadway design. Provide input required to establish Scopes of Services for various project types; negotiate with both staff and consultants for staff-hour efforts required to prepare roadway construction plans; provide and direct consultants with technical information required to expedite FDOT Plans Preparation methods. Evaluate, assess and implement process improvement strategies to streamline the production activities associated with plans preparation methodologies. Support interdisciplinary Departments such as Project Management, Construction, Maintenance, Planning, Environmental Management Office or other as required on any element associated with roadway design. Lead, coach, counsel, and or discipline employees as appropriate.

5/96 – 1/99

In-house Roadway Design Production Leader, Roadway Design Section
Florida Department of Transportation, District VII, Tampa

Responsibilities include selecting and assigning projects for ten (10) professional staff engineers based on staff power availability. Scheduling and forecasting production readiness dates for design projects to upper administration. Provide services to other technical disciplines to include Project Management, Maintenance, Construction, Project Development and others as required. Estimate and negotiate roadway design services for consultant contracts. Provide quality control plan reviews and issue guidance to consultant engineers as required. Interview, select and hire employees as required. Perform functions of the District Roadway Design Engineer in his absence.

RONALD ANDRE CHIN

WORK EXPERIENCE:

6/91-5/96

Professional Engineer II, Roadway Design Unit
Florida Department of Transportation, District VII, Tampa

Function as the **District Pavement Design Engineer** responsible for the review, design, and preparation of flexible pavements for in-house and consultant produced Roadway Construction Plans. Review complex roadway design projects produced by FDOT design personnel and consultants for consistency with current roadway design standards contained in AASHTO publications, FHWA criteria, the Plans Preparation Manual, the Florida Green Book, and appropriate standard indices. Responsible for the supervision of pavement design staff. Review Scopes of Services for roadway design projects and provide input as required. Prepare roadway plans man-hour estimates and assist in Consultant/Department negotiations as required. Function as a **Project Manager and Design Team Leader** in responsible charge to direct and supervise roadway design staff to expedite the plans production process for assigned Roadway Design Projects.

12/90-6/91

Engineer IV, Roadway Plans Review Unit
Florida Department of Transportation, District VII, Tampa

Review and direct reviews of roadway design projects for consistency with roadway design standards contained in AASHTO publications, FHWA criteria, the Florida "Green Book", the Plans Preparation Manual, and the appropriate standard indexes. Prepare and review pavement designs for consultant and in-house produced roadway design projects based on geotechnical data and planning data provided with projections of axle loadings from the Planning Department. Responsible for the supervision of an engineer. Prepare roadway plans man-hour estimates and assist in Consultant/Department negotiations as required.

9/89-12/90

Engineer IV, Roadway Design Unit
Florida Department of Transportation, District VII, Tampa

Direct engineering reviews of identified roadway design projects to ensure that the product is adequately engineered and State and Federal design criteria, standards, and policies are followed in preparing the contract construction plans. Function as a **Design Section Leader** of a Design Unit in responsible charge to support, review, schedule, coordinate and accomplish the production process for several identified roadway design projects. Supervise all the production activities necessary to have the identified roadway design projects prepared, advertised, and let to contract. Review the work accomplished by design engineers and technicians engaged in the preparation of roadway construction plans and advise and direct as necessary, providing input as required.

12/88-9/89

Engineer III, Roadway Design Unit
Florida Department of Transportation, District I, Bartow

Department of Transportation and Federal Highway Administration design criteria, standards and policies are followed in preparing the contract construction plans. Administrative duties included assisting in establishing the Roadway Design Unit for the newly developing district.

RONALD ANDRE CHIN

WORK EXPERIENCE:

8/87-12/88

Engineer II, Roadway Design Unit
Florida Department of Transportation, District I, Bartow

Design the component parts of all highway construction plans for assigned projects and maximize the utilization of a computer aided design and drafting system in the development of these contract plans. Design included preparing typical sections, establishing vertical and horizontal alignments, establishing intersection geometry, producing intersection profiles, establishing right-of-way requirements, and preparing pavement design. Provide project coordination with all respective departments such as Traffic Operations, Drainage, and other technical services.

7/86-8/87

Engineer I, Roadway Design Unit
Florida Department of Transportation, District I, Bartow

Project Design: Responsible for checking field data, preparing typical sections, analyzing design criteria to determine necessary geometry and pavement widths; and profile grades. Plans Preparation: Calculate geometrics and grades, calculate superelevations and earthwork, calculate alignments and vertical profiles, assemble detail information on plan and profile sheets including grades, proposed drainage and proposed right-of-way and calculate quantities.

ADDITIONAL QUALIFICATIONS:

Familiar with **Geopak** and Microstation, FDOT's Mainframe and Personal Computers
Certified Public Manager - Levels I, II & III; FDOT Leadership Academy (11/96)
Familiar with Microsoft Office Suite; Participated on Several Construction-Design Partnering Meetings; Value Engineering Team Leader; Asphalt Level I Certification, KARRASS Negotiations

TYPES OF HIGHWAY DESIGN PROJECTS

WORKED ON:

Urban/Rural Interstate; Multi-Lane Urban/Rural Reconstruction; Bridge Replacement; Multi-Lane Urban/Rural Resurfacing; Bridge Approaches; Intersection/Operational Improvements; and Sidewalk Enhancements.

REGISTRATIONS: **Professional Engineer**, State of Florida, P.E. No.: 43897, Since 1991

PERSONAL DATA: Age: **52 years** Married Excellent Health

REFERENCES: Furnished upon request

Paul Bertels



Experience	1999 - Present	City of Clearwater	Clearwater, FI
	Traffic Operations Manager		
	<ul style="list-style-type: none">▪ Cost analysis and justification saved traffic signal maintenance operation.▪ Reorganized office staff.▪ Negotiated contract with other municipalities for signal maintenance.▪ Converted Osceola Avenue to two way operation for school access▪ Paved and Remarked Hercules Avenue for better access to H.S.▪ Supervised the repair and rehabilitation of Enterprise Road▪ Oversaw improvements to the Roundabout▪ Won approval for expansion of Traffic Operations Building.▪ Reorganized traffic operations division.▪ Negotiated Interlocal Agreement for ITS with Pinellas County.▪ Created additional supervisor position in the sign shop.▪ Invented remote manual override for traffic signals and assigned patent rights to the city. Patent number 7733242.▪ See attachment for additional accomplishments.		
	1984 - 1999	City of Pinellas Park	Pinellas Park, FI
	Traffic Operations Director		
	<ul style="list-style-type: none">▪ Co-Founded the traffic operations division with Mike Arnold.▪ Responsible for development of first computerized sign inventory in the State of Florida.▪ Served as project manager on many infrastructure improvements.▪ Created the street lighting program that provided full coverage to 100% (Found the city in the dark and left the city in the light).▪ See attachment for additional accomplishments.		
	1979 - 1984	City of Clearwater	Clearwater, FI
	Traffic Service Supt.		
	<ul style="list-style-type: none">▪ Designed and wrote specifications for truck mounted striping machine.▪ Assisted in the development of photographic screen-printing.▪ Initiated cross training program.		

1974 - 1979 City of Clearwater Clearwater, FL
Traffic Engineering Aide
▪ Implemented manual sign inventory system.
▪ Operated the count program.
▪ Complaint investigation.

1970 – 1974 City of Clearwater Clearwater, FL
Laborer/lineman

Education 1967 – 1971 St. Petersburg Jr. College Clearwater, FL

Organizations **Chair, MPO Traffic Signal and Median Control Committee 1995-2009**
Member of MPO Traffic Signal and Median Control Committee 1986-2009. Committee disbanded in 2009.
Chair, MPO Technical Coordinating Committee 1999-2011
Member of MPO Technical Coordinating Committee 1986-Present
Chair, MPO Technical Review Committee for Mobility MIS 1999-2001
MPO Technical Review Committee for PMI 2002-2008
Member of MPO ITS Committee

Employment History

Principal Planner, Pinellas County Metropolitan Planning Organization

May 2010 - present

- Responsible for the management, development and implementation of the Long Range Transportation Plan, including elements addressing bicycle and pedestrian facilities, transit service, roadway improvement projects, operational and management projects, the safety and security of the transportation system, and the consideration of land use and transportation integration.
- Developed the agency's first multimodal priority list, and responsible for annual project prioritization efforts.
- Responsible for the development of the agency's performance-based, outcome driven planning process.
- Developed and maintain a competitive countywide complete streets funding program.
- Management of an extensive public involvement effort to solicit feedback on transportation issues and plans, including presentations to both public and private groups on a variety of transportation related topics.
- Coordination with agency partners throughout the region on the maintenance of a consistent and collaborative planning process.
- Coordinate with the Florida Department of Transportation and regional partners to update, maintain, and run the Regional Travel Demand Model.
- Coordinate with local, regional, state and federal transportation agencies to ensure appropriate implementation of rules, regulations and statutes.
- Review roadway plans to ensure the consideration of transit, bicycle, pedestrian and freight users along project length.
- Supervision of staff responsible for the Transportation Improvement Program, Congestion Management Process and ongoing system performance reporting.

Procurement Analyst, Pinellas County Government

August 2009-May 2011

- Collaboration with a variety of government agencies and departments to determine needs for commodities and services, to develop bid specifications to meet those needs, and to negotiate contracts with vendors.
- Management of purchasing contracts to ensure agency needs are being met while maintaining relationships with existing and potential vendors.

Planner, Pinellas County Government

January 2007 – August 2009

- Manage the development of a countywide school concurrency program.
- Review of land use and zoning amendments for consistency with the Pinellas County Comprehensive Plan and the Pinellas Planning Council Countywide Land Use Plan.
- Participate on a region-wide task force to develop model low-impact-development standards.
- Conduct extensive research on housing trends and conditions countywide.

Planning Technician, Pinellas County Government

May 2005 – January 2007

- Update various elements of the Pinellas County Comprehensive Plan, including Natural Resource Conservation and Management, Housing, Future Land Use and Quality Communities, Economic and Surface Water Management.
- Development of the Pinellas County Blueways system and the Pinellas County Blueways Guidebook.
- Development of a study on the use of manufactured homes for affordable housing.

Education

2006

Bachelor of Arts
International Relations and
Global Affairs

Eckerd College, St. Petersburg, FL

Cheryl N. Stacks, P.E., PTOE

One 4th Street North, 8th Floor,
St. Petersburg, FL 33701
727-892-5328
cheryl.stacks@stpete.org



Summary

Multi-faceted, creative, and dedicated transportation safety professional with 15+ years of experience in transportation planning, traffic engineering, and construction spanning multiple transportation modes and systems. Diversified skill sets covering technical expertise in civil engineering and transportation planning, program and project management, and municipal and private-industry work. Excellent interpersonal, oral and written communication skills.

Experience

Transportation Manager, City of St. Petersburg, Florida **St. Petersburg, Florida — 2014-present**

- Managed the continued implementation of the CityTrails Bicycle and Pedestrian program and progression into the city's Complete Streets program
- Served as a Lead Reviewer for the City of St. Petersburg for FDOT's Gandy Boulevard Improvement Project, an \$83M design-build project to provide grade separation and multimodal accommodation along a 2.5-mile section of Gandy Boulevard
- Prepared St. Petersburg's concept vision for the USDOT's Smart City Challenge grant program to provide funding toward full integration innovative technologies into transportation systems
- Coordinated and participated in the transit system analyses to convert transit service in Downtown St. Petersburg from a hub-and-spoke system to a distributed grid network that required realignment of 16 routes and establishment of eight separated layover locations and 20 new bus stop locations
- Developed the St. Petersburg Bike Share Program that will provide an integrated micro-transit service of 300 public utility bikes at 30 stations once launched in Fall 2016

Bicycle Pedestrian Coordinator, City of St. Petersburg, Florida **St. Petersburg, Florida — 2006-2014**

- Administered the implementation of the CityTrails Bicycle and Pedestrian program including the programming of \$5M in city Capital funds and acquisition of over \$15M in grant funding for the design and construction of over 50 miles of on-street bicycle facilities and 20 miles multimodal trails
- Conducted design reviews of traffic engineering and site development plans with emphasis on bicycle and pedestrian accommodation
- Performed analyses on traffic crash data to determine statistical trends and develop countermeasures for implementation
- Served as the primary staff liaison for the City of St. Petersburg in a technical advisory role to the Pinellas County Metropolitan Planning Organization's Bicycle, Pedestrian Transportation, and School Transportation Safety committees

- Recognized as Florida's Bicycle Professional of the Year by the Florida Bicycle Association in 2008

**Engineering Specialist II, Hillsborough County, Florida
Tampa, Florida — 2003-2006**

- Served as Manager of the Neighborhood and Residential Traffic Calming Programs that included administration of a combined \$1.4M annual budget and direct supervision of two technical staff members
- Conducted design reviews of traffic engineering plans with emphasis on multimodal accommodation
- Provided excellent customer service in responding to traffic safety concerns from citizens, County staff, and Board of County Commissioners representatives

**Staff Consultant, Chitester Management Systems, Inc.
Tampa, Florida — 1998-2003**

- Performed engineering analyses with regard to construction claims through the use of Critical Path Method scheduling
- Assisted senior and principal engineers in preparation of materials to be used in mediation and litigation
- Created and presented training modules for certified courses regarding construction claims and avoidance, Critical Path Method scheduling, and delay analysis
- Outsourced to provide engineering support to Hillsborough County Public Works Department, including both the Design and Engineering Support Section and the Traffic Services Division; performed design reviews of both traffic and roadway engineering plans; prepared grant applications for Intelligent Transportation Systems funding

**Education, Affiliations,
and Certifications**

Georgia Institute of Technology

Bachelor of Civil Engineering, December 1997

Specializing in transportation engineering with an emphasis on multimodal transportation including highways, streets, bicycle, pedestrian, and transit

- American Society of Civil Engineers, Student Chapter Member, 1996-1997
- Omega Phi Alpha, National Service Sorority Member, 1992-1997

Association of Pedestrian and Bicycle Professionals

American Planning Association

Skills

- Broad engineering and planning experience in multiple modes of transportation including highways, streets, bicycle and pedestrian facilities
- Licensed Professional Engineer in State of Florida; P.E. License No. 61902
- Certified Professional Traffic Operations Engineer
- Effective communicator with excellent written and oral skills to listen and relay information to technical and lay persons with a broad range of abilities and interests
- Extensive knowledge of local traffic laws and state/federal regulations as they apply to traffic control work on municipal transportation systems
- Capital program and project implementation including funding and identification of supplemental resources

APPENDIX B – LETTERS OF SUPPORT



FORWARD PINELLAS

P: (727) 464.8250

F: (727) 464.8212

forwardpinellas.org

310 Court Street
Clearwater, FL 33756



August 31, 2020

U.S. Department of Transportation (USDOT) Federal Highway Administration (FHWA)
Office of Acquisition and Grants Management
1200 New Jersey Avenue, SE
Mail Drop: E62-204. Washington DC 20590

RE: Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD), Funding Opportunity Number 693JJ320NF00010

USDOT FHWA Representative:

Forward Pinellas, the metropolitan planning organization (MPO) serving Pinellas County, enthusiastically offers our support for Pinellas County's Smart Communities project proposal under the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) program funding through USDOT FHWA. The funding will provide the County and its regional transportation partners the opportunity to accelerate its vision to build a next-generation transportation network through the deployment of technologies that will assist the region with multi-modal and multi-agency strategies to improve mobility and safety.

Forward Pinellas and the County have a longstanding partnership in the progressive development of the region's public infrastructure and transportation network. As the most densely populated county in the State of Florida, Pinellas County's transportation network supports nearly one million residents and 15.5 million visitors each year. With its growing economy and regional population, in addition to being identified as one of the most popular tourism destinations on the U.S. Gulf Coast, the area offers a unique opportunity to further invest and cultivate new and advanced transportation technologies to better traffic flow, enhance mobility, and increase pedestrian safety for walkable communities.

Pinellas County is in an ideal position to serve as a model program to expand its existing transportation technologies to assist the U.S. Department of Transportation in establishing and implementing the ATCMTD program.

- The Transportation division of Pinellas County Public Works has strong partnerships with its regional transportation agencies of which it works closely with to expand on its Advanced Traffic Management System/Intelligent Transportation System network.
- Pinellas County has existing infrastructure and connected vehicle technology in place to aid in the successful and efficient deployment of the ATCMTD program.

Forward Pinellas confidently supports this investment in the County's infrastructure to improve safety and enhance mobility and, in doing so, provide a transportation network that will enable the efficient flow of people and commerce, and enhance regional connectivity today and into the future. We greatly appreciate the consideration of the U.S. Department of Transportation in this endeavor.

Respectfully,

A handwritten signature in blue ink, appearing to read "Whit Blanton". The signature is stylized and cursive.

Whit Blanton, FAICP
Executive Director



August 20, 2020

U.S. Department of Transportation (USDOT) Federal Highway Administration (FHWA)
Office of Acquisition and Grants Management
1200 New Jersey Avenue, SE
Mail Drop: E62-204. Washington DC 20590

RE: Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD), Funding Opportunity Number 693JJ320NF00010

USDOT FHWA Representative:

As the Chief Executive Officer of the Pinellas Suncoast Transit Authority (PSTA), I am writing in support of Pinellas County's Smart Communities project proposal for funding through the USDOT FHWA Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) program. The funding will provide the County and its regional transportation partners the opportunity to accelerate its vision to build a next-generation transportation network through the deployment of technologies that will assist the region with multi-modal and multi-agency strategies to improve mobility and safety.

PSTA and the County have a longstanding partnership in the progressive development of the region's public infrastructure and transportation system. We are currently working with the County to implement the region's first federally funded Bus Rapid Transit project which includes partnering on the transit signal priority component of the project.

As the most densely populated county in the State of Florida, the Pinellas County's transportation network supports nearly one million residents and 15.5 million visitors each year. With its growing economy and population, in addition to being identified as one of the most popular tourism destinations on the U.S. Gulf Coast, the area offers a unique opportunity to further invest and cultivate new and advanced transportation technologies to improve traffic flow, enhance mobility, and increase pedestrian safety for walkable communities.

Pinellas County is in an ideal position to serve as a model for expanding existing transportation technologies and assisting the U.S. Department of Transportation establish and implement a strong ATCMTD program.

- The Transportation division of Pinellas County Public Works has strong partnerships with its regional transportation agencies, including PSTA, of which it works closely with to expand on its Advanced Traffic Management System/Intelligent Transportation System network.
- Pinellas County has existing infrastructure and connected vehicle technology in place to aid in the successful and efficient deployment of the ATCMTD program.

PSTA confidently supports this investment in the County's infrastructure to improve safety and enhance mobility and, in doing so, provide a transportation network that will enable the efficient flow of people and goods, enhance economic development opportunities and improve regional connectivity today and into the future. The consideration of the U.S. Department of Transportation in this endeavor is greatly appreciated.

Respectfully,

A handwritten signature in blue ink, appearing to read "Brad Miller", is positioned above the typed name.

Brad Miller, Chief Executive Officer
Pinellas Suncoast Transit Authority

Pinellas Suncoast Transit Authority

3201 Scherer Drive, St. Petersburg, FL 33716 • Phone: 727-540-1800 • InfoLine: 727-540-1900 • www.PSTA.net





CITY OF CLEARWATER

POST OFFICE BOX 4748, CLEARWATER, FLORIDA 33758-4748
MUNICIPAL SERVICES BUILDING, 100 SOUTH MYRTLE AVENUE, SUITE 220, CLEARWATER, FLORIDA 33756
TELEPHONE (727) 562-4750 FAX (727) 562-4755

ENGINEERING DEPARTMENT

8/20/2020

U.S. Department of Transportation (USDOT) Federal Highway Administration (FHWA)
Office of Acquisition and Grants Management
1200 New Jersey Avenue, SE
Mail Drop: E62-204. Washington DC 20590

RE: Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD), Funding Opportunity Number 693JJ320NF00010

USDOT FHWA Representative:

Please accept this letter in support of Pinellas County's Smart Communities project proposal in consideration of the Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) program funding through USDOT FHWA. The funding will provide the County and its regional transportation partners the opportunity to accelerate its vision to build a next-generation transportation network through the deployment of technologies that will assist the region with multi-modal and multi-agency strategies to improve mobility and safety.

The City of Clearwater and the County have a longstanding partnership in the progressive development of the region's public infrastructure and transportation system. As the most densely populated county in the State of Florida, the Pinellas County's transportation network supports nearly one million residents and 15.5 million visitors each year. With its growing economy and population, in addition to being identified as one of the most popular tourism destinations on the U.S. Gulf Coast, the area offers a unique opportunity to further invest and cultivate new and advanced transportation technologies to better traffic flow, enhance mobility, and increase pedestrian safety for walkable communities.

Pinellas County is in an ideal position to serve as a model program to expand its existing transportation technologies in order to assist the U.S. Department of Transportation in establishing and implementing the ATCMTD program.

- The Transportation division of Pinellas County Public Works has strong partnerships with its regional transportation agencies of which it works closely with to expand on its Advanced Traffic Management System/Intelligent Transportation System network.

Frank V. Hibbard, Mayor

Mark Bunker, Councilmember
Kathleen Beckman, Councilmember



David Allbritton, Councilmember
Hoyt Hamilton, Councilmember

"Equal Employment and Affirmative Action Employer"



CITY OF CLEARWATER

POST OFFICE BOX 4748, CLEARWATER, FLORIDA 33758-4748

MUNICIPAL SERVICES BUILDING, 100 SOUTH MYRTLE AVENUE, SUITE 220, CLEARWATER, FLORIDA 33756

TELEPHONE (727) 562-4750 FAX (727) 562-4755

ENGINEERING DEPARTMENT

- Pinellas County has existing infrastructure and connected vehicle technology in place to aid in the successful and efficient deployment of the ATCMTD program.

The City of Clearwater confidently supports this investment in the County's infrastructure to improve safety and enhance mobility and, in doing so, provide a transportation network that will enable the efficient flow of motorists, commerce and regional connectivity today and into the future. The consideration of the U.S. Department of Transportation in this endeavor is greatly appreciated.

Respectfully,

Paul Bertels

Manager, Traffic Operations Division

Clearwater, FL

Paul.bertels@myclearwater.com

727-562-4794

Frank V. Hibbard, Mayor

Mark Bunker, Councilmember
Kathleen Beckman, Councilmember



David Allbritton, Councilmember
Hoyt Hamilton, Councilmember

"Equal Employment and Affirmative Action Employer"