Pinellas County
Department of Administrative Services

Solicitation Number 23-0029-RFP

Pinellas Connected Community Project - Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD)

Response

Technical Proposal
Original

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AGREEMENT

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement the day and year first written.

PINELLAS COUNTY, FLORIDA
By and through its
Board of County Commissioners

By

Kapsch TrafficCom, USA, Inc.
Name of Firm

By:
Signature

Dan Toohey
Print Name

SVP, Sales and Business Development
Title

GLOSSARY

Term	Definition
AI	Artificial Intelligence
AIMES	Australian Integrated Mobility EcoSystem
API	Application Programming Interface
ATCMTD	Advanced Transportation and Congestion Management Technologies Deployment
ATMS	Advanced Traffic Management System
BSM	Basic Safety Message
CBD	Central Business District
CCTV	Closed-Circuit Television
CMCC	Connected Mobility Command Center
CMP	Connected Mobility Platform
ConOps	Concept of Operations
CMU	Carhegie Mellon University
CV	Connected Vehicle
DART	Dallas Area Rapid Transit
DDOS	Distributed Denial of Service
DLVP	Deep Learning Versatile Platform
DMM	Demand Management Module
DMS	Dynamic Message Sign
DMS	Demand Management Subsystem
DR	Disaster Recovery
DSRC	Dedicated Short Range Communications
EAR	Exploratory Advanced Research
ESB	Enterprise Service Bus
ETSI	European Telecommunications Standards Institute
EV	Electric Vehicle
FAT	Final Acceptance Test
FCC	Federal Communications Commission
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FTD	Field Test Display,
GB	Gigabyte
GLP	Geo-Location Platform
GUI	Graphic User Interface

Term	Definition
HTTPS	Hypertext Transfer Protocol Secure
HW	Hardware
ICM	Integrated Corridor Management
IEEE	Institute of Electrical and Electronics Engineers
iOS	iDevice Operating System
IT	Information Technology
ITS	Intelligent Transportation System
IVA	Intersection Video Analytics
MAP	Map Data Message
MDB	Multi Drop Bus
MDP	Mobility Data Platform
ML	Machine Learning
MP	Mobility Platform
MRA	Mobile Routing Application
MVA	Mobile Video Analytics
NCTCOG	North Central Texas Council of Governments
NTCIP	National Telecommunications for ITS Protocol
NOAA	National Oceanic and Atmospheric Administration
NTP	Notice To Proceed
O&M	Operation and Maintenance
OBU	Onboard Unit
PAM	Predictive Analytics Module
PCC	Pinellas Connected Community
PDD	Preliminary System Design Document
PDR	Preliminary Design Review
PID	Personal Information Device
PKI	Public Key Infrastructure
PM	Program Manager
PMP	Project Management Professional
RAM	Random Access Memory
RCU	Roadside Control Unit
RFP	Request for Proposals
RSM	Roadside Safety Material
RSU	Roadside Unit
RVTM	Requirements Traceability Verification Matrix

Term	Definition
SAE	Society of Automotive Engineers
SAT	System Acceptance Test
SCDP	Smart City Data Platform
SCMS	Security Credential Management System
SEMP	Systems Engineering Management Plan
SOP	Standard Operating Procedure
SPaT	Signal Phase and Timing
SQL	Structured Query Language
SRM	Signal Request Message
SSM	Signal Status Message
SW	Software
TERL	Traffic Engineering Research Laboratory
TIM	Traveler Information Message
TMC	Traffic Management Center
TMDD	Traffic Management Data Dictionary
TSMO	Transportation Systems Management and Operations
TRR	Test Readiness Review
URL	Uniform Resource Locator
USDOT	United States Department of Transportation
VRU	Vulnerable Road Users
WP	Work Plan
WZDx	Workzone Data Exchange

Section I Title Page

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Contact	Don Hicks
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Date	February 6, 2023

Subject: **23-0029-RFP Pinellas Connected Community Project - Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD)**

Dear Mr. Meloy,

Kapsch is pleased to submit our proposal to collaborate with Pinellas County and its stakeholders on the Pinellas Connected Community ('PCC') project. For over a decade Kapsch has been a trusted partner to the County. We worked with the County for many years as your ATMS provider and more recently as your partner to conceive and implement the initial smart city platform. In 2018 we worked with you on the Connected Vehicle Project along US19. Through our partnership we designed and implemented many of the core subsystems that form the basis for the PCC. Finally, we supported the county in writing the ATCMTD grant proposal that is providing Federal funding in support of this PCC project.

Through our partnership, Kapsch has gained a thorough and unique understanding of the transportation system in the County and the congestion and safety problems that negatively impact the lives of your citizens and visitors. This knowledge and understanding of your transportation systems, stakeholders, challenges and opportunities, positions Kapsch as the right partner for the County for the PCC.

Kapsch has supplemented our in-house expertise with an experienced team of technology partners and industry experts to support this project. We are recommending a solution that updates and expands the current smart city and ATMS platforms thereby allowing Pinellas to leverage current and past investments.

I am excited to serve as your primary contact and project manager for this opportunity. Together we will design and implement a forward thinking technology solution to improve safety and mobility and serve as a model for other communities around Florida and the country.

Please do not hesitate to contact me should you have any questions about our proposal. I look forward to your favorable evaluation of our proposal and continuing our partnership.

Respectfully,

Don Hicks
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Section II Proposed Solution

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SECTION II PROPOSED SOLUTION

Kapsch is excited to extend our partnership with Pinellas County through this Pinellas Connected Community project (PCC). Kapsch offers a modular and open architected PCC solution that builds upon the current set of solutions we previously deployed for the County. This approach offers Pinellas **the lowest risk and best value solution** by leveraging these previous technology investments and incorporating the local knowledge and experience of Pinellas County partners, and our exclusive team members, Econolite and VIBE.

- **Lowest Risk**: While most offerors will propose PCC solutions that are "system of systems" (requiring extensive integration of software systems provided by multiple companies); Kapsch will implement a solution built around our fully integrated Traffic and Demand Management Platform with few vendors-provided subsystems. **We are fully compliant with 90% of the requirements.**
- **Best Value**: We will construct the PCC by adding new system components to the existing Smart City Data Platform (SCDP) and Connected Mobility Command Center (CMCC) previously implemented by Kapsch along with the County's Econolite Centracs ATMS. **Our architecture optimizes the connectivity between subsystems to streamline data flow and enable "plug and play" modularity**.

Pinellas County has made substantial investments in ITS and connected vehicle technology to address safety and congestion issues caused by a constant presence of vehicles, pedestrians, and cyclists competing to use the limited roadway infrastructure. Kapsch has proudly been a trusted partner of Pinellas County in this effort. **Together, Kapsch and County developed the Smart City Data Platform (SCDP) and implemented a connected vehicle ecosystem as part of the FDOT SPaT Challenge.** Kapsch also assisted the County with creating the vision of the PCC and preparing the winning ATCMTD grant application that is the basis for this project.

Through the PCC, the County will incorporate additional technology innovation to expand the functionality of the SCDP including:

- Enhancing the Connected Mobility Platform (CMP) through new data and systems integrations.
- Expanding the Connected Vehicle ecosystem with additional RSUs and new applications.
- Deploying Intersection Video Analytics (IVA) at key locations to monitor and detect potential hazards and provide real-time alerts to drivers and pedestrians.
- Integrating mobile video analytics to gather more information about workzones, bus stops, and other infrastructure-related items to support safety and mobility analytics.
- Implementing a predictive analytics system to minimize impacts of non-recurring congestion.
- Incorporating demand management solution to more optimally spread traffic across available street capacity in the County and reduce delays.
- Deploying mobile applications to support the safety and mobility use cases.
- Developing a real-time performance measures platform.

II.1 Solution Architecture – Business and Functional Description

The Kapsch PCC solution architecture is shown in Figure PS-01 and includes the following components:

- ***Subsystems previously provided by Kapsch and Econolite***: Connected Mobility Platform (CMP), SCDP GUI (EcoTrafiX), and CMCC implemented by Kapsch; ATMS deployed and maintained by the County's trusted vendor, Econolite.
- ***Off the shelf subsystems from Kapsch***: Configuration and integration of additional off-the-shelf subsystems from our Smart Traffic and Demand Management Platform including the Demand Management Module, Decision Support System, Mobile App, and Intersection Video Analytics (IVA).
- ***Vendor provided technology solutions***: off-the shelf subsystems from three external vendors: IVA (DERQ), Mobile Video Analytics MVA (Blyncsy), and Predictive Analytics Module [PAM] (TrafficQure).

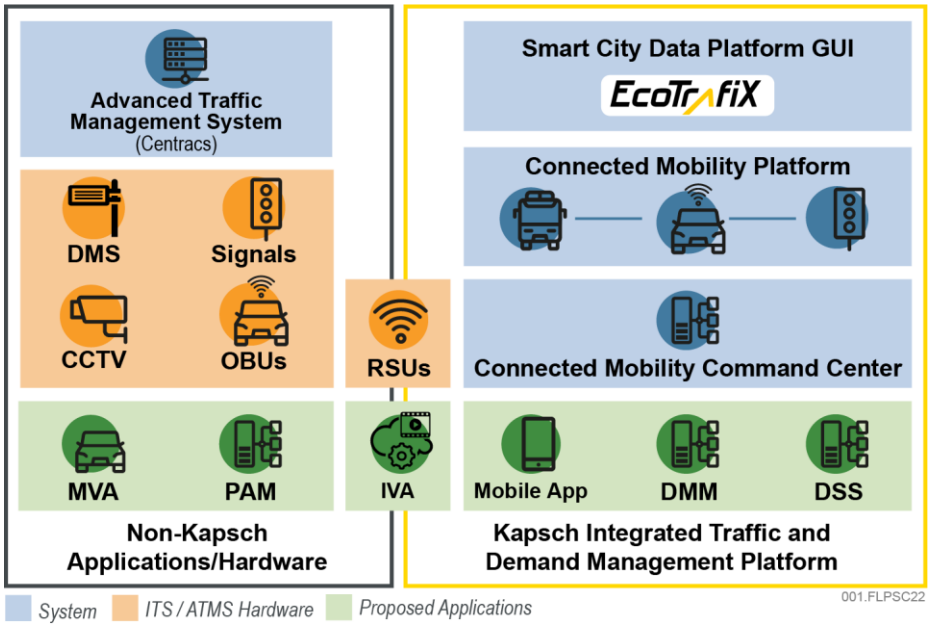

Figure PS-01. Functional Architecture for the PCC

Our solution is compliant with the County's specifications. Out of the Box, all of our PCC subsystems and components are nearly 100% "fully compliant" with the functional requirements. Very limited customization and configuration is required for this project aside from the work required to integrate the subsystems.

171 out of the 190 requirements are marked as "Compliant" with only 19 marked as "Partially Compliant".

Key Innovations to our PCC Solution

Given the budget and time constraints of this project, Kapsch proposes to focus on the implementation and deployment of the technology solutions that are best suited to meet the essential goals of the project: improving intersection safety, reducing congestion along primary routes, and accelerate deployment of advanced technologies. We will introduce the following technology innovations to our PCC solution.

- ***Detecting Vulnerable System Users:*** Florida is the 4th leading state in Pedestrian fatalities at 3.2/100,000 population. Pedestrians made up roughly 17% of traffic deaths in 2020, of which 20% or more are among 45- to 74-year-olds. In fact, majority of pedestrian deaths occur among 55- to 64-year-olds**.** Per the National Highway Safety Administration: "Vulnerable Road Users (VRUs), such as pedestrians, cyclists, and people who use wheelchairs, accounted for approximately 20% of the 42,915 people who were killed in motor vehicle crashes in 2021, , an increase of 13% over 2020." The Kapsch solution directly addresses this real crisis through video and connected technologies. Kapsch's Smart Intersection technologies increase awareness of all actors within the intersection area that pedestrians, bicyclists and other vulnerable road users are in the intersection area and at risk of being struck. Increasing awareness leads to a reduction of VRU incidents and fatalities.
- ***Orchestrated Connected Corridors*****:** Kapsch's Smart City Data Platform reduces congestion, improves mobility & safety for motorists and VRUs. The service platform leverages sensor technologies from pavement, to cloud, to operations to manage traffic corridors based on real-time data insights through a single platform suite for highway and urban environments. The platform offers cohesive, consolidated and modular services enabling roadway operators to choose services today yet expand as needs change. This approach allows the department to optimize the existing transport corridors as well as to serve as a launchpad for the new services that mixed mobility and automated vehicles will demand in the coming years.
- ***Predictive Analytics for Travel Time Prediction***: In addition to the basic requirements to predict incident risk and reduce potential for future crashes, we are proposing to predict travel times for the next 5, 10, 20, 30 minutes across the key roadway segments and corridors in the County to support load balancing and influencing route choice behavior.
- ***Mobile routing analytics and load balancing***: We believe that the County's objectives will be met most cost effectively without implementing an incentivization engine. Based on our expertise in traveler behavioral routing we recommend focusing on key decision points in the network and providing predicted travel time and/or delay data for the sets of parallel routes (US 19/Belcher and East Lake Road, Ulmerton Road and east Bay Drive). We will work with the County to identify decision points and downstream destination points and provide drivers with messages in the mobile app that provides predicted travel times and/or delays for these options similar to commonly formatted roadside DMS as shown in Figure PS-02.

Figure PS-02. Example Travel Time Comparison Sign

Leveraging Existing Investments

Our solution leverages the County's previous technology investments. We will build off the four core critical subsystems to the PCC that have already been implemented for Pinellas and satisfy the stated requirements: EcoTrafiX as the Operational User Interface, Connected Mobility Platform (CMP), Connected Mobility Command Center (CMCC), ATMS (Econolite Centracs).

- Kapsch will upgrade Pinellas County to the latest versions of EcoTrafiX, CMP, and CMCC.
- Integrate additional external data sources such as 911, Transit, Weather, and SunGuide into CMP.
- Integrate CMP and Centracs to support data exchanges with the ATMS.

ECOTRAFIX – SCDP GRAPHICAL USER INTERFACE

EcoTrafiX is Kapsch's premier urban traffic management system for smart city operations including providing situational awareness across agencies and transportation modes. In the previous SCDP project, Kapsch (Figure PS-03) deployed EcoTrafiX Version 3.2 with a map-centric graphical user interface, modules to support event and incident management, and integrations with WAZE and HERE.

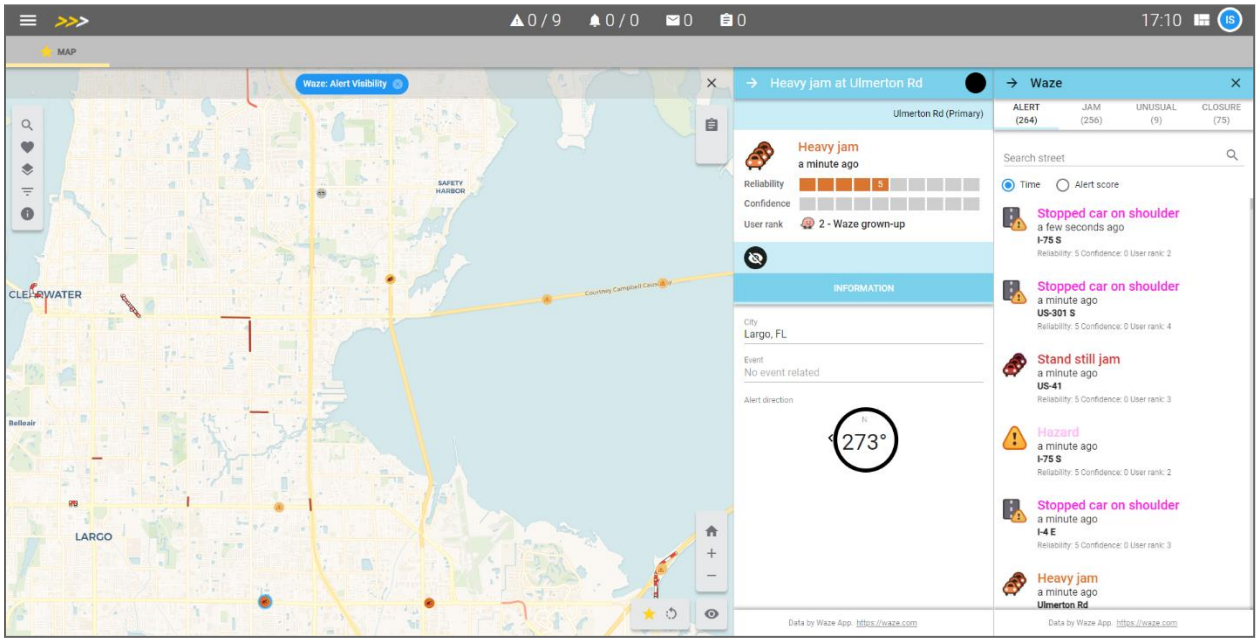

Figure PS-03. Existing EcoTrafiX Deployment for Pinellas County with WAZE Integration

Kapsch will upgrade to the latest EcoTrafiX version (Version 3.5) that includes several improvements:

- Upgrades of core open source components used in the platform.
- Expanded and improved administrative management including user management, roles, and permissions.
- Improved IT Vulnerability Analyses.
- Upgrades to the GUI including new lists for users, organizations, contacts, improved organization and layout of map layers, expanded and enhanced list views for events and connected field devices.
- Revised and improved reports.
- Improvements in system alarms including separation of operational and technical alarms.

CONNECTED MOBILITY COMMAND CENTER (CMCC)

Kapsch's CMCC solution manages the deployment and integration with the CV Roadside Units (RSUs). The CMCC pulls data from all connected, active RSUs (Kapsch and Non-Kapsch units) and creates and pushes J2735 message sets to the RSUs. **CMCC meets all the RFP requirements**.

Kapsch previously deployed CMCC Version 1.5 for Pinellas County under the Signal Phase and Timing Connected Vehicle Challenge project sponsored by FHWA through the FDOT. Kapsch provided Pinellas County a robust CV hardware and software solution at 23 signalized intersections along US 19 from Beckett Way to Ulmerton Road (SR 688) and at two intersections at the TERL campus, and in the office, to monitor and track operations within the system. The major components deployed were RIS-9260 Dual-Mode RSU, ACV-3301 OBU, and CMCC. The hardware and software supported services such as Emergency Vehicle Preemption, Transit Signal Priority, Basic Safety Message Collection, the eWalk Pedestrian Safety application and SPaT/MAP/TIM Transmission.

The currently deployed CMCC fulfills the functionality needed to manage the County's RSU deployments:

- **Automated Monitoring and Alert**. Monitoring all devices within the network to detect any issues in connectivity or messaging. Users can register for alerts and notifications regarding issues with equipment, system functions, or recorded data.
- **Asset Management**. Each location and its associated equipment is managed. This allows equipment to be swapped out quickly and easily with minimal setup required.
- **Automated Device Configuration**. Configuring devices in CMCC is easy and intuitive. Once all configurations are set, RSUs can be swapped out quickly and easily with minimal re-configuration required.
- **Advanced Message Configuration and Scheduling**. CMCC extends basic RSU messaging functionality by providing expansive scheduling capabilities. This includes the ability to set specific times, days of the week, and intervals in which messages should be transmitted. Configurations are granular enough to allow special messages to be sent only on specific dates or during specific times of day; for example, it can accommodate messages that only repeat July 4 from 5:00pm to midnight. Updated messages and message scheduling are applied immediately.
- **Message Builder and Disseminator**. CMCC generates all J2735-related messages including MAP, RSM, and TIM. An interactive map-centric GUI makes it easy to create road segment and intersection MAP messages quickly.
- **Experience working with FDOT's Security Credential Management System (SCMS)**. Kapsch has a history of working with TrustPoint Systems, Inc./ISS, both on projects in Florida and in other states.

Kapsch will upgrade the County's CMCC to version 2.15.3 to provide additional functionality including:

- **Interface with the Mobile Application.** Enables the provision of CV data contents broadcasted to OBUs to end users using the installed Mobile App on their smart phones.
- **Enhanced GUI.** As shown in Figure PS-04**,** we have updated the map interface, added several new list views, and additional features to enhance usability.
- **Virtual RSU (vRSU).** The most significant enhancement to CMCC will be our new vRSU for enabling the hybrid cellular-based communication to/from the CMCC. This allows CMCC to

exchange information with hybrid CV onboard units and the Kapsch smartphone application. The vRSU provides the capability of consuming and distributing information where no physical roadside units are available and therefore expanding the covering of CV systems, while enabling secured and reliable message exchange using dedicated PKI/SCMS connectivity.

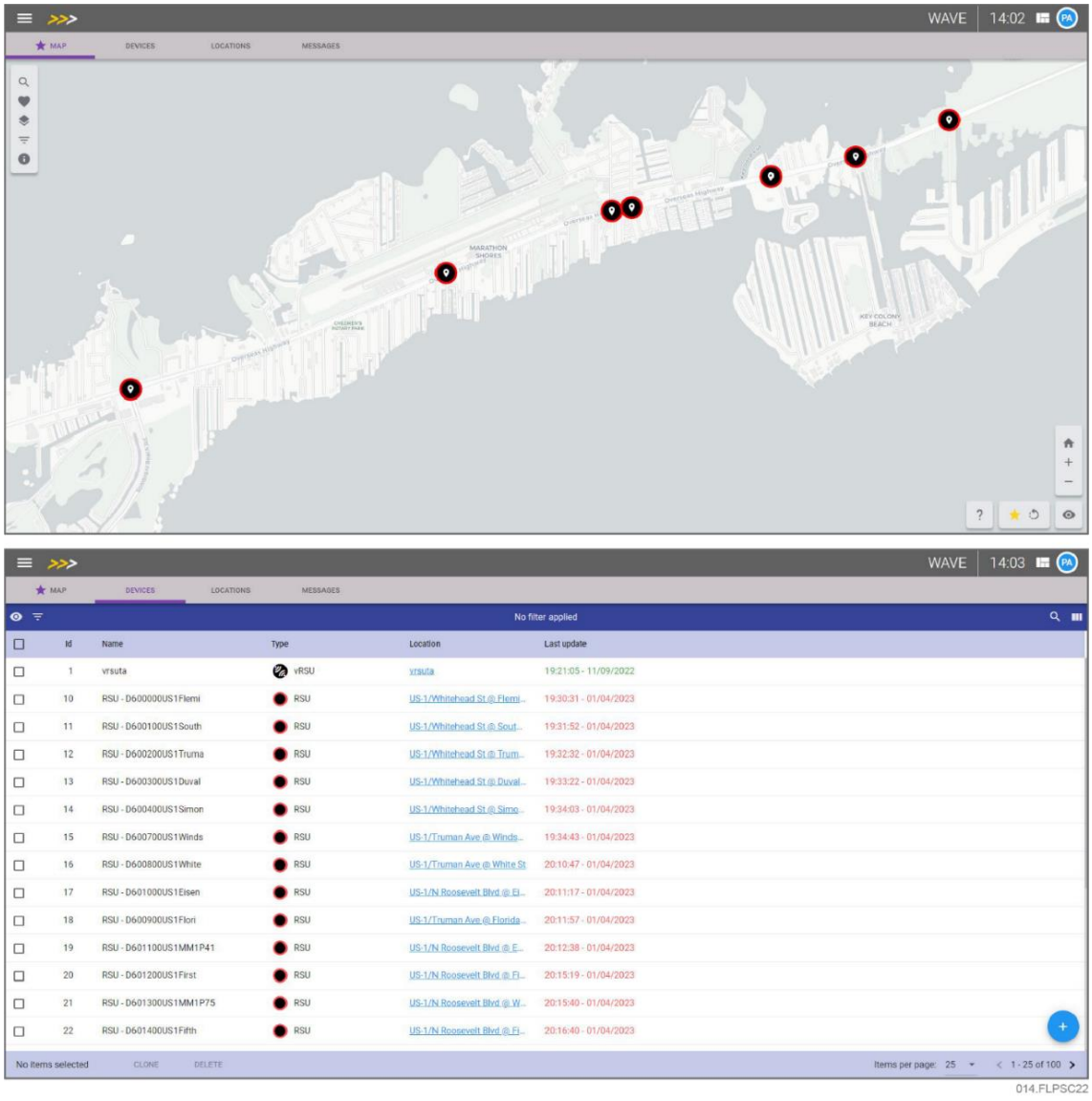

Figure PS-04. CMCC Map and List Views

Connected Mobility Platform (CMP) – Updating to MDP

Kapsch deployed our Connected Mobility Platform (CMP) for Pinellas as part of the Smart City Data Platform project. 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. Included in this effort was the integration of Waze and HERE data.

Last year, Kapsch introduced the next version of our big data platform, renamed as the Mobility Data Platform (MDP) (Figure PS-05) in acknowledgement that this solution integrates more than connected mobility data. MDP works in tandem with EcoTrafiX by integrating third-party solutions and services and making data easily accessible through standard APIs to agencies users and their partners. In addition to being a data hub, MDP provides a suite of offline and real-time analytical tools to generate performance measures dashboards and visualizations that are visible within EcoTrafiX. MDP also includes a data mart for 3rd party developers.

