PREPARED FOR:
FRESNO COUNCIL OF GOVERNMENTS

Kimley»Horn
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Proposal for

Fresno County Transportation Systems Management and Operations (TSMO) Plan and Regional ITS Architecture Update

A. Transmittal Letter

April 24, 2026

Shichen Fan, Project Manager
Fresno Council of Governments
2035 Tulare Street, Suite 201
Fresno, CA 93721

RE: Proposal for Fresno County Transportation Systems Management and Operations (TSMO) Plan and Regional ITS Architecture Update

Dear Mr. Fan and Members of the Selection Committee:

Fresno Council of Governments (Fresno COG) seeks a consultant with the expertise to develop a TSMO Plan and modernize Fresno County'sIntelligent Transportation System (ITS) Architecture framework to reflect advancements in technology, evolving operational practices, and shifting regionalpriorities. As one of the nation's leading ITS firms, Kimley-Horn is that consultant. We are committed to providing Fresno COG with an actionable, maintainable plan that aligns with federal requirements, supports informed decision-making, and positions the region for continued success in securing federal funding and advancing innovative transportation solutions. We are supported by national and local experts to bring the best team. **Citizen Engineers**, founded by Monica Harwood and Jim Peters who were the leads of the Federal Highway Association (FHWA) Resource Center, will lead the TSMO Plan. **LSA Associates, Inc. (LSA)**, with task lead Kristine Cai, formerly of Fresno COG, brings her local knowledge to the stakeholder outreach.

Extensive ITS experience throughout California. Kimley-Horn has delivered several projects that showcase our TSMO and ITS expertise throughout California for agencies such as the Kern County Association of Governments (Kern COG), Tulare County Association of Governments (TCAG), Southern California Association of Governments (SCAG), and Metropolitan Transportation Commission (MTC). With decades of TSMO experience, Kimley-Horn is called upon by agencies from small-town traffic departments to national agencies across the country to plan, design, and implement user-friendly, operationally proven, and innovative Intelligent Transportation Systems.

Project manager Alyssa Phaneuf, PE, has more than 25 years of ITS planning, architecture development, and ITS systems engineering design experience. Her applicable experience includes the outreach and development of the 2015 Fresno COG ITS Strategic Deployment Plan where Kimley-Horn was a subconsultant leading the ITS Architecture task. She is currently leading the development of the Ventura County and Imperial County ITS and TSMO Architectures in partnership with SCAG. Her experience also includes collaborating with clients from the Bay Area to San Diego to develop tailored architectures and ITS and TSMO plans that promote usability and accessibility for project sponsors. Notably, she managed the San Diego Association of Governments (SANDAG) Regional TSMO Plan, advancing regional strategies and implementation tools for the San Diego region. She also completed a statewide capability maturity model assessment for all of the Caltrans districts, including District 6, as part of a regional TSMO assessment.

Understanding the regional needs. The Kimley-Horn team has delivered a range of projects in the Central Valley, like the recent Fresno-Clovis Metropolitan Area (FCMA) Managed Lanes Study, that highlight our ability to address the unique needs of relatively rural communities that are adapting to consistent regional growth. We understand your unique transportation environment—our team is adept at tailoring solutions that reflect the values and expectations of Fresno County stakeholders. **Darya Shtykalo, PE**, the Task 2 lead, worked with Kristine Cai (from our teaming partner, LSA), the Task 3 lead, over the last year to coordinate stakeholder and public engagement for the FCMA Managed Lanes Study. With more than 20 years at Fresno COG, Kristine offers invaluable institutional knowledge and a thorough understanding of Fresno COG. The Kimley-Horn team knows the local players and how to successfully execute this project.

Should you have any questions, please contact project manager **Alyssa Phaneuf, PE,** at alyssa.phaneuf@kimley-horn.com, 213.261.4047, or the address at the bottom right of this page. Thank you for considering our proposal.

Sincerely,
KIMLEY-HORN AND ASSOCIATES, INC.

Alyssa Phaneuf, PE*
Project Manager/Vice President

**As a vice president of Kimley-Horn, Alyssa Phaneuf, PE is authorized to negotiate and bind the firm contractually.*

Alyssa can be reached at the following address:
660 South Figueroa Street, Suite 2050,
Los Angeles, CA 90017.
Telephone: 213.261.4047.
Email: alyssa.phaneuf@kimley-horn.com.

Kimley-Horn's proposal is a firm offer for 90 daysfrom the date of submittal, April 24, 2026.

Kimley-Horn has a thorough understanding of the RFP and its requirements.

B. Table of Contents

C. Overview

Understanding the Nature of Work

Located in the agriculture-rich San Joaquin Valley, Fresno County has been traditionally a car-dependent region, given its largely agriculture-backed economy and the strong preference of single-family-oriented land use development pattern. After decades of investment in the transportation infrastructure through federal, State, and local fundings, a mature highway system in Fresno County has been delivered, efficiently connecting people and transporting farm products from the region to the rest of the State and country. In the last decade, especially after the pandemic, the region has started to experience peak-hour congestion in commute corridors and at bottleneck areas. According to the Central California Travel Study (CCTS) conducted in 2022/2023, more than 90% of the trips made in Fresno County were by private vehicles, and most of such vehicle trips were made by single-occupancy vehicles. Only 0.6% of trips were by transit, 6.2% walking, and 1.1% were bike/e-bike trips.

Senate Bill 375 (SB 375), the Sustainable Communities and Climate Protection Act of 2008, requires that the California Air Resources Board (CARB) set Greenhouse Gas (GHG) emission reduction targets for the 18 Metropolitan Planning Organizations (MPOs) in California. The MPOs are required to demonstrate that the Sustainable Communities Strategy (SCS) in their Regional Transportation Plan (RTP) will achieve the GHG reduction targets, if implemented, through integrated transportation and land use strategies. In 2018, the CARB set aggressive GHG reduction targets for the MPOs in the second round of target setting. Fresno COG was given the target of reducing per capita Vehicles Miles Travelev (VMT) by 13% (compared to the 2005 level) by 2035 in the 2018 GHG target update, which is higher than the 2010 target of 10% by 2035.

Our team has worked with every iteration of the National ITS Architecture, including its most recent update, ARC-IT 9.3

Technology and Transportation Systems Management and Operations (TSMO) are cost-effective strategies to help improve congestion and meet the regional goals. TSMO uses data and a needs-based process to identify strategies for operations that focus on safety and reliability. Together, these solutions can provide coordinated improvements that work at a local and a regional scale. In order to implement these strategies, it is important to develop a strategic framework that aligns with the regional goals. This project will use the existing regional plans and coordinate stakeholder outreach to develop guidance documents on technology, TSMO, emergency response and non-recurring congestion, and data sharing.

As the designated MPO, Fresno COG maintains the regional ITS architecture to facilitate transportation technology deployment in a coordinated fashion. It is important to provide a new baseline as the region has grown and technology has evolved. Managed lanes and connected vehicle applications are emerging in the region. Data has become its own currency in the technology world with implications for transportation in terms of data availability but also for data sharing and cybersecurity. All of these changes and more are what make this project exciting.

As transportation technology maturity has evolved in the region, there are more opportunities for TSMO strategies to work collaboratively to meet the regional goals. As the federally designated Transportation Management Area (TMA) agency for Fresno County, Fresno COG has developed a Congestion Management Process (CMP) as an integral part of the metropolitan transportation planning process, which emphasizes operational improvement, demand management and performance monitoring rather than expanding highways to facilitate single-occupancy-vehicles. ITS is part of the congestion management strategies established in the latest CMP. The Kimley-Horn team will review the congestion management strategies in the CMP for alignment with that the TSMO and the ITS Architecture.

During the RTP/SCS development process, Fresno COG established project evaluation criteria that included categories such as mobility & access, equity, safety, resiliency, and feasibility. In addition, the Surface Transportation Block Grant Program (STBGP) and Congestion Mitigation and Air Quality (CMAQ) have separate project scoring criteria. Projects selected by the STPG and CMAQ are programmed into the Federal Transportation Improvement Program (FTIP). The Kimley-Horn team will conduct a high-level check of the proposed improvements projects in the TSMO/ITS Architecture against the project evaluation criteria of these regional plans and funding programs, and provide a summary report on whether these projects will be meeting the established criteria of these plans/programs.

In addition, for project planning and prioritization, the FTIP Programming has a “Transportation Performance Management” element which specifies that projects outlined in the FTIP must have direct relevance to achieving the transportation performance targets set in the RTP. The TSMO Plan can help confirm that the recommended projects are in line with FTIP programming guidelines. TSMO Plan can help prioritize which projects are most aligned with regional priorities that follow FTIP program guidelines, and there could be a link to the ITS Architecture for relevant technology projects.

General Approach

Kimley-Horn and our partners LSA and Citizen Engineers have a proven approach to the Fresno TSMO Plan and ITS Architecture Update. We believe that this team has the local knowledge, the technical expertise, and the big picture thinking that is needed to execute a plan that will set the long-term vision for the region that can be implemented at a local and regional level.

A consitent theme to our approach is using existing materials and plans as well as engaging stakeholders. The stakeholder engagement will be focused and serve multiple purposes—to collect inventory for the ITS Architecture, assess data sharing needs, and assess the prioritization for TSMO strategies.

A consitent throughline for each of the different deliverables is understanding the baseline for the region for each subject area - data sharing, transportation technology, or TSMO solutions in general. We will use the Capability Maturity Assessment (CMA) to provide a framework to use to evaluate business processes for each subject area. The Federal Highway Administration (FHWA) adapted the CMA framework for the TSMO program to help agencies gain a common understanding of the process. The CMA framework defines agencies' capabilities in different process areas, which are defined by FHWA as:

Business Process;
- Formal Scoping, Planning, Programming, and Budgeting

Systems & Technology;
- Use of Systems Engineering, Systems Architecture Standards, Interoperability, and Standardization

Performance Measurement;
- Measures Definition, Data Acquisition, and Data Utilization

Organization and Workforce;
- Programming Status, Organizational Structure, Staff Development, and Recruitment and Retention

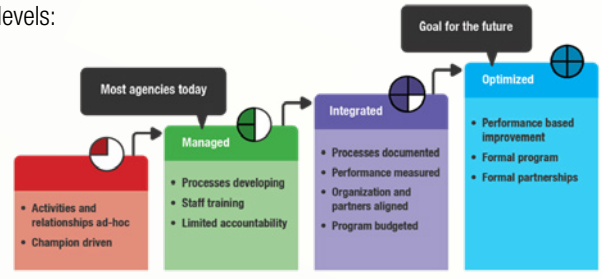
Culture;
- Technical Understanding, Leadership, Outreach, Responsiveness to changing real-time conditions and Program Legal Authority

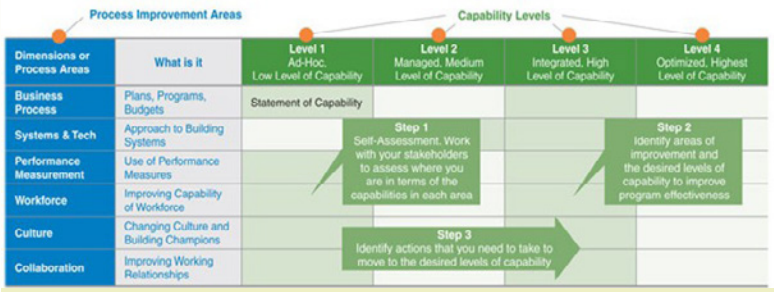
Collaboration;
- Relationships with Public Safety Agencies, Local Governments, MPOs, and the Private Sector

Agencies evaluate their capabilities within these process areas, grouped into different levels:

1. Level 1, defined as "ad hoc, low level of capability"
2. Level 2, defined as "managed, medium level of capability"
3. Level 3, defined as "integrated, high level of capability"
4. Level 4, defined as "optimized, highest level of capability"

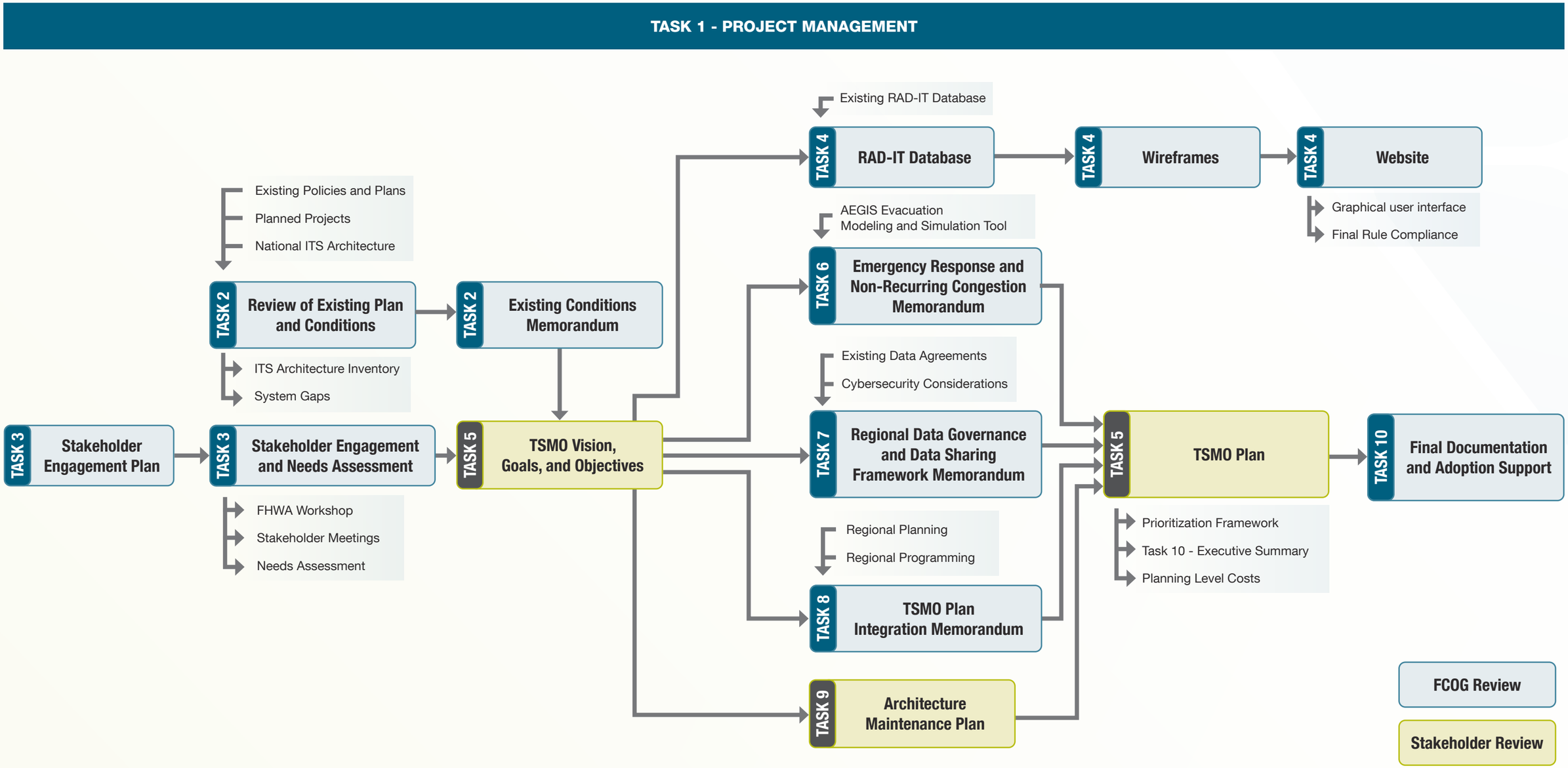
The CMA matrix from the FHWA is shown in the figure below. While the CMA is a formal tool for TSMO, it is also helpful as we evaluate processes related to data sharing and resiliency. We believe in using at a holistic approach including performance metrics, operations, business processes, and technology to complete this project, including the associated stakeholder outreach. We have put together the following task flow diagram to show the tasks inputs and outputs and interdependencies.





Capability Maturity Assessment (FHWA), Source: FHWA

Summary of Project Approach



D. Detailed Work Plan

Task Description and Deliverables

Kimley-Horn's services are limited to those expressly described in this scope of work. Any services not specifically identified herein, or any increase in the level of effort, number of meetings, workshops, reviews, or deliverables beyond those expressly stated, will be considered Additional Services and shall require prior written authorization from Kimley-Horn through a written amendment to this Agreement. Unless otherwise expressly stated, Kimley-Horn shall address one (1) round of consolidated comments per deliverable. Additional review cycles will be considered Additional Services.

TASK 1 – Project Management and Coordination

Kimley-Horn will prepare for a project kick-off meeting with Fresno COG staff. At this meeting, the Kimley-Horn team will discuss the scope, schedule, approach to outreach, and communication for the project.

Following the kick-off meeting, Kimley-Horn will prepare a detailed work plan, which includes the schedule, critical path items, stakeholder meetings, deliverables, roles and responsibilities, and quality control procedures.

Kimley-Horn will host up to 20 virtual one-hour meetings to discuss progress on the project, action items, and schedule. We will provide meeting agendas and meeting minutes for each meeting.

Our accounting team will generate a draft invoice each month for work conducted on this project. The accountant and project manager will meet to confirm that the invoice is correct and will create a progress report to include:

- A narrative and description of ongoing tasks and deliverables
- Progress and cost status (planned versus actual)
- Identification of problems or issues and corresponding resolution strategies before they affect schedule and budget
- Look-ahead calendar and tracking of action items
- Updates to the project's baseline schedule and schedule recovery plans
- Invoices describing the percentage completion of each task/deliverable/milestone

Deliverables:

- 1.1 Kick-off meeting agenda, meeting materials, and minutes
- 1.2 Workplan and schedule
- 1.3 Monthly invoices and progress reports (up to 20)
- 1.4 Monthly meeting agendas and minutes (up to 20)

TASK 2 – Review of Existing Plans and Conditions

The Kimley-Horn team will review the prior 2015 Fresno County ITS Strategic Deployment Plan. Our project manager, Alyssa Phaneuf, was a key task lead on that Plan and completed the ITS Architecture and Existing Conditions review for it. We will build on the strong foundation of that Plan and provide a summary of the changes to the region in terms of technology since that time, as well as the changes to the National ITS Architecture.

