iteris®

VENTURA COUNTY TRANSPORTATION COMMISSION

BIG DATA LICENSE AND TRANSPORTATION ANALYTICS DASHBOARD

April 14, 2023

Updated June 27, 2023
per negotiations

Submitted to

VCTC

08060-105.23

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1 COVER LETTER

April 14th, 2023

Ms. Amanda Fagan
Director of Planning & Sustainability
Ventura County Transportation Commission
751 East Daily Drive STE 420
Camarillo, California 93010

Re: Proposal for Big Data License and Transportation Analytics Dashboard

08060-105.23

Dear Ms. Fagan:

Iteris, Inc. (Iteris) is pleased to submit the enclosed response to the Request for Proposals to provide a Big Data License and Transportation Analytics Dashboard for the Ventura County Transportation Commission (VCTC). We will start providing services **on Day 1** of the contract through **Iteris' ClearGuide®** analytics Software-as-a-Service (SaaS) and **HERE Traffic** data, and we will provide **Cambridge LOCUS**, a leading Origin-Destination Location Based Service, shortly after contract execution. These tools and data provide data-driven decisions through web-based dashboards and congestion management and transportation planning analytics. HERE traffic data will supply Caltrans with real-time speed data to support traveler information, replacing the data previously supplied by SpeedInfo. This data includes expanded networkwide coverage beyond freeways to arterials in Ventura County.

During the past decade Iteris has been VCTC's trusted partner in successfully delivering multiple significant countywide strategic transportation plans and analysis tools, these include the US 101 CMCP, the Ventura County Freight Corridor Study, Ventura County Transportation Model (VCTM) and CEQA SB743 VMT tool, US 101 HOV PAED and other efforts. Given the history of our work with VCTC and multiple local agencies, Iteris staff have the most local knowledge and understanding of the County's mobility and data needs for future projects.

Innovation is integral to everything we do. Iteris' cloud-enabled ClearMobility services, which includes ClearGuide, specialize in processing and delivery of real-time data services, data aggregation, and analytics platforms. Traffic operations, traffic planning, safety, engineering, Intelligent Transportation Systems (ITS), and Transportation Systems Management and Operations (TSMO) teams use these data and tools to make transportation safer and more efficient and effective. Iteris' team has extensive knowledge of Ventura County's traffic needs, and we are experts in traffic planning and operations practices. We leverage this expertise to support, build, and deliver useful data and analytics platforms. These innovative solutions will help VCTC reduce traffic congestion, enhance system reliability, understand people movements and improve mobility and safety.

With Iteris' innovative Big Data Analytics solution we are excited to partner with Cambridge Systematics to offer their Origin-Desitination software tool, LOCUS**,** a suite of customizable data products built using anonymized Location-based Services (LBS) data. LOCUS will support the people movement needs of VCTC combining data with existing transportation and demographic data collected through traffic counts, household and transit surveys, farecard and toll data to provide tailored, reliable,

ground-trusted findings that can be applied confidently to VCTC and other local jurisdictional partners within Ventura County. **LOCUS and ClearGuide can be used readily with traditional transportation data sources and tools**, including the Ventura County Traffic Model (VCTM) which was developed by Iteris, to provide flexible, current analysis by VCTC.

Iteris understands VCTC's desire for an experienced project team that understand VCTC's goals and who has experience delivering services that are being requested. Therefore, our team is lead by **Steve Gaddy, PMP, CSPO as Project Manager** for this project and Steve is supported by a team of experts with both local and domain knowledge. Steve has managed ClearGuide services throughout the Western US, supporting LA County Metropolitan Transportation Authority (LA Metro), San Bernardino County Transportation Authority (SBCTA) and the State of Utah among others. He also has supported Advanced Traveler Information Systems (ATIS) and weather operations and has extensive experience with real-time services. While ClearGuide is Steve's primary focus, he also has years of experience managing Caltrans Performance Measurement System (PeMS). As a result, he is fully aware of California's unique challenges and how to support agencies in California with mobility and safety solutions.