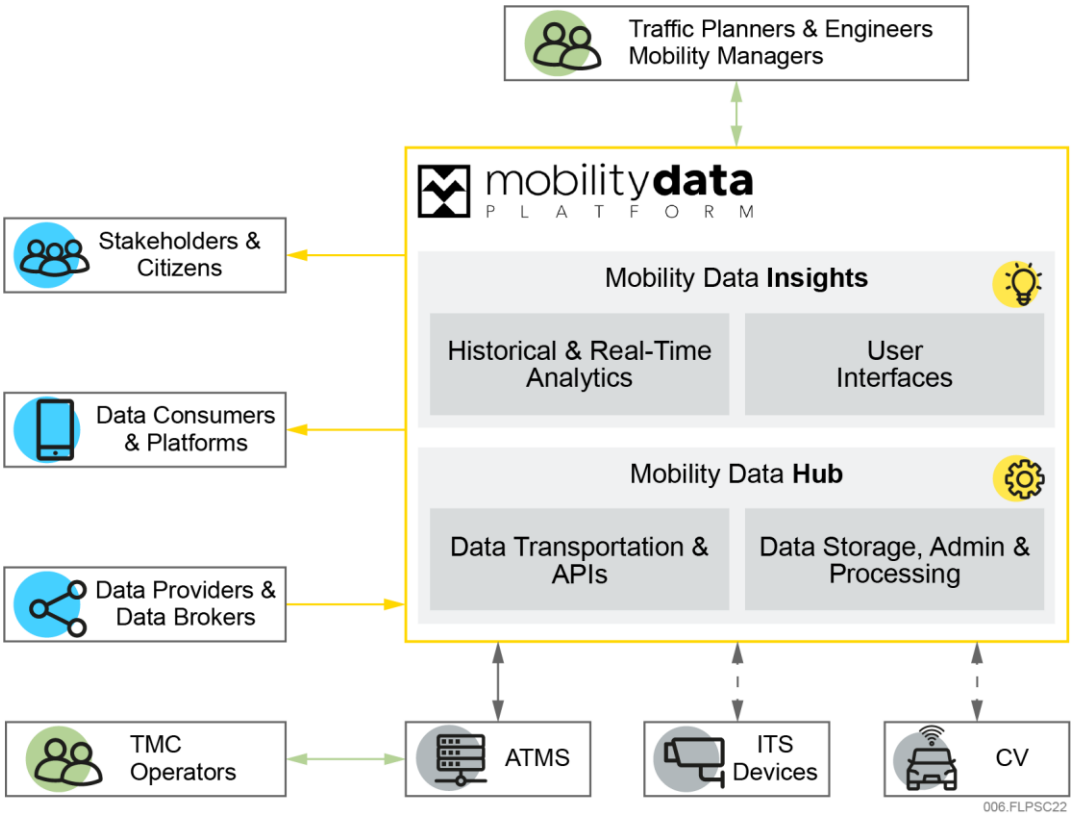

Figure PS-05. Mobility Data Platform

We will update Pinellas to MDP. As part of this upgrade, Pinellas will gain the following new features:

- Expanded set of built-in integrations via MDP databus plus API Manager to manage REST APIs providing security, redirection, usage control and overall governance.
- New APIs built on industry standards including GTFS, WAZE, HERE, and TMDD/NTCIP.
- Interface with ATMS Centracs to enhance data sharing and analytics.
- Common Data Model-based database and data exchanges.
- Expanded business intelligence tools for creating interactive dashboards, for real-time and historical analytics and for predictive services.

New Kapsch Subsystems to be Added

Kapsch will augment and extend the existing core subsystems by configuring and deploying additional off the shelf subsystems from our Smart Traffic and Demand Management Platform.

DEMAND MANAGEMENT MODULE (DMM) AND DECISION SUPPORT SYSTEM (DSS)

Kapsch will deploy its Demand Management Subsystem to determine and activate traveler information strategies that optimally distribute trips across available network capacity based on current and predicted speeds, travel times, and signal timings. As show in Figure PS-06, this subsystem combines two key actions:

- **Decision Support System**: Integrates operational data from the CMP and predictive analytics (incident risk and travel times predictions) from PAM to recommend a load balancing strategy. The system analyzes the baseline demand for major parallel routes and seeks to shift demand from an overutilized route to one or more underutilized routes.
- **Strategy Activation**: Creating and transmitting the traveler information components (route recommendations, virtual DMS) to the mobile app to influence travel demand.

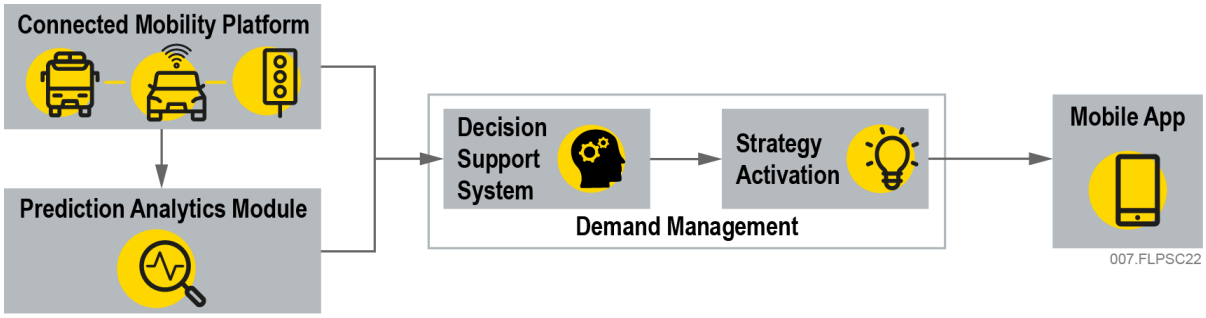

Figure PS-06. Demand Management Subsystem

In lieu of monetary incentivization, we are offering a traveler-information based demand management approach that relies on targeted information to effect changes in route choice and driving behavior to meet the County's goal of improving safety and reducing congestion. Our DMM will provide drivers with route-specific predicted travel time information, generated by predictive analytics, to induce load balancing and improve traffic performance. **This approach will greatly benefit the County by reducing schedule risk, avoiding integration with additional vendors, and lowering system cost all while encouraging the desired road user behavior and load balancing.**

MOBILE APP – KAPSCH'S TRAFFIC ASSIST MOBILE PLATFORM

Kapsch offers a single mobile application platform to meet the County's requirements. Kapsch's TrafficAssist mobile platform is a key component of our smart traffic and demand management strategy. TrafficAssist has bi-directional communication with the CMCC virtual RSU (vRSU) interface via cellular connectivity to push and ingest CV messages. Traffic Assist meets all functional requirements for the four (4) mobile device services: C-OBU, Virtual DMS, Mobile Routing Application and Personal Information Device. By providing meaningful and relevant real-time information, Traffic Assist influences user travel choice and driving behavior supporting a safer and more reliable transportation network. Traffic Assist will support all of the mobile app requirements for Pinellas County:

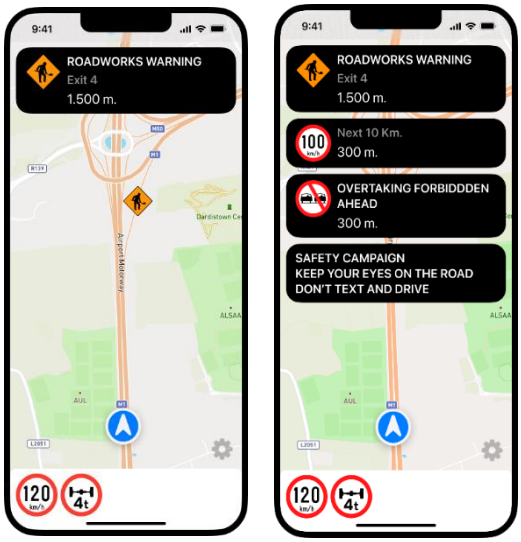

Figure PS-07. Traffic Assist Application – GUI

- CV location-based service that provides relevant traffic and infrastructure-based information including speed limits and work zones fulfilling the C-OBU and Virtual DMS functionalities.
- Routing choice service that uses predicted travel conditions to induce optimal route choice. Fulfilling the Mobile Routing Application functionalities.

TrafficAssist displays relevant information to the end-user via the main driving screen that combines a map-based display with real-time notifications and signage. Figure PS-07 above shows a screenshot of the application GUI. User location, travel direction, speed, and area of interest are used by TrafficAssist to filter and display relevant information extracted from received CV messages.

The application is easily configurable (see Figure PS-08) through the app's settings. Users are able to enable a variety of information services and customize how notifications are presented as well as the preferred radius for receiving relevant messages. As driving safely is the driver's first responsibility, the Kapsch TrafficAssist mobile application is designed with this priority and does not require any end-user interaction to use the service while driving other than brief glances to get the information.

Figure PS-08. Traffic Assist Application – Settings

In order to provide enhanced traveler information not only to drivers but also to pedestrians and bicycles, the Kapsch TrafficAssist mobile application is envisioned to be used by pedestrians and bicycles as well. For the purpose of pedestrian safety, Kapsch TrafficAssist mobile application will be used as a Personal Information Device (PID). While being used as a PID, end-user receives CV messages from a traffic management center, utilizing cellular connectivity to the vRSU. It enables a bi-directional data exchange with a vRSU via the Kapsch CMCC.

The app will be available on both Android and iOS platforms.

PERFORMANCE MEASURES MODULE

Kapsch's MDP includes both a data hub and a data analytics component that uses QLIK (Qlik Sense | Modern Cloud Analytics), for visualizations and analytics. Through QLIK, users create high-value dynamic dashboards that will enable Pinellas County to:

- Generate and track performance measures
- Create dynamic dashboards to compare current vs historical events and trends
- Analyze the distribution and type of events to make intelligent inferences
- Understand impact of incidents
- Study evolution of traffic conditions.

These visualizations are viewable directly through EcoTrafiX as a result of the integration between EcoTrafiX and MDP. Kapsch will create an initial set of five dashboards and visualizations for the County as well as train Pinellas County staff to use and modify these analytics and create their own analytics. Annual licensing costs for QLIK are included in our price proposal. Example dashboards are shown below.

Event Analytics: Figure PS-09 depicts an example of an events dashboard for analyzing the impacts of regional events on traffic and pulls event data from CMP.

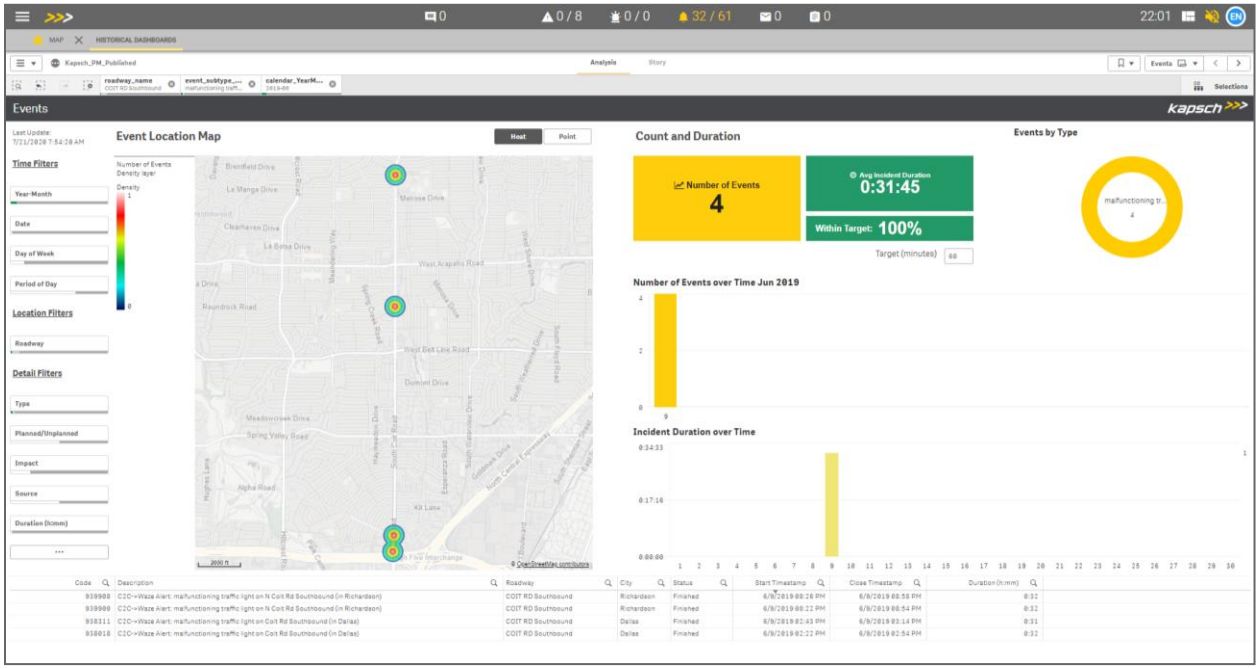

Figure PS-09. Events Dashboards

Travel Time Analytics: CMP provides a wide range of travel time related analytics that may be incorporated into dashboards and visualizations. Figure PS-10 depicts a "Hotspot" travel time dashboard that compares free flow, current, and expected travel times for specific roadway segments that the County wants to monitor. This dashboard was deployed by Kapsch for our TMC operations project in New York.

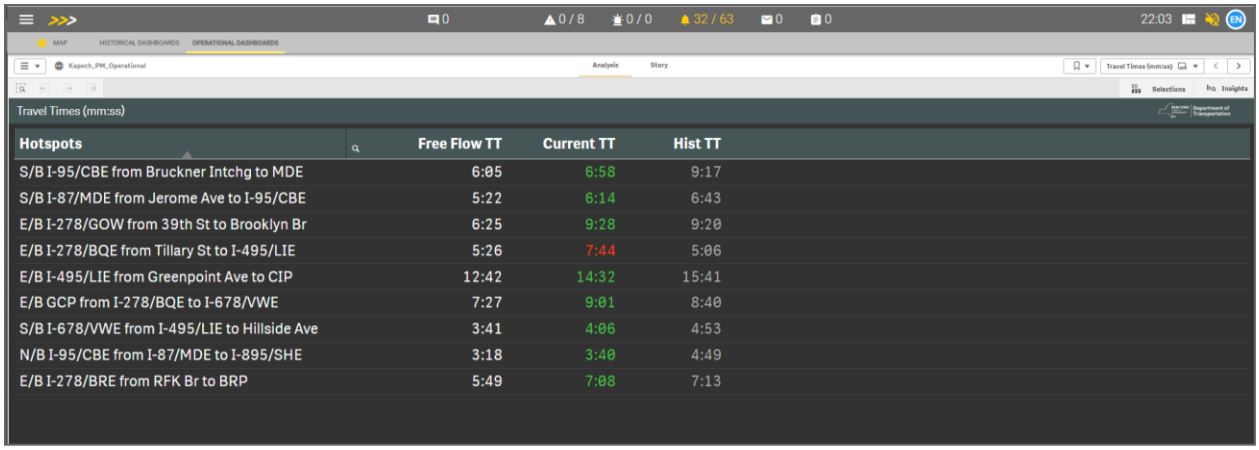

Figure PS-10. Travel Times Analytics Dashboards

Kapsch and Vendor Supplied Components

Kapsch will integrate vendor-supplied solutions (IVA, MVA, PAM) and Hardware components (RSUs) into the PCC. Kapsch attests that each subsystem or component meets the system requirements in the RFP.

Intersection Video Analytics

Kapsch will provide 24 IVA units (18 to be installed, and 6 spare units), provided by Kapsch and DERQ. During the project we will work with the County to determine how to distribute the two types of IVA units across the set of intersections to be covered. Edge devices with the IVA software will be installed and configured in the existing traffic signal cabinets. Per addendum 3, Kapsch will also provide and install 2 new fixed mount CCTV cameras for each intersection.

Both Kapsch's DLVP and DERQ's IVA units and software meet the system requirements for IVA. These were the units identified in the ATCMTD grant application and the basis for the IVA functional requirements in Attachment 2 (Section 1.3):

- The IVA units offer bi-directional integration of data including, pedestrian detection, vehicle classifications, and detection of various elements with the traffic signal controller.
- The detection zone may be configured with virtual segments (lines and zones) to support data collection including:
  - Vehicles: identifying stopped vehicles, vehicle trajectories, vehicle classification, vehicle counts.
  - Pedestrians and cyclists: recognize pedestrians and cyclists with 90% accuracy, collect counts, location, and movement data across the intersection.

Operational dashboards may be generated from the data collected through IVA tools. Figure PS-11 depicts a video analytics dashboard generated from data collected through DLVP. This dashboard presents a summary of key events detected (e.g., near-misses, stopped vehicle, pedestrians on road), analyses of key turning movements in the intersection, and vehicle classification. Kapsch will work with the County to develop IVA dashboards that will be incorporated into the operational GUI.

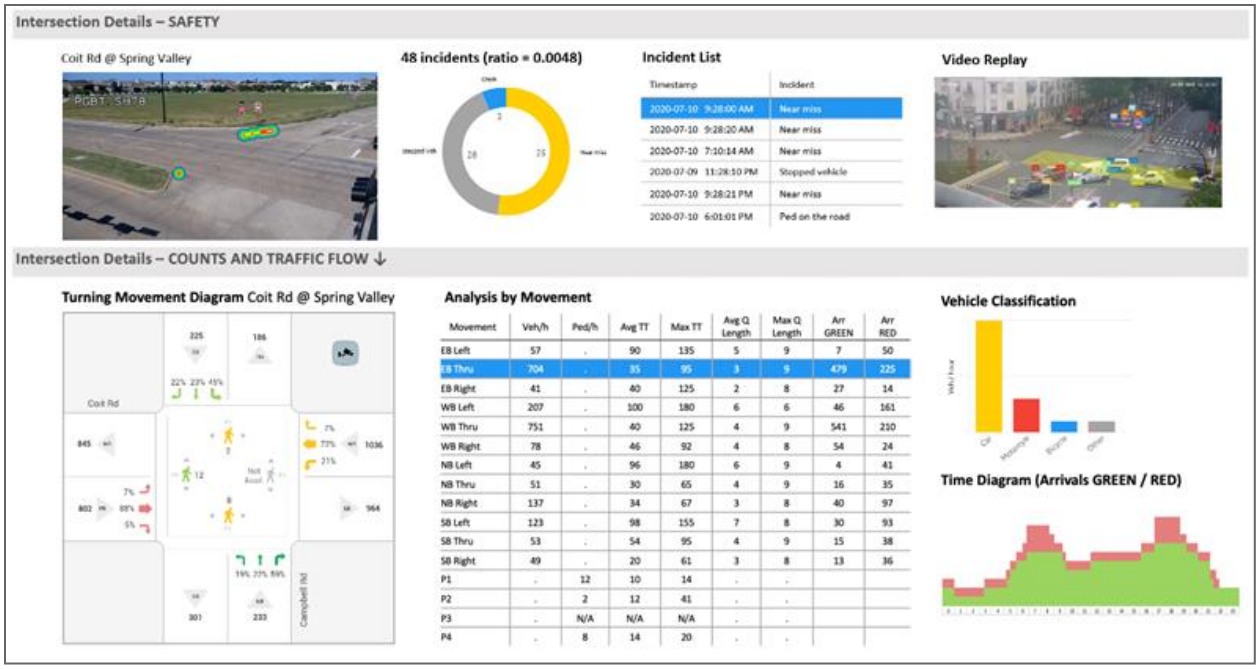

Figure PS-11. Intersection Analytics Dashboard

MOBILE VIDEO ANALYTICS (MVA) – PAYVER – BLYNCSY™

Kapsch will deploy Blyncsy's MVA solution that includes in-vehicle dash cameras and their Payver product to collect summary data of the infrastructure generated from imagery retrieved from installed dash cameras and crowd-sourced data (Figure PS-12). Kapsch will integrate Payver into the PCC platform to make captured images and derived data available within the PCC and the operational GUI.

The MVA processes dashcam footage from hundreds of thousands of vehicles already on the roads, allowing for the processing of captured images within 60 seconds from the time of collection. This means that the MVA can provide an up-to-date view of work zones from around the County without ever scheduling someone to drive the roads.

The MVA will be deployed with the ability to perform video analytics of:

- Road signs within the test area
- Transit stops within the test area to detect and report damages and other detectable issues.

One of the provided applications is the automation of work zone analysis, whose data is exchanged using a U.S. standard, called Workzone Data Exchange (WZDx). Payver can automatically detect work zones and related equipment, permitted or not, and directly update the WZDx feed and relevant authorities.

In addition, Payver can also be enabled for remote inspections by overlaying georeferenced traffic control plans for work zones, reveal trends in work zone behavior, and provide a historical record of in-field operations. And while not in scope, the street-level imagery that is collected by Payver can further be used for a wide range of applications, like pavement and paint line quality, which can lower the costs of data collection even further by sharing it across departments.

Figure PS-12. Automated Detection of Work Zones and Bus Stops

PREDICTIVE ANALYTICS – TRAFFIQURE TECHNOLOGIES

The Predictive Analytics Module (PAM) will support the PCC by using current and historical data collected in CMP to anticipate congestion before it happens in high spatial and temporal granularity and predict delays up to 30 minutes in advance. These predictions are then incorporated into the Demand Management Module to support real-time decision making for optimally spreading trips across the available network capacity based on speeds, travel times and current signal timings.

TraffiQure Technologies will provide the PAM for the PCC. TraffiQure is a technology spinoff firm from Carnegie Mellon University that applies Artificial Intelligence and Machine Learning technologies to support predictive analytics for real-time traffic management. Founded by Dr. Sean Qian, Professor of Civil and Environmental Engineering at CMU, TraffiQure's technology was initially developed, deployed, and validated as part of a USDOT Smart Mobility Challenge Grant to Cranberry Township, PA[1], and further being extended and deployed for Maryland's TSMO program under an FHWA Exploratory Advanced Research (EAR) grant.

TraffiQure will configure a real-time Predictive Analytics Module that acquires, processes, and analyzes multi-source data in the region 24/7 to:

- Promptly detect traffic anomalies in high granularity (on all highways and local major arterials in the region)
- Compute predicted travel times along all roadway segments for the next 5, 10, 20, 30 minutes
- Send event alerts to EcoTrafiX to inform TMC staff
- Recommend response plans (e.g., signal timing contingency plans, access control, information dissemination) that would proactively mitigate potential impacts from major incidents.

An operational dashboard (Figure PS-13) for PAM will be created and integrated into EcoTrafiX to enable the PCC users to visualize the traffic prediction and incident impacts.

[1] Real-Time Traffic Monitoring and Prediction for Cranberry Township - Final research Report

Figure PS-13. PAM Dashboard with Speed Predictions

Input data for PAM will come from the CMP (Waze, HERE, Weather, traffic data) along with readily available external sources (e.g., Twitter). PAM uses 6-24 months data of traffic speeds, incidents, weather, and social media to train an automated machine that predicts traffic flow, delays, and risk of incidents up to 30 minutes in advance, and recommends optimal decisions that effectively and promptly alleviate congestion and incident risks. The prediction of congestion and incident risks is made to each road segment of 1/10 – ½ miles, which can be used to recommend demand management strategies prior to actual traffic breakdowns to prevent congestion spillover, a main advantage comparing to responsively engaging management plans after traffic breakdowns. In addition, should the County be interested in future enhancements, PAM can be integrated with Econolite Centracs to automatically engage contingency signal timing plans responding to predicted incidents or congestion.

The performance of the PAM will be evaluated using two approaches: 1) the prediction error rate of the 30-min ahead prediction is less than 5% throughout the course of the soft launch; and 2) after using this system, the congestion and incidents in the region during main traffic incidents are expected to reduce by at least 20%, and a congestion alert is expected to be sent to the TMC staff at least 15 minutes earlier than Waze reports in some cases. It will also automate the process of anomaly detection and demand management recommendation, which substantially reduce the workload of the TMC staff and is able to operate the system 24/7.

ROADSIDE UNITS (RSUS)

Kapsch will provide and install an additional 125 Dual-Mode DSRC/C-V2X and Single Mode C-V2X RSUs (110 to be installed + 15 for maintenance support) that meet the specifications of the RFP and Attachment 2. The supplied RSUs will include the Kapsch dual mode/dual active unit (RIS 9260 shown in Figure PS-14) and 15 Danlaw RouteLink CV2X only RSUs to meet the County's requirement to test interoperability of the software with multiple RSU manufacturer.

Figure PS-14. RIS-9260

Kapsch RIS-9260

The proposed RIS-9260 has undergone major firmware upgrades to improve functionality and performance. RIS-9260 RSU can **simultaneously broadcast** on DSRC and C-V2X to transmit messages like SPaT, MAP, TIM, and SSM and to receive messages from vehicles such as BSM and SRM. Processing on the unit is managed from the Kapsch CMCC, which can receive and analyze incoming messages and meets SAE and IEEE message and security standards.

Danlaw RouteLink Roadside Unit

The Danlaw RouteLink RSU, shown in Figure PS-15, communicates between in-vehicle/mobile devices and transportation infrastructure, such as traffic controller equipment and backhaul networks. It can broadcast alerts to drivers to adverse driving conditions, enables preemption for first responders, and signal priority to buses and service vehicles. RouteLink is available for C-V2X or DSRC systems.

Figure PS-15. RouteLink RSU

Kapsch is well-versed with the Danlaw RSU and has worked with them to integrate their RSUs and OBUs in our Kapsch projects (e.g., Smart Columbus and Gwinnett County). Our software-based roadside control (RCU) will be installed on the Danlaw RSUs and the units will be directly integrated with CMCC to demonstrated interoperability.

II.2 System Architecture

This section below presents the system architecture including data flows, hardware uses and network connectivity with full description of the equipment being proposed.

Logical Architecture

Figure PS-16 presents the logical architecture along with the data flow between the subsystems.