Our review will focus on changes to transportation technology, but also on regional shifts in transportation needs and goals. As such, we will also review the Fresno COG Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), the regional planning documents as shown in the following table. Our review will include specific programs and projects that are relevant to technology like signal systems projects or transit automated vehicle location systems. It will also include goals and ideas that are needed to capture as future projects. The ITS Architecture will document existing projects, but also provide generic service packages so that new ideas or concepts won't be precluded.

We will also identify changes to the National ITS Architecture since 2015. We have worked on or completed three ITS Architectures in the last two years, so we are intimately familiar with the changes to service packages and requirements. Many of the existing service packages have just changed names slightly, which is a minor shift, but there are brand new service packages like VS04 Special Vehicle Alert.

The table on the following page provides a cursory look at the potential relevant topics from existing regional plans that may be relevant to the TSMO Plan and ITS Architecture.

Plan	Potentially Relevant Topics
Regional Transportation Plan	▪ Expanding transit systems and service frequency ▪ Improving connectivity between all transit ▪ Developing connected bikeways systems ▪ Updates to Fresno Area Express ▪ Updates to Clovis Roundup ▪ Updates to Intercity Ground Transportation Amtrak San Joaquins ▪ Updates to YARTS, FRCTA, and others
Fresno County Coordinated Public Transit-Human Services Plan	▪ Results of the technology assessment (page 81) ▪ Recommendations including ride-matching services, purchases of buses and technology, car-sharing partnerships
Measure C Projects	▪ Safe Routes to School Projects ▪ Veterans Boulevard Signal Improvements
SR 99 Comprehensive Multimodal Corridor Plan (CMCP)	▪ Goals related to promoting EV and emerging technology strategies ▪ 110 technology investment strategies
Transportation Improvement Program	▪ SHOPP projects ▪ Clovis Signal Improvements ▪ Coalinga Signal Improvements ▪ Fresno County American Ave Signal
Managed Lanes Study*	▪ HOT lane infrastructure is recommended in this report, but managed lanes are one of the many alternatives under consideration by FCOG
Light Rail Study	▪ Fresno Transit Improvements will be discussed in this future report, but light rail is one of the many alternatives under consideration by FCOG

**Completed by Kimley-Horn*

Kimley-Horn will complete an assessment of the existing conditions and prepare a memo that describes the relevant inventory, updates and guidance from state, regional, and local documentation. It will also describe the changes to the national ITS framework that are important for the region. We will identify gaps in the operational (integration needs or changes, stakeholder roles and responsibilities, etc.), technological (systems, technology, communication connections, etc.), and regulatory conditions. The purpose of this memo is to set the stage for the stakeholder engagement to help identify areas to discuss with stakeholders and to begin to update the inventory in the ITS Architecture. We will submit a draft Existing Conditions Memo and address one round of consolidated comments for the final submittal.

Deliverables:

- ↘ 2.1 Draft Existing Conditions Memorandum
- ↘ 2.2 Final Existing Conditions Memorandum

TASK 3 – Stakeholder Engagement and Needs Assessment

Working with Fresno COG staff, the Kimley-Horn team will develop a Stakeholder Engagement Plan that includes a stakeholder list, engagement strategies, communication protocols and other specifics of the engagement process for this project. A draft stakeholder engagement plan will be prepared for Fresno COG staff's review. Comments from Fresno COG staff will be addressed and incorporated into the final plan for execution.

The Kimley-Horn team, led by LSA, will work with the Fresno COG project management team to identify a list of stakeholders for this project. The stakeholders include:

1. Public Sector

- Caltrans
- Local governments (public works)
- Transit operators
- Law enforcement (CHP, police departments, etc.)
- Emergency services
- Fire departments
- IT departments

2. System Users

- Freight and logistics industries
- Transit riders
- Cyclists and pedestrians
- Commuters

3. Private Sector

- Technology firms
- Telecom companies
- Infrastructure contractors

4. Academic institutions

- Fresno State Transportation Institute

5. Community groups

Kristine Leading a Stakeholder Workshop at FCOG

Fresno State Transportation Institute (FSTI), funded by Fresno County's Measure C, is an academic research institution that provides diverse services including education, research, technical service as well as public outreach in San Joaquin Valley, especially in the greater Fresno area. With FSTI's local knowledge and research background in the multimodal transportation area, it will be engaged where appropriate and feasible to support the stakeholder engagement activities for this project.

A total of four Stakeholders Advisory Committee (SAC) meetings will be held to seek input and guidance from the stakeholders. The consultant team will develop meeting agendas and meeting notes, which will be reviewed by the Fresno COG project manager prior to distribution.

In addition, two workshops will be held to include wider stakeholder participation in the development of the TSMO plan. The Kimley-Horn team will work with Fresno COG staff to develop the invitation, attendee list, workshop program and presentation materials. It is anticipated that one workshop will be held at the earlier stage of the project to seek input on the potential improvement of the system. The other workshop will be towards the latter half of the project when the consultant team will present the draft plan for feedback and discuss prioritization. The two workshops will also be held online. The team will provide meeting agendas and meeting materials for Fresno COG to review. We will address one round of comments on the meeting materials. We will provide meeting minutes after each interview and workshop.

As part of the stakeholder engagement process, the team will conduct a series of interviews with key partners such as transportation agencies, emergency response agencies, transit providers and regional planning agencies to understand the issues and concerns from the key stakeholders, and seek input on the potential improvements on the system.

We will use the Capability Maturity Model (CMM) to guide the development of the interview questions. The CMM is a management tool used to assess the maturity of the system. It focuses on six dimensions: Business Processes, Systems & Technology, Performance Measurement, Culture, Organization/Staffing and Collaboration. Up to 10 meetings (including the four SAC meetings and two workshops) are scoped for the project. All interviews will be conducted online.

Example of Interactive Tool Used During Recent FCOG Managed Lanes Study Stakeholder Meeting

In addition, two workshops will be held to include wider stakeholder participation in the development of the TSMO plan. The Kimley-Horn team will work with Fresno COG staff to develop the invitation, attendee list, workshop program and presentation materials. It is anticipated that one workshop will be held at the earlier stage of the project to seek input on the potential improvement of the system. The other workshop will be towards the latter half of the project when the consultant team will present the draft plan for feedback and discuss prioritization. The two workshops will also be held online. The team will provide meeting agendas and meeting materials for Fresno COG to review. We will address one round of comments on the meeting materials. We will provide meeting minutes after each interview and workshop.

Furthermore, a half-day workshop will be held to provide up-to-date training on FHWA systems engineering requirements, relevant Caltrans Local Assistance Program Guidelines, and how to use the ITS Architecture. The results of all the stakeholder engagement will be presented in a final memo. Any comments on the stakeholder engagement memo will be addressed in the draft TSMO Plan.

Deliverables:

- 3.1 Draft Stakeholder Engagement Plan
- 3.2 Final Stakeholder Engagement Plan
- 3.3 FHWA 4-hour Workshop
- 3.4 Stakeholder Outreach (10 total meetings)
- 3.5 Stakeholder Outreach Summary Memorandum

Monica leading an TSMO Workshop

TASK 4 – Regional ITS Architecture Update (ARC-IT Based)

The Kimley-Horn team played a pivotal role in the current version of the RAD-IT database for the Fresno ITS Architecture, which will allow our team to better navigate the organization and connections. Our first step will be to convert the existing RAD-IT database to the current version of RAD-IT. During this process, we anticipate that there will be broken links and missing connections, which we will seek to resolve by leveraging our understanding of the previous version. We take a methodical approach to updating the database, which includes:

- **Converting the database to the current version**
- **Updating projects and systems from planned to existing**
- **Incorporating systems/stakeholders/technologies that exist now but are new since the last update**
- **Outstanding maintenance requests**
- **Incorporate new service packages, subsystems, and information flows to reflect proposed conditions**
- **Incorporate forward-looking technologies in generic service packages to grow with the region**

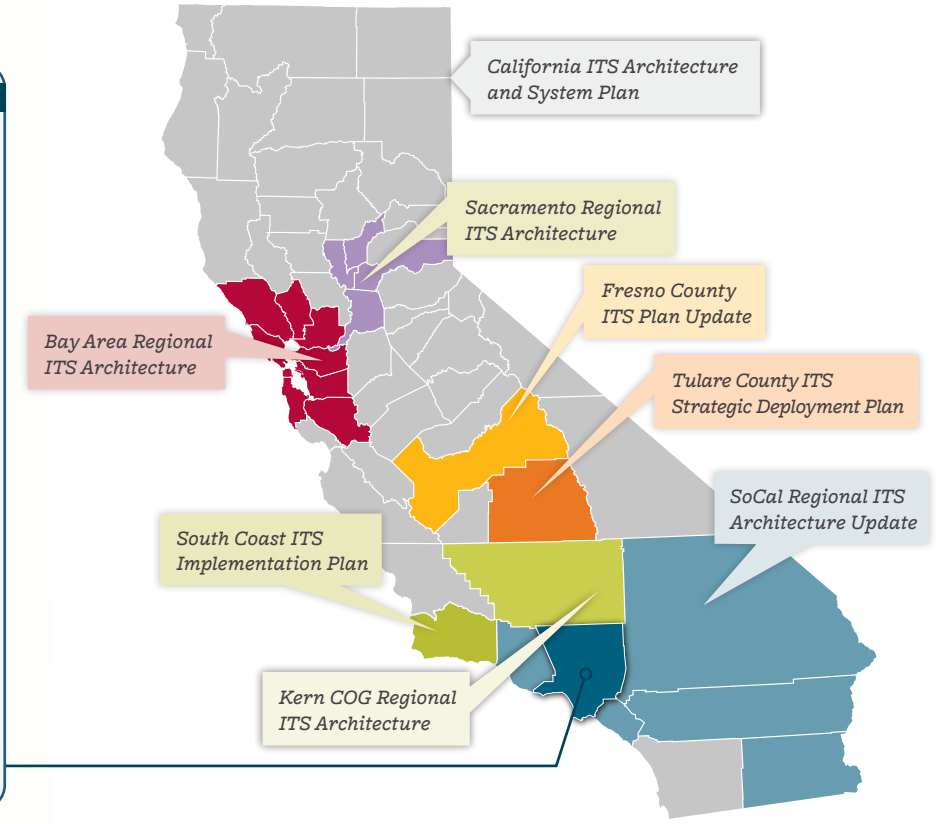
SCAG Region ITS Experience:

AGENCIES:

- LA Metro
- Caltrans District 7
- County of Los Angeles Public Works
- Port of Long Beach
- Southern California Association of Governments (SCAG)
- Gateway Cities Council of Governments (GCCOG)
- Orange County Transportation Authority (OCTA)
- South Bay Cities Council of Governments (SBCCOG)
- Imperial County Transportation Commission (ICTC)

COUNTIES/CITIES

- Agoura Hills
- Anaheim
- Artesia
- Beverly Hills
- Buena Park
- Burbank
- Chino
- Commerce
- Covina
- Culver City
- Diamond Bar
- Downey
- El Centro
- Fontana
- Glendale
- Inglewood
- Irwindale
- La Quinta
- Long Beach
- Los Angeles
- Malibu
- Palmdale
- Palm Desert
- Pasadena
- Pomona
- Rancho Mirage
- Riverside County
- Santa Clarita
- Santa Monica
- Thousand Oaks
- Westlake Village



Kimley-Horn ITS Architecture Experience

The Kimley-Horn team has been innovating architectures since we were the first to bring the Bay Area ITS Architecture online in the early 2000's. Kimley-Horn has developed ITS Architectures with linked RAD-IT databases to actual GIS-based inventories to provide a more tangible way to use the architecture.

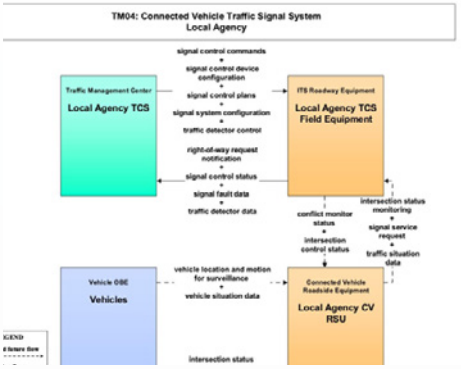
RAD-IT is a specific language that does not translate to most transportation professionals' day-to-day experience. However, we want the database to accurately reflect the information flows, exchange of data, and connections between systems. Our approach is to speak in plain language to the stakeholders and explain it in terms of projects and integrations. Those are more common terms that can be translated into RAD-IT. We will make assumptions and confirm them with the stakeholders in small group meetings. We have assumed up to five small group meetings to review the RAD-IT architecture. They could be organized into small local agencies, transit agencies, Caltrans, and regional or large local agencies. Each meeting will review the draft diagrams and confirm assumptions and key information flows and system status.

Our goal is to have an architecture that is intended to be understandable to the users who speak in terms of projects like the McKinley & Blythe Complete Streets project, but also have more general systems that will extend the life of the architecture and make maintenance changes less frequently, like Fresno Region Transit Signal Priority. We will also incorporate potential evolving technologies that the stakeholders may not have identified a specific need for, but may be necessary as transportation technology evolves, like VTOLS or Connected and Autonomous Vehicles. Existing and emerging data sources will also be included in the Architecture, although not usually by name as those change very frequently. However, they are a source of information for systems like ATSPMs and should be recognized.

In addition to the service package and information flows, there are additional components necessary to be in compliance with 23 CFR 940 that the Kimley-Horn team will develop. Those include requirements like National Transportation Communications (NTCIP), Transportation Demand Management (TDM), and Information Service Element Evaluation (ISEE), among others. The Kimley-Horn team will seek to develop the architecture database to be in compliance with the Final Rule, but also to produce a meaningful architecture for the users. Our goal is to stay true to the purpose of the Regional ITS Architecture, which is to provide a forward-thinking strategic planning framework for technology while consistent with federal guidelines.

Kimley-Horn developed a way for users to directly provide minor updates to remove the need for a maintenance committee using dual-factor authentication logins and trainings. Currently, we are integrating Slack into the Bay Area ITS Architecture to allow stakeholders to interact directly around technology.

Kimley-Horn will provide the ITS Architecture in a linked website that includes pertinent elements of the Final Rule and provides a searchable, graphical database as a tool for the users. We will develop wireframes of the website consistent with Fresno COG website and graphical guidelines, the website will be developed in WordPress with either a named domain or to be incorporated to the existing website. The website content will be provided in a Word document for ease of commenting. We will address one round of comments on the wire frames and one round of comments on the website content. Kimley-Horn's services related to the ITS Architecture website are limited to development and delivery of planning level content, architecture diagrams, and visualization tools. We do not provide website hosting, cybersecurity monitoring, data security services, user account administration, software maintenance, system uptime assurances, or post-delivery technical support unless expressly authorized as Additional Services.



Deliverables:

- 4.1 Draft RAD-IT Database
- 4.2 Final RAD-IT Databased
- 4.3 ITS Architecture Website Wireframes
- 4.4 Five small group meetings with stakeholders for review
- 4.5 Draft ITS Architecture Website
- 4.6 Final ITS Architecture Website

TASK 5 – TSMO Plan Development

Building on the existing conditions review, stakeholder input, needs assessment, and updated ITS Architecture, our approach will translate technical findings and regional priorities into a practical, implementation-oriented TSMO Plan. The plan will be structured to reflect Fresno COG's operational environment and will emphasize strategies that improve coordination, reliability, safety, and response to non-recurring congestion, planned events, weather disruptions, and emergencies. Consistent with the RFP, the work will develop a TSMO vision, goals, and objectives grounded in Fresno COG's adopted and emerging regional planning framework, including the RTP/SCS, CMP, TIP, Regional Safety Plan, and other related transit, active transportation, and resiliency efforts; identify operational strategies supported by technology, institutional coordination, and policy improvements; and prepare planning-level cost estimates and implementation phasing.

Goal	Goal Statement
Collaboration	Support increased collaboration within the Department and with external partner agencies.
Internal Knowledge and Awareness	Establish tools and processes that support continuous education for project sponsors, owners, and those identified with specific roles and responsibilities for each TSMO strategy.
Performance Management	Evolve the use of data to make informed decisions regarding TSMO investments.
Integrate Operations	Integrate operations and TSMO strategies into every aspect of program and project delivery.
Funding	Implement a sustainable approach to funding TSMO strategies.

NCDOT TSMO Plan Sample Goals

Citizen Engineers led the Tahoe Regional Planning Agency's Tahoe TSMO Plan, which was developed in coordination with the region's Resiliency Plan and Emergency Operations Plan.

As part of this task, the Kimley-Horn team will develop a clear and regionally grounded strategy framework that connects operational needs to implementable actions. Recommended strategies will be organized to help Fresno COG and partner agencies understand what should be advanced, why it matters, who needs to be involved, and how implementation can reasonably occur over time. The strategy set will emphasize practical actions matched to regional capabilities and resources, while also identifying opportunities to align implementation with related planning, programming, and capital efforts where appropriate. This will help the TSMO Plan function as a usable guide for decision-making rather than a long list of worthy but untethered ideas.

We will also develop a prioritization framework for recommended TSMO and ITS strategies and projects. The framework will be based on factors such as: alignment with regional goals, operational benefit, relative cost, implementation readiness, and institutional considerations, and will be designed so Fresno COG and partner agencies can continue using it beyond the life of this project. We will prepare planning-level cost ranges, near-, mid-, and longer-term phasing, and a prioritized strategy list that can serve as a living implementation tool between plan updates. This work will be integrated into a TSMO Plan, Executive Summary, and Project Sequencing and Strategic Deployment Guide so they are consistent with broader regional planning and programming processes. We will prepare a Draft TSMO Plan for review by stakeholders. We will address one round of consolidated comments and prepare a final TSMO Plan.

Deliverables:

- 5.1 Draft TSMO Plan, including the Prioritized Strategy List for Ongoing Tracking and Updates
- 5.2 Final TSMO Plan

TASK 6 – Emergency Response and Non-Recurring Congestion Focus

We worked with Cal FIRE and other emergency responders on the SCAG ITS Architecture.

The Kimley-Horn team will evaluate operations related to emergency response and non-recurring congestion. Not only is non-recurring congestion a significant contributor to delay in the region, but emergency response and non-recurring congestion can be a matter of safety.

When Kimley-Horn was completing the SCAGs ITS Architecture for Southern California, we heard from Cal FIRE and other emergency responders that communication was a significant barrier to emergency response and evacuations. Often emergency responders were using different communication bands, making communication between each other challenging.