Steve will be the principal contact for VCTC for this project, overseeing operations from project inception to completion, and coordinating staff activities, trainings, and meetings. Steve will be supported by **Scott Perley** as principal-in-charge, **Tiffany Symes** as Senior Advisor, and **Michael Darter** as Technical Lead. **Jennifer Emerson-Martin**, one of our Ventura County planning experts, will support Steve as a Senior Planning Coordinator helping Steve coordinate with **Jason Lemp** at Cambridge Systematics for LOCUS and to bridge any gaps between the technical project team and the planning and engineering staff at VCTC.

Selecting Iteris for this project will continue to put the power of traffic data with thoughtful analytics services developed by traffic data scientists into VCTC's hands to support congestion management and transportation planning analytics guided by a team who has the knowledge of your region. Our growing solution suite will help the County to receive the most value from this service both now and over the coming years. The analytics tools developed as a part of this project will serve VCTC and other local jurisdictional partners within Ventura County in decision-making processes.

Thank you for the opportunity to submit our proposal, which is submitted with true and correct information, and a fee proposal which is valid for one hundred and twenty (120) calendar days. This proposal is submitted subject to the successful negotiation of a mutually agreeable contract between Iteris and VCTC.

Iteris looks forward to continuing our strong relationship with VCTC through this project. Please contact Scott Perley, at [redacted] or the Project Manager, Steve Gaddy, at [redacted], should you have any questions.

Authorized Signatory and Principal Contact	Scott Perley, Vice President, Program Management 1700 Carnegie Ave, Suite 100 Santa Ana, CA 92705 [redacted]

Sincerely,

Iteris, Inc.

[redacted]

Scott Perley, Vice President, Program Management

The Iteris team, including, Cambridge Systematics and HERE Traffic confirms no conflicts of interest exist relative to the performance of the contractual services resulting from the RFP

2 EXECUTIVE SUMMARY

Iteris understands the project goals and requirements of this project to provide real-time information, data, and congestion management and planning analytics tools to support Ventura County Transportation Commission (VCTC), Caltrans, and 10 local cities. Iteris, with our SaaS-based solution ClearGuide, our data partner HERE, and our Origin-Destination partner Cambridge Systematics supports the response for the **Next Generation Speed Info System** and **a web-based Transportation System Analytic Dashboard.** VCTC users and partner agencies will understand congestion and mobility trends and people movement, and through real-time data services, our team will provide travel time and speed data to the public through Caltrans and RIITS. Iteris' solution provides all jurisdictions within Ventura County access to transportation analytics including speed, zone to zone trips and origin-destination data, while also supporting transportation planning and congestion management in Ventura County through an accessible web-based dashboard.

The Iteris team provides VCTC with significant qualifications and the following distinct advantages and benefits:

SOLUTIONS THAT WORK FOR VCTC ON DAY 1 AND EVERYDAY

Iteris has supplied traffic probe based analytics services to agencies across the US and Canada since 2014 and analytics services in California since the 1990s. Our ClearGuide solution is ready to be utilized immediately with reliable HERE Technologies traffic and map data and will provide immediate benefits to VCTC. VCTC and other local jurisdictional partners within Ventura County. will be able to access operational performance measurements Day 1 in ClearGuide with data from 2019-2023 with continually updated and archived data going forward as it is processed in real-time. Cambridge LOCUS will contain data for pre-pandemic and post pandemic traffic, supporting VCTC with initiatives like planning more efficient bus routes, studying the impacts of climate events on transportation, measuring visitor movements and researching the impacts of mileage-based user fees on equity communities. ClearGuide services and Cambridge LOCUS O-D tools, will all be provided via web applications hosted in cloud services. ClearGuide and LOCUS are easy to use, reliable, and provide consistent access to meaningful reports and visuals in timely, efficient, and complete ways.

ACCURATE MANAGED DATA

The ClearGuide and LOCUS solutions deliver precise and accurate data trusted by local agencies and states around the country. ClearGuide manages the use of this highly accurate data through detailed maps that Iteris licenses from HERE, a leading traffic and mapping company. ClearGuide provides meaningful analytics tools that highlight accurate, reliable traffic data and leverages updated commercial grade maps and map attributes to help users understand context. ClearGuide users realize the benefits through the continuous evolution of the ClearGuide application, which provides user-friendly tools to support critical agency needs and aids users with critical context and dynamic visualizations. LOCUS, a curated location-based services (LBS) dataset, reflects a behaviorally-based approach to locational data rooted in transportation principles. LOCUS produces high quality, equity-focused, expanded, and validated passenger O-D flows for numerous transportation clients across the country.