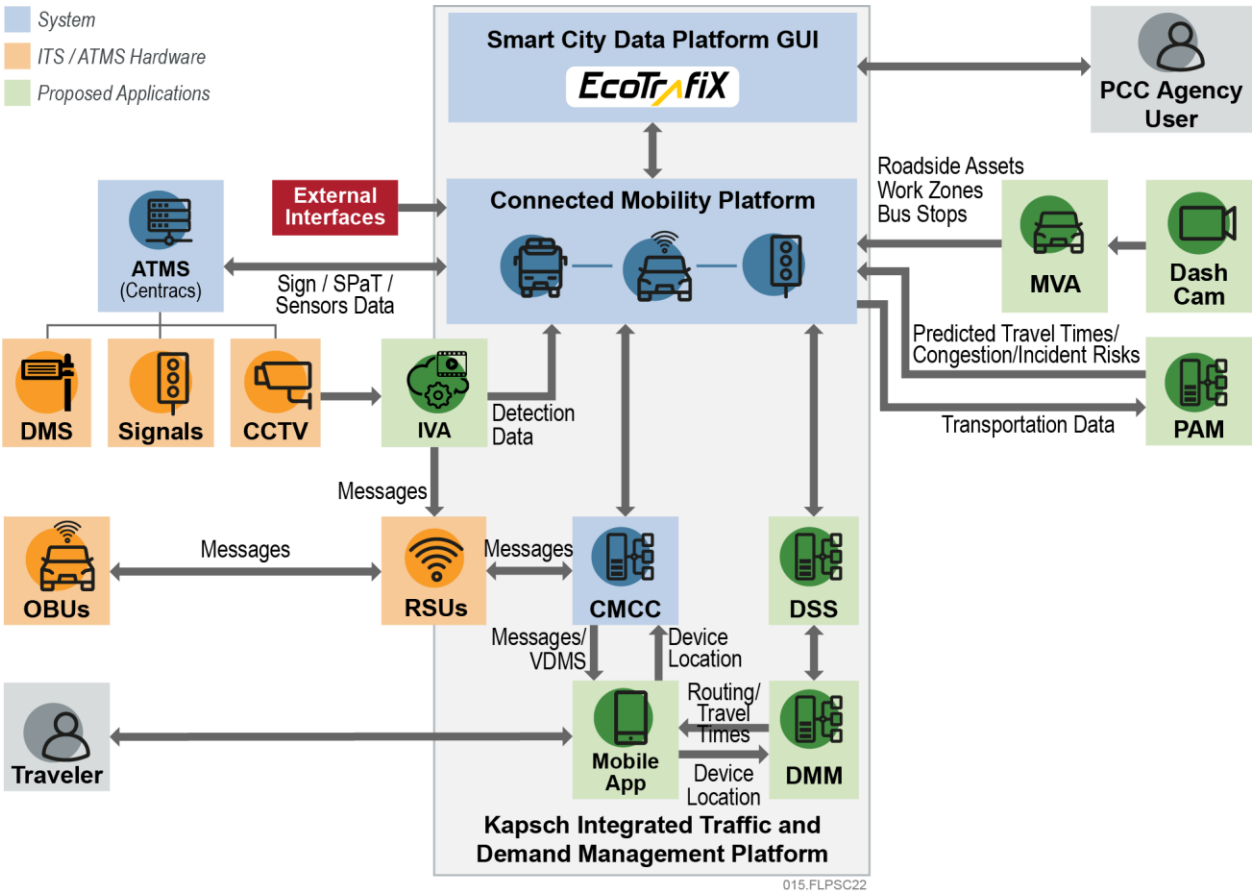

Figure PS-16. Logical Architecture and Data Flow

Our logical architecture is extremely efficient by reducing how data flows between the subsystems. For example,

- CMP is the sole provider of stored data for the PCC. Routing all of the data flows to/from CMP provides a more stable and streamlined architecture. Data from PAM, IVA, and MVA only flow into CMP and not other subsystems making it simple to replace these subsystems or add new subsystems at a future date
- The CMCC is the central source of messaging, generating and disseminating almost all messages to the RSUs and mobile app. The only exception are critical safety messages between the IVA and the RSUs. Having a single message generator reduces complexity and improves maintainability for the County. Creation of new messages in the future will be added to a single subsystem.

Physical Architecture – Cloud-Hosted Solution

Our cloud-hosted system architecture (Figure PS-17) meets Pinellas County's expectations for performance, scalability, and availability. Cloud hosting is appropriate for data-driven systems that include a growing data repository and exchange system. This has several key benefits for Pinellas:

- **Scalability**: With Microsoft Azure we can quickly scale up the infrastructure in response to changes of the amount of data to be stored and processed, new subsystems to be added, and/or the need to stand up additional environments.
- **Maintainability**: Azure reduces the level of effort for maintaining and monitoring the various virtual machines and components. Azure provides numerous tools and analytics to assist with monitoring system performance and proactively identifying issues.
- **Updates**: Rolling out patches and system updates is far easier in a cloud hosted system. Azure provides a service to automatically install patches. Alternatively, you can schedule rolling updates that stagger the deployments to reduce downtime.
- **Costs**: Hosting in the cloud reduces the upfront expenditures for hardware and software. It protects against obsolescence. It allows for "pay as you go" limiting the costs to what services are consumed every month.
- **Security**: Azure includes state of the art security monitoring and protection that will protect the PCC against unwanted attacks and other vulnerabilities.
- **Redundancy and Resiliency**: Although not specified by the RFP, it is easy to add full redundancy and resiliency for the PCC hosted in Azure.
- **High Availability**: Our MDP is built on Kubernetes which is a cloud-native application framework that optimizes availability, scaling, and software deployment.

All of our subsystems/components will be hosted in Azure except for the IVA edge-controller that will be installed at the roadside to minimize latency for communications and messaging. All external access to the system will go through the Azure Firewall including the solution's IVA, MVA, PAM, RSUs and Mobile Application.

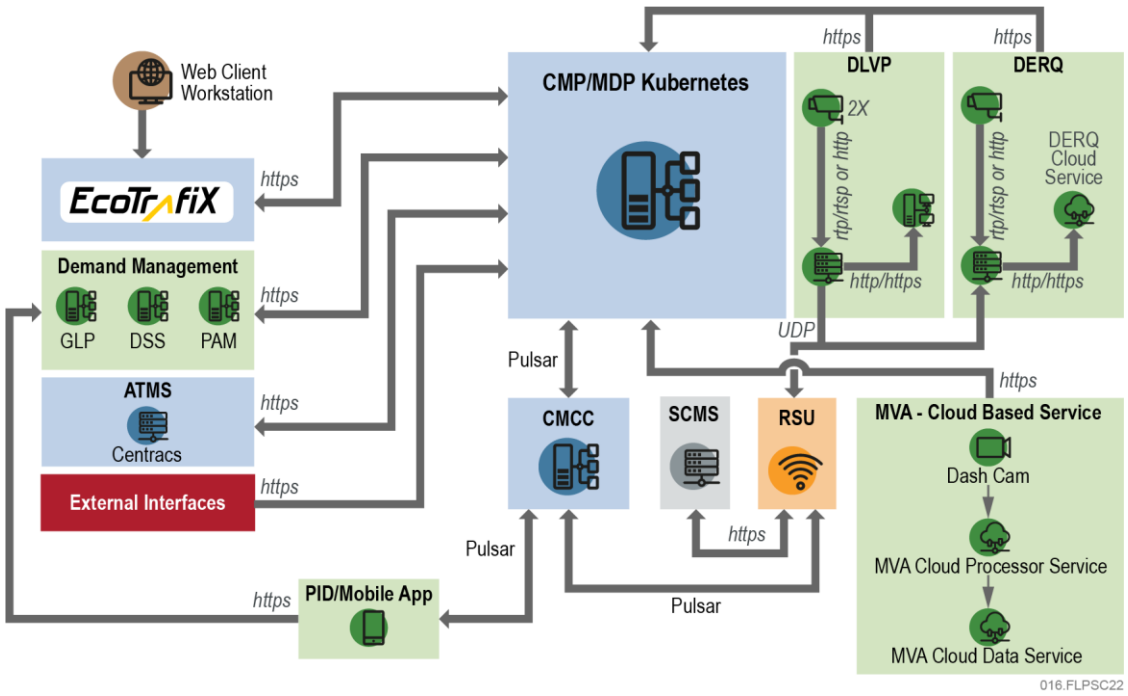

Figure PS-17. Physical Architecture

Main components of the system and high-level implementation:

- **MDP** (Mobility Data Platform) – acts as the central data hub and data analytics platform and is Kapsch's next generation version of CMP that we previously deployed for the County. MDP is implemented as native Kubernetes solution which allows auto-scaling, low operation cost and maintainability. MDP provides a wide range of APIs to simplify integration with internal and external systems. It also includes a full data analytics and business intelligence package for generating dashboards.
  - Hardware Specifications:
    - The Kubernetes sizing for this solution is Core: 40, RAM: 64G, Storage: 5T assuming 3 years for data retention
    - Qlik Server (Data Visualization) – Core: 4, RAM: 16G, Storage: 28GB.
- **EcoTrafiX –** This is the operational GUI currently deployed and ingests data from the MDP. EcoTrafiX will integrate new dashboards to enable system users to visualize data and activities from the new subsystems deployed as part of this project.
  - Hardware Specifications:
    - Administration Server: Windows Server 2016/2019, Core: 4, RAM: 16G, Storage: 300GB
    - Load Balancer: Based on NGINX software. Centos 7.x, 4 CPUs, 32 GB RAM, 128 GB
    - Map Server: Centos 7.x, Core: 4, RAM: 32 GB, Storage: 300 GB
    - Core Server: Centos 7.x, Core: 16, RAM: 32 GB, Storage: 512 GB
    - ESB Server: Centos 7.x, Core: 16, RAM: 32 GB, Storage: 256 GB

  - Postgress SQL Servers: 1 VM (Centos 7.x, Core: 8, RAM: 32GB, Storage: 300GB), 1 VM (Centos 7.x, Core:16, RAM: 64GB, Storage: 1024 GB).

- **CMCC** (Connected Mobility Command Center) – This component controls the connected vehicle ecosystem by managing and communicating with RSUs and disseminating traveler and safety information through the Mobile Application.
  - Hardware Specifications:
    - Main Core Server: Ubuntu 22.x LS, Core: 4, RAM: 16GB, HD: 256GB
    - Comm Server: Ubuntu 22.x LS, Core: 4, RAM: 16GB, HD: 256GB
    - Database Server: Ubuntu 22.x LS, Core: 4, RAM: 16GB, HD: 256GB.
- **DMM** (Demand Management Model) – DMM has two main functions (1) through the Decision Support System (DSS), it determines when load balancing is necessary and (2) Uses Kapsch's Geo-Location Platform (GLP) to determine and generate routing messaging to be sent to the mobile app.
  - Hardware Specifications:
    - DSS Server: Centos 7.x, Core: 16, RAM: 128 GB, Storage: 500 GB
    - GLP Server: Centos 7.x, Core: 16, RAM: 64 GB, Storage: 1024 GB.
- **PAM** (Predictive Analytics Module) – PAM is a stand-alone machine learning engine that uses data from the MDP to predict risk of incidents and forecast travel times for all segments in the network. Outputs from Pam will be used by DMM/DSS to support load balancing.
  - Hardware Specifications:
    - Application Server : Centos 7.x, 4 CPUs, 32 GB RAM, 128 GB.
- **Kapsch Mobile Application –** natively developed for Android and iOS platform. The Mobile App sends routing request to DMM server through HTTPS API REST. The Mobile App is also connected to CMCC through HTTPS and Pulsar Protocol. The network traffic between Mobile App and the system goes through the Azure Firewall.

Field Device Specification

- **Kapsch DLVP (Deep Learning Versatile Platform) IVA**– Consists of one edge controller and two cameras installed per intersection connected to a Kapsch-provided switch with internet access provided by Pinellas County. IVA communicates securely with both the RSUs and the MDP. All data from the edge controllers at each intersection will be sent to an Analytics Server to support creation of dashboards that will be integrated into EcoTrafiX.
  - Hardware Specifications:
    - Edge Controller: ARK-1250L Intel 11th Gen. Core i5/i3
    - Camera AXIS M3058-PLVE: 12MP Outdoor 360° Panoramic Network Mini Dome with Night Vision
    - Analytics Server: 1 VM Ubuntu 22.x LS, Core: 4, RAM: 8GB, Storage: 1 TB.
- **DERQ IVA** – It consists of one edge controller and two camera installed per intersection connected to the switch with internet access provided by County. All data from the edge controllers from each

intersection will be sent both to the CMP and to DERQ's Cloud Service. A dashboard will be built for EcoTrafiX to display real-time intersection data analytics.

- Hardware Specifications:
  - Edge Controller: ARK-1250L Intel 11th Gen. Core i5/i3
  - Camera AXIS M3058-PLVE: 12MP Outdoor 360° Panoramic Network Mini Dome with Night Vision.

- **Blyncsy MVA** (Mobile Video Analytics) – Installed dash cameras will stream images into Blyncsy Cloud Infrastructure where information will be processed and analyzed. Blyncsy will expose a Cloud REST API Service that will, based on a configurable period of time, push captured data into MDB through a Data Connector. The connectivity will be established through HTTPS and the API will use an authentication token. The network traffic will be secured by the Azure Firewall. EcoTrafix will retrieve the information from the MDP through the Pulsar Protocol and visualize the data using a custom map layer. EcoTrafiX will also integrate the Blyncsy Payver GUI as a new map layer.
- **RSU** Kapsch RIS-9260: IEEE 802.11p™ DSRC and 3GPP C-V2X (LTE-V2X) wireless communication for both the ETSI ITS G5 and IEEE WAVE standards.

Supporting Hardware:

- Network Switch: TP-SW8 Series High Power 10/100Mb 8 Port PoE Switch. It will be installed at each intersection, where an RSU will be installed per this project.
- Network DDOS Protection is implemented through Azure and Cisco solutions:
  - Azure Load Balancer: 2 units Standard Tier: 5 Rules, 1,000 GB Data Processed
  - Firewall Management Center: Core: 8, RAM:28 GB
  - FTD-V-10S-BSE-K9: 2x Cisco Firepower TD Virtual Base Lic, 1 Gbps
  - FTD-V-10S-TMC: 2x Cisco Firepower TD Virtual TP, Malware & URL Lic, 1 Gbps
  - Azure Firewall: Core: 4, RAM: 14 GB.

II.3 Kapsch Offer

Kapsch is offering our PCC solution to Pinellas County as a cloud-hosted solution as discussed above. Our solution satisfies the functional requirements while offering the County a low risk-high reward approach to best accomplish the goals of the project, including meeting the target schedule. Kapsch's PCC solution offers the County several benefits including:

- Modular and open architected solution that streamlines the data flow between subsystems and avoids redundant integrations that would make it difficult to update or change individual components in the future.
- The PCC will be Cloud-hosted in Microsoft Azure ensuring the solution is highly scalable and secure.
- The PCC solution optimizes the use of subsystems and components previously implemented by Kapsch for the County.
- A majority of new subsystems are off-the-shelf, integrated components of Kapsch's traffic and demand management solution which reduces the risk of having to integrate individual subsystems provided by many vendors.
- The project team consisting of Kapsch, Econolite, and VIBE have a proven track record of collaborating with the County.

This offer reflects our understanding of the County's needs and our proposal of how to best accomplish the goals of the project. The offer includes:

- Field installation of devices (RSUs, IVA, CCTV, MVA) as part of the design-build effort; post Go-Live, Pinellas County will provide Tier 1 support including any field work to repair/maintain field devices.
- Configuration and installation of the PCC on the Azure hosting platform and transference of the maintenance responsibility to Pinellas upon the completion of the burn-in period. Pinellas County will be responsible for Tier 1 support of the solution beginning upon full system acceptance at the end of the burn-in period. Kapsch is open to discussing the option of a full Software as a Service offering should the County be interested.
- ***The Kapsch standard warranty***. Kapsch warrants that it shall provide any services under this Agreement in good faith and workmanlike manner. Kapsch warrants any materials delivered shall conform to applicable specifications for a period of (one year) after delivery. Upon written notice of a defect, Kapsch shall at its option repair or replace the defective material. This warranty covers defects arising under normal use, and does not cover defects resulting from misuse, abuse, neglect, repairs, alterations or attachments made by Customer or third parties not approved by Kapsch, problems with electrical power, usage not in accordance with product instructions, or any interfaces with systems, equipment, firmware or software not developed by Kapsch. Kapsch reserves the right to investigate claims by Customer as to defects. Customer shall pay costs to investigate invalid claims and for any repair or replacement shown by investigation not to be covered by warranty. Products supplied but not manufactured by Kapsch shall be subject to the warranty provided by the original manufacturer, which Kapsch shall pass through to the Customer. THE WARRANTIES SET FORTH IN THIS PROVISION ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OR TRADE.

- Designs, drawings, specifications, reports, computer software and code, photographs, instruction manuals, and other technical information and data (hereinafter "Work") provided by Kapsch hereunder, whether conceived and developed prior to or during the performance of work, and all proprietary right and interest therein and the subject matter thereof shall be and remain the property of Kapsch except as otherwise expressly agreed in writing by Kapsch. Kapsch hereby grants a royalty-free, limited, non-transferable license to Customer to use Work delivered by Kapsch to Customer solely for the purposes specifically expressed hereunder. Kapsch proposes a commercial end user license.
- Pinellas County will be responsible for providing reliable network connectivity to/from the PCC. Kapsch is not responsible for network failures that impede the use of the PCC system.
- Kapsch offer assumes that mutually agreeable payment milestones will be agreed upon with the intent to provide cash neutral outlays for both parties.
  - Kapsch offer includes a mobilization payment of 15% of the total design build upon notice to proceed in order to facilitate acceleration of the initial development activities to help meet the project schedule.
  - Kapsch offer assumes monthly payments for project management.
  - Statements related to the schedule may be found in proposal Section IV.

Specific Terms of the Offer Related to Individual System Requirements

Table PS-01. Offer Terms for Specific Requirements

No.	Requirement	Terms of the Offer
1.1.2	The CMP shall receive, aggregate, and send Smart City related data	Our offer includes our existing integration of HERE and WAZE data as well as the integration of proposed new data sources (911, Transit, Weather, and Sunguide) subject to the following conditions: • Proposed new data sources have available standards-based data feeds • Any other 3rd party data sources are not included in the offer
1.2.1	The Performance Measures module shall display dashboards and reports of current system performance	Our offer includes the provision of five new dynamic dashboards (one of which will display current vs historical travel times per 1.2.1.2) and training for Pinellas staff on how to build additional dashboards.
1.2.2	The Predictive Analytics Module shall predict incident risk within the region	6 months of historical data are required to train and calibrate the AI/ML model. If the County can provide at least 6 months of historical data needed to train the model, we can accelerate development and acceleration of the model. If the County does not have historical data, the model will be built upon data collected as soon as Kapsch integrates the new data sources into CMP.
1.2.2.3	The Predictive Analytics Module shall send appropriate County users an alert when an incident is likely to occur.	PAM predicts an incident risk for segments in the network, not specific individual events. The PCC will be implemented to trigger an alert when the segment-

No.	Requirement	Terms of the Offer
		specific predicted incident risk is greater than a threshold defined in cooperation with the County.
1.2.4.4	The Decision Support Module shall provide recommendation for messages and timing plans for the load balance.	Our offer complies with the RFP text on page 28 stating "The VENDOR will develop a load balancing algorithm using a deterministic model to distribute trips across the available network capacity based on speeds, travel times and **current signal timings**." Our offer does not include recommending changes to signal timing plans.
DR 2.4, DR 5.10, DR5.17, DR 8.2	Involvement of TERL	Any delay due to involvement of and ultimate approval by TERL will have to be negotiated and agreed upon by County. Kapsch is not responsible for project delays due to involvement of TERL.
DR 3.1	The system shall expand the SCDP to interface with 3rd party applications.	Our offer includes integration with applications denoted as part of the PCC solution and data sources mentioned in the RFP (i.e., 911, Sunguide, Weather, and Transit). The SCDP has a defined API for further 3rd party application interfaces expansion. Integration Offer does not include any 3rd part applications not mentioned in RFP Figure 4.
DR 4.2	The system shall deploy a load balancing algorithm to improve use of alternate underutilized corridors.	Kapsch's offer focuses on load balancing algorithms and traveler information messages to meet this requirement. Based on the answer to Question #57 that references page 28 of the RFP which states: "The module will also provide recommendations through a Mobile Routing Application (MRA) ***and provide an incentivization model to prompt drivers, through their smartphones, to accept an alternative route*** if one is determined to be beneficial to overall network capacity" Our offer includes an incentivization model based around improved travel times and delays to induce changes in driver route choice behavior.
DR 8.4	The Vendor shall obtain licensing for the CV system (e.g., RSUs) from the Federal Communications Commission (FCC)	Kapsch will assist the County to apply and obtain the FCC license for the RSU location. FCC processes require the owning organization, in this case the County, to submit the application once complete.
DR 10.16	The on-site service includes the hardware and software technical support, firmware upgrades, software upgrades, licenses, product upgrades, and hardware repair and support with guaranteed response times for diverse levels of problems. CEI shall verify this with VENDOR documentations.	Kapsch offers a cloud hosted solution and will provide services commensurate with helping the County maintain the cloud-hosted solution.
DR 10.19	The VENDOR shall present Standard Operating Procedures (SOPs) to the Pinellas County DPW for approval	Our offer includes 80 hours to support the County with creating/updating SOPs.

Section III Functional Requirements

kapsch >>>
challenging limits

System VENDOR/Manufacturer: Kapsch TrafficCom, USA, Inc.

Contact: Don Hicks, VP National Sales and Business Development, don.hicks@kapsch.net

ATMS Software:

Pinellas Connected Community - System Requirements Matrix

No.	Requirement Function/Description	Req Type, Method & Source Documentation			Compliance			
		Req Type	Verification Method	Parent Req	Compliant	Partially Compliant	Not Compliant	Vendor Response - Please enter Comments in Column I to explain the reason for any functions that are noted as Partially Compliant and if customization of the software is necessary.
1.0	The Connected Community System shall provide multi-modal and multi-agency strategies and technologies to improve mobility and safety within the region	F	DEMO		X			
1.1	The Smart City Data Platform will store all necessary data for the Connected Community System	D	DEMO	1.0	X			
1.1.1	The Connected Mobility Command Center (CMCC) shall monitor the status of CV Roadside equipment	F	DEMO	1.1	X			
1.1.1.1	The CMCC shall send J2735 formatted messages to CV Roadside equipment	F	DEMO	1.1.1	X			
1.1.1.2	The CMCC shall send data to the Connected Mobility Platform (CMP).	F	DEMO	1.1.1	X			
1.1.2	The CMP shall receive, aggregate, and send Smart City related data	F	DEMO	1.1	X			
1.1.2.1	The CMP shall receive CV related data from the CMCC	F	DEMO	1.1.2	X			
1.1.2.2	The CMP shall receive video analytics data from the video analytic system	F	DEMO	1.1.2	X			
1.1.2.3	The CMP shall receive sign data from the Mobile Video platform	F	DEMO	1.1.2		X		Integration between the MVA and CMP will be implemented during the project
1.1.2.4	The CMP shall receive virtual video data from the Mobile Video platform	F	DEMO	1.1.2		X		Integration between the MVA and CMP will be implemented during the project
1.1.2.5	The CMP shall receive construction zone data from the Mobile Video platform	F	DEMO	1.1.2		X		Integration between the MVA and CMP will be implemented during the project
1.2	The Smart City Operational Platform shall provide the business processes for the system	F	DEMO	1.0	X			
1.2.1	The Performance Measures module shall display dashboards and reports of current system performance	F	DEMO	1.2	X			
1.2.1.1	The Performance Measures module shall provide an interface for users to create new dashboards and reports	F	DEMO	1.2.1	X			
1.2.1.2	The Performance Measures module shall display current versus historical travel times	F	DEMO	1.2.1	X			
1.2.1.3	The Performance Measures module shall receive data from the CMP	F	DEMO	1.2.1	X			
1.2.1.4	The Performance Measures module shall be viewable through a menu item selectable within the Smart City Platform	F	DEMO	1.2.1	X			
1.2.2	The Predictive Analytics Module shall predict incident risk within the region	F	DEMO	1.2	X			
1.2.2.1	The Predictive Analytics Module shall compute the location of an incident risk	F	DEMO	1.2.2	X			
1.2.2.2	The Predictive Analytics Module shall receive current transportation data from the CMP	D	DEMO	1.2.2		X		Integration between the PAM and CMP will be implemented during the project
1.2.2.3	The Predictive Analytics Module shall send appropriate agency users an alert when an incident is likely to occur	F	DEMO	1.2.2		X		Integration between the PAM and CMP will be implemented during the project
1.2.2.4	The Predictive Analytics Module shall send predicted incidents to the CMP	F	DEMO	1.2.2		X		Integration between the PAM and CMP will be implemented during the project
1.2.3	The Demand Management Module shall calculate a recommended load balance between parallel routes.	F	DEMO	1.2		X		Our DMM does load balancing but specific rules for Pinellas County need to be configured.
1.2.3.1	The Demand Management Module shall use route selection criteria based on travel time and traffic volumes	F	DEMO	1.2.3	X			
1.2.3.2	The Demand Management Module shall receive data from the CMP	D	DEMO	1.2.3	X			
1.2.3.3	The Demand Management Module shall provide recommendation of appropriate messages to be tested on physical DMS	F	DEMO	1.2.3	X			
1.2.3.4	The Demand Management Module shall provide the adequate distribution of vehicles between main and alternative routes according to objective criteria	F	DEMO	1.2.3		X		Our DMM does load balancing but specific rules for Pinellas County need to be configured
1.2.3.5	The Demand Management Module shall provide data for mobile app providers for visual and spoken notification of route recommendations, as in the Mobile Routing Analytics (MRA) application and Virtual Dynamic Messages (VDMS).	D	DEMO	1.2.3	X			
1.2.4	The Decision Support Module shall provide recommended actions for events	F	DEMO	1.2	X			
1.2.4.1	The Decision Support Module shall calculate when load balancing is needed	F	DEMO	1.2.4	X			
1.2.4.2	The Decision Support Module shall calculate the optimal distribution of trips across the available network capacity based on speeds, travel times and current signal timings.	F	DEMO	1.2.4		X		This is core Functionality of DSS but specific rules for Pinellas County need to be configured
1.2.4.3	The Decision Support Module shall notify agency users when a load balance is recommended	F	DEMO	1.2.4		X		This is core Functionality of DSS but specific rules for Pinellas County need to be configured
1.2.4.4	The Decision Support Module shall provide recommendation for messages and timing plans for the load balance.	F	DEMO	1.2.4	X			
1.3	Intersection Video Analytics (IVA) shall use video streams to develop various traffic data	F	DEMO	1.3	X			
1.3.1	Intersection Video Analytics (IVA) shall recognize pedestrians within an instrumented intersection with a 90% accuracy	F	DEMO	1.3	X			
1.3.2	Intersection Video Analytics (IVA) shall recognize bicycles within an instrumented intersection with a 90% accuracy	F	DEMO	1.3	X			
1.3.3	Intersection Video Analytics (IVA) shall send pedestrian and bicycle detections to the CMP	F	DEMO	1.3	X			
1.3.4	Intersection Video Analytics (IVA) shall send pedestrian and bicycle detections to the CV infrastructure	F	DEMO	1.3	X			