Task 2 establishes the regional ITS and transportation planning foundation by reviewing the RTP/SCS, CMP, TIP, and related technology plans. Building on that work, document review in addition to task 2, the emergency operations plans, regional hazard mitigation plans, incident management policies, and event management protocols will provide the baseline we need to evaluate emergency response and non-recurring congestion.

The Kimley-Horn team will conduct targeted interviews (up to three) and facilitated discussions (up to three) with Fresno County Office of Emergency Services (OES), CAL FIRE, CHP, Fresno County Sheriff, local fire districts, and EMS providers to assess how transportation agencies currently communicate and coordinate with public safety partners during incidents and emergencies. Using these discussions, we will evaluate existing protocols, shared situational awareness tools, CAD-to-TMC data exchange, and joint command structures to identify where coordination breaks down or where information handoffs are slow or informal.

Kimley-Horn has developed an evacuation modeling platform that enables agencies to define hazard scenarios in compliance with AB 747 and SB 99 and the Attorney General's Technical Advisory on Evacuation Modeling.

The Kimley-Horn team will evaluate existing signal preemption and priority systems for emergency vehicle response across the region and assess coverage gaps along critical incident response and evacuation corridors. We will also review whether agencies maintain pre-approved signal timing plans for incident and event conditions that can be activated quickly, and identify corridors where coordinated timing adjustments, queue flushing, or dynamic rerouting could meaningfully improve operations. For planned events such as Fresno State games, the Big Fresno Fair, and agricultural transport surges, we will evaluate whether event traffic management plans exist and are operationally actionable, and recommend improvements where they are ad hoc or undocumented.

AEGIS
ADAPTIVE EVACUATION & GEOGRAPHIC INTELLIGENCE SYSTEM

We will apply **Kimley-Horn's AEGIS**, an evacuation modeling and simulation tool, to assess evacuation route capacity, clearance times, and bottlenecks for wildfire scenarios affecting eastern Fresno County and foothill communities served by SR 168, SR 41, and SR 180. This analysis will identify where ITS investments such as dynamic message signs, highway advisory radio, real-time traveler alerts, or portable deployable assets, would have the greatest impact on evacuation effectiveness and public safety. AEGIS outputs are planning level scenario analyses based on available data and assumptions and do not represent predictions or guarantees.

The tool will help us assess existing detection and alert capabilities on SR 99, SR 33, and other affected corridors and recommend technology and operational protocols to reduce secondary incident risk for Tule fog. For major incidents broadly, we will evaluate the region's capacity to rapidly deploy portable ITS equipment and identify gaps in coverage, staffing, and activation procedures.

Based on the coordination assessment and operational analysis, develop recommendations for a regional operations coordination framework that supports unified or coordinated command for transportation agencies during declared emergencies and major incidents.

The Kimley-Horn team will identify opportunities to connect operational data including outputs from AEGIS modeling to public-facing channels such as 511, SigAlert, Wireless Emergency Alerts, and agency social media, confirming that traveler information reaches the public through the channels they actually use. We will recommend a structured approach to pre-planned event operations that allows agencies to activate coordinated plans without relying on ad hoc communication.

We will document findings and recommendations in a memorandum and address one round of consolidated comments for the final memorandum. Emergency response, evacuation, and non-recurring congestion analyses are planning level evaluations intended to inform policy, strategy, and investment considerations only. These analyses are not intended for real time operational decision making, emergency response deployment, or life safety determinations.

Deliverables:

- 6.1 Draft Emergency Response and Non-Recurring Congestion Memorandum
- 6.2 Final Emergency Response and Non-Recurring Congestion Memorandum

TASK 7 – Regional Data Governance and Data Sharing Framework

Mobility as a Service platforms are becoming more popular, and ATSPMs are integrating private sector data sources. Many projects cross agency boundaries, which require data sharing across platforms, systems, and IT networks to maximize efficiency and benefits. Cybersecurity concerns, data ownership, data privacy, and data sharing are important considerations for ITS. Data sharing enhances operations, which often require changes to business processes, organizational foundations, staff capabilities, expanded partnerships and more. The goal of the Data Governance Framework is to develop best practices, recommendations, and implementation guidance for data governance.

Our approach to defining the regional data governance framework is to review existing practices, defined data ownership guidance, and existing data sharing agreements. We will also solicit input directly from the users by holding up to two (2) data governance workshops. The workshops will be divided into regional agencies like Caltrans and Fresno COG and smaller agencies like local agencies and transit agencies.

Questions that will be asked include:

- What institutional barriers do you have to sharing data or perform data driven operations?
- What near-term data initiatives foes your agency foresee?
- What is your process for training or keeping up to date on data governance or data security?

The purpose of the workshops is to assess the regional needs regarding data, privacy, cybersecurity, and system integration. The audience will include traffic engineers, IT, and potentially legal staff. Based on the results of the workshop, existing regional guidance, and national best practices, we will develop a regional data governance framework that includes phased implementation recommendations.

The memorandum will include:

- Vision for data governance
- Outlining the various institutional, technical, legal, and operational barriers that exist
  - Examples: Unclear regional roles, differing data systems with limited interoperability, liability concerns, lack of standard processes to facilitate data sharing.
- Identify current regional strengths, weaknesses, opportunities, and threats regarding data governance
- Recommendations on how data coordination can help directly support the TSMO strategies outlined in previous regional planning documents
- Recommendations on roles and responsibilities
- Considerations for data minimization, cybersecurity, and data storage

We will prepare a draft memorandum on data governance for review and will address one round of consolidated comments.

Deliverables:

- 7.1 Draft Data Memorandum
- 7.2 Final Data Memorandum

TASK 8 – Integration with Regional Planning and Programming

The Kimley-Horn team will provide a TSMO Plan and ITS Architecture that is integrated into planning and programming. The Integration with Regional documents will provide training and guidance for the stakeholders to understand how to use the TSMO Plan and ITS Architecture. It will also require integrating the TSMO Plan and the ITS Architecture into the existing, more well-known, planning and programming processes.

The TSMO Plan is a supplement and is complementary to the existing Congestion Management Plan. As such, the region must be pointed in the same direction. For example, the CMP outlines goals that include the following:

- "Optimize transportation facilities through efficient system management"
- "Invest in strategies that reduce travel demand and improve system performance
- VMT Reduction

In order to integrate the TSMO Plan and ITS Architecture with the broader regional planning process at Fresno COG, the Kimley-Horn team will provide consistency so that the goals/objectives and strategies established for the TSMO and ITS Architecture are aligned with the 2026 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS), which will be adopted by the Fresno COG Policy Board in August/September 2026. The figure shows how the regional Plans are related to one another.

There are five goals proposed in the 2026 RTP/SCS:

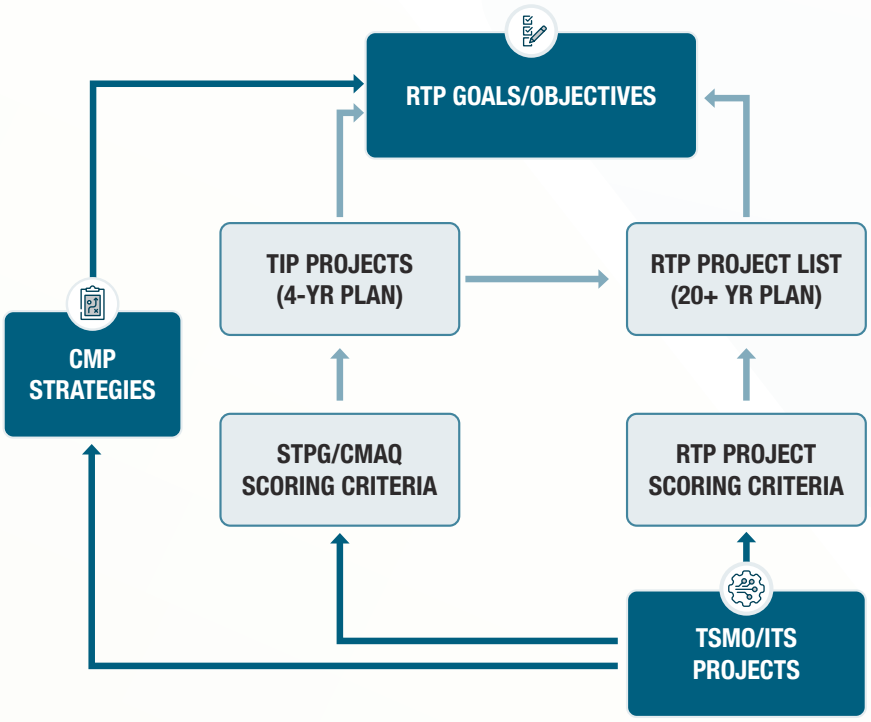
1. Improved mobility and accessibility for all
2. Vibrant communities that are accessible by sustainable transportation options
3. A safe, well-maintained, efficient and climate-resilient multimodal transportation network
4. A transportation network that supports a sustainable and vibrant economy
5. A region embracing clean transportation, technology, and innovation.

The five goals are supported by various policies and strategies. The goals for the TSMO and the ITS Architecture will be complementary and contribute to the goals and objectives of the RTP/SCS. The TSMO plan can provide specific objectives on how to meet those goals, which may include:

- Ongoing performance measurement to assess performance against goals
- Using technology as a tool to improve transportation efficiency
- Providing traveler information with reliable data to inform users

These objectives can align with goals that are already shown in the CMP such as Travel Time Reliability Measures and Peak Hour Delays. These performance measures can be linked to TSMO strategies such as Incident Management, Goods Movement Management, or Integrated Corridor Management. All of these strategies are consistent with the technology-focused strategies in the CMP (Traffic Signal Synchronization, ITS Upgrades, and Ramp Metering) and these technology-focused strategies should be present in the ITS Architecture.

The Kimley-Horn team will summarize relevant regional guidance documents, along with project prioritization processes. We will provide guidance on aligning the TSMO strategies and goals with existing planning documents and how the TSMO plan and ITS Architecture can be integrated into existing planning and programming process, and how training and guidance can be updated to help development of technology projects. The Kimley-Horn team will develop a memo with recommendations. The comments on the memorandum will be incorporated into the TSMO Plan.



Deliverables:

- 8.1 Draft TSMO Plan Integration Memorandum
- 8.2 Final TSMO Plan Integration Memorandum

TASK 9 – ITS Architecture Maintenance Plan

The Kimley-Horn team will develop an ITS Architecture Maintenance Plan that will include the policies and procedures for maintaining the ITS Architecture. The Maintenance Plan will include the following:

- Communication portal for stakeholders to submit maintenance requests (already established on the Fresno COG website, but we can determine if it has been effective)
- Recommended Maintenance Committee – to approve or provide feedback to maintenance request submittals and provide oversight to architecture updates
- Schedule for reviews and for proactive outreach to solicit maintenance requests
- Recommendations for training and information sharing opportunities
- Guidance for reviewing maintenance requests
- Schedule for regular architecture updates


CONNECT-IT
Connect and integrate Transportation Technology
An ITS Architecture for the LA Region

Master CONNECT-IT with a Quick Tutorial

You can browse what types of ITS projects are planned for your agency by using the Search Architecture function. Click on the drop-down menu to find your agency or your agency's grouping. Take a minute today and look at the services that are planned for your agency. You might get some ideas for future projects or be ready to take advantage of future funding.

Future Training Session

Due to current events, we will no longer be holding in-person training sessions in the near future. We will provide an update on the date and location of the next CONNECT-IT training at a later time. Please contact Shrota Sharma (sharmas@metro.net) if you have any current needs or questions.

Project Highlight: LAWA Coordinated ITS Project

The Landside Access Modernization Program (LAMP) Coordinated ITS Improvement project applies Integrated Corridor Management (ICM) principles to the major arterial corridors providing vehicle ingress and egress to the LAX airport. This project is a partnership between LAWA and the Cities of Inglewood and Culver City with additional participation from City of Los Angeles and Caltrans. Its purpose is to use integrated system monitoring, traveler information, signal coordination, and resource sharing to more efficiently manage congestion issues accessing the airport.

For example, during a major evacuation event (e.g. active shooter, bomb threat) at LAX, the agencies can quickly coordinate a response. LAX traffic operators are assisted by the Decision Support System (DSS) to alert travelers approaching LAX with CMS messages along the major arterial and freeway routes and flush traffic out of the central terminal area. With assistance from the DSS, operators are free to monitor the situation and coordinate with law enforcement officials and staff at local agencies.

When developing the project, the team used **CONNECT-IT** to help in determining the high-level

Example ITS Architecture newsletter

The Kimley-Horn team will assess what has been effective in the architecture maintenance process and what can be improved. It has been longer than the typically recommended time for architecture updates in the region, and the previous tasks will help us assess what the recommended update periods should be. The National ITS Architecture has made some significant changes since the last updates, but the region has also evolved. We can suggest procedures that we have seen work in other locations, like having the stakeholders take responsibility for minor changes. We have also had success with quarterly or regular newsletters to keep the architecture in the forefront of stakeholders' minds and training programs that show how to use the architecture and when to use it. The Maintenance Plan can address these items and provide recommendations. There are practical changes that can be made, like adding a checkbox when people submit an FTIP amendment to ask stakeholders whether there is technology involved in the project and then directing them to the maintenance request form.

We will prepare a draft of the Architecture Maintenance Plan for review and address one round of comments.

Deliverables:

- 9.1 Draft Architecture Maintenance Plan
- 9.2 Final Architecture Maintenance Plan

TASK 10 – Final Documentation and Adoption Support

The Kimley-Horn team will prepare the draft and final versions of the previous deliverables along with a project-wide executive summary. The executive summary will be graphical. We will develop a Power Point presentation based on the deliverables in the project, and address one round of comments, before presenting to the FCOG Policy Board and two supporting committees. The Policy Advisory Committee (PAC) consists of city managers of the 15 incorporated cities and the Chief Administrative Officer (CAO) of the County. The Transportation Technical Committee (TTC) includes member agency staff and representatives from a wide variety of transportation and community interest groups. Our schedule shows these presentation materials being finalized around December 2027, to allow at least one month before the February committee meetings for Fresno COG to conduct board member briefings and circulate the relevant portions of the final report, as needed.

We have assumed that all three presentations will be delivered in person. Meeting materials will be provided at least a week before the committee meetings, to be posted with the agenda. The TTC meets the second Friday of each month at 8:30 AM and the PAC meets the same day at 10 AM. We will plan to attend both committees on the same day, estimated to be in February 2028. Then, we will address any comments as needed before the Policy Board meeting the last Thursday of the same month.

Deliverables:

- 10.1 Draft Executive Summary
- 10.2 Final Executive Summary
- 10.3 Draft PowerPoint Presentation
- 10.4 Final PowerPoint Presentation
- 10.5 Three In-Person Presentations

Schedule

Our team has developed the schedule shown below for the project. It is intended that all work will be completed within 20 months of negotiating a contract, but we will work with Fresno COG staff to accelerate the schedule where feasible and within reason.. After notice to proceed, our team will develop a workplan and stakeholder engagement plan to kick-off the project and, in parallel, begin existing conditions research. Ability to schedule stakeholder meetings is a potential schedule risk. To mitigate this risk, we will schedule recurring stakeholder meetings at a regular cadence to hold the calendar time. Soliciting written stakeholder feedback on deliverables is another potential risk to timely project delivery. To avoid this delay, we will use stakeholder meetings, with materials distributed in advance, as a forum for verbal feedback. While the stakeholder group may not have an opportunity to provide written comments on each deliverable, all task findings will at a minimum be presented to them at meetings.

Task	Description	2026						2027												2028	
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Task 1	**Project Management and Coordination**																				
1.1	Kick-off Meeting																				
1.2	Work Plan																				
1.3	Monthly Invoices and Progress Reports																				
1.4	Bi weekly meetings																				
Task 2	**Review of Existing Plan and Conditions**																				
2.1	Draft Existing Conditions Memorandum																				
2.2	Final Existing Conditions Memorandum																				
Task 3	**Stakeholder Engagement and Needs Assessment**																				
3.1	Draft Stakeholder Engagement Plan																				
3.2	Final Stakeholder Engagement Plan																				
3.3	FHWA Workshop																				
3.4	Stakeholder Outreach (Up to 10 Meetings)																				
3.5	Stakeholder Outreach Summary Memorandum																				
Task 4	**Regional ITS Architecture Update (ARC-IT Based)**																				
4.1	Draft RAD-IT																				
4.2	Final RAD-IT																				
4.3	Wireframes																				
4.4	Five Review Meetings																				
4.5	Draft Architecture Website																				
4.6	Final Architecture Website																				
Task 5	**TSMO Plan Development**																				
5.1	TSMO Vision, Goals, and Objectives																				
5.1	TSMO Vision, Goals, and Objectives, Draft TSMO Plan																				
5.2	Prioritized Strategy List for Ongoing Tracking and Updates, Final TSMO Plan																				
5.3	Prioritized Strategy List for Ongoing Tracking and Updates																				
Task 6	**Emergency Response and Non-Recurring Congestion Focus**																				
6.1	Draft Emergency Response and Non-Recurring Congestion Memorandum																				
6.2	Final Emergency Response and Non-Recurring Congestion Memorandum																				
Task 7	**Regional Data Governance and Data Sharing Framework**																				
7.1	Research Existing Data Practices																				
7.2	Research Existing Data Practices Draft Data Memorandum																				
7.3	Final Data Memorandum																				
Task 8	**Integration with Regional Planning and Programming**																				
8.1	Draft TSMO Plan Integration Memorandum																				
8.2	Final TSMO Plan Integration Memorandum																				
Task 9	**ITS Architecture Maintenance Plan**																				
9.1	Draft Architecture Maintenance Plan																				
9.2	Final Architecture Maintenance Plan																				
Task 10	**Final Documentation and Adoption Support**																				
10.1	Draft Executive Summary																				
10.2	Final Executive Summary																				
10.3	Draft PowerPoint Presentation																				
10.4	Final PowerPoint Presentation																				
10.5	Three In-Person Presentations																				

Kimley-Horn
FCOG Review
Stakeholder Review

E. Management Approach

Management Approach

Kimley-Horn's management approach is focused on partnership with Fresno COG and is dedicated to delivering the highest quality service to promote your satisfaction. We adopt a "no surprises" approach to managing our projects and to successfully achieve that goal, we maintain frequent and open communications with Fresno COG staff so that you are always informed and on board with the approach, action items, and overall delivery strategy for the study. Our team will maintain a well-coordinated project team effort and successfully complete the project within the stated schedule.