SMART DATA SCIENCE FROM A TRUSTED TEAM

Iteris provides world-leading analytics services that handle all types of data in agnostic, reliable, and valuable ways. ClearGuide is the latest evolution of the Iteris traffic monitoring and analytics platform that has delivered services to over **60 clients** and has evolved for **over 17 years**. VCTC will benefit from the knowledge, data expertise, and analytics know-how that this depth of experience provides. Cambridge Systematics brings similar experience and data science applied to the Origin-Destination service. As a transportation experts, Cambridge uses that knowledge to make the data processing reliable and has performed substantial ground truth validation with traditional count and survey methods.

OVER A DECADE OF SUCCESSFUL WORK WITH VCTC

Throughout the last decade, Iteris has supported VCTC in developing the current and previous version of the Ventura County Transportation Model. Knowing that the base year of the model is 2016 and another model update is imminent, the Iteris ClearGuide solution can help with validating next update round of VCTM, as it provides information on peak hour operating conditions along facilities and major corridors. The ClearGuide solution also provides data on how the traffic conditions change during the typical day and how peaks have (or have not spread) as a result of congestion. This data is critical to support future forecasts.

The usefulness of Cambridge's LOCUS system and data is also similar. To match VCTC's existing models, it would be best if the zonal system for the LOCUS data is made consistent (through correspondence tables and GIS shapefiles) with the Traffic Analysis Zones (TAZ) for the model, so the data exchange and flow between the two data bases is seamless. The Origin-Destination data obtained from LOCUS can greatly assist model calibration and validation for trip distribution within VCTM, as the data in the current VCTC model provides some skeptical patterns between Ventura County and the San Fernando Valley portion of Los Angeles County.

Additionally, Iteris has supported many major planning projects in the County, including completing forecasting for the US-101 HOV PA/ED, completing the US-101 Multi-modal Study, supporting Thousand Oaks for on-call and on-going CEQA VMT analysis for developments, developing the current City of Ventura travel demand model, updating and completing the current City of Camarillo traffic impact fee study, and are working on planning for the currently on-going VCOG VMT Transportation Mitigation Program. This project set shows that we are prepared to support VCTC in future planning projects with analytics data from this big data pilot project and we will ensure with local knowledge your full use of the systems and data that are being procured.

WORK WITH SIMILAR AGENCIES WITH EXCELLENT RESULTS

Cambridge Systematics and Iteris have extensive work histories using these exact tools with nearby LA Metro which can be shared and built upon for VCTC's Big Data deployment. As there is a significant amount of travel between Ventura and Los Angeles Counties, this already available data-set and work history will be of added benefit to VCTC. Both Cambridge Systematics and Iteris are excited to partner with VCTC to help VCTC and its other agencies get the most out of our transportation data to make an impact. Further, VCTC and LA Metro will have the rights to share access to the other's ClearGuide application and LOCUS dashboard at no additional fee.

Caltrans licensed LOCUS data to replace the active-transport solution provided by another vendor. Cambridge Systematics worked with Caltrans to develop a tailored active-transport modal inference algorithm that was tested in both urban and rural areas. The same algorithm was implemented for OCTA for their own regional study and for LA Metro as part of the RIITS agency-wide license.

Like Cambridge's work with LA Metro, exemplified in the quote from Conan Cheung, Iteris has and currently provides the solutions requested in this Scope of Work with other alike agencies. ClearGuide supports a range of agency sizes including Metropolitan Planning Organizations, cities, regional agencies, and State Departments of Transportation. Our experience working with the San Bernardino County Transportation Authority (SBCTA) is a direct comparison to VCTC and it is useful to highlight some of SBCTA's main use cases.