1.4	Mobile Routing Analytics (MRA) App shall display traffic data	F	DEMO	1.4	X			
1.4.1	Mobile Routing Analytics (MRA) App shall display signal phase and timing data as a user approaches a CV-equipped intersections	F	DEMO	1.4		X		This feature is currently under development and will be configured for Pinellas during the project
1.4.2	Mobile Routing Analytics (MRA) App shall display current event information from the Smart City Platform	F	DEMO	1.4	X			
1.4.3	Mobile Routing Analytics (MRA) App shall display recommended routing	F	DEMO	1.4		X		This feature is currently under development and will be configured for Pinellas during the project
1.4.4	Mobile Routing Analytics (MRA) App shall be available for users to download from the Apple App Store and/or Google Play Store	F	DEMO	1.4	X			
1.4.5	Virtual Dynamic Message Sign (VDMS) messages shall display current event information from the Smart City Platform	F	DEMO	1.4	X			
1.4.6	Virtual Dynamic Message Sign (VDMS) messages shall display recommended routing	F	DEMO	1.4		X		This feature is currently under development and will be configured for Pinellas during the project
1.4.7	Virtual Dynamic Message Sign (VDMS) messages shall be available for users to download from the Apple App Store and/or Google Play Store	F	DEMO	1.4	X			
1.5	Mobile Video Analytics (MVA) shall analyze mobile video streams to provide summary data of the infrastructure	F	DEMO	1.0	X			
1.5.1	Mobile Video Analytics (MVA) shall provide a visual location and inventory of current road signs in the test area	F	DEMO	1.5	X			
1.5.2	Mobile Video Analytics (MVA) shall detect, monitor, and map all Road Work Zones and Transit stop in the test area	F	DEMO	1.5	X			
1.5.3	Mobile Video Analytics (MVA) shall provide virtual camera images viewable on the Smart City Platform map interface	F	DEMO	1.5	X			
1.5.4	Mobile Video Analytics (MVA) interface will be viewable within the Smart City Platform	D	DEMO	1.5		X		This will be implemented as part of this project
1.6	CV Roadside Unit (RSU) shall be capable of being managed by the CMCC	F	DEMO	1.0	X			
1.6.1	CV Roadside Unit (RSU) shall provide an ethernet connection to traffic signal controller	F	DEMO	1.6	X			
1.6.2	CV Roadside Unit (RSU) shall use a power over ethernet connection	F	DEMO	1.6	X			
1.6.3	CV Roadside Unit (RSU) shall use both DSRC and CV2X simultaneously (i.e., dual mode)	F	DEMO	1.6	X			
1.6.4	CV Roadside Unit (RSU) shall send J2735 and J294S messages to OBU equipped vehicles	F	DEMO	1.6	X			
1.6.5	CV Roadside Unit (RSU) shall send and receive signal phase and timing information	F	DEMO	1.6	X			
1.6.6	CV Roadside Unit (RSU) shall be installed at county identified intersections	F	DEMO	1.6	X			
1.6.7	CV Roadside Unit (RSU) shall transmit data using DSRC, CV2X, and/or cellular standards	F	DEMO	1.6	X			
DR001.1	The Connected and Automated Vehicle (CV) system shall use a CV Roadside Unit (RSU) at intersections within key to send and receive messages from Onboard Units (OBU) in vehicles, Cellular-OBU (C-OBUs) and Personal Information Device (PID).	F	DEMO	ConOps Section 4	X			
DR001.2	RSUs shall be properly interfaced with traffic signal controllers, according to manufacturers' specifications and CEI verification.	I	INSPECT	ConOps Section 4	X			
DR001.3	The system shall use Society of Automotive Engineers (SAE) most current J2735 message sets (e.g., Signal Phase and Timing (SPaT), MAP (roadway geometry), Basic Safety Message (BSM), Personal Safety Message (PSM), Traveler Information Message (TIM), Signal Request Message (SSM), Signal Status Message (SSM), etc.) and J2945 onboard system requirements.	C	TEST	ConOps Section 4	X			
DR001.4	The CV RSU messages shall be readable by an OBU in vehicles, and C-OBU smartphone application(s).	F	DEMO	ConOps Section 4	X			
DR001.5	In-vehicle C-OBU equipment to meet Florida Design Standards and standard specifications	F	DEMO	Technical Special Provision	X			
DR001.6	The CV RSUs messages shall be readable by a pedestrian smartphone/Personal Information Device (PID)-based application.	F	DEMO	ConOps Section 4	X			
DR001.7	The CV system shall send out safety alerts to vehicle and pedestrian through C-OBUs and PIDs.	F	DEMO	ConOps Section 4	X			
DR001.8	The system shall deploy Intersection Video Analytics (IVAs) added to existing Pinellas County Closed-Circuit Television (CCTV) for both a pedestrian and work zone detection system.	F	DEMO	ConOps Section 4	X			
DR001.9	IVA equipment to meet Florida Design Standards and standard specifications	F	DEMO	Technical Special Provision	X			
DR001.10	The system shall deploy Dash Cams for Mobile Video Analytics (MVAs) to assist with predictive analytics and readable by RSUs.	H	DEMO	ConOps Section 4	X			
DR001.11	Dash Cam equipment to meet Florida Design Standards and standard specifications	F	DEMO	Technical Special Provision	X			
DR001.12	The CV system shall deploy PID-OBUs for Mobile Routing Analytics (MRAs) and Virtual Dynamic Message Sign (VDMS) messages to assist with in-vehicle rerouting.	H	DEMO	ConOps Section 4		X		Mobile Routing is being added to our mobile app. Will be finalized during the project
DR001.13	The CV system shall expand the existing Smart City Data Platform (SCDP) to provide a data interface to 3rd party mobile app developers	I	DEMO	ConOps Section 4	X			
DR001.14	The CV system shall expand SCDP to include demand management, load balancing and predictive analytics modules.	F	DEMO	ConOps Section 4	X			
DR001.15	The CV system shall collect and store/archive MRA, VDMS, IVA and MVA, demand management, load balancing and predictive analytics data for later retrieval and analysis.	D	TEST	ConOps Section 4	X			
DR001.16	The system shall collect and store/archive data for pedestrian and vehicle safety performance measurement. CEI shall verify that the data is collected at the TMC.	D	TEST	ConOps Section 4	X			
DR001.17	The system shall allow collecting, storing and comparing before and after incident response times.	D	TEST	ConOps Section 4	X			
DR001.18	Pedestrian Safety application software on a PID shall receive and send messages to/from the RSU.	F	DEMO	ConOps Section 4	X			
DR001.19	The pedestrian PID shall use an application that receives notices from an RSU of an approaching vehicle, when an opposing pedestrian phase is active.	F	DEMO	ConOps Section 4	X			
DR001.20	The RSU shall log all BSMs, PSMs, TIMs and vehicle and PID alerts and forward data to storage per the system design.	F	DEMO	ConOps Section 4	X			
DR001.21	The PID application(s) shall provide transmission to storage using RSU/OBU logs	F	DEMO	ConOps Section 4	X			

DR001.22	The PID and OBU devices shall read, interpret and present a Cellular-Vehicle to Everything (C-V2X) and/or Dedicated Short- Range Communications (DSRC) Traveler Information Message (TIM) from the RSU as allowed by Federal Communications Commission (FCC) licensing for CVs.	F	DEMO	ConOps Section 4	X			
DR001.23	CAV RSUs shall comply with the FDOT Connected Vehicle Roadside Unit (RSU) Development Specification Section 681 for DSRC and C-V2X communications or as amended for the project.	F	DEMO	Develop-ment Specifica-tion Dev681CV RSU	X			
DR002.1	The system shall deploy a predictive analytics algorithm for use with Dash Cams and MVAs	F	DEMO	ConOps Section 4	X			
DR002.2	The system shall deploy a Decision Support System (DSS) for incident management.	F	DEMO	ConOps Section 4	X			
DR002.3	The system shall deploy IVAs on CCTVs for incident detection.	F	DEMO	ConOps Section 4	X			
DR002.4	The FDOT Transportation Engineering Research Laboratory (TERL) approval of IVA and MVA equipment shall be conducted, as determined by application to TERL.	C	TEST	ConOps Section 4	X			
DR003.1	The system shall expand the SCDP to interface with 3rd party applications.	I	DEMO	ConOps Section 4	X			
DR004.1	The system shall deploy a Demand Management Module.	F	DEMO	ConOps Section 4	X			
DR004.2	The system shall deploy a load balancing algorithm to improve use of alternate underutilized corridors.	F	DEMO	ConOps Section 4	X			
DR004.3	The system shall deploy a Decision Support System (DSS) to improve use of alternate, underutilized corridors.	F	DEMO	ConOps Section 4	X			
DR005.1	The system shall provide for a Mobile Routing Analytics (MRA) and Virtual Dynamic Messages (VDMS) software on the SCDP.	F	DEMO	ConOps Section 4	X			
DR005.2	The system shall provide for MRA software to run on a smartphone/PID.	F	DEMO	ConOps Section 4	X			
DR005.3	MRA messages for an individual vehicle shall be transmitted from the TMC SCDP to the vehicle's OBU smartphone/PID via RSUs.	F	DEMO	ConOps Section 4	X			
DR005.4	MRA messages for an individual vehicle shall be transmitted from the vehicle's OBU smartphone/PID to the TMC SCDP via RSUs.	F	DEMO	ConOps Section 4	X			
DR005.5	The smartphone/PID to be used as OBU shall be compatible with Personal Safety Message (PSM) data based on SAE J2735 and J2945 message set standards.	D	TEST	ConOps Section 4	X			
DR005.6	The smartphone/PID to be used as OBU shall be compatible with Traveler Information Message (TIM) data based on SAE J2735 and J2945 message set standards.	D	TEST	ConOps Section 4	X			
DR005.7	The MRA system shall determine best routes for vehicles with PID-OBU.	F	DEMO	ConOps Section 4	X			
DR005.8	The TIM or alert message shall be displayed on a PID with an MRA application.	F	DEMO	ConOps Section 4	X			
DR005.9	The MRA smartphone/PID app shall be capable of sending and receiving compatible information to the 3rd party SCDP interface.	D	TEST	ConOps Section 4	X			
DR005.10	TERL approval of MRA application shall be conducted, as determined by application to TERL.	P	TEST	ConOps Section 4	X			
DR005.11	The system shall provide for Virtual Dynamic Messages (VDMS) software on the SCDP.	F	DEMO	ConOps Section 4	X			
DR005.12	The system shall provide for VDMS software to run on a smartphone/PID.	F	DEMO	ConOps Section 4	X			
DR005.13	VDMS messages for an individual vehicle shall be transmitted from the TMC SCDP to the vehicle's OBU smartphone/PID via RSUs.	F	DEMO	ConOps Section 4	X			
DR005.14	VDMS messages for an individual vehicle shall be transmitted from the vehicle's OBU smartphone/PID to the TMC SCDP via RSUs.	F	DEMO	ConOps Section 4	X			
DR005.15	The TIM or alert message shall be displayed on a PID with VDMS application.	F	DEMO	ConOps Section 4	X			
DR005.16	The VDMS smartphone/PID app shall be capable of sending and receiving compatible information to the 3rd party SCDP interface.	D	TEST	ConOps Section 4	X			
DR005.17	TERL approval of VDMS application shall be conducted, as determined by application to TERL.	P	TEST	ConOps Section 4	X			
DR005.18	The equipment shall meet DMS, CCTV and all CV/ITS equipment requirements as denoted in the *FDOT Standard Specifications for Road and Bridge Construction,* most current edition	F	DEMO	ConOps Section 4	X			
DR006.1	The PCC system with its new elements, information flows and services in Pinellas County, City of Clearwater and St. Petersburg shall be compatible with PCC ConOps revisions suggested to the FDOT District Seven Regional Intelligent Transportation System Architecture (RITSA)	F	DEMO	ConOps Section 4	X			
DR006.2	The system shall provide a Data Mart for 3rd Party app developers, as defined by the system designers.	D	DEMO	ConOps Section 4		X		This current capability in CMP requires some new development for the new data sources to be made available in PCC
DR006.3	The system shall provide for traffic control continuity with modular systems that can be maintained, expanded, or replaced at the end of their technological lifecycle.	F	DEMO	ConOps Section 4	X			
DR006.4	RSU and all equipment warranties shall be transferrable and signed over to Pinellas County upon system acceptance.	C	DEMO	ConOps Section 4	X			
DR006.5	The VENDOR shall train Pinellas County maintenance staff and contracted personnel on RSUs and all CV interfaces and systems prior to system acceptance.	F	DEMO	ConOps Section 4	X			
DR006.6	CV system security shall be integrated with a Security Credential Management System (SCMS).	I	TEST	ConOps Section 4	X			
DR006.7	The SCMS used shall be compatible with or supplied by the statewide FDOT vendor.	F	DEMO	ConOps Section 4	X			
DR007.1	User privacy and Personally Identifiable Information (PII) of users, when collected, shall be protected (by scrubbing of PII, etc.).	F	DEMO	ConOps Section 4	X			
DR007.2	The software system(s) shall be password protected.	F	DEMO	ConOps Section 4	X			
DR007.3	The system components (RSUs, etc.) shall be password protected.	F	DEMO	ConOps Section 4	X			
DR007.4	The TMC facilities shall be secured from intrusion by persons without security clearance.	F	DEMO	ConOps Section 4	X			
DR007.5	The system shall log number of known attempted and successful breaches.	D	TEST	ConOps Section 4	X			
DR007.6	The VENDOR shall provide a plan for cyber-incident response including a proposed cyber incident response team of Community Emergency Response Team (CERT) type make-up.	F	DEMO	ConOps Section 4	X			

DR007.7	System software shall be updated to protect the software from breaches and failures as the software suppliers create updates.	F	DEMO	ConOps Section 4	X			
DR007.8	The VENDOR shall submit to Pinellas County a description of how the system will prevent, detect, log, and resolve attempted exploits.	F	DEMO	ConOps Section 4	X			
DR007.9	The system shall have a means to prevent or terminate system access of devices having medium- or high-risk determination during regular, recurring operations monitoring.	F	DEMO	ConOps Section 4	X			
DR008.1	Equipment and software shall meet requirements as denoted in the *FDOT Standard Specifications for Road and Bridge Construction,* most current edition, and other standards, such as NTCIP, IEEE, etc.	F	DEMO	ConOps Section 4	X			
DR008.2	CV, ITS and signal equipment shall come from the FDOT Approved Products List (APL) or be reviewed and proceed only with approval by the FDOT TERL.	F	DEMO	ConOps Section 4	X			
DR008.3	New elements of the Traffic CV Management System shall be consistent with and compatible with the operational functions of the existing Traffic CV Management System.	F	TEST	ConOps Section 4	X			
DR008.4	The Vendor shall obtain licensing for the CV system (e.g., RSUs) from the Federal Communications Commission (FCC).	F	DEMO	ConOps Section 4	X			
DR008.5	CV system shall use C-V2X communications and/or Dedicated Short-Range Communications (DSRC) as allowed by the most recent FCC regulations for CV communications.	F	DEMO	ConOps Section 4	X			
DR008.6	The CV system shall use CV V2I communications — SAE J2735 message set, latest version.	F	DEMO	ConOps Section 4	X			
DR008.7	The CV system shall use CV V2I communications — SAE J2945 message set, latest version.	F	DEMO	ConOps Section 4	X			
DR008.8	SAE J2735 and J2945 full-message-set transmission between the OBUs and RSU infrastructure (e.g., SPaT, MAP, TIM, BSM, SRM, and P SSM) shall occur with no errors and verified by CEI.	P	TEST	ConOps Section 4	X			
DR008.09	The SCMS system shall be tested with a representative sample of project devices in accordance with the SCMS provider's guidance.	D	TEST	ConOps Section 4	X			
DR008.10	C-V2X/DSRC message transmission between the OBUs and RSU infrastructure (e.g., SPaT, MAP, TIM, BSM, SRM, and SSM) shall occur with no errors and verified by CEI.	D	TEST	ConOps Section 4	X			
DR008.11	The system shall offer low latency, secure applications, TMC control, and minor infrastructure modifications.	F	TEST	ConOps Section 4	X			
DR008.12	Initial testing must allow for drivers with CV equipment passing through the study area to not interfere with nor be interfered with by the equipment installation and tests.	F	TEST	ConOps Section 4	X			
DR008.13	Installation, testing, and maintenance of the CV equipment shall be done according to the VENDOR's prescribed methods and with due diligence for maintenance and protection of traffic and CV messaging.	C	TEST	ConOps Section 4	X			
DR008.14	Mean, median, maximum latency shall be within system tolerance. Latency is a time delay between the cause and the effect of some physical change in the system being observed.	P	TEST/ ANALYSIS	ConOps Section 4	X			
DR008.15	Under failure of equipment or communications, the RSU system shall notify the Pinellas County TMC operator of the system problem.	F	DEMO	ConOps Section 4	X			
DR008.16	Drivers and pedestrians shall view a local "no signal" message when the OBU or PID system is inoperable.	F	DEMO	ConOps Section 4	X			
DR008.17	The OBU Human Machine Interface (HMI) shall be mounted or installed in a location where it does not obstruct the line of sight of the vehicle operator nor distract from the primary task of driving.	F	DEMO	ConOps Section 4	X			
DR008.18	The OBU HMI shall be positioned in a location such that it can provide a visual output to the driver that can be read from the driver's normal seated position.	F	DEMO	ConOps Section 4	X			
DR008.19	The OBU HMI shall present alerts to drivers using a device that drivers are familiar with and limits driver interaction.	F	DEMO	ConOps Section 4	X			
DR008.20	An OBU shall issue alerts to the vehicle operator via an HMI.	F	DEMO	ConOps Section 4	X			
DR008.21	The OBU HMI shall include both a visual and auditory interface for sharing traveler information that correlates with local signage (e.g., speed limits) per Manual on Uniform Traffic Control Devices (MUTCD) requirements.	F	DEMO	ConOps Section 4	X			
DR008.22	The OBU HMI shall notify the driver of MRA system status with the screen graphics and audio instructions.	F	DEMO	ConOps Section 4	X			
DR008.23	The OBU HMI shall notify the driver of VDMS system status with the screen graphics and audio instructions.	F	DEMO	ConOps Section 4	X			
~~DR008.24~~	~~The number of calls for OBU maintenance, time required to maintain shall be tracked and logged.~~	~~D~~	~~TEST~~	~~ConOps Section 4~~				Deleted by Q&A
DR008.25	The MVA Dash Cam shall be mounted in the vehicle or installed in a location where it does not obstruct the line of sight of the vehicle operator nor distract from the primary task of driving.	H	DEMO	ConOps Section 4	X			
DR008.26	An RSU shall use Coordinated Universal Time (UTC) time for all logged data (e.g., events logs, probe vehicle data) based on the format defined in J2735 section 6.19 and epoch of January 1st, 1970.	C	TEST	ConOps Section 4	X			
DR008.27	RSU functionality failure shall not affect the safe operation of the signal controller.	C	DEMO	ConOps Section 4	X			
DR008.28	An RSU shall implement a firewall blocking all Internet protocol (IP) access from devices to any IP address other than those approved for specific applications.	D	TEST	ConOps Section 4	X			
DR008.29	An RSU shall support secure communication to/from the TMC.	F	TEST	ConOps Section 4	X			
DR008.30	The TMC shall transmit performance metrics, as specified by traffic management staff, and defined in the Systems Validation Plan, to the storage/archival system	P	TEST	ConOps Section 4	X			
DR008.31	The Traffic CV Management System shall make the status of RSUs available to Traffic Management Staff.	F	DEMO	ConOps Section 4	X			
DR008.32	The Traffic CV Management System shall provide an alert to Traffic Management Staff via an email to the location of an RSU that is not running normally (off, not responding, in safe mode, etc.)	F	DEMO	ConOps Section 4	X			
DR008.33	The Traffic CV Management System shall monitor status of tamper alert devices to the extent that monitoring does not interfere with tamper alert operations.	F	DEMO	ConOps Section 4	X			
DR008.34	The Traffic CV Management System shall maintain a log of all alerts issued to traffic management staff	F	DEMO	ConOps Section 4	X			

DR008.35	The CV equipment (e.g., RSUs, PIDs, IVA, MRA, MVA, VDMS, etc.) shall be connected so as not to interfere with the basic operations of the equipment it is attached to (e.g., traffic controller, CCTV camera, vehicle, etc.).	F	DEMO	ConOps Section 4	X			
DR008.36	The CV equipment (e.g., RSUs, PIDs, IVA, MRA, MVA, VDMS, etc.) shall be properly grounded to protect from electrical surges.	H	INSPECT	ConOps Section 4	X			
DR009.1	The system shall collect data to evaluate Component Effectiveness (false positives/negative alerts)	D	TEST	ConOps Section 4	X			
DR009.2	The system shall collect data to evaluate System Effectiveness (reduced collisions, increased travel speed, reduced delay, reduced operational downtime)	D	DEMO	ConOps Section 4	X			
DR009.3	Data from each CV App shall be collected in the Storage Area Network (SAN), Network Attached Storage (NAS) or cloud storage per the system design.	D	DEMO	ConOps Section 4	X			
DR009.4	The data retention, archival, and retrieval system of the data storage shall comply with: - Public Records Law, Chapter 119, Florida Statutes - Safety and Security Services, Section 281.301, Florida Statutes - Security of Data and Information Technology Resources Act, Section 282.318, Florida Statutes - Florida Cybersecurity Standards, Chapter 60GG-2, Florida Administrative Code The system shall be able to compare data from each CV App versus data from the "before" data to evaluate the effectiveness of the system.	D	DEMO	ConOps Section 4	X			
DR009.5	The system data shall meet or be consistent with constraints and conditions stated in the *PCC Data Management Plan*	D	DEMO	DMP	X			
DR009.6	The traffic data needed as defined in the Systems Validation Plan (Section 7.4) in the PCC ConOps will be physically stored and archived on a central data repository hosted in the Pinellas County TMC.	D	DEMO	ConOps Section 7.4	X			
DR009.7	The data repository will allow TMC operators to upload, archive, and manage project data for the purposes of analyzing traffic information regarding the CV applications for SPaT, IVA, MVA and MRA, VDMS, the DSS predictive analytics, demand management and so forth.	D	DEMO	ConOps Section 7.4	X			
DR009.8	Needed data required by FHWA and Pinellas County shall be readable and stored to the Project Open Data Metadata Schema | resources.data.gov or other FHWA required platforms. Link: ***https://resources.data.gov/keywords/project-open-data-metadata-schema/***	D	DEMO	DMP (pg. 7)		X		During the implementation of the project a data set will be defined following the schema definition
DR009.9	Data that is to be made publicly accessible shall follow the U.S. DOT Public Access Plan, as noted: ***https://www.transportation.gov/mission/open/official-dot-public-access-plan-v11***	D	DEMO	DMP (pg. 7)		X		During the implementation the defined data set will be available to the public
DR009.10	The repository shall be indexed in the following site: ***https://www.re3data.org/search?query=transportation***	D	DEMO	DMP (pg. 7)		X		During the implementation of the project the repository will be indexed.
DR010.1	The system shall be maintainable within VENDOR, FDOT and national operational standards and specifications	F	DEMO	ConOps Section 4	X			
DR010.2	The system shall use equipment that is rated to have Mean Time Between Failure per USDOT RSU Requirements (USDOT_RSU_340-v001). The RSU shall remain operational for an average of 100,000 hours. CEI can verify this information from the VENDOR documentations of all equipment to be within FDOT and National Standards.	P	DEMO	ConOps Section 4	X			
DR010.3	The RSU provider shall supply classroom training(s) of equipment installation, configuration, integration, and commissioning of its RSU, equipment, assemblies, and all related components and capabilities.	F	DEMO	ConOps Section 4	X			
DR010.4	The VENDOR shall be responsible for installation and installation instructions and shall provide training to Pinellas County DPW staff and asset maintenance VENDOR in the installation, replacement, and use of the OBU.	F	DEMO	ConOps Section 4	X			
DR010.5	The VENDOR(s) shall supply classroom training(s) and related materials (handouts, slides, booklets, etc.) on equipment installation, configuration, integration, and commissioning of the RSU equipment assemblies, OBU devices, PID apps, and other related components to Pinellas County Department of Public Works (DPW) staff and asset maintenance Vendor.	F	DEMO	ConOps Section 4	X			
DR010.6	The VENDOR shall provide a Certificate of Completion to all individuals who successfully complete the VENDOR training.	F	DEMO	ConOps Section 4	X			
DR010.7	OBU devices deployed shall be of the aftermarket type or based on smartphone/PID applications.	F	DEMO	ConOps Section 4	X			
DR010.8	Field maintenance of RSUs shall be conducted as needed prior to final acceptance.	F	DEMO	ConOps Section 4	X			
DR010.9	Test Plan and Operational Readiness Testing (ORT), per Test Readiness Review (TRR) and Operational Readiness Review (ORR), shall be completed prior to system acceptance and deployment.	P	TEST	ConOps Section 4	X			
DR010.10	Following the system VENDOR's training and instructions, the Pinellas County staff shall inspect and review the installation and testing of the equipment on US 19, SR 60, etc., according to the TRR and ORR plans.	P	INSPECT	ConOps Section 4	X			
DR010.11	The VENDOR shall train Pinellas County maintainers to install, test, and maintain the equipment.	F	DEMO	ConOps Section 4	X			
DR010.12	VENDOR installers shall be responsible to install and test the fleet vehicle OBUs according to TRR and ORR plans, as are further explained in the Systems Engineering Management Plan (SEMP).	F	TEST	ConOps Section 4	X			
DR010.13	The RSU VENDOR shall provide a Software Development Kit (SDK) license to Pinellas County for the RSU.	F	DEMO	ConOps Section 4	X			
DR010.14	The VENDOR shall provide troubleshooting guides, firmware upgrades and customer service plan throughout duration of the project, and warranty documentations and ensure all warranties are transferred to the Pinellas County DPW.	F	DEMO	ConOps Section 4	X			
DR010.15	The Manufacturer's Warranty shall include all software and hardware upgrades required to comply with the latest version of the standards.	F	DEMO	ConOps Section 4	X			
DR010.16	The on-site service includes the hardware and software technical support, firmware upgrades, software upgrades, licenses, product upgrades, and hardware repair and support with guaranteed response times for diverse levels of problems. CEI shall verify this with VENDOR documentations.	F	DEMO	ConOps Section 4	X			

DR010.17	An MRA, VDMS, IVA and MVA Installation and Maintenance Plan shall be provided to the Pinellas County DPW for approval. The MRA, VDMS, IVA and MV Installation and Maintenance Plan shall include details about installation site locations, site layouts, ingress and egress, electrical service and power layout, logistics for the initial installation of equipment and applications in different types of vehicles and at intersections included in the project, vehicle operator training on OBU messages and alerts, and logistics for continuing the MRA, VDMS, IVA and MVA, RSU and OBU related Technical Support Services.	F	DEMO	ConOps Section 4	X			
DR010.18	System software shall be updated to protect the software from breaches as the software suppliers create updates.	F	DEMO	ConOps Section 4	X			
DR010.19	The VENDOR shall present Standard Operating Procedures (SOPs) to the Pinellas County DPW for approval	F	DEMO	ConOps Section 4	X			
DR010.20	All warrantees for equipment shall be transferrable to Pinellas County	F	DEMO	ConOps Section 4	X			
DR010.21	The VENDOR shall turn over all warranties for equipment to Pinellas County upon systems acceptance.	F	DEMO	ConOps Section 4	X			

Section IV Project Work Plan

kapsch >>>
challenging limits

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SECTION IV PROJECT WORK PLAN

IV.1 Work Plan Approach and Schedule

Kapsch will work collaboratively with Pinellas County and their stakeholders to efficiently plan and optimize the implemementation schedule of the PCC. Kapsch will use multiple parallel workstreams with concurrent activities to meet the project goals and deadlines. Figure WP-01 depicts our high-level work plan and parallel workstreams.