Project Manager

Our project manager, **Alyssa Phaneuf, PE**, will be your primary point of contact. As a hands-on project manager, Alyssa will have the ultimate responsibility to Fresno COG to monitor that the project team is completing tasks on schedule and on budget, and in accordance with the direction provided by Fresno COG. Alyssa will hold regular coordination calls with Fresno COG's project manager to maintain focus on immediate tasks, provide status updates, and plan coordination with other agencies and the stakeholders. Alyssa will maintain a high level of communication amongst the task leads to remain current on project status and coordinate across tasks. We will use action logs, submittal registers, meeting minutes, and monthly schedule updates to communicate status and provide information to Fresno COG. Kimley-Horn acknowledges that the identified project manager and project team will not be substituted without prior approval of Fresno COG.

Organization Chart

Kimley-Horn has assembled a team of highly qualified professionals who will contribute to their areas of specialty for this project. We have specifically selected them to be included in this proposal because of their familiarity with Fresno COG and ongoing efforts in the region, experience with similar types of work, and expertise with managed lanes in general. Several of our team members regularly work alongside each other and have a strong understanding of their strengths and technical skill sets. The distribution of work among our proposed team members is demonstrated on the organizational chart on page 18 and the table on page 19.

Alyssa Phaneuf, PE

Alyssa has more than 25 years of experience in various ITS and traffic engineering and transportation planning projects, including regional ITS planning, traffic operations, and systems engineering. She is an expert in ITS Architectures having developed them throughout California for the last twenty years. She is an expert in the Systems Engineering process, having developed and taught a class for Caltrans and completed training on TSMO with FHWA. She excels at engaging stakeholders and translating their needs into on-the-ground technology solutions. She understands how to tailor solutions to the needs of the region. Her experience planning and implementing and testing ITS solutions allows her to understand every part of the Systems Engineering process.

Darya Shtykalo, PE

Darya is a transportation engineer with eight years of experience in planning and engineering, with a focus on TSMO and ITS. She works with regional and local agencies throughout California, including the Central Valley, to plan the implementation of projects, including developing planning-level estimation of capital and operating costs, prioritization, phasing, and compliance with state and federal standards. Darya worked at the San Francisco Metropolitan Transportation Commission for a year in the 511 group, which included oversight of the ITS Architecture website revamp. Darya is a responsive, hands-on task lead. She is currently serving Fresno COG as the deputy project manager on the Managed Lanes Study, which involves reviewing the RTP and local stakeholder coordination.

Monica Harwood, PE PTOE

Monica Harwood, PE, PTOE, is a senior transportation operations planner and engineer with more than 25 years of experience planning, implementing, and operating multimodal transportation systems. Her work bridges technical operations, systems engineering, stakeholder facilitation, and implementation planning, helping agencies define operational needs, align partners, and turn broad goals into practical strategies. She has supported state, regional, and local clients through TSMO planning, systems engineering, training, and operations program development, including national work for FHWA. Through her role with FHWA, Monica facilitated TSMO workshops and trainings nationwide, including Capability Maturity Model (CMM) workshops and systems engineering trainings. She also led a two-day strategic TSMO program planning workshop for Caltrans in Sacramento. Previously, as TSMO Development Lead at WSDOT, she helped lead multiple TSMO CMM assessments and reassessments to support program development and continuous improvement and delivered TSMO workshops for ITSWA.

Kristine Cai (LSA)

Ms. Cai is a recognized expert in transportation strategy and planning, policy development, vehicle miles traveled (VMT) strategy and mitigation, and travel demand forecasting. Ms. Cai served as the Deputy Director for Fresno COG and was with the Fresno COG for 21 years before joining LSA. During her service in the public sector, Ms. Cai devoted much of her career to integrated transportation and land use planning work. She has extensive experience advancing innovative solutions that meet sustainability, efficiency, equity, and safety goals. Leading a team of professional engineers and planners, she implemented many projects and programs that advanced sustainability in the Fresno region as well as in the San Joaquin Valley. As the Director of Mobility for Central and Northern California at LSA, Ms. Cai will continue to serve the communities in the San Joaquin Valley as well as in the Northern California region.

Deanna Haase, PE

Deanna is a project manager with Kimley-Horn and has led or managed components of various ITS, transportation operations, and performance analysis projects around the country for more than 20 years. Her focus is on agency infrastructure strategic deployment planning, operational process evaluation and development, data management and information sharing, regional multijurisdictional coordination, and freeway/arterial integration. She has extensive FMS and arterial management system design and planning experience with local, county, and state agencies. Deanna excels at working side-by-side with program managers from all facets of TSMO programs to engage stakeholders to help define goals and expectations that result in development to create actionable and implementable strategies.

Jeff Dale, PE, PMP

Jeff has more than 29 years of experience in ITS and TSMO with a focus on planning and operations. He is one of Kimley-Horn's lead subject-matter experts in emerging technologies. Jeff partners with agencies to develop and implement plans that leverage future technologies to better support their operational strategies. His experience includes roles with incident management, traffic management centers (TMC) operations, emergency operations, and integrating a range of ITS/TSMO strategies. Jeff provides a breadth of geographic experience from his work with public agencies in more than a dozen states. His skillset includes facilitation, fostering multi-agency collaboration, and strategic planning that helps agencies prepare for emerging technologies.

Doug Gettman, PhD

Doug has more than 30 years of consulting, systems planning, and engineering experience in a wide variety of technical areas, including automated vehicles/connected vehicles (AV/CV), adaptive traffic control ITS software (i.e., central systems, web applications, and field traffic controllers), machine learning and artificial intelligence, transportation system modeling and simulation, communications system design, and transit operations. Doug has developed, deployed, integrated, and supported ATMSs for cities, counties, and state DOT across North America, including Arizona, Florida, Texas, California, Michigan, Ontario, Ohio, and Nevada. Doug leads the deployment of Traction Priority to provide Freight Service Priority (FSP) for North Central Texas Council of Governments (NCTCOG) and TSP for Los Angeles Metro.

Ayberk Kocatepe, PhD, PTP

Ayberk has more than 10 years of experience in travel demand model development, demand forecasting, transit ridership forecasting, transit survey expansion, New Starts analysis, and corridor studies. He has processed and applied transportation travel data, including traffic and transit surveys and various big-data sources, in meaningful and innovative ways to inform about the travel patterns and travel needs in a corridor or region. Ayberk has been working with the Federal Tranist Administration's FTA's STOPS model since 2018 and has since developed and applied STOPS models around the United States, including Minneapolis, South Florida, Orlando, Tampa, Atlanta, and New Orleans.

The organization chart on the following page illustrates our proposed team, including identification and responsibilities of key personnel and subconsultants. Kimley-Horn will not substitute members of the project team without prior approval of Fresno COG. Resumes of our proposed staff are provided in the **Appendix.**

Fresno Council of Governments

Subconsultants:

1. Citizen Engineers
2. LSA

PROJECT MANAGER
Alyssa Phaneuf, PE

Existing Conditions
Darya Shtykalo, PE
Kristine Cai[2]
Bryant Oceguada

Stakeholder Coordination
Kristine Cai[2]
Maya Bouchet, AICP
Darya Shtykalo, PE

ITS Architecture and Maintenance Plan
Deanna Haase, PE
Charity Thompson, EIT
Risha Karim, EIT
Ben Petru
Jim Peters[1]

TSMO Plan
Jeff Dale, PE, PMP
Monica Harwood[1]
Deanna Haase, PE
Maya Bouchet, AICP

Data Sharing
Doug Gettman, PhD
Darya Shtykalo, PE

Emergency Response
Ayberk Kocatepe, PhD, PTP
Chris Gegerson, PE, PTOE, AICP, PTP, TE
Anais Schenk, AICP
Heidi Rous
Surabhi Barbhaya

Labor Hour Allocation and Tasks

Staff Name	Hours Assigned to the Contract	Tasks
Alyssa Phaneuf, PE	173	Project management
Darya Shtykalo, PE	80	Review of Existing Plan and Conditions, Stakeholder Engagement and Needs Assessment, Regional Data Governance and Data Sharing Framework,
Bryant Oceguada	405	Review of Existing Plan and Conditions
Jim Peters	102	Regional ITS Architecture Update (ARC-IT Based), ITS Architecture Maintenance Plan
Maya Bouchet, AICP	40	Stakeholder Engagement and Needs Assessment, TSMO Plan Development
Deanna Haase, PE	44	Regional ITS Architecture Update (ARC-IT Based), ITS Architecture Maintenance Plan
Charity Thompson, EIT	60	Regional ITS Architecture Update (ARC-IT Based), ITS Architecture Maintenance Plan
Risha Karim, EIT	191	Regional ITS Architecture Update (ARC-IT Based), ITS Architecture Maintenance Plan
Ben Petru	30	Regional ITS Architecture Update (ARC-IT Based), ITS Architecture Maintenance Plan
Monica Harwood, PE, PTOE	149	TSMO Plan Development
Jeff Dale, PE, PMP	18	TSMO Plan Development
Ayberk Kocatepe, PhD, PTP	12	Emergency Response and Non-Recurring Congestion Focus
Chris Gregerson, PTE, PTOE, AICP, PTP, TE	4	Emergency Response and Non-Recurring Congestion Focus
Anais Schenk, AICP	90	Regional ITS Architecture Update (ARC-IT Based)
Heidi Rous	8	Emergency Response
Surabhi Barbhaya	4	Emergency Response
Doug Gettman, PhD	16	Data Sharing Framework
Kristine Cai	84	Review of Existing Plan and Conditions, Stakeholder Engagement and Needs Assessment

F. Budget and Billing Format

Kimley-Horn's budget and cost systems are intended to be a live database that is available to our project manager and task leads to manage their budgets in real time. We monitor budgets regularly and generate reports to provide status updates to our clients when asked. We use our accounting system to generate our invoices on a monthly basis and provide progress reports with each invoice documenting the progress made in the prior month and the anticipated activities for the following month. This allows Fresno COG to manage expenditure on this project and plan ahead for future expenses. Based on the method of payment agreed upon with Fresno COG, our invoice will reflect the required billing information, and will be backed by audited reports and other materials as required in the contract.

Kimley-Horn uses the Costpoint Engineering Accounting system to track labor hours and expenses for each project. Twice monthly, the Kimley-Horn Management Information System (MIS) generates a Project Effort Report showing by task, actual effort expended and project expenses. This internal control allows us to make, on a timely basis, adjustments that may be necessary to stay within budget and assist in maintaining the project schedule.

With regards to our invoicing process, the Costpoint Engineering Accounting system has been proven to easily and precisely track fees against a work directive project. On the first day of each month, a preliminary invoice is generated and given to Kimley-Horn project managers for review. This draft invoice allows our project managers to compare fees, add progress reports if necessary, make sure the project is on budget, and make sure that the draft meets the client's specific invoicing requirements. Any changes are then incorporated into the final invoice before submitting it to the client. The consistent reviews built into our invoicing procedure help us confirm that fees remain consistent with contract requirements for each project we undertake. Written procedures for this process are contained in our internal Costpoint Internal Accounting User Manual and are available for review upon request.

Kimley-Horn project managers also use the project management program Microsoft Project to assist in tracking project task labor hours and expenses. Labor hours are assigned to each activity and task along with labor hourly rates. As labor hours are expended (reported from biweekly timesheets), the costs are updated in Microsoft Project. Cost reports are generated with the software and can be checked against our main cost accounting system.

Our accounting system is highly automated, with online time recording capability and on-the-spot capability for the project manager to review charges to the project and review current project status and costs.

G. Insurance Requirements

Kimley-Horn will meet the insurance requirements established within this contract. Upon request we will provide the necessary insurance certifications to satisfy this requirement.

H. Conflicts of Interest

Kimley-Horn does not have any financial, business, or other relationship with Fresno COG that may have an outcome on the selection. Should a potential conflict of interest arise while working on any task pertaining to this project, Fresno COG can be certain that Kimley-Horn will immediately address any potential conflict of interest and resolve the matter in accordance with good professional ethics and standards.

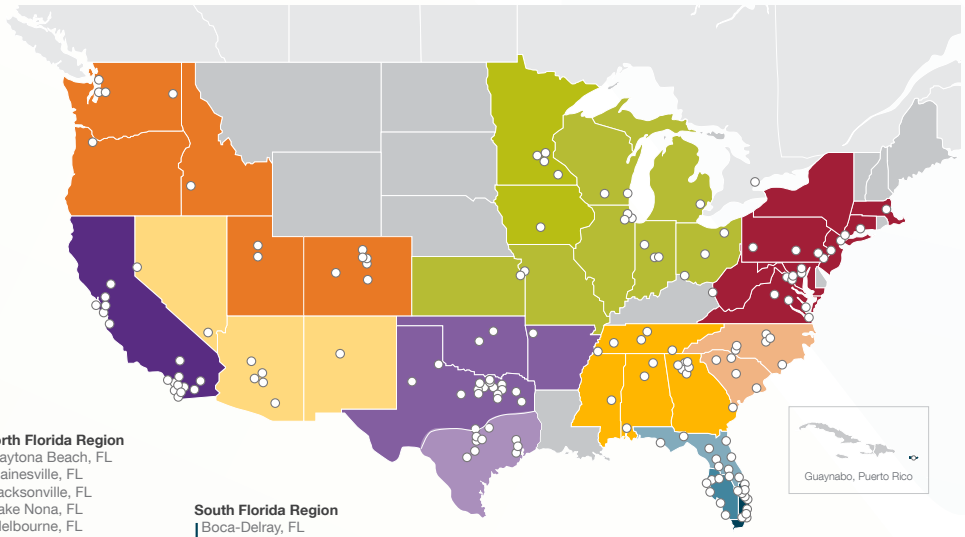
The entire Kimley-Horn team sincerely looks forward to providing professional engineering and related services to Fresno COG with the same high level of service and responsiveness you have come to expect from us over the years.

I. Summary of Qualifications

Kimley-Horn is a multidisciplinary consulting firm offering planning, design, and environmental services to federal, state, and local governmental agencies; developers; and commercial and industrial interests. Founded in 1967, Kimley-Horn became well known for its expertise in transportation planning and traffic engineering. The firm has 10,000 employees in 160 offices nationwide, with 17 locations across California. With a well-established Northern California presence through our offices—Pleasanton, Oakland, San Mateo, San Jose, Sacramento, and Monterey—and with more than 450 licensed engineers, planners, and technicians in California, we support all phases of projects within Caltrans right-of-way, from the early planning stages through final design and construction administration. We provide our clients with the local knowledge and responsiveness of a small organization, backed by the extensive resources of a nationally ranked engineering firm, staffed by committed project managers and technical and support staff, who believe in personalized client service. Kimley-Horn's extensive and exceptional history in partnering with Fresno COG, Fresno County agencies, Caltrans District 6, and Caltrans Headquarters as well as our team's background in completing highway improvement projects in California, provides us with an advantage in knowing the area's challenges, regulations, funding, procedures, and infrastructure requirements, including Caltrans policies, procedures, and standards. These extensive qualifications will allow us to bring our team's specialized experience, capabilities, and local knowledge to the Fresno County TSMO Plan and Regional ITS Architecture Update to provide the most successful outcome.

Kimley»Horn

Expect More. Experience Better.



Atlantic Region
- Baltimore City, MD
- Boston, MA
- Bridgeport, CT
- Charlottesville, VA
- Harrisburg, PA
- Loudoun, VA
- Montgomery County, MD
- New York, NY[3]
- Northern Virginia, VA
- Philadelphia Center City, PA
- Philadelphia Suburban, PA
- Pittsburgh, PA
- Princeton, NJ
- Richmond, VA
- Towson, MD
- Virginia Beach, VA
- Washington, DC[1]
- White Plains, NY
- Williamsburg, VA

California Region
- Coachella Valley, CA
- Escondido, CA
- Irvine, CA
- Long Beach, CA
- Los Angeles, CA
- Monterey, CA
- Oakland, CA
- Orange, CA
- Pasadena, CA
- Pleasanton, CA
- Riverside, CA
- Sacramento, CA
- San Diego, CA
- San Jose, CA
- San Mateo, CA
- Santa Clarita, CA
- Temecula, CA

Carolinas Region
- Charleston, SC
- Charlotte, NC
- Columbia, SC
- Durham, NC
- Fort Mill, SC
- Greenville, SC
- Holly Springs, NC
- Lake Norman, NC
- Raleigh, NC
- Wilmington, NC

Central Region
- Celina, TX
- Childress, TX
- Dallas, TX

Central Region (continued)
- Dallas Downtown, TX
- Denton, TX
- Fort Worth, TX
- Fort Worth, TX
- Frisco, TX
- Irving/Las Colinas, TX
- Lubbock, TX
- McKinney, TX
- Northwest Arkansas, AR
- Oklahoma City, OK
- Richardson, TX
- Sherman, TX
- Terrell, TX
- Tulsa, OK
- Tyler, TX
- Weatherford, TX

Midwest Region
- Chicago Downtown, IL
- Chicago North Suburbs, IL
- Chicago West Suburbs, IL
- Cincinnati, OH
- Columbus, OH
- Des Moines, IA
- Detroit, MI[2]
- Indianapolis, IN
- Indianapolis Downtown, IN
- Kansas City, MO
- Kansas City South, KS
- Madison, WI
- Milwaukee, WI
- Northeast Ohio, OH
- Rochester, MN
- Twin Cities, MN
- Twin Cities South, MN
- Twin Cities West, MN
- West Lafayette, IN

Mountain Pacific Region
- Aspen, CO
- Bellevue, WA
- Boise, ID
- Broomfield, CO
- Colorado Springs, CO
- Denver, CO
- Denver Downtown, CO
- Everett, WA
- Fort Collins, CO
- Lehi, UT
- Portland, OR
- Salt Lake City, UT
- Seattle, WA
- Spokane, WA

North Florida Region
- Daytona Beach, FL
- Gainesville, FL
- Jacksonville, FL
- Lake Nona, FL
- Melbourne, FL
- Ocala, FL
- Orlando, FL
- Panama City Beach, FL
- Tallahassee, FL

Southwest Region
- Albuquerque, NM
- Las Vegas, NV
- Mesa, AZ
- Phoenix, AZ
- Prescott, AZ
- Reno, NV
- Scottsdale, AZ
- Tucson, AZ

South Region
- Alpharetta, GA
- Atlanta Midtown, GA
- Birmingham, AL
- Chamblee, GA
- Chattanooga, TN
- Cumming, GA
- Franklin, TN
- Huntington, WV
- Huntsville, AL
- Jackson, TN
- Memphis, TN
- Meridian, MS
- Mobile, AL
- Nashville, TN
- Peachtree Corners, GA
- Savannah, GA
- Woodstock, GA

South Florida Region
- Boca-Delray, FL
- Doral, FL
- Indiantown, FL
- Fort Lauderdale, FL
- Guaynabo, Puerto Rico[4]
- Jupiter, FL
- Miami, FL
- Palm Beach Gardens, FL
- Vero Beach, FL
- West Palm Beach, FL
- West Palm Beach Downtown, FL

Texas South Region
- Austin East, TX
- Austin North, TX
- Austin South, TX
- Bryan/College Station, TX
- Georgetown, TX
- Houston, TX
- Pearland, TX
- San Antonio, TX
- San Marcos, TX
- The Woodlands, TX

West Florida Region
- Fort Myers, FL
- Lakeland, FL
- Naples, FL
- Sarasota, FL
- St. Petersburg, FL
- Tampa, FL

Canada
- Toronto, ON[5]

Affiliated Companies
[1]Kimley-Horn DC, LLC
[2]Kimley-Horn of Michigan, Inc.
[3]Kimley-Horn Engineering and Landscape Architecture of New York, PC
[4]Kimley-Horn Puerto Rico, LLC
[5]Kimley-Horn Canada ULC

Rev. 04-01-26

Qualifications and Experience

Kimley-Horn has extensive ITS planning and technology implementation experience in California and nationwide. Members of the Kimley-Horn team have developed state, regional, and subregional-level as well as project-based ITS architectures and traveler information systems for more than 20 years. Our key staff currently support the US Department of Transportation (USDOT) in training state DOTs, MPO's, and local agencies nationwide on ITS architecture, TSM&O, Capability Maturity Model (CMM), and Deployment. Across the country, Kimley-Horn has completed more than 100 projects that involved developing ITS architectures. Kimley-Horn has exceptional expertise designing regional and statewide ITS architectures that comply with FHWA Final Rule and conform to the requirements in 23 CFR 940 (and as extended by SAFETEA-LU). We have been refining and innovating ITS architectures across the country using our in-house software team to develop customized architectures and transportation technology applications for our clients using the Systems Engineering process.