> "We chose LOCUS because it was validated to local conditions and because the LOCUS team customized their platform to integrate regional transit farecard and APC information and provide us with a bird's eye view of thoughtful transit usage KPIs across the County. We have used LOCUS for a variety of projects including bus network redesign, COVID-19 recovery, multimodal corridor planning, and transit competitiveness assessments. We are pleased with the collaborative approach that the LOCUS team brought to the table and also with project outcomes that resulted from using LOCUS."
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> *—Conan Cheung, Chief Operating Officer, LA Metro*

In 2014, Iteris started providing SBCTA with Congestion Management Program (CMP) consulting support and during the project term automated the CMP service to provide constant monitoring of the CMP corridors through the ClearGuide service. Iteris worked with SBCTA to transition their CMP monitoring from volume based to speed based using traffic probe data validating the methods between monitoring types and eventually using ClearGuide for the CMP reporting from 2015 onward.

ClearGuide measures the Level of Service on the county's arterials, performs travel time analysis, reports before and after analysis and reliability studies and supports signal timing initiatives. In the SBCTA ClearGuide deployment, the service has grown and expanded. ClearGuide SPM has also been added to support Advanced Traffic Signal Performance Measures (ATSPM) based on high resolution controller data. Bottleneck reports have been added to find areas to improve congestion and Regional Dashboards and trend maps give a clear picture of trends over time. Through our experience with agencies like SBTCA and LA Metro, Iteris and our team have built an excellent understanding of VCTC's user needs will utilize the same data sets support collaboration with Metro on common initiatives.

APPLICATION BENEFITS

ClearGuide archives the traffic data and produces performance metrics in a password-protected, web-based, cloud-hosted application. The following provides a summary of features available in ClearGuide that will be described in depth in the Understanding of the Scope of Work.

- User authentication allows management of users and the service license
- An interactive map, with customizable background, shows color-coded real-time segment speeds
- Pop-up link reports show segment attributes, real-time speed, and historical speed ranges
- Selectable map layers view speeds, data quality, configurable anomalies, free flow speed, speed limit and functional classification

- Time sliders view all the above layers in the past, as historical data, supporting after-action and post-event reviews
- Powerful downloader and reports access all historical data
- Subregion selector and geography filters let VCTC and partner agencies find the right area
- Flexible route creation supports grouping segments and creating corridors
- Configurable alerts support real-time notifications of speeds, delays, congestion and closures
- Timeseries, Time of Day, Day of Week, and Time of Day + Day of Week report on a wide range of metrics
- Map Animation: From any historical point in time, ClearGuide maps can be animated to show a time-lapse of historic traffic conditions and events on the map. ClearGuide allows saving, sharing, and exporting animations as video files in a very intuitive way. Bottlenecks, incidents, and weather overlays may also be included in animation videos.
- Trend Maps: Trend maps capture long-term performance and robustness of the system instead of daily fluctuations. The Reliability Trend Map in ClearGuide shows network-wide color-coded segments based on Travel Time Index (TTI) and Buffer Time Index (BTI) values. TTI and BTI are among the most used reliability measures, which provide comparison between travel time conditions in the peak period to free-flow conditions. Users can select month, year, and time periods from navigation tools for easy observation and comparison of the trends. Trend map also provides speed percentiles and PTI.
- Multi-Route Reports: This tool is comprised of three powerful grouping reports that can analyze a variety of performance metrics on a collection of routes and corridors. Results can be sorted based on chosen mobility or reliability metrics and can be filtered by region. Time comparison report fits many before and after analysis use cases.
- Daily and Calendar Contours: Dynamic generation of time-space diagrams of speed (average, median, maximum, minimum), TTI and confidence score. These interactive graphs pack multiple days and up to one month of data into a single page graphical snapshot, with hyperlinks to underlying segments. Map attributes including speed limit, number of lanes, traffic signals, exit numbers, stop signs and ramps provide spatial context.
- API Support: Most of the reports in ClearGuide are supported by API for integration with external systems. Full documentation and code snippets are provided.
- User guide and training materials