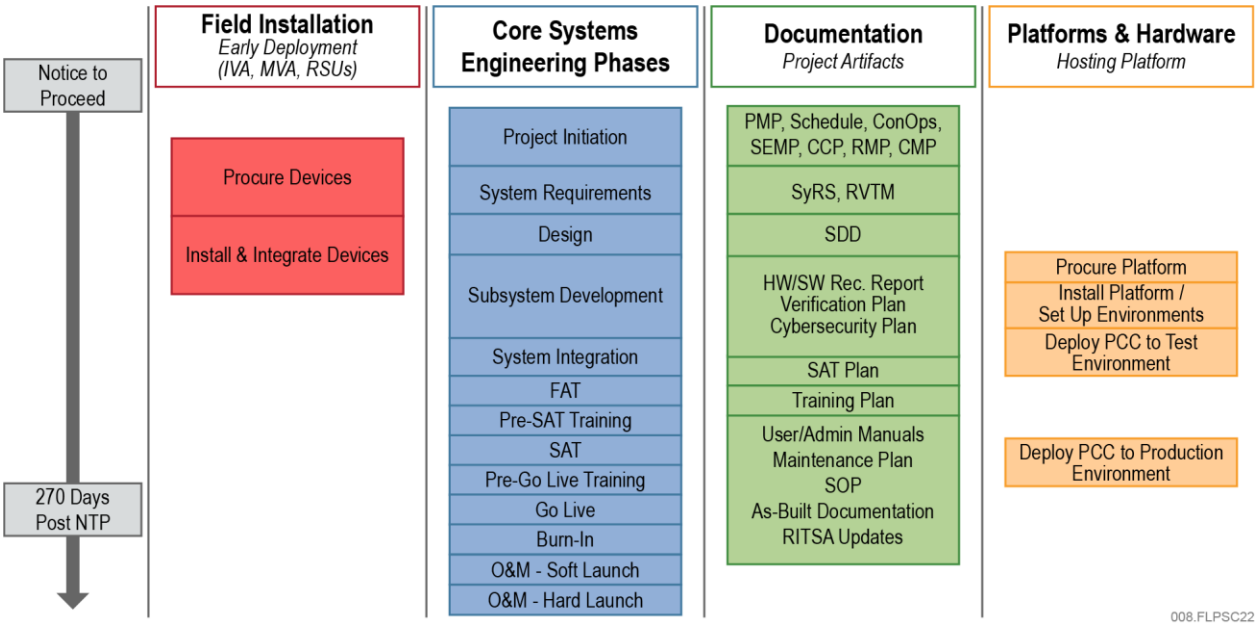

Figure WP-01. High-Level Work Plan

- **Primary Work Stream –** These activities make up the essential tasks defined in the software development lifecycle and systems engineering processes.
  - **Core Systems Engineering Phases**: This workstream involves the major tasks required to plan, design, implement, test, transition, and maintain the PCC. It aligns with the traditional Systems Engineering Process diagram as specified by FHWA. Most of these tasks are on the project schedule's critical path.
  - **Documentation**: We have separated out this workstream because the production and review of project artifacts has a major impact on schedule risk. In addition, the timing of some planning documents are not on the critical path and may be shifted in response to resource availability.
- **Supporting Work Stream –** These workstreams will be conducted by separate project teams, independent from the primary streams.
  - **Field Installation**: This workstream will be conducted early in the project as there is minimal overlap with the primary work stream. This supports the County's objective for an "early deployment."
  - **Platforms and Hardware**: This workstream team will work closely with the County's IT group to procure and set up the PCC Hosting Platform and environments.

Sequence to Deploy System Components

The subsystems and components of the PCC will be added in stages as shown in Figure WP-02.

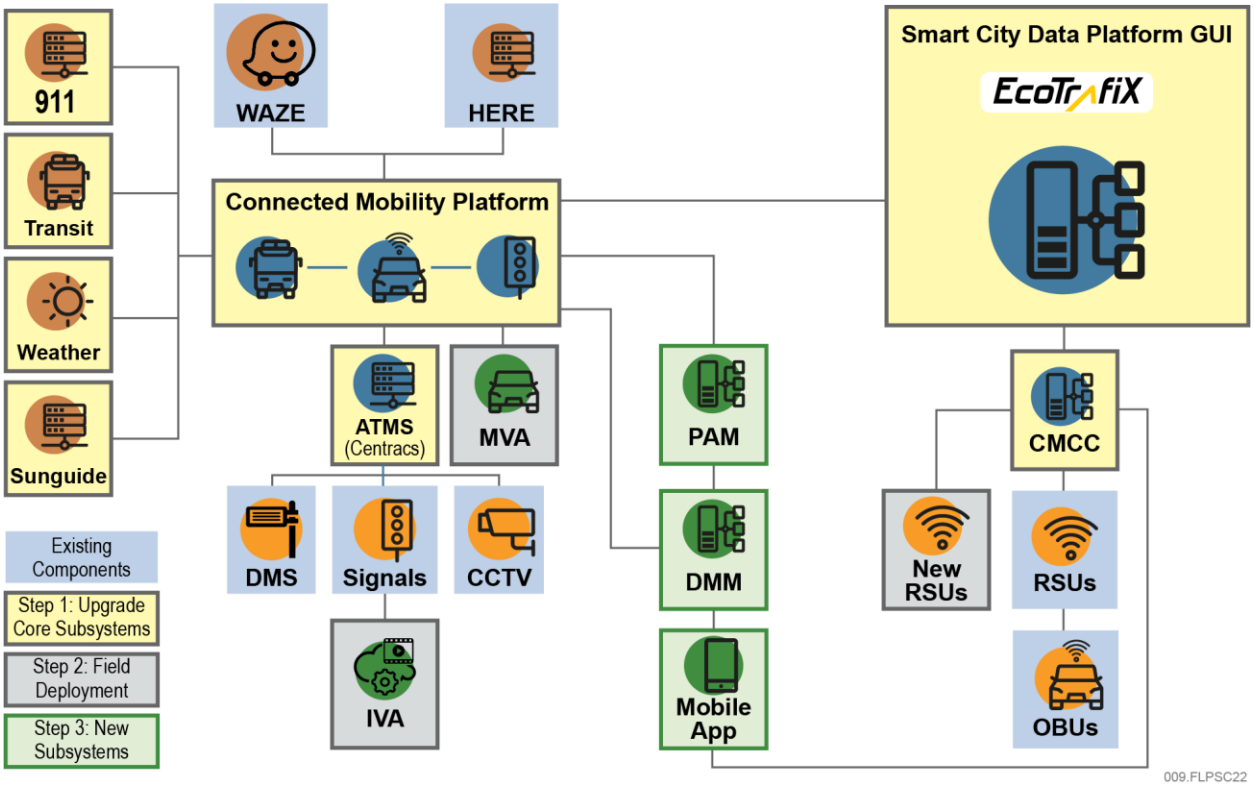

Figure WP-02. Deploying Existing Systems

- **Step 1 – Upgrade Core Subsystems**: At the start of the project, Kapsch will update the County's existing systems (CMP, CMCC, EcoTrafiX) to the latest versions then integrate new external data sources. Econolite and Kapsch will connect ATMS to CMP.
- **Step 2 – Field Deployment**: In the initial stages of the project, Kapsch will provide an early installation and integration of the field components including RSUs, IVA, and MVA.
- **Step 3 – New Subsystems**: Kapsch will deploy and calibrate PAM and DMM subsystems and roll out the mobile application.

Project Gates and Reviews

Kapsch will work closely with Pinellas County and your program manager to ensure all deliverables satisfy the project requirements. Our workplan incorporates formal project gates at key points in the work breakdown structure (Figure WP-03). During project initiation, Kapsch and the County will finalize the set of project gates, identify participants for each of the reviews, and agree on the acceptance criteria.

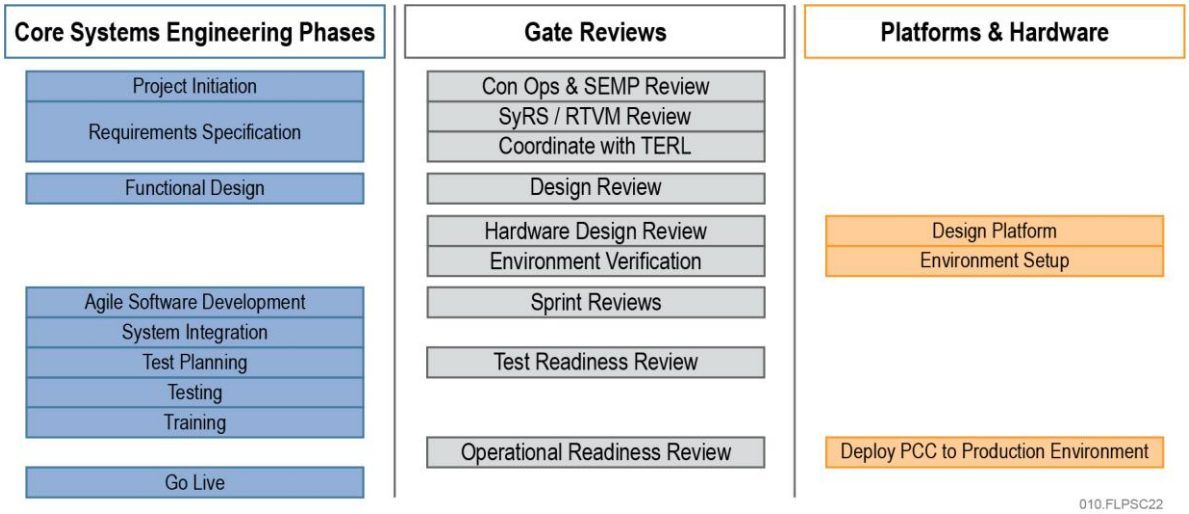

Figure WP-03. Formal Review Gates

High-Level Schedule

A high-level Gantt chart for the project schedule is presented in Figure WP-04. This schedule aligns with the six project phases and indicates the major task durations required to successfully plan, deliver, and operate the PCC while meeting the 270 day target for deployment: To reduce schedule risk, we have incorporated the following recommendations into our schedule:

- **Prioritizing project documentation**: The RFP includes nearly 20 planning documents that introduces significant schedule risk. We recommend prioritizing these deliverables both by postponing some of the documents until the soft-launch phase and eliminating some documents to ensure meeting desired project dates. This will allow the County to focus on key documentation during the design-build effort.
  - **Project Management Documents to Maintain**: Updated PMP, SEMP, and ConOps; Project Schedule, Risk Management Plan, Configuration Management Plan, Change Control Plan.
  - **Documents needed for Gate Reviews**: SyRS & RTVM, SDD, Verification Plan, HW/Platform Recomendation Report (Cloud Hosting Report), Test Plan, User and Admin manuals.
  - **Documents to support Critical Design-Build Tasks**: Cybersecurity plan, Training plan, User and Admin manuals.
  - **Documents to deliver post go-live:** As-Built Documentation; Interface Control Document (substitute for interface Control Plan), Operations and Maintenance Plan, Standard Operating procedures.
- **Our schedule is based on the following efficiency assumptions:**
  - Kapsch and Pinellas PMs will schedule meetings in advance to ensure participant availability.
  - Pinellas will facilitate stakeholder involvement in project meetings.
  - Pinellas will provide consolidated feedback on all draft documents within 10 business days.
  - Kapsch will incorporate document changes and issue a final document within 5 business days.
  - Pinellas will review and approve final versions within 5 business days of request.
  - No more than 2 versions (draft and final) of all deliverables will be required.
  - Pinellas will provide feedback to submitted requests for information within 2 business days.

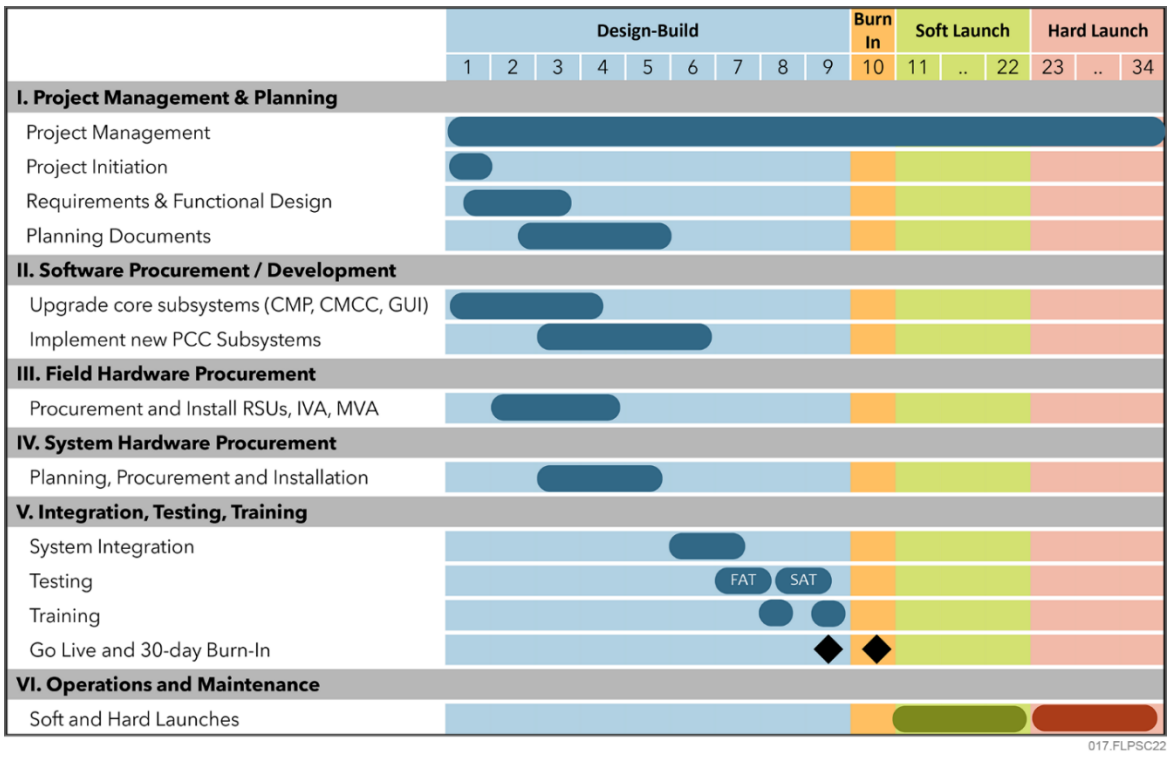

Figure WP-04. High-Level Schedule

Vendor vs County Responsibilities

Table WP-01 summarizes roles and responsibilities for both Kapsch and the County.

Table WP-01. Table of Milestones by Phase

Kapsch Team	County Team
Kapsch will be responsible for successfully delivering the PCC to the satisfaction of Pinellas County and its stakeholders	***The County is responsible for supporting the project activities and keep the project on-schedule.***
• Maintaining open and transparent communication with the County Project Manager. • Developing and managing the baseline project schedule and subsequent revisions. • Informing the County of needed stakeholder participation for project activities. • Coordinating all project-related meetings including agendas, invitations, and meeting minutes. • Preparing monthly status reports. • Managing Kapsch team resources and staffing to ensure proper staffing for the project. • Managing project issues and risks. • Generating and delivering all product documentation on time and with quality assurance. • Managing the operations and maintenance support for the solution.	• Making the right resources available to the project team as needed. • Attending all project meetings • Facilitating participation of stakeholders as needed. • Timely review of all project deliverables. Provide consolidated written comments to all initial deliverables within 10 business days of receipt and final deliverables within 5 days of receipt. • Reviewing and responding to any Kapsch requests for information within 2 business days. • Facilitating discussion with partners or third-party service provided as needed. • Providing support of the IT group and ensuring resources are available to assist in planning, procurement, and installation of the hardware platform. • Providing Kapsch with network access to deploy and maintain the PCC.

Project Phases and Milestones

Table WP-02 summarizes the set of milestones and deliverables by phase for the effort.

Table WP-02. Table of Milestones by Phase

Phase	Major Activities and Milestones	Phase	Major Activities and Milestones
Post Selection	Detailed Project Work Plan	**Phase V1 Integration**	Integration of the PCC subsystems
Phase I1 Project Management	Project Management Activities		Set up Environments
	Status all Meetings and Summaries		Cybersecurity Plan
	Attend all Public meetings	**Phase V2 Testing**	Test plan
Phase I2 Project Initiation	Updated PMP and ConOps		Execute FAT
	Project Schedule with Updates		Execute SAT
	Change Control Plan		SAT Plan and Testing
	Risk Management Plan	**Phase V3 Training**	Training Plan
	Configuration Management Plan		Complete System Training
Phase I3 – Requirements & Design	SyRS and RVTM	**Phase V4 Transition**	User and Admin Documentation
	System Design Document		Go Live
Phase I4 Planning Documents	Verification Plan		30-day Burn-in
	Cloud Hosting Report	**Soft Launch**	Maintenance Plan
Phase II Software Procurement / Development	Implement new software components DSS, PAM, DMM,		Standard Operating Procedures
	Configure Mobile App		As Built Documentation
	Integration with existing components		Interface Control Document
Phase III Hardware Procurement	RSUs		RITSA Updates
	IVA		System Verification
	MVA	**Hard Launch**	Operations & Maintenance
Phase IV System HW Procurement	Cloud Hosting Environments setup		Preventive Maintenance
	System Software Licenses		Emergency Maintenance

IV.2 Work Plan Details

This section provides a high-level overview of the activities and key milestones associated with primary tasks (core systems engineering) listed in the work plan (Figure WP-01).

Project Initiation: Kickoff meeting, approval of baseline updated Project Management Documentation (PMP, SEMP, ConOps, Schedule)

Upon Notice-to-Proceed (NTP) and acceptance of the detailed project work plan, Kapsch will schedule a 2-day kickoff meeting with Pinellas County and the major stakeholders. Primary discussions during the kickoff meeting will include reviewing the key project plans to be updated: PMP, ConOps, and SEMP; reviewing Kapsch's draft baseline project schedule, and scheduling working meetings for the first two months of the project. After the kickoff meeting, Kapsch will generate and deliver updated versions of the PMP, ConOps, and SEMP for review. In addition, the Kapsch Project Manager will deliver the initial baseline project schedule to the County PM.

Requirements Specification: Generation and Approval of SyRS amd RTVM

Kapsch will facilitate a series of requirements review workshops with the County to ensure we come to a common understanding of the requirements, how the PCC will meet the requirements, and the approach for verifying/validating the requirements. Kapsch will develop detailed hardware and software system and subsystem requirements and capture them in a System Requirements Specification (SyRS). Kapsch will stand up our JIRA requirements tracking tool and generate a baseline version of the Requirements Traceability Verification Matrix (RTVM).

Functional Design: Generation and Approval of PDD

Kapsch will hold a series of meetings with the County to establish the business solution architecture and functional design of the PCC. The functional design will build off of the operational scenarios defined in the ConOps and the proposed business solution architecture presented in the Proposed Solution section of this proposal. Kapch will prepare a draft of the Preliminary System Design Document (PDD) to be discussed in a Preliminary Design Review (PDR) meeting of all main stakeholders including FDOT and FHWA. Kapsch will make modifications to the PDD based on stakeholder feedback and submit a final version to the County within two weeks after the PDR.

Planning Documentation: Generation and Approval of Planning Documentation

Kapsch will develop and/or update a series of planning documents to support the project activities.

Hardware Provisioning: Generation and Approval of HW/SW Recommendation Report, Hardware Procurement and Installation

In lieu of a formal HW/SW recommendation report, Kapsch will deliver a Cloud/SW Recommendation Report and a COTS Specification Plan. Upon approval of the provisioning plans, Kapsch will build all necessary environments on Azure Cloud, procure all necessary software, and accessories and work with the IT and network support staff to configure and validate the three project environments (Integration, Pre-Production/Staging, Production).

Early Deployment: Installation and integration of of IVA, MVA, RSUs

Prior to the start of the design and integration tasks for new PCC subsystems, Kapsch will integrate new data feeds into the CMP and accelerate procurement and installation of the field devices/systems (e.g., RSUs, IVA, MVA). Kapsch will coordinate with FDOT TERL as necessary to meet state specifications.

Detailed Design-Build: Setup and calibration of new PCC Subsystems

Kapsch will apply an agile methodology to implement the PCC. As a prelude to the agile development approach, Kapsch will utilize the Concept of Operations operational scenarios to generate a complete backlog set of epics and user stories. Kapsch will then map the product backlog to the system requirements and use this to generate a sprint schedule. This schedule will be revisited and dynamically updated at the start of each sprint when the sprint backlog is defined.

PCC Integration: Installation of the PCC on the integration environment

When the integration environment has been installed and verified, and all subsystem development has been completed, Kapsch will migrate the PCC in preparation for system integration. During this phase, Kapsch will complete integration of the subsystems and data sources in preparation for testing.

Functional Requirement Testing

The Kapsch testing approach involves a highly detailed and clinical approach to requirements and deliverable tracking. The specific test case ID(s) and verification methodology utilized for each requirement will be mapped on the RTVM. This traceability ensures that each and every requirement has been allocated to at least one test case.

Test Plan: Submission and Acceptance of Test Plan

Kapsch will prepare a test plan that describes the test plans and test procedures to validate each requirement, verify the integration and data sharing across subsystem components, and verify connection with external systems. It will also define responsibilities of Kapsch and the County during testing.

Factory Acceptance Testing (FAT): Completion of FAT and ready to start SAT

Upon completion of the integration activities, Kapsch will conduct an internal factory acceptance test of the system and meet with the County to conduct the Test Readiness Review (TRR). The TRR will focus on the results of the FAT, the status of the test plans, and the availability of personnel to determine when it is appropriate to begin System Acceptance Testing (SAT).

System Acceptance Testing (SAT): Completion of SAT

Kapsch will execute the predefined test scenarios under the observance of the County. At the end of each day of testing, Kapsch will generate a test report for review. This report will be discussed prior to the next day of testing and the schedule for addressing issues and retesting will be determined. Upon successful conclusion of SAT and system acceptance, Kapsch and the County will conduct the Operations Readiness Review in preparation for transition and Go Live.