Qualifications of our team are presented in section **E. Management Approach** with resumes of key staff provided in the Appendix. Our team brings the following specific relevant experience to address the challenges of this project.

We Are a Full-Service Firm

Kimley-Horn is well-equipped to be responsive to Fresno COG's needs on this project. Our technical qualifications and strengths align perfectly with your needs for this contract. We have been the prime consultant for numerous regional ITS architecture update projects.

ITS Services

Kimley-Horn has an outstanding reputation in the field of ITS. Members of the firm have extensive project experience working directly for municipal, county, state, and federal agencies as well as providing consulting services to private clients. Specific ITS services include:

- TSMO Plans
- ITS Architectures
- ITS Master Plans
- ITS Strategic Plans
- Smart Cities
- Connected vehicles technologies
- Systems engineering
- Integrated Corridor Management (ICM)
- Arterial performance measurements
- Traffic signal systems
- Traffic signal communication systems (wireless/fiber optic)
- Communication networks
- Intelligent Transportation Systems
- Traffic management centers
- Traffic surveillance systems
- Ramp metering systems
- Video surveillance/detection systems
- Dynamic message signs
- Arterial management systems
- Freeway management systems
- Adaptive control systems
- Transit signal priority systems
- Technology assessment
- Travel time information and systems
- Detection systems
- System integration
- Electrical engineering
- Signal timing and coordination
- Utility relocation coordination
- Lighting systems
- Agency permitting
- Shop drawings review
- Preparation of record drawings
- Contract administration
- Shop drawings review
- Construction management
- Construction inspection

Experience with ITS Architecture

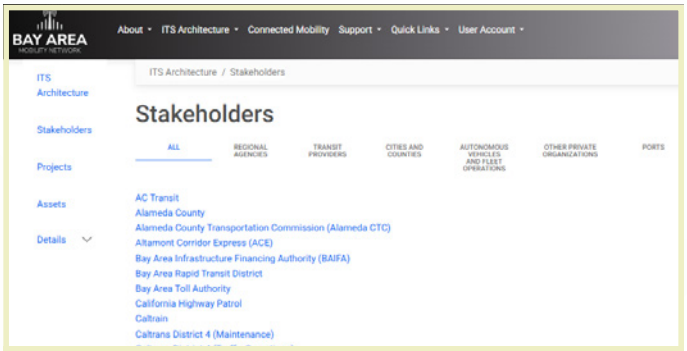
Our team has worked on regional ITS architecture plans throughout the country, including plans in:

- SCAG Region, CA
- Los Angeles, CA
- Tulare County, CA
- Kern County, CA
- Central Coast, CA
- Bay Area, CA
- Imperial County, CA
- Ventura County, CA
- Maricopa County, AZ
- Statewide, NV
- Bingham County, ID
- Statewide, ID
- Austin, TX
- Northwest AR
- 21 Regions, TX
- Knoxville, TN
- Lawrence, TX
- Memphis, TN
- Statewide, MI
- San Antonio, TX
- Johnson City, TN
- Jackson, TN
- Statewide, TN
- Richmond, VA
- Statewide, NC
- Statewide, GA
- Statewide, MI

Project Descriptions

MTC, Bay Area ITS Architecture Update, Bay Area, CA

Kimley-Horn is currently updating the Bay Area ITS Architecture. We developed the framework for a user-friendly approach to the ITS architecture with a focus on reducing jargon in 2011. The current update will include a map-based interface to link assets to service packages. It will also allow users to sign-in using a dual-factor authentication to update their individual architecture assets to reduce the burden on the Maintenance Committee. Based on stakeholder input, we will develop a Mobility Management System that includes a Slack channel for sharing experience with technology planning, design, and deployment for local agencies and a data library to provide a one-stop shop for all regional transportation data sources.



MTC ITS Architecture Website, developed by Kimley-Horn

Sacramento Area Council of Governments (SACOG) ITS Strategic Deployment Plan, Sacramento Region, CA

Kimley-Horn was selected by SACOG to prepare a Strategic Deployment Plan (SDP) for the Sacramento Region, the goal of which was to develop a strategy and process for mainstreaming the planning and deployment of ITS into the traditional planning and improvement processes. This unique project engaged ITS professionals and transit operators; transportation, land use, and transit planners; and public safety proponents in a series of interactive workshops to guide the development of the Regional ITS Architecture, establish priorities for services and projects, and raise awareness to include ITS in the Land Use Plan, General Plan, and Capital Improvement Programs developed across the region. The framework of the SDP development follows the requirements established by FHWA and the National ITS Architecture.

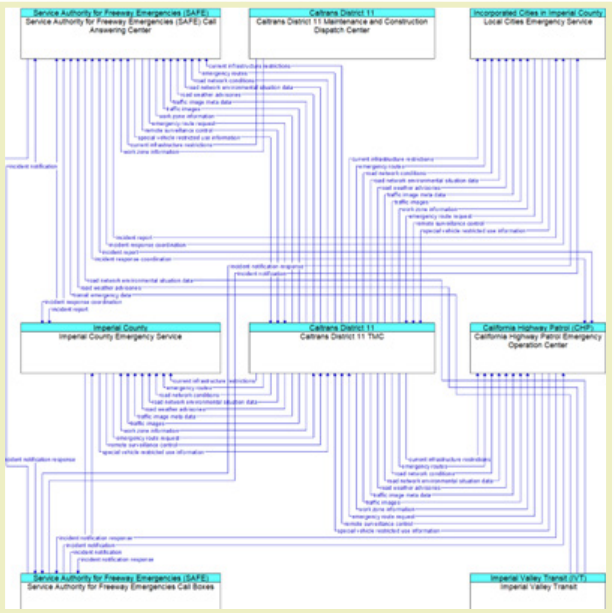
TCAG, ITS Urban Area Strategic Deployment Plan, Tulare County, CAMTC Bay Area ITS Architecture

Kimley-Horn completed the TCAG ITS Urban Area Strategic Deployment Plan (SDP). The ITS SDP coordinated the various ITS activities happening in the County to provide a common vision for the area and outlined a prioritized program for ITS Deployments in the short-, medium-, and long-term. Kimley-Horn held focused stakeholder workshops and one-on-one stakeholder meetings to solicit input from all key stakeholders in the Tulare County region and gained consensus on the future of ITS deployment in Tulare County. We are currently updating the TCAG ITS Architecture to align it with the National ITS Architecture and will continue to do maintenance for the next several years.

SCAG, Regional ITS Architecture Update, Los Angeles, CA

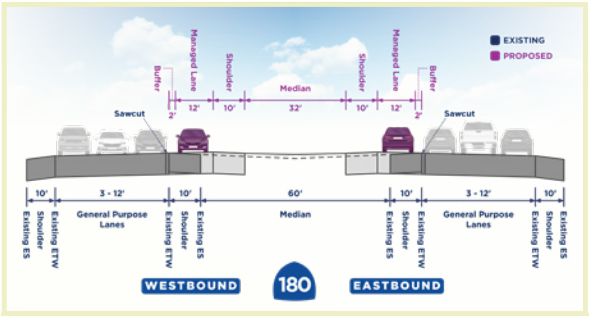
Kimley-Horn updated the SCAG Regional ITS Architecture in Southern California in 2019 to bring the region into conformance with the ARC-IT update of the National ITS Architecture. Kimley-Horn was selected to perform the 2019 update after successfully completing SCAG's 2011 update of its Regional ITS Architecture, which included a focus on adding goods movement, express lanes, positive train control, and security services to the region. Development of the 2019 update focused on sustained stakeholder engagement by convening regular Steering Committee workshops to reach consensus on the SCAG Region's inventory, needs, goals, gaps, and opportunities. Using information received through stakeholder engagement, the Kimley-Horn team tailored the ITS Architecture update to include advanced cross-county projects such as Big Data management, connected vehicle applications, and automated goods movement security technologies. In addition, Kimley-Horn identified and documented the existing interfaces between ITS services and proposed a wide network of potential interfaces between systems for seamless regional collaboration.

After we developed the updated ITS architecture plan, the steering committee commented and provided buy-in to the prioritization of regional projects in a workshop setting. The website provides stakeholders with easy access to existing and planned inventory, services, interfaces, and projects that are assigned to their agencies or agency group.



RAD-IT Screenshot

Fresno COG, Fresno-Clovis Metropolitan Area Managed Lanes Plan, Fresno, CA



SR 180 Cross Section with Proposed Managed Lanes

Kimley-Horn is leading a managed lanes study in the Fresno-Clovis Metropolitan Area (FCMA). The purpose of the study is to do a preliminary assessment of potential managed lanes strategies and their applicability to the region. The assessment will include evaluating pros and cons of potential managed lanes alternatives along SR 41, SR 168, and SR 180. Stakeholder and public feedback are important study inputs. Stakeholders, and regional and local transportation management agencies, gather for steering committee meetings throughout the study development, to provide feedback on milestones and inform key decisions. Public engagement also informs the study, in the form of an online survey and community meeting. The purpose of the community meeting is to educate community members about this transportation study, engage with them about key questions and tradeoffs, and get their feedback on recommendations.

SCAG, Imperial ITS Architecture, Imperial County

Kimley-Horn, under contract with SCAG, is developing the Imperial ITS Architecture. The Imperial ITS Architecture has not been updated since 2005. Kimley-Horn has converted the previous Turbo Architecture files to RAD-IT, which required backchecking broken links and reviewing interfaces that RAD-IT autocreated. We held several stakeholder workshops and individual meetings to understand existing and planned conditions. The result will be a fully linked website with current RAD-IT database that will bring Imperial County into compliance with the Final Rule

SCAG, Ventura ITS Architecture, Ventura, CA

Kimley-Horn, under contract with SCAG, is developing the Ventura ITS Architecture. The Ventura ITS Architecture has not been updated since 2004. Kimley-Horn has converted the previous Turbo Architecture files to RAD-IT, which required backchecking broken links and reviewing interfaces that RAD-IT autogenerated. We held several stakeholder workshops and individual meetings to understand existing and planned conditions. The result will be a fully linked website with current RAD-IT database that will bring Ventura County into compliance with the Final Rule and consistent with other regional plans that Ventura has adopted in the interim.

Fresno COG, Fresno ITS Plan, Fresno, CA

As a subconsultant to URS, Kimley-Horn led the ITS Architecture component of the Fresno COG ITS Strategic Deployment Plan. We led the ITS inventory workshops with Fresno COG that required engagement from a variety of stakeholders, with varying degrees of transportation technology knowledge, to build the inventory. We developed the RAD-IT database for the project and internal deliverables associated with the ITS Architecture. The focus of the ITS Architecture was to update the inventory to provide a future-looking ITS Architecture to minimize maintenance and provide consistency to the National ITS Architecture.

SANDAG, Regional TSMO Plan, San Diego, CA

Kimley-Horn worked with SANDAG to prepare a Transportation System Management and Operations Plan for the region that will serve as the foundation for the regional strategic TSM and TDM vision to guide strategy development and integration projects. Kimley-Horn worked with stakeholders to identify goals and objectives for TSMO, specific performance targets, and resources needed to achieve the goals. This Plan provided the specific strategies, interim steps, and immediate actions needed to implement TSMO, and tied together several other regional efforts into a cohesive, connected, strategic action plan that established goals and interim steps SANDAG should undertake to develop and deploy a region-wide TSMO Program in the short, mid, and long-term so that it is also fully aligned with the San Diego Forward mission, vision, and goals. The Kimley-Horn team also developed a business case for TSMO that is for executives across the region in support of the Plan and a Toolkit that will be used by local agencies to implement the TSMO actions.

City of National City, National City Resiliency Plan (OLDCC), National City, CA

Kimley-Horn partnered with the City to develop a resiliency plan that aimed to reduce congestion, improve traffic safety, and enhance multimodal transportation to support military installations and adjacent communities. In coordination with the City of National City, Naval Base San Diego and the City of San Diego, the project team identified a set of prioritized projects within the Naval Base San Diego study area that address safety, mobility, and connectivity. The study emphasized stakeholder engagement to gain support for the projects and solicit feedback on the prioritization process

NCDOT, 2022 TSMO Strategic Plan, Statewide, NC

Kimley-Horn provided an in-depth update to the TSMO Strategic Plan. This project expanded previous strategic plans to provide a complete suite of TSMO planning documents and further mature the Department's adoption and integration of TSMO strategies. The process included national and peer agency resources to develop plans that align with NCDOT's mission and vision. Kimley-Horn led efforts for all components of the plan including the Strategic Layer (Strategic Plan), the Programmatic Layer (Programmatic Plan), and the Service Layer Plans that fall within the Tactical Layer. The Service Layer Plans each focused on portions of the larger TSMO Program and outlined 5-year action plans for those specific functional areas.

SCDOT TSMO Master Plan, Statewide, SC

Kimley-Horn is preparing SCDOTs first Statewide TSMO Master Plan, which will provide a framework for a more sustainable, efficient, and safe transportation network for South Carolina. The TSMO Master Plan will include a strategic level congruent with SCDOTs strategic vision, goals, and objectives while providing direction toward incorporating TSMO principles into SCDOT programs.The TSMO Master Plan will assess the existing conditions through stakeholder engagement and data to match recommendations and improvements with demonstrated problems. The TSMO Master Plan will help guide SCDOT and stakeholders through deploying TSMO strategies, projects, and programs to reduce carbon emissions. This plan is the first statewide technology-focused plan in South Carolina. It will be the first step in creating the momentum to educate and inform stakeholders about key challenges and improvements.

USDOT/FHWA, Impacts of Emerging Data Sources and Big Data Tools on TSM&O, Nationwide, US

Kimley-Horn assisted FHWA's Connected Data Systems (CDS) Program, which was seeking to develop scalable data management and delivery methods, exploiting the potential of high-volume multisource data from connected and automated vehicles, connected travelers with mobile devices, and other sources, to enhance current operational practices and transform surface transportation system management. This project assessed current and emerging commercial and government big data techniques and approaches to aggregate, store and use emerging data sources, and identified ways to integrate these capabilities into transportation management systems. The project included a technology scan of big data practices and technologies, scenario development for how emerging big data sources could be used by state and local TSM&O agencies, and a gap analysis of limitations to overcome to realize the benefits of integrating emerging data sources.

Subconsultants

LSA

LSA is a diversified transportation, environmental, and community planning firm with 47 years of experience helping public- and private-sector clients navigate the often-complex process of transportation, environmental, and other planning tasks. Founded in 1976, LSA has nine offices in California, including Irvine (Headquarters), Carlsbad, Clovis, Los Angeles, Palm Springs, Point Richmond, Riverside, Roseville, and San Luis Obispo, with a total staff of approximately 180 full-time employees capable of fulfilling any project assignment, large or small. LSA has participated in many complex transportation and mobility projects throughout California since its founding. They have managed and successfully completed projects for both public agencies and private entities in the Central Valley, including Fresno COG, the City of Fresno, the City of Clovis, the City of Visalia, the Madera County Transportation Commission, the Merced County Association of Governments, and private developers throughout the Central Valley. Currently, they are working with the City of Fresno to develop a citywide VMT mitigation fee program that is nearing completion. LSA's project manager for this project, Kristine Cai, served as Deputy Director for Fresno COG and led many multimodal projects in Fresno County during her 21-year tenure with Fresno COG. She has extensive experience working with local governments, transit agencies, Caltrans, and other stakeholders, including alternative mode advocates and community groups in the Fresno region. Kristine directed the development of Fresno COG's 2022 RTP/SCS and led the development of the Activity-Based Model to meet the requirements of air quality conformity, SCS development, and other planning activities and to address issues in interregional trip, transit, and active transportation forecasting.

Kristine directed the development of FCOG's 2022 RTP/SCS, as an FCOG employee, and currently serves as a 2026 RTP/SCS project consultant, providing project guidance.

Relevant Projects

Fresno COG, 2022, 2018, 2014 Regional Transportation Plan/Sustainable Communities Strategy Development, Fresno County, CA

Kristine Cai directed the development of the Fresno COG's 2022 RTP/SCS. She worked closely with federal, state, local partners, interest groups, and the public through a robust, interactive, and multifaceted public process to develop a comprehensive transportation plan that addresses issues such as transportation, housing, climate, social equity, resource conservation, and public health. Kristine previously managed the RTP/SCS development process in 2014 and 2018 and worked with local governments, community groups, and the public to confirm a successful collaboration process.