Cambridge LOCUS Origin-Destination provides rich data quality to support better model validation, corridor studies, to look at trip flows traversing the corridor, supporting sketch flows, supporting different assignment scenarios, and allowing analysts to segment travel by:

- Trip purpose
- Trip time of day period
- Day of week
- Resident vs. visitor
- Mode (walk, bike, and motorized)
- Equity groups, supporting movement of disadvantaged communities

ClearGuide and LOCUS :

- Allow users to create routes or create zones in intuitive and flexible ways
- Visualize both real-time and historical data on the maps and dashboards, with many choices of map layers

- Deliver a rich set of charts, contour plots and visualization tools to investigate performance metrics and travel patterns
- Support multiple formats for downloading and exporting data and reports for offline or external use
- Include flexible and configurable filters allowing a wide range of route level and regional views applications when creating reports
- Provide an API interface or exports to support reports or feeding external systems

In summary, ClearGuide and LOCUS are perfect matches for VCTC's Next Generation Speed Information System and Transportation System Analytic Dashboard because they will provide complete coverage of the Ventura County road and highway network through proven tools in use in neighboring areas today. The team's robust experience with VCTC will ensure the solutions are tailored to VCTC's current and future needs. By using industry leading data sources through HERE Technologies and Cambridge Systematics, users can feel confident in querying historic and current data and generating the metrics needed to monitor transportation performance. Iteris' innovative approach and leading solutions will achieve the RFP's main goals of providing Ventura County with access to a big data license for transportation analytics, supplying Caltrans District 7 with near real time speed data to maintain the Traveler Information System, and supporting transportation planning and congestion management in Ventura County through an accessible web-based dashboard.

5 COST PROPOSAL – REVISED FROM INITIAL PROPOSAL PER NEGOTIATIONS

Cost Component	Year 1	Year 2	Year 3	Option Year 4	Option Year 5
ClearGuide Roadways	110,000	131,000	137,300	138,915	145,861
HERE Traffic ML Data	66,333	88,250	92,363	90,681	95,215
Public display access (RIITS website)	20,000	21,000	22,050	23,153	24,310
Delivery of volume estimates from probe data	103,000	123,650	129,583	130,812	137,352
Total Investment for VCTC	**299,333**	**363,900**	**381,295**	**383,560**	**402,738**
OPTIONAL - Cambridge Locus (12 months historic data*)	46,000				
OPTIONAL - Cambridge Locus (Year 1-5)	92,000	105,525	110,801	116,341	122,158

Iteris is proposing a cost for VCTC which would allow access for the 10 partner agencies listed in the RFP, and public safety officials within Ventura County. Iteris pricing model is population based, and therefore we would recommend a cost share across the participating cities/agencies based on their relative populations within Ventura County. The costs above show elements and their costs and areas that support price increases or decreases. We are proposing fixed software and data subscription fees that include the initial training and setup of the services provided with no required software customization. Therefore, there are no additional professional services or hourly rates proposed in this agreement.

The optional deliverable for probe-based volume estimation approach has been added to the required deliverables and cost, while Cambridge Locus has been adjusted to be an optional deliverable per Ventura County's request during negotiations.

The subscription license proposed for ClearGuide Roadways includes standard product support, initial training led by a subject matter expert, access to Iteris' online training portal, and all hosting/cloud costs. The optional license for Cambridge LOCUS includes two one-hour training sessions with an additional 40 hours of customer support annually.

Iteris is proposing historic data for both the HERE Traffic ML dataset as well as the optional Cambridge Locus data. HERE Traffic ML history includes all data starting with March 2019 through contract execution date.

Volume estimates from probes will be generated once the contract has been executed. Estimated delivery of volume data, loaded and visible in the ClearGuide application is January 2024.

The optional Cambridge LOCUS data is generally available and deployed 45 days after the conclusion of the prior year, and the base fee includes annual data deliveries. The data can be delivered on a quarterly rolling basis vs. annual for the additional cost listed above.

Proposer [redacted]

Signature of Authorized Person	6/27/2023 Date

Subcontractor Payments

The Iteris accounting department will notify VCTC when payments are issued to each of the identified subcontractors. Subcontractor invoices will be paid within the terms designated by their respective organizations.

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