Training

Kapsch will deliver comprehensive training for system users, administrators, and IT staff. Our multi-level training program will enable the County to manage, operate, maintain, repair, update and reconfigure all hardware and software systems delivered by Kapsch.

Training Plan: Delivery and Approval of Training Plan

Kapsch will prepare a Training Plan that describes all elements of the training program including:

- Training Objectives and Evaluation Criteria
- Goals and expected results
- Define training metrics
- Training Content for user and admins
- Format of training sessions
- Number and classification of stakeholder staff to be trained
- Schedule

Execute Training: Successful Training of all Key Personnel

Training will be delivered as early as can be scheduled after the implementation milestone is reached with the goal of completing all initial training prior to system acceptance. Kapsch will prepare training materials and hold specific classes for users, administrators, and maintenance staff.

Go Live: Successul Migration to Production Environment, PCC Launch, Completion of 30-day Burn-in

Upon successful completion of SAT and sign off from the Operations Readiness Review, Kapch and the County will schedule to Go-Live date. Kapsch will manage, with support from the County and Program Manager, the Go Live and final acceptance phase.

- ***Transition Planning***: In advance of the Go-Live, Kapsch will organize a workshop with County and Program Manager staff to discuss and review the transition plans and schedule the necessary resources and/or support. When Kapsch and the County agree that all parties are ready and prepared, Go-Live will commence.
- ***System Documentation***: Kapsch will deliver detailed user and administrator documentation for the PCC. Kapsch will prepare several classes of documents that are customized for specific user groups including user manuals, system configuration manual, troubleshooting guide, as-built documentation, and system administration manuals.
- ***Burn-In***: Upon successful Go Live, the 30-day Burn-In period will start. Kapsch will provide an experienced system engineer on-site for the first week post go-live to resolve any issues and ensure County staff are properly using the system. Kapsch will provide warranty support during the Burn-In period to address any issues that arise. At the conclusion of the Burn-In, the system will move to the operations and maintenance phase.

Operations and Maintenance Phase Support

Kapsch will work in tandem with the County and the IT Group to operate and maintain the PCC. Additionally, Kapsch will work with the System Evaluator to support the system validation and FHWA reporting needs of the project.

Soft Launch

During the first 12 months after the successful burn-in period Kapsch will monitor the performance of the PCC and make any necessary adjustments prior to full O&M. As part of the Soft Launch phase, Kapsch will provide an Installation and Maintenance Plan for the MRA, VDMS, IVA and MVA subsystems. Kapsch will also work with the County to update the existing standard operating procedures or create new ones as referenced in the County's ConOps (Section 5).

Hard Launch

Throughout the O&M phase, Kapsch will provide 24x7 second tier operational support for the PCC, responding to and addressing issues reported by the County who will be responsible for Tier 1 support. The County will report issues to Kapsch's Support Help Desk. All critical issues should be reported by phone and will be logged into our JIRA Service Desk issue tracking tool. Kapsch will respond to all critical issue reports within 30 minutes and will maintain communication with the County until the issue is resolved.

IV.3 Deployment Team

Kapsch has assembled a diverse team to plan, implement, and deploy the PCC (Figure WP-05). Our organization chart is shown in Figure WP-06. Econolite and VIBE are our subcontractors aiding Kapsch with the Design-Build activities. Blyncsy, DERQ, and TraffiQure are vendors providing components and subsystems for the PCC. Danlaw is supplying a small numbers of new RSUs but is not represented in the diagram.

Figure WP-05. Kapsch PCC Team

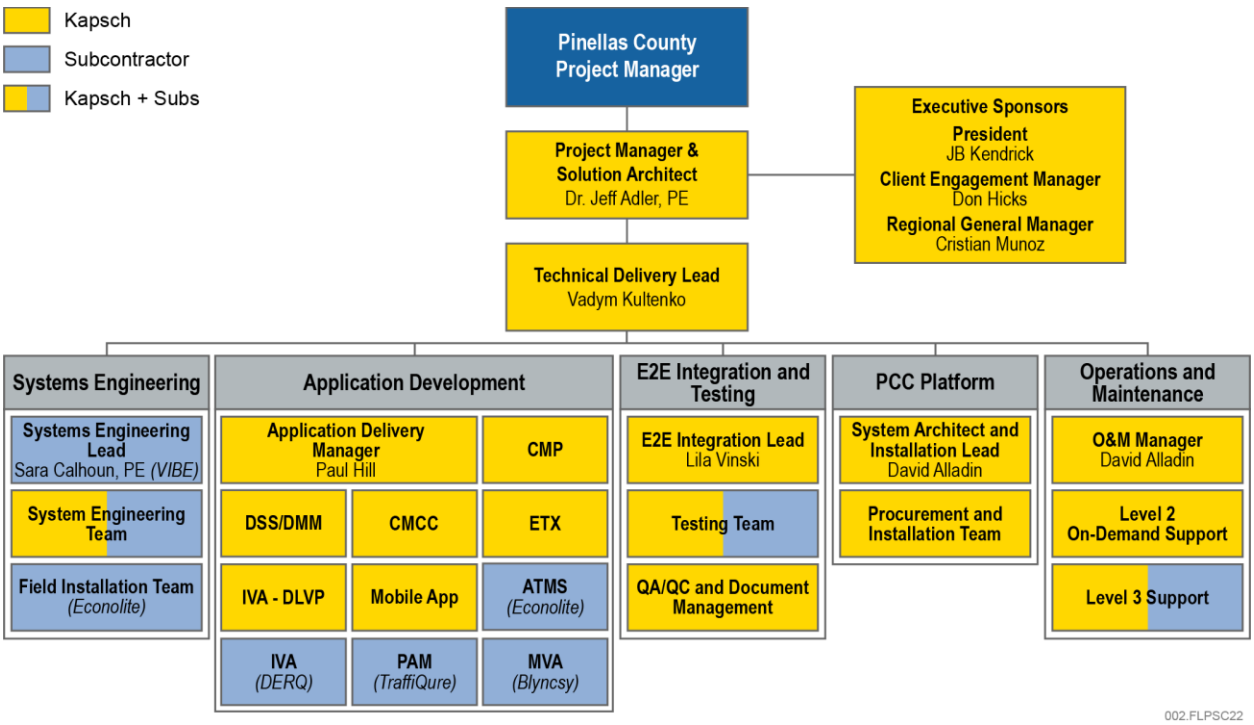

Figure WP-06. Kapsch PCC Team Organization Chart

Key Project Personnel

Kapsch has assembled highly experienced key personnel to direct and manage the project activities.

Project Manager and Solution Architect– Jeff Adler, PhD, PE

Dr. Adler is Vice President of Solution Consulting at Kapsch with expertise in traffic management systems, traveler information systems, driver choice behavior, and decision support systems. For more than 15 years he has worked with state agencies to plan and implement complex ITS solutions. Dr. Adler was the project manager for statewide TMS projects in Pennsylvania and Alaska and provided oversight to Kapsch's work in Pinellas County and Regional ICM project for FDOT District 5.

Technical Delivery Lead – Vadym Kultenko, PMP

Mr. Kultenko is a results-driven, PMP-certified Technical Project Manager and Technical Delivery Lead at Kapsch with more than 14 years of experience with end to end delivery with a specific focus on service delivery, product support, business service, and technology consolidation. He has provided technical and management leadership to more than 20 large-scale projects.

Systems Engineering Lead – Sara Calhoun, PE

Ms. Calhoun has more than a decade of experience as a Project Manager and Senior ITS Manager, planning, designing, and implementing signal system and ITS projects. She has been involved with Pinellas County's ATMS program for several years, including providing in-house support as the ATMS program manager. She has also provided support for projects that include freeway management system design, signal design, traffic operations studies, and ATMS studies and designs.

Application Delivery Lead – Paul Hill

Mr. Hill offers more than 30 years of experience, including design and implementation of ITS installations and extensive work with CV technology. In his role at Kapsch, he has served as lead on-site integrator for traffic signal and freeway management systems, and has worked extensively with connected vehicle technology including cellular vehicle to everything (C-V2X) and dedicated short range communication (DSRC) based systems. Mr. Hill supported the Pinellas SPaT CV Project, Smart Columbus, and EcoTrafiX installations in Chicago and Buenos Aires, Argentina.

End to End (E2E) Integration and Testing Lead – Lila Vinski

Ms. Vinski is an experienced professional with more than 22 years of experience in engineering in the areas of system design and development, wireless design and development, and system performance and qualification testing. She oversees system validation and product engineering for Kapsch technology and platforms working onsite with clients to manage the testing and validation process. Her extensive experience also includes wireless system design and engineering, and she holds two patents in this field.

System Architect and Installation Lead – David Alladin

Mr. Alladin is a Senior Systems Engineer at Kapsch with more than 26 years of experience developing traffic management software, ITS hardware integration and design, and software deployment and implementation. He worked on the Pinellas SCDP project, as well as supporting ATMS projects for the California I-210 Corridor Pilot; Wichita, KS; Rochester and Albany, NY; and freeway management systems for I-70 in Kansas; Knoxville, Chattanooga, and Nashville, TN; New Jersey; Palm Beach, FL; and Baton Rouge, LA.

Section V Relevant Project Experience

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SECTION V RELATIVE PROJECT EXPERIENCE

Smart Traffic and Demand Management for the City of Vienna

Kapsch is partnering with the City of Vienna to implement the most modern traffic and demand management system of its kind. By combining traditional traffic managment functions with personalized information (see Figure PE-1) to induce changes in travel choice and driving behavior; this solution will decrease congestion, reduce emissions caused by road traffic by more than 15%, and reduce the time drivers spend in traffic. The goals of the solution include the following:

- Providing end users with data that allows them to navigate the city streets more efficiently
- Using existing and new data to improve traffic flow with the aim to reduce congestion and emission
- Making vehicles an active part of traffic management

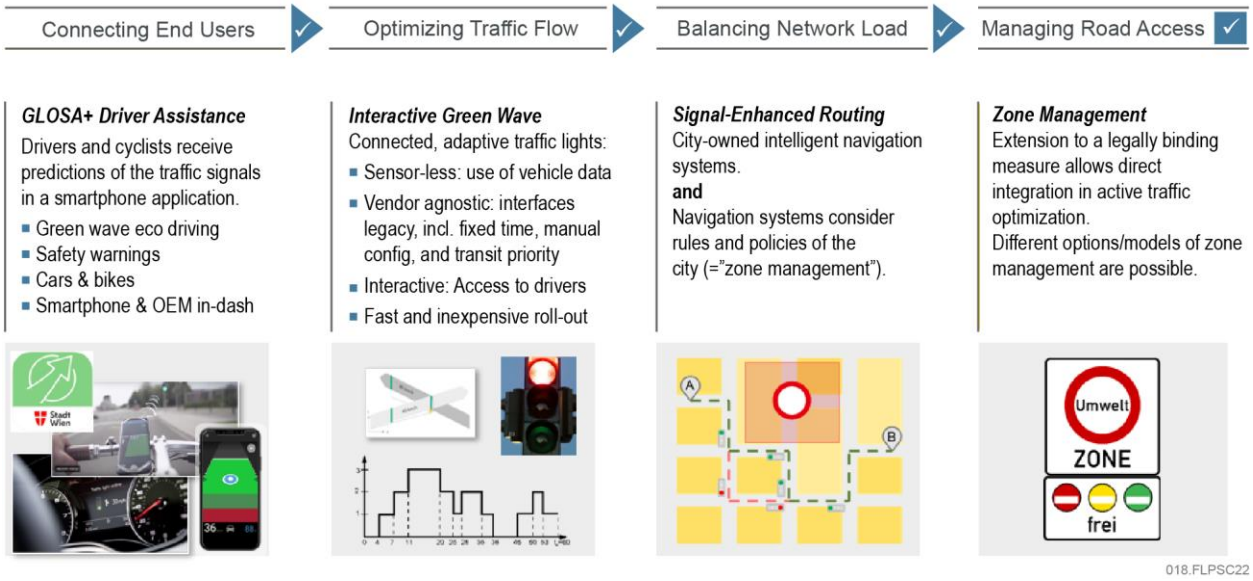

Figure PE-1. Vienna Traffic and Demand Management Project Elements

Kapsch is building the solution around our Smart Traffic and Demand management platform that we offer Pinellas. Core subsystems deployed for Vienna include **EcoTrafiX™, demand management and decision support systems, and Mobile App with two applications**:

- **Dynamic Routing and Navigation -** The key innovation is feeding the navigation app with traffic signal data that optimizes travel routing. Vienna will be the first city in Europe to offer its citizens this possibility
- **Green Wave / GLOSA-** Notifies drivers and cyclists about signal timing and phasing alerting both to when a red light will turn green. This allows **driving speed to be optimally adjusted to the traffic light phases**. For cyclists, this means less effort to stop and start driving, while drivers can save fuel and CO_2. The app already **includes about 75 intersections in the City**.

Reference Information: Gernot Lenz, Coordinator of Traffic Control and Signlaing Systems, +43 1 4000 33143, gernot.lenz@wien.gv.at

Smart Columbus

As the infrastructure prime contractor, Kapsch supplies roadside units at **more than 100 Columbus intersections to support V2I safety and mobility applications**. The RSUs are a combination of Kapsch RIS-9160s, Danlaw AutoLink RSUs, and control units to provide advanced capabilities to vendor RSUs. In addition, the Kapsch CMCC will be used to configure, monitor, and gather live data from the entire environment. This data will be integrated into the Smart Columbus network with the goal of improving mobility for local residents while improving transportation network safety and efficiency.

For the Smart Columbus project, Kapsch oversees the infrastructure integration of the city's Smart Columbus Connected Vehicle Environment (CVE). The CVE will enhance safety and mobility for vehicle operators and improve pedestrian safety in school zones by deploying CV infrastructure on the roadside and CV equipment in vehicles. From an application standpoint, **transit and freight signal priority and emergency vehicle preemption application deployment and testing** are a key part of the project. Kapsch has supplied **67 RIS-9160 DSRC RSUs and integrated 43 RSUs from multiple vendors**. Main deliverables include installation and test plan development, RSU location site survey, installation training and support, and operations and maintenance support.

Reference Information: Ryan J. Bollo, P.E., Senior Project Manager –ITS/Technology Program; 614.645.3946; rjbollo@columbus.gov

AIMES

Kapsch Australia has established a local testbed environment in association with the University of Melbourne and DoT, within the Australian Integrated Mobility EcoSystem (AIMES), a 6km^2 area located near the Melbourne central business district (CBD) in and around the University of Melbourne city campus. The purpose of the testbed is to develop, prove, and test new solutions with a key focus on road user safety, congestion, and enforcement to change road user behaviors within a busy intersection.

The system has been built with ease of deployment in mind, to be easily scaled out across other locations with minimal limitations of development changes. Potential future use by government agencies could change road user behavior by increasing the awareness to road users that a detection and enforcement device is active and present in the intersection, and provide additional signage to influence their behavior.

The AIMES environment involves a variety of vehicle types. Kapsch has been able to optimize the system and improve both the readability of license plates and detection through our deep learning platform to detect erratic driving behavior to provide increased and a rich data set to improve situational awareness on the road. In the future, this diverse data set of driving behavior will allow the classification of cars including vehicle make, model, and color, that will provide various DoT agencies with data to make better, more informed decisions to improve road congestion and safety and to be able to measure these changes in the network at critical intersections.

Reference Information: Dr Majid Sarvi, University of Melbourne and Director – AIMES; majid.sarvi@unimelb.edu.au

Dallas-Fort Worth 511 Information Exchange Network

511DFW on US 75 is a free service of the North Central Texas Council of Governments (NCTCOG) and its partner agencies. Originally deployed as part of the US 75 Integrated Corridor Management (ICM) Project led by Dallas Area Rapid Transit (DART), this was the first 5-1-1 system in the State of Texas serving the Dallas-Fort Worth metropolitan area. The goal of the ITS and ICM is empowering travelers through accurate and reliable information to make informed choices before and during a trip. The information in the 511DFW system comes from many public agency and transportation sources in the Dallas-Fort Worth area using the solution's information exchange network platform, which is the essential data integration piece of the solution. The initial ICM project (and subsequent DFW511 project) have fundamentally changed how transportation agencies in the area, and specifically in the US 75 corridor, collaborate to move more people and vehicles through the corridor.

The Kapsch team worked with DART, USDOT, NCTCOG and other regional partners on the deployment of the existing US75 Integrated Corridor Management, Regional Information Exchange Network (EcoTrafiX™) and 511DFW system. Additionally, new NCTCOG partners are being added to the information exchange network to increase both physical and functional reach. Kapsch continues to be a one-stop-shop for a multi-modal traveler information system and uses innovative technology solutions to disseminate accurate, free, and multi-modal traveler information to the public.

The Kapsch platform is a solution rather than a product: integrating regional data sources, external systems and external data providers into one single platform. Kapsch proposed technical recommendations and approach for upgrading and enhancing the existing 511DFW system and the various sub-systems:

- Upgrade and enhance the 511DFW.org Public Website.
- Upgrade and enhance the 511DFW Mobile App.
- Upgrade the current EcoTrafiX™ sub-system (referenced as the IEN).
- Expand on existing data archiving and Performance Measures.
- Integration with DART parking systems.
- Provide information on EV charging stations.
- Expanded on Transit information coverage, providing schedule information for three agencies including DART, DCTA, and Trinity Metro.
- New partnerships and data integration: increasing the HERE Traffic Data Coverage, including the HERE Routing Service, NOAA Weather Service, Waze Data Interface, enhancing the 511DFW IVR System, enhancing the 511DFW Mobile Application, enhanced Social Media Integration, planning for the Integration of Future technology – V2X.

As part of the EcoTrafiX™ deployment, we implemented our Kapsch performance measures solution, which provides valuable insights on the traffic flow in the region. Cities and agencies use these dashboards for analyzing roadway conditions. The completeness and accuracy of the information provided from all of the regional agencies is an added value.

Reference Information: Miriam Thompson, NCTCOG Transportation System Operations Supervisor, 817.608.2336, mthompson@nctcog.org

SECTION D – CONTRACTOR REFERENCES

THE FOLLOWING INFORMATION IS REQUIRED IN ORDER THAT YOUR PROPOSAL MAY BE REVIEWED AND PROPERLY EVALUATED.

COMPANY NAME: Kapsch TrafficCom USA, Inc.

LENGTH OF TIME COMPANY HAS BEEN IN BUSINESS: Kapsch TrafficCom, USA since 1987

BUSINESS ADDRESS: 2855 Premiere Parkway, Suite F, Duluth GA 30097

HOW LONG IN PRESENT LOCATION: 36 years

TELEPHONE NUMBER: 470.473.6400

FAX NUMBER: 678.473.9003

TOTAL NUMBER OF CURRENT EMPLOYEES: 800 FULL TIME _____ PART TIME

NUMBER OF EMPLOYEES YOU PLAN TO USE TO SERVICE THIS CONTRACT: 20+

All references will be contacted by a County Designee via email, fax, or phone call to obtain answers to questions, as applicable before an evaluation decision is made.

Bidders must have experience in work of the same or similar nature and must provide references that will satisfy the County. Proposer must furnish a reference list of at least four (4) customers for whom they have performed similar services.

EITHER LOCAL COMMERCIAL OR GOVERNMENTAL REFERENCE(S) (PINELLAS COUNTY GOVERNMENT REFERENCES WILL NOT BE ACCEPTED) THAT YOU HAVE PREVIOUSLY PERFORMED SIMILAR CONTRACT SERVICES FOR:

1. City of Vienna Traffic Management 2.0	2. Smart Columbus
COMPANY: City of Vienna	COMPANY: Columbus Department of Public Works
ADDRESS: 1110 Wien, Senngasse 2, Vienna, Austria	ADDRESS: 111 North Front Street, Columbus, OH 43215
TELEPHONE/FAX: +43 1 4000 33143	TELEPHONE/FAX: 614.645.3946
CONTACT: Gernot Lenz	CONTACT: Ryan J. Bollo, P.E.
CONTACT EMAIL: gernot.lenz@wien.gv.at	CONTACT EMAIL: rjbollo@columbus.gov
COMPANY EMAIL ADDRESS: N/A	COMPANY EMAIL ADDRESS: N/A
3. Australian Integrated Mobility EcoSystem (AIMES)	4. Málaga Mobility Control Center (MOVIMA)
COMPANY: University of Melborne, Australia and Department of Transport	COMPANY: Málaga City Council, Mobility Area
ADDRESS: Grattan Street, Parkville, Victoria, 3010, Australia	ADDRESS: C/ Concejal Muñoz Cerván 3. Módulo 5 Tabacalera. CP 29003 Málaga, Spain
TELEPHONE/FAX:	TELEPHONE/FAX: 951 926027
CONTACT: Dr. Majid Sarvi	CONTACT: Joaquín Pérez Ramírez
CONTACT EMAIL: majid.sarvi@unimelb.edu.au	CONTACT EMAIL: jpramirez@malaga.eu
COMPANY EMAIL ADDRESS: N/A	COMPANY EMAIL ADDRESS: N/A

Section F Cost

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SECTION F - COST PROPOSAL

23-0029-P

PINELLAS CONNECTED COMMUNITY PROJECT - ATCMTD

PROJECT DELIVERABLES	QTY	UNIT OF MEASURE	UNIT COST	NOT TO EXCEED EXTENDED PRICE
1. Project Management and Planning				
Project Management and Planning Tasks - Phase 1	1	LS	$ 874,471.00	$ 874,471.00
2. Software Development and Licensing				
Core System Licenses (if required)	1	LS	$ 70,000.00	$ 70,000.00
New Software Development	1	LS	$ 261,710.00	$ 261,710.00
Decision Support System Development	1	LS	$ 50,000.00	$ 50,000.00
Predictive Analytics Module Development	1	LS	$ 277,385.00	$ 277,385.00
Demand Management Module	1	LS	$ 123,614.00	$ 123,614.00
Mobile Application Development	1	LS	$ 178,259.00	$ 178,259.00
Cellular On-Board Unit Emulator	1	LS	$ 29,710.00	$ 29,710.00
Smartphone Pedestrian Personal Information App	1	LS	$ 29,710.00	$ 29,710.00
Mobil Routing/ Incentivization App	1	LS	$ 29,710.00	$ 29,710.00
Virtual Dynamic Message Sign App	1	LS	$ 29,710.00	$ 29,710.00
Mobile Video Analytics Module - 30 linear miles of coverage	1	LS	$ 153,425.00	$ 153,425.00
3. Field Hardware Components				
Roadside Units	110	F&I	$ 5,697.00	$ 626,670.00
Roadside Units - Additional Units	15	FO	$ 5,249.00	$ 78,735.00
Intersection Video Analytics - Full Intersection Coverage	18	F&I	$ 48,419.00	$ 871,542.00
Intersection Video Analytics - Additional Units	3	FO	$ 17,500.00	$ 52,500.00
Mobile Video Platform (Dash Cam) Units	5	F&I	$ 26,685.00	$ 133,425.00
4. System Computer Hardware				
Computer Network Servers	1	F&I	$ 86,250.00	$ 86,250.00
Hardware Operating Licenses	1	F&I	$ -	$ -
5. Implementation, Integration, Testing and Training				
Installation	1	Hours	$ 142,767.00	$ 142,767.00
Integration Services	1920	Hours	$ 145.00	$ 278,400.00
Training	320	Hours	$ 175.00	$ 56,000.00
Travel (paid in accordance with Florida Statute 112.061)	1	LS	$ 67,056.00	$ 67,056.00
6. Operations and Maintenance				
2 Years Operational Support	24	MTH	$ 49,965.00	$ 1,199,160.00
2 Years Preventative and Emergency Response Maintenance	24	MTH	$ 12,491.00	$ 299,784.00

1. Project Management and Planning	$ 874,471.00
2. Software Development and Licensing	$ 1,233,233.00
3. Field Hardware Components	$ 1,762,872.00
4. System Computer Hardware	$ 86,250.00
5. Implementation, Integration, Testing and Training	$ 544,223.00
6. Operations and Maintenance	$ 1,498,944.00
TOTAL PROJECT COST NOT TO EXCEED	$ 5,999,993.00

****ADDITIONAL SERVICES****	UOM	RATE
The County may elect to have the vendor perform work that is not specifically described in the Section 2 or the SOW, but is related to the Services (the "Additional Services") is which event the vendor shall perform such Additional Services on a time and materials basis at an hourly rate not to exceed:	Hour	$200.00

ePayables Form

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ELECTRONIC PAYMENT (EPAYABLES)

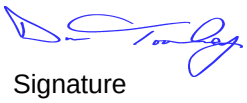
ELECTRONIC PAYMENT (EPAYABLES)

The Board of County Commissioners (County) is offering faster payments. The County would prefer to make payment using credit card through the ePayables system. See above.

Would your company accept to participate in the ePayables credit card program?
Yes _____ No __X___
For more information about ePayables credit card program please visit Purchasing Department website
www.pinellascounty.org/purchase/

Kapsch TrafficCom, USA, Inc.

Company Name



Signature

Dan Toohey

Printed Signature

302.544.1171

Phone Number

dan.toohey@kapsch.net

Email

W-9 Form

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W-9 REQUEST FOR TAXPAYER ID NUMBER AND CERTIFICATION

W-9 REQUEST FOR TAXPAYER ID NUMBER AND CERTIFICATION

***Instructions to form W-9 available upon request**

The contractor must complete and submit to the County Form W-9 available: Through the following link:

www.irs.gov/forms-pubs/about-form-w-9

Section 119.071(5), Florida Statutes Notice:

Your Tax Identification Number (which for individuals is your social security number) is collected on Form W9 for use in filing information returns with the IRS as described more fully below. Collection of the Internal Revenue Code (26 U.S.C § 6109).

Privacy Act Notice:

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA, or Archer MSA or HAS. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, and District of Columbia, and U.S. possessions to carry out their tax laws. We may also disclose this information to other countries under the tax treaty, to federal and state agencies to enforce federal nontax criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer.

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See Specific Instructions on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.
Kapsch TrafficCom USA, Inc.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☑ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.
8201 Greensboro Dr., Suite 1002

Requester's name and address (optional)

6 City, state, and ZIP code
McLean, VA 22102

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number
[ ][ ][ ] - [ ][ ] - [ ][ ][ ][ ]

or

Employer identification number
1 6 - 1 3 1 7 8 3 6

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here Signature of U.S. person ▶ _____ Date ▶ 6/20/2019

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting,* later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code,* later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships,* earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code,* later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Addendum Acknowledgement

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SECTION G - ADDENDUM

PLEASE ACKNOWLEDGE RECEIPT OF ADDENDA FOR THIS SOLICITATION BY SIGNING AND DATING BELOW:

ADDENDA NO.	SIGNATURE/PRINTED NAME	DATE RECEIVED
Addendum #1	Dan Toohey	December 09, 2022
Addendum #2	Dan Toohey	December 21, 2022
Addendum #3	Dan Toohey	December 21, 2022
Addendum #4	Dan Toohey	December 22, 2022
Addendum #5	Dan Toohey	January 20, 2023
Addendum #6	Dan Toohey	February 03, 2023

Note: Prior to submitting the response to this solicitation, it is the responsibility of the firm submitting a response to confirm if any addenda have been issued. If such document(s) have been issued, acknowledge receipt by signature and date in section above. Failure to do so may result in response being considered non-responsive or result in lowering the rating of a firm's proposal.

Information regarding addenda issued is available on the OpenGov website, https://secure.procurenow.com/portal/pinellasfl, listed under the bid attachments.

Statement of No-Bid Form

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SECTION H – STATEMENT OF NO BID

NOTE: If you do not intend to bid on this requirement, please compete this form. **Thank you.**

We, the undersigned have declined to submit a bid for No. **23-0029-RFP** for **Pinellas Connected Community Project - ATCMTD**.

_____ Specifications too "tight", i.e., geared toward one brand or manufacturer only (explain below).

_____ Insufficient time to respond to the Invitation to Bid.

_____ We do not offer this product or service.

_____ Our schedule would not permit us to perform.

_____ Unable to meet specifications.

_____ Unable to meet Bond requirement.

_____ Specifications unclear (explain below).

_____ Unable to Meet Insurance Requirements.

_____ Remove Us from Your "Notification List" Altogether

_____ Other (specify below).

REMARKS:

_____

_____

_____

_____

COMPANY NAME:_____

DATE:_____

SIGNATURE:_____

TYPED NAME OF ABOVE:_____

TELEPHONE:_____

FAX:_____

COMPANY EMAIL:_____

E-Verify Form

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APPENDIX 1 – E-VERIFY AFFIDAVIT

I hereby certify that Kapsch TrafficCom, USA does not employ, contract with, or subcontract with an unauthorized alien, and is otherwise in full compliance with Section 448.095, Florida Statutes.

All employees hired on or after January 1, 2021, have had their work authorization status verified through the E-Verify system.

A true and correct copy of Kapsch TrafficCom, USA proof of registration in the E-Verify system is attached to this Affidavit.

Signature: _____

Print Name: Dan Toohey

Date: January 31, 2023

Federal Work Authorization User Identification No.: 16-1317836

Name of Pinellas County Contract and Contract No.: Connected Community ATCMTD 22-0029 RFP

STATE OF FLORIDA COUNTY OF Georgia / Gwinnett

The foregoing instrument was acknowledged before ___, this _____ (date) by Dan Toohey (name of officer or agent, title of officer or agent) of Kapsch TrafficCom USA (name of contractor company acknowledging), a _____ (state or place of incorporation) corporation, on behalf of the corporation. He/she is personally known to me or has produced in Person / Known (type of identification) as identification.

by means of 1) physical presence __ or 2) online notarization

[Notary Seal]

JESSICA SPURLING
MY COMMISSION EXPIRES
AUGUST 15 2023
FULTON COUNTY, GA
NOTARY PUBLIC

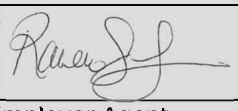
Notary Public: _____

Name typed, printed, or stamped: Jessica D. Spurling

My Commission Expires: Aug. 15, 2023

If you have any questions, contact E-Verify at 1-888-464-4218.

Approved by:

Employer Kapsch TrafficCom USA, Inc.	
Name (Please Type or Print) Raven Lee	Title VP, HR
Signature 	Date 7/22/2021
E-Verify Employer Agent Hire Right	
Name (Please Type or Print)	Title
Signature Electronically Signed	Date October 14, 2020
Department of Homeland Security - Verification Division	
Name	Title
Signature	Date

Information Required for the E-Verify Program **Information relating to your Company:**	
Company Name	Kapsch TrafficCom USA Inc
Company Facility Address	8201 Greensboro Drive Suite 1002 Mclean, VA 22102
Company Alternate Address	8201 Greensboro Drive Suite 1002 Mclean, VA 22102
County or Parish	Fairfax
Employer Identification Number	16-1317836
North American Industry Classification Systems Code	Professional, Scientific, And Technical Services (541)
Parent Company	
Number of Employees	500 to 999
Number of Sites Verified for	28

Are you verifying for more than 1 site? If yes, please provide the number of sites verified for in each State:

Virginia	2
Texas	3
Louisiana	3
Washington	1
North Carolina	2
California	2
Georgia	1
Iowa	1
Indiana	2
New York	3
Missouri	1
Tennessee	1
Florida	1
Puerto Rico	1
Rhode Island	1
Maryland	1
New Jersey	2

Information relating to the Program Administrator(s) for your Company on policy questions or operational problems:

Name	Raven Lee
Phone Number	(571) 200-0304
Fax Number	
Email Address	raven.lee@kapsch.net

Signed Sample Agreement Form

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AGREEMENT

GOODS AND SERVICES AGREEMENT

THIS GOODS AND SERVICES AGREEMENT is made as of **Click or tap to enter a date.** (effective date). By and between Pinellas County, a political subdivision of the State of Florida ("County"), and _____, _____ ("Contractor"), (individually, "Party," collectively, "Parties").

W I T N E S S E T H:

WHEREAS, the County requested proposals pursuant to _____ 23-0029-P for; Pinellas connected community project – ATCMTD and

WHEREAS, based upon the County's assessment of Contractor's proposal, the County selected the Contractor to provide the Services as defined herein; and

WHEREAS, Contractor represents that it has the experience and expertise to provide Goods and perform the Services as set forth in this Agreement.

NOW, THEREFORE, in consideration of the above recitals, the mutual covenants, agreements, terms and conditions herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby mutually acknowledged, the Parties agree as follows:

1. Definitions

A. **"Agreement"** means this Agreement, including all Exhibits, which are expressly incorporated herein by reference, and any amendments thereto.

B. **"County Confidential Information"** means any County information deemed confidential and/or exempt from Section 119.07, Florida Statutes, and Section 24(a), Article 1 of the Florida Constitution, or other applicable law, including, but not limited to data or information referenced and any other information designated in writing by the County as County Confidential Information.

C. **"Contractor Confidential Information"** means any Contractor information that is designated as confidential and/or exempt by Florida's public records law, including information that constitutes a trade secret pursuant to Chapter 688, Florida Statutes, and is designated in this Agreement or in writing as a trade secret by Contractor (unless otherwise determined to be a public record by applicable Florida law). Notwithstanding the foregoing, Contractor Confidential Information does not include information that: (i) becomes public other than as a result of a disclosure by the County in breach of the Agreement; (ii) becomes available to the County on a non-confidential basis from a source other than Contractor, which is not prohibited from disclosing such information by obligation to Contractor; (iii) is known by the County prior to its receipt from Contractor without any obligation or confidentiality with respect thereto; or (iv) is developed by the County independently of any disclosures made by Contractor.

D. **"Contractor Personnel"** means all employees of Contractor, and all employees of subcontractors of Contractor, including, but not limited to temporary and/or leased employees, who are providing the Services at any time during the project term.

E. **"Services"** means the work, duties and obligations to be carried out and performed safely by Contractor under this Agreement, as described throughout this Agreement and as specifically described in the Statement of Work Exhibit attached hereto and incorporated herein by reference. As used in this Agreement, Services shall include any component task, subtask, service, or function inherent, necessary, or a customary part of the Services, but not specifically described in this Agreement, and shall include the provision of all standard day-to-day administrative, overhead, and internal expenses, including costs of bonds and insurance as required herein, labor, materials, equipment, safety equipment, products, office supplies, consumables, tools, postage, computer hardware/software, telephone charges, copier usage, fax charges, travel, lodging, and per diem and all other costs required to perform Services except as otherwise specifically provided in this Agreement.

2. Execution of Agreement

The execution of this Agreement is expressly limited by the Terms and Conditions hereon. County and the Contractor are not bound by additional provisions or provisions at variance herewith that may appear in the Contractor's quotation, estimate, scope of work, or any other such related documents, acknowledgement in force, or any other communication from Contractor to or from County unless such provision is expressly set forth herein.

AGREEMENT

3. Conditions Precedent

This Agreement, and the Parties' rights and obligations herein, are contingent upon and subject to the Contractor securing and/or providing the performance security, if required, and the insurance coverage(s) required, within 10 days of the Effective Date. No Services shall be performed by the Contractor and the County shall not incur any obligations of any type until Contractor satisfies these conditions. Unless waived in writing by the County, in the event the Contractor fails to satisfy the conditions precedent within the time required herein, the Agreement shall be deemed not to have been entered into and shall be null and void.

4. Services

A. **Services** - The County retains Contractor, and Contractor agrees to provide the Services. All Services shall be performed to the satisfaction of the County and shall be subject to the provisions and terms contained herein and the Exhibits attached hereto.

B. **Services Requiring Prior Approval** - Contractor shall not commence work on any Services requiring prior written authorization in the Statement of Work without approval from Project Manager.

C. **Additional Services** - From the Effective Date and for the duration of the project, the County may elect to have Contractor perform Services that are not specifically described in the Statement of Work attached hereto but are related to the Services ("Additional Services"), in which event Contractor shall perform such Additional Services for the compensation specified in the Statement of Work attached hereto. Contractor shall commence performing the applicable Additional Services promptly upon receipt of written approval as provided herein.

D. **De-scoping of Services** - The County reserves the right, in its sole discretion, to de-scope Services upon written notification to the Contractor by the County. Upon issuance and receipt of the notification, the Contractor and the County shall enter into a written amendment reducing the appropriate Services Fee for the impacted Services by a sum equal to the amount associated with the de-scoped Services as defined in the payment schedule in this Agreement, if applicable, or as determined by mutual written consent of both Parties based upon the scope of work performed prior to issuance of notification.

E. **Independent Contractor Status and Compliance with the Immigration Reform and Control Act** - Contractor is and shall remain an independent contractor and is neither agent, employee, partner, nor joint venturer of County. Contractor acknowledges that it is responsible for complying with the provisions of the Immigration Reform and Control Act of 1986 located at 8 U.S.C. 1324, et seq, and regulations relating thereto, as either may be amended from time to time. Failure to comply with the above provisions shall be considered a material breach of the Agreement.

F. **Non-Exclusive Services** - Award of this Agreement imposes no obligation on the County to utilize the Contractor for all goods and/or services of this type, which may develop during the agreement period. This is a non-exclusive Agreement. During the term of this Agreement, and any extensions thereof, the County reserves the right to contract for another provider for similar goods and/or services as it determines necessary in its sole discretion.

G. **Project Monitoring** - During the term of the Agreement, Contractor shall cooperate with the County, either directly or through its representatives, in monitoring Contractor's progress and performance of this Agreement.

5. Term of Agreement

A. **Initial Term -** The term of this Agreement shall commence on

☒ **the Effective Date**

and shall remain in full force and for 3 years, or until termination of the Agreement, whichever occurs first.

☒ The Parties may extend the term of this Agreement for one (1) additional five (5) year period(s) pursuant to the same terms, conditions, and pricing set forth in the Agreement by mutually executing an amendment to this Agreement, as provided herein

6. Orders

Within the term of this Agreement, County may place one or more orders for goods and/or services at the prices listed on the Price Schedule Exhibit attached hereto, and which is incorporated by reference hereto.

AGREEMENT

7. Delivery / Claims

Prices on the Schedule of Prices are F.O.B. Destination, FREIGHT INCLUDED and unloaded to location(s) within Pinellas County. Actual delivery address(es) will be identified at time of order. Contractor will be responsible for making any and all claims against carriers for missing or damaged items.

8. Inspection

In County's sole discretion, goods rejected due to inferior quality or workmanship will be returned to Contractor at Contractor's expense and are not to be replaced except upon receipt of written instructions from County.

9. Material Quality

All goods and materials purchased and delivered pursuant to this Agreement will be of first quality and not damaged and/or factory seconds. Any materials damaged or not in first quality condition upon receipt must be exchanged within 24 hours of notice to the Contractor at no charge to County.

10. Material Safety Data

In accordance with OSHA Hazardous Communications Standards, it is the Contractor seller's duty to advise if a product is a toxic substance and to provide a Material Safety Data Sheet at time of delivery.

11. Purchase Order Number

Each order will contain the Purchase Order Number applicable to this Agreement, and such Purchase Order Number must appear on all packing slips, invoices and all correspondence relating to the Order. County will not be responsible for goods delivered without a Purchase Order Number.

12. Variation in Quantity

County assumes no liability for goods or materials produced, processed or shipped in excess of the amounts ordered pursuant to the terms of this Agreement.

13. Warranty

Seller warrants that the goods are of first quality and as described in Prices Schedule. All manufacturer, producer or seller warranties offered to any other purchaser are expressly available and applicable to County.

14. Compensation and Method of Payment

A. **Goods and Services Fee** - As total compensation for the Goods and Services, the County shall pay the Contractor the sums as provided in this Section Compensation and Method Payment ("Goods and Services Fee"), pursuant to the terms and conditions as provided in this Agreement. It is acknowledged and agreed by Contractor that this compensation constitutes a limitation upon County's obligation to compensate Contractor for such Goods and Services required by this Agreement but does not constitute a limitation upon Contractor's obligation to provide Goods and perform all of the Services required by this Agreement. In no event will the Goods and Services Fee paid exceed the not-to-exceed sums set out in subsections below, unless the Parties agree to increase this sum by written amendment as authorized in the Amendment Section of this Agreement.

B. **Spending Cap and Payment Structure** - The County agrees to pay the Contractor the total not-to-exceed sum of **$** ~~5,999,~~993 for Goods and Services completed and accepted herein, payable

[***INSERT APPROPRIATE OPTIONS AND DELETE THE REMAINING OPTIONS***]

on a fixed-fee basis for the deliverables as set out in Section F , payable upon submittal of an invoice as required herein.]

AGREEMENT

B. **Travel Expenses** -

☒ The Services Fee includes all travel, lodging and per diem expenses incurred by Contractor in performing the Services.

C. **Taxes** - Contractor acknowledges that the County is not subject to any state or federal sales, use, transportation and certain excise taxes.

D. **Payments and Invoicing -** Contractor shall submit invoices for payments due as provided herein and authorized reimbursable expenses incurred with such documentation as required by County. Invoices shall be submitted to

☒ as provided in Exhibit D attached hereto.

For time and materials Services, all Contractor Personnel shall maintain logs of time worked, and each invoice shall state the date and number of hours worked for Services authorized to be billed on a time and materials basis.

All payments shall be made in accordance with the requirements of Section 218.70 et seq., Florida Statutes, "The Local Government Prompt Payment Act." The County may dispute any payments invoiced by Contractor in accordance with the County's Invoice Payments Dispute Resolution Process established in accordance with Section 218.76, Florida Statutes, and any such disputes shall be resolved in accordance with the County's Dispute Resolution Process.

15. Acceptance of Services

For all Services deliverables that require County acceptance as provided in the Statement of Work, the County, through the Project Manager or designee, will have 10 calendar days to review the deliverable(s) after receipt or completion of same by Contractor, and either accept or reject the deliverable(s) by written notice to *[Proposer]* _____. If a deliverable is rejected, the written notice from the County will specify any required changes, deficiencies, and/or additions necessary. Contractor shall then have 7 calendar days to revise the deliverable(s) to resubmit and/or complete the deliverable(s) for review and approval by the County, who will then have 7 calendar days to review and approve, or reject the deliverable(s); provided however, that Contractor shall not be responsible for any delays in the overall project schedule that result from the County's failure to timely approve or reject deliverable(s) as provided herein. Upon final acceptance of the deliverable(s), the County will accept the deliverable(s) in writing.

16. Discounts

Delay in receiving an invoice, invoicing for materials shipped ahead of specified schedule, or invoices rendered with errors or omissions will be considered just cause for County to withhold payment without losing discount privileges. Discount privilege will apply from date of scheduled delivery, the date or receipt of goods, or the date of approved invoice, whichever is later.

17. Subcontracting/Assignment.

A. **Subcontracting -** Contractor is fully responsible for completion of the Services required by this Agreement and for completion of all subcontractor work, if authorized as provided herein. Contractor shall not subcontract any work under this Agreement to any subcontractor other than the subcontractors specified in the proposal and previously approved by the County, without the prior written consent of the County, which shall be determined by the County in its sole discretion.

B. **Assignment -**

☒ This Agreement, and all rights or obligations hereunder, shall not be assigned, transferred, or delegated in whole or in part, including by acquisition of assets, merger, consolidation, dissolution, operation of law, change in effective control of the Contractor, or any other assignment, transfer, or delegation of rights or obligations, without the prior written consent of the County. The Contractor shall provide written notice to the County within fifteen (15) calendar days of any action or occurrence assigning the Agreement or any rights or obligations hereunder as

described in this section. In the event the County does not consent to the assignment, as determined in its sole discretion, the purported assignment in violation of this section shall be null and void, and the County may elect to terminate this Agreement by providing written notice of its election to terminate pursuant to this provision upon fifteen (15) days notice to Contractor.

18. Personnel

A. **E-Verify -** The contractor and subcontractor must register with and use the E-verify system in accordance with Florida Statute 448.095. A contractor and subcontractor may not enter into a contract with the County unless each party registers with and uses the E-verify system.

If a contractor enters a contract with a subcontractor, the subcontractor must provide the contractor with an affidavit stating that the Subcontractor does not employ, contract with, or subcontract with unauthorized aliens. The contractor must maintain a copy of the affidavit for the duration of the contract.

If the County, Contractor, or Subcontractor has a good faith belief that a person or entity with which it is contracting has knowingly violated Florida Statute 448.09(1) shall immediately terminate the contract with the person or entity.

If the County has a good faith belief that a Subcontractor knowingly violated this provision, but the Contractor otherwise complied with this provision, the County will notify the Contractor and order that the Contractor immediately terminate the contract with the Subcontractor.

A contract terminated under the provisions of this section is not a breach of contract and may not considered such. Any contract termination under the provisions of this section may be challenged to Section 448.095(2)(d), Florida Statute. Contractor acknowledges upon termination of this agreement by the County for violation of this section by Contractor, Contractor may not be awarded a public contract for at least one (1) year. Contractor acknowledges that Contractor is liable for any additional costs incurred by the County as a result of termination of any contract for a violation of this section.

Contractor or Subcontractor shall insert in any subcontracts the clauses set forth in this section, requiring the subcontracts to include these clauses in any lower tier subcontracts. Contractor shall be responsible for compliance by any Subcontractor or Lower Tier Subcontractor with the clause set for in this section.

B. **Qualified Personnel -** Contractor agrees that each person performing Services in connection with this Agreement shall have the qualifications and shall fulfill the requirements set forth in this Agreement

C. **Approval and Replacement of Personnel** - The County shall have the right to approve all Contractor Personnel assigned to provide the Services, which approval shall not be unreasonably withheld. Prior to commencing the Services, the Contractor shall provide at least ten (10) days written notice of the names and qualifications of the Contractor Personnel assigned to perform Services pursuant to the Agreement. Thereafter, during the term of this Agreement, the Contractor shall promptly and as required by the County provide written notice of the names and qualifications of any additional Contractor Personnel assigned to perform Services. The County, on a reasonable basis, shall have the right to require the removal and replacement of any of the Contractor Personnel performing Services, at any time during the term of the Agreement. The County will notify Contractor in writing in the event the County requires such action. Contractor shall accomplish any such removal within forty-eight (48) hours after receipt of notice from the County and shall promptly replace such person with another person, acceptable to the County, with sufficient knowledge and expertise to perform the Services assigned to such individual in accordance with this Agreement. In situations where individual Contractor Personnel are prohibited by applicable law from providing Services, removal and replacement of such Contractor Personnel shall be immediate and not subject to such forty-eight (48) hour replacement timeframe and the provisions of the Termination Section of this Agreement shall apply if minimum required staffing is not maintained.

19. Name Changes

The Contractor is responsible for immediately notifying the County of any company name change, which would cause invoicing to change from the name used at the time of the original Agreement.

AGREEMENT

20. Compliance with Laws

Contractor shall comply with all applicable federal, state, county and local laws, ordinances, rules and regulations in the performance of its obligations under this Agreement, including the procurement of permits and certificates where required, and including but not limited to laws related to Workers Compensation, Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act of 1973, Minority Business Enterprise (MBE), occupational safety and health and the environment, equal employment opportunity, privacy of medical records and information, as applicable. Failure to comply with any of the above provisions shall be considered a material breach of the Agreement.

21. Applicable Law and Venue

This Agreement and any and all purchases made hereunder shall be governed by and construed in accordance with the laws of the State of Florida (without regard to principles of conflicts of laws). The Parties agree that all actions or proceedings arising in connection with this Agreement shall be tried and litigated exclusively in the state or federal (if permitted by law and a Party elects to file an action in federal court) courts located in or for Pinellas County, Florida. This choice of venue is intended by the Parties to be mandatory and not permissive in nature, and to preclude the possibility of litigation between the Parties with respect to, or arising out of, this Agreement in any jurisdiction other than that specified in this section. Each Party waives any right it may have to assert the doctrine of forum non-conveniens or similar doctrine or to object to venue with respect to any proceeding brought in accordance with this section.

22. Public Entities Crimes

Contractor is directed to the Florida Public Entities Crime Act, Section 287.133, Florida Statutes, as well as Florida Statute 287.135 regarding Scrutinized Companies, and represents to County that Contractor is qualified to transact business with public entities in Florida, and to enter into and fully perform this Agreement subject to the provisions stated therein. Failure to comply with any of the above provisions shall be considered a material breach of the Agreement.

23. Waiver

No waiver by either Party of any breach or violation of any covenant, term, condition, or provision of this Agreement or of the provisions of any ordinance or law, shall be construed to waive any other term, covenant, condition, provisions, ordinance or law, or of any subsequent breach or violation of the same.

24. Due Authority

Each Party to this Agreement represents and warrants that: (i) it has the full right and authority and has obtained all necessary approvals to enter into this Agreement; (ii) each person executing this Agreement on behalf of the Party is authorized to do so; (iii) this Agreement constitutes a valid and legally binding obligation of the Party, enforceable in accordance with its terms.

25. Termination

A. **Contractor Default Provisions and Remedies of County**

1. **Events of Default** - Any of the following shall constitute a “Contractor Event of Default” hereunder:
    i. Contractor fails to maintain the staffing necessary to perform the Services as required in the Agreement, fails to perform the Services as specified in the Agreement, or fails to complete the Services within the completion dates as specified in the Agreement;
    ii. Contractor breaches Confidential Information Section of this Agreement;
    iii. Contractor fails to gain acceptance of goods and/or services deliverable, for 2 consecutive iterations; or
    iv. Contractor fails to perform or observe any of the other material provisions of this Agreement.
2. **Cure Provisions** - Upon the occurrence of a Contractor Event of Default as set out above, the County shall provide written notice of such Contractor Event of Default to Contractor (“Notice to Cure”), and Contractor shall have 30 calendar days after the date of a Notice to Cure to correct, cure, and/or remedy the Contractor Event of Default described in the written notice.

3. **Termination for Cause by the County** - In the event that Contractor fails to cure a Contractor Event of Default as authorized herein, or upon the occurrence of a Contractor Event of Default as specified in Termination – Contractor Default Provisions and Remedies of County – Events of Default Section of this Agreement, the County may terminate this Agreement in whole or in part, effective upon receipt by Contractor of written notice of termination pursuant to this provision, and may pursue such remedies at law or in equity as may be available to the County.

B. County Default Provisions and Remedies of Contractor

1. **Events of Default** - Any of the following shall constitute a "County Event of Default" hereunder:
   i. the County fails to make timely undisputed payments as described in this Agreement;
   ii. the County breaches Confidential Information Section of this Agreement; or the County fails to perform any of the other material provisions of this Agreement.

2. **Cure Provisions** - Upon the occurrence of a County Event of Default as set out above, Contractor shall provide written notice of such County Event of Default to the County ("Notice to Cure"), and the County shall have thirty (30) calendar days after the date of a Notice to Cure to correct, cure, and/or remedy the County Event of Default described in the written notice.

3. **Termination for Cause by the Contractor** - In the event the County fails to cure a County Event of Default as authorized herein, Contractor may terminate this Agreement in whole or in part effective on receipt by the County of written notice of termination pursuant to this provision, and may pursue such remedies at law or in equity as may be available to the Contractor.

C. Termination for Convenience

1. Notwithstanding any other provision herein, the County may terminate this Agreement, without cause, by giving 30 days advance written notice to the Contractor of its election to terminate this Agreement pursuant to this provision.

26. Time is of the Essence

Time is of the essence with respect to all provisions of this Agreement that specify a time for performance, including the Services as described in the Exhibits attached hereto; provided, however, that the foregoing shall not be construed to limit a Party's cure period allowed in the Agreement.

27. Confidential Information and Public Records

A. **County Confidential Information** - Contractor shall not disclose to any third party County Confidential Information that Contractor, through its Contractor Personnel, has access to or has received from the County pursuant to its performance of Services pursuant to the Agreement, unless approved in writing by the County Contract Manager. All such County Confidential Information will be held in trust and confidence from the date of disclosure by the County, and discussions involving such County Confidential Information shall be limited to Contractor Personnel as is necessary to complete the Services.

B. **Contractor Confidential Information** - All Contractor Confidential Information received by the County from Contractor will be held in trust and confidence from the date of disclosure by Contractor and discussions involving such Contractor Confidential Information shall be limited to the members of the County's staff and the County's subcontractors who require such information in the performance of this Agreement. The County acknowledges and agrees to respect the copyrights, registrations, trade secrets and other proprietary rights of Contractor in the Contractor Confidential Information during and after the term of the Agreement and shall at all times maintain the confidentiality of the Contractor Confidential Information provided to the County, subject to federal law and the laws of the State of Florida related to public records disclosure. Contractor shall be solely responsible for taking any and all action it deems necessary to protect its Contractor Confidential Information except as provided herein. Contractor acknowledges that the County is subject to public records legislation, including but not limited to Chapter 119, Florida Statutes, and the Florida Rules of Judicial Administration, and that any of the County's obligations under this Section may be superseded by its obligations under any requirements of said laws.

C. **Public Records** - Contractor acknowledges that information and data it manages as part of the services may be public records in accordance with Chapter 119, Florida Statutes and Pinellas County public records policies. Contractor agrees that prior to providing services it will implement policies and procedures to maintain, produce, secure, and retain public records in accordance with applicable laws, regulations, and County policies, including but not limited to the Section 119.0701, Florida Statutes. Notwithstanding any other provision of this Agreement relating to compensation, the Contractor agrees to charge the County, and/or any third parties requesting public

records only such fees allowed by Section 119.07, Florida Statutes, and County policy for locating and producing public records during the term of this Agreement.

If the contractor has questions regarding the application of Chapter 119, Florida Statutes, to the contractor's duty to provide public records relating to this agreement, the contractor shall contact:

Pinellas County Board of County Commissioners

Purchasing and Risk Management Division

400 S. Ft. Harrison Ave, 6th Floor,

Clearwater, FL 33756

Public Records Liaison

Phone: 727-464-3237

Email: mcchartier@pinellascounty.org

28. Audit

Contractor shall retain all records relating to this Agreement for a period of at least 5 years after final payment is made. All records shall be kept in such a way as will permit their inspection pursuant to Chapter 119, Florida Statutes. In addition, County reserves the right to examine and/or audit such records.

29. Digital Accessibility

Contractor acknowledges and warrants that all digital content and services provided under this contract conforms and shall continue to conform during the Term of this Agreement to the W3C Web Content Accessibility Guidelines, version 2.0 ("WCAG 2.0") at conformance Level A and AA. If all digital content and services does not fully conform to WCAG 2.0 A and AA, Contractor shall advise Pinellas County in writing of the nonconformance prior to execution of this Agreement and shall provide Pinellas County a plan to achieve conformance to WCAG 2.0 A and AA, including but not limited to, an intended timeline for conformance. Failure to achieve conformance, as determined in Pinellas County's sole discretion, on its intended timeline shall be considered a material breach of this Agreement and grounds for termination by Pinellas County.

If during the Term of this Agreement, Contractor fails to maintain compliance with WCAG 2.0 A and AA or Pinellas County otherwise identifies an issue related to accessibility of the product (the "Accessibility Issue") that renders the product inaccessible, then Pinellas County shall notify Contractor of non-compliance. Within 30 days of Contractor's receipt of a non-compliance notice ("Notice"), Contractor and Pinellas County shall meet and mutually agree upon an appropriate timeline for resolution of the Accessibility Issue(s) ("Initial Meeting").

Should Contractor:

i. fail to acknowledge receipt of the notice within 30 days of receipt of the Notice;

ii. unreasonably and solely withhold agreement regarding a timeline for resolution for more than 30 days following the Initial Meeting; or

iii. fail to materially resolve the Accessibility Issue(s) within the agreed-upon timeline,

Failure to comply with the requirements of this section shall constitute a material breach of this Agreement and shall be grounds for termination of this Agreement by Pinellas County and subject Contractor to the Liability and Insurance – Indemnification Section of this Agreement, "Indemnification."

30. Liability and Insurance

A. **Insurance** - Contractor shall comply with the insurance requirements set out in the Insurance Exhibit, attached hereto and incorporated herein by reference.

B. **Indemnification** - Contractor agrees to indemnify, pay the cost of defense, including attorney's fees, and hold harmless the County, its officers, employees and agents from all damages, suits, actions or claims, including reasonable attorney's fees incurred by the County, of any character brought on account of any injuries or damages received or sustained by any person, persons, or property, or in any way relating to or arising from the Agreement; or on account of any act or omission, neglect or misconduct of Contractor; or by, or on account of, any claim or amounts recovered under the Workers' Compensation Law; or of any other laws, regulations, ordinance, order or decree; or arising from or by reason of any actual or claimed trademark, patent or copyright infringement or litigation based thereon; or for any violation of requirements of the Americans with Disabilities Act of 1990, as may be amended, and all rules and regulations issued pursuant thereto (collectively the "ADA") except when such injury, damage, or violation was caused by the sole negligence of the County.

C. **Liability** - Neither the County nor Contractor shall make any express or implied agreements, guaranties or representations, or incur any debt, in the name of or on behalf of the other Party. Neither the County nor Contractor shall be obligated by or have any liability under any agreements or representations made by the other that are not expressly authorized hereunder. The County shall have no liability or obligation for any damages to any person or property directly or indirectly arising out of the operation by Contractor of its business, whether caused by Contractor's negligence or willful action or failure to act.

D. **Contractor's Taxes** - The County will have no liability for any sales, service, value added, use, excise, gross receipts, property, workers' compensation, unemployment compensation, withholding or other taxes, whether levied upon Contractor or Contractor's assets, or upon the County in connection with Services performed or business conducted by Contractor. Payment of all such taxes and liabilities shall be the responsibility of Contractor.

31. County's Funding

The Agreement is not a general obligation of the County. It is understood that neither this Agreement nor any representation by any County employee or officer creates any obligation to appropriate or make monies available for the purpose of the Agreement beyond the fiscal year in which this Agreement is executed. No liability shall be incurred by the County, or any department, beyond the monies budgeted and available for this purpose. If funds are not appropriated by the County for any or all of this Agreement, the County shall not be obligated to pay any sums provided pursuant to this Agreement beyond the portion for which funds are appropriated. The County agrees to promptly notify Contractor in writing of such failure of appropriation, and upon receipt of such notice, this Agreement, and all rights and obligations contained herein, shall terminate without liability or penalty to the County.

32. Survival

The provisions of this Agreement shall survive the expiration or termination of this Agreement.

33. Notices

All notices, authorizations, and requests in connection with this Agreement shall be deemed given on the day they are: (1) deposited in the U.S. mail, postage prepaid, certified or registered, return receipt requested; or (2) sent by air express courier (e.g., Federal Express, Airborne, etc.), charges prepaid, return receipt requested; or (3) sent via email and addressed as set forth below, which designated person(s) may be amended by either Party by giving written notice to the other Party:

For County:

AGREEMENT

Attn:

with a copy to:

Attn: Merry Celeste,

Purchasing and Risk Management Division Director

Pinellas County Purchasing Department

400 South Fort Harrison Avenue

Clearwater, FL 33756

For Contractor:

Attn:

34. Conflict of Interest

A. The Contractor represents that it presently has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with the performance of the Services required hereunder, and that no person having any such interest shall be employed by Contractor during the agreement term and any extensions;

B. The Contractor shall promptly notify the County in writing of any business association, interest, or other circumstance which constitutes a conflict of interest as provided herein. If the Contractor is in doubt as to whether a prospective business association, interest, or other circumstance constitutes a conflict of interest, the Contract may identify the prospective business association, interest or circumstance, the nature of work that the Contractor may undertake and request an opinion as to whether the business association, interest or circumstance constitutes a conflict of interest if entered into by the Contractor. The County agrees to notify the Contractor of its opinion within (10) calendar days of receipt of notification by the Contractor, which shall be binding on the Contractor.

35. Right to Ownership

All work created, originated and/or prepared by Contractor in performing Services pursuant to the Agreement, and other documentation or improvements related thereto, to the extent that such work, products, documentation, materials or information are described in or required by the Services (collectively, the "Work Product") shall be County's property when completed and accepted, if acceptance is required in this Agreement, and the County has made payment of the sums due therefore. The ideas, concepts, know-how or techniques developed during the course of this Agreement by the Contractor or jointly by Contractor and the County may be used by the County without obligation of notice or accounting to the Contractor. Any data, information or other materials furnished by the County for use by Contractor under this Agreement shall remain the sole property of the County.

36. Amendment

This Agreement may be amended by mutual written agreement of the Parties hereto.

37. Severability

The terms and conditions of this Agreement shall be deemed to be severable. Consequently, if any clause, term, or condition hereof shall be held to be illegal or void, such determination shall not affect the validity or legality of the remaining terms and conditions, and notwithstanding any such determination, this Agreement shall continue in full force and effect unless the particular clause, term, or condition held to be illegal or void renders the balance of the Agreement impossible to perform.

38. No Third-Party Beneficiary

The Parties hereto acknowledge and agree that there are no third party beneficiaries to this Agreement. Persons or entities not a party to this Agreement may not claim any benefit from this Agreement or as third party beneficiaries hereto.

AGREEMENT

39. Force Majeure

"Force Majeure Event" means any act or event that (i) prevents a Party (the "Nonperforming Party") from performing its obligations or satisfying a condition to the other Party's (the "Performing Party") obligations under this Agreement, (ii) is beyond the reasonable control of and not the fault of the Nonperforming Party, and (iii) the Nonperforming Party has not, through commercially reasonable efforts, been able to avoid or overcome. Force Majeure Event(s) do not include economic hardship, changes in market conditions or insufficiency of funds. If a Force Majeure Event occurs, the Nonperforming Party is excused from the performance and thereby prevented from satisfying any conditions precedent to the Performing Party's performance that cannot be satisfied, in each case to the extent limited or prevented by the Force Majeure Event. The Nonperforming Party must promptly notify the Performing Party upon the occurrence of a Force Majeure Event. When the Nonperforming Party is able to resume its performance or satisfy the conditions precedent to the Performing Party's obligations, the Nonperforming Party will resume performance under this Agreement without undue delay. Each Party will use commercially reasonable efforts to mitigate the effect of a Force Majeure Event.

40. Order of Precedence

All Exhibits attached and listed below are incorporated in their entirety into, and form part of this Agreement and will have priority in the order listed

A. Pinellas County Agreement
B. RFP
C. Statement of Work.

In the event of an inconsistency in this Agreement and any of the attached Exhibits, the terms set forth in this Agreement will prevail.

41. Entirety

This Agreement constitutes the entire Agreement between the Parties and supersedes all prior negotiations, representations or agreements either oral or written.

(Signature Page Follows)

AGREEMENT

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement the day and year first written.

PINELLAS COUNTY, FLORIDA
By and through its
Board of County Commissioners

By

Kapsch TrafficCom, USA, Inc.
Name of Firm

By:
Signature

Dan Toohey
Print Name

SVP, Sales and Business Development
Title

AGREEMENT

EXHIBIT A - STATEMENT OF WORK

AGREEMENT

EXHIBIT B - INSURANCE REQUIREMENTS

AGREEMENT

EXHIBIT C - PAYMENT SCHEDULE

AGREEMENT

EXHIBIT D - PAYMENT/INVOICES

PAYMENT/INVOICES:

CONTRACTOR shall submit invoices for payment due as provided herein with such documentation as required by Pinellas County and all payments shall be made in accordance with the requirements of Section 218.70 et. seq, Florida Statutes, "The Local Government Prompt Payment Act." Invoices shall be submitted to the address below unless instructed otherwise on the purchase order, or if no purchase order, by the ordering department:

Finance Division Accounts Payable
Pinellas County Board of County Commissioners
P. O. Box 2438
Clearwater, FL 33757

Each invoice shall include, at a minimum, the Contractor's name, contact information and the standard purchase order number. In order to expedite payment, it is recommended the Contractor also include the information shown in below. The County may dispute any payments invoiced by CONTRACTOR in accordance with the County's Dispute Resolution Process for Invoiced Payments, established in accordance with Section 218.76, Florida Statutes, and any such disputes shall be resolved in accordance with the County's Dispute Resolution Process.

INVOICE INFORMATION:

Contractor Information Company name, mailing address, phone number, contact name and email address as provided on the PO

Remit To Billing address to which you are requesting payment be sent

Invoice Date Creation date of the invoice

Invoice Number Company tracking number

Shipping Address Address where goods and/or services were delivered

Ordering Department Name of ordering department, including name and phone number of contact person

PO Number Standard purchase order number

Ship Date Date the goods/services were sent/provided

Quantity Quantity of goods or services billed

Description Description of services or goods delivered

Unit Price Unit price for the quantity of goods/services delivered

Line Total Amount due by line item

Invoice Total Sum of all of the line totals for the invoice

Pinellas County offers a credit card payment process (ePayables) through Bank of America. Pinellas County does not charge vendors to participate in the program; however, there may be a charge by the company that processes your credit card transactions. For more information please visit Pinellas County purchasing website at (www.pinellascounty.org/purchase).

AGREEMENT

EXHIBIT E - DISPUTE RESOLUTION FOR PINELLAS COUNTY BOARD OF COUNTY COMMISSIONERS IN MATTERS OF INVOICE PAYMENTS:

Payment of invoices for work performed for Pinellas County Board of County Commissioners (County) is made, by standard, in arrears in accordance with Section 218.70, et. seq., Florida Statutes, the Local Government Prompt Payment Act.

If a dispute should arise as a result of non-payment of a payment request or invoice the following Dispute Resolution process shall apply:

A. Pinellas County shall notify a vendor in writing within 10 days after receipt of an improper invoice, that the invoice is improper. The notice should indicate what steps the vendor should undertake to correct the invoice and resubmit a proper invoice to the County. The steps taken by the vendor shall be that of initially contacting the requesting department to validate their invoice and receive a sign off from that entity that would indicate that the invoice in question is in keeping with the terms and conditions of the agreement. Once sign off is obtained, the vendor should then resubmit the invoice as a "Corrected Invoice" to the requesting department which will initiate the payment timeline.

    1. Requesting department for this purpose is defined as the County department for whom the work is performed.

    2. Proper invoice for this purpose is defined as an invoice submitted for work performed that meets prior agreed upon terms or conditions to the satisfaction of Pinellas County.

B. Should a dispute result between the vendor and the County about payment of a payment request or an invoice then the vendor should submit their dissatisfaction in writing to the Requesting Department. Each Requesting Department shall assign a representative who shall act as a "Dispute Manager" to resolve the issue at departmental level.

C. The Dispute Manager shall first initiate procedures to investigate the dispute and document the steps taken to resolve the issue in accordance with section 218.76 Florida Statutes. Such procedures shall be commenced no later than 45 days after the date on which the payment request or invoice was received by Pinellas County, and shall not extend beyond 60 days after the date on which the payment request or invoice was received by Pinellas County.

D. The Dispute Manager should investigate and ascertain that the work, for which the payment request or invoice has been submitted, was performed to Pinellas County's satisfaction and duly accepted by the Proper Authority. Proper Authority for this purpose is defined as the Pinellas County representative who is designated as the approving authority for the work performed in the contractual document. The Dispute Manager shall perform the required investigation and arrive at a solution before or at the 60 days timeframe for resolution of the dispute, per section 218.76, Florida Statutes. The County Administrator or his or her designee shall be the final arbiter in resolving the issue before it becomes a legal matter. The County Administrator or his or her designee will issue their decision in writing.

E. Pinellas County Dispute Resolution Procedures shall not be subject to Chapter 120 of the Florida Statutes. The procedures shall also, per section 218.76, Florida Statutes, not be intended as an administrative proceeding which would prohibit a court from ruling again on any action resulting from the dispute.

F. Should the dispute be resolved in the County's favor interest charges begin to accrue 15 days after the final decision made by the County. Should the dispute be resolved in the vendor's favor the County shall pay interest as of the original date the payment was due.

G. For any legal action to recover any fees due because of the application of sections 218.70 et. seq., Florida Statutes, an award shall be made to cover court costs and reasonable attorney fees, including those fees incurred as a result of an appeal, to the prevailing party If it is found that the non-prevailing party held back any payment that was the reason for the dispute without having any reasonable lawful basis or fact to dispute the prevailing party's claim to those amounts.

Attachment A

CONTRACT PROVISIONS FOR CONTRACTS UNDER FEDERAL AWARDS
BID OR PROPOSAL NUMBER: 23-0029-RFP
BID OR PROPOSAL TITLE: Pinellas Connected Community Project - ATCMTD

This solicitation is either fully or partially grant-funded. In addition to other terms and conditions required by Pinellas County and the applicable federal agency, all contracts awarded to the qualified bidder are subject to the following provisions, as applicable to the services provided.

Equal Employment Opportunity (As per Executive Order 11246): During the performance of this contract, the CONTRACTOR agrees as follows:

(1) The CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The CONTRACTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) The CONTRACTOR will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The CONTRACTOR will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The CONTRACTOR will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the CONTRACTOR's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The CONTRACTOR will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor.

Davis-Bacon Act as amended (40 U.S.C. 3141-3148): When required by federal program legislation, for all prime construction contracts awarded in excess of $2,000, CONTRACTORS are required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, Contractors must be required to pay wages not less than once a week. If the applicable grant award contains Davis Bacon provisions, the County will place a copy of the current prevailing wage determination issued by the Department of Labor in the solicitation document. The decision to award a contract shall be conditioned upon the acceptance of the wage determination [Appendix II to 2 CFR Part 200].

Copeland Anti Kick Back Act: If Davis-Bacon is applicable, CONTRACTOR shall also comply with all the requirements of 29 CFR Part 3 which are incorporated by reference to this contract. CONTRACTORS are prohibited from inducing by any means any person employed in the construction, completion or repair of public work to give up any part of the compensation to which he or she is otherwise entitled [Appendix II to 2 CFR Part 200].

Contract Work Hours and Safety Standards Act (40 U.S.C. 3701–3708): Where applicable, all contracts awarded **in excess of $100,000** that involve the employment of mechanics or laborers must be in compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each CONTRACTOR is required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence [Appendix II to 2 CFR Part 200].

Rights to Inventions Made Under a Contract or Agreement: If the federal award meets the definition of ''funding agreement'' under 37 CFR § 401.2 (a) and the County enters into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that ''funding agreement,'' the County must comply with the requirements of 37 CFR Part 401, ''Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,'' and any implementing regulations issued by the awarding agency [Appendix II to 2 CFR Part 200].

Clean Air Act (42 U.S.C. 7401–7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251–1387): As amended—The CONTRACTOR agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251–1387). Violations must be reported to the federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA) [Appendix II to 2 CFR Part 200].

Debarment and Suspension (Executive Orders 12549 and 12689): A contract award (see 2 CFR 180.220) will not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), ''Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549. If applicable, the CONTRACTOR must verify that none of their subcontractors (for contracts expected to equal or exceed $25,000), appear on the federal government's Excluded Parties List. The Excluded Parties List is accessible at http://www.sam.gov [Appendix II to 2 CFR Part 200].

Byrd Anti-Lobbying Amendment (31 U.S.C. 1352): CONTRACTORs that apply or bid for an award **exceeding $100,000** must submit a completed "Disclosure of Lobbying Activities" [Form SF-LLL]. Each tier certifies to the tier above that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with *non-federal funds* that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the non-federal award. [Appendix II to 2 CFR Part 200]. **The bidder shall complete Form SF-LLL and submit with bid. Bidders may be deemed non-responsive for failure to submit this certification.**

Conflict of Interest [2 CFR §200.112]: The CONTRACTOR must disclose in writing any potential conflict of interest to the Federal awarding agency or COUNTY in accordance with applicable Federal awarding agency policy.

Mandatory Disclosures [2 CFR §200.113]: The CONTRACTOR must disclose in writing all violations of federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the federal award. Failure to make required disclosures can result in any of the remedies described in 2 CFR §200.338 Remedies for noncompliance, including suspension or debarment.

Protected Personally Identifiable Information (Protected PII) [CFR §200.303(e)]: The CONTRACTOR must take reasonable measures to safeguard protected personally identifiable information and other information the federal awarding agency or COUNTY designates as sensitive or the County considers sensitive consistent with other applicable federal, state, and local laws regarding privacy and obligations of confidentiality. Per CFR § 200.82, Protected PII means an individual's first name or first initial and last name in combination with any one or more of types of information, including, but not limited to, social security number, passport number, credit card numbers, clearances, bank numbers, biometrics, date and place of birth, mother's maiden name, criminal, medical and financial records, educational transcripts. This does not include PII that is required by law to be disclosed.

Prohibition on utilization of time and material type contracts [2 CFR §200.318 (j) (1)]: The COUNTY will not award contracts based on a time and material basis if the contract contains federal funding.

Contracting with Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms [2 CFR § 200.321]: If using subcontractors, the CONTRACTOR must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Affirmative steps must include:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

(4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;

(5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

(6) Affirmative Action Requirements per 41 CFR60-4.1 Goals for Women and Minorities in Construction (for contracts in excess of $10,000): Goals and timetables for minority and female utilization may be set which shall be based on appropriate workforce, demographic or other relevant data and which shall cover construction projects or construction contracts performed in specific geographical areas. The goals, which shall be applicable to each construction trade in a covered Contractor's or subcontractor's entire workforce which is working in the area covered by the goals and timetables, shall be published as notices in the Federal Register, and shall be inserted by the contracting officers and applicants, as applicable, in the Notice required by 41 CFR 60-4.2. Covered construction Contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed.
(g) Information regarding certified M/WBE firms can be obtained from:

- Florida Department of Management Services (Office of Supplier Diversity);
- Florida Department of Transportation;
- Minority Business Development Center in most large cities; and
- Local Government M/DBE programs in many large counties and cities

Procurement of Recovered Materials [2 CFR §200.322]: CONTRACTOR must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

Prohibition on utilization of cost plus a percentage of cost contracts [2 CFR §200.323 (d)]**:** The COUNTY will not award contracts containing federal funding on a cost plus percentage of cost basis.

Attachment B

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action:	2. Status of Federal Action:	3. Report Type:
☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	☐ a. bid/offer/application b. initial award c. post-award	☐ a. initial filing b. material change **For Material Change Only:** year _____ quarter _____ date of last report _____

4. Name and Address of Reporting Entity:	5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:
☐ **Prime** ☐ **Subawardee** Tier _____, *if known*: *Name *Street 1 *Street 2 *City *State *Zip **Congressional District**, *if known*:	**Congressional District**, *if known*:
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*: _____
8. Federal Action Number, *if known*:	**9. Award Amount,** *if known*: $
10. a. Name and Address of Lobbying Registrant (*if individual, last name, first name, MI*):	**b. Individuals Performing Services** (*including address if different from No. 10a*) (*last name, first name, MI*):
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____
Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

PRINT

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employeeof a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizationallevel below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Attachment C
ADDITIONAL FUNDING CONDITIONS
PROPOSAL NUMBER: 23-0029-RFP
PROPOSAL TITLE: Pinellas Connected Community Project - ATCMTD

Domestic preferences for procurements. [2 CFR § 200.322]

(a) As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.
(b) For purposes of this section:

(1) "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as
polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

Prohibition on Contracting for Covered Telecommunications Equipment or Services

(a) Definitions.
As used in this clause, the terms backhaul; covered foreign country; covered telecommunications
equipment or services; interconnection arrangements; roaming; substantial or essential component; and telecommunications equipment or services have the meaning as defined in FEMA Policy 405-143-1,
Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services
(Interim), as used in this clause—
(b) Prohibitions.

(1) Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019,
Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after
Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons.

(2) Unless an exception in paragraph (c) of this clause applies, the contractor and its subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from the Federal Emergency Management Agency to:

(i) Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system.

(ii) Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a

substantial or essential component of any system, or as critical technology of any system.

(iii) Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system; or

(iv) Provide, as part of its performance of this contract, subcontract, or other contractual instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(c) Exceptions.

(1) This clause does not prohibit contractors from providing—

(i) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements: or Contract Provisions Guide 28

(ii) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2) By necessary implication and regulation, the prohibitions also do not apply to:

(i) Covered telecommunications equipment or services that: i. Are not used as a substantial or essential component of any system; and ii. Are not used as critical technology of any system.

(ii) Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.

(d) Reporting requirement.

(1) In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in paragraph (d)(2) of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information.

(2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause:

(i) Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

(ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) Subcontracts.

The Contractor shall insert the substance of this clause, including this paragraph (e), in all subcontracts
and other contractual instruments."

Link to National Archives, Code of Federal Regulation (CFR) Chapter 2 Part 200: 2 CFR Part 200

Exceptions

kapsch >>>
challenging limits

EXCEPTIONS

Kapsch TrafficCom, USA, Inc. takes no exceptions.