Fresno COG, Activity Based Model Update, Fresno County, CA

Kristine Cai led the development of the Activity-Based Model to meet the requirements of air quality conformity, SCS development, and other planning activities and to address issues in inter-regional trip, transit, and active transportation forecasting.

Los Angeles County Metropolitan Transportation Authority, I-405 Express Lanes, Los Angeles County, CA

LSA is preparing the VMT Mitigation Study for the project, which intends to convert existing HOV lanes on I-405 within the Sepulveda Pass area to high-occupancy toll lanes (i.e., ExpressLanes).

Fresno COG, Fresno-Clovis Metropolitan Area Managed Lane Study

Kristine Cai will serve as an advisor, collaborating with Kimley-Horn on the Fresno-Clovis Metropolitan Area Managed Lane Study. Together, the team will conduct a preliminary assessment of potential managed lane strategies and evaluate their applicability to the region.

Citizen Engineers, LLC

Citizen Engineers is a woman-owned, emerging small business (OR DBE, ESB #14726) specializing in ITS, TSMO, and multimodal operations planning. Founded by Kelly Smith and Jim Peters in 2023, their firm brings both technical depth and a practitioner's mindset, offering solutions that function for operators and maintenance personnel. The Citizen Engineers team members have decades of experience in both the private and public sectors, including past statewide TSMO leads for the Washington State Department of Transportation (WSDOT) and Oregon Department of Transportation (ODOT) as well as the past FHWA Resource Center lead for TSMO. The Citizen Engineers team understands the full spectrum of what it takes to manage and operate the transportation system from planning through operations and maintenance.

Darya and Kristine are currently working together on a Managed Lane Study for FCOG

- ITS/TSMO planning and design
- Systems engineering
- Traffic signal timing
- Traffic engineering investigations
- Traffic signal and detection design
- Communications network planning and design
- Safety analysis and planning
- Complete Streets planning
- Community engagement
- Facilitation
- Coaching/training

Relevant Projects

Idaho Transportation Department (ITD) Statewide TSMO and ITS Plan, Boise, ID

Citizen Engineers developed ITD's statewide TSMO Plan and ITS Tactical Plan, including the stakeholder engagement plan, facilitated discussions, and the strategic, programmatic, and tactical planning documents. The team worked with ITD to assess current TSMO practices, document needs, identify peer best practices, and build the business case for advancing operations statewide. The final plan established a phased project list that included field deployments as well as actions to strengthen business processes, statewide systems, and performance measures. The work required structured engagement, coordination across agency leadership and technical staff, and translation of broad operational needs into a practical implementation roadmap.

Winner of the 2025 Best Agency Improvement Project from the National Operations Center of Excellence (NOCoE)

Vancouver Area Smart Trek (VAST) TSMO Work Program: Technical Assistance, Vancouver, BC

Citizen Engineers provides ongoing technical assistance to the VAST program in support of regional ITS and TSMO planning and implementation. The team collaborates with the Southwest Washington Regional Transportation Council to develop committee agendas and work plans for the Operations Steering Committee and Communications Infrastructure Committee, while also supporting fiber asset management, regional coordination, and ITS project implementation. Citizen Engineers also updated the VAST Regional TSMO Plan and developed coordinated signal timings for two corridors using moving vehicle data and AI-supported optimization tools. The work reflects continuing experience in multi-agency coordination, communications planning, and sustained support for regional operations governance.

City of Hillsboro TSMO Implementation Plan and Systems Engineering for ATSPM, Hillsboro, OR

Citizen Engineers supported the City of Hillsboro in improving traffic signal management and operations through a phased TSMO implementation plan and systems engineering support for automated traffic signal performance measures. The team developed a plan that identified signal system and communications strategies, including signal connectivity, cameras, signal timing upgrades, cloud-based priority and preemption, and use of ATSPMs to strengthen operations. Following the plan, Citizen Engineers developed the concept of operations for an ATSPM system, evaluated options, and provided recommendations for next steps. The work combined stakeholder facilitation, practical systems engineering, and implementation planning to help the City move from operational needs to clear actions.

J. Signing of Proposal/Authorization to Negotiate

Kimley-Horn's proposal is signed by Alyssa Phaneuf, PE, who is a vice president of Kimley-Horn, and is authorized to negotiate and bind the firm contractually. Alyssa can be reached at the following address: 660 South Figueroa Street Suite 2050, Los Angeles, CA 90017.
Telephone: 213.261.4047. Email: alyssa.phaneuf@kimley-horn.com

Kimley-Horn's proposal is a firm offer for 90 days from the submittal —April 24, 2026.

K. Attachments

We have provided the following forms in this section:

- Attachment A: Budget and Cost Breakdown

Fresno Council of Governments (FresnoCOG)

Fresno County Transportation Systems Management and Operations (TSMO) Plan and Regional ITS Architecture Update

197.39% Overhead%
196.29% Overhead% w/o FCCM
10% Fee%

		Kimley-Horn and Associates, Inc.												
	Name	Alyssa Phaneuf	Sr. Professional II	Sr. Professional I	Professional II	Professional I	Analyst II	Analyst I	Support Staff	TOTAL HOURS	TOTAL COST	CITIZEN ENGINEERS COST	LSA COST	TOTAL PROJECT COSTS
	Category/Title	Project Manager												
	Direct Rate	$115.92	$113.40	$96.51	$85.36	$69.12	$58.07	$47.68	$42.79					
	Billing Rate	$379.08	$370.84	$315.61	$279.14	$226.04	$189.90	$155.92	$139.93					
Task 1	**Project Management and Coordination**	**45**			**30**			**63**	**42**	**180**	**$ 41,133.17**		**$ 6,616.98**	**$ 47,750.14**
1.1	Kick off Meeting	3			3			5	2	13	$ 3,034.15		$ 6,616.98	$ 9,651.12
1.2	Work Plan	2			2			8		12	$ 2,563.83			$ 2,563.83
1.3	Monthly Invoices and Progress Reports	20						20	40	80	$ 16,297.32			$ 16,297.32
1.4	Monthly meetings	20			25			30		75	$ 19,237.87			$ 19,237.87
Task 2	**Review of Existing Plan and Conditions**	**15**			**21**		**70**			**106**	**$ 24,841.21**	**$ 2,000.00**		**$ 26,841.21**
2.1	Draft Existing Conditions Memorandum	12			15		60			87	$ 20,130.11	$ 2,000.00		$ 22,130.11
2.2	Final Existing Conditions Memorandum	3			6		10			19	$ 4,711.10			$ 4,711.10
Task 3	**Stakeholder Engagement and Needs Assessment**	**22**			**30**					**52**	**$ 16,714.07**	**$ 17,570.00**	**$ 47,370.94**	**$ 81,655.01**
3.1	Draft Stakeholder Engagement Plan				4					4	$ 1,116.57			$ 1,116.57
3.2	Final Stakeholder Engagement Plan				2					2	$ 558.29			$ 558.29
3.3	FHWA Workshop	10			12					22	$ 7,140.53	$ 17,570.00		$ 24,710.53
3.4	Stakeholder Outreach (Up to 10 Workshops)	10			12					22	$ 7,140.53		$ 47,370.94	$ 54,511.46
3.5	Stakeholder Outreach Summary Memorandum	2								2	$ 758.16			$ 758.16
Task 4	**Regional ITS Architecture Update (ARC-IT Based)**	**14**		**36**		**90**	**250**		**80**	**470**	**$ 95,681.64**			**$ 95,681.64**
4.1	Draft RAD-IT			8		60	60			128	$ 27,480.98			$ 27,480.98
4.2	Final RAD-IT			8		30	30			68	$ 15,002.91			$ 15,002.91
4.3	Wireframes	4		8			40		20	72	$ 14,435.80			$ 14,435.80
4.4	5 Review Meetings	4		4			40		20	68	$ 13,173.37			$ 13,173.37
4.5	Draft Architecture Website	4		4			60		20	88	$ 16,971.37			$ 16,971.37
4.6	Final Architecture Website	2		4			20		20	46	$ 8,617.21			$ 8,617.21
Task 5	**TSMO Plan Development**	**18**	**14**		**34**			**8**		**74**	**$ 22,753.46**	**$ 78,060.00**		**$ 100,813.46**
5.1	Draft TSMO Plan	10	8		24					42	$ 13,456.96	$ 26,270.00		$ 39,726.96
5.2	Final TSMO Plan	8	6		10			8		32	$ 9,296.50	$ 51,790.00		$ 61,086.50
Task 6	**Emergency Response and Non-Recurring Congestion Focus**	**6**	**14**		**20**			**50**	**10**	**100**	**$ 22,244.55**	**$ 1,610.00**		**$ 23,854.55**
6.1	Draft Emergency Response and Non-Recurring Congestion Memorandum	4	8		10			30	10	62	$ 13,351.47	$ 1,610.00		$ 14,961.47
6.2	Final Emergency Response and Non-Recurring Congestion Memorandum	2	6		10			20		38	$ 8,893.09			$ 8,893.09
Task 7	**Regional Data Governance and Data Sharing Framework**	**6**	**14**		**30**			**80**	**10**	**140**	**$ 29,713.67**	**$ 1,610.00**		**$ 31,323.67**
7.1	Draft Data Memorandum	4	8		20			60	10	102	$ 20,820.58	$ 1,610.00		$ 22,430.58
7.2	Final Data Memorandum	2	6		10			20		38	$ 8,893.09			$ 8,893.09
Task 8	**Integration with Regional Planning and Programming**	**5**			**5**		**40**		**10**	**60**	**$ 12,286.43**		**$ 5,658.22**	**$ 17,944.65**
8.1	Draft TSMO Plan Integration Memorandum						20		10	30	$ 5,197.31		$ 5,658.22	$ 10,855.53
8.2	Final TSMO Plan Integration Memorandum	5			5		20			30	$ 7,089.12			$ 7,089.12
Task 9	**ITS Architecture Maintenance Plan**			**8**				**50**		**58**	**$ 10,320.98**			**$ 10,320.98**
9.1	Draft Architecture Maintenance Plan			4				40		44	$ 7,499.33			$ 7,499.33
9.2	Final Architecture Maintenance Plan			4				10		14	$ 2,821.65			$ 2,821.65
Task 10	**Final Documentation and Adoption Support**	**42**					**45**		**30**	**117**	**$ 28,664.82**	**$ 4,580.00**		**$ 33,244.82**
10.1	Draft Executive Summary	4					10		10	24	$ 4,814.64	$ 4,580.00		$ 9,394.64
10.2	Final Executive Summary	2					5		5	12	$ 2,407.32			$ 2,407.32
10.3	Draft PowerPoint Presentation	4					20		10	34	$ 6,713.63			$ 6,713.63
10.4	Final PowerPoint Presentation	2					10		5	17	$ 3,356.82			$ 3,356.82
10.5	Three In-Person Presentations	30								30	$ 11,372.41			$ 11,372.41
	TOTAL HOURS	**173**	**42**	**44**	**170**	**90**	**405**	**251**	**182**	**1,357**				
	Subtotal Labor:	**$65,580.91**	**$15,575.26**	**$13,886.67**	**$47,454.38**	**$20,343.20**	**$76,909.47**	**$39,136.59**	**$25,467.52**		**$ 304,354.00**	**$ 105,430.00**	**$ 59,646.13**	**$ 469,430.13**
	Other Direct Costs										**$ 10,087.08**	**$ 4,935.75**		**$ 15,022.83**
	Escalation										$ 6,087.08	$ 2,635.75		$ 8,722.83
	Travel										$ 4,000.00	$ 2,300.00		$ 6,300.00
	TOTAL COST:										**$ 314,441.08**	**$ 110,365.75**	**$ 59,646.13**	**$ 484,452.96**

Note: The cost shown herein represents an estimate based on the anticipated scope of work, level of effort, and assumed labor categories and rates. The labor categories shown are for estimating purposes only. The categories and rates presented are not intended to represent all personnel or billing rates, and actual staff and billing rates may vary from those shown. All work will be performed in accordance with the contract terms and will not exceed the agreed upon not-to-exceed amount.

Appendix – Resumes

ALYSSA PHANEUF, PE

Project Manager

Professional Credentials

- Master of Science, Civil Engineering and Transportation, Georgia Institute of Technology
- Bachelor of Science, Civil and Environmental Engineering, University of California, Berkeley
- Professional Engineer in California #63123
- ITS California, Board Member

Alyssa has more than 25 years of experience in various ITS and traffic engineering and transportation planning projects, including regional ITS planning, traffic operations, and systems engineering. She is an expert in ITS Architectures having developed them throughout California for the last 20 years. She is an expert in the Systems Engineering process, having developed and taught a class for Caltrans and completed training on TSMO with FHWA. She excels at engaging stakeholders and translating their needs into on-the-ground technology solutions. She understands how to tailor solutions to the needs of the region. Her experience planning and implementing and testing ITS solutions allows her to understand every part of the Systems Engineering process.

RELEVANT EXPERIENCE

- **Fresno COG ITS Strategic Deployment Plan, Fresno, CA** – Task Lead
- **SACOG, ITS Strategic Deployment Plan, Sacramento Region, CA** – Project Manager
- **MTC, Bay Area ITS Architecture Update, Bay Area, CA** – Project Manager
- **Tulare CAG, ITS Strategic Plan and Architecture Update, Visalia, CA** – Project Engineer
- **Kern COG ITS Architecture** – Project Manager
- **LA Metro, Los Angeles County Regional ITS Architecture (RITSA) Update, Los Angeles, CA** – Project Engineer
- **SCAG, Ventura County ITS Architecture, Ventura, CA** – Project Manager
- **SCAG, Imperial County ITS Architecture, Imperial, CA** – Project Manager
- **LA Metro, Arterial ITS Inventory Tool Expansion (ITS First), Los Angeles County, CA** – Project Manager
- **SCAG, Regional ITS Architecture Update, Los Angeles, CA** – Project Manager
- **Caltrans District 12, North Orange County Triangle ICM TSMO Plan, District 12, CA** – Project Manager
- **City of Westlake Village, ITS Master Plan, Westlake Village, CA** – Project Manager
- **City of Stockton, ITS Master Plan, Stockton, CA** – Project Engineer
- **Caltrans District 10, Integrated Corridor Management Plan (ICMP), San Joaquin County, CA** – Project Engineer
- **City of Visalia, ITS Master Plan, Visalia, CA** – Project Manager
- **San Joaquin Council of Governments (SJCOG), ADD I-205 Managed Lanes Concept of Operations, San Joaquin County, CA** – Project Manager
- **SANDAG, Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD) Grant Application, San Diego, CA** – Project Manager
- **City of Stockton, ITS Master Plan, Stockton, CA** – Project Engineer
- **SANDAG, Regional TSMO Plan, San Diego, CA** – Project Manager
- **SANDAG Broadband Master Plan, San Diego, CA** – Project Manager
- **SANDAG Regional NexGen BRT Technology ConOps and System Requirements** – Project Manager
- **MTC, Regional Communications Strategic Investment Plan, Bay Area, CA** – Project Engineer
- **Caltrans Headquarters, Statewide Connected and Automated Vehicle Implementation Plan, Los Angeles, CA** – Project Engineer
- **Caltrans District 11, I-15/SR-78 Concept of Operations, San Diego, CA** – Project Manager

DARYA SHTYKALO, PE

Existing Conditions; Stakeholder Coordination; Data Sharing

Professional Credentials

- Bachelor of Science, Civil Engineering, California Polytechnic State University, San Luis Obispo
- Professional Engineer in California #95172
- Intelligent Transportation Society California, Board President (Young Professional Group – Los Angeles Chapter)

Darya is a transportation engineer with eight years of experience in planning and engineering, with a focus on TSMO and ITS. She works with regional and local agencies throughout California, including the Central Valley, to plan the implementation of projects, including developing planning-level estimation of capital and operating costs, prioritization, phasing, and compliance with state and federal standards. Darya worked at the San Francisco Metropolitan Transportation Commission for a year in the 511 group, which included oversight of the ITS Architecture website revamp. Darya is a responsive, hands-on task lead. She is currently serving Fresno COG as the deputy project manager on the Managed Lanes Study, which involves reviewing the RTP and local stakeholder coordination.

RELEVANT EXPERIENCE

- **Fresno COG, Fresno-Clovis Metropolitan Area Managed Lanes Plan, Fresno, CA** – Deputy Project Manager
- **SJCOG, I-205 Managed Lanes Concept of Operations, San Joaquin County, CA** – Project Engineer
- **CARTA, Program Advisory Services, Sacramento, CA** – Deputy Program Manager
- **Yolo TD, Yolo 80 Managed Lanes, Davis, CA** – Project Engineer
- **Placer County TPA, SR 65 Express Lanes, Auburn, CA** – Project Engineer
- **City of Sacramento, Stockton Boulevard BRT, Sacramento, CA** – Project Engineer
- **City of Stockton, ITS Master Plan, Stockton, CA** – Project Analyst
- **Sacramento Area Council of Governments (SACOG) ITS Strategic Deployment Plan, Sacramento Region, CA** – Project Analyst
- **NCDOT, TSMO Plan, Raleigh, NC** – Project Engineer
- **MTC, Bay Area ITS Architecture Update, Bay Area, CA** – Project Engineer
- **MTC, 511 Technical Advisory Servies, Bay Area, CA** – Project Manager
- **MTC, Regional Communications Strategic Investment Plan, Bay Area, CA** – Project Analyst
- **MTC, I-880 Communications Infrastructure Assessment, Bay Area, CA** – Project Analyst
- **MTC, I-880 ICM Project, Oakland, CA** – Project Analyst
- **MTC, Bay Bridge Integrated Corridor System Design Services, San Francisco, CA** – Project Analyst
- **SANDAG, Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD), San Diego, CA** – Deputy Project Manager
- **SANDAG, Broadband Master Plan, San Diego, CA** – Deputy Project Manager
- **SANDAG, Regional NexGen BRT Technology ConOps and System Requirements** – Deputy Project Manager
- **Caltrans Headquarters, Statewide Connected and Automated Vehicle Implementation Plan, Los Angeles, CA** – Project Analyst
- **Caltrans Headquarters, Statewide Communications Plan, Statewide, CA** – Project Analyst
- **Caltrans District 11, I-15/SR-78 Concept of Operations, San Diego, CA** – Deputy Project Manager
- **Caltrans District 11, I-5/I-805 Equity Study, San Diego, CA** – Deputy Project Manager
- **County of Santa Clara, ITS Master Plan, Santa Clara, CA** – Project Engineer
- **City of San Carlos, Traffic Signal Master Plan, San Carlos, CA** – Project Engineer
- **City of San Carlos, Adaptive Signal System Installation, San Carlos, CA** – Project Engineer
- **City of San Carlos, Bicycle Video/Radar Detection Pilot, San Carlos, CA** – Project Manager
- **City of Oakland, Fiber Network Master Plan Update, Oakland, CA** – Project Analyst

BRYANT OCEGUEDA

Existing Conditions

Professional Credentials

- Bachelor of Science, Civil Engineering, California State University, Fullerton

Bryant Ocegueda is an ITS Planning Analyst with two years of experience in Intelligent Transportation Systems and regional transportation planning. He has previous experience supporting Fresno COG as well as contributing to existing conditions analyses and ITS-related planning tasks for other regional and metropolitan projects.

RELEVANT EXPERIENCE

- **Fresno COG, Fresno-Clovis Metropolitan Area Managed Lanes Plan, Fresno, CA** – Project Analyst
- **SJCOG, I-205 Managed Lanes PA&ED** – Project Analyst
- **MTC 511 Technical Advisor Services** – Project Analyst
- **SANDAG, Broadband Master Plan, San Diego, CA** – Project Analyst
- **SANDAG, Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD), San Diego, CA** – Project Analyst
- **Caltrans District 11, I-5/I-805 Equity Study - Project Analyst**
- **LA Metro, Cloud-Based Transit Signal Priority (TSP), Los Angeles, CA** – Project Analyst
- **LA Metro, North Hollywood-Burbank-Pasadena Rail Transit Feasibility Study** – Project Analyst
- **City of Monterey Park, Vision Zero Action Plan (SS4A) (CIP 96044)** – Project Analyst
- **City of Bell Gardens, Transit Oriented Community Specific Plan and Zoning Code Update** – Project Analyst

MAYA BOUCHET, AICP

Stakeholder Coordination; TSMO Plan

Professional Credentials

- Bachelor of Science, Policy, Planning, and Development, University of Southern California
- American Institute of Certified Planners #34252
- Intelligent Transportation Society (ITS), Member

Maya is a planner with experience in ITS planning and design. She has completed several planning documents applying a systems engineering approach to develop strategic and implementable ITS projects. She is experienced in working with multiple stakeholder groups to understand similar and diverging needs which can help establish measurable goals and objectives. Her planning work is complemented by her experience designing ITS projects, which include communication infrastructure, traffic signal equipment, system integration, and redundancy. She completed the Program Planning for TSMO Course through the University of Maryland.

RELEVANT EXPERIENCE

- **MTC, Bay Area ITS Architecture Update, Bay Area, CA** – Project Engineer
- **SANDAG, I-805 TSMO Plan, San Diego, CA** – Project Analyst
- **NCDOT, TSMO Plan, Raleigh, NC** – Project Engineer
- **SANDAG, Regional TSMO Plan, San Diego, CA** – Project Analyst
- **SACOG, ITS Strategic Deployment Plan, Sacramento Region, CA** – Project Analyst
- **City of Stockton, ITS Master Plan, Stockton, CA** – Project Planner
- **City of Stockton, Fiber Master Plan, Stockton, CA** – Project Planner
- **City of Stockton, Fiber Maintenance Agreement Support, Stockton, CA**– Project Planner
- **City of Manteca, Fiber Master Plan, Manteca, CA** – Project Planner
- **City of Inglewood, Traffic Signal and ITS Design Guidelines, Inglewood, CA** – Project Manager
- **City of Inglewood, ITS Gap Closure Part II, Inglewood, CA** – Task Manager
- **City of Inglewood, ITS Gap Closure Part I, Inglewood, CA** – Task Manager
- **City of Westlake Village, ITS Master Plan, Westlake Village, CA** – Project Analyst
- **City of Santa Clarita, ITS Phase VII (Bicycle Detection System), Santa Clarita, CA** – Task Lead
- **SGVCOG, San Gabriel Valley Transit Study, Irwindale, CA** – Deputy Project Manager
- **City of Rancho Mirage, Traffic Signal Interconnect Project, Rancho Mirage, CA** – Project Analyst
- **Calabasas Communication, ITS Project, Calabasas, CA** – Project Manager

DEANNA HAASE, PE

ITS Architecture and Maintenance Plan; TSMO Plan

Professional Credentials

- Bachelor of Science, Civil Engineering, California Polytechnic State University
- Professional Engineer in AZ, CA, NV, VA, OR, and UT

Deanna is a project manager with Kimley-Horn and has led or managed components of various ITS, transportation operations, and performance analysis projects around the country for more than 20 years. Her focus is on agency infrastructure strategic deployment planning, operational process evaluation and development, data management and information sharing, regional multijurisdictional coordination, and freeway/arterial integration. She has extensive freeway management systems (FMS) and arterial management system design and planning experience with local, county, and state agencies. Deanna excels at working side-by-side with program managers from all facets of TSMO programs to engage stakeholders to help define goals and expectations that result in development to create actionable and implementable strategies.

RELEVANT EXPERIENCE

- **Fresno COG, Intelligent Transportation System Strategic Deployment (TSSD) Plan Update, Fresno, CA** – Task Manager
- **Kern COG, 2018 ITS Plan, Kern Region, CA** – Project Engineer
- **Tulare CAG, ITS Strategic Plan and Architecture Update, Visalia, CA** – Project Engineer
- **SACOG, ITS Strategic Deployment Plan, Sacramento Region, CA** – Project Engineer
- **Nevada Department of Transportation (NDOT), Statewide and Regional ITS Architectures Updates, NV** – Project Manager
- **Maricopa Association of Governments (MAG) ITS Architectures Updates, Maricopa County, AZ** – Project Manager
- **NCDOT TSMO Prioritization, Statewide, NC** – Project Engineer
- **City of Phoenix, ITS Strategic Plan, Phoenix, AZ** – Project Manager
- **City of Tempe, ITS Strategic Plan, Tempe, AZ** – Project Manager
- **City of Mesa, ITS Strategic Deployment Plan, Mesa, AZ** – Project Engineer
- **City of Phoenix, Regional ITS Fiber Optic Backbone, Phoenix, AZ** – Project Engineer
- **City of Goodyear, ITS Strategic Plan, Goodyear, AZ** – Project Engineer
- **City of Phoenix Signal and ITS Inventory and Asset Management Process I Phoenix, AZ** – Project Manager
- **NDOT, Statewide ITS and Active Transportation Management (ATM) Master plan, Statewide, AZ** – Project Manager
- **Arizona DOT (ADOT), Statewide ITS Master Plan, Statewide, AZ** – Project Manager
- **Utah DOT (UDOT), Statewide ITS Master Plan, Statewide, UT** – Project Manager
- **UDOT, ITS Asset Management, UT** – Project Manager
- **Maricopa Association of Governments (MAG) Systems Management and Operations (SM&O) Plan, Maricopa, AZ** – Project Manager

CHARITY THOMPSON, EIT

ITS Architecture and Maintenance Plan

Professional Credentials

- Bachelor of Science, Civil Engineering, University of Nevada, Las Vegas
- Professional Engineering Intern in Nevada #0T8949

Charity is a transportation analyst serving public- and private-sector clients in Las Vegas and throughout Nevada. With a focus on safety, ITS, and roadway design, Charity's project experience includes ITS architecture updates, transportation planning, and roadway safety engineering. She has played a key role in Nevada's Statewide Master Plan, contributing significantly to the statewide ITS architecture update.

RELEVANT EXPERIENCE

- **SCAG, Regional ITS Architecture Update, Los Angeles, CA** – Project Analyst
- **Regional Transportation Commission (RTC) of Southern Nevada, DCM, Las Vegas, NV** – Project Analyst
- **RTC Washoe, ITS Strategic Master Plan, Washoe County, NV** – Project Analyst
- **RTC Washoe, Kietzke ITS, Reno, NV** – Project Analyst
- **NDOT, Nevada Statewide ITS and Advanced Traffic Management (ATM) Master Plan, Statewide, NV** – Project Analyst
- **NDOT, SHSP Implementation, Statewide, NV** – Project Analyst
- **NDOT, HOV Lanes and Facilities NEPA Evaluation Study, Clark County, NV** – Project Analyst
- **NDOT, Flamingo Road SMP, Las Vegas, NV** – Project Analyst
- **NDOT, Statewide Water Rights Analysis, Statewide, NV** – Project Analyst
- **City of Tucson, Bilby Road Complete Streets, Tucson, AZ** – Project Analyst

RISHA KARIM, EIT

ITS Architecture and Maintenance Plan

Professional Credentials

- Bachelor of Science, Civil Engineering, University of California, Irvine
- Professional Engineer-in-Training in California #183780

Risha has previous experience working with Fresno COG assessing the feasibility of managed lanes in the area's corridors. She has also updated ITS Architectures for multiple jurisdictions using RAD-IT. Risha has been involved in extensive stakeholder outreach to assess the needs of a region during an ITS Architecture update.

RELEVANT EXPERIENCE

- **Fresno COG, Fresno-Clovis Metropolitan Area Managed Lanes Plan, Fresno, CA** – Project Analyst
- **SCAG, Regional ITS Architecture Update, Los Angeles, CA** – Project Analyst
- **CARTA, Program Advisory Services, Sacramento, CA** – Project Analyst
- **City of Sacramento, Stockton Boulevard BRT, Sacramento, CA** – Project Analyst
- **SANDAG, Regional NexGen BRT Technology ConOps and System Requirements** – Project Analyst
- **SANDAG, Advanced Transportation and Congestion Management Technologies Deployment (ATCMTD), San Diego, CA** – Project Analyst
- **SANDAG, Broadband Master Plan, San Diego, CA** – Project Analyst
- **LA Metro, Cloud-Based Transit Signal Priority (TSP), Los Angeles, CA** – Project Analyst
- **Metropolitan Transportation Commission (MTC), 511 Technical Advisor Services, San Francisco, CA** – Project Analyst
- **SGVCOG, Transit Jump Start, San Gabriel, CA** – Project Analyst
- **City of San Carlos, Bicycle Video/Radar Detection Pilot, San Carlos, CA** – Project Analyst

BEN PETRU

ITS Architecture and Maintenance Plan

Professional Credentials

- Bachelor of Science, Software Engineering Technology, ITT-Technical Institute

Benjamin is a software engineer with 20 years of experience that has led multiple ITS architecture implementations. Ben has developed and contributed to multiple serverless and desktop solutions ranging from ATMS systems, document management systems (DMS) integration systems, and ITS Architecture management to safety protocol systems. Prior to joining Kimley-Horn he worked as the Senior Lead Developer for the ADOT for almost 10 years.

RELEVANT EXPERIENCE

- **MTC, SF Bay Regional ITS Architecture Website, San Francisco, CA** – Lead Software Engineer
- **Kansas Department of Transportation (KDOT), Kansas Strategic Highway Safety Plan Website, Topeka, KS** – Lead Software Engineer
- **Pennsylvania Department of Transportation (PennDOT), Pennsylvania Statewide Airport Economic Impact Study, Aviation Economic Impact Calculator, Harrisburg, PA** – Lead Software Engineer
- **Minnesota Department of Transportation (MnDOT), Minnesota State Aviation System, Aviation Hub Application, St. Paul, MN** – Lead Software Engineer
- **Tennessee Department of Transportation (TDOT), Tennessee State Aviation System, Aviation Hub Application, Nashville, TN** – Lead Software Engineer

JEFF DALE, PE, PMP

TSMO Plan

Professional Credentials

- Bachelor of Science, Civil Engineering, North Carolina State University
- Professional Engineer in NC, IA, MI, NJ, and NY
- Project Management Professional #1459139

Jeff has more than 29 years of experience in ITS and TSMO with a focus on planning and operations. He is one of Kimley-Horn's lead subject-matter experts in emerging technologies. Jeff partners with agencies to develop and implement plans that leverage future technologies to better support their operational strategies. His experience includes roles with incident management, TMC operations, emergency operations, and integrating a range of ITS/TSMO strategies. Jeff provides a breadth of geographic experience from his work with public agencies in more than a dozen states. His skillset includes facilitation, fostering multi-agency collaboration, and strategic planning that helps agencies prepare for emerging technologies.

RELEVANT EXPERIENCE

- **NCDOT, TIM Program Manager, Statewide, NC** – Project Director
- **NCDOT, TSMO Deployment Guide, Statewide, NC** – Project Manager
- **NCDOT, TSMO Prioritization, Statewide, NC** – Principal In Charge
- **NCDOT, 2022 TSMO Strategic Plan, Statewide, NC** – Project Manager
- **NCDOT, I-5719, Ramp Meter Analysis and Design Manual, Gaston County, NC** – Principal in Charge
- **Metrolina ITS Regional Strategic Deployment Plan, Charlotte, NC** – Project Manager
- **Michigan DOT (MDOT), ITS Architecture Updates, Statewide, MI** – Principal in Charge
- **Berkeley-Charleston-Dorchester Council of Governments (BCDCOG), Charleston Area Transportation Study (CHATS) Regional ITS Deployment Guide, Charleston, SC** – Project Manager
- **Wilmington MPO Regional ITS Regional ITS Strategic Deployment Plan, Wilmington, NC** – Project Manager
- **SCDOT TSMO Master Plan, Statewide, SC** – Deputy Project Manager
- **Triad Regional ITS Strategic Deployment Plan, Greensboro, NC** – Project Manager
- **Wisconsin DOT (WisDOT), Traffic Operations Program Integration Review, Milwaukee, WI** – Senior Engineer

AYBERK KOCATEPE, PHD, PTP

Emergency Response

Professional Credentials

- Doctor of Philosophy, Civil Engineering, Florida State University
- Master of Science, Architectural Engineering, Politecnico di Milano
- Bachelor of Science, Civil Engineering, Bogazici University
- Professional Transportation Planner in California #890

Ayberk has more than 10 years of experience in travel demand model development, demand forecasting, transit ridership forecasting, transit survey expansion, New Starts analysis, and corridor studies. He has processed and applied transportation travel data, including traffic and transit surveys and various big-data sources, in meaningful and innovative ways to inform about the travel patterns and travel needs in a corridor or region. Ayberk has been working with FTA's STOPS model since 2018 and has since developed and applied STOPS models around the United States, including Minneapolis, South Florida, Orlando, Tampa, Atlanta, and New Orleans.

RELEVANT EXPERIENCE

- **Fresno Council of Governments (COG), VMT Fee-Based Mitigation Banking Program, Fresno County, CA** – Modeler
- **Fresno COG, Regional VMT Mitigation Program Study, Fresno, CA** – Senior Project Planner
- **SJCOG, Regional Congestion Management Program 2023-2024, 2024-2025, 2025-2026, San Joaquin County, CA** – Task Manager
- **City of Tracy, 2023 Citywide Roadway and Transportation Master Plan (TMP) Update, Tracy, CA** – Task Manager
- **City of Tracy, TMP AB 602, Tracy, CA** – Task Manager
- **City of Tracy, International Park of Commerce Building 20 Traffic Study Review, Tracy, CA** – Task Manager
- **StanCOG, RTP/SCS Regional VMT Bank Element, Stanislaus County, CA** – Modeler
- **Texas Department of Transportation (TxDOT), Statewide Resiliency Planning, Statewide, TX** – Senior Project Planner
- **Association of Central Oklahoma (ACOG) Encompass 2050 Metropolitan Transportation Plan (MTP), Oklahoma City, OK** – Task Lead
- **SANDAG, Flexible Fleets Implementation Strategic Plan, San Diego, CA** – Senior Modeler
- **Arlington County, Master Transportation Planning, Arlington, VA** – Senior Modeler
- **Santa Cruz Metropolitan Transit District, Caltrans Reliability Study, Santa Cruz, CA** – Senior Modeler
- **Monterey Salinas Transit (MST), Transit-Oriented Development (TOD) Planning Study, Monterey, CA** – Senior Modeler

CHRIS GREGERSON, PE, PTOE, AICP, PTP, TE

Emergency Response

Professional Credentials

- Master of Science, Transportation Engineering, University of Illinois at Urbana-Champaign
- Bachelor of Science, Industrial Engineering, Virginia Polytechnic Institute and State University
- Professional Engineer in California #86812
- Traffic Engineer in California #2860
- American Institute of Certified Planners (AICP) #35800
- Professional Transportation Planner (PTP) #657
- Professional Traffic Operations Engineer (PTOE) #4588

Chris is a professional civil engineer, traffic engineer, and planner with 13 years of experience in transportation engineering and planning. He has both led and assisted in the development of fee programs for jurisdictions throughout California. Chris has also played a key role in developing regional VMT mitigation programs across the state, working closely with MPOs and local jurisdictions on the development of their programs. Chris has led the preparation and adoption of VMT policies for numerous cities and counties statewide and has presented extensively on VMT policy and analytical methodologies at professional conferences, including multiple ITE conferences. Chris is highly skilled in applying both traditional and activity-based travel demand models for a wide range of planning and engineering applications.

RELEVANT EXPERIENCE

- **Fresno COG, Regional VMT Mitigation Program Study, Fresno, CA** – Project Engineer
- **StanCOG, Preparation of the 2022 and 2026 RTP/SCS, Stanislaus County, CA** – Senior Planner
- **StanCOG, REAP 2.0 SCS Support Projects Including Regional VMT Mitigation Program, Stanislaus County, CA** – Senior Planner
- **City of Agoura Hills, TIF Program Update, Agoura Hills, CA** – Project Manager
- **County of El Dorado, TIF Program Update, El Dorado County, CA** – Project Manager
- **City of Concord, TIF Program Update, Concord, CA** – Project Manager
- **Transportation Agency Monterey County (TAMC), Traffic Impact Fee (TIF) Program Update, Monterey County, CA** – Project Manager
- **Tri-Valley Transportation Council (TVTC), TIF Program, Contra Costa/Alameda County, CA** – Project Engineer
- **City of Gilroy, TIF Program Update, Gilroy, CA** – Project Planner
- **City of Marina, TIF Program Update, Marina, CA** – Project Planner
- **City of Soledad, TIF Program Update, Soledad, CA** – Project Planner
- **City of Tracy, TIF and Transportation Master Plan Update, Tracy, CA** – Project Engineer
- **Transportation Authority of Marin (TAM), VMT Mitigation Program and Trip Reduction Toolbox, Marin County, CA** – Deputy Project Manager
- **CVAG, Coachella Valley VMT Study, Coachella Valley, CA** – Project Planner
- **San Luis Obispo Council of Governments (SLOCOG), Regional VMT Mitigation Program Study, Fresno, CA** – Deputy Project Manager
- **County of Santa Cruz Regional VMT Mitigation Program (along with Caltrans, Santa Cruz County Regional Transportation Commission [SCCRTC], and Watsonville), Santa Cruz County, CA** – Project Engineer
- **City of Riverside, VMT Mitigation Program, Riverside, CA** – Deputy Project Manager
- **County of Riverside, SB 743 Implementation Plan, Riverside, CA** – Project Engineer
- **City of Palmdale, VMT Mitigation Program, Palmdale, CA** – Project Engineer
- **City of Agoura Hills, SB 743 Implementation Plan, Agoura Hills, CA** – Project Engineer
- **City of El Segundo, SB 743 Implementation Program, El Segundo, CA** – Project Engineer

ANAIS SCHENK, AICP

Emergency Response

Professional Credentials

- Master of Urban and Regional Planning, San Jose State University
- Bachelor of Arts, Anthropology, Reed College
- American Institute of Certified Planners #218826

Anais has 16 years of experience in the transportation sector as a planner, with both public and private sector expertise. She has served as a deputy project manager and project manager on a wide range of projects, with a focus on travel demand management, fee-based VMT studies, mitigation and monitoring programs, and regional transportation planning efforts. Her work has consistently involved coordinating across multiple agencies and jurisdictions to support complex decision-making, funding strategies, and program implementation: experience that translates directly to the interagency collaboration required in emergency management and resilience planning. She has contributed to projects involving active transportation, municipal code updates, housing and land use planning, environmental review (EIRs), and specific plans, many of which intersect with community preparedness, evacuation planning considerations, and infrastructure resilience. With more than 10 years in the public sector, Anais understands the challenges of working within regulatory frameworks, managing grant-funded programs, and navigating competing priorities across agencies. Her private sector experience has primarily supported municipal clients, where she has helped develop practical, implementable solutions to complex mobility challenges. She brings a strong interest in supporting communities through integrated planning approaches that enhance mobility, adaptability, and long-term resilience.

RELEVANT EXPERIENCE

- **StanCOG, 2026 RTP/SCS Update, Stanislaus County, CA** – Land Use Scenario Lead and Outreach Task Lead
- **StanCOG, REAP 2.0 Projects, Stanislaus County, CA** – VMT Study Lead
- **CVAG, Coachella Valley VMT Study, Coachella Valley, CA** – Deputy Project Manager
- **TAM, Regional VMT Study, Marin County, CA** – Transportation Demand Management Lead
- **County of Santa Cruz, Regional Fee-Based VMT Mitigation Bank Program, Santa Cruz County, CA** – Deputy Project Manager
- **County of Santa Cruz, VMT Mitigation Threshold and Guidelines, Santa Cruz County, CA** – Project Manager*
- **County of Santa Cruz, Sustainability Update (General Plan Update), Santa Cruz County, CA** – Project Planner*
- **County of Santa Cruz, Code Modernization, Santa Cruz County, CA** – Project Planner*
- **County of Santa Cruz, Active Transportation plan (ATP), Santa Cruz County, CA** – Project Planner*
- **County of Santa Cruz, Housing Opportunity Analysis, Santa Cruz County, CA** – Project Planner*
- **County of Santa Cruz, Visualizing Sustainable Transportation, Santa Cruz County, CA** – Project Manager*
- **County of Santa Cruz, Countywide Bicycle Wayfinding Project, Santa Cruz County, CA** – Project Manager*
- **San Francisco State University, Expansion Tiered EIRs, San Francisco, CA** – Deputy Project Manager*
- **Fresno State University, Events Center Expansion EIR, Fresno, CA** – Deputy Project Manager*
- **California State University Monterey Bay, Master Plan Mobility Element, Marina, CA** – Deputy Project Manager*
- **Metropolitan Transportation Plan Update, AMBAG Planning Area, CA** – Deputy Project Manager*

**Prior to joining Kimley-Horn*

HEIDI ROUS

Emergency Response

Professional Credentials

- Bachelor of Science, Physics, California State Polytechnic University

Heidi has experience providing risk assessment and impact analysis services, including asset protection, health effects, GHG modeling, climate vulnerability assessments (CVAs), and adaptation plans. She is currently managing numerous climate and resiliency projects, including CVAs describing and evaluating the degree to which a city or county's natural, built, and human systems are at risk of exposure to climate change impacts, including drought and altered precipitation patterns, extreme weather, changes in temperature, increased air pollutants, wildfires, sea level rise, and flood risk.

RELEVANT EXPERIENCE

- **City of Oakley, Climate Action and Adaptation Plan, Oakley, CA** – Project Manager
- **City of Anaheim, General Plan Update Environmental Impact Review and Community Climate Action Plan, Anaheim, CA** – Project Manager
- **Southern California Association of Governments (SCAG), Regional Climate Adaption Framework, Various Cities, CA** – Project Manager
- **Orange County Transportation Authority (OCTA), Climate Adaptability and Sustainability Plan, Orange County, CA** – Project Manager
- **City of Beverly Hills, Safety Element Update and Climate Vulnerability Assessment, Beverly Hills, CA** – Project Manager
- **City of Sedro-Woolley, 2025 Comprehensive Plan and Climate Resiliency Element, Sedro-Woolley, WA** – Climate Planning Lead
- **City of Oak Harbor, 2025 Comprehensive Plan Update and New Climate Resilience Element, Oak Harbor, WA** – Climate Planning Lead
- **Lewis County, 2025 Comprehensive Plan Periodic Update and Climate and Resilience Element, Lewis County, WA** – Climate Planning Lead
- **OCTA, CASP, Orange County, CA** – Vulnerability and Adaptation Technical Lead

SURABHI BARBHAYA

Emergency Response

Professional Credentials

- Master of City Planning, Land Use Planning, University of Cincinnati
- Bachelor of Architecture, Architecture, Maharaja Sayajirao University of Baroda, India

Surabhi has 20 years of experience in urban planning, urban design, and active transportation. She has worked on a spectrum of projects, including General Plan Updates, specific plans, design guidelines, objective design standards, complete streets, bike master plans, trail and greenway planning, and pedestrian studies. Her urban planning background helps her take a holistic approach towards projects by integrating land use, transportation, and sustainable development to respond to demographic, market, economic, physical, and organizational forces. Her architecture and urban design background further add to this holistic approach by focusing on the project's aesthetic aspects via design guidelines. She firmly believes that meaningful public engagement leads to ownership of the project by the community and uses her graphic skills to communicate ideas to the audience during the project's consensus-building phase. Many of her projects have won local and state American Planning Association (APA) and American Society of Landscape Architects (ASLA) awards. Surabhi is also an active member of the planning community and is serving as board member for APA Orange Section.

RELEVANT EXPERIENCE

- **City of Pinole, Housing Element Update, Safety Element Update, Environmental Justice Element Update, Pinole, CA** – Project Manager*
- **City of San Juan Capistrano, Housing Element Update, Safety Element Update, Environmental Justice Element Update, San Juan Capistrano, CA** – Task Manager*
- **City of Arcadia, Housing Element Implementation, Arcadia, CA** – Task Manager
- **City of Santa Clarita, Town Center Specific Plan, Santa Clarita, CA** – Project Manager
- **County of Monterey, Castroville Community Plan Update, Castroville, CA** – Project Manager
- **City of Hawthorne Comprehensive General Plan Update, Hawthorne, CA** – Project Manager
- **City of Calimesa General Plan Update- Safety Element Update and Evacuation Routes Study, Calimesa, CA** – Project Manager
- **County of San Benito General Plan Update- Safety Element Update and Evacuation Routes Study, San Benito, CA** – Task Manager
- **City of Cypress General Plan Update- Safety, Open Space and Conservation Elements Update and Evacuation Routes Study, Cypress, CA** – Project Manager
- **City of La Canada Flintridge General Plan Update- Circulation, Open Space and Conservation Elements Update, La Canada Flintridge, CA** – Project Manager
- **City of El Cajon, Parkway Plaza Specific Plan, El Cajon, CA** – Task Manager
- **City of Rolling Hills Estates, General Plan Update, Rolling Hills, CA** – Project Manager*
- **City of Elk Grove, General Plan Update, Elk Grove, CA** – Task Manager*
- **County of San Diego, Campo Road Corridor Revitalization Specific Plan, San Diego County, CA** – Project Manager*
- **City of La Cañada Flintridge, Housing Prototype Study and Objective Design Standards, La Cañada Flintridge, CA** – Project Manager*
- **County of Riverside, Mixed Use and Multifamily Objective Design Standards, Riverside County, CA** – Project Manager*
- **Los Altos Hills Housing and Safety Elements Update, Los Altos Hills, CA** – Project Manager*
- **City of San Leandro, Creek Trail Master Plan, San Leandro, CA** – Deputy Project Manager*
- **City of Imperial Beach, Boulevard Complete Streets Project, Imperial Beach, CA** – Public Engagement Lead*
- **County of San Diego, Rio Prado and Bonsall Parks, San Diego County, CA** – Public Engagement Lead*

**Prior to joining Kimley-Horn*

DOUG GETTMAN, PhD

Data Sharing

Professional Credentials

- Doctor of Philosophy, Systems and Industrial Engineering, University of Arizona
- Master of Science, Systems
- Engineering, University of
- Arizona
- Bachelor of Science, Systems Engineering, University of Arizona

Doug has more than 30 years of consulting, systems planning, and engineering experience in a wide variety of technical areas, including AV/CV, adaptive traffic control ITS software (i.e., central systems, web applications, and field traffic controllers), machine learning and artificial intelligence, transportation system modeling and simulation, communications system design, and transit operations. Doug has developed, deployed, integrated, and supported ATMSs for cities, counties, and state DOT across North America, including Arizona, Florida, Texas, California, Michigan, Ontario, Ohio, and Nevada. Doug leads the deployment of Traction Priority to provide FSP for NCTCOG and TSP for LA Metro.

RELEVANT EXPERIENCE

- **Los Angeles World Airports (LAWA), Integrated Corridor Management Concept of Operations, Traffic Summit Utilities and LAMP Enabling Projects, Los Angeles, CA** – Systems Engineer
- **Caltrans, Statewide Connected and Autonomous Vehicle Implementation Plan, Los Angeles, CA** – Project Manager
- **SANDAG, Advancing Connectivity and the Economy Through Technology in the San Diego Region, ATCMTD Grant, San Diego, CA** – ITS Technologist
- **LA Metro, Arterial ITS Inventory Tool Expansion (ITS First), Los Angeles, CA** – Project Engineer
- **MTC, Bay Area ITS Architecture Update, Bay Area, CA** – ITS Technologist
- **County of Los Angeles, CV Pilot Deployment Concept of Operations, Gateway Cities Region, CA** – Project Manager
- **LA Metro, ITS On-Call Services, Los Angeles County, CA** – Project Engineer
- **USDOT/FHWA, Impacts of Emerging Data Sources and Big Data Tools on TSM&O, Nationwide, US** – Project Manager
- **USDOT, Guidelines for Applying the Capability Maturity Model for Vehicle-to-Infrastructure Deployment, Nationwide, US** – Project Manager
- **NCHRP 20-102: Impacts of AV and CV Technology on State and Local Governments (On-Call Contract), Nationwide, US** – Project Manager
- **Signal Phase and Timing Broadcast for Connected Vehicles, Multiple Locations, US** – Project Manager
- **American Association of State Highway and Transportation Officials (AASHTO), CV/AV Research Plan, Washington, DC** – Project Manager
- **NCDOT, Activity Roadmap for North Carolina DOT and DMV in Preparation for Automated and Connected Vehicles, Statewide, NC** – Project Manager
- **ITD, Eastern Idaho, Rural IntelliDrive (Connected Vehicles) Concept of Operations, Boise, ID** – Technical Advisor
- **University of Virginia, Traffic Management Centers in a Connected Vehicle Environment, Charlottesville, VA** – Systems Engineer
- **Michigan DOT, Southeast Michigan Connected Vehicle Concept of Operations and System Implementation, Greater Detroit and Ann Arbor, MI** – Project Manager
- **Michigan DOT, Connected Vehicle Concept of Operations for Work Zone Traveler Information, Statewide, Michigan** – Project Support
- **Emirate of Dubai, Automated Vehicle Roadmap, United Arab Emirates** – Project Manager
- **North Carolina, Automated Vehicle Roadmap, Statewide, NC** – Project Manager
- **NCHRP 20-102 (02): Impacts Regulations and Policies on AV Adoption in Public Transit, Statewide, TX** – Project Manager

MONICA HARWOOD, PE, PTOE

TSMO Plan

citizen ENGINEERS

Monica Harwood, PE, PTOE, is a senior transportation operations planner and engineer with more than 25 years of experience planning, implementing, and operating multimodal transportation systems. Her work bridges technical operations, systems engineering, stakeholder facilitation, and implementation planning, helping agencies define operational needs, align partners, and turn broad goals into practical strategies. She has supported state, regional, and local clients through TSMO planning, systems engineering, training, and operations program development, including national work for FHWA. Through her role with FHWA, Monica facilitated TSMO workshops and trainings nationwide, including Capability Maturity Model (CMM) workshops and systems engineering trainings. She also led a two-day strategic TSMO program planning workshop for Caltrans in Sacramento. Previously, as TSMO Development Lead at WSDOT, she helped lead multiple TSMO CMM assessments and reassessments to support program development and continuous improvement and delivered TSMO workshops for ITSWA.

Professional Credentials

- Master of Science, Civil Engineering, University of Washington
- Bachelor of Science, Civil Engineering, University of Idaho
- Professional Engineer in ID, OR, WA

RELEVANT EXPERIENCE

- **TRPA Tahoe TSMO Plan, Lake Tahoe Basin, CA** – TSMO Planner
- **SW Washington VAST Regional TSMO Plan, Vancouver Region, WA** – Lead TSMO Planner
- **ITD Capability Maturity Model Assessment, Boise, ID** – FHWA Resource Center Facilitator
- **WSDOT Statewide TSMO Program Plan, Washington Statewide, WA** – Agency Project Manager
- **City of Hillsboro ITS Master Plan, Hillsboro, OR** – Lead TSMO Planner
- **Thurston Regional Planning Council Regional Detour Planning, Thurston County, WA** – TSMO Planner
- **FHWA Resource Center TSMO Program Support and CMM Workshops, Various Locations, Nationwide** – Lead Facilitator
- **Spokane Regional Transportation Management Center, Spokane Region, WA** – TMC Manager

JIM PETERS

Stakeholder Coordination – Subconsultant Lead

citizen ENGINEERS

Jim Peters is a senior ITS and TSMO planner and engineer with more than 31 years of experience helping agencies plan and implement transportation operations programs, communications systems, and ITS deployments. His work combines technical depth in ITS architecture, systems engineering, signal and communications systems, and operations planning with the practical ability to guide multi-agency coordination and move concepts into implementation.

Professional Credentials

- Bachelor of Science, Civil Engineering, University of Washington

RELEVANT EXPERIENCE

- **TRPA Tahoe TSMO Plan, Lake Tahoe Basin, CA** – TSMO Planner
- **SW Washington VAST ITS, TSMO and Technical Support, Vancouver Region, WA** – Project Manager
- **ITD Statewide TSMO and ITS Tactical Plan, Idaho Statewide, ID** – Project Manager
- **ITD Statewide Signal Timing Pilot, Idaho Statewide, ID,** – Project Manager
- **WSDOT Statewide TSMO Program Plan, Washington Statewide, WA,** – Project Manager
- **WSDOT Transportation Operations Division Strategic Plan, Washington Statewide, WA** – Project Manager
- **Portland Metro Area TSMO Plan, Portland Region, OR** – Project Manager
- **WSDOT Systems Engineering Training, Washington Statewide, WA,** – Lead Trainer
- **City of Hillsboro Traffic Signal Management and Operations Plan, Hillsboro, OR**– Project Manager
- **City of Hillsboro ITS Master Plan, Hillsboro, OR** – Project Lead
- **City of Hillsboro Ongoing Signal Timing Support , Hillsboro, OR** – Project Manager
- **ODOT Traffic Signal Coordination and Training, Portland Metropolitan Region, OR** – Project Manager
- **ODOT Maintenance Work Zone Safety Strategy and Implementation Plan, Oregon Statewide, OR** – Project Manager
- **OCTA ITS Communications Study, Orange County, California** – Project Manager,
- **CCTA Smart Signals, Contra Costa County, California** – Signal System Technical Expert
- **ODOT Statewide Broadband Strategy and Implementation Plan, Oregon Statewide, OR** – Project Manager
- **Washington County Broadband Program Technical Support, Washington County, OR** – Project Manager

KRISTINE, CAI

Stakeholder Coordination – Subconsultant Lead; Existing Conditions

LSA

Ms. Cai is a recognized expert in transportation strategy and planning, policy development, VMT strategy and mitigation, and travel demand forecasting. Ms. Cai served as the Deputy Director for the Fresno COG and was with the Fresno COG for 21 years before joining LSA. During her service in the public sector, Ms. Cai devoted much of her career to integrated transportation and land use planning work. She has extensive experience advancing innovative solutions that meet sustainability, efficiency, equity, and safety goals. Leading a team of professional engineers and planners, she implemented many projects and programs that advanced sustainability in the Fresno region as well as in the San Joaquin Valley. As the Director of Mobility for Central and Northern California at LSA, Ms. Cai will continue to serve the communities in the San Joaquin Valley as well as in the Northern California region.

Professional Credentials

- Master of Science,Regional and Community Planning, Kansas State University

RELEVANT EXPERIENCE

- **Fresno COG, 2022 Regional Transportation Plan/Sustainable Communities Strategy Development, Fresno, CA** – Project Manager
- **Fresno COG, Activity Based Model Update, Fresno County, CA** – Project Manager
- **Fresno COG, Regional VMT Mitigation Program Study, Fresno, CA** – Project Manager
- **Fresno COG, 2018 Regional Transportation Plan/Sustainable Communities Strategy Development, Fresno, CA** – Project Manager
- **Fresno COG, Fresno County Regional Long Range Transit Plan Development, Fresno, CA** – Project Manager
- **Fresno COG, Development of the Fresno County SB 743 Implementation Regional Guidelines, Fresno, CA** – Project Manager
- **Fresno COG, Regional Active Transportation Plan, Fresno, CA** – Project Manager
- **Fresno COG, Transit-Oriented Development Funding Program, Fresno, CA** – Project Manager